2021 Annual Status Report
Boomsnub/Airco Superfund Site
Hazel Dell, Washington

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LIST OF ACRONYMS AND ABBREVIATIONS

AOC	Area of Concern
BOC	The BOC Group, Inc.
Boomsnub	Boomsnub Corporation
CAS	Chemical Abstract Service
CD	Consent Decree
City	City of Vancouver
COC	Contaminant of concern
CVOC	Chlorinated volatile organic compound
DCE	dichloroethene
EA	EA Engineering, Science, and Technology, Inc., PBC
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
ft	feet
GWTS	Groundwater Extraction and Treatment System
IWS	in-well stripping
µg/L	micrograms per liter
MCL	Maximum Contaminant Level
mg/kg	milligrams per kilogram
MTCA	Model Toxics Control Act
Messer	Messer LLC
NFS	no further sampling
O&M	operation and maintenance
OU	operable unit
PDB	passive diffusion bag
QASP	Quality Assurance and Sampling Plan
ROD	Record of Decision

LIST OF ACRONYMS AND ABBREVIATIONS (Continued)

Site	Boomsnub/Airco Superfund Site
SVE	soil vapor extraction
TCE	trichloroethene
VOC	volatile organic compound

EXECUTIVE SUMMARY

Introduction

This Annual Status Report summarizes information on activities that took place during 2021 at the Boomsnub/Airco Superfund Site (Site) in Hazel Dell, Washington. EA Engineering, Science, and Technology, Inc., PBC (EA), under contract to Messer LLC (Messer), operated and maintained a Site-wide groundwater extraction and treatment system and completed other EPA-approved remedial activities during 2021. Work at the Site is conducted under a Consent Decree between the U.S. Environmental Protection Agency (EPA) and the BOC Group (herein referred to as Messer)[1], Docket No. CO7-5163FDB, which was entered by the court on 29 June 2007 (EPA 2007).

2021 Operable Unit (OU)-3 System Operations

The Groundwater Treatment System (GWTS) was turned off, drained, and winterized on 3 January 2021 with prior approval from the EPA. The GWTS will remain in this "mothballed" state unless the EPA or Messer elects to reactivate the system at a later time. A summary of treatment system operations in January 2021 was provided in the Semi-Annual Groundwater Monitoring Report January – June 2021 (EA Engineering, Science, and Technology, Inc., PBC [EA] 2021a)

2021 Annual Screening of Groundwater Monitoring Data

Annual screening of groundwater monitoring data is conducted for each monitoring and extraction well currently sampled. As described in the Closure Plan, dated February 2018 and approved by the EPA on 19 March 2018, site closure will occur when the concentrations of all Site contaminants of concern in groundwater monitoring and extraction wells included in the Closure Monitoring Program have reached the Site-specific cleanup levels, as defined in the Record of Decision (EPA 2001). The following EPA guidance documents were used to develop the procedures in the Closure Plan to determine when the groundwater cleanup levels have been achieved: *Recommended Approach for Evaluating Completion of Groundwater Restoration Remedial Actions at a Groundwater Monitoring Well* (EPA 2014), and *Guidance for Evaluating Completion of Groundwater Restoration Remedial Actions* (EPA 2013).

Based on the results of the annual screening of groundwater monitoring data through 2021, the following changes to monitoring frequencies are recommended for 2022:

- Reduce sampling of wells AMW-1A, AMW-2A. AMW-12A, and AMW-53A from quarterly to semiannually for continued monitoring of the effectiveness of in-situ

1 The BOC Group, Inc. (BOC) changed its name to Linde LLC and then, as of 1 March 2019, Linde LLC changed its name to Messer LLC. For ease of reporting, references to Messer in this report include the period of BOC and Linde responsibility prior to 1 March 2019.

treatments. MW-1A will maintain quarterly sampling for the purpose of Attainment Monitoring.

- Maintain semiannual sampling frequency in Intermediate wells AMW-59, MW-14E, MW-20D, MW-38 (VOCs only, Northern Plume), and PZ-39(VOCs only) to provide continued monitoring of the in-situ treatment area west of NE St. Johns Road. CPU-14 will be sampled quarterly for VOCs and semiannually for chromium.

- Reduce to semiannual the post-GWTS shutdown monitoring frequency for chromium for Proximal Wells MW-3A, MW-4A, MW-4B, MW-4C, MW-6A, MW-6B, and MW-9B, which had been increased to quarterly in 2021 to monitor the impacts from the GWTS shutdown during 2021, the first-year post-shutdown. MW-6A, while part of post-GWTS shutdown enhanced monitoring, will maintain quarterly sampling in 2022 for the purpose of Attainment Monitoring.

- Continue Attainment Monitoring for all wells made eligible through the onset of steady state hydrologic conditions caused by the shutdown of the GWTS. Wells in the first four events of Attainment Monitoring (or showing progress in Remediation Monitoring) will be sampled on a quarterly basis.

Status of Previous Recommendations for 2021

To meet the operating objectives for OU-2 and OU-3, planned activities for 2021 were recommended in the 2020 Annual Status report (EA 2021d). The status of those planned activities is summarized below:

- **Well Sampling** – Wells were sampled in accordance with the updated sampling schedule.
- **Easement Agreements and Restrictive Covenants** – EA continues to work with the EPA as necessary to obtain the required agreements with non-responsive property owners. EA will continue efforts to obtain agreements as opportunities and need arise.
- **Padden Parkway Business Park** – The property owner was kept informed of activities on the property during 2021. EA will continue to work with them regarding 2022 real estate development activities.
- **In-Situ Treatments** – In-situ groundwater treatments were completed on 1 August 2020. Analysis of trichloroethene (TCE) trends shows that in-situ injections have been effective at accelerating TCE mass removal in areas of recalcitrant contamination that had been seeing slowly diminishing effectiveness of the pump and treat remedial action.

- **Northern Plume** – EA continues to work with EPA to develop a strategy for closure of OU-3 wells being impacted by the Northern Plume.

Recommendations and Planned Activities for 2022

Messer plans on continuing PacTrust Corporate Park (formerly known as "Padden Parkway") remediation system modification work initiated in 2021 in cooperation with PacTrust Development. Implementation of the remedial system modification design will occur in the Winter and Spring 2022, and the decommissioning of MW-34 is planned for June 2022, when the detention pond in which it is now located has dried out.

Messer plans on sampling site-wide on a quarterly basis in 2022. With the GWTS shutdown having occurred in January 2021, Messer recommends that sampling of monitoring wells in the Attainment Monitoring phase of closure monitoring occur on a quarterly basis for the first four events, as described in the Closure Plan (EA 2018). Quarterly QASP Addenda will precede quarterly sampling events.

The GWTS will remain in a state of readiness, should regular monitoring of chromium concentrations around the treatment system building in 2022 indicate migration of chromium in response to which the EPA elects to reactivate the system. If the system remains unused, it will be decommissioned when the wells in the network that it services have concluded attainment

In the course of planning for the shutdown of the GWTS in Fall 2020, Messer recommended additional monitoring for chromium in monitoring wells located around the GWTS post-shutdown. The wells that Messer recommends for monitoring for the duration of the GWTS mothball period are MW-3A, MW-4A, MW-4B, MW-4C, MW-6A, MW-6B, and MW-9B. Chromium concentrations in monitoring wells adjacent to the GWTS (such as MW-6A) have not been positively impacted by the GWTS for a period approaching 15 years (EA 2020a). The GWTS will need to be removed and the contaminated residual soil excavated to achieve chromium cleanup levels in the affected monitoring wells in the vicinity of the GWTS. Additional monitoring in this area will identify any change to the residual chromium plume concentration or configuration in the period between GWTS shutdown and final soil excavation. The aforementioned wells were sampled quarterly in 2021, per the recommendations of the 23 September 2020 Memorandum (EA 2020a) and the 2020 Annual Report (EA 2021); the sampling frequency for these wells is recommended to be reduced to semi-annual in 2022.

As described in a technical memorandum dated 23 September 2020 (EA 2020a), in-situ treatment of remaining "hot spots" is planned as the means of addressing residual TCE contamination in the mid-plume and source areas. Specific recommendations for each monitoring location are discussed below.

Messer also recommends decommissioning and removal of the soil vapor extraction (SVE)/ in-well stripping (IWS) system located on the Messer Gas Plant property (OU-2). This SVE system

is no longer operational, following a successful implementation from 2004 to 2008. The IWS system ceased operation in 2013.

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1. INTRODUCTION

This Annual Status Report summarizes information on activities that took place during 2021 at the Boomsnub/Airco Superfund Site (Site) in Hazel Dell, Washington. It presents the combined Semi-Annual Groundwater Monitoring Report July – December 2021 and the 2021 Annual Status Report for the Site. Combining these reports was agreed to by the U.S. Environmental Protection Agency (EPA) on 28 July 2020.

The results of the Summer and Fall 2021 quarterly sampling events, as well as a summary of the well monitoring status for 2021 and recommendations for 2022, are provided. A summary of treatment system operations in January 2021 was provided in the Semi-Annual Groundwater Monitoring Report January – June 2021 (EA Engineering, Science, and Technology, Inc., PBC [EA] 2021a).

EA, under contract to Messer LLC (Messer), operated and maintained a Site-wide groundwater extraction and treatment system (GWTS). Work at the Site is conducted under a Consent Decree (CD) between EPA and The BOC Group (herein referred to as Messer)[2], Docket No. CO7-5163FDB, which was entered by the court on 29 June 2007 (EPA 2007).

1.1 BACKGROUND

The Site is located just north of the city limits of Vancouver, Washington, as depicted on Figure 1-1. It includes two adjacent facilities, the former Boomsnub Corporation (Boomsnub) chrome plating facility located at 7608 NE 47th Avenue, Vancouver, Washington and the Messer industrial gas production facility located at 4715 NE 78th Street, Vancouver, Washington. Boomsnub and its predecessor company, Pioneer Plating, conducted chrome plating operations at this location from 1967 until 1994. Boomsnub is no longer in business; the Boomsnub property is not owned by Messer. The Messer plant manufactures compressed and liquefied gas products including nitrogen, oxygen, and argon. The plant also stores and distributes other specialty gases such as hydrogen and helium. The facility was built by Air Liquide America Corporation in 1963 and has been in operation since 1964.

In 1987, the Washington State Department of Ecology (Ecology) determined that a plume of chromium-contaminated groundwater was emanating from the Boomsnub facility. While cleanup activities were being conducted at the Boomsnub facility, volatile organic compounds (VOCs) were detected in groundwater samples and were suspected to be coming from the Messer property. Messer began investigating the nature and extent of VOCs in 1991. In June 1994, EPA took over the role of lead regulatory agency from Ecology and in April 1995 the Site was placed on the National Priorities List. The primary constituents of concern at the Site are hexavalent chromium and selected VOCs. Previous studies indicated that almost all chromium in groundwater was hexavalent chromium (ICF Kaiser 1999). For this reason, most historical and

2 The BOC Group, Inc. (BOC) changed its name to Linde LLC and then, as of 1 March 2019, Linde LLC changed its name to Messer LLC. For ease of reporting, references to Messer in this report include the period of BOC and Linde responsibility prior to 1 March 2019.

recent groundwater samples have been analyzed only for total chromium to represent hexavalent chromium. The primary VOC of concern is trichloroethene (TCE), which serves as an indicator of VOC presence at the Site. The chromium and TCE groundwater contaminant plumes overlapped and were commingled downgradient of the source areas. In the 1990s, the plumes were found to extend approximately 4,400 feet (ft) in a west-northwest direction from the sources.

The Site is divided into three operable units (OUs) to manage cleanup activities: OU-1, Boomsnub Soil; OU-2, BOC (Messer) TCE source; and OU-3, Site-wide Groundwater (Figure 1-2). EPA conducted soil removal actions at OU-1 in 1994 and 2001 to remove hexavalent chromium-contaminated soils serving as a source for groundwater contamination. Soil with contamination above clean up levels was left in place underneath and adjacent to buildings and other site structures. Messer has conducted numerous site investigations, conducted a removal action, and operated a VOC source removal system for soil and groundwater on their property.

The highest concentrations of Site contaminants have occurred in a shallow groundwater-bearing zone referred to as the alluvial aquifer. The alluvial aquifer is not used as a municipal water supply, although a limited number of private wells pump from this aquifer. TCE and chromium have been detected, although at considerably lower concentrations, in the deeper groundwater-bearing zone, the Troutdale Aquifer. Chromium has not been detected in the Troutdale Aquifer since 2006. The Troutdale Aquifer serves as a municipal water supply for the City of Vancouver (City) and Clark County. Municipal water supply wells are not located in areas impacted by the chromium or TCE groundwater contaminant plumes.

A GWTS was used to capture and treat Site groundwater. The GWTS began operating in 1990 and was originally constructed along the axis of the chromium plume. Since the initial system was installed, it has been modified, upgraded, and expanded several times to increase pumping and treatment capacity and capabilities, and to increase removal efficiency. The monitoring and extraction well network for the Site is presented on Figure 1-3. The system was turned off, drained, and winterized on 3 January 2021 with prior approval from the EPA. The GWTS will remain in this “mothballed” state unless the EPA or Messer elects to reactivate the system at a later time.

Chromium was removed from the extracted groundwater using an ion-exchange system. VOCs were removed from the extracted groundwater using air stripping with granular activated carbon treatment of the off-gases. The treatment facility is located on the Boomsnub property. Treated groundwater was discharged to an infiltration gallery located on the Messer property. The infiltration gallery was constructed during September and October 2005 and began receiving water in February 2006 (EA 2006). The infiltration gallery stopped receiving effluent from the GWTS on 3 January 2021. Prior to construction of the infiltration gallery, the treated groundwater was discharged to the City sanitary sewer system.

The Record of Decision (ROD) identified the remedy for OU-3 as continued groundwater extraction and treatment until groundwater cleanup levels are achieved throughout the

groundwater plume (EPA 2000). The remediation goals include the reduction of total chromium in groundwater to 80 micrograms per liter (µg/L) and the reduction of TCE to 5 µg/L. The ROD for the Site, dated February 2000, identified the following groundwater cleanup levels:

Groundwater Cleanup Levels

Contaminant of Concern	CAS Number	Basis	Practical[a] Quantitation Limit (µg/L)	Cleanup[b] Level (µg/L)
Hexavalent chromium	18540-29-9	MTCA B	5	80
Chromium (total)	7440-47-3	MCL	5	100
Bromodichloromethane	75-27-4	MTCA B	1	1
Carbon tetrachloride	56-23-5	MTCA B	1	1
Dibromochloromethane	124-48-1	MTCA B	1	1
1,2-Dichloroethane	107-06-2	MCL	1	5
1,1-Dichloroethene	75-35-4	MTCA B	1	1
Tetrachloroethene	127-18-4	MCL	1	5
1,1,1-Trichloroethane	71-55-6	MCL	1	200
Trichloroethene	79-01-6	MCL	1	5

Notes: CAS = Chemical Abstract Service
µg/L = Micrograms per liter
MTCA = Washington State Model Toxics Control Act
MCL = Maximum Contaminant Level

(a) Ecology Implementation Memo No. 3 dated 24 November 1993 (Ecology 1993).
(b) Cleanup level established as the higher of the regulatory level or the practical quantitation limit; see Washington Administrative Code 173-340-700(6) and Ecology Implementation Memo No. 3 dated 24 November 1993.

An Action Memorandum was issued by EPA in September 2001, identifying the requirements for remediation activities for OU-2 (EPA 2001). On 18 September 2002, BOC and EPA entered an Administrative Order on Consent (EPA Docket Number CERCLA 10-2002-0052; EPA 2002), addressing the specific design, construction, and operational requirements for a Non-Time-Critical Removal Action for OU-2 to implement the requirements of the Action Memorandum. Locations of the OU-2 treatment and monitoring wells are shown on Figure 1-4.

On 1 April 2002, the BOC Group (which later became Linde LLC) assumed interim responsibility for the operation and maintenance (O&M) of the GWTS for OU-3. On 1 March 2019, Messer retained responsibility for the remediation at this location as part of acquisition of certain Linde assets. Therefore, Messer continues with operation of the Boomsnub/Airco Superfund Site.

In October 2002, EPA conducted additional soil characterization activities on the Boomsnub property around the groundwater extraction and treatment system building. The purpose of the work was to identify areas in the shallow soils (15 ft or less deep) with concentrations of chromium above the cleanup levels specified in the ROD. The results of the soil characterization activities were presented in the *Soil Characterization: Groundwater Treatment System Compound* report, finalized in April 2003 (URS Group, Inc. 2003).

In September 2003, Messer began construction of the Non-Time Critical Removal Action at their

facility to address the VOC source area (OU-2). The EPA-selected remedial action was a combination of in-well stripping (IWS) and soil vapor extraction (SVE) systems to remove VOCs from both the groundwater and soil beneath the Messer gas plant. The systems became operational in February 2004. The SVE system was operated to treat the vadose zone soil in OU-2 until 2008, when it was turned off with EPA approval. The IWS system was operated to treat groundwater in OU-2, until it was turned off with EPA approval in August 2013. In 2020 the EPA agreed that the IWS and SVE systems could be decommissioned.

The Toe-of-Plume Pilot Study, an in-situ treatment program, was performed in 2006 to treat an area of recalcitrant chromium and TCE contamination near the original toe of the groundwater contaminant plumes. Chromium and TCE concentrations in the pilot study monitoring wells have remained below the cleanup level since that time, indicating that the treatment was effective.

In 2008, an investigation identified another plume of VOC contamination in groundwater north of the Boomsnub/Airco Plume (OU-3 plume), in the area around well AMW-18 (EA 2008). This offsite plume is referred to as the Northern Plume. In May 2011, EPA and Messer performed a joint investigation of the Northern Plume area to get a better understanding of the source, extent, and concentrations of VOCs in the plume (EA 2011). A new monitoring well (AMW-64) was installed in February 2012, at the request of the EPA, to monitor the Northern Plume northwest of well AMW-18 (EA 2012). The Northern Plume continues to be monitored, along with the OU-3 plume, to evaluate potential impacts to the Site, and in accordance with an agreement between Messer and EPA. The EPA does not attribute contamination from the Northern Plume to activities on the Boomsnub or Messer properties. The Work Plan for the 2008 investigation noted that an offsite source of TCE originating from the Permalume property immediately east and upgradient of the Messer gas plant property impacted monitoring well AMW-8A, which is located at the eastern boundary of the Messer Property and is approximately 700 ft northeast of the Boomsnub/Airco Site TCE Source Area (EA 2008). AMW-8A and the Permalume property are located upgradient of Northern Plume well AMW-18, and the results of the AMW-18 Area Investigation support a finding of the Permalume property as the source of the Northern Plume.

In 2015 the EPA issued an Explanation of Significant Differences allowing use of in-situ treatment in addition to the ROD-approved remedial action. An in-situ treatment pilot test (Phase I) was conducted in Fall 2018 just downgradient of TCE Source Group wells AMW-2A and MW-1A and upgradient of Intermediate Group wells MW-18D and MW-18E, to determine the effectiveness of proposed treatments on reducing TCE concentrations. The results of the pilot study showed both treatments were effective in reducing the TCE concentrations in nearby wells. Regenesis PlumeStop® was used in the TCE Source Area and PeroxyChem EHC Plus® was used in the Intermediate Wells area.

Full scale in-situ treatment injections (Phase IIA) were conducted in the Fall 2019 using PeroxyChem EHC Plus® in the historically mid-plume area where a lithological trough crosses the plume perpendicularly. Approximately 61,920 pounds of this compound were injected into five permeable reactive zones. Additional injections (Phase IIB) were performed in 2020 and included additional injections further downgradient of the Phase IIA injections using additional

PeroxyChem EHC Plus® in three permeable reactive zones, as well as within the OU-2 area using Regenesis PlumeStop® in five permeable reactive zones. Performance monitoring of Phase IIA and Phase IIB was performed by sample collection in the Spring and Fall 2020 in select downgradient wells and was reported in a separate in-situ treatment report, submitted to the EPA in the Spring 2021.

1.2 PURPOSE

The purpose of this report is to provide an overview of Site activities at OU-2 (TCE source area) and OU-3 (site-wide groundwater) for the reporting period of 1 January through 31 December 2021.

1.3 OPERATING OBJECTIVES

The operating objectives for OU-2, identified in the 2001 Action Memorandum (EPA 2001), include the following:

- Remove VOCs from the vadose zone that may be acting as the source to groundwater.
- Remove VOCs from groundwater on the western portion of the Messer property.
- Halt off-property migration of VOCs in groundwater.

The operating objectives for OU-3 are defined in the ROD (EPA 2000). Activities at the Site are designed to meet the following overall objectives:

- Reduce contaminant migration within the alluvial aquifer (expansion of the plumes).
- Continue mass removal activities designed to restore impacted groundwater to Site-specific cleanup levels.
- Reduce contaminant migration into the Troutdale Aquifer by reducing contamination in the alluvial aquifer.

With the implementation and continued operation of remedial measures discussed in this document, these objectives are, and continue to be, met.

1.4 ORGANIZATION OF THIS DOCUMENT

This report is divided into eight sections and three appendices:

- Section 1 provides the background, purpose, and operating objectives.
- Section 2 summarizes remedial action progress during the reporting period including system operations and monitoring.
- Section 3 provides a discussion of groundwater monitoring results and trends.
- Section 4 summarizes other Site activities conducted during the reporting period.

- Section 5 presents the results of the annual assessment of groundwater monitoring data and provides recommendations, as appropriate, for changes to the well sampling schedule.
- Section 6 summarizes the status of previously recommended activities for 2021 and presents recommendations and planned activities for 2022.
- Section 7 lists the references cited in this document.
- Appendix A – laboratory chain-of-custody documentation for groundwater samples collected during the Summer and Fall 2021 sampling events and the analytical results summary for groundwater samples.
- Appendix B – documentation relative to the OU-3 GWTS operations and monitoring.
- Appendix C – field purge and sampling forms for the Summer and Fall 2021 sampling events.
- Appendix D – monthly data quality assurance/quality control summary and groundwater data validation report.
- Appendix E and F – information on chromium and TCE concentrations in groundwater. The information is presented both by well groupings and by individual wells. Appendices E and F are organized in sections, as follows:
    - Tables reporting chromium and TCE groundwater concentrations for the last five sampling events are provided in Appendices E-1 and F-1, respectively. Only wells sampled during the 2021 reporting period are included in these tables.
    - Graphs showing chromium and TCE concentration trends by well grouping are presented in Appendices E-2 and F-2, respectively. Only wells sampled during the 2021 reporting period are included. These graphs allow a comparison of trends within geographical or hydrogeological groupings. They also allow immediate comparison of concentrations between wells in a grouping and the ability to identify potential outliers.
    - Graphs showing chromium and TCE concentrations over time for individual wells are presented in Appendices E-3 and F-3, respectively. Only wells sampled during the 2021 reporting period are included.
- Appendix G – supporting information for the closure monitoring assessment, including a list of wells excluded from closure monitoring, and tables showing the results of the remediation monitoring analysis and attainment monitoring analysis for each contaminant of concern (COC).
- Appendix H – discussion on the Northern Plume and associated tables and figures. The Northern Plume continues to be monitored, to evaluate potential impacts to the Site and treatment system.

2. REMEDIAL ACTION PROGRESS

This section provides a summary of OU-3 system operations, system performance for the 2021 reporting period, and plume monitoring conducted from 1 July to 31 December 2021. A summary of OU-3 system operations and system performance during the previous reporting period (January through June 2021) is presented in the Semi-Annual Groundwater Monitoring Report (EA 2021a). The GWTS was shut off on 3 January 2021. Prior to the shut off influent and effluent samples were collected by EA in accordance with the Site-specific Quality Assurance and Sampling Plan (QASP; EA 2019) and were reported in the Semi-Annual Groundwater Monitoring report (EA 2021a).

2.1 SYSTEM OPERATIONS

System data for the samples collected in January 2021 are presented in the Semi-Annual Groundwater Monitoring Report (EA 2021a). No additional sampling was completed in 2021 and the GWTS will remain turned off until Messer or EPA elects to reactivate the system.

2.1.1 Groundwater Extraction System

No extraction well pumping rates were recorded from July through December due to system shutdown.

2.1.2 Groundwater Treatment System

No additional routine monitoring of the treatment system influent and effluent was conducted throughout the reporting period due to system shutdown.

2.1.2.1 Ion-Exchange and Air Stripper Systems

No monthly influent and effluent removal rates were calculated. The system remained off throughout the reporting period.

2.1.2.2 Infiltration Gallery

No treated groundwater from the Site treatment system was discharged back into the alluvial aquifer. The system remained off throughout the reporting period.

2.2 SYSTEM PERFORMANCE

The GWTS remained off throughout the reporting period.

2.2.1 Water Treated

The GWTS remained off throughout the reporting period.

2.2.2 System Availability

The GWTS remained off throughout the reporting period.

2.2.3 Mass Removal

The GWTS remained off throughout the reporting period.

2.3 MEETINGS

Due to the COVID-19 pandemic, most meetings in 2021 were conducted remotely on a videoconference platform. One in-person meeting was held at the site.

- **20 April 2021 –** Attendees: David Sordi and Philipp Sieber (Messer); Matt Oyen (PacTrust); Bob Fentress Jr. (McKenzie); Chris Breemer (Cascadia Associates LLC); Jonathan Williams and Tim Maley (EPA); Jonathan Reeve and Jil Frain (EA). EPA laid out expectations of the remedial system remaining in an operational-ready state with regularly-scheduling monitoring well sampling unobstructed by the commercial real estate development. EPA explained that monitoring well locations have location-specific trend data going back many years and monitoring well relocation is not an acceptable alternative. PacTrust Development will work with Messer to accommodate the operation of the remediation system and monitoring process within the design of the PacTrust Corporate Park.
- **27 April 2021** – Annual site meeting. Attendees: David Sordi and Philipp Sieber (Messer); Jonathan Williams and Tim Maley (EPA); Jonathan Reeve and Susan Kettlewell (EA). Reviewed performance and monitoring results from 2020, discussed planned site activities for 2021.
- **8 July 2021** – Attendees: David Sordi, Philipp Sieber, and Richard Lingg (Messer); Jonathan Williams, Tim Maley, and Stephanie Ebright (EPA), Jonathan Reeve (EA). Discussed residual chromium contamination in soil on the Boomsnub property and how it would be addressed and how further action would be apportioned between Messer and the EPA. Decision made for EA to conduct a data gaps analysis and prepare a memorandum that outlines the investigation scope and costs necessary to characterize remaining chromium in vadose-zone soil at three different concentration thresholds: 400 milligrams per kilogram (mg/kg), 100 mg/kg, and 8 mg/kg.
- **29 October 2021** – Attendees: David Sordi and Philipp Sieber (Messer); Jonathan Williams, Tim Maley, and Brandon Perkins (EPA); Jonathan Reeve (EA). Discussed chromium in soil memorandum prepared by EA at the request of EPA. After reviewing the memo that summarized the scope and cost of characterizing soil at the 400 mg/kg, 100 mg/kg, and 8 mg/kg concentration thresholds, the EPA decided that a more productive use of resources would be to focus on just the 400 mg/kg threshold for soil but expand that investigation to also determine if a residual source of chromium contamination in vadose zone soils is feeding the residual groundwater plume of

dissolved chromium on the Boomsnub property. EA was directed to supplement the memorandum with expanded scope and costs to include this investigation of groundwater contamination source in the 400 mg/kg chromium in soil characterization.

- **17 November 2021** – On-Site meeting at the Boomsnub/Airco Superfund Site. Attendees: David Sordi (Messer); Matt Oyen, Eric Sporre (PacTrust Development); Adam Solomonson (McKenzie); Jonathan Williams, Tim Maley, and Brandon Perkins (EPA); Jonathan Reeve and Richard Read (EA). Brandon Perkins to take over EPA Remedial Project Manager duties for the Boomsnub/Airco Superfund Site for Jonathan Williams. Mr. Williams will transition duties to Mr. Perkins with official transition occurring on 1 January 2022. All parties agreed it would be a good idea to give Mr. Perkins a tour of the site and have EA present the history of the site to Mr. Perkins as an orientation. The tour included the Boomsnub property and facilities, a fence line tour of the Messer Gas Plant, a tour of ongoing development at PacTrust Corporate Park (including meeting with and discussing design implementation schedule with representatives of the PacTrust team), and a tour of in-situ injection locations including at Luke Jensen Park. A presentation on the remedial action history of the site and recent activities was given at the Boomsnub site office.

2.4 DELIVERABLES

The following deliverables were submitted between January and December 2021.

- **03 January 2021** – Winter 2021 QASP Addendum (EA 2021b) was submitted to EPA.
- **07 January 2021** – Notification letters for the Winter 2021 sampling event were mailed to the property owners.
- **31 January 2021** – October through December 2020 Self-Monitoring Report was submitted to the City.
- **08 March 2021** – Spring 2021 QASP Addendum (EA 2021c) was submitted to EPA.
- **31 March 2021** – 2020 Annual Status Report (EA 2021d) was submitted to the EPA.
- **05 April 2021** – Notification letters for the Spring 2021 sampling event were mailed to the property owners.
- **23 April 2021** – January through March 2021 Self-Monitoring Report was submitted to the City.
- **7 February 2021** – 2020 Dangerous Waste Report was submitted to Ecology.
- **29 May 2021** – In-Situ Treatment of Areas of Residual Contamination Phase II Report (EA 2021e) regarding the Phase II in-situ event performed on Clark County property was submitted to EPA.
- **08 June 2021** – Summer 2021 QASP Addendum (EA 2021f) was submitted to EPA.

- **06 July 2021** – Notification letters for the Summer 2021 sampling event were mailed to the property owners.
- **30 July 2021** – April through June 2021 Self-Monitoring Report was submitted to the City.
- **20 August 2021** – Semi-Annual Groundwater Monitoring Report, January – June 2021 (EA 2021a) was submitted to EPA.
- **07 September 2021** – Fall 2021 QASP Addendum (EA 2021g) was submitted to EPA.
- **01 October 2021** – Notification letters for the Fall 2021 sampling event were mailed to the property owners.
- **03 November 2021** – July through September 2021 Self-Monitoring Report was submitted to the City.

The following deliverables are anticipated for submittal during the next reporting period (January through December 2022):

- **07 January 2022** – Winter 2022 QASP Addendum submitted to EPA.
- **31 January 2022** – October through December 2021 Self-Monitoring Report to be submitted to the City.
- **01 March 2022** – Spring 2022 QASP Addendum to be submitted to EPA.
- **1 March 2022** – Dangerous Waste Report to be submitted to Ecology.
- **1 April 2022** – 2021 Annual Status Report to be submitted to EPA (per approval from EPA).
- **4 April 2022** – Notification letters for the Spring 2022 sampling event to be mailed to the property owners.
- **28 April 2022** – January through March 2022 Self-Monitoring Report to be submitted to the City.
- **25 May 2022** – Summer 2022 QASP Addendum to be submitted to EPA.
- **29 July 2022** – April through June 2022 Self-Monitoring Report to be submitted to the City.
- **25 July 2022** – Notification letters for the Summer 2022 sampling event to be mailed to the property owners.
- **18 August 2022** – Fall 2022 QASP Addendum to be submitted to EPA.
- **21 August 2022** – Semiannual Report, January – June 2022 to be submitted to EPA.
- **25 September 2022** – Notification letters for the Fall 2022 sampling event to be mailed to the property owners.

- **31 October 202** – July through September 2022 Self-Monitoring Report to be submitted to the City.
- **28 November 2022** – Winter 2023 QASP Addendum to be submitted to EPA.
- **28 December 2022** – Notification letters for the Winter 2023 sampling event to be mailed to the property owners.

2.5 FIELD EVENTS

The following are field events that occurred during the year, excluding routine O&M tasks:

- **1-5 February 2021** – Winter groundwater sampling event.
- **19-23 April 2021** – Spring groundwater sampling event.
- **19-23 July 2021** – Summer groundwater sampling event.
- **11-15 October 2021** – Fall groundwater sampling event.

The following are field events are anticipated to occur during the next reporting period (January through December 2022): excluding routine O&M tasks:

- **24-28 January 2022** – Winter groundwater sampling event.
- **18-22 April 2022** – Spring groundwater sampling event.
- **18-22 July 2022** – Summer groundwater sampling event.
- **17-21 October 2022** – Fall groundwater sampling event.

2.6 PROJECT MANAGEMENT

Both Messer and the EPA initiated project management changes at the end of 2021. Starting in 2022 Mr. Kevin Svitana, PhD, PG, CP with BSI Group will take over the senior project manager role for Mr. David Sordi, PE, on behalf of Messer. For the EPA, starting in 2022 Mr. Brandon Perkins will take over the Remedial Project Manager role for Mr. Jonathan Williams, LHG. Additionally, for reporting to the Washington Department of Ecology, the site contact changed in May 2021 from Mr. Mohsen Kourehdar, PE, to Mr. Andy Smith, PE, LG.

2.7 PROBLEMS ENCOUNTERED

No problems were encountered with the mothballed GWTS or the remedial monitoring network during the July through December 2021 reporting period. Problems encountered during the January through June 2021 timeframe are discussed in the Semi-Annual Groundwater Monitoring Report, January—June 2021 (EA 2021a).

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3. GROUNDWATER MONITORING ACTIVITIES, RESULTS, AND TRENDS

This section presents the concentration trends observed in groundwater since 1995 with a focus on data collected during the calendar year. Sampling activities for Summer and Fall 2021 were conducted in accordance with the EPA-approved Site-specific QASP (EA 2019) and the EPA-approved QASP Addendums for the Summer 2021 (EA 2021f) and Fall 2021 (EA 2021g) Quarterly Sampling Events. These documents are referred to as the Site QASP and the Summer and Fall 2021 QASP Addendums, respectively. Wells sampled during the summer and fall events and their corresponding analytical results are shown on Figures 3-1 through 3-4. Figures for winter and spring events were previously reported in the 2021 Semi Annual Report (EA 2021a). Data tables and analysis of trends presented in this section span all of 2021 and thus include evaluation of winter and spring data in the overall 2021 evaluation. In addition to COC monitoring, performance monitoring at monitoring wells located down gradient of in-situ injections that created permeable reactive zones is included in this section. In addition to VOCs and chromium, performance monitoring includes key metals, water quality parameters, and attenuation parameters such as dissolved byproduct gases, organic carbon, and anions. Performance monitoring reviews these parameters to determine the effectiveness of in-situ treatments beyond what is observable with the TCE concentration.

3.1 FIELD METHODS

This section provides a discussion of methods used for field data collection activities.

3.1.1 Extraction Well Sampling

No extraction wells were active during the Summer and Fall 2021.

3.1.2 Monitoring Well Sampling

Groundwater samples from monitoring wells were collected using passive diffusion bag (PDB) samplers or via dedicated or non-dedicated pumps. The field parameters measured included pH, specific conductivity, temperature, dissolved oxygen, turbidity, and oxidation-reduction potential.

For wells sampled using PDB samplers, the PDBs were deployed at least 14 days in advance of sample collection. Measurement of field parameters is not required when sampling from PDB samplers, as agreed on by EPA (EA 2019). PDB samplers are used to sample wells that require only analysis of VOCs, and the samples were submitted for laboratory analysis of VOCs only. No biofilms were observed on PDB samplers.

For monitoring wells sampled via a dedicated pump (stationed permanently in the well) or a non-dedicated pump, the flow rate was adjusted to 0.5 liter per minute or less prior to measuring field water quality parameters and collecting samples. For wells that ran dry during water quality stabilization (micropurging) or during sampling due to low groundwater levels, the monitoring well was allowed to sit for approximately 24 hours and the first recharge water was collected via

submersible pump or bailer for analytical sampling. Extraction wells previously sampled by extraction pump operation were converted to monitoring wells for non-dedicated pump or PDB sampling.

3.1.3 Water Level Gauging Program

A round of water level measurements was obtained from accessible monitoring and extraction wells during the Fall 2021 sampling event. The water levels were measured to the nearest 0.01 ft relative to the top of the well casing using an electronic water level indicator. Water level measurements for the Winter and Spring 2021 sampling events were reported in the Semi-Annual Groundwater Monitoring Report, January through June 2021 (EA 2021a). A summary of the water level data for Fall 2021 is provided in Table 3-1 and groundwater contours are presented on Figures 3-5 and 3-6.

3.2 WELL GROUPINGS

To facilitate analysis of contaminant concentrations across the Site, the wells are grouped by aquifer and geographical location and are presented on Figure 3-7, and wells within each grouping are summarized in Table 3-2. All wells except those identified as Troutdale Aquifer wells are screened within or slightly below the alluvial aquifer.

3.2.1 Alluvial Aquifer Wells

3.2.1.1 Upgradient Wells

The Upgradient wells are located near the upgradient (eastern) site boundary (Figure 3-7). One upgradient well, AMW-8A, is in the closure plan and was sampled in Fall 2021.

3.2.1.2 TCE Source Wells

The TCE Source wells are located on the western half of the Messer property (Figure 3-7), near the historical TCE-impacted soil. A source removal system was previously operated in this area. These wells are typically sampled for VOCs only, as part of the OU-2 monitoring program, as these wells are upgradient of the chromium source area. Sampling frequency of select wells (AMW-1A, AMW-2A, AMW-12A, AMS-53A, and MW-1A) located in this area was increased to quarterly in 2021 to monitor effectiveness of the in-situ remediation.

3.2.1.3 Proximal Wells

The Proximal wells are located west of the maintenance building (former machine shop) on the Boomsnub property and east of NE St. Johns Road (Figure 3-7). These wells are proximal to the chromium source. Monitoring frequency of seven wells (MW-3A, MW-4A, MW-4B, MW-4C, MW-6A, MW-6B, and MW-9B) was increased to quarterly in 2021 to monitor the impacts from the GWTS shutdown in January 2021.

3.2.1.4 Intermediate Wells

The Intermediate wells are located west of NE St. Johns Road, north and south of NE 78th Street (Figure 3-7). Sampling frequency of select wells (AMW-59, MW-14E, MW-14C, MW-20D, MW-38, and PZ-39) located in this area was increased to quarterly in 2021 to monitor effectiveness of the in-situ remediation.

3.2.1.5 Church of God Wells

The Church of God wells are located north of NE 78th Street between the west side of the Clark County sports field complex and the western Church of God property line (Figure 3-7).

3.2.2 Troutdale Aquifer Wells

The Troutdale Aquifer serves as a municipal water supply for the City and Clark County. Groundwater samples were collected for VOC analysis from three Troutdale Aquifer wells, including the Bennett private well, during the 2021 reporting period. No Troutdale well has had an exceedance above the chromium MCL since 2006, and after a decade of annual sampling returning chromium results below the MCL, chromium sampling ceased in 2018.

3.3 CONTAMINANT CONCENTRATIONS AND TRENDS

3.3.1 Overview

The following is a discussion of the overall remedial system configuration and how it is performing. The following subsections describe trends for each well grouping. The extent of impacted groundwater in the alluvial aquifer, as determined from groundwater sampling data obtained in 1995, Summer 2021 and in Fall 2021, is presented on Figure 3-8 for chromium and on Figure 3-9 for TCE. These figures illustrate that groundwater remedial actions have been effective in mass removal and in reducing the footprints of both the chromium and TCE plumes. Figure 3-9 shows TCE from the Northern Plume and TCE from the OU-3 plume in different shades. Prior to in-situ injections in 2019, the mid-plume area featured an area of continuous exceedance of the MCL between St. Johns Road and NE 78th Street (EA 2020b). Figure 3-9 shows that in 2021 the same area between St. Johns Road and NE 78th Street is has TCE concentrations mostly below the MCL, illustrating that in-situ injections have been effective at accelerating TCE mass removal in areas of recalcitrant contamination that had been seeing slowly diminishing effectiveness of the pump and treat remedial action.

Chromium and TCE concentrations in groundwater during sampling in 2021 are presented in Appendices E-1 and F-1, respectively. Wells with 2021 groundwater sampling results exceeding the Site cleanup levels of 80 µg/L for chromium and 5 µg/L for TCE are highlighted red on Figures 3-10 and 3-11, respectively.

3.3.2 Alluvial Aquifer Wells – TCE and Chromium

3.3.2.1 TCE Source Area Wells

Thirteen wells in the TCE Source Area were sampled for TCE during the Summer 2021 sampling event, and 15 wells were sampled for TCE during the Fall 2021 sampling event.

TCE

During the 2021 reporting period, TCE concentrations remained above the 5 µg/L cleanup level in four groundwater samples wells that were sampled in Summer and Fall. The following table presents the results from the last six sampling events for comparison.

TCE Source Area Well TCE Concentrations, in µg/L

Well	Spring 2020	Fall 2020	Winter 2021	Spring 2021	Summer 2021	Fall 2021
AMW-1A	**9.2**	--	4.8	**6.2**	**5.3**	**15**
AMW-1B	--	--	--	--	--	0.15 J
AMW-1C	--	--	--	--	--	0.5 U
AMW-2A	**37**	--	**6.3**	**54**	**52**	**47**
AMW-2B	--	--	--	--	--	0.23 J
AMW-3A	--	--	--	--	0.80	--
AMW-4A	--	0.5 U	0.5 U	--	0.5 U	0.5 U
AMW-12A	**20**	**12**	**11**	**12**	**6.6**	**5.6**
AMW-13A	--	--	--	--	0.5 U	0.5 U
AMW-19A	--	--	--	--	1.6	1.2
AMW-26	--	--	--	--	2.9	2.9
AMW-52A	--	--	--	--	0.5 U	0.5 U
AMW-53A	**11**	**19**	**28**	**9.3**	**22**	**18**
MW-1A	0.77	--	0.41 J	0.24 J	0.44 J	0.32 J
MW-1B	--	--	0.5 U	--	0.5 U	0.5 U
MW-1C	--	--	--	--	0.24 J	0.5 U

Note:
U Analyte not detected above the specified reporting limit
J Estimated concentration
Results shown in **blue bold** exceed the established cleanup level of 5 µg/L
-- Not Analyzed

Since the IWS system was turned off in August 2013, groundwater samples from the TCE Source Area have been collected to monitor for changes/rebound in VOC concentrations.

During the reporting period the TCE concentration remained above the cleanup level in wells AMW-1A, AMW-2A, AMW-12A and AMW-53A. Concentrations in well AMW-12A have been on a slow decreasing trend since Fall 2011. TCE concentrations in well AMW-53A have been generally increasing since Spring 2016. Historical TCE concentrations in wells in this area tend to fluctuate (Appendix F).

3.3.2.2 Proximal Wells

The Proximal Wells are proximal to the chromium source. In 2021, 24 wells in this area were sampled for chromium and 23 wells were sampled for TCE.

Chromium

During the 2021 reporting period, chromium concentrations were above the 80 µg/L cleanup level in groundwater samples collected from 7 of the 24 wells sampled for chromium, as presented in the following table.

Proximal Well Chromium Concentrations, in µg/L

Well	Fall 2020	Winter 2021	Spring 2021	Summer 2021	Fall 2021
AMW-58	--	--	--	12.6	--
MW-2A	**601**	--	--	--	**330**
MW-2B	--	5.9	--	10.5	7.3
MW-2C	--	--	--	28.3	--
MW-3A	--	**131**	**140**	**113**	**129**
MW-3B	--	--	--	7.16	6.74
MW-3C	--	--	--	31.2	10.5
MW-4A	**556**	**263**	**380**	**90**	**589**
MW-4B	**318**	**87.1**	**107**	**204**	**124**
MW-4BSHED	--	--	--	--	72.7
MW-4C	--	65	**97.2**	52.2	45.4
MW-6A	**149**	15.9	11.1	37.9	68.1
MW-6B	14.9	38.5	70.8	33.1	35.4
MW-6C	--	--	--	13.9	23.8
MW-6D	--	--	--	13.8	7.2
MW-7C	--	--	--	10.8	8.5
MW-8B	--	--	--	15.1	8.5
MW-9B	--	13.6	5.7	18.3	12.1
MW-9C	--	--	--	17.4	--
MW-10B	32.1	--	--	--	**116**
MW-10C	57.9	--	--	**238**	74.5
MW-12C	--	--	--	11.3	13.8
MW-13C	--	39.8	--	46.3	43.2
PW-1B	31.9	--	0.9	--	--

Notes:
Results shown in **blue bold** exceed the established cleanup level of 80 µg/L
Results shown in red **bold are** for dissolved chromium rather than total
-- Not Analyzed

Wells MW-2A, MW-4A, and MW-4B had concentrations above the 80 µg/L cleanup level in both the 2020 and 2021 reporting periods. Wells MW-2A, MW-4A, and MW-4B continued to show high concentrations of chromium and will continue to be monitored. Groundwater samples from wells MW-4A and MW-4B continue to exhibit some of the highest concentrations of chromium in groundwater at the Site and consistently remain above the cleanup level. However, concentration fluctuations are typical in these wells. Historically, groundwater from wells in the

Proximal area have had large fluctuations in chromium concentrations and results from the sampling event were within the normal range of fluctuations (Appendix E). Well MW-3A was not analyzed for chromium in 2020 but contained chromium at concentrations above the cleanup level in all four 2021 quarterly events. Well MW-4C was also not analyzed for chromium in 2020 but contained chromium at concentrations above the cleanup level in Spring 2021. Well MW-10B was below the cleanup level in 2019 and 2020 but contained chromium at a concentration above the cleanup level in Fall 2021. Well MW-10C was above the cleanup level in Summer 2021 but below the cleanup level in Fall 2021. No trends related to GWTS shutdown have been noted in the fluctuating chromium concentrations measured in the proximal wells. Shutdown of the GWTS was completed 3 January 2021, as in-situ treatments are implemented as an alternative to the pump and treat strategy. Additional quarterly monitoring of chromium concentrations in the proximal well group will continue to take place to monitor for changes in the geometry or concentration of the residual chromium plume.

While chromium trends in the proximal well field showed that the GWTS was ineffective at further reducing chromium concentrations when it was operating, mothballing of the system will provide an additional option for treatment should monitoring show expansion of the chromium plume. When attainment monitoring has concluded in the proximal well field, the GWTS building and air stripper pad will be removed as part of treatment system decommissioning and chromium-contaminated soil that exists beneath impervious surfaces of the GWTS will be excavated.

TCE

During the 2021 reporting period, TCE concentrations were below the 5 µg/L cleanup level in groundwater samples collected from 22 of the 23 wells sampled for TCE, as presented in the following table.

Proximal Well TCE Concentrations, in µg/L

Well	Spring 2020	Fall 2020	Winter 2021	Spring 2021	Summer 2021	Fall 2021
AMW-58	--	--	--	--	0.5 U	0.5 U
MW-2A	--	--	0.94	--	0.82	0.73
MW-2B	--	2.5	1.4	--	1.6	.97
MW-2C	--	--	0.38 J	--	0.38 J	0.27 J
MW-3B	--	--	--	--	1.4	1.3
MW-3C	--	--	--	--	1.3	1.6
MW-4A	--	1.8	--	--	--	2.0
MW-4B	--	--	--	--	--	2.5
MW4BSHED	--	--	--	--	--	2.4
MW-4C	--	--	--	--	--	1.0
MW-6A	--	0.5 U	--	--	--	0.5 U
MW-6B	--	4.2	--	--	--	**30**
MW-6C	--	--	--	--	0.47 J	0.47 J
MW-6D	--	--	--	--	1.2	0.48 J
MW-7B	--	**6.3**	--	--	--	--
MW-7C	--	--	--	--	0.21 J	0.30 J
MW-8B	--	--	--	--	1.2	1.2

MW-9B	--	--	--	--	--	1.4
MW-9C	--	1.2	--	--	1.2	0.83
MW-10B	**7.4**	**8.9**	--	2.3	2.6	1.4
MW-10C	--	1.3	--	--	2.0	2.6
MW-12C	--	--	--	--	3.3	1.2
MW-13C	--	--	4.5	--	2.8	1.3
PW-1B	--	2.2	--	--	2.7	3.1

Notes:
U Analyte not detected above the specified reporting limit
J Estimated concentration
Results shown in **blue bold** exceed the established cleanup level of 5 µg/L.
-- Not Analyzed

The TCE concentrations in well MW-10B were above the cleanup level in Spring and Fall 2020 but dropped below the cleanup level during the 2021 quarterly sample events. The TCE concentration in the Fall 2021 sample from well MW-6B increased above the cleanup level. Historically, TCE concentrations in groundwater samples in the western portion of the Proximal Well group have been on a decreasing trend (Appendix F).

3.3.2.2.1 Enhanced GWTS Chromium Monitoring

In accordance with the recommendation of the 2020 Annual Report (EA 2021d) and the technical memorandum dated 23 September 2020 (EA 2020a), in 2021 enhanced chromium monitoring was collected on a quarterly basis at select wells around the GWTS to specifically monitor for changes in the groundwater chromium plume located on the Boomsnub property after the shutdown of the GWTS on 3 January 2021. The following table shows the chromium results from that enhanced monitoring effort.

Well	Fall 2019	Fall 2020	GWTS Shutdown 1/3/2021	Winter 2021	Spring 2021	Summer 2021	Fall 2021
MW-3A	**105**	--		**131**	**140**	**113**	**129**
MW-4A	**371**	**556**		**263**	**380**	**90**	**589**
MW-4B	**366**	**318**		**87.1**	**107**	**204**	**124**
MW-4C	**68.7**	--		65	**97.2**	52.2	45.4
MW-6A	**128**	**149**		15.9	11.1	37.9	68.1
MW-6B	12.2	14.9		38.5	70.8	33.1	35.4
MW-9B	--	--		13.6	5.7	18.3	12.1

Notes:
Results shown in **blue bold** exceed the established cleanup level of 80 µg/L
Results shown in red **bold are** for dissolved chromium rather than total
-- Not Analyzed

As the above table shows, most wells have not shown a significant increase or upward trend since the shutdown of the groundwater treatment system. The exception is monitoring well MW-6B, which has elevated concentrations compared to pre-shutdown concentrations but does not have an upward trend in the limited post-shutdown dataset and remains below the MCL. All wells show considerable fluctuation in concentrations across the seasons, which is anticipated based upon previously observed fluctuations in chromium concentrations in the Proximal Well set.

3.3.2.3 Intermediate Wells

In 2021, 11 Intermediate Wells were sampled for chromium and 12 Intermediate Wells were sampled for TCE. In-situ groundwater treatments using EHC® Plus in the vicinity of the Intermediate Wells began in Fall 2018. The MW-18 cluster is downgradient of pilot injections conducted in 2018; AMW-59, MW-14, and MW-19 are downgradient or in the vicinity of Phase IIA injections conducted in October 2019; and MW-38, MW-20D, and PZ-39 are downgradient or in the vicinity of Phase IIB injections conducted in May 2020. MW-40 is also downgradient of Phase IIB injections but is located farther downgradient from a treatment zone than the other wells noted.

Chromium

During the 2021 reporting period, chromium concentrations were above the 80 µg/L cleanup level in groundwater samples collected from 7 of 11 wells sampled, as presented in the following table.

Intermediate Well Chromium Concentrations, in µg/L

Well	January 2020	Spring 2020	Fall 2020	Winter 2021	Spring 2021	Summer 2021	Fall 2021
AMW-59	70.9	**100**	19.2	11.6	12.2	11.1	--
CPU-14	--	--	--	--	--	--	**165**
MW-14C	62.9	73.8	10.2	74.6	**84.1**	--	37.7
MW-14E	38.1	54.4	**173**	**166**	**234**	**176**	**192**
MW-15E	--	--	--	10.3	--	11.2	10.5
MW-18D	46.4	**89.8**	15.8	**127**	**158**	**177**	--
MW-18E	--	8.4 U	2.9 J	4.2	--	--	--
MW-19D	**119**	**171**	38.4	**122**	59.6	66.1	63.2
MW-20D	--	--	59.9	79.2	**86.4**	**81.5**	**115**
MW-40	--	--	**103**	**124**	--	--	**135**
PZ-39	--	--	3.2 J	15	6.5	7.8	--

Note:
U Analyte not detected above the specified reporting limit
J Estimated concentration
Results shown in **blue bold** exceed the established cleanup level of 80 µg/L
-- Not Analyzed

The chromium concentration in well AMW-59 was above the cleanup level in Spring 2020 for the first time since the well was first sampled in January 2005 but dropped below the cleanup level again in Fall 2020 and has remained below the cleanup level during 2021 quarterly sampling. The chromium concentration in well MW-14E was above the cleanup level in Fall 2020 for the first time since Spring 2006 and remained above the cleanup level in 2021. The chromium concentration in well MW-40 was above the cleanup level in Fall 2020 for the first time since 2011 and remained above in the cleanup level in 2021. The chromium concentration in well MW-19D dropped below the cleanup level in Fall 2020, for the first time since Fall 2018, and was also below in the cleanup levels in the Spring, Summer and Fall 2021 quarterly sampling events. Well MW-18E was sampled in 2019, for the first time since Fall 2011, to evaluate the effectiveness of the Phase I in-situ treatment injections conducted just upgradient of this well.

Chromium concentrations in Well 18E are below cleanup levels. CPU-14 began attainment monitoring for chromium in Fall 2021 and had not been sampled since completion of remediation monitoring in 2015. Fluctuations in chromium concentrations in all wells in the intermediate group wells are likely related to the effects of treatment, as well as hydraulic changes that occurred after pumping from wells in the Intermediate Well Group were shut off prior to in-situ treatment injections. MW-18D was shut off in 2018, and MW-14C, MW-14E, MW-19D, and MW-20D were shut off in 2019. Chromium trends in AMW-59 and MW-19D appear to show that increases and fluctuations of chromium concentrations occurring after in-situ treatment injections are transient and the fluctuations ebb with time.

TCE

TCE concentrations were above the 5 µg/L groundwater cleanup level in 5 of the 12 wells sampled in this area, as presented in the following table.

OU-3 Intermediate Well TCE Concentrations, in µg/L

Well	January 2020	Spring 2020	Fall 2020	Winter 2021	Spring 2021	Summer 2021	Fall 2021
AMW-59	**41**	**14**	4.1	**16**	**6.0**	**9.3**	0.4 J
AMW-60	--	--	0.4 J	--	--	--	0.3 J
CPU-14	--	--	3.7	--	2.9	4.4	1.0
MW-14C	3.9	2.6	2.4	2.9	2.8	2.8	2.5
MW-14E	**6.7**	**9.6**	**9.2**	**10**	**8.4**	**12**	**19**
MW-15E	--	--	--	1.5	--	2.6	3.0
MW-18D	4.8	3	3.1	3.4	3.5	3.6	--
MW-18E	--	0.25 J	0.24 J	0.2 J	0.5 J	0.4 J	--
MW-19D	3.5	4.3	**45**	**7.7**	**9.2**	**6.0**	**7.4**
MW-20D	--	**17**	**12**	**6.9**	**11**	**6.8**	**9.4**
MW-40	--	--	--	0.9	--	--	0.9
PZ-39	--	--	**42**	**36**	**39**	**42**	**37**

Note:
J Estimated concentration
Results shown in **blue bold** exceed the established cleanup level of 5 µg/L
-- Not Analyzed

The TCE concentration dropped below the cleanup level in well AMW-59 in Fall 2020 for the first time since January 1995 when the well was first monitored, but was above the cleanup level in the Winter, Spring and Summer 2021 quarterly sampling events. The TCE concentration in well AMW-59 then dropped to below the cleanup level to near the detection limit in Fall 2021. In wells MW-14E, MW-20D, and PZ-39, TCE concentrations have consistently remained above the cleanup level. The TCE concentration in well CPU-14 dropped below the cleanup level in Fall 2020 and remained below the cleanup level in 2021; it has been fluctuating around the cleanup level since 2010. TCE concentrations in wells MW-18D and MW-18E dropped below the cleanup level for the first time in Spring 2019 and remained below during the 2021 reporting period. TCE concentrations in well MW-19D have remained above the cleanup level since Fall 2020. An in-situ treatment Phase I reductive dechlorination pilot test with activated carbon was conducted in Fall 2018 upgradient of these wells and was effective in reducing the TCE

concentrations. However, historically, TCE concentrations in groundwater samples from wells in this area (not impacted by the Northern Plume) have been on a decreasing trend (Appendix F).

3.3.2.4 Church of God Wells

The Church of God wells are located north of NE 78th Street between the west side of the Clark County sports field complex and the western Church of God property line. Four wells were sampled in this area in 2021.

Chromium

During the reporting period chromium was not detected above the 80 µg/L cleanup level in groundwater from any of the three wells sampled for chromium, as shown in the following table.

Church of God Well Chromium Concentrations, in µg/L

Well	Fall 2020	Winter 2021	Spring 2021	Summer 2021	Fall 2021
AMW-27	--	--	--	38.3	--
CPU-12	7 J	8.6	--	--	--
MW-22D	66.7	62.8	68.2	57.4	--

Note:
J Estimated concentration
-- Not Analyzed

TCE

During the reporting period, the TCE concentration in groundwater was above the 5 µg/L cleanup level in one of the four wells sampled, as presented in the following table.

Church of God Well TCE Concentrations, in µg/L

Well	Fall 2020	Winter 2021	Spring 2021	Summer 2021	Fall 2021
AMW27	--	3.5	--	1.6	--
AMW-61	**6.2**	--	--	--	**5.5**
CPU-12	--	3.0	--	--	--
MW-22D	1.6	3.1	4.0	3.5	--

Note:
J Estimated concentration
Results shown in **blue bold** exceed the established cleanup level of 5 µg/L
-- Not Analyzed

Historically, TCE concentrations in samples collected from wells in this area have been on an overall decreasing trend (Appendix F). TCE concentrations were above the 5 µg/L cleanup level in the groundwater sample collected from well AMW-61. The TCE concentrations in this well, screened in the silty zone at the bottom of the alluvial aquifer, fluctuate but have remained above the cleanup level since Fall 2013.

3.3.3 Troutdale Aquifer Wells – TCE and Chromium

Groundwater samples for VOC analysis were collected from three Troutdale Aquifer wells, including the Bennett private well, during the 2021 reporting period. No Troutdale wells were sampled for chromium during the 2021 reporting period.

TCE
Concentrations of TCE were below the 5 µg/L cleanup level in all three wells sampled during the 2021 quarterly sampling events, as presented in the following table.

Troutdale Aquifer Well TCE Concentrations, in µg/L

Well	Fall 2020	Winter 2021	Spring 2021	Summer 2021	Fall 2021
AMW-24	**5.7**	--	--	--	4.9
BENNETT	1.3	1.0	--	2.5	--
MW-33	3.5	3.0	0.9	0.9	2.4

Notes:
Results shown in **blue bold** exceed the established cleanup level of 5 µg/L

TCE concentrations in groundwater from well AMW-24 have been consistently decreasing and were below the cleanup level in Fall 2021. The TCE concentration in groundwater from the Bennett private well had historically fluctuated above and below the cleanup level but has remained below since Spring 2016 (Appendix F). The TCE concentration in Troutdale well MW-33 dropped below the cleanup level in Fall 2018 for the first time since monitoring began in Spring 1998 and remained below the cleanup level during the four 2021 quarterly sampling events.

3.3.4 Other Detected VOCs

TCE is a primary COC for the site but is not the only VOC present. Routinely detected other VOCs include: tetrachloroethene; trichlorofluoromethane; 1,1,1-trichloroethane; 1,1-dichloroethene (DCE); bromodichloromethane; and cis-1,2-DCE. Results for these compounds for samples collected during the 2021 quarterly sampling events in relation to Site cleanup levels, are summarized in Tables 3-3a and 3-3b. Results for the Winter and Spring quarterly sampling events are discussed in the Semi-Annual Groundwater Monitoring Report (EA 2021a). Concentrations of 1,1-DCE exceeded the cleanup level of 1 µg/L in three Intermediate Wells (AMW-59, AMW-60, and PZ-39). No cis-1,2-DCE was detected exceeding the cleanup level of 70 µg/L; however, levels in wells AMW-24, AMW-59, MW-18D and MW--19D have increased since 2019. Cis-1,2-DCE is a product of effective reductive dechlorination from the in-situ groundwater treatments. No other VOCs exceeded the cleanup levels during the July through December reporting period.

Well AMW-60 had concentrations of 1,1-DCE above the cleanup level but TCE concentrations were below the cleanup level. Many of the other VOC detections are coincident with TCE exceedances; however, low level non-TCE detections were reported in several wells that have TCE concentrations below the cleanup level (Tables 3-3a and 3-3b).

3.3.5 In-Situ Injection Performance Monitoring

As described in Section 1.1, three rounds of injections for in-situ treatment were performed in 2018, 2019, and 2020. Injections were conducted in two Areas of Concern (AOC). AOC-1 is in the TCE Source Areas, where residual contamination is observed in TCE Source Area Wells. AOC-2 is in the mid-plume area, where residual contamination is observed in the Intermediate Plume Wells. Initial performance monitoring samples to assess the effectiveness of the injections were collected from select wells downgradient of Phase IIB injections in Fall 2020, concurrent with O&M fall sample collection. A full report of in-situ treatments and conclusions was provided to the EPA separately and submitted May 2021 (EA 2021e).

The In-Situ Phase II Report (EA 2021e) recommended three more quarters of performance monitoring at most performance monitoring locations to determine the effectiveness of in-situ treatments. These additional performance monitoring events were conducted as part of the Spring, Summer, and Fall 2021 quarterly sampling events. Updated versions of the performance monitoring data tables first presented in the In-Situ Phase II Report are provided here as Tables 3-4 and 3-5. Additional observations afforded by the extended dataset provided in Tables 3-4 and 3-5, beyond those already stated in the In-Situ Phase II Report, are presented below.

3.3.5.1 AOC-1

MW-1A – TCE concentrations in well MW-1A remained well below the cleanup level, near the detection limit, from Winter 2021 through Fall 2021.

AMW-1A – While the post-treatment TCE concentration had dropped just below the cleanup level by February 2021, it subsequently rebounded above the cleanup level. Molar concentrations of chlorinated VOCs (CVOCs) have not exceeded pre-injection molar concentrations, but the Fall 2021 high TCE concentration reversed three quarters of improvements in molar concentration.

AMW-2A – Despite an initial reduction in TCE concentration and molar concentration of COVCs observed in Winter 2021, the subsequent three quarters of sampling have seen concentrations of TCE exceed the baseline pre-sampling event and return to the recent historical range of concentrations. Cis-1,2-DCE continues to be observed at low concentrations indicating the presence of biotic degradation processes.

AMW-12A – In the three quarters of sampling that have occurred since the In-Situ Phase II Report, TCE concentrations and molar concentrations of CVOCs have continued to decline. Continued detections of methane indicate that biotic processes including TCE reduction are continuing. As of Fall 2021 the observed TCE concentration was just above the cleanup level.

3.3.5.2 AOC-2

MW-20D – Reductions in TCE concentrations through Winter 2021 have stalled, hovering around the Winter 2021 TCE concentration but above the cleanup level. Ethane and ethylene decreased to below detection limits by Summer 2021. Methane was produced at significant concentrations while CVOCs were being reduced in the Spring and Summer 2021 but fell below detection limits in Fall 2021. The arrival of dissolved iron in MW-20D in Fall 2021 suggests groundwater transport of that metal from the Row 1 permeable reactive zone.

MW-38 – Reductions in TCE concentrations stalled in Winter 2021 and by Fall 2021 rebounded to approximately the pre-injection level. MW-38 was administratively moved by the EPA to Northern Plume Monitoring in October 2020. Given the additional offsite source of TCE that influences this well, an evaluation of in-situ performance at this location is complicated by external variables; however, detections of ethane, ethylene, and methane in Winter 2021, as well as reductions in TCE that were observed in the two quarters following the injection event, show that Row 2 injections exerted a beneficial effect on this portion of the Northern Plume.

PZ-39 – The In-Situ Phase II Report noted that additional time would be needed to observe an effect at this monitoring well due to its location in relation to NE 78th Street. No decrease in TCE concentrations has been observed in the latest three quarters of sampling, however, cis-1,2-DCE increased from 0.51 µg/L to 8 µg/L over the four quarters of monitoring in 2021, indicating that breakdown of TCE is occurring.

MW-19D – Concentrations of TCE in well MW-19D have continued to fluctuate. By Fall 2021 the TCE concentrations was approximately equal to the Winter 2021 concentration but molar concentration of CVOCs had decreased an additional 11 percent. Indicators of enhanced reductive dechlorination have continued to increase, with Fall 2021 dissolved gas dechlorination end products at the highest levels yet (ethane at 9 µg/L, ethylene at 1.1 µg/L, and methane at 8,500 µg/L). Arsenic concentrations have fallen below detection limits, verifying that the mobilization of dissolved arsenic was a transient phenomenon associated with the onset of reducing conditions in the aquifer.

MW-18D – Concentrations of TCE remain below the cleanup level, with some increase in the breakdown product cis-1,2-DCE. Ethane and methane continue to be produced at high concentrations, indicating continued dechlorination of CVOCs.

MW-18E – Concentrations of TCE remain below the cleanup level and near the detection limit. Cis-1,2-DCE and vinyl chloride concentrations are decreasing while trans-1,2-DCE concentration is increasing. This monitoring well is no longer sampled for attenuation parameters (Table 3-5) due to successful completion of remediation monitoring.

AMW-59 – TCE concentrations have continued to fluctuate at this well, decreasing to near the detection limit in Fall 2021. As anticipated in the In-Situ Phase II Treatment Report, concentrations of daughter products cis-1,2-DCE and trans-1,2-DCE had begun to decrease as of

Fall 2021. The breakdown end products ethane and ethylene, as well as methane, were at the highest concentrations yet observed in Fall 2021.

MW-14C – TCE concentrations remained below the cleanup level for the Spring, Summer, and Fall 2021 sampling events. Ethane and methane concentrations increased in Fall 2021.

MW-14E – While TCE concentrations remain below pre-treatment concentrations, the last three quarters of sampling continue to show that TCE concentrations have plateaued at approximately 2-3 times the cleanup level. Although measurable methane has continued to be observed, there are not strong indicators of biotic or abiotic processes occurring.

4. OTHER ACTIVITIES

4.1 PACTRUST CORPORATE PARK

In 2021 Pacific Realty Associates LP (also known as PacTrust) communicated with Messer and EA that they were moving forward with plans to commercially develop the property between NE St. Johns Road and NE 78th Street (Tax Parcel 144527-000) into a corporate park. The easement agreement associated with the property deed was reviewed and the EPA consulted; the EPA explained to PacTrust in a 20 April 2021 meeting (Section 2.3) that the Boomsnub/Airco Superfund Site remedial system consisting of the forcemain, containment vaults, access vaults, extraction wells, monitoring wells, and associated piping and conduit located on the property must remain operational and serviceable. Over the course of 2021 PacTrust advanced their designs of the topography and building slabs for the PacTrust Corporate Park, and as those PacTrust designs advanced from conceptual to final EA, on behalf of Messer, prepared and finalized a design for a modification of the remedial system that integrates the remedial system into the floor of two of the planned PacTrust Corporate Park buildings.

The EA design keeps monitoring wells CPU-14, MW-18D, and MW-18E in their current locations, which was a requirement of the EPA, but modifies the surface monuments and well vaults such that they are flush with the floors of the PacTrust Corporate Park buildings in which they will be located. Access to these wells for routine sampling purposes will be conducted via access vaults constructed on the outside edge of each building; these access vaults are then connected to the monitoring well vaults horizontally through piping laid in a trench beneath the building slab. The monitoring wells will retain vertical access in the floor of each building for non-routine access (such as pump servicing, pump removal, or well abandonment). Prior to occupation of the building, a dedicated sampling pump will be placed in each of these three wells and hung from the well cap down to the screened interval. Flexible sample tubing and wiring for the pump will run vertically up from the pump to the surface monument then horizontally through piping to the exterior of the building where they will terminate in an electrical receptacle and sampling port in the exterior access vault. In this manner, the wells can continue to be routinely sampled without disturbing future building tenants.

In addition to sampling, the EPA stipulated that the remedial system must retain the ability to resume operation if deemed necessary. To this end, the EA design also modified Containment Vault CV-8 such that it will sit flush with the finished building slab, retaining vertical access so that an extraction pump could be reinstalled in MW-18D and wired to the remedial system power line in CV-8 (if necessary).

Furthermore, the EPA and the Washington State Department of Ecology both agreed with PacTrust's request to remove CPU-2 and MW-34. CPU-2, situated within the footprint of a future building, was removed by PacTrust in 2021. MW-34 is situated within a mostly-constructed detention pond and requires overdrilling to abandon. Due to rainwater collecting in the fall of 2021 in the detention pond in which MW-34 is now located, abandonment of this well by Messer and EA was delayed until the summer of 2022. Through regular discussions Messer,

EA, and PacTrust proactively coordinated on both the remedial system modification design and site actions such as the MW-34 abandonment delay.

4.2 EASEMENT AGREEMENTS AND RESTRICTIVE COVENANTS

EA, on behalf of Messer, has pursued easement agreements and restrictive covenants for non-Messer owned properties, as required by Sections 25 and 26 of the CD (EPA 2007). Properties which include Site infrastructure but for which Messer has been unable to negotiate easement agreements include the following:

Easement Agreements Needed

Property Owner	Parcel Number	Reason Agreement Needed
Clark County	144505-000 and various un-numbered	Wells, vaults, pipelines
Gaither Family II LLC	144492-000	Well CPU-12
Holtgrieve Estate	144718-000	Wells, vaults, pipelines
Xylem LLC	099630-000	Well MW-33

Further progress toward gaining easement agreements and restrictive covenants from non-responsive property owners is pending EPA assistance. Information on the location of these properties was shared with the EPA in a 28 May 2020 presentation. The lack of easement agreements on the properties listed above did not hinder Messer's ability to conduct site work on the affected properties in 2021.

4.3 SUSTAINABILITY PRACTICES

Messer and EA have a commitment to sustainable practices. In the office and in the field, attempts are made to reduce, reuse, and recycle whenever possible. Messer and EA have strived to reduce printing by increasing the use of digital deliveries in lieu of hard copies. In addition, the following monitoring and O&M activities are in place:

- Using PDBs or dedicated pumps for groundwater sampling wherever possible to eliminate the use of disposable tubing and decontamination solutions.

With the shutoff of the GWTS, electricity usage for the site has been reduced by approximately two thirds in 2021 compared to 2020. EA pumped water and sediment out of containment vaults that were previously automatically pumped dry by the GWTS, in order to ensure that stormwater and sediment did not leave the site.

4.4 PREVIOUS REPORTS

Due to the duration of time that has passed since initial publishing, Messer now considers the Draft Preliminary Close Out Report approved by the EPA and closed to further revision. This report was submitted to the EPA on 30 September 2011.

5. ANNUAL ASSESSMENT OF GROUNDWATER SAMPLING

This section summarizes the annual assessment of the groundwater sampling results and sampling frequency for the Site. The purpose of this assessment is to determine if any changes should be made to the well monitoring schedule. To this end, the assessment includes two primary tasks: (1) evaluation of the status of wells included in the Closure Monitoring Program, specifically with regards to progress toward completion of remediation and attainment monitoring; and (2) evaluation of recommended changes to the well sampling frequencies.

5.1 EVALUATION OF CLOSURE MONITORING WELLS

The procedures used to evaluate groundwater monitoring data for wells included in the Closure Monitoring Program are based on the Site closure requirements described in the Closure Plan, Revision 3 for the Site (EA 2018), which incorporates EPA suggestions and recent EPA guidance, as discussed below.

As described in the Closure Plan, site closure will occur when the concentrations of all Site COCs in groundwater monitoring and extraction wells included in the Closure Monitoring Program have reached the Site-specific cleanup levels, as defined in the ROD. The following EPA guidance documents were used to develop the procedures in the Closure Plan to determine when the groundwater cleanup levels have been achieved:

- *Recommended Approach for Evaluating Completion of Groundwater Restoration Remedial Actions at a Groundwater Monitoring Well* (EPA 2014)
- *Guidance for Evaluating Completion of Groundwater Restoration Remedial Actions* (EPA 2013).

Site closure will occur in two phases: (1) remediation monitoring will be performed to determine when remediation is complete (Section 5.1.1); and (2) attainment monitoring will be performed to confirm COC concentrations are expected to remain below the cleanup levels in the future (Section 5.1.2). The Site will be closed once all Closure Monitoring Program wells have reached attainment for all COCs.

Table 5-1 lists the wells included in the Closure Monitoring Program for the Site, as presented in the Closure Plan (EA 2018) and is updated with wells which were impacted by the Northern Plume after completion of the Closure Plan, namely MW-21D and MW-38. Wells not required to be a part of closure monitoring are listed in Appendix G-1. These wells include wells that have never had COC concentrations greater than the cleanup levels and wells impacted by the Northern Plume.

The sections below present the results of annual screening to evaluate whether VOCs and/or chromium concentrations in groundwater from Closure Monitoring Program wells at the Site have met the requirements for remediation monitoring complete and/or attainment monitoring complete. This annual screening for all VOCs and chromium forms the basis for the 2022

sampling program and is supplemented by quarterly tracking of TCE and chromium status presented in QASP Addenda.

5.1.1 Remediation Monitoring Phase

The remediation monitoring phase refers to the phase of the remedy where remedial activities are being implemented to reach groundwater cleanup levels. With the shutdown of the GWTS on 3 January 2021, no areas were under active remediation and steady-state groundwater conditions returned to all locations approximately one month after the shutoff date.

The most recent four data points from each Closure Monitoring Program well were evaluated to assess whether remediation monitoring is complete for each COC in each well, in accordance with the Closure Plan (EA 2018a) and EPA guidance (EPA 2014). Remediation monitoring is considered complete for wells where all COCs have been either non-detect or reported at levels below the cleanup levels for the most recent four consecutive sampling events. These wells may be considered for decreased sampling frequency until ready to enter the attainment monitoring phase.

If certain COCs meet their cleanup levels during four consecutive sampling events in a given well but other COCs are reported at concentrations above cleanup levels during one or more of the four sampling events, then remediation monitoring is considered complete for the COCs that have been below cleanup levels for four events. A decision may be made to remove the COCs that are below the cleanup levels from the monitoring program for wells fitting this scenario.

Factors used in evaluating the status of the closure monitoring wells are presented in Table 5-2. In the table, wells are presented by well groupings to demonstrate what is happening in specific areas of the plume. Columns titled “Remediation Monitoring Phase Complete?” in Table 5-2 show the results of the analysis based on the most recent four data points for TCE, all VOCs, and chromium. Columns titled “Never Exceeded Cleanup Level?” indicate wells where no exceedance has been reported for VOCs or for chromium. Generally, COCs that have never exceeded cleanup levels in a well are excluded from the Closure Monitoring Program.

Summary data are provided in Table 5-2 for TCE and chromium, the primary COCs at the Site. However, as indicated in the table, for a few wells, remediation monitoring is incomplete due to other VOCs reported at concentrations exceeding cleanup levels. Data for the other Site COCs are included in Appendix G-2.

Closure Monitoring Program wells that are currently undergoing remediation monitoring and wells for which remediation monitoring is complete are shown on Table 5-1 and Figures 5-1 and 5-2 for VOCs and chromium, respectively.

Per the Closure Plan, more than four data points may be required to document the completion of remediation monitoring in some cases, if statistical analysis is required to evaluate a mixture of COC concentrations above and below the cleanup levels from recent sampling events. However, statistical analysis was not performed as part of this annual assessment. Rather, wells with any

exceedances of the cleanup level over the last four sampling events were considered, for the purposes of this assessment, to require additional remediation monitoring.

Figures 5-3 through 5-8 show the progress each well in the Closure Monitoring Program has made through the remediation monitoring phase for TCE and chromium as of the Fall 2021 sampling event. As remediation monitoring has four events, each event a COC stays below the cleanup level counts as 2 out of 8 steps on the vertical axis. When the bar reaches the top (8/8) remediation monitoring for that monitoring well is complete.

5.1.2 Attainment Monitoring Phase

The attainment monitoring phase is intended to confirm that COC concentrations will remain at or below the cleanup levels in the future. In accordance with EPA guidance, the attainment monitoring phase for each well will not begin until after the remediation monitoring phase is complete for the well and the groundwater in the vicinity is no longer impacted by active remediation.

With the shutdown of the GWTS on 3 January 2021, attainment monitoring could begin with the Spring 2021 sampling event for wells previously impacted by extraction and infiltration. In Summer 2021, monitoring wells downgradient of in-situ treatment could begin attainment monitoring if remediation monitoring was complete, as one year had passed since the last in-situ treatments.

Table 5-1 summarizes which of the closure monitoring wells/COCs currently meet the requirements for the initiation of attainment monitoring: (1) remediation monitoring is complete and (2) no active remediation is occurring in the vicinity.

Cleanup attainment will be measured using eight data points, in accordance with EPA guidance (EPA 2014). As with the remediation monitoring, the attainment monitoring phase evaluation is conducted separately for each COC at each well. If the eight consecutive attainment monitoring results are either non-detect or below the cleanup level for one or more COCs in a given well, then attainment monitoring will be considered complete for that well/COC(s).

Table 5-3 provides a list of wells in the closure monitoring program, and for wells that have reached attainment monitoring, the status of that monitoring is summarized, based on an evaluation of VOC and chromium concentrations reported from the last eight sampling events. This evaluation indicates that 52 wells meet the requirements for attainment monitoring for both VOCs and chromium (or are excluded from closure monitoring for one of the COCs). Attainment monitoring is complete for 11 of those wells.

Closure Monitoring Program wells that are currently undergoing attainment monitoring and wells for which attainment monitoring is complete are shown on Table 5-3 and Figures 5-1 and 5-2 for VOCs and chromium, respectively.

Similar to remediation monitoring, statistical analysis may be used to assess completion of attainment monitoring; however, no statistical analyses were conducted for this report. Figures 5-3 through 5-8 show the progress each well in the Closure Monitoring Program has made through the attainment monitoring phase for TCE and chromium as of the Fall 2021 sampling event. As attainment monitoring has eight events, each event a COC stays below the cleanup level counts as 1 out of 8 steps on the vertical axis in Figures 5-3 through 5-8. When the bar reaches the top of (8/8) attainment monitoring for that monitoring well is complete. Per the Closure Plan (EA 2018) a statistical analysis is required for each monitoring location to verify concentrations will not increase after attainment monitoring is complete, this evaluation will occur for all monitoring wells in a well group when attainment monitoring is complete for all wells in the well group.

5.2 EVALUATION OF SAMPLING FREQUENCY

As part of the annual assessment, the current sampling frequency for each well is evaluated and, if appropriate, revised. When proposing a revised sampling frequency for a well, the following factors were considered: the current sampling frequency and, for closure monitoring wells, whether remediation monitoring and/or attainment monitoring is complete for VOCs and/or chromium. These factors are summarized in Table 5-2. Additionally, a review of graphs of historical TCE and chromium concentrations in each well sampled during 2021 (presented in Appendices E and F) was performed during the evaluation of recommended sampling frequencies for 2022.

Wells to be sampled in 2022 are included on Figure 5-9. Recommended sampling frequencies for 2022 are included in Table 5-2 and summarized in Table 5-4. Factors that may yield recommended changes in sampling frequency for Closure Monitoring Program wells include the following:

- Wells for which attainment monitoring is complete and for which sampling is not required for other purposes are designated for NFS, as no further sampling of these wells is recommended.
- Wells within active areas of in-situ remediation may have increased monitoring frequency to monitor the effectiveness of the remediation.
- In accordance with the recommendations of the Closure Plan (EA 2018), wells in the first 4 events of the 8-event attainment monitoring phase will be sampled quarterly, while wells in the last 4 events of the 8-event attainment monitoring phase will be sampled semi-annually.

Generally, changes in sampling frequency are not recommended for Northern Plume wells. Five Northern Plume wells are monitored semiannually for VOCs, and one additional well (AMW-23) is sampled annually for VOCs to monitor the approach of the Northern Plume (Tables 5-2 and 5-4).

Sampling of select wells within the OU-2 source area was increased to quarterly during 2021 to monitor effectiveness of the remediation. These wells are AMW-1A, AMW-2A. AMW 12A, AMW-53 and MW-1A. Except for MW-1A, these wells will be reduced to semiannual sampling in 2022. MW-1A will maintain quarterly sampling for the purpose of Attainment Monitoring.

To provide continued monitoring of the in-situ treatment area west of NE St. Johns Road, sampling frequency will continue to be semiannual in Intermediate wells AMW-59, MW-14E, MW-20D, MW-38 (VOCs only, Northern Plume), and PZ-39(VOCs only). CPU-14 will be sampled quarterly for VOCs and semiannually for chromium.

Monitoring frequency for chromium was increased in 2021 quarterly for Proximal Wells MW-3A, MW-4A, MW-4B, MW-4C, MW-6A, MW-6B, and MW-9B to monitor the impacts from the GWTS shutdown during 2021, the first-year post-shutdown. In 2022, monitoring frequency for these wells will reduce to semiannual. MW-6A, while part of post-GWTS shutdown enhanced monitoring, will maintain quarterly sampling in 2022 for the purpose of Attainment Monitoring.

Many additional changes were made to sampling frequency in the Proximal Well Group and the TCE Source Area Well Group to advance Attainment Monitoring after the GWTS shutdown. Tables 5-2 and 5-9 provide further details on these additional changes initiated by the GWTS shutdown.

Changes to sampling frequencies are recommended based on the results of the annual assessment. Well sampling frequency recommendations for 2022 are provided in Table 5-2 and summarized in Table 5-4. Adjustments are made to sampling frequency in quarterly sampling events based upon results of previous sampling events and frequency may be adjusted in quarterly sampling QASP Addenda from the recommendations of this report based upon collected data.

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6. RECOMMENDATIONS AND PLANNED ACTIVITIES

The following sections summarize the status of activities recommended for 2021, as well as recommendations and planned activities for 2022.

6.1 STATUS OF PREVIOUS RECOMMENDATIONS 2021

To meet the operating objectives for OU-2 and OU-3, planned activities for 2021 were recommended in the 2020 Annual Status report (EA 2021d). The status of those planned activities is summarized below:

- GWTS Shutdown – The GWTS was shut down as recommended in the 2020 Annual Report on 3 January 2021.
- **Well Sampling** – Wells were sampled based upon the recommendations of the 2020 Annual Report, with consideration given to analytical results from subsequent sampling events.
- **Easement Agreements and Restrictive Covenants** – EA continues to work with the EPA as necessary to obtain the required agreements with non-responsive property owners. EA will continue efforts to obtain agreements as opportunities and need arise.
- **PacTrust Corporate Park** – A design to incorporate the remediation system in an operational-ready state and access the monitoring wells for continued sampling was prepared in 2021 in cooperation with the property owner, PacTrust Development. This real estate development will be built in 2022 and the remedial system modification design will be implemented concurrently with building foundations construction.
- **In-Situ Treatments** – The In-Situ Treatment of Areas of Residual Contamination Phase II Report was submitted to EPA in May 2021.
- **Northern Plume** – EA continues to work with EPA to develop a strategy for closure of OU-3 wells being impacted by the Northern Plume.

6.2 RECOMMENDATIONS AND PLANNED ACTIVITIES FOR 2022

Messer plans on continuing PacTrust Corporate Park (formerly known as “Padden Parkway”) remediation system modification work initiated in 2021 in cooperation with PacTrust Development. Implementation of the remedial system modification design will occur in the Winter and Spring 2022, and the decommissioning of MW-34 is planned for June 2022, when the detention pond in which it is now located has dried out.

The GWTS will remain in a state of readiness, should regular monitoring of chromium concentrations around the treatment system building in 2022 indicate migration of chromium in response to which the EPA elects to reactivate the system. If the system remains unused, it will be decommissioned when the wells in the network that it services have concluded attainment

monitoring. As discussed in Section 3.3.2.2.1, chromium monitoring conducted through Fall 2021 has so far not indicated a significant change in chromium plume size or concentration.

Messer recommends additional monitoring for chromium in monitoring wells located around the GWTS post-shutdown. The wells that Messer recommends for monitoring for the duration of the GWTS mothball period are MW-3A, MW-4A, MW-4B, MW-4C, MW-6A, MW-6B, and MW-9B. Chromium concentrations in monitoring wells adjacent to the GWTS (such as MW-6A) have not been positively impacted by the GWTS for a period approaching 15 years (EA 2020a). The GWTS will need to be removed and the contaminated residual soil excavated to achieve chromium cleanup levels in the affected monitoring wells in the vicinity of the GWTS. Additional monitoring in this area will identify any change to the residual chromium plume concentration or configuration in the period between GWTS shutdown and final soil excavation. The aforementioned wells were sampled quarterly in 2021, per the recommendations of the 23 September 2020 Memorandum (EA 2020a) and the 2020 Annual Report (EA 2021); the sampling frequency for these wells will be reduced to semi-annual in 2022.

Messer plans on sampling on a quarterly basis in 2022. With the GWTS shutdown having occurred in January 2021, Messer recommends that sampling of monitoring wells in the Attainment Monitoring phase of closure monitoring occur on a quarterly basis for the first four events, as described in the Closure Plan (EA 2018). Quarterly QASP Addenda will precede quarterly sampling events.

6.2.1 In-Situ Treatment Recommendations

As described in the 2015 Explanation of Significant Differences (EPA 2015), in-situ treatment is an effective and approved alternative method for addressing the remaining residual mass. As described in a technical memorandum dated 23 September 2020 (EA 2020a), in-situ treatment of remaining “hot spots” is planned as the means of addressing residual TCE contamination in the mid-plume and source areas. Overall, in-situ treatment continues to be an effective remedy for degradation of recalcitrant chlorinated compounds at the site, but natural variability in the encountered subsurface materials and other factors such as infrastructure location have resulted in a range of treatment effectiveness at individual locations. Specific recommendations for each monitoring location are discussed below.

6.2.1.1 AOC-1

In-situ treatment performance monitoring in AOC-1 has shown mixed results in the three quarters of sampling since it was addressed in the In-Situ Phase II Report (EA 2021). MW-1A appears successfully remediated, and AMW-12A has shown continual decreases in TCE concentrations, with the concentration likely to fall below the cleanup level soon. AMW-1A was trending in the right direction with decreases in the molar concentrations of CVOCs and TCE concentrations near the cleanup level, until the Fall 2021 sampling event. With just one event spiking upwards from a reducing trendline, further performance monitoring is recommended at AMW-1A prior to additional action. AMW-2A is in a difficult location to treat, with considerable infrastructure upgradient of the location, and is marginally addressed by the north

end of Row 14 located in an accessible area further upgradient. It is possible that the shutdown of the GWTS and subsequent cessation of infiltration gallery groundwater recharge shifted groundwater direction just enough in the vicinity of AMW-2A that soluble injectate from Row 14 moved away from AMW-2A instead of towards it. In 2022, further monitoring of AMW-2A is recommended and consideration should be given for how recalcitrant contamination might be further addressed in this difficult to access area.

6.2.1.2 AOC-2

For performance monitoring wells located downgradient of Phase IIB treatment rows injected in Spring 2020, transit distances are longer from each row to each performance monitoring well, and the subsurface lithology is also siltier in the Luke Jensen Park area, resulting in slower groundwater velocities. As a result, concentrations are expected to take longer to decrease. Additional monitoring is recommended for MW-20D and PZ-39 to see if they start trending more positively towards the cleanup level via active degradation. Consideration of the potential benefit to closure schedule of further injections in this area will be given during the evaluation of additional treatments for other site hot spots. Messer recommends that MW-20D and PZ-39 continue to be sampled quarterly in 2022, and that MW-38 continue to be sampled on a semi-annual basis as part of the Northern Plume. Due to the complicating factor of the Northern Plume's influence on MW-38, Messer recommends that MW-38 no longer be evaluated as part of in-situ treatment performance monitoring.

For MW-19D, although sub-cleanup level TCE concentrations have not been maintained, markers of reductive dechlorination are continuing to increase, indicating biotic degradation. Additional performance monitoring is recommended on a semi-annual basis while biotic degradation is actively occurring. Semi-annual performance monitoring is recommended for MW-19D.

For wells MW-18D, MW-18E, and MW-14C, continued semi-annual sampling, without natural attenuation parameters, is recommended for attainment monitoring.

Monitoring Well AMW-59, TCE concentration has fluctuated above the cleanup level but most recently is well below the cleanup level and has good indicators of reductive dechlorination. Given that two years has passed since the injection event, continued performance monitoring on a semi-annual basis is recommended.

At location MW-14E, two years have now passed since the in-situ treatment was injected and the TCE concentrations have plateaued with no indicators of active degradation processes observed. For these reasons, additional treatment appears necessary to successfully drive TCE concentrations below the cleanup level at MW-14E. Messer will evaluate treatment scenarios at this location, which has posed a challenge to properly address due to its location immediately downgradient of NE St. Johns Road.

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7. CONCLUSIONS

This section discusses progress towards remedial goals and the effectiveness of actions taken in 2021. 2021 was a pivotal year at the Boomsnub/Airco Superfund Site, as the GWTS was shutdown thus switching the primary remedial action from groundwater extraction and treatment to in-situ treatment of groundwater achieved via injections that established permeable reactive zones. This switch was based on the effectiveness of the in-situ treatments demonstrated in 2020 and taken with full concurrence from the EPA. In planning for the GWTS shutdown, the EPA had two concerns: that the GWTS remain usable in the event of plume migration and that the residual chromium plume located primarily on the Boomsnub property might migrate after shutdown. Messer addressed these two concerns by agreeing to maintain the GWTS system in an operational-ready state (i.e., "mothballed") and by agreeing to conduct additional groundwater monitoring for chromium around the residual Boomsnub plume quarterly for the first year and then semi-annually thereafter.

After four quarters of post-shutdown sampling for chromium around the residual chromium plume in 2021, there are no sharply rising concentrations nor is there clear downgradient movement of the residual chromium plume that might suggest the need for reinstatement of a containment strategy. The post-shutdown chromium concentrations observed to date are within normal fluctuations of a post-pumping groundwater system. Monitoring will continue semi-annually and an assessment of chromium plume stability will be made on an annual basis.

The success of in-situ treatments is discussed on a location-by-location basis in Sections 3.3.5 and 6.2.1, but overall the in-situ treatments continue to demonstrate effectiveness as a remedy. The resounding success of the pilot study (Phase 1) was not replicated in all locations as natural variability of subsurface materials, challenging infrastructure placement, and field conditions were encountered, but the performance monitoring results indicate that even at many of those wells where TCE concentrations remain above the MCL improvements have been made and are continuing to be made through degradation of chlorinated compounds. There are only a couple locations where additional injection looks like a likely path forward at this time but overall, the in-situ treatments injected in 2019 and 2020 were effective at progressing the site towards cleanup goals in 2021.

As mentioned previously in this report, the shutdown of the GWTS created steady-state hydrogeologic conditions that allowed many wells to begin advancing through Attainment Monitoring on a quarterly basis in 2021. In past years Attainment Monitoring was conducted on those wells deemed eligible on a semi-annual basis, as there was no practical reason to sample them more frequently while the GWTS was operational. With the GWTS shut down and the final remedy initiated, there is now ample reason to move monitoring wells through both Remediation Monitoring and Attainment Monitoring at the maximum frequency specified in the Closure Plan (EA 2018). The attainment of steady-state hydrogeologic conditions and subsequent movement of many wells through a portion of the Attainment Monitoring phase in 2021 has resulted in considerable progress towards site closure.

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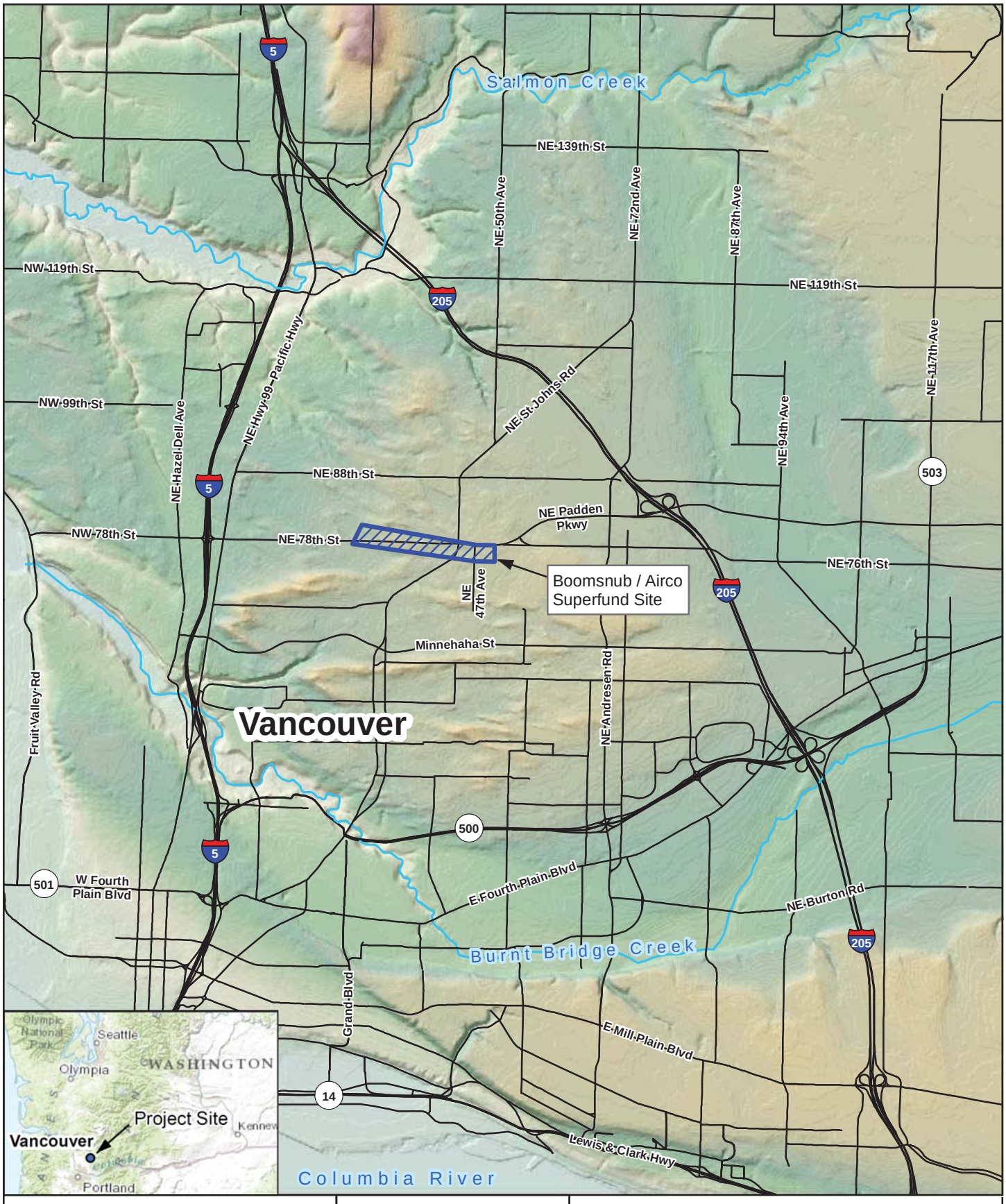
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Figures



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BOOMSNUB / AIRCO SUPERFUND SITE
HAZEL DELL, WASHINGTON

FIGURE 1-1
SITE LOCATION MAP

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N.E. 25th Ave.
Well CPU-4S, 4D
Located Approx. 3/10 mile
North of NE 78th Street

N.E. 82nd St.

N.E. St. John's Rd.

Church of God

MW-25D
AMW-27
MW-49
MW-26D
MW-27D
CPU-13
MW-21D
MW-22D
MW-20D
MW-19D
MW-18E
MW-18D
MW-14C
MW-14E
AMW-59
MW-10B, 10C
MW-6B
PW-1B

CV-18
CV-17
CV-16
CV-14
CV-14A
CV-15
CV-13
CV-12
CV-11
CV-10
CV-9
CV-8
CV-7
CV-6
CV-5
CV-4
CV-3
CV-2
CV-1

N.E. 78th St.

OU3 Treatment Plant

OU1 Source Area

OU3 Extraction System

Boomsnub Infiltration Gallery

Former Boomsnub Corporation

OU2 Source Area

Messer

Messer Infiltration Gallery

N.E. 51st Ave.

N.E. 43rd Ave.

N.E. 40th Ave.

Lewis & Clark Railroad

Groundwater Flow Direction
Alluvial Aquifer

Inactive Extraction Well
Extraction System Forcemain
Containment Vault

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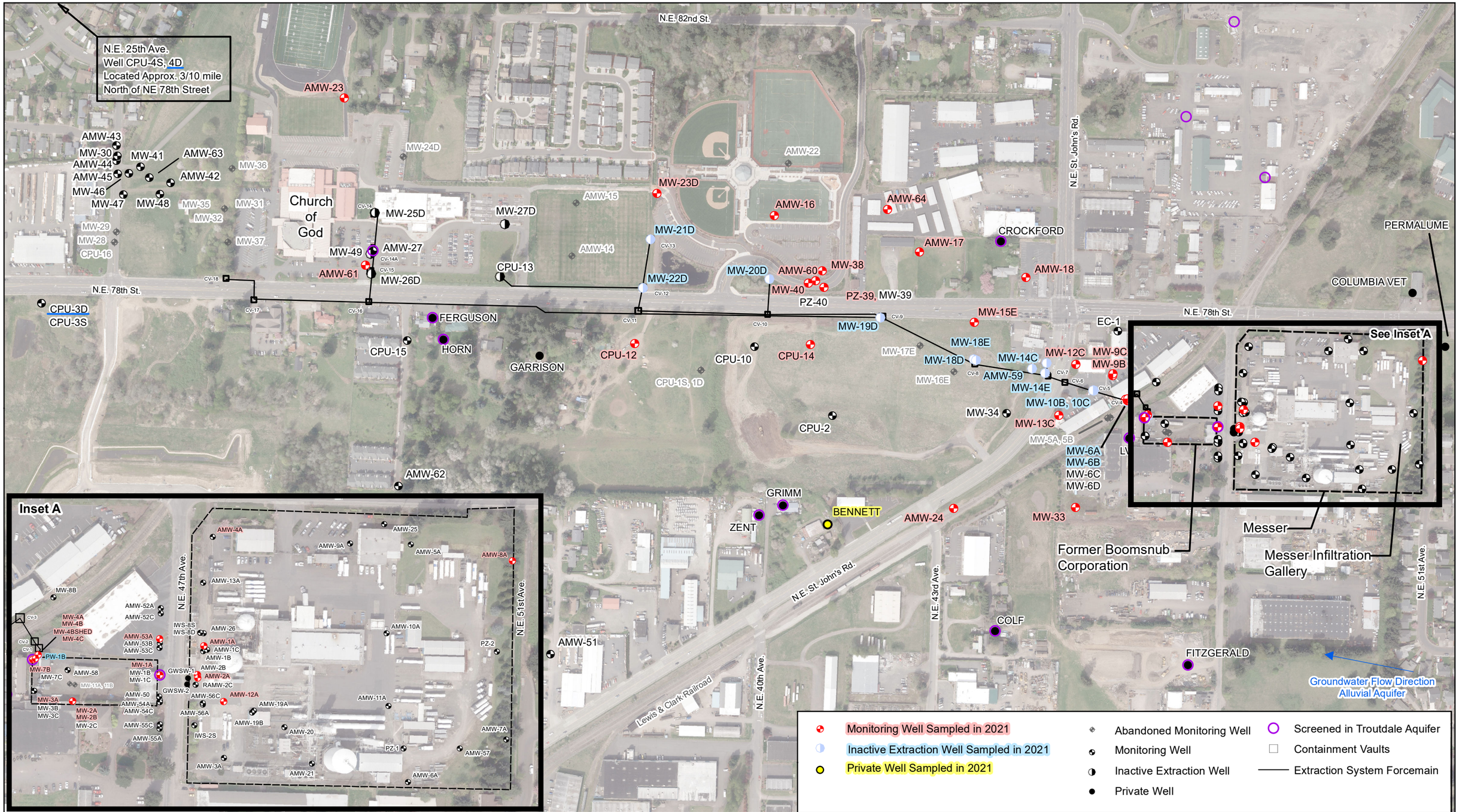
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FIGURE 1-2
OPERABLE UNITS AND TREATMENT SYSTEM
2021



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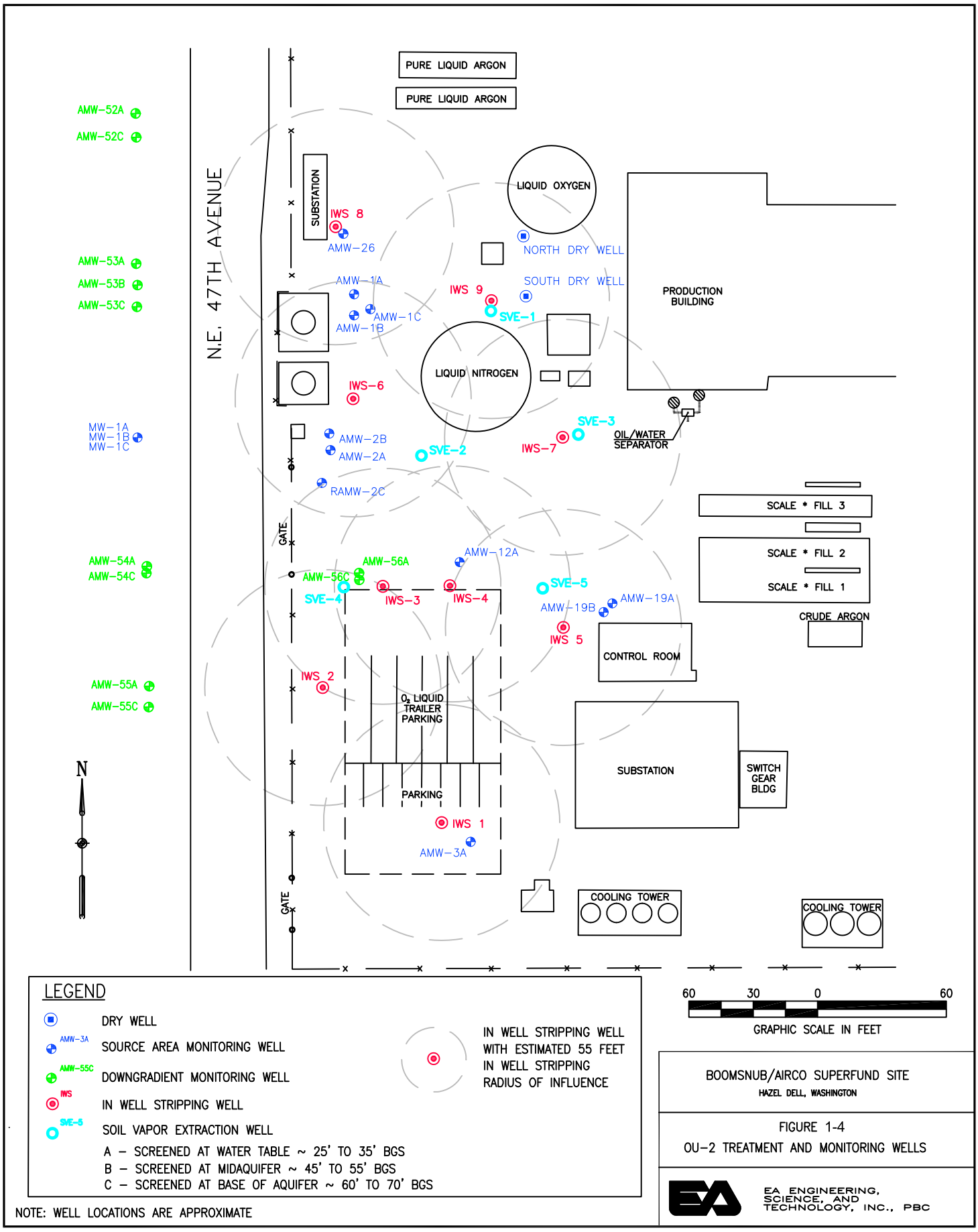
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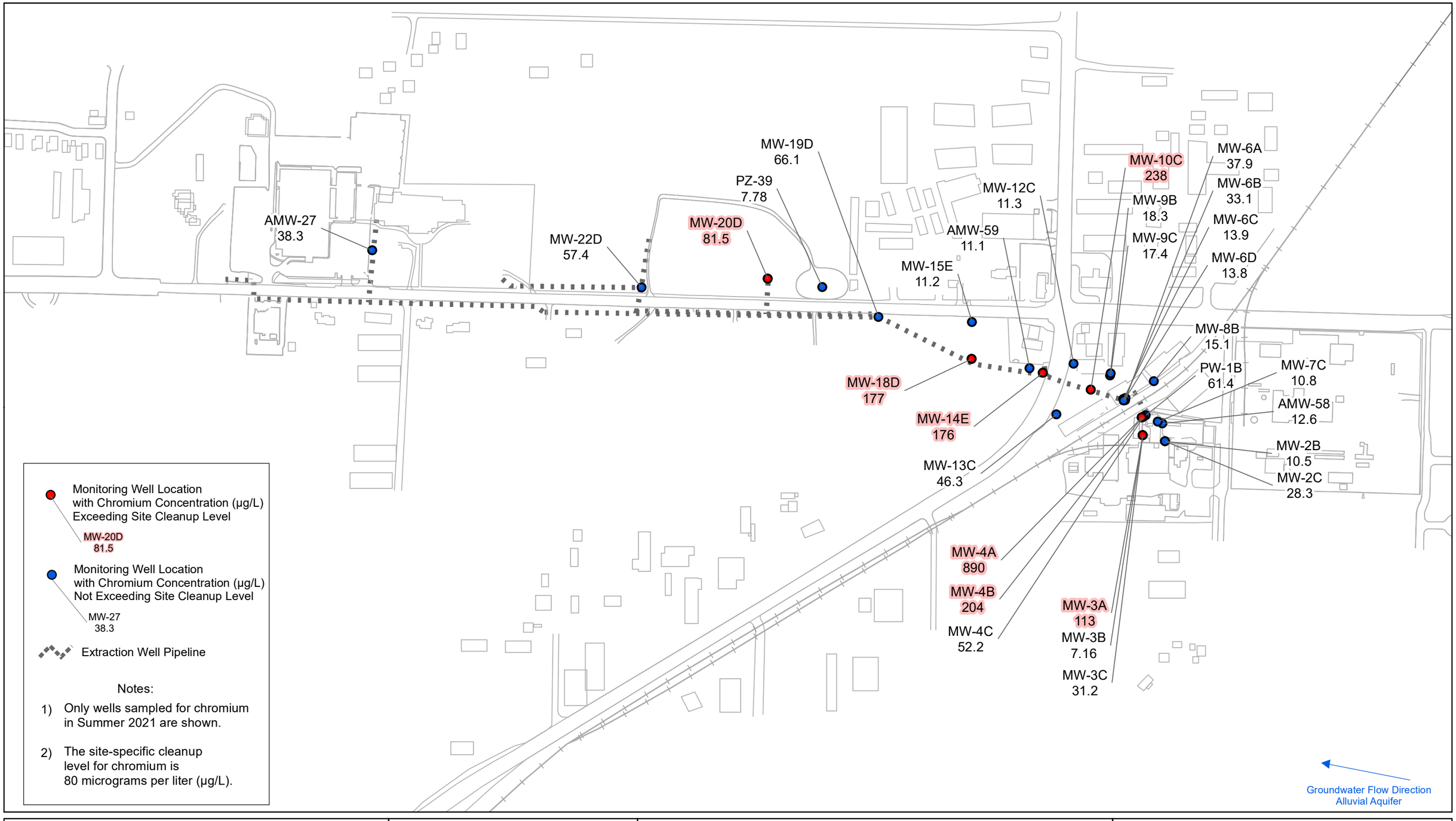
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FIGURE 1-3
MONITORING AND EXTRACTION WELL NETWORK


PURE LIQUID ARGON
PURE LIQUID ARGON
AMW-52A
AMW-52C
N.E. 47TH AVENUE
SUBSTATION
IWS 8
AMW-26
LIQUID OXYGEN
NORTH DRY WELL
AMW-53A
AMW-53B
AMW-53C
AMW-1A
AMW-1C
AMW-1B
IWS 9
SVE-1
SOUTH DRY WELL
PRODUCTION BUILDING
LIQUID NITROGEN
IWS-6
MW-1A
MW-1B
MW-1C
AMW-2B
AMW-2A
SVE-2
SVE-3
IWS-7
OIL/WATER SEPARATOR
RAMW-2C
SCALE * FILL 3
SCALE * FILL 2
SCALE * FILL 1
CRUDE ARGON
GATE
AMW-54A
AMW-54C
AMW-56A
AMW-56C
AMW-12A
SVE-4
IWS-3
IWS-4
SVE-5
AMW-19B
AMW-19A
IWS 5
CONTROL ROOM
AMW-55A
AMW-55C
IWS 2
O2 LIQUID TRAILER PARKING
PARKING
SUBSTATION
SWITCH GEAR BLDG
IWS 1
AMW-3A
GATE
COOLING TOWER
COOLING TOWER
N
LEGEND
DRY WELL
AMW-3A
SOURCE AREA MONITORING WELL
AMW-55C
DOWNGRADIENT MONITORING WELL
IWS
IN WELL STRIPPING WELL
SVE-5
SOIL VAPOR EXTRACTION WELL
A – SCREENED AT WATER TABLE ~ 25' TO 35' BGS
B – SCREENED AT MIDAQUIFER ~ 45' TO 55' BGS
C – SCREENED AT BASE OF AQUIFER ~ 60' TO 70' BGS
IN WELL STRIPPING WELL WITH ESTIMATED 55 FEET IN WELL STRIPPING RADIUS OF INFLUENCE
NOTE: WELL LOCATIONS ARE APPROXIMATE
60 30 0 60
GRAPHIC SCALE IN FEET
BOOMSNUB/AIRCO SUPERFUND SITE
HAZEL DELL, WASHINGTON
FIGURE 1-4
OU-2 TREATMENT AND MONITORING WELLS
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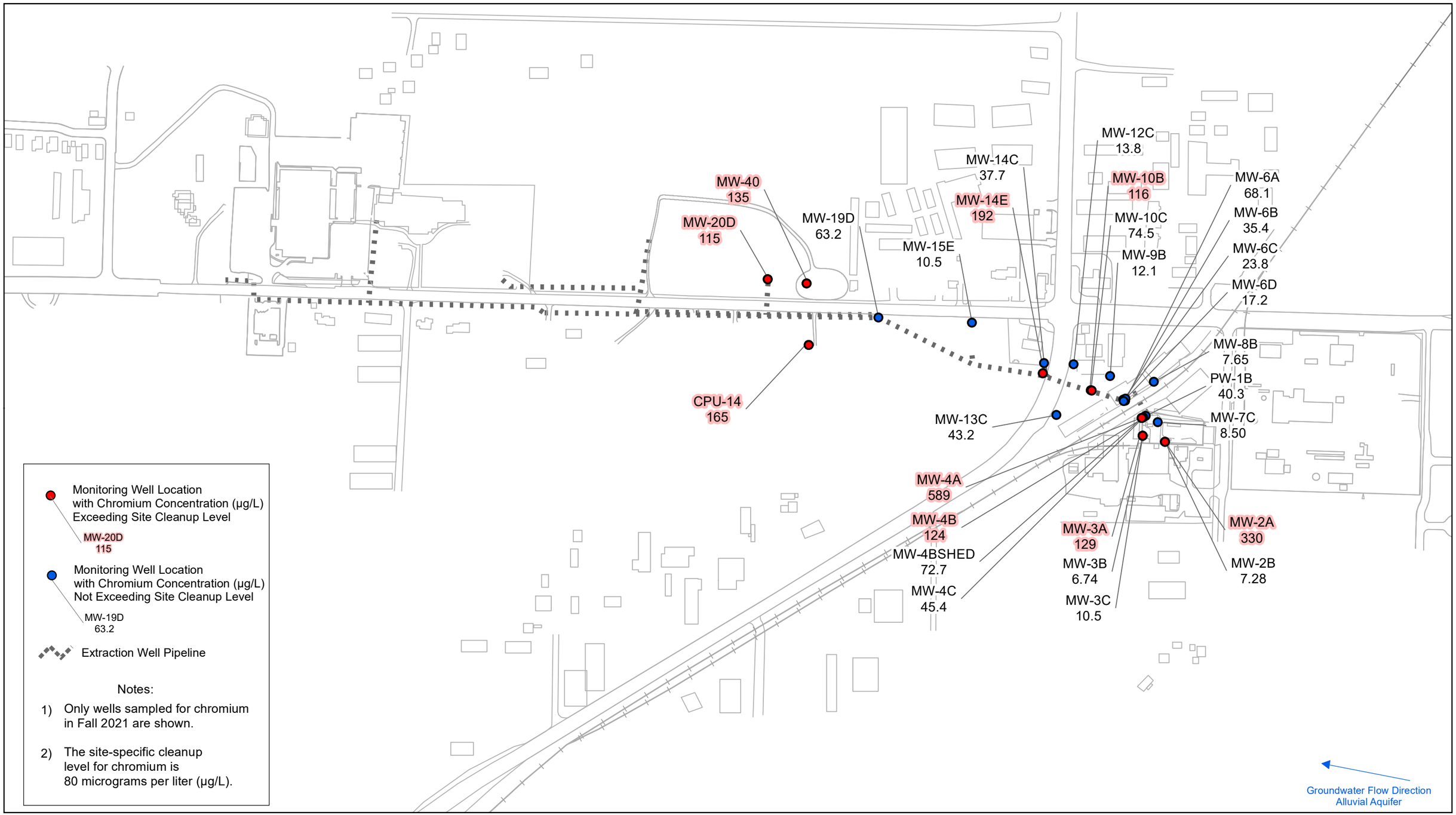
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FIGURE 3-1
CHROMIUM SAMPLING RESULTS,
SUMMER 2021



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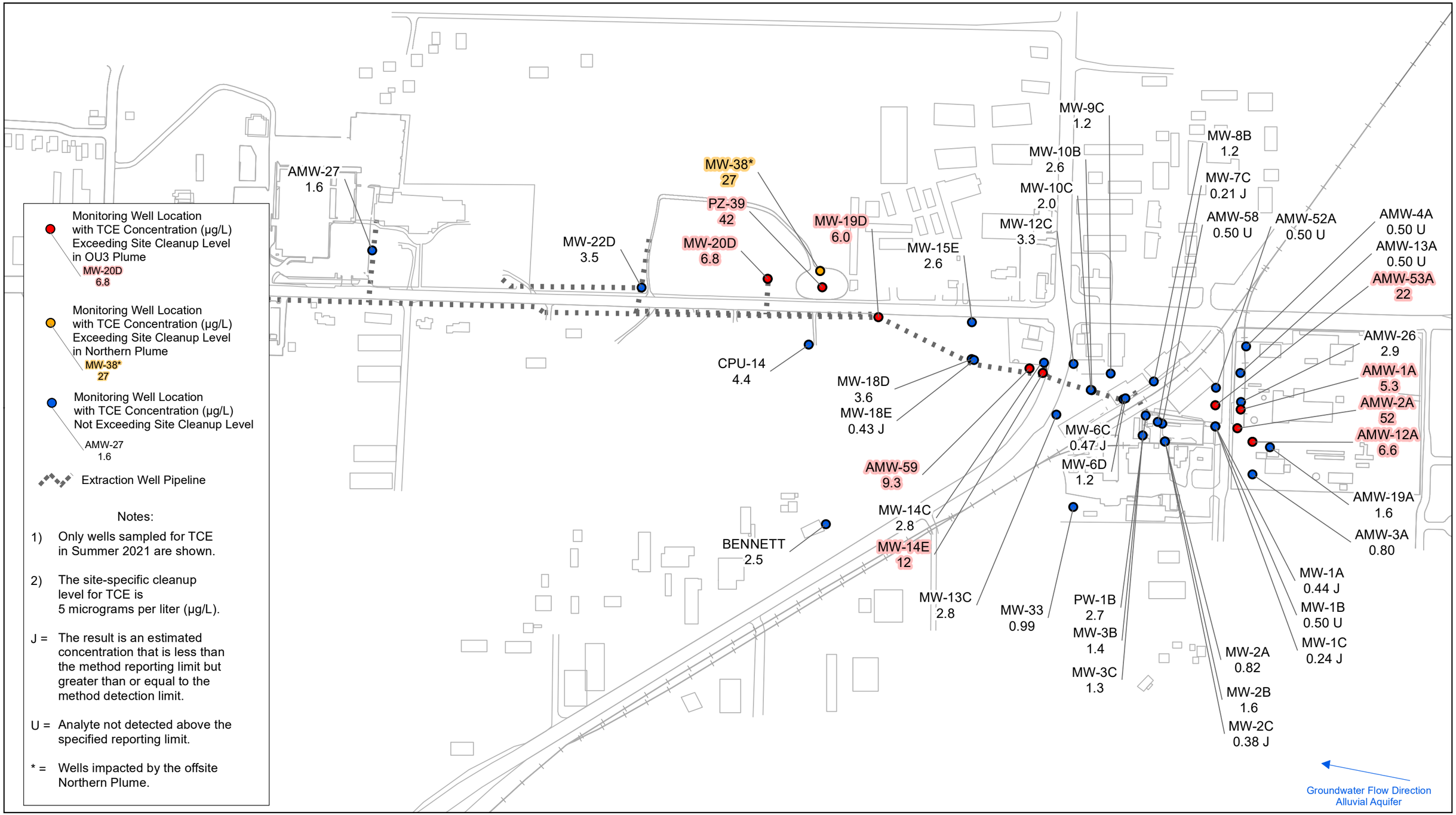
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FIGURE 3-2
CHROMIUM SAMPLING RESULTS,
FALL 2021

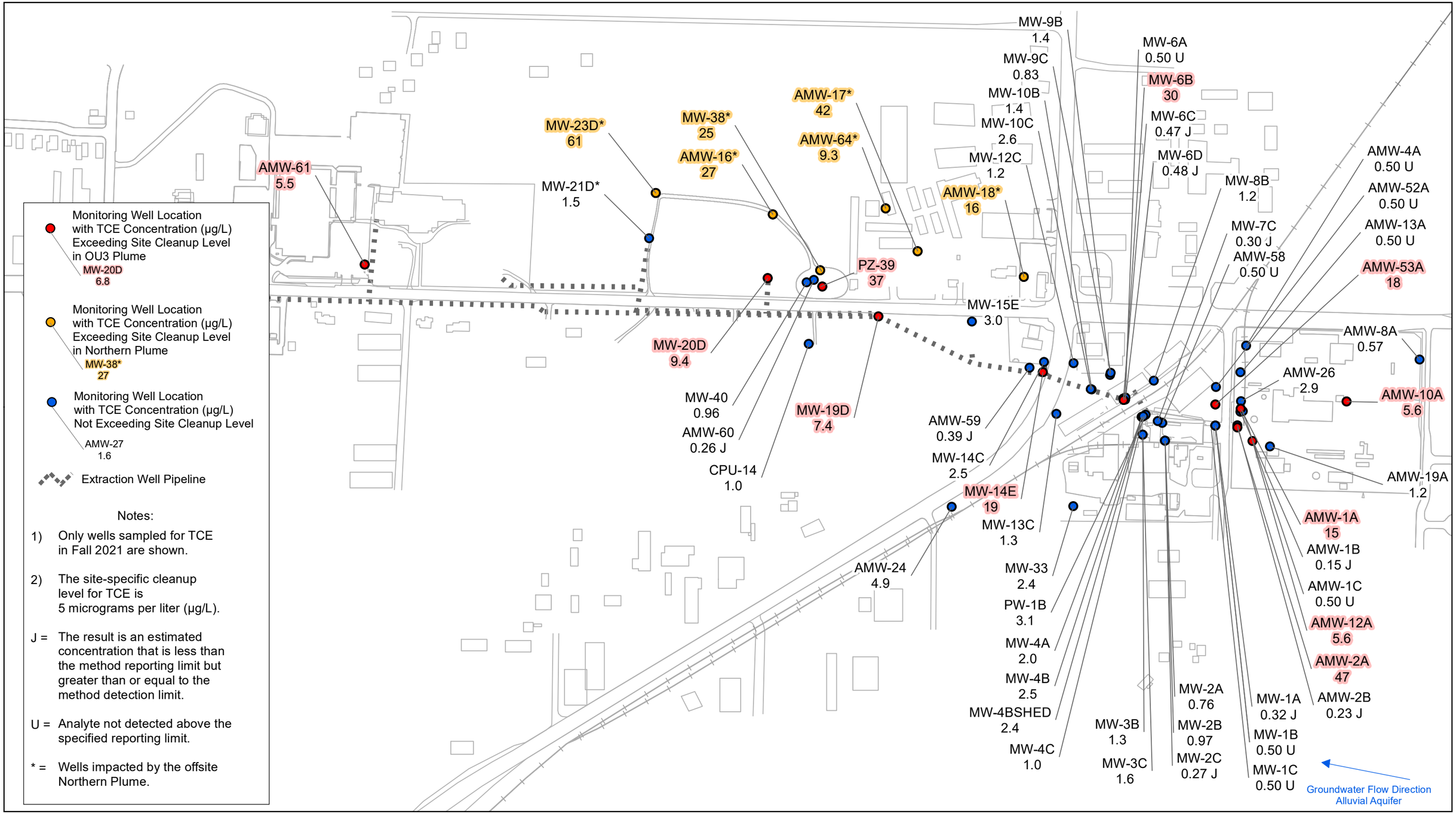


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FIGURE 3-3
TRICHLOROETHENE SAMPLING RESULTS, SUMMER 2021



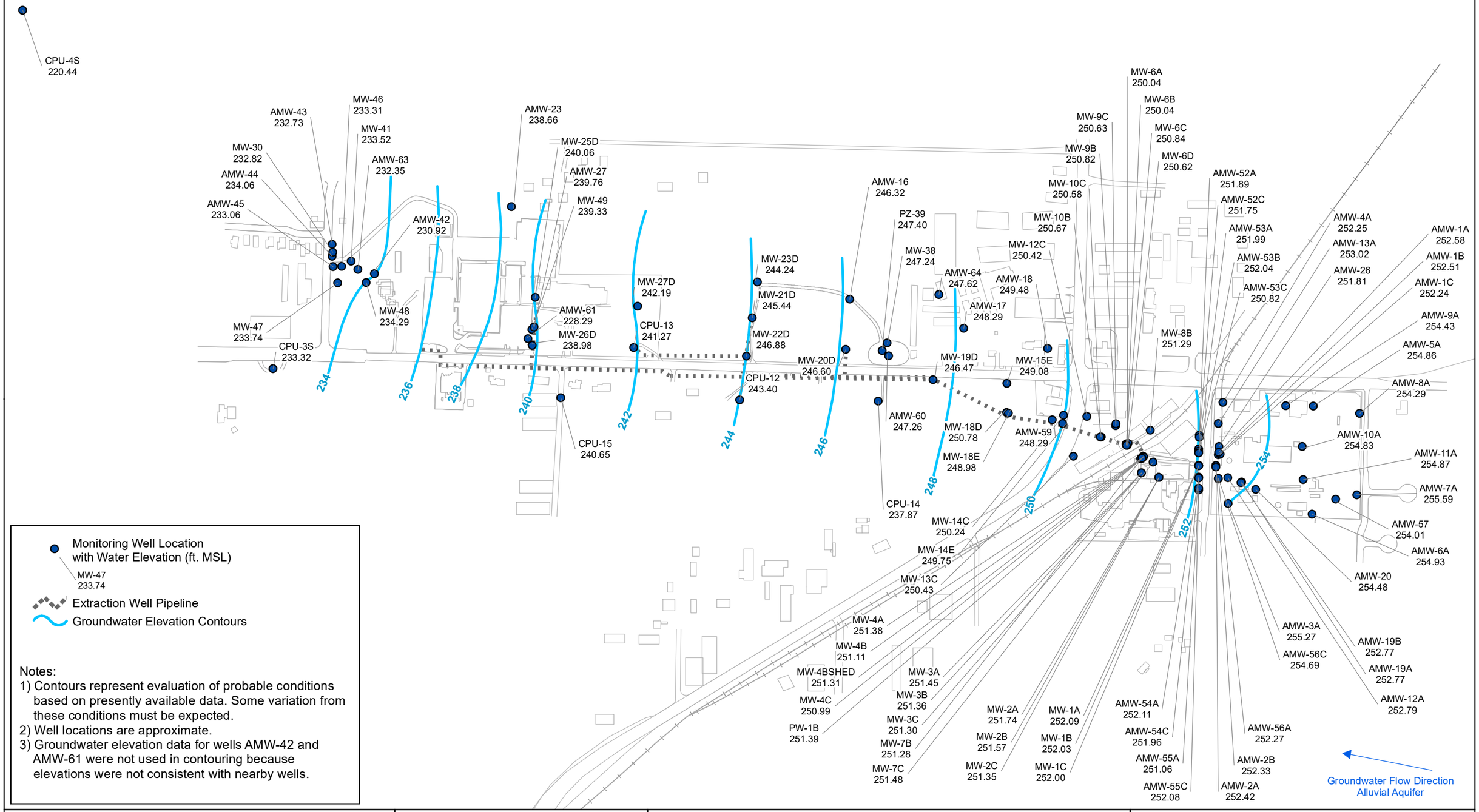
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FIGURE 3-4
TRICHLOROETHENE SAMPLING RESULTS, FALL 2021



Monitoring Well Location
with Water Elevation (ft. MSL)

MW-47
233.74

Extraction Well Pipeline

Groundwater Elevation Contours

Notes:
1) Contours represent evaluation of probable conditions based on presently available data. Some variation from these conditions must be expected.
2) Well locations are approximate.
3) Groundwater elevation data for wells AMW-42 and AMW-61 were not used in contouring because elevations were not consistent with nearby wells.

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FIGURE 3-5
ALLUVIAL AQUIFER GROUNDWATER CONTOURS
FALL 2021

CPU-4D
103.95

CPU-3D
114.30

AMW-62
125.04

AMW-51
124.63

AMW-24
132.37

MW-33
137.89

AMW-25
143.44

115

120

125

130

135

140

Monitoring Well Location
with Water Elevation (ft. MSL)
AMW-51
124.63

Extraction Well Pipeline

Groundwater Elevation Contours

Notes:
1) Groundwater extraction system was in operation at the time of water level gauging.
2) Contours represent evaluation of probable conditions based on presently available data. Some variation from these conditions must be expected.
3) Well locations are approximate.

Groundwater Flow Direction
Troutdale Aquifer

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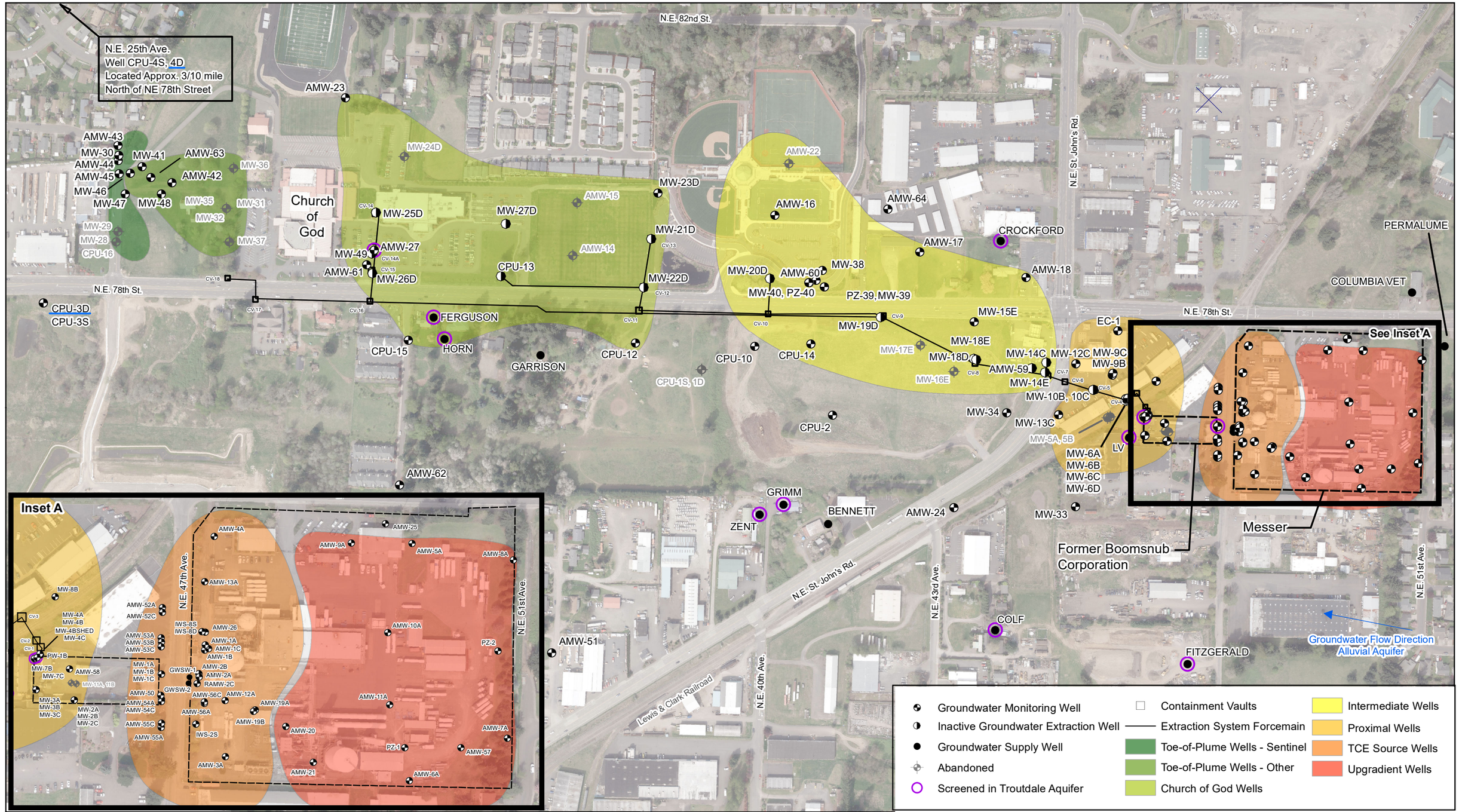
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FIGURE 3-6
TROUTDALE AQUIFER GROUNDWATER CONTOURS
FALL 2021



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FIGURE 3-7
EXTRACTION AND MONITORING
WELL GROUPINGS

1995

Groundwater Flow Direction
Alluvial Aquifer

2021

Extraction Well Pipeline

Chromium Concentration Contours

- 80 - 250 µg/L
- 250 - 500 µg/L
- 500 - 1,500 µg/L
- 1,500 - 5,000 µg/L
- 5,000 - 10,000 µg/L
- 10,000 - 20,000 µg/L
- >20,000 µg/L

Note:
Contours represent evaluation of probable conditions based on presently available data. Some variations from these conditions must be expected.

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FIGURE 3-8
CHROMIUM PLUME COMPARISON
1995 VS. 2021

1995

2021

Groundwater Flow Direction
Alluvial Aquifer

Extraction Well Pipeline

TCE Concentration Contours

Boomsnub/Airco OU-3 Plume

- 5 - 25 µg/L
- 25 - 100 µg/L
- 100 - 500 µg/L
- 500 - 1,000 µg/L
- 1,000 - 2,000 µg/L
- > 2,000 µg/L

Wells Impacted by the Northern Plume

Northern Plume

- 25 - 100 µg/L
- 5 - 25 µg/L
- Plume Overlap Area

Notes:
? = Plume boundary is not clearly delineated.

Contours represent evaluation of probable conditions based on presently available data. Some variations from these conditions must be expected.

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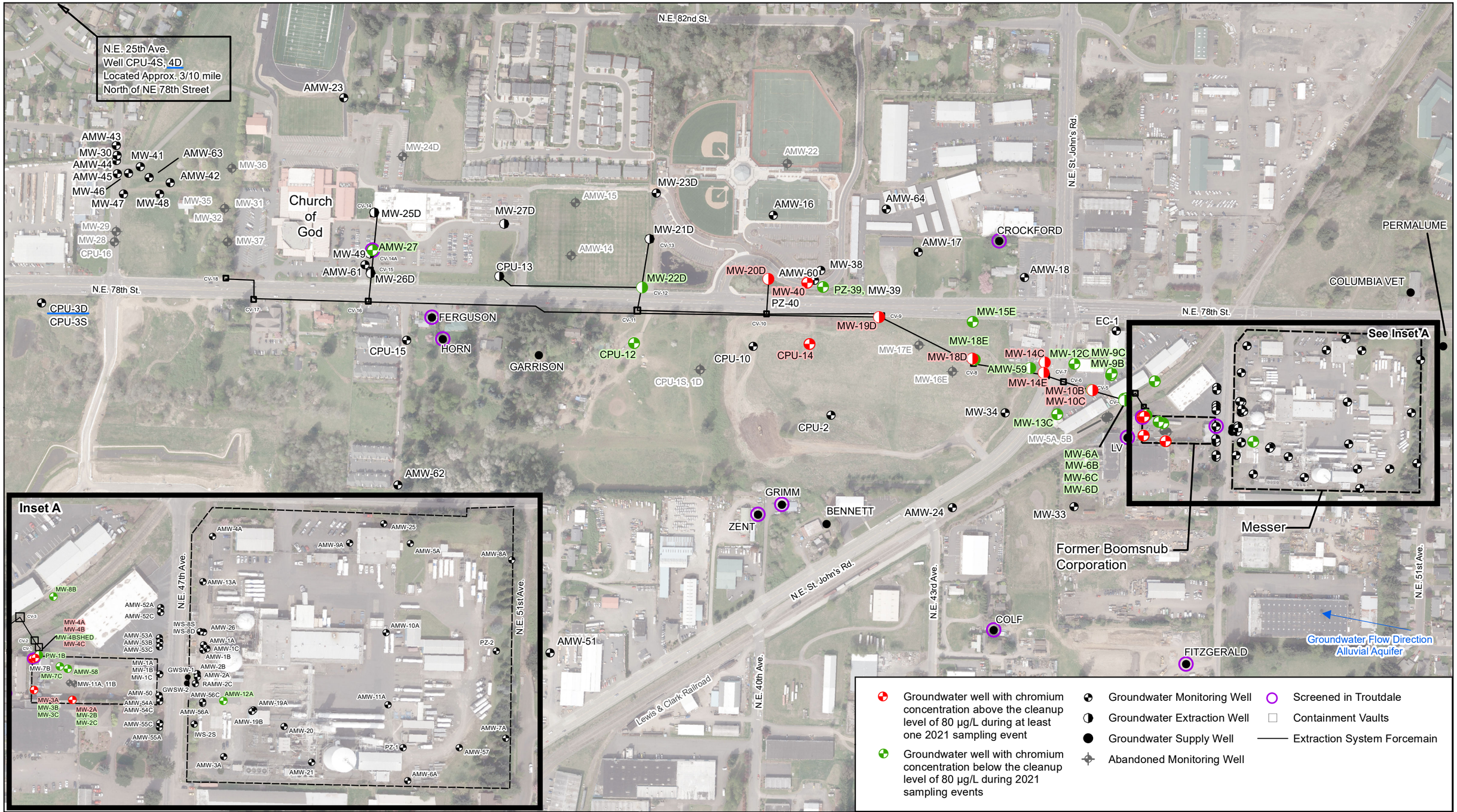
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File Name: Fig_3_9_TCE_Plume_10.7

FIGURE 3-9
TRICHLOROETHENE PLUME COMPARISON
1995 VS. 2021



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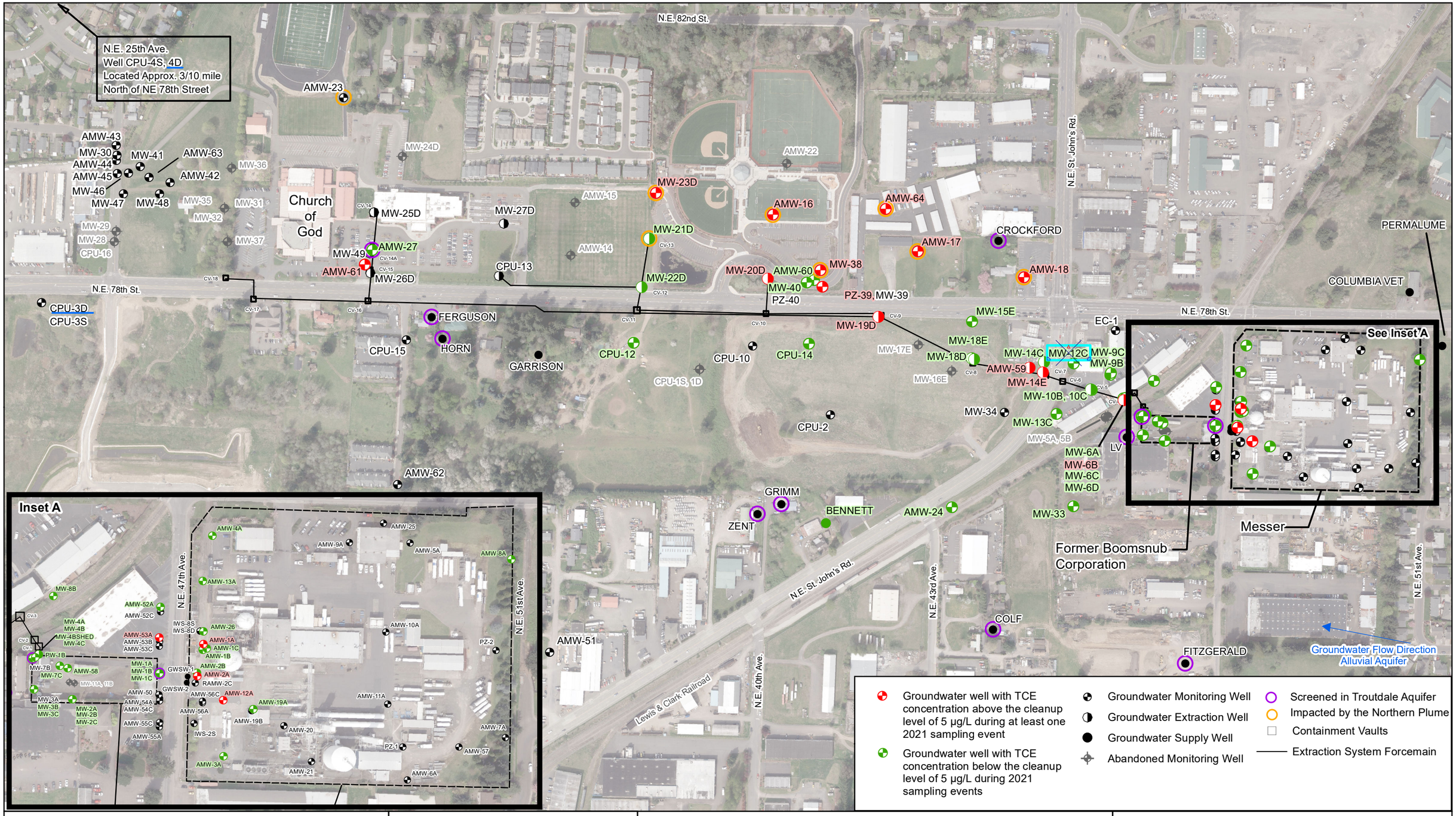
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File Name: Fig_3_10_CR_Concentration_2021

FIGURE 3-10
WELLS WITH CHROMIUM CONCENTRATIONS ABOVE THE CLEANUP LEVEL IN 2021



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File Name: Fig_3_11_TCE_Concentration_2021

FIGURE 3-11
WELLS WITH TCE CONCENTRATIONS
ABOVE THE CLEANUP LEVEL IN 2021

N.E. 25th Ave.
Well CPU-4S, 4D
Located Approx. 3/10 mile
North of NE 78th Street

N.E. 82nd St.

AMW-23

AMW-43
MW-30
AMW-44
AMW-45
MW-46
MW-47
MW-41
AMW-63
AMW-42
MW-48
MW-36
MW-35
MW-31
MW-32
MW-24D
MW-29
MW-28
CPU-16
MW-37
Church of God
CV-14
MW-25D
MW-27D
AMW-15
MW-49
AMW-27
CV-14A
AMW-61
CV-15
MW-26D
CPU-13
AMW-14
MW-23D
MW-21D
CV-13
MW-22D
CV-12
AMW-22
AMW-16
AMW-64
N.E. St. John's Rd.
CROCKFORD
AMW-17
AMW-18
PERMALUME
COLUMBIA VET
MW-38
MW-20D
AMW-60
MW-40
PZ-40
PZ-39, MW-39
MW-19D
CV-9
CV-10
CV-11
CV-16
CV-17
CV-18
N.E. 78th St.
CPU-3D
CPU-3S
FERGUSON
HORN
CPU-15
GARRISON
CPU-12
CPU-10
CPU-14
CPU-1S, 1D
CPU-2
MW-17E
MW-15E
MW-18E
MW-18D
CV-8
MW-16E
AMW-59
CV-7
MW-14C
MW-12C
MW-9C
MW-9B
CV-6
MW-14E
CV-5
MW-10B
CV-4
MW-10C
MW-34
MW-13C
MW-5A, 5B
LV
EC-1
N.E. 78th St.
See Inset 'A'
MW-6A
MW-6B
MW-6C
MW-6D
AMW-62
GRIMM
ZENT
BENNETT
AMW-24
MW-33
Messer
Former Boomsnub Corporation
N.E. St. John's Rd.
N.E. 43rd Ave.
N.E. 51st Ave.
COLF
AMW-51
FITZGERALD
Groundwater Flow Direction
Alluvial Aquifer
Lewis & Clark Railroad
N.E. 40th Ave.

Inset A

AMW-4A
AMW-25
AMW-9A
AMW-5A
AMW-8A
N.E. 47th Ave.
N.E. 51st Ave.
AMW-13A
MW-8B
AMW-52A
AMW-52C
MW-4A
MW-4B
MW-4BSHED
MW-4C
CV-3
CV-2
CV-1
IWS-8S
IWS-8D
AMW-26
AMW-10A
AMW-53A
AMW-53B
AMW-53C
AMW-1A
AMW-1C
AMW-1B
PZ-2
PW-1B
MW-7B
MW-7C
AMW-58
MW-1A
MW-1B
MW-1C
GWSW-1
AMW-2B
AMW-2A
RAMW-2C
MW-11A, 11B
GWSW-2
AMW-50
AMW-54A
AMW-54C
AMW-56C
AMW-12A
AMW-19A
AMW-11A
MW-3A
MW-3B
MW-3C
MW-2A
MW-2B
MW-2C
AMW-56A
AMW-19B
AMW-55C
AMW-55A
IWS-2S
AMW-20
AMW-7A
PZ-1
AMW-57
AMW-3A
AMW-21
AMW-6A

Remediation Phase
Remediation Phase Complete
Attainment Phase
Attainment Phase Complete
Excluded from Closure Monitoring Program
Screened in Troudale Aquifer
Containment Vaults
Extraction System Forcemain

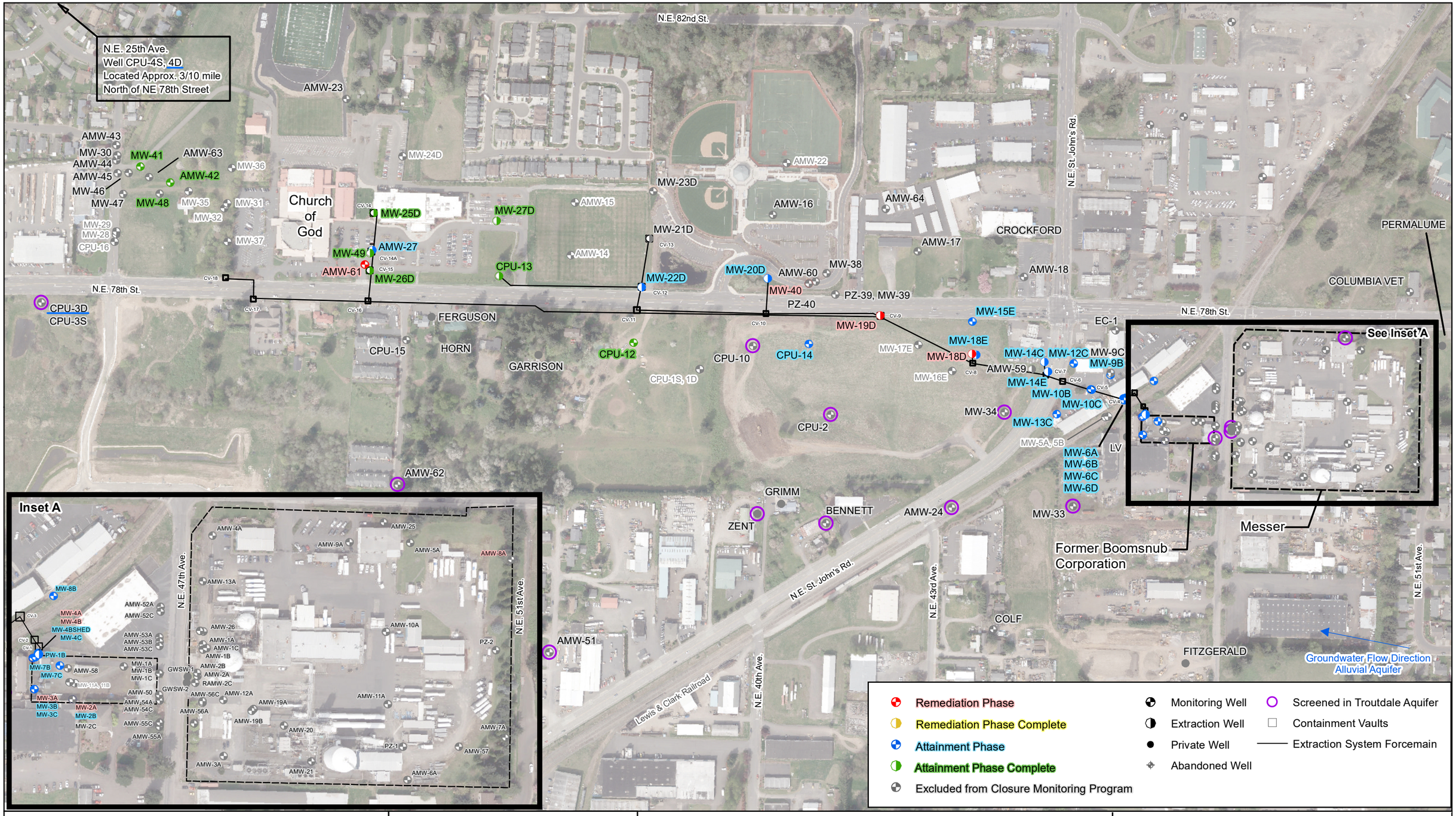
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FIGURE 5-1
STATUS OF CLOSURE MONITORING PROGRAM
VOLATILE ORGANIC COMPOUNDS



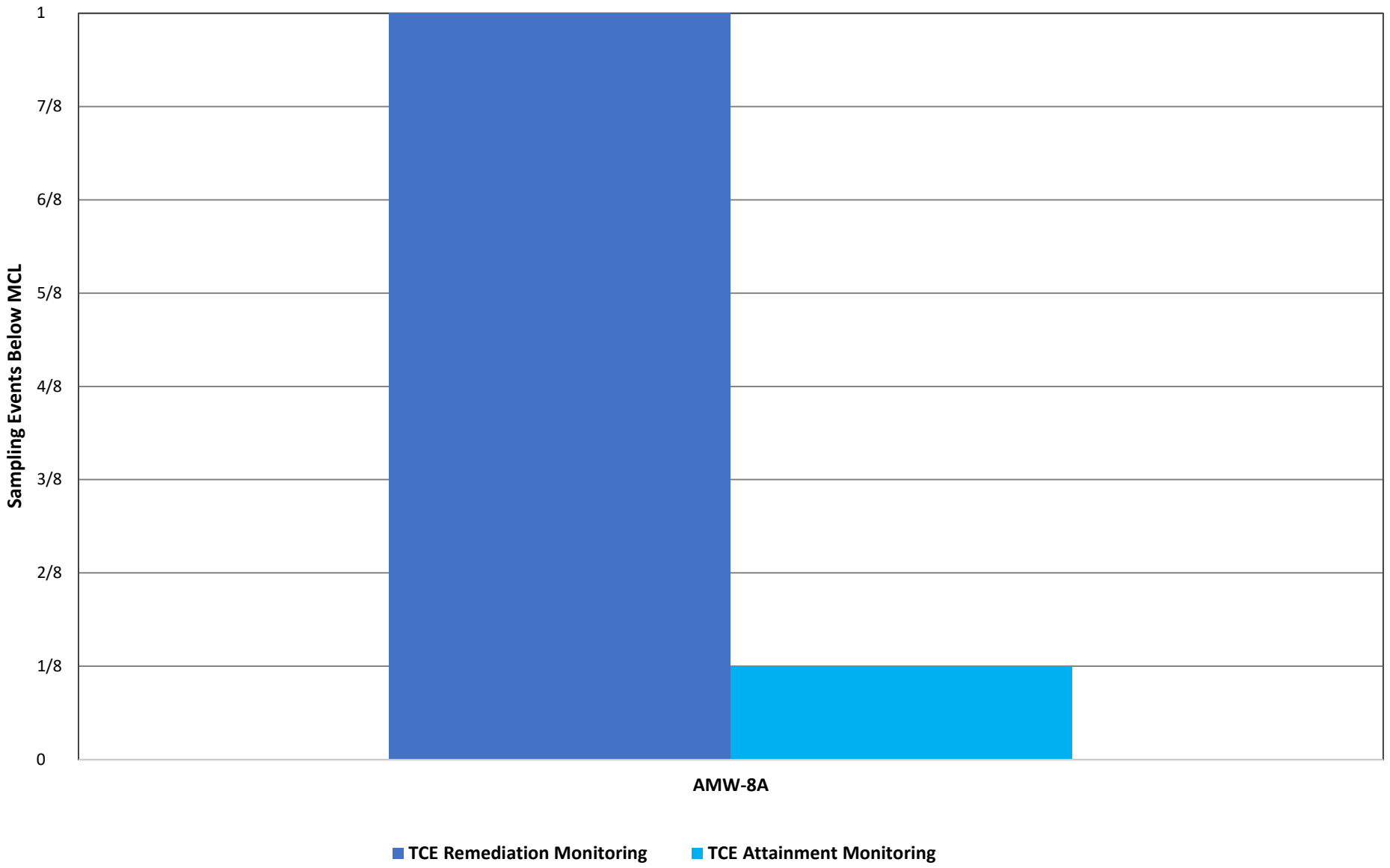
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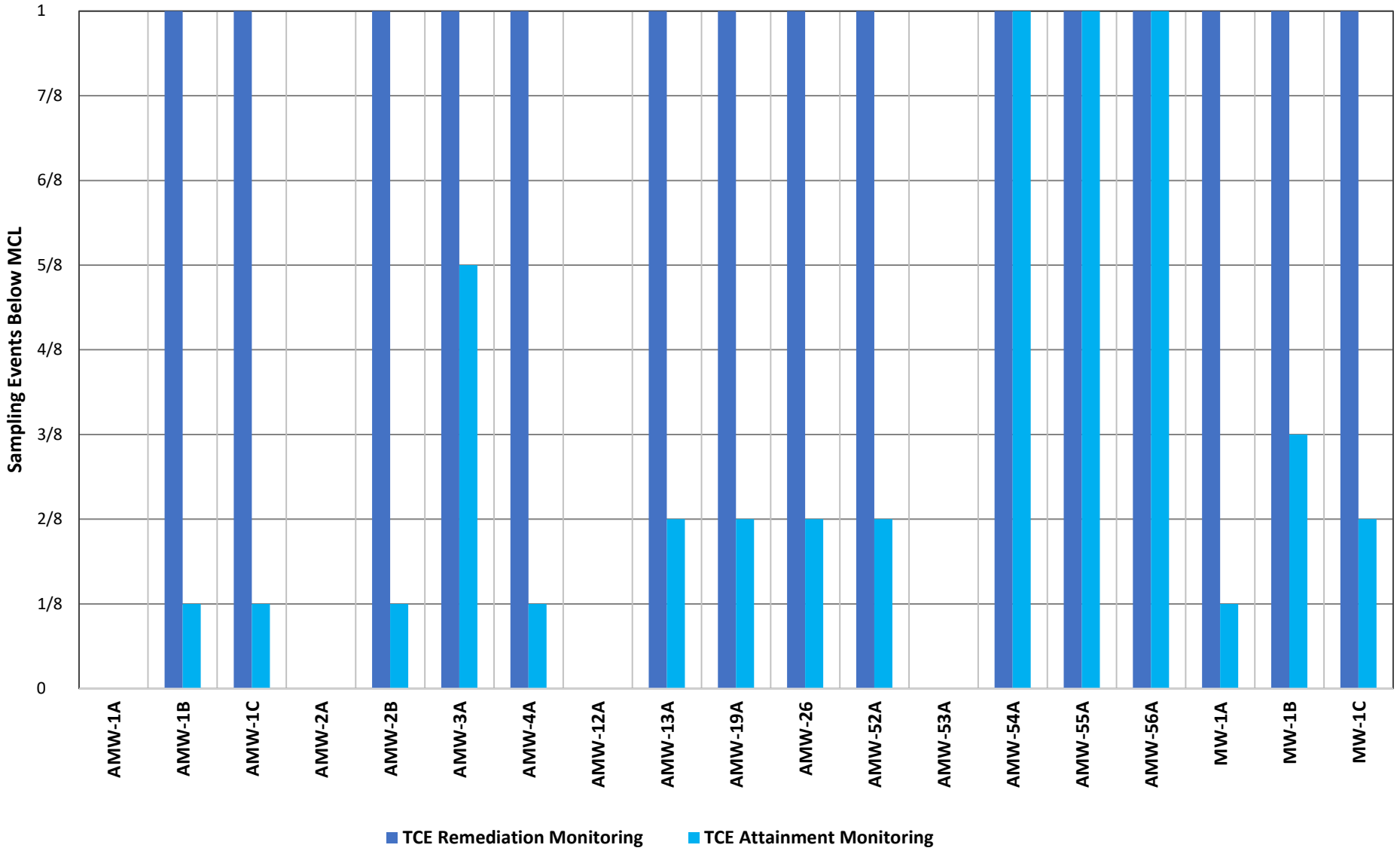
FIGURE 5-2
STATUS OF CLOSURE MONITORING PROGRAM
CHROMIUM

Figure 5-3 - Upgradient Wells Closure Monitoring Progress - Fall 2021



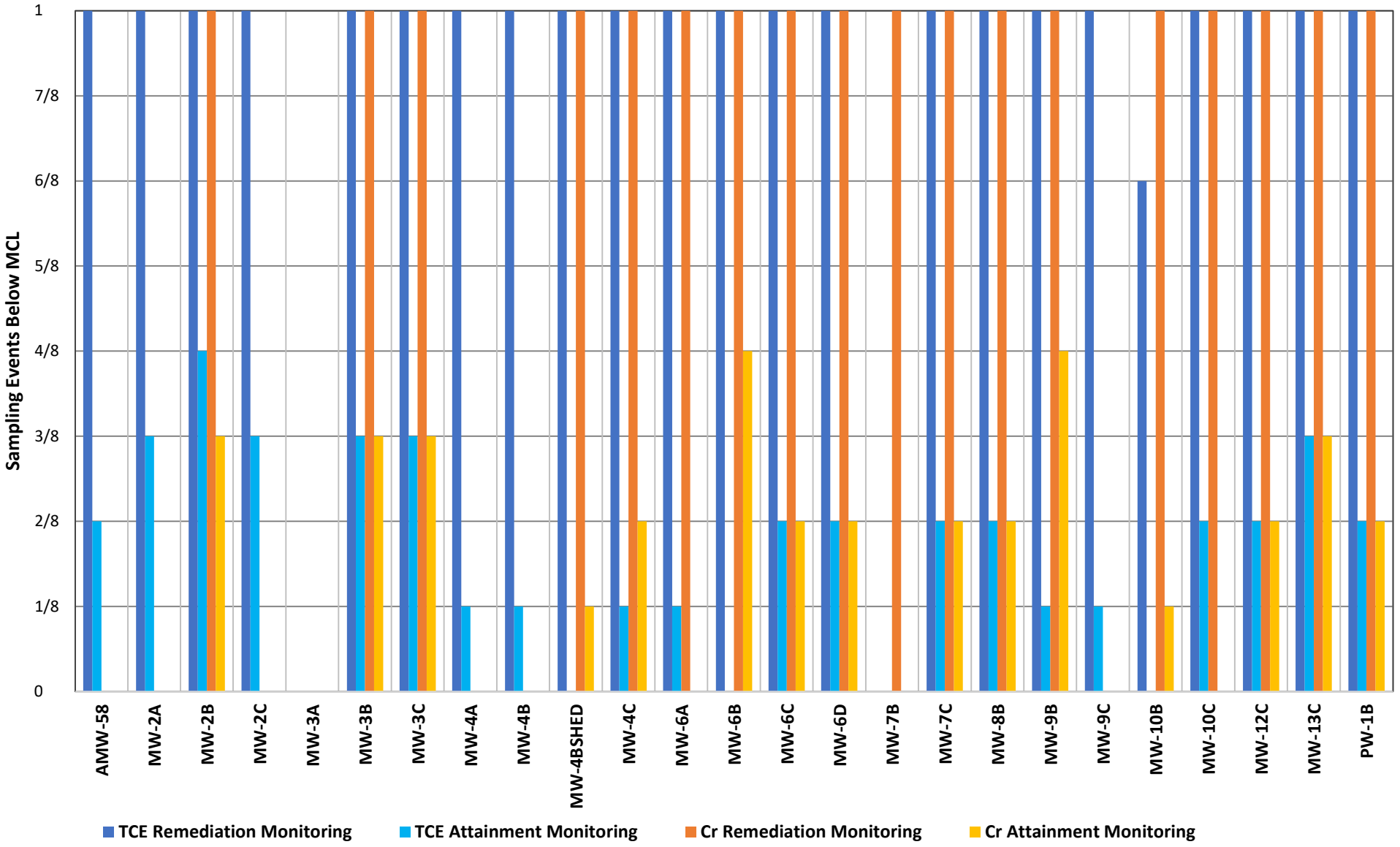
Note: Chromium monitoring not applicable for all Upgradient Wells.

Figure 5-4 - TCE Source Area Wells Closure Monitoring Progress - Fall 2021



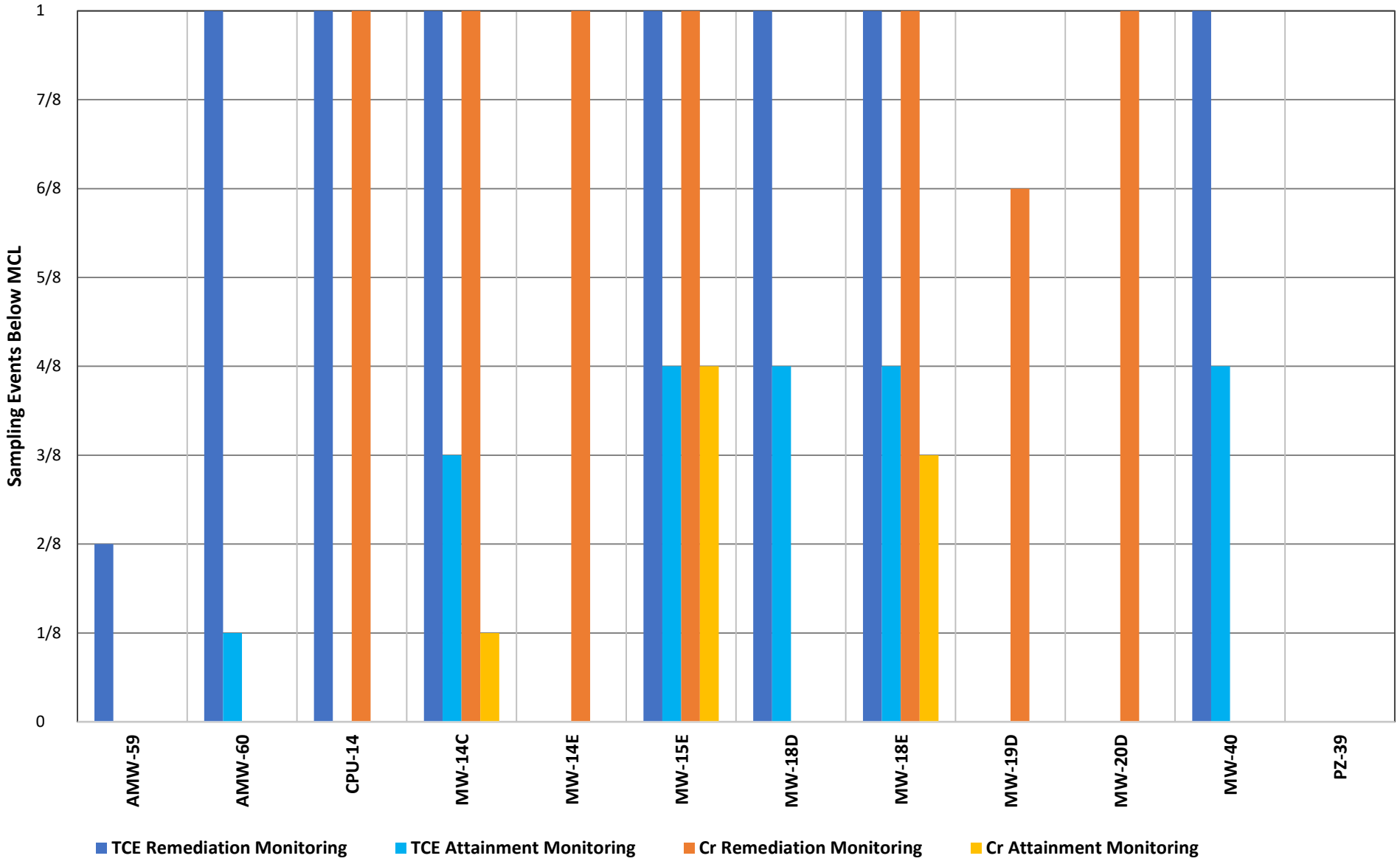
Note: Chromium monitoring not applicable for all TCE Source Area Wells.

Figure 5-5 - Proximal Wells Closure Monitoring Progress - Fall 2021



Note: Chromium monitoring not applicable for AMW-58, MW-2C, and MW-9C. TCE monitoring not applicable for MW-3A.

Figure 5-6 - Intermediate Wells Closure Monitoring Progress - Fall 2021



Note: Chromium monitoring not applicable for AMW-59, AMW-60, and PZ-39

Figure 5-7 - Church of God Wells Closure Monitoring Progress - Fall 2021

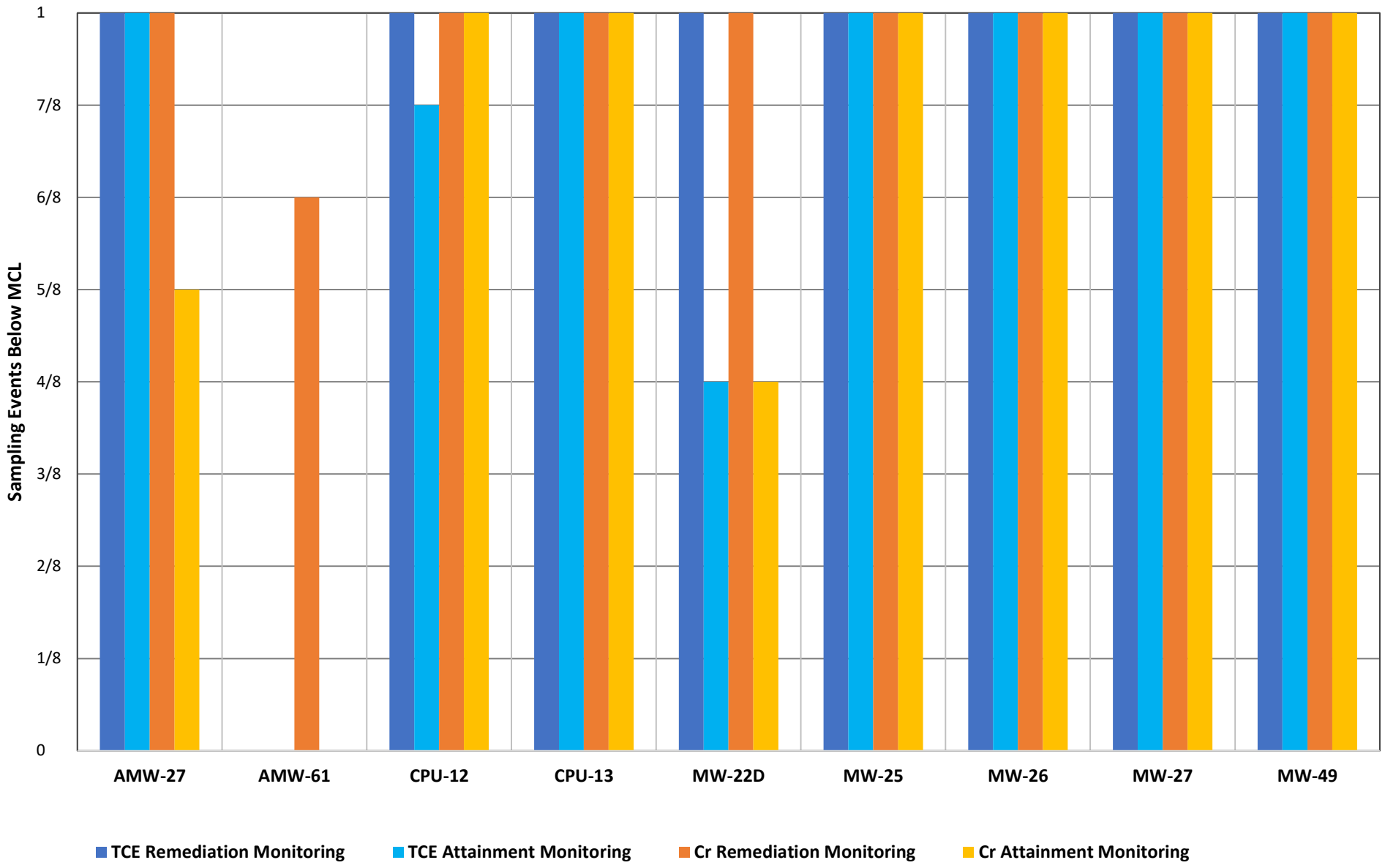
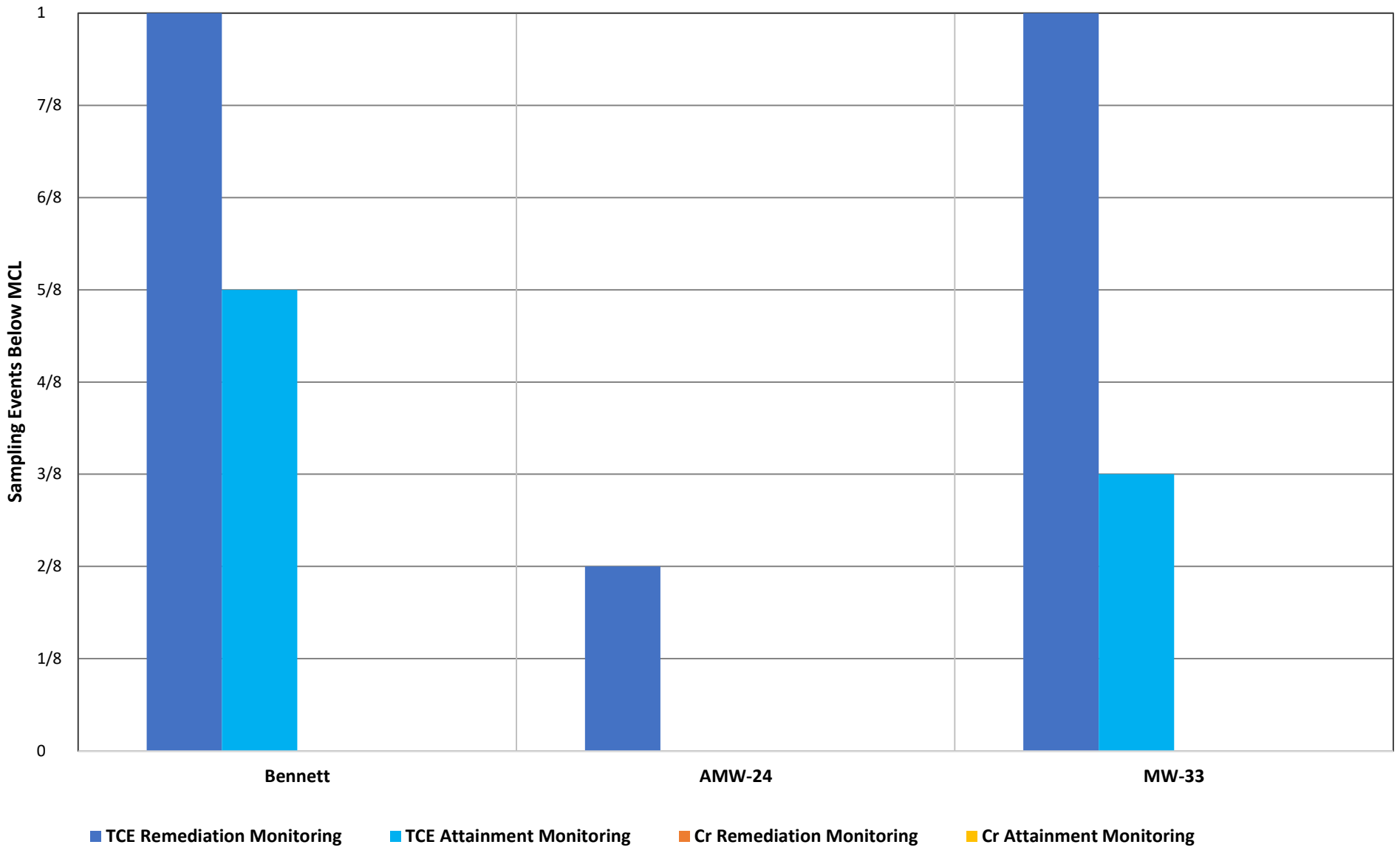
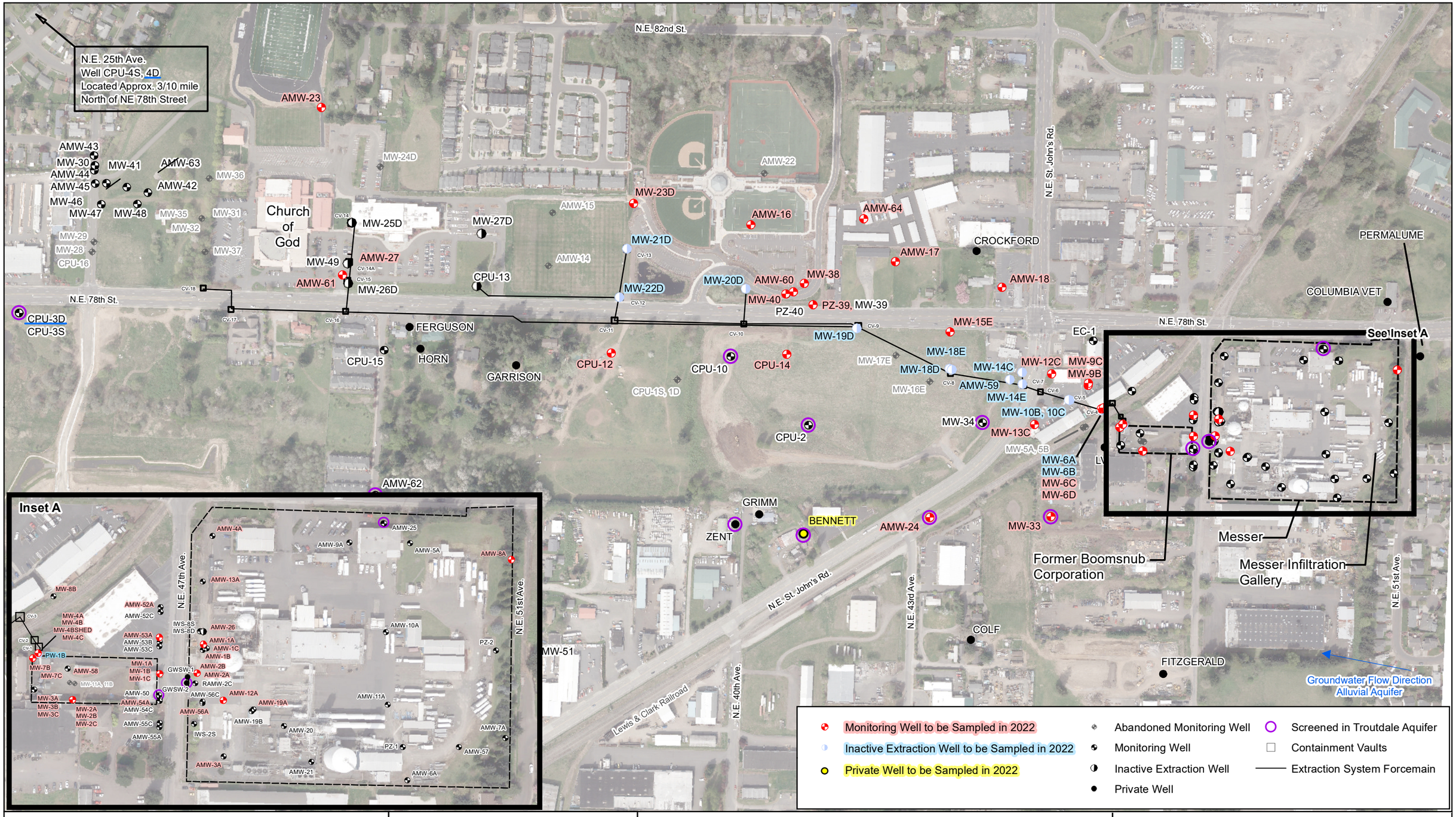


Figure 5-8 - Troutdale Wells Closure Monitoring Progress - Fall 2021



Note: Chromium monitoring not applicable for all Troutdale Wells.



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FIGURE 5-9
WELLS TO BE SAMPLED IN 2022

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Tables

Table 3-1. Summary of Water Level Gauging Data and Groundwater Surface Elevations—Fall 2021

Well ID	Well Type	Total Depth (ft btoc)	Top of Screen (ft btoc)	Bottom of Screen (ft btoc)	Screen Length (ft)	TOC Elevation (ft MSL)	Depth to Water (ft btoc)	Groundwater Surface Elevation (ft MSL)
AMW-1A	M	34.83	24.56	34.56	10	284.09	31.51	252.58
AMW-1B	M	56.49	46.49	56.49	10	284.11	31.60	252.51
AMW-1C	M	79.00	69	79	10	284.06	31.82	252.24
AMW-2A	M	34.51	24.51	34.51	10	284.03	31.61	252.42
AMW-2B	M	59.00	47	57	10	284.11	31.78	252.33
AMW-3A	M	34.00	24.5	34.5	10	283.92	28.65	255.27
AMW-4A	M	34.20	23.9	33.9	10	283.74	31.49	252.25
AMW-5A	M	34.60	24.5	34.5	10	284.14	29.28	254.86
AMW-6A	M/D	33.90	24	34	10	284.56	29.63	254.93
AMW-7A	M/D	34.09	24.25	34.25	10	285.02	29.43	255.59
AMW-8A	M	34.50	24.5	34.5	10	285.49	31.20	254.29
AMW-9A	M	34.50	24.5	34.5	10	283.92	29.49	254.43
AMW-10A	M/D	31.50	21	31	10	284.01	29.18	254.83
AMW-11A	M/D	33.84	23.5	33.5	10	283.21	28.34	254.87
AMW-12A	M	34.55	24.35	34.35	10	283.74	30.95	252.79
AMW-13A	M	34.30	23.8	33.8	10	283.88	30.86	253.02
AMW-16	M	91.28	81.13	91.13	10	266.11	19.79	246.32
AMW-17	M/D	90.38	81	91	10	260.42	12.03	248.29
AMW-18	M	103.65	92.65	102.65	10	278.8	29.32	249.48
AMW-19A	M	35.25	25	35	10	283.94	31.17	252.77
AMW-19B	M	54.50	44.5	54.5	10	283.97	31.20	252.77
AMW-20	M	85.00	25	35	10	283.69	29.21	254.48
AMW-23	M	85.00	75	85	10	278.26	39.60	238.66
AMW-24	M/D	200.00	190	200	10	264.72	132.35	132.37
AMW-25	M/D	225.00	215	225	10	282.94	139.50	143.44
AMW-26	M/D	34.50	24.2	34.2	10	283.02	31.21	251.81
AMW-27	M	88.00	78	88	10	272.6	32.84	239.76
AMW-42	M	99.50	84.2	99.2	15	255.88	26.49	230.92

Well ID	Well Type	Total Depth (ft btoc)	Top of Screen (ft btoc)	Bottom of Screen (ft btoc)	Screen Length (ft)	TOC Elevation (ft MSL)	Depth to Water (ft btoc)	Groundwater Surface Elevation (ft MSL)
AMW-43	M/D	85.00	72	85	13	247.71	14.98	232.73
AMW-44	M/D	81.00	71	81	10	247.82	13.76	234.06
AMW-45	M/D	77.00	67	77	10	244.87	11.81	233.06
AMW-50	M/D	195.19	185.19	195.19	10	282.78	141.13	141.65
AMW-51	M/D	195.70	185.7	195.7	10	258.44	133.81	124.63
AMW-52A	M	34.55	24.55	34.55	10	280.4	28.51	251.89
AMW-52C	M	73.63	63.63	73.63	10	280.38	28.63	251.75
AMW-53A	M	32.63	22.33	32.33	10	281.05	29.06	251.99
AMW-53B	M	54.55	44.55	54.55	10	281.2	29.16	252.04
AMW-53C	M	74.21	64.21	74.21	10	281.41	30.59	250.82
AMW-54A	M	34.30	24.3	34.3	10	283.31	31.20	252.11
AMW-54C	M	74.74	64.74	74.74	10	283.12	31.16	251.96
AMW-55A	M	30.83	20.83	30.83	10	282.11	31.05	251.06
AMW-55C	M	68.45	58.45	68.45	10	282.71	30.63	252.08
AMW-56A	M	35.24	25.24	35.24	10	283.67	31.40	252.27
AMW-56C	M	67.40	57.4	67.4	10	283.67	28.98	254.69
AMW-57	M	75.38	70.08	75.08	5	285.68	31.67	254.01
AMW-58	M	114.73	109.43	114.43	5	280.08	61.88	218.20
AMW-59	M/D	140.04	134.74	139.74	5	269.37	21.08	248.29
AMW-60	M	109.50	104.2	109.2	5	266.45	19.19	247.26
AMW-61	M	97.16	91.86	96.86	5	273.78	45.49	228.29
AMW-62	M/D	196.03	185.73	195.73	10	258.66	133.62	125.04
AMW-63	M	86.43	76.13	86.13	10	257.42	25.07	232.35
AMW-64	M	98.70	88.4	98.4	10	266.13	18.51	247.62
CPU-3S	M	72.72	65.72	70.72	5	246.77	13.45	233.32
CPU-3D	M/D	219.38	212.38	217.38	5	246.77	132.47	114.30
CPU-4S	M	69.30	62.3	67.3	5	234.1	13.66	220.44
CPU-4D	M	210.00	203	208	5	234.05	130.10	103.95
CPU-10	M	198.22	186.9	196.9	10	261.24	128.60	132.64
CPU-12	M	72.20	61.12	71.12	10	275.23	31.83	243.40

Well ID	Well Type	Total Depth (ft btoc)	Top of Screen (ft btoc)	Bottom of Screen (ft btoc)	Screen Length (ft)	TOC Elevation (ft MSL)	Depth to Water (ft btoc)	Groundwater Surface Elevation (ft MSL)
CPU-13	E/O	82.70	71.7	81.7	10	278.99	37.72	241.27
CPU-14	M	71.43	60.43	70.43	10	257.56	19.69	237.87
CPU-15	M	89.49	78.49	88.49	10	275.87	35.22	240.65
MW-1A	M	38.56	28.27	38.27	10	285.49	33.40	252.09
MW-1B	M	59.79	54.49	59.49	5	285.47	33.44	252.03
MW-1C	M	77.44	72.14	77.14	5	285.45	33.45	252.00
MW-2A	M	37.39	32.09	37.09	5	282.57	30.83	251.74
MW-2B	M	57.94	52.64	57.64	5	282.49	30.92	251.57
MW-2C	M	86.94	81.64	86.64	5	282.43	31.08	251.35
MW-3A	M	32.70	22.3	32.3	10	280.21	28.76	251.45
MW-3B	M	56.69	51.39	56.39	5	280.33	28.97	251.36
MW-3C	M	83.69	78.39	83.39	5	280.35	29.05	251.30
MW-4A	M	37.70	26.8	36.8	10	280.3	28.92	251.38
MW-4B	M	44.80	39.7	44.7	5	280.15	29.04	251.11
MW-4BSHED	M	58.20	52.9	57.9	5	280.47	29.16	251.31
MW-4C	M	80.00	74.7	79.7	5	279.9	28.91	250.99
MW-6A	M	31.50	18.25	28.25	10	278.77	28.73	250.04
MW-6B	E/M	59.00	45.75	55.75	10	273.32	23.28	250.04
MW-6C	M	84.80	71.55	81.55	10	278.65	27.81	250.84
MW-6D	M	113.70	100.45	110.45	10	278.9	28.28	250.62
MW-7B	M	57.70	47	57	10	280.02	28.74	251.28
MW-7C	M	80.50	69	79	10	279.94	28.46	251.48
MW-8B	M	60.00	46.9	56.9	10	280.7	29.41	251.29
MW-9B	M	58.00	44.9	54.9	10	275.42	24.60	250.82
MW-9C	M	76.50	65	75	10	275.44	24.81	250.63
MW-10B	E/M	61.50	48	58	10	273.24	22.57	250.67
MW-10C	E/M	81.50	70	80	10	273.25	22.67	250.58
MW-12C	M	82.71	71.2	81.2	10	274.31	23.89	250.42
MW-13C	M	76.53	65.03	75.03	10	271.97	21.54	250.43

Well ID	Well Type	Total Depth (ft btoc)	Top of Screen (ft btoc)	Bottom of Screen (ft btoc)	Screen Length (ft)	TOC Elevation (ft MSL)	Depth to Water (ft btoc)	Groundwater Surface Elevation (ft MSL)
MW-14C	E/M	81.50	70	80	10	271.22	20.98	250.24
MW-14E	E/M	126.00	115	125	10	268.95	19.20	249.75
MW-15E	M	107.23	96.22	106.22	10	265.73	16.65	249.08
MW-18D	E/M	94.40	73.4	93.4	20	262.74	11.96	250.78
MW-18E	M	123.57	112.69	122.69	10	261.77	12.79	248.98
MW-19D	E/M	82.20	76.2	91.2	15	257.98	11.51	246.47
MW-20D	E/M	87.00	76	86	10	269.43	22.83	246.60
MW-21D	E/M	67.00	64.4	74.4	10	265.98	20.54	245.44
MW-22D	E/M	65.20	54	64	10	269.02	22.14	246.88
MW-23D	M	88.10	71.86	86.86	15	265.33	21.09	244.24
MW-25D	E/O	79.05	67.85	77.85	10	272.13	32.07	240.06
MW-26D	E/O	94.20	83	93	10	272.86	33.88	238.98
MW-27D	M	71.20	65.07	75.07	10	273.23	31.04	242.19
MW-30	M/D	63.00	51	61	10	246.75	13.93	232.82
MW-33	M/D	215.00	205	215	10	272.55	134.66	137.89
MW-38	M	81.90	76.92	81.92	5	263.92	16.68	247.24
MW-41	E/M	81.70	71.7	81.7	10	253.08	21.42	233.52
MW-46	E/M	80.30	70	80	10	247.79	15.56	233.31
MW-47	M/D	83.00	72.7	82.7	10	246.39	12.65	233.74
MW-48	M	86.50	76.2	86.2	10	248.82	17.86	234.29
MW-49	M	81.50	71.2	81.2	10	271.68	32.35	239.33
PW-1B	E/M	58.00	48	58	10	276.56	25.17	251.39
PZ-1	PZ	38.79	23.79	38.79	15	284.15	29.17	254.98
PZ-2	PZ	42.97	27.97	42.97	15	286.54	31.08	255.46
PZ-39	M	91.20	89.2	91.2	2	265.41	18.01	247.40

Notes:

Water levels were measured on 15 October 2021.

Groundwater surface elevation is determined by subtracting the depth to water from the top-of-casing elevation.

btoc	=	Below top of casing
E	=	Extraction well
E/M	=	Extraction well (inactive) with pump pulled; sampled using monitoring well techniques
E/O	=	Extraction well with pump turned off
ft	=	Feet
M	=	Monitoring well
M/D	=	Monitoring well with dedicated pump
MSL	=	Mean sea level
NA	=	Not applicable
NM	=	Not measured
PZ	=	Piezometer
TOC	=	Top of casing

Table 3-2. Extraction and Monitoring Well Groupings

Well Group	AMW Wells		MW Wells		Other Wells
Upgradient	AMW-6A AMW-7A **AMW-8A** AMW-10A AMW-11A				
TCE Source (OU-2)	**AMW-1A** **AMW-2A** AMW-3A **AMW-4A** **AMW-12A**	AM-19A AMW-26 **AMW-53A** AMW-54A AMW-56A	**MW-1A** **MW-1B**		
Proximal			**MW-2A** **MW-2B** **MW-3A** MW-3C **MW-4A** **MW-4B** **MW-4BSHED** **MW-4C** **MW-6A** **MW-6B**	MW-6C MW-6D **MW-7B** **MW-9B** **MW-9C** **MW-10B** **MW-10C** MW-12C **MW-13C**	**PW-1B**
Intermediate	**AMW-59** **AMW-60**		**MW-14C** **MW-14E** **MW-15E** **MW-18D** **MW-18E**	**MW-19D** **MW-20D** **MW-40**	**CPU-14** **PZ-39**
Northern Plume	**AMW-16** **AMW-17** **AMW-18**	**AMW-23** **AMW-64**	**MW-23D** **MW-38**	**MW-21D**	
Church of God	**AMW-27** **AMW-61**			**MW-22D**	**CPU-12**
Toe of Plume	AMW-63 AMW-44		MW-41		
Troutdale Aquifer	**AMW-24**		**MW-33**		**Bennett**

Notes:

- Wells shown in **bold** and shaded were sampled during the 2021 Reporting year.
- Only wells being sampled as part of the current monitoring plan (EA 2018a) are listed on this table (and does not include wells where sampling is on hold).
- Northern Plume wells include those currently impacted by the off-site Northern Plume.
- AMW wells were installed by Messer LLC.
- MW wells were installed by the U.S. Environmental Protection Agency or Washington Department of Ecology.
- CPU wells were installed by Clark Public Utilities.

Table 3-3a. Summary of Chromium and Selected VOC Concentrations in Groundwater Samples—Winter and Spring 2021

Well Group	Well	Sampling Event	Chromium	TCE	PCE	CFC-11	1,1,1-TCA	1,1-DCE	Cis-1,2-DCE	BDCM
Church of God Wells	AMW-27	Winter 2021	NA	3.5	1.1	0.50 U	0.50 U	0.10 J	0.29 J	0.50 U
	CPU-12	Winter 2021	8.59	3.0	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-22D	Winter 2021	62.8	3.1	1.7	0.50 U	0.50 U	0.10 J	0.50 U	0.50 U
	MW-22D	Spring 2021	68.2	4.0	1.8	0.13 J	0.50 U	0.090 J	0.50 U	0.50 U
Intermediate Plume Wells	AMW-59	Winter 2021	11.6	**16**	0.50 U	0.50 U	0.50 U	**2.4**	18	0.50 U
	AMW-59	Spring 2021	12.2	**6.0**	0.50 U	0.50 U	0.50 U	0.98	11	0.50 U
	CPU-14	Spring 2021	NA	2.9	0.50 U	0.50 U	0.10 J	0.50 U	0.50 U	0.50 U
	MW-14C	Winter 2021	74.6	2.9	0.71	0.15 J	0.11 J	0.50 U	0.50 U	0.31 J
	MW-14C	Spring 2021	**84.1**	2.8	0.58	0.12 J	0.090 J	0.50 U	0.080 J	0.11 J
	MW-14E	Winter 2021	**166**	**10**	2.4	0.50 U	0.18 J	0.16 J	0.24 J	0.50 U
	MW-14E	Spring 2021	**234**	**8.4**	2.9	0.50 U	0.080 J	0.50 U	0.20 J	0.50 U
	MW-15E	Winter 2021	10.3	1.5	0.26 J	0.12 J	0.50 U	0.50 U	0.50 U	0.50 U
	MW-18D	Winter 2021	**127**	3.4	0.61	0.50 U	0.50 U	0.50 U	3.8	0.50 U
	MW-18D	Spring 2021	**158**	3.5	0.57	0.50 U	0.50 U	0.50 U	4.0	0.12 J
	MW-18E	Winter 2021	4.18	0.22 J	0.50 U	0.50 U	0.50 U	0.50 U	0.74	0.50 U
	MW-18E	Spring 2021	NA	0.47 J	0.50 U	0.50 U	0.50 U	0.50 U	0.69	0.50 U
	MW-19D	Winter 2021	**122**	**7.7**	1.0	0.50 U	0.50 U	0.25 J	1.7	0.50 U
	MW-19D	Spring 2021	59.6	**9.2**	1.3	0.50 U	0.50 U	0.29 J	4.3	0.50 U
	MW-20D	Winter 2021	79.2	**6.9**	0.60	0.50 U	0.50 U	0.50 U	0.50 U	0.20 J
	MW-20D	Spring 2021	**86.4**	**11**	1.1	0.50 U	0.10 J	0.13 J	0.10 J	0.50 U
	MW-40	Winter 2021	**124**	0.89	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.24 J
	PZ-39	Winter 2021	15.0	**36**	0.62	1.5	0.65	**1.8**	0.51	0.50 U
	PZ-39	Spring 2021	6.49	**39**	0.80	0.91	0.51	**1.5**	1.8	0.50 U
Northern Plume Well	MW-21D	Spring 2021	NA	1.5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-38	Winter 2021	NA	**14**	0.51	0.19 J	0.090 J	0.11 J	0.50 U	0.50 U
	MW-38	Spring 2021	NA	**22**	0.73	0.12 J	0.080 J	0.50 U	0.50 U	0.50 U
	AMW-16	Spring 2021	NA	**22**	0.11 J	0.50 U	0.21 J	0.20 J	0.10 J	0.50 U
	AMW-17	Spring 2021	NA	**46**	0.22 J	0.50 U	0.090 J	0.50 U	0.50 U	0.50 U

Well Group	Well	Sampling Event	Chromium	TCE	PCE	CFC-11	1,1,1-TCA	1,1-DCE	Cis-1,2-DCE	BDCM
Northern Plume Wells	AMW-18	Spring 2021	NA	**17**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	AMW-64	Spring 2021	NA	**8.4**	0.50 U	0.12 J	0.10 J	0.50 U	0.070 J	0.50 U
	MW-23D	Spring 2021	NA	**72**	0.50 U	0.50 U	0.40 J	0.80	0.25 J	0.50 U
Proximal Wells	MW-10B	Spring 2021	NA	2.3	0.51	0.13 J	0.50 U	0.50 U	0.50 U	0.50 U
	MW-13C	Winter 2021	39.8	4.5	0.91	0.50 U	0.090 J	0.50 U	0.50 U	0.32 J
	MW-2A	Winter 2021	NA	0.94	0.52	0.14 J	0.50 U	0.50 U	0.50 U	0.50 U
	MW-2B	Winter 2021	5.90	1.4	0.35 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-2C	Winter 2021	NA	0.38 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-3A	Winter 2021	**131**	NA	NA	NA	NA	NA	NA	NA
	MW-3A	Spring 2021	**140**	NA	NA	NA	NA	NA	NA	NA
	MW-4A	Winter 2021	**263**	NA	NA	NA	NA	NA	NA	NA
	MW-4A	Spring 2021	**380**	NA	NA	NA	NA	NA	NA	NA
	MW-4B	Winter 2021	**87.1**	NA	NA	NA	NA	NA	NA	NA
	MW-4B	Spring 2021	**107**	NA	NA	NA	NA	NA	NA	NA
	MW-4C	Winter 2021	65.0	NA	NA	NA	NA	NA	NA	NA
	MW-4C	Spring 2021	**97.2**	NA	NA	NA	NA	NA	NA	NA
	MW-6A	Winter 2021	15.9	NA	NA	NA	NA	NA	NA	NA
	MW-6A	Spring 2021	11.1	NA	NA	NA	NA	NA	NA	NA
	MW-6B	Winter 2021	38.5	NA	NA	NA	NA	NA	NA	NA
	MW-6B	Spring 2021	70.8	NA	NA	NA	NA	NA	NA	NA
	MW-9B	Winter 2021	13.6	NA	NA	NA	NA	NA	NA	NA
	MW-9B	Spring 2021	5.69	NA	NA	NA	NA	NA	NA	NA
TCE Source Wells	AMW-12A	Winter 2021	NA	**11**	0.43 J	3.3	0.63	0.50 U	0.090 J	0.50 U
	AMW-12A	Spring 2021	0.90	**12**	0.47 J	2.7	0.46 J	0.50 U	0.18 J	0.50 U
	AMW-1A	Winter 2021	NA	4.8	0.82	7.7	0.98	0.43 J	12	0.50 U
	AMW-1A	Spring 2021	NA	**6.2**	0.20 J	8.8	0.67	0.50 U	0.50 U	0.50 U
	AMW-2A	Winter 2021	NA	**6.3**	0.86	0.25 J	0.50 U	0.13 J	0.23 J	0.50 U
	AMW-2A	Spring 2021	NA	**54**	1.0	5.5	1.4	0.50 U	0.47 J	0.50 U
	AMW-4A	Winter 2021	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	AMW-53A	Winter 2021	NA	**28**	0.96	28	4.0	0.26 J	0.39 J	0.50 U

Well Group	Well	Sampling Event	Chromium	TCE	PCE	CFC-11	1,1,1-TCA	1,1-DCE	Cis-1,2-DCE	BDCM
TCE Source Wells	AMW-53A	Spring 2021	NA	**9.3**	0.43 J	6.7	0.81	0.50 U	0.14 J	0.50 U
	MW-1A	Winter 2021	NA	0.41 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-1A	Spring 2021	NA	0.24 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-1B	Winter 2021	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Troutdale Wells	BENNETT	Winter 2021	NA	1.0	0.50 U	0.50 U	0.50 U	0.50 U	0.19 J	0.50 U
	MW-33	Winter 2021	NA	3.0	0.50 U	0.50 U	0.50 U	0.28 J	0.70	0.50 U
	MW-33	Spring 2021	NA	0.92	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Cleanup or Guidance Level			80	5	5	2,400	200	1	70	1

NOTES:

Only commonly detected VOCs are included in this table
Results are in micrograms per liter (µg/L).
Results in **blue bold** exceed the established cleanup or guidance level for the compound.
The concentrations listed in the table are the maximum of the primary and duplicate samples (as applicable).
1,1,1-TCA = 1,1,1-Tricholoroethane
1,1-DCE = 1,1-Dichloroethene
BDCM = Bromodichloromethane
CFC-11 = Trichlorofluoromethane
Cis-1,2-DCE = cis-1,2-Dichloroethene
E = The result is an estimated concentration because the value exceeded the instrument calibration range.
J = The result is an estimated concentration that is less than the method reporting limit but greater than or equal to the method detection limit.
NA = The sample was not analyzed for the specified compound.
PCE = Tetrachloroethene
TCE = Trichloroethene
U = Analyte not detected above the specified reporting limit.
* = Filtered sample, unfiltered sample result 398 (µg/L).

Table 3-3b. Summary of Chromium and Selected VOC Concentrations in Groundwater Samples — Summer and Fall 2021

Well Group	Well	Sampling Event	Chromium	TCE	PCE	CFC-11	1,1,1-TCA	1,1-DCE	Cis-1,2-DCE	BDCM
Church of God Wells	AMW-27	Summer 2021	38.3	1.6	0.39 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	AMW-61	Fall 2021	NA	**5.5**	2.0	0.50 U	0.080 J	0.14 J	0.50 U	0.50 U
	MW-22D	Summer 2021	57.4	3.5	1.9	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Intermediate Plume Wells	AMW-59	Summer 2021	11.1	**9.3**	0.50 U	0.50 U	0.50 U	**1.8**	17	0.50 U
	AMW-59	Fall 2021	NA	0.39 J	0.50 U	0.50 U	0.50 U	0.27 J	5.7	0.50 U
	AMW-60	Fall 2021	NA	0.26 J	0.50 U	0.50 U	0.50 U	**3.8**	0.69	0.50 U
	CPU-14	Summer 2021	NA	4.4	0.50 U	0.12 J	0.14 J	0.50 U	0.50 U	0.50 U
	CPU-14	Fall 2021	**165**	1.0	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-14C	Summer 2021	NA	2.8	0.65	0.17 J	0.11 J	0.50 U	0.50 U	0.50 U
	MW-14C	Fall 2021	37.7	2.5	0.58	0.12 J	0.50 U	0.50 U	0.50 U	0.50 U
	MW-14E	Summer 2021	**176**	**12**	2.7	0.50 U	0.11 J	0.50 U	0.14 J	0.50 U
	MW-14E	Fall 2021	**192**	**19**	3.3	0.50 U	0.16 J	0.50 U	0.58	0.50 U
	MW-15E	Summer 2021	11.2	2.6	0.35 J	0.12 J	0.50 U	0.50 U	0.50 U	0.50 U
	MW-15E	Fall 2021	10.5	3.0	0.29 J	0.12 J	0.50 U	0.50 U	0.50 U	0.50 U
	MW-18D	Summer 2021	**177**	3.6	0.56	0.50 U	0.50 U	0.13 J	6.9	0.50 U
	MW-18E	Summer 2021	NA	0.43 J	0.50 U	0.50 U	0.50 U	0.50 U	0.32 J	0.50 U
	MW-19D	Summer 2021	66.1	**6.0**	1.1	0.50 U	0.50 U	0.20 J	6.8	0.50 U
	MW-19D	Fall 2021	63.2	**7.4**	1.1	0.50 U	0.50 U	0.50 U	1.1	0.50 U
	MW-20D	Summer 2021	**81.5**	**6.8**	0.85	0.14 J	0.16 J	0.10 J	0.50 U	0.15 J
	MW-20D	Fall 2021	**115**	**9.4**	1.2	0.13 J	0.10 J	0.16 J	0.50 U	0.50 U
	MW-40	Fall 2021	**135**	0.96	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.54
	PZ-39	Summer 2021	7.78	**42**	0.86	1.7	0.62	**2.1**	5.6	0.50 U
	PZ-39	Fall 2021	NA	**37**	0.91	2.0	0.65	**1.7**	8.0	0.50 U
Northern Plume Wells	MW-21D	Fall 2021	NA	1.5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-38	Summer 2021	NA	**27**	0.90	0.15 J	0.080 J	0.50 U	0.50 U	0.50 U
	MW-38	Fall 2021	NA	**25**	0.84	0.17 J	0.090 J	0.080 J	0.50 U	0.50 U
	AMW-16	Fall 2021	NA	**27**	0.50 U	0.50 U	0.25 J	0.21 J	0.50 U	0.50 U
	AMW-17	Fall 2021	NA	**42**	0.23 J	0.50 U	0.080 J	0.50 U	0.50 U	0.50 U
	AMW-18	Fall 2021	NA	**16**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U

Table 3-3b. Summary of Chromium and Selected VOC Concentrations in Groundwater Samples — Summer and Fall 2021

Well Group	Well	Sampling Event	Chromium	TCE	PCE	CFC-11	1,1,1-TCA	1,1-DCE	Cis-1,2-DCE	BDCM
Northern Plume Wells	AMW-64	Fall 2021	NA	**9.3**	0.50 U	0.50 U	0.10 J	0.50 U	0.070 J	0.50 U
	MW-23D	Fall 2021	NA	**61**	0.50 U	0.50 U	0.44 J	0.80	0.27 J	0.50 U
Proximal Source Wells	AMW-58	Summer 2021	12.6	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	AMW-58	Fall 2021	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-10B	Summer 2021	NA	2.6	0.65	0.29 J	0.50 U	0.50 U	0.50 U	0.50 U
	MW-10B	Fall 2021	**116**	1.4	0.25 J	1.2	0.12 J	0.50 U	0.50 U	0.50 U
	MW-10C	Summer 2021	**238**	2.0	0.48 J	0.90	0.12 J	0.50 U	0.50 U	0.50 U
	MW-10C	Fall 2021	74.5	2.6	0.38 J	0.37 J	0.50 U	0.50 U	0.50 U	0.50 U
	MW-12C	Summer 2021	11.3	3.3	0.33 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-12C	Fall 2021	13.8	1.2	0.25 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-13C	Summer 2021	46.3	2.8	0.74	0.50 U	0.10 J	0.50 U	0.50 U	0.19 J
	MW-13C	Fall 2021	43.2	1.3	0.63	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-2A	Summer 2021	NA	0.82	0.49 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-2A	Fall 2021	**330**	0.76	0.35 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-2B	Summer 2021	10.5	1.6	0.41 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-2B	Fall 2021	7.28	0.97	0.29 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-2C	Summer 2021	28.3	0.38 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-2C	Fall 2021	NA	0.27 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-3A	Summer 2021	**113**	NA	NA	NA	NA	NA	NA	NA
	MW-3A	Fall 2021	**129**	NA	NA	NA	NA	NA	NA	NA
	MW-3B	Summer 2021	7.16	1.4	0.45 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-3B	Fall 2021	6.74	1.3	0.45 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-3C	Summer 2021	31.2	1.3	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-3C	Fall 2021	10.5	1.6	0.39 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-4A	Summer 2021	**890**	NA	NA	NA	NA	NA	NA	NA
	MW-4A	Fall 2021	**589**	2.0	0.60	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-4B	Summer 2021	**204**	NA	NA	NA	NA	NA	NA	NA
	MW-4B	Fall 2021	**124**	2.5	0.49 J	0.24 J	0.11 J	0.50 U	0.50 U	0.10 J
	MW-4BSHED	Fall 2021	72.7	2.4	0.56	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U

Table 3-3b. Summary of Chromium and Selected VOC Concentrations in Groundwater Samples — Summer and Fall 2021

Well Group	Well	Sampling Event	Chromium	TCE	PCE	CFC-11	1,1,1-TCA	1,1-DCE	Cis-1,2-DCE	BDCM
Proximal Source Wells	MW-4C	Summer 2021	52.2	NA	NA	NA	NA	NA	NA	NA
	MW-4C	Fall 2021	45.4	1.0	0.36 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-6A	Summer 2021	37.9	NA	NA	NA	NA	NA	NA	NA
	MW-6A	Fall 2021	68.1	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-6B	Summer 2021	33.1	NA	NA	NA	NA	NA	NA	NA
	MW-6B	Fall 2021	35.4	**30**	0.46 J	8.9	1.8	0.30 J	0.76	0.10 J
	MW-6C	Summer 2021	13.9	0.47 J	0.11 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-6C	Fall 2021	23.8	0.47 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-6D	Summer 2021	13.8	1.2	0.50 U	0.50 U	0.50 U	0.12 J	0.50 U	0.50 U
	MW-6D	Fall 2021	17.2	0.48 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-7C	Summer 2021	10.8	0.21 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-7C	Fall 2021	8.50	0.30 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-8B	Summer 2021	15.1	1.2	0.72	0.33 J	0.50 U	0.50 U	0.50 U	0.50 U
	MW-8B	Fall 2021	7.65	1.2	0.43 J	1.3	0.10 J	0.50 U	0.50 U	0.50 U
	MW-9B	Summer 2021	18.3	NA	NA	NA	NA	NA	NA	NA
	MW-9B	Fall 2021	12.1	1.4	0.53	5.1	0.14 J	0.50 U	0.50 U	0.50 U
	MW-9C	Summer 2021	17.4	1.2	0.23 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-9C	Fall 2021	NA	0.83	0.16 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	PW-1B	Summer 2021	61.4	2.7	0.58	0.14 J	0.50 U	0.50 U	0.50 U	0.50 U
	PW-1B	Fall 2021	40.3	3.1	0.52	0.17 J	0.11 J	0.50 U	0.50 U	0.50 U
TCE Source Wells	AMW-12A	Summer 2021	NA	**6.6**	0.40 J	1.2	0.24 J	0.50 U	0.16 J	0.50 U
	AMW-12A	Fall 2021	NA	**5.6**	0.34 J	1.0	0.28 J	0.50 U	0.50 U	0.50 U
	AMW-13A	Summer 2021	NA	0.50 U	0.50 U	0.45 J	0.50 U	0.50 U	0.50 U	0.50 U
	AMW-13A	Fall 2021	NA	0.50 U	0.50 U	0.46 J	0.50 U	0.50 U	0.50 U	0.50 U
	AMW-19A	Summer 2021	NA	1.6	0.30 J	2.0	0.16 J	0.50 U	0.50 U	0.50 U
	AMW-19A	Fall 2021	NA	1.2	0.29 J	2.0	0.15 J	0.50 U	0.50 U	0.10 J
	AMW-1A	Summer 2021	NA	**5.3**	0.21 J	8.5	0.65	0.50 U	0.50 U	0.50 U
	AMW-1A	Fall 2021	NA	**15**	0.38 J	17	2.5	0.50 U	0.21 J	0.50 U
	AMW-1B	Fall 2021	NA	0.15 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U

Table 3-3b. Summary of Chromium and Selected VOC Concentrations in Groundwater Samples — Summer and Fall 2021

Well Group	Well	Sampling Event	Chromium	TCE	PCE	CFC-11	1,1,1-TCA	1,1-DCE	Cis-1,2-DCE	BDCM
TCE Source Wells	AMW-1C	Fall 2021	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	AMW-26	Summer 2021	NA	2.9	0.31 J	14	0.67	0.50 U	0.50 U	0.50 U
	AMW-26	Fall 2021	NA	2.9	0.38 J	13	0.74	0.50 U	0.50 U	0.50 U
	AMW-2A	Summer 2021	NA	**52**	0.91	4.9	1.5	0.50 U	0.61	0.50 U
	AMW-2A	Fall 2021	NA	**47**	1.1	6.9	2.3	0.50 U	0.38 J	0.50 U
	AMW-2B	Fall 2021	NA	0.23 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	AMW-3A	Summer 2021	NA	0.80	0.49 J	0.15 J	0.50 U	0.50 U	0.50 U	0.50 U
	AMW-4A	Summer 2021	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	AMW-4A	Fall 2021	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	AMW-52A	Summer 2021	NA	0.50 U	0.50 U	0.57	0.50 U	0.50 U	0.50 U	0.50 U
	AMW-52A	Fall 2021	NA	0.50 U	0.50 U	0.71	0.50 U	0.50 U	0.50 U	0.50 U
	AMW-53A	Summer 2021	NA	**22**	1.3	9.5	1.7	0.50 U	0.28 J	0.50 U
	AMW-53A	Fall 2021	NA	**18**	0.88	5.1	0.88	0.50 U	0.12 J	0.50 U
	MW-1A	Summer 2021	NA	0.44 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-1A	Fall 2021	NA	0.32 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-1B	Summer 2021	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-1B	Fall 2021	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-1C	Summer 2021	NA	0.24 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-1C	Fall 2021	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
TCE Upgradient Wells	AMW-8A	Fall 2021	NA	0.57	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Troutdale Wells	AMW-24	Fall 2021	NA	4.9	0.50 U	0.50 U	0.50 U	0.48 J	0.99	0.50 U
	BENNETT	Summer 2021	NA	2.5	0.50 U	0.50 U	0.50 U	0.28 J	0.64	0.50 U
	MW-33	Summer 2021	NA	0.99	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	MW-33	Fall 2021	NA	2.4	0.50 U	0.50 U	0.50 U	0.30 J	0.50	0.50 U
Cleanup or Guidance Level	80	5	5	2,400	200	1	70	1		

Table 3-3b. Summary of Chromium and Selected VOC Concentrations in Groundwater Samples — Summer and Fall 2021

Notes:

Only commonly detected VOCs are included in this table
No extraction wells active in 2021.
Results are in micrograms per liter (µg/L).
Results in **blue bold** exceed the established cleanup or guidance level for the compound.
The concentrations listed in the table are the maximum of the primary and duplicate samples (as applicable).

1,1,1-TCA	=	1,1,1-Tricholoroethane
1,1-DCE	=	1,1-Dichloroethene
BDCM	=	Bromodichloromethane
CFC-11	=	Trichlorofluoromethane
Cis-1,2-DCE	=	cis-1,2-Dichloroethene
J	=	The result is an estimated concentration that is less than the method reporting limit but greater than or equal to the method detection limit.
NA	=	The sample was not analyzed for the specified compound.
PCE	=	Tetrachloroethene
TCE	=	Trichloroethene
U	=	Analyte not detected above the specified reporting limit.

Table 3-4 Phase II In-Situ Injection Performance Monitoring

Area	Performance Well Location	Upgradient Treatment Row #	Sample Date	Pre- or Post Injection Event	Primary Parameters		Field Parameters		Breakdown Products			Concentration (ug/L)				Molar Concentration (µM)					Change from Baseline Event
					TCE (µg/L)	Cr (µg/L)	DO (mg/L)	ORP (mV)	Cis-DCE (µg/L)	Trans-DCE (µg/L)	Vinyl Chloride (µg/L)	TCE (µg/L)	Cis-DCE (µg/L)	Trans-DCE (µg/L)	Vinyl Chloride (µg/L)	TCE (µM)	Cis-DCE (µM)	Trans-DCE (µM)	Vinyl Chloride (µM)	Total	
AOC-1	MW-1A	11	Oct-19	Pre	15	--	--	--	0.50 U	0.50 U	0.50 U	15	--	--	--	0.11	--	--	--	0.115	
			Apr-20		4.8	--	--	--	0.50 U	0.50 U	0.50 U	4.8	--	--	--	0.04	--	--	--	0.037	
			Oct-20	Post	NS	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	-	--	--	NS	NS
			Feb-21		0.41 J	--	50	301	0.50 U	0.50 U	0.50 U	0.41	--	--	--	0.00	--	--	--	0.003	-97%
			Apr-21		0.24 J	--			0.50 U	0.50 U	0.50 U	0.24	--	--	--	0.00	--	--	--	0.002	-98%
			Jul-21		0.44 J	--			0.50 U	0.50 U	0.50 U	0.44	--	--	--	0.00	--	--	--	0.003	-97%
			Oct-21		0.32 J	--	4.79	279.1	0.50 U	0.50 U	0.50 U	0.32	--	--	--	0.00	--	--	--	0.002	-98%
	AMW-1A	13	Oct-19	Pre	21	--	--	--	0.23 J	0.50 U	0.50 U	21	0.23	--	--	0.16	0.002	--	--	0.163	
			Apr-20		9.2	--	--	--	0.13 J	0.50 U	0.50 U	9.2	0.13	--	--	0.07	0.001	--	--	0.072	
			Oct-20	Post	DRY	--	DRY	DRY	DRY	DRY	DRY					0.00	0.000	0.00	0.00	NS	DRY
			Feb-21		4.8	--	11.64	252.7	12	0.50 U	0.50 U	4.8	12	--	--	0.04	0.124	--	--	0.160	-1%
			Apr-21		6.2		5.04	121.3	0.5 U	0.5 U	0.5 U	6.2	--	--	--	0.05	--	--	--	0.047	-71%
			Jul-21		5.3				0.5 U	0.5 U	0.5 U	5.3	--	--	--	0.04	--	--	--	0.040	-75%
			Oct-21		15		3.86	187.6	0.21 J	0.5 U	0.5 U	15	0.21	--	--	0.04	0.124	--	--	0.160	-1%
	AMW-2A	14	Oct-19	Pre	12 J	--	--	--	0.080 J	0.50 U	0.50 U	12.00	0.08	--	--	0.09	0.001	--	--	0.092	
			Apr-20		37	--	--	--	0.54	0.50 U	0.50 U	37	0.54	--	--	0.28	0.006	--	--	0.288	
			Oct-20	Post	DRY	--	DRY	DRY	DRY	DRY	DRY					--	--	--	--	NS	DRY
			Feb-21		6.3	--	9.18	233.4	0.23 J	0.50 U	0.50 U	6.3	0.23	--	--	0.05	0.002	--	--	0.050	-45%
			Apr-21		54	--			0.47 J	0.50 U	0.50 U	54	0.47	--	--	0.41	0.005	--	--	0.417	351%
			Jul-21		52	--			0.61	0.50 U	0.50 U	52	0.61	--	--	0.40	0.006	--	--	0.403	336%
			Oct-21		47	--	3	301.8	0.38 J	0.50 U	0.50 U	47	0.38	--	--	0.41	0.004	--	--	0.416	350%
	AMW-12A	14	Oct-19	Pre	21	--	--	--	0.15 J	0.50 U	0.50 U	21	0.15	0.15	--	0.16	0.002	0.00	--	0.163	
			Apr-20		20	--	--	--	0.17 J	0.50 U	0.50 U	20	0.17	--	--	0.15	0.002	--	--	0.154	
			Oct-20	Post	12	8.4 U	8.34	120.7	0.15 J	0.50 U	0.50 U	12	0.15	--	--	0.09	0.002	--	--	0.093	-43%
			Feb-21		11	--	7.32	96.7	0.090 J	0.50 U	0.50 U	11	0.09	--	--	0.08	0.001	--	--	0.085	-48%
			Apr-21		12	0.9 U			0.18 J	0.50 U	0.50 U	12	0.18			0.09	0.002	--	--	0.093	-43%
			Jul-21		6.6	--	5.5	90.6	0.16 J	0.50 U	0.50 U	6.6	0.16			0.05	0.002	--	--	0.052	-68%
			Oct-21		5.6	--	3.74	158.6	0.5 U	0.50 U	0.50 U	5.6				0.04	--	--	--	0.043	-74%
AOC-2	MW-20D	1	Apr-20	Pre	17	--	4.93	110.3	0.21 J	0.50 U	0.50 U	17	0.21	--	--	0.13	0.002	--	--	0.132	
			Oct-20	Post	12	59.9	1.57	95.1	0.50 U	0.50 U	0.50 U	12	--	--	--	0.09	--	--	--	0.092	-31%
			Feb-21		6.9	79.2	1.02	162.0	0.50 U	0.50 U	0.50 U	6.9	--	--	--	0.05	--	--	--	0.053	-60%
			Apr-21		11	86.4	0.25	111.3	0.1 J	0.50 U	0.50 U	11	0.10			0.08	0.001	--	--	0.085	-36%
			Jul-21		6.8	81.5	0.36	114.1	0.50 U	0.50 U	0.50 U	6.8				0.05	--	--	--	0.052	-61%
			Oct-21		9.4	115	0.88	45.5	0.50 U	0.50 U	0.50 U	9.4				0.07	--	--	--	0.072	-46%
	MW-38	2	Oct-19	Pre	28	--	--	--	0.50 U	0.50 U	0.50 U	28	--	--	--	0.21	--	--	--	0.214	
			Oct-20	Post	12	4.7 J	0.96	150.6	0.50 U	0.50 U	0.50 UJ	12	--	--	--	0.09	--	--	--	0.092	-57%
			Feb-21		14	--	1.30	191.3	0.50 U	0.50 U	0.50 U	14	--	--	--	0.11	--	--	--	0.107	-50%
			Apr-21		22	--			0.50 U	0.50 U	0.50 U	22				0.17	--	--	--	0.168	-21%
			Jul-21		27	--			0.50 U	0.50 U	0.50 U	27				0.21	--	--	--	0.206	-4%
			Oct-21		25	--			0.50 U	0.50 U	0.50 U	25				0.19	--	--	--	0.191	-11%
	PZ-39	2	Oct-19	Pre	33	--	--	--	0.58	0.50 U	0.50 U	33	0.58	--	--	0.25	0.006	--	--	0.258	
			Oct-20	Post	42	3.2 J	1.26	107.2	0.57	0.50 U	0.50 U	42	0.57	--	--	0.32	0.006	--	--	0.326	27%
			Feb-21		36	15.0	0.90	331.1	0.51	0.50 U	0.50 U	36	0.51	--	--	0.27	0.01	--	--	0.280	9%
			Apr-21		39	6.5	0.03	90.5	1.8	0.50 U	0.50 U	39	1.8			0.30	0.02	--	--	0.316	23%
			Jul-21		42	7.8	0.14	-101.3	5.6	0.50 U	0.50 U	42	5.6			0.32	0.06	--	--	0.378	47%
			Oct-21		37	--	0.48	-89.4	8	0.50 U	0.50 U	37	8			0.28	0.082	--	--	0.365	42%
	MW-19D	3	Oct-19	Pre	15	87.5	3.44	128.5	0.15 J	0.50 U	0.50 U	15	0.15	--	--	0.11	0.002	--	--	0.116	
			Jan-20	Post	3.5	119	1.44	128.9	0.50 U	0.50 U	0.50 U	3.5	--	--	--	0.03	--	--	--	0.027	-77%
			Apr-20		4.3	171	1.05	145.3	0.50 U	0.50 U	0.50 U	4.3	--	--	--	0.03	--	--	--	0.033	-72%
			Oct-20		45	38.4	0.39	-173.7	3.5	1.1	0.50 U	45	3.5	1.1	--	0.34	0.036	0.01	--	0.391	237%
			Feb-21		7.7	122	0.81	281.8	1.7	0.21 J	0.50 U	7.7	1.7	0.21	--	0.06	0.018	0.00	--	0.078	-32%
			Apr-21		9.2	59.6	0.01	40	4.3	0.29 J	0.50 U	9.2	4.3	0.29		0.07	0.044	0.00	--	0.118	1%
			Jul-21		6	66.1	0.07	-17.2	6.8	0.1 J	0.50 U	6	6.8	0.1		0.05	0.070	0.00	--	0.117	1%
			Oct-21		7.4	63.2	0.43	8.5	1.1	0.5 U	0.50 U	7.4	1.1			0.06	0.011	0.00	--	0.068	-42%
	MW-18D	6	Oct-18	Pre	49	127	3.2	155.8	0.070 J	0.50 U	0.50 U	49	0.07	--	--	0.37	0.001	--	--	0.375	
			Apr-19	Post	2.2	65.6	--	--	0.5 U	0.5 U	0.5 U	2.2	--	--	--	0.02	--	--	--	0.017	-96%
			Oct-19		2.9	74.2	0.11	86.9	0.52	0.50 U	0.50 U	2.9	0.52	--	--	0.02	0.005	--	--	0.027	-93%
			Jan-20		4.8	47.9	0.02	81.7	2.4	0.50 U	0.50 U	4.8	2.4	--	--	0.04	0.025	--	--	0.061	-84%
			Apr-20		3	89.8	0.65	93.4	1.2	0.50 U	0.50 U	3	1.2	--	--	0.02	0.012	--	--	0.035	-91%
			Oct-20		3.1	15.8	0.4	14.7	2.1	0.50 U	0.50 U	3.1	2.1	--	--	0.02	0.022	--	--	0.045	-88%
			Feb-21		3.4	25.7	0.83	25.8	3.8	0.50 U	0.50 U	3.4	3.8	--	--	0.03	0.039	--	--	0.065	-83%
			Apr-21		3.5	158	0.007	1.9	4	0.50 U	0.50 U	3.5	4			0.03	0.041	--	--	0.068	-82%
			Jul-21		3.6	177	0.01	9.4	6.9	0.50 U	0.09 J	3.6	6.9		0.09	0.03	0.071	--	--	0.099	-74%
			Oct-21		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	MW-18E	6	Oct-18	Pre	150	--	0.01	-162.1	31	0.84	0.56	150	31	0.84	0.56	1.15	0.320	0.01	0.01	1.482	
			Apr-19	Post	1.8	11.2	--	--	11	0.09 J	2.1	1.8	11	0.09	2.1	0.01	0.113	0.00	0.03	0.162	-89%
			Oct-19		0.7	69.2	0.13	-168.2	3.8	0.50 U	2.2	0.7	3.8	--	2.2	0.01	0.039	--	0.04	0.080	-95%
			Apr-20		0.25 J	8.4 U	0.42	-102.1	1.3	0.50 U	1.7	0.25	1.3	--	1.7	0.00	0.013	--	0.03	0.043	-97%
			Oct-20		0.24 J	2.9 J	0.32	-127.8	0.5	0.18 J	1.1	0.24	0.5	0.18	1.1	0.00	0.005	0.00	0.02	0.026	-98%
			Feb-21		0.22 J	8.4 U	0.85	-127.8	0.74	0.47 J	1.5	0.22	0.74	0.47	1.5	0.00	0.008	0.00	0.02	0.038	-97%
			Apr-21		0.5 J	--			0.69	1.4	0.91	0.50	0.69	1.4	0.91	0.00	0.007	0.01	0.01	0.040	-97%
			Jul-21		0.4 J	--	1.09	47.4	0.32 J	1.7	0.43 J	0.40	0.32	1.7	0.43	0.00	0.003	0.02	0.01	0.031	-98%
			Oct-21		NS	NS	NS	NS	NS	NS	NS					NS	NS	NS	NS	NS	NS
	AMW-59	8	Oct-19	Pre	45	--	--	--	4.2	0.68	0.12 J	45	4.2	0.68	0.12	0.34	0.043	0.01	0.00	0.396	
			Jan-20	Post	41	70.9	0.01	-97.8	6.8	0.47 J	0.27 J	41	6.8	0.47	0.27	0.31	0.070	0.00	0.00	0.392	-1%
			Apr-20		14	100	0.46	41.8	12	0.40 J	0.52	14	12	0.40	0.52	0.11	0.124	0.00	0.01	0.243	-39%
			Oct-20		3.1	18.2	1.28	-114.5	23	0.41 J	1.9	3.1	23	0.41	1.9	0.02	0.237	0.00	0.03	0.295	-25%
			Feb-21		16	11.6	0.73	223.6	18	0.7	5.7	16	18	0.7	5.7	0.12	0.186	0.01	0.09	0.406	3%
			Apr-21		6	12.2	0.01	148.9	11	0.52	5.7	6	11	0.52	5.7	0.05	0.113	0.01	0.09	0.256	-35%
			Jul-21		9.3	11.1	0.02	-196.8	17	0.74	3.5	9.3	17	0.74	3.5	0.07	0.175	0.01	0.06	0.310	-22%
			Oct-21		0.4 J	--			5.7	0.46 J	4.7	0.4	5.7	0.46	4.7	0.00	0.059	0.00	0.08	0.142	-64%
	MW-14C	8	Oct-19	Pre	5.9	48.1	7.45	164.1	0.50 U	0.50 U	0.50 U	5.9	--	--	--	0.05	--	--	--	0.045	
			Jan-20	Post	3.9	62.9	3.31	14.14	0.50 U	0.50 U	0.50 U	3.9	--	--	--	0.03	--	--	--	0.030	-34%
			Apr-20		2.6	73.8	3.01	54.4	0.16 J	0.50 U	0.50 U	2.6	0.16	--	--	0.02	0.002	--	--	0.021	-52%
			Oct-20		2.4	10.2	1.33	70.7	0.50 U	0.50 U	0.50 U	2.4	--	--	--	0.02	--	--	--	0.018	-59%
			Feb-21		2.9	74.6	1.55	398.3	0.50 U	0.50 U	0.50 U	2.9	--	--	--	0.02	--	--	--	0.022	-51%
			Apr-21		2.8	84.1	0.13	98.2	0.08 J	0.50 U	0.50 U	2.8	0.08			0.02	--	--	--	0.021	-53%
			Jul-21		2.8	--	0.09	56.6	0.50 U	0.50 U	0.50 U	2.8				0.02	--	--	--	0.021	-53%
			Oct-21		2.5	37.7	1.46	95.5	0.50 U	0.50 U	0.50 U	2.5				0.02	--	--	--	0.019	-58%
	MW-14E	8	Oct-19	Pre	39	27.5	5.8	136.8	2	0.30 J	0.50 U	39	2	0.30	--	0.30	0.021	0.00	--	0.321	
			Jan-20	Post	6.7	38.1	0.83	139.2	0.070 J	0.50 U	0.50 U	6.7	0.07	--	--	0.05	0.001	--	--	0.052	-84%
			Apr-20		9.6	54.4	0.8	55.3	0.15 J	0.50 U	0.50 U	9.6	0.15	--	--	0.07	0.002	--	--	0.075	-77%
			Oct-20		9.2	173	6.13	90.4	0.14 J	0.50 U	0.50 U	9.2	0.14	--	--	0.07	0.001	--	--	0.072	-78%
			Feb-21		10	166	6.07	417.7	0.24 J	0.50 U	0.50 U	10	0.24	--	--	0.08	0.002	--	--	0.079	-75%
			Apr-21		8.4	234	0.13	98.2	0.2 J	0.50 U	0.50 U	8.4	0.2			0.06	0.002	--	--	0.066	-79%
			Jul-21		12	176	0.56	82.9	0.14 J	0.50 U	0.50 U	12	0.14			0.09	0.001	--	--	0.093	-71%
			Oct-21		19	192	4.19	28.25	0.58	0.50 U	0.50 U	19	0.58			0.15	0.006	--	--	0.151	-53%

Notes:
mg/L = Milligram(s) per liter
µg/L = Microgram(s) per liter
AOC = Area of concern
NA = Not applicable
NS = Not sampled due to field conditions
U = not Detected
J = Result estimated
* = result identified by laboratory as an outlier
TCE = trichloroethene
Cr = chromium

Table 3-5 Phase II In-Situ Injection Performance Monitoring, Secondary Parameters

Area	Performance Well Location	Upgradient Treatment Row #	Sample Date	Pre- or Post Injection Event	Secondary Parameters																			
					Ethane (µg/L)	Ethylene (µg/L)	Methane (µg/L)	TOC (mg/L)	DOC (mg/L)	COD (mg/L)	As (µg/L)	Fe (µg/L)	Diss. Fe (µg/L)	Mg (µg/L)	Mn (µg/L)	Acetic Acid (mg/L)	Butyric Acid (mg/L)	DL-Lactic Acid (mg/L)	Propionic Acid (mg/L)	Pyruvic Acid (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	Alkalinity (mg/L)
AOC-1	AMW-12A	14	Oct-19	Pre	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			Apr-20		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			Oct-20	Post	0.60 U	1.0 U	1.3 U	0.79	1.18	65	21 U	--	416	6730	25.7	1.0 U	2.0 U	1.0 U	1.0 U	0.50 U	1.08	11	5.51	--
			Feb-21		0.6	1	10	1.1	1.09	10 U	21 U	740	--	2240	32.7	1.0 U	2.0 U	1.0 U	1.0 U	0.50 U	0.26	2.97	3.98	--
			Apr-21		< 0.60 U	< 1.0 U	< 1.3 U	1	0.6	< 10 U	< 21 U	--	--	3570	8.8	0.77 J	< 2.0 U	< 1.0 U	< 1.0 U	< 0.50 U	0.79	5	6.33	
			Jul-21		< 0.60 U	< 1.0 U	33	0.8	0.7	6 J	< 21 U	--	224	9630	427	--	--	--	--	--	0.95	6.51	7.16	
			Oct-21		< 2 U	< 1 U	1.7	--	3	< 10 U	< 21 U	--	--	2950	0.5 J	--	--	--	--	--	0.86	6.14	--	
	MW-20D	1	Apr-20	Pre	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			Oct-20	Post	0.60 U	1.0 U	1.3 U	0.21 J	0.55	4 J	--	--	25 J	--	--	1.0 U	2.0 U	1.0 U	1.0 U	0.50 U	1.61	17.3	4.42	--
			Feb-21		0.6	1	2.8	0.96	1.37	10 U	21 U	953	26 J	15300	214	1.0 U	2.0 U	1.0 U	1.0 U	0.50 U	1.42	16.5	4.4	--
			Apr-21		0.83	< 1.0 U	180	0.9	0.45 J	< 10 U	5 J	--	--	16300	346	0.75 J	< 2.0 U	< 1.0 U	< 1.0 U	< 0.50 U	1.05	16.4	4.35	
			Jul-21		< 0.60 U	< 1.0 U	38	0.5	0.5	< 10 U	6 J	--	25 J	14400	105	--	--	--	--	--	1.75	14.4	4.12	
			Oct-21		< 2 U	< 1 U	< 1 U	--	0.8	< 10 U	< 21 U	--	380	14900	185	--	--	--	--	--	1.48	18.2	--	
	MW-38	2	Oct-19	Pre	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			Oct-20	Post	--	--	--	--	--	--	21 U	342	--	13100	1.1 UJ	--	--	--	--	--	--	--	--	--
			Feb-21		0.6	1	1.3	1.81	1.78	10 U	21 U	112	--	13300	3.1	1.0 U	2.0 U	1.0 U	1.0 U	0.50 U	1.9	31.7	5.56	--
	PZ-39	2	Oct-19	Pre	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			Oct-20	Post	0.60 U	0.36	0.73	0.56	0.71	10 U	--	--	14 J	--	--	1.0 U	2.0 U	1.0 U	1.0 U	0.50 U	1.5	18.1	4.44	--
			Feb-21		0.6	0.29	1.2	--	--	--	5 J	1120	172	19400	84.1	--	--	--	--	--	--	--	--	--
			Apr-21		< 0.60 U	< 1.0 U	1	0.9	0.48 J	< 10 U	8 J	--	--	19600	95.3	0.80 J	< 2.0 U	< 1.0 U	< 1.0 U	< 0.50 U	1.68	18.3	4.7	
			Jul-21		< 0.60 U	0.4	2	0.8	0.7	< 10 U	< 21 U	--	23 J	19600	94	--	--	--	--	--	1.49	18.7	4.88	
			Oct-21		< 2 U	1.2	< 1 U	--	0.8	5 J	< 21 U	--	33 J	19200	63.4	--	--	--	--	--	1.84	19.4	--	
	MW-19D	3	Oct-19	Pre	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			Jan-20	Post	0.60 U	1.0 U	1.3 U	0.86	0.34 J	14	6 J	--	--	12200	2930	1.0 U	2.0 U	1.0 U	1.0 U	0.50 U	2.65	3.39	5.45	96
			Apr-20		0.60 U	1.0 U	1.3 U	1.08	0.86	10 U	--	--	--	--	--	--	--	--	--	--	2.84	12.5	5.42	123
			Oct-20		4	2.2	1200	68.4	69.9	166	29	5510	3750	25300	3450	91	32	1.0 U	11	0.50 U	1.25	9.73	6.51	--
			Feb-21		3.1	0.35	1500	9.4	7.62	23	11 J	1630	59	19600	1900	20	2.0 U	1.0 U	2.2	0.50 U	1.4	12.2	5.57	--
			Apr-21		3.2	1.3	1700	20.5	20.7	49	10 J	--	--	29500	2080	45	< 2.0 U	< 1.0 U	< 1.0 U	< 0.50 U	1.6	11.5	5.74	
			Jul-21		5.6	0.59	2900	10.2	12.2	27	< 21 U	--	1140	25100	1560	--	--	--	--	--	1.14	11	5.99	
			Oct-21		9	1.1	8500	--	1.1	4 J	< 21 U	--	301	19800	1560	--	--	--	--	--	0.93	12.7	--	
	MW-18D	6	Oct-18	Pre	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			Apr-19	Post	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			Oct-19		1.1	0.30 J	20000	0.17 J	0.15 J	657	--	--	--	--	--	1.0 U	2.0 U	1.0 U	1.0 U	0.29 J	1.51	9.93	3.91	86
			Jan-20		5.5	1.2	21000	0.35 J	0.50 J	8 J	21 U	--	--	9770	368	1.0 U	2.0 U	5.4	1.0 U	0.50 U	0.98	11.4	4.19	88
			Apr-20		3.4	0.33 J	11000	0.57	0.48 J	10 U	--	--	--	--	--	1.0 U	2.0 U	1.0 U	1.0 U	0.50 U	1.27	10.8	4.18	86
			Oct-20		4.2	1.0 U	14000	0.43 J	0.47 J	55	21 U	--	849	9080	535	1.0 U	2.0 U	1.0 U	1.0 U	0.50 U	0.94	12.8	4.34	--
			Feb-21		6.7	1	18000	0.87	1.26	13	21 U	2710	1390	9880	553	1.0 U	2.0 U	1.0 U	1.0 U	0.50 U	1.19	11.8	5.1	--
			Apr-21		5.3	< 1.0 U	17000	0.8	0.45 J	7 J	< 21 U	--	--	9940	483	0.68 J	< 2.0 U	< 1.0 U	< 1.0 U	< 0.50 U	1.26	13.5	4.81	
			Jul-21		11	< 1.0 U	21000	0.6	0.6	8 J	< 21 U	--	905	9940	532	--	--	--	--	--	0.96	15.1	4.97	
AOC-2	MW-18E	6	Oct-18	Pre	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			Apr-19	Post	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			Oct-19		1.3	1.2	19000	13	13.5	10 U	--	--	--	--	--	4.9	2.0 U	1.0 U	0.99 J	0.50 U	0.10 U	0.74	12	573
			Apr-20		2.4	3.1	27000	5.81	4.75	212	--	--	--	--	--	--	--	--	--	--	0.10 U	0.48	12.4	477
			Oct-20		5.2	2.3	24000	2.95	1.78	134	21 U	--	9460	27300	1210	1.0 U	2.0 U	1.0 U	1.0 U	0.50 U	0.10 U	0.83	10.2	--
			Feb-21		5.3	4.3	17000	2.18	1.54	38	21 U	10800	8270	21700	1080	1.0 U	2.0 U	1.0 U	1.0 U	0.50 U	0.10 U	1.86	9.42	--
	AMW-59	8	Oct-19	Pre	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			Jan-20	Post	0.96	1	290	479	435	1200	21 U	--	--	36600	2670	170	52	520	19	3.4	0.10 U	18.5	18.9	196
			Apr-20		2.1	2.3	9500	677	668	4570	--	--	--	--	--	710	520	5.0 U	140	2.5 U	0.10 U	0.40 U	21.2	475
			Oct-20		2.1	1.4	12000	15.5	10.6	101	21 U	40200	39000	32600	1900	3.4	2.0 U	1.0 U	1.0 U	0.50 U	0.10 U	2.27	18	--
			Feb-21		1.8	2	5700	5.43	4.89	20	21 U	22800	20400	30800	1710	4.6	2.0 U	1.0 U	1.0 U	0.50 U	0.10 U	4.75	16.5	--
			Apr-21		2.4	3.4	5200	7.9	6.3	34	< 21 U	--	--	32400	1820	10	< 2.0 U	< 1.0 U	< 1.0 U	< 0.50 U	0.05 J	2.32	16.3	
			Jul-21		2.3	3.1	4600	7.1	7.2	22	< 21 U	--	5070	30900	1700	--	--	--	--	--	< 0.10 U	4.69	14.7	
			Oct-21		4	7.1	12000	--	3.8	18	< 21 U	--	7200	32100	1690	--	--	--	--	--	0.07 J	1.3	--	
	MW-14C	8	Oct-19	Pre	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			Jan-20	Post	0.60 U	1.0 U	1.0 J	0.12 J	0.21 J	10 U	21 U	--	--	10500	155	1.0 U	2.0 U	1.0 U	1.0 U	0.50 U	4.51	18.6	6.8	80
			Apr-20		0.60 U	1.0 U	4.4	0.62	0.57	9 J	--	--	--	--	--	1.0 U	2.0 U	1.0 U	1.0 U	0.50 U	4.29	34.2	8	71
			Oct-20		1.4	1.0 U	750	0.50 U	0.84	51	21 U	--	14 J	10100	305	1.0 U	2.0 U	1.0 U	1.0 U	0.50 U	4.34	19	7.01	--
			Feb-21		0.88	1	670	1.07	1.07	10 U	21 U	262	22 J	10300	372	1.0 U	2.0 U	1.0 U	1.0 U	0.50 U	4.08	30.7	8.02	--
			Apr-21		0.22	< 1.0 U	140	0.5	0.36 J	4 J	< 21 U	--	--	9590	138	0.60 J	< 2.0 U	< 1.0 U	< 1.0 U	< 0.50 U	3.7	24.8	7.52	
			Jul-21		0.51	< 1.0 U	390	0.5	0.6	5 J	< 21 U	--	36 J	9650	169	--	--	--	--	--	3.23	22.1	7.62	
			Oct-21		2	< 1 U	1600	--	0.7	< 10 U	< 21 U	--	12 J	9190	99.6	--	--	--	--	--	3.2	20.6	--	
	MW-14E	8	Oct-19	Pre	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
			Jan-20	Post	0.60 U	1.0 U	0.57 J	0.44 J	0.93	10 U	21 U	--	--	14200	1030	1.0 U	2.0 U	1.0 U	1.0 U	0.50 U	1.61	13	4.07	141
			Apr-20		0.60 U	1.0 U	1.5	0.47 J	0.51	5 J	--	--	--	--	--	1.0 U	2.0 U	1.0 U	1.0 U	0.50 U	1.55	11.5	3.96	140
			Oct-20		0.60 U	1.0 U	2.8	0.16 J	0.7	4 J	21 U	--	57	10900	353	1.0 U	2.0 U	1.0 U	1.0 U	0.50 U	2.5	31.1	5.33	--
			Feb-21		0.6	1	0.75	0.59	0.93	10 U	21 U	553	22 J	10400	2500	1.0 U	2.0 U	1.0 U	1.0 U	0.50 U	2.56	31.7	5.71	--
			Oct-21		< 2 U	< 1 U	2.1	--	0.5	< 10 U	< 21 U	--	7250	10500	21	--	--	--	--	--	2.21	32.4	--	

Notes:
mg/L = Milligram(s) per liter
µg/L = Microgram(s) per liter
AOC = Area of concern
NA = Not applicable
NS = Not sampled due to field conditions
DOC = Dissolved Organic Carbon
MNA = Monitored Natural Attenuation
"--" = not measured

TABLE 5-1. CLOSURE MONITORING PROGRAM WELLS

Well Name	No longer Impacted by Treatment System/Under Steady State Conditions ? [1]	Remediation Phase Complete for VOCs?	VOCs Not Completing Remediation Phase (# needed)	Currently Ready for Attainment Monitoring of VOCs?	Remediation Phase Complete for Chromium?	Currently Ready for Attainment Monitoring of Chromium?
Upgradient						
AMW-8A	Yes	Yes		Yes	No	NA
TCE Source Area [2]						
AMW-1A	Yes	No	Trichloroethylene (4)	No	NA	NA
AMW-1B	Yes	Yes		Yes	NA	NA
AMW-1C	Yes	Yes		Yes	NA	NA
AMW-2A	Yes	No	Trichloroethylene (4)	No	NA	NA
AMW-2B	Yes	Yes		Yes	NA	NA
AMW-3A	Yes	Yes		Yes	NA	NA
AMW-4A	Yes	Yes		Yes	NA	NA
AMW-12A	Yes	No	Trichloroethylene (4)	No	NA	NA
AMW-13A	Yes	Yes		Yes	NA	NA
AMW-19A	Yes	Yes		Yes	NA	NA
AMW-26	Yes	Yes		Yes	NA	NA
AMW-52A	Yes	Yes		Yes	NA	NA
AMW-53A	Yes	No	Trichloroethylene (4)	No	NA	NA
AMW-54A	Yes	Yes		Yes	NA	NA
AMW-55A	Yes	Yes		Yes	NA	NA
AMW-56A	Yes	Yes		Yes	NA	NA
MW-1A	Yes	Yes		Yes	NA	NA
MW-1B	Yes	Yes		Yes	NA	NA
MW-1C	Yes	Yes		Yes	NA	NA
Proximal						
AMW-58	Yes	Yes		Yes	NA	NA [3]
MW-2A	Yes	Yes		Yes	No	No
MW-2B	Yes	Yes		Yes	Yes	Yes
MW-2C	Yes	Yes		Yes	NA	NA [3]
MW-3A	Yes	NA		NA [3]	No	No
MW-3B	Yes	Yes		Yes	Yes	Yes
MW-3C	Yes	Yes		Yes	Yes	Yes
MW-4A	Yes	Yes		Yes	No	No
MW-4B	Yes	Yes		Yes	No	No
MW-4BSHED	Yes	Yes		Yes	Yes	Yes
MW-4C	Yes	Yes		Yes	Yes	Yes
MW-6A	Yes	Yes		Yes	Yes	Yes
MW-6B	Yes	Yes		Yes	Yes	Yes
MW-6C	Yes	Yes		Yes	Yes	Yes
MW-6D	Yes	Yes		Yes	Yes	Yes

TABLE 5-1. CLOSURE MONITORING PROGRAM WELLS

Well Name	No longer Impacted by Treatment System/Under Steady State Conditions ? [1]	Remediation Phase Complete for VOCs?	VOCs Not Completing Remediation Phase (# needed)	Currently Ready for Attainment Monitoring of VOCs?	Remediation Phase Complete for Chromium?	Currently Ready for Attainment Monitoring of Chromium?
MW-7B	Yes	No	Trichloroethylene (4)	No	Yes	Yes
MW-7C	Yes	Yes		Yes	Yes	Yes
MW-8B	Yes	Yes		Yes	Yes	Yes
MW-9B	Yes	Yes		Yes	Yes	Yes
MW-9C	Yes	Yes		Yes	NA	NA [3]
MW-10B	Yes	No	Trichloroethylene (1)	No	Yes	Yes
MW-10C	Yes	Yes		Yes	Yes	Yes
MW-12C	Yes	Yes		Yes	Yes	Yes
MW-13C	Yes	Yes		Yes	Yes	Yes
PW-1B	Yes	Yes		Yes	Yes	Yes
Intermediate						
AMW-59	Yes	No	1,1-Dichloroethylene (3), Trichloroethylene (3)	No	NA	NA [3]
AMW-60	Yes	No	1,1-Dichloroethylene (4)	No	NA	NA [3]
CPU-14	Yes	Yes		Yes	Yes	Yes
MW-14C	Yes	Yes		Yes	Yes	Yes
MW-14E	Yes	No	Trichloroethylene (4)	No	No	No
MW-15E	Yes	Yes		Yes	Yes	Yes
MW-18D	Yes	Yes		Yes	No	No
MW-18E	Yes	Yes		Yes	Yes	Yes
MW-19D	Yes	No	Trichloroethylene (4)	No	No	No
MW-20D	Yes	No	Trichloroethylene (4)	No	Yes	Yes
MW-40	Yes	Yes		Yes	No	No
PZ-39	Yes	No	1,1-Dichloroethylene (4), Trichloroethylene (4)	No	NA	NA [3]
Church of God						
AMW-27	Yes	Yes		Yes	Yes	Yes
AMW-61	Yes	No	Trichloroethylene (4)	No	No	No
CPU-12	Yes	Yes		Yes	Yes	Yes
CPU-13	Yes	Yes		Yes	Yes	Yes
MW-22D	Yes	Yes		Yes	Yes	Yes
MW-25D	Yes	Yes		Yes	Yes	Yes
MW-26D	Yes	Yes		Yes	Yes	Yes
MW-27D	Yes	Yes		Yes	Yes	Yes
MW-49	Yes	Yes		Yes	Yes	Yes
Toe of Plume						
AMW-42	Yes	Yes		Yes	Yes	Yes
MW-41	Yes	Yes		Yes	Yes	Yes
MW-48	Yes	Yes		Yes	NA	NA [3]

TABLE 5-1. CLOSURE MONITORING PROGRAM WELLS

Well Name	No longer Impacted by Treatment System/Under Steady State Conditions ? (1)	Remediation Phase Complete for VOCs?	VOCs Not Completing Remediation Phase (# needed)	Currently Ready for Attainment Monitoring of VOCs?	Remediation Phase Complete for Chromium?	Currently Ready for Attainment Monitoring of Chromium?
Troutdale						
AMW-24	Yes	No	Trichloroethylene (3)	No	NA	NA [3]
BENNETT	Yes	Yes		Yes	NA	NA [3]
MW-33	Yes	Yes		Yes	NA	NA [3]

Notes:

Table 5-4 presents attainment status for wells currently in attainment monitoring.

COC = Contaminant of Concern identified for the Site

NA = Not Applicable

VOC = Volatile organic compound

(1) Implies the well is no longer influenced by nearby extraction wells or by discharge to the infiltration gallery, and that groundwater at the well has achieved post-remediation steady-state conditions, and is not undergoing in-situ remediation.

(2) Chromium is not a contaminant of concern (COC) for TCE Source Area wells

(3) Designated as NA since contaminant(s) never exceeded cleanup level.

Per the Closure Monitoring Plan, the determination of whether Remediation Phase is Complete is based on analysis of the most recent four samples for each COC.

Shaded cells indicate wells ready for attainment monitoring

TABLE 5-2. WELLS AND RECOMMENDED SAMPLING FREQUENCIES

Well Name	Well Type	TCE Annual Evaluation (Last 4 Samples)													Never Exceeded Cleanup Level for VOCs?	Total Number Cr Datapoints	Chromium Annual Evaluation (Last 4 Samples)							Never Exceeded Cleanup Level for Cr?	2021 Sampling Frequency [1]		2022 Sampling Frequency Recommendations and When Sampled Next [2]		Well Use / Rationale for Recommendation
		Date of First of the Most Recent Four Samples	Most Recent Sample Date	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Consecutive Samples < Cleanup Goal	Remediation Monitoring Phase Complete for TCE? [3]	Historical Min. Conc. (ug/L)	Historical Max. Conc. (ug/L)	Number of Samples	Number of Conc. < Cleanup Goal	Most Recent Sample Date	Remediation Phase Complete for all VOCs? [3]			Date of First of the Most Recent Four Samples	Most Recent Sample Date	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Consecutive Samples < Cleanup Goal	Remediation Monitoring Phase Complete for Chromium? [3]		VOCs	Cr	VOCs	Cr	
Closure Monitoring Program Wells																													
Upgradient Wells																													
AMW-8A	M	10/2016	10/2021	0.22	0.57	0.57	4	YES						YES		2	04/1995	10/1995	U	U	U	2	NA		Biennial 2021	NA	Quarterly	NA	TCE background well; in attainment monitoring
TCE Source Wells																													
AMW-1A	M	02/2021	10/2021	4.80	15.00	15.00	None	NO						NO											Quarterly	NA	Semiannual	NA	OU-2 well; well cluster. Includes DO/ORP for in-situ monitoring.
AMW-1B	M	05/2009	10/2021	0.15	0.51	0.15	4	YES						YES											On Hold	NA	Quarterly	NA	OU-2 well; in attainment monitoring
AMW-1C	M	01/2008	10/2021	U	U	U	4	YES						YES											On Hold	NA	Quarterly	NA	OU-2 well; in attainment monitoring
AMW-2A	M	02/2021	10/2021	6.30	54.00	47.00	None	NO						NO											Quarterly	NA	Semiannual	NA	OU-2 well; well cluster. Includes DO/ORP for in-situ monitoring.
AMW-2B	M	10/2013	10/2021	0.23	0.41	0.23	4	YES						YES											On Hold	NA	Quarterly	NA	OU-2 well; well cluster - in attainment monitoring
AMW-3A	M	10/2017	07/2021	0.63	0.80	0.80	4	YES						YES											On Hold	NA	Semiannual	NA	OU-2 well; in attainment monitoring
AMW-4A	M	10/2020	10/2021	U	U	U	4	YES						YES											Annual	NA	Quarterly	NA	OU-2 well; in attainment monitoring
AMW-12A	M	02/2021	10/2021	5.60	12.00	5.60	None	NO						NO											Quarterly	NA	Semiannual	NA	OU-2 well; Includes DO/ORP for in-situ monitoring.
AMW-13A	M	10/2014	10/2021	U	0.26	U	4	YES						YES											On Hold	NA	Quarterly	NA	OU-2 well; in attainment monitoring
AMW-19A	M	10/2015	10/2021	1.20	1.60	1.20	4	YES						YES											Every 5 years 2022	NA	Quarterly	NA	OU-2 boundary well; in attainment monitoring
AMW-26	M	10/2014	10/2021	0.70	4.30	2.90	4	YES						YES											Every 5 years 2022	NA	Quarterly	NA	OU-2 boundary well; in attainment monitoring
AMW-52A	M	10/2014	10/2021	U	0.32	U	4	YES						YES											On Hold	NA	Quarterly	NA	OU-2 well; in attainment monitoring
AMW-53A	M	02/2021	10/2021	9.30	28.00	18.00	None	NO						NO											Quarterly	NA	Semiannual	NA	OU-2 well; Includes DO/ORP for in-situ monitoring.
AMW-54A	M	10/2013	10/2017	1.80	3.00	2.10	4	YES						YES											Every 5 years 2022	Every 5 years 2022	Every 5 years 2022	Every 5 years 2022	OU-2 boundary well; remediation and attainment monitoring complete
AMW-55A	M	10/2012	10/2015	1.00	1.30	1.00	4	YES						YES											NFS	NA	NFS	NA	OU-2 well; remediation and attainment monitoring complete
AMW-56A	M	10/2013	10/2017	1.70	3.70	3.70	4	YES						YES											Every 5 years 2022	NA	Every 5 years 2022	NA	OU-2 boundary well; remediation and attainment monitoring complete
MW-1A	M	02/2021	10/2021	0.24	0.44	0.32	4	YES						YES											Quarterly	NA	Quarterly	NA	OU-2 well; Includes DO/ORP for in-situ monitoring.
MW-1B	M	10/2009	10/2021	U	0.28	U	4	YES						YES											On Hold	NA	Semiannual	NA	OU-2 well; well cluster - in attainment monitoring
MW-1C	M	10/2008	10/2021	U	0.24	U	4	YES						YES											On Hold	NA	Quarterly	NA	OU-2 well; well cluster - in attainment monitoring
Proximal Wells																													
AMW-58	M	10/2010	10/2021	U	0.10	U	4	YES						YES		9	10/2006	07/2021	2.60	12.60	12.60	4	NA	X	On Hold	NA	Quarterly	NA	In attainment monitoring for VOCs; Cr never exceeded cleanup level
MW-2A	M	10/2016	10/2021	0.76	1.70	0.76	4	YES						YES		37	10/2018	10/2021	153.00	601.00	330.00	None	NO		On Hold	Annual	Semiannual	Annual	Well cluster - remediation monitoring for Cr; attainment monitoring for VOCs
MW-2B	M	10/2020	10/2021	0.97	2.50	0.97	4	YES						YES		17	10/2009	10/2021	5.90	10.50	7.28	4	YES		Annual	On Hold	Semiannual	Semiannual	Well cluster - attainment monitoring for VOCs and Cr
MW-2C	M	10/2009	10/2021	0.27	0.38	0.27	4	YES						YES		9	10/2003	07/2021	U	28.30	28.30	4	NA	X	On Hold	NA	Semiannual	Semiannual	Well cluster - attainment monitoring for VOCs; Cr never exceeded cleanup level
MW-3A	M	05/2004	10/2008	0.23	0.91	0.23	4	NA						NA	X	34	02/2021	10/2021	113.00	140.00	129.00	None	NO		NA	Quarterly	NA	Semiannual	Well cluster - remediation monitoring for Cr; VOCs never exceeded cleanup level. Frequency of Cr monitoring is semiannual to measure impacts of system shut down.
MW-3B	M	10/2014	10/2021	1.30	1.40	1.30	4	YES						YES		13	10/2004	10/2021	U	7.16	6.74	4	YES		On Hold	On Hold	Quarterly	Quarterly	Well cluster - attainment monitoring for VOCs and Cr
MW-3C	M	10/2018	10/2021	1.00	1.60	1.60	4	YES						YES		9	10/2003	10/2021	5.80	31.20	10.50	4	YES		On Hold	On Hold	Quarterly	Quarterly	Well cluster - not optimal depth; attainment monitoring for VOCs and Cr
MW-4A	M	10/2018	10/2021	1.80	3.90	2.00	4	YES						YES		33	02/2021	10/2021	263.00	890.00	589.00	None	NO		Annual	Quarterly	Quarterly	Semiannual	Well cluster - not optimal depth; attainment monitoring for VOCs, remediation monitoring for Cr. Frequency of Cr monitoring is semiannual to measure impacts of system shut down.
MW-4B	M	10/2012	10/2021	2.50	4.20	2.50	4	YES						YES		27	02/2021	10/2021	87.10	204.00	124.00	None	NO		On Hold	Quarterly	Quarterly	Semiannual	Well cluster - not optimal depth; attainment monitoring for VOCs, remediation monitoring for Cr. Frequency of Cr monitoring is semiannual to measure impacts of system shut down.
MW-4BShed	M	10/2009	10/2021	1.50	4.10	2.40	4	YES						YES		21	10/2013	10/2021	46.00	72.70	72.70	4	YES		Biennial 2021	On Hold	Quarterly	Quarterly	Well cluster - attainment monitoring for VOCs and Cr
MW-4C	M	10/2017	10/2021	1.00	2.30	1.00	4	YES						YES		15	02/2021	10/2021	45.40	97.20	45.40	2	YES		On Hold	Quarterly	Quarterly	Semiannual	Well cluster - not optimal depth; attainment monitoring for VOCs and Cr. Frequency of Cr monitoring is semiannual to measure impacts of system shut down.
MW-6A	M	10/1997	10/2021	U	U	U	4	YES						YES		14	02/2021	10/2021	11.10	68.10	68.10	4	YES		Annual	Quarterly	Quarterly	Quarterly	Well cluster - not optimal depth; attainment monitoring for VOCs and Cr. Frequency of Cr monitoring is semiannual to measure impacts of system shut down.
MW-6B	E/M	10/2018	10/2021	2.10	30.00	30.00	None	YES						YES		63	02/2021	10/2021	33.10	70.80	35.40	4	YES		Annual	Quarterly	Quarterly	Semiannual	Extraction well - inactive; attainment monitoring for VOCs and Cr (also well cluster, previously most impacted). Frequency of Cr monitoring is semiannual to measure impacts of system shut down.
MW-6C	M	10/2018	10/2021	0.20	0.47	0.47	4	YES						YES		12	10/2004	10/2021	U	23.80	23.80	4	YES		On Hold	On Hold	Quarterly	Quarterly	Well cluster - not optimal depth; attainment monitoring for VOCs and Cr
MW-6D	M	10/2018	10/2021	0.48	1.90	0.48	4	YES						YES		10	10/2004	10/2021	6.10	29.80	17.20	4	YES		On Hold	On Hold	Quarterly	Quarterly	Well cluster - not optimal depth; attainment monitoring for VOCs and Cr

TABLE 5-2. WELLS AND RECOMMENDED SAMPLING FREQUENCIES

Well Name	Well Type	TCE Annual Evaluation (Last 4 Samples)													Never Exceeded Cleanup Level for VOCs?	Total Number Cr Datapoints	Chromium Annual Evaluation (Last 4 Samples)							Never Exceeded Cleanup Level for Cr?	2021 Sampling Frequency [1]		2022 Sampling Frequency Recommendations and When Sampled Next [2]		Well Use / Rationale for Recommendation
		Date of First of the Most Recent Four Samples	Most Recent Sample Date	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Consecutive Samples < Cleanup Goal	Remediation Monitoring Phase Complete for TCE? [3]	Historical Min. Conc. (ug/L)	Historical Max. Conc. (ug/L)	Number of Samples	Number of Conc. < Cleanup Goal	Most Recent Sample Date	Remediation Phase Complete for all VOCs? [3]			Date of First of the Most Recent Four Samples	Most Recent Sample Date	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Consecutive Samples < Cleanup Goal	Remediation Monitoring Phase Complete for Chromium? [3]		VOCs	Cr	VOCs	Cr	
MW-7B	M	10/2017	10/2020	3.10	6.30	6.30	None	NO						NO		6	04/1995	10/2009	U	72.60	U	4	YES		Annual	On Hold	Quarterly	Annual	Well cluster - adjacent to MW-4 cluster; remediation monitoring for VOCs, attainment monitoring for Cr.
MW-7C	M	10/2004	10/2021	0.18	0.74	0.30	4	YES						YES		8	10/2004	10/2021	8.50	12.30	8.50	4	YES		On Hold	On Hold	Quarterly	Quarterly	Well cluster - attainment monitoring for VOCs and Cr
MW-8B	M	10/2014	10/2021	1.20	1.80	1.20	4	YES						YES		13	10/2004	10/2021	6.30	15.10	7.65	4	YES		On Hold	On Hold	Quarterly	Quarterly	Attainment monitoring for VOCs and Cr
MW-9B	M	10/2014	10/2021	1.40	2.80	1.40	4	YES						YES		17	02/2021	10/2021	5.69	18.30	12.10	4	YES		On Hold	Quarterly	Quarterly	Semiannual	Well cluster - previously most TCE impacted; attainment monitoring for VOCs and Cr. Frequency of Cr monitoring is semiannual to measure impacts of system shut down.
MW-9C	M	10/2019	10/2021	0.83	2.90	0.83	4	YES						YES		10	05/1998	07/2021	4.10	65.40	17.40	4	NA	X	Annual	NA	Quarterly	NA	Well cluster - not optimum depth; attainment monitoring for VOCs; Cr never exceeded cleanup level
MW-10B	E/M	10/2020	10/2021	1.40	8.90	1.40	3	NO						NO		60	10/2018	10/2021	25.20	116.00	116.00	None	YES		Semiannual	Annual	Quarterly	Quarterly	Extraction well - inactive (also well cluster); remediation monitoring for VOCs, attainment monitoring for Cr
MW-10C	E/M	10/2019	10/2021	1.30	2.60	2.60	4	YES						YES		63	10/2019	10/2021	57.90	238.00	74.50	1	YES		Annual	Annual	Quarterly	Semiannual	Extraction well - inactive (also well cluster); attainment monitoring for VOCs and Cr
MW-12C	M	10/2017	10/2021	0.63	3.30	1.20	4	YES						YES		26	10/2009	10/2021	U	13.80	13.80	4	YES		Biennial 2021	On Hold	Quarterly	Quarterly	TCE Plume boundary; attainment monitoring for VOCs and Cr
MW-13C	M	10/2019	10/2021	1.30	4.50	1.30	4	YES						YES		29	10/2010	10/2021	27.50	46.30	43.20	4	YES		Biennial 2021	On Hold	Semiannual	Semiannual	TCE Plume boundary; attainment monitoring for VOCs and Cr
PW-1B	E/M	10/2019	10/2021	2.20	3.10	3.10	4	YES						YES		88	10/2019	10/2021	28.70	61.40	40.30	4	YES		Annual	Annual	Quarterly	Quarterly	Extraction well - inactive; attainment monitoring for VOCs and Cr
Intermediate Wells																													
AMW-59	E/M	02/2021	10/2021	0.39	16.00	0.39	1	NO						NO		16	10/2020	07/2021	11.10	19.20	11.10	4	NA	X	Semiannual	Semiannual	Semiannual	NA	Plume area - silt well; remediation monitoring for VOCs. Cr never exceeded cleanup level. Monitored semiannually for in-situ performance including NA parameters.
AMW-60	M	10/2018	10/2021	U	0.40	0.26	4	YES						NO		4	11/2004	10/2009	U	23800.00	2.10	3	NA	X	Annual	NA	Semiannual	NA	Silt well, remediation monitoring for 1-1 dichloroethene only, Cr never exceeded cleanup level
CPU-14	M	10/2020	10/2021	1.00	4.40	1.00	4	YES						YES		34	10/2013	10/2021	U	165.00	165.00	None	YES		Semiannual	On Hold	Quarterly	Semiannual	Plume boundary; attainment monitoring for VOCs and Cr
MW-14C	E/M[4]	02/2021	10/2021	2.50	2.90	2.50	4	YES						YES		76	10/2020	10/2021	10.20	84.10	37.70	1	YES		Semiannual	Annual	Semiannual	Semiannual	Extraction well - inactive, (also well cluster); attainment monitoring for VOCs and Cr, NA parameters included for in-situ performance monitoring.
MW-14E	E/M[4]	02/2021	10/2021	8.40	19.00	19.00	None	NO						NO		75	02/2021	10/2021	166.00	234.00	192.00	None	NO		Semiannual	Semiannual	Semiannual	Semiannual	Plume area - silt well; attainment monitoring for VOCs. Monitored semiannually for in-situ performance including NA parameters.
MW-15E	M	10/2019	10/2021	1.40	3.00	3.00	4	YES						YES		16	10/2008	10/2021	3.30	11.20	10.50	4	YES		Biennial 2021	On Hold	Semiannual	Semiannual	Attainment monitoring for VOCs and Cr.
MW-18D	E/M	10/2020	07/2021	3.10	3.60	3.60	4	YES						YES		87	10/2020	07/2021	15.80	177.00	177.00	None	NO		Semiannual	Semiannual	Semiannual	Semiannual	Extraction well - inactive; attainment monitoring for VOCs and Cr
MW-18E	E/M	10/2020	07/2021	0.22	0.47	0.43	4	YES						YES		34	10/2019	02/2021	U	69.20	4.18	4	YES		Semiannual	On Hold	Semiannual	Semiannual	Attainment monitoring for VOCs and Cr
MW-19D	E/M[4]	02/2021	10/2021	6.00	9.20	7.40	None	NO						NO		87	02/2021	10/2021	59.60	122.00	63.20	3	NO		Semiannual	Semiannual	Semiannual	Semiannual	Extraction well - inactive, remediation monitoring for VOCs, Cr. NA parameters included for in-situ performance monitoring.
MW-20D	E/M	02/2021	10/2021	6.80	11.00	9.40	None	NO						NO		87	02/2021	10/2021	69.20	86.40	69.20	1	YES		Semiannual	Semiannual	Semiannual	Semiannual	Extraction well - inactive; remediation monitoring for VOCs, attainment monitoring for Cr. NA parameters included for in-situ performance monitoring.
MW-40	M	10/2018	10/2021	0.30	0.96	0.96	4	YES						YES		12	10/2019	10/2021	51.60	135.00	135.00	None	NO		On Hold	Annual	Semiannual	Annual	Remediation monitoring for Cr, attainment monitoring for VOCs
PZ-39	M	02/2021	10/2021	36.00	42.00	37.00	None	NO						NO		7	10/1999	07/2021	3.20	15.00	7.78	4	NA	X	Semiannual	Semiannual	Semiannual	NA	Remediation monitoring for VOCs; Cr never exceeded cleanup level. NA parameters included for in-situ performance monitoring.
Church of God Wells																													
AMW-27	E/M	04/2016	07/2021	1.60	3.50	1.60	4	YES						YES		44	04/2013	07/2021	U	38.30	38.30	4	YES		On Hold	NFS	NFS	Semiannual	Plume area - silt well; attainment monitoring for VOCs and Cr
AMW-61	M	10/2018	10/2021	5.50	7.40	5.50	None	NO						NO		7	11/2004	10/2017	17.30	1410.00	39.70	3	NO		Annual	Annual	Annual	Annual	Silt well, remediation monitoring for VOCs and Cr
CPU-12	M	10/2016	02/2021	2.50	3.00	3.00	4	YES						YES		32	10/2018	02/2021	4.00	8.59	8.59	4	YES		Biennial 2021	Annual	Annual	NFS	Plume boundary; attainment monitoring for VOCs and Cr
CPU-13	E/O	04/2013	10/2014	0.92	1.20	0.94	4	YES						YES		59	04/2013	10/2014	25.30	54.80	45.70	4	YES		NFS	NFS	NFS	NFS	Extraction well - inactive, (also well cluster); remediation and attainment monitoring complete. No further sampling.
MW-22D	E/M	10/2020	07/2021	1.60	4.00	3.50	4	YES						YES		84	10/2020	07/2021	57.40	68.20	57.40	4	YES		Semiannual	Semiannual	Semiannual	Semiannual	Inactive extraction well. Attainment monitoring for VOCs and Cr
MW-25D	E/O	10/2012	10/2014	1.30	3.00	1.70	4	YES						YES		76	10/2012	10/2014	2.70	6.30	6.30	4	YES		NFS	NFS	NFS	NFS	Former extraction well; remediation and attainment monitoring complete. No further sampling.
MW-26D	E/O	10/2012	10/2014	0.35	2.10	0.35	4	YES						YES		76	10/2012	10/2014	7.00	38.60	11.40	4	YES		NFS	NFS	NFS	NFS	Former extraction well; remediation and attainment monitoring complete. No further sampling.
MW-27D	E/M	10/2011	10/2014	0.63	1.50	1.50	4	YES						YES		50	10/2011	10/2014	U	12.20	U	4	YES		NFS	NFS	NFS	NFS	Former extraction well; remediation and attainment monitoring complete. No further sampling.
MW-49	E/O	10/2012	10/2014	1.10	1.70	1.60	4	YES						YES		34	10/2012	10/2014	9.30	12.20	12.20	4	YES		NFS	NFS	NFS	NFS	Former extraction well; remediation and attainment monitoring complete. No further sampling.
Toe Wells																													
AMW-42	M	10/2009	10/2014	0.65	1.30	0.65	4	YES						YES		53	10/2009	10/2014	U	21.30	U	4	YES		NFS	NFS	NFS	NFS	Remediation and attainment monitoring complete. No further sampling.
MW-31	E/M	10/2008	10/2012	0.20	0.36	0.26	4	YES						YES		44	10/2008	10/2012	8.10	12.90	11.40	4	YES		NFS	NFS	NFS	NFS	Remediation and attainment monitoring complete. No further sampling.
MW-35	E/M	10/2015	04/2017	3.00	3.70	3.60	4	YES						YES		65	10/2012	04/2015	U	29.30	U	4	YES		NFS	NFS	NFS	NFS	Decommissioned 2017

TABLE 5-2. WELLS AND RECOMMENDED SAMPLING FREQUENCIES

Well Name	Well Type	TCE Annual Evaluation (Last 4 Samples)													Never Exceeded Cleanup Level for VOCs?	Total Number Cr Datapoints	Chromium Annual Evaluation (Last 4 Samples)							Never Exceeded Cleanup Level for Cr?	2021 Sampling Frequency [1]		2022 Sampling Frequency Recommendations and When Sampled Next [2]		Well Use / Rationale for Recommendation
		Date of First of the Most Recent Four Samples	Most Recent Sample Date	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Consecutive Samples < Cleanup Goal	Remediation Monitoring Phase Complete for TCE? [3]	Historical Min. Conc. (ug/L)	Historical Max. Conc. (ug/L)	Number of Samples	Number of Conc. < Cleanup Goal	Most Recent Sample Date	Remediation Phase Complete for all VOCs? [3]			Date of First of the Most Recent Four Samples	Most Recent Sample Date	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Consecutive Samples < Cleanup Goal	Remediation Monitoring Phase Complete for Chromium? [3]		VOCs	Cr	VOCs	Cr	
MW-41	E/M	10/2010	10/2017	U	U	U	4	YES						YES		57	10/2010	10/2017	U	U	U	4	YES		Discontinue	Discontinue	NFS	NFS	Remediation and attainment monitoring complete. No further sampling.
MW-48	M	10/2006	10/2009	U	U	U	4	YES						YES		39	10/2006	10/2009	4.00	35.00	35.00	4	NA	X	NFS	NA	NFS	NA	Remediation and attainment monitoring complete for VOCs; Cr never exceeded cleanup level. No further sampling
Troutdale Wells																													
AMW-24	M	10/2018	10/2021	4.90	6.90	4.90	1	NO						NO		26	10/2011	10/2014	3.50	13.60	13.60	4	NA	X	Annual	NA	Annual	NA	Troutdale well - TCE impacted; remediation monitoring for VOCs, Cr never exceeded cleanup level
MW-33	M/D	02/2021	10/2021	0.92	3.00	2.40	4	YES						YES		30	10/2011	10/2014	1.90	3.20	2.20	4	NA	X	Annual	NA	Semiannual	NA	Troutdale well - TCE impacted; attainment monitoring for VOCs, Cr never exceeded cleanup level
BENNETT	Other	10/2019	07/2021	0.90	2.50	2.50	4	YES						YES		21	10/2014	04/2017	U	U	U	4	NA	X	Annual	NA	Semiannual	NA	Troutdale well - TCE impacted; attainment monitoring for VOCs, Cr never exceeded cleanup level
Wells Excluded from Closure Monitoring Program																													
Northern Plume Wells																													
AMW-16	M	04/2019	10/2020	23.00	39.00	23.00	0	NA	-	-	-	-	-	NA										X	Semiannual	NA	Semiannual	NA	Northern Plume monitoring well
AMW-17	M	04/2019	10/2020	48.00	66.00	48.00	0	NA	-	-	-	-	-	NA										X	Semiannual	NA	Semiannual	NA	Northern Plume monitoring well
AMW-18	M	04/2019	10/2020	16.00	20.00	16.00	0	NA	-	-	-	-	-	NA										X	Semiannual	NA	Semiannual	NA	Northern Plume monitoring well
AMW-23	M	10/2019	10/2020	U	U	U	4	NA	-	-	-	-	-	NA										X	Annual	NA	Annual	NA	Northern Plume monitoring well
AMW-64	M	04/2019	10/2020	7.10	11.00	7.10	0	NA	-	-	-	-	-	NA										X	Semiannual	NA	Semiannual	NA	Northern Plume monitoring well
MW-21D	E/M	04/2020	10/2021	0.31	7.10	1.50	3	NA						NA		86	10/2017	10/2020	6.10	14.60	14.60	4	YES		Semiannual	Annual	Semiannual	Annual	Extraction well - not pumping as of June 2018; attainment monitoring complete for Cr; monitor TCE for Northern Plume impacts
MW-23D	M	04/2019	10/2020	83.00	150.00	83.00	0	NA	-	-	-	-	-	NA											Semiannual	NA	Semiannual	NA	Northern Plume monitoring well
MW-38	M	02/2021	10/2021	14.00	27.00	25.00	None	NA						NA		1									Semiannual	NA	Semiannual	NA	Northern Plume monitoring well
Toe Wells																													
AMW-63	M	10/2009	10/2017	U	U	U	4	NA	-	-	-	-	-	NA	X	0	10/2009	10/2017	-	-	-	-	NA	X	Discontinue	Discontinue	NFS	NFS	Remediation and attainment monitoring complete. No further sampling.
Infiltration Gallery Wells																													
AMW-6A	M/D	10/2014	10/2019	0.10	0.26	0.10	4	YES						YES	X	22	10/2014	10/2019	3.60	10.50	10.50	4	YES	X	Biennial 2021	Biennial 2021	NFS	NFS	Infiltration gallery monitoring well-discontinue
AMW-7A	M/D	10/2014	10/2019	U	0.21	U	4	YES						YES	X	23	10/2014	10/2019	0.70	2.10	2.10	4	YES	X	Biennial 2021	Biennial 2021	NFS	NFS	Infiltration gallery monitoring well-discontinue
AMW-10A	M/D	10/2014	10/2019	U	0.14	U	4	YES						YES	X	20	10/2014	10/2019	3.70	8.30	5.70	4	YES	X	Biennial 2021	Biennial 2021	NFS	NFS	Infiltration gallery monitoring well-discontinue
AMW-11A	M/D	10/2014	10/2019	U	0.27	U	4	YES						YES	X	21	10/2014	10/2019	1.20	3.80	3.80	4	YES	X	Biennial 2021	Biennial 2021	NFS	NFS	Infiltration gallery monitoring well-discontinue

NOTES:
The rationale for changing wells from NFS (2016 recommendation) to "On Hold" or "Every 5 Years" is presented in Section 5.
Bold text indicates changes in 2022 for recommendations for sampling frequency.
[1] The 2021 sampling frequencies shown are those recommended in the 2020 Annual Status Report for the Boomsnub/Airco Superfund Site.
[2] A summary of all 2022 recommended sampling frequencies is provided in Table 5-4.
[3] The "Remediation Monitoring Phase is Completed" determinations are per EPA Guidance (EPA 2013) based on the most recent four sample data points for each COC. The remediation monitoring phase is completed when the last four sample concentrations are lower than the cleanup level.
[4] The pumps in wells MW-14C and MW14E were turned off and removed on 10/16/2019; and the pump in well MW-19D was turned off and removed 10/14/2019.

COC	= Contaminant of Concern.	NA	= Not applicable.
Cr	= Chromium.	NFS	= No further sampling (closure monitoring complete, or for a well excluded from closure monitoring, further sampling determined to be unnecessary)
E	= Extraction well.	TCE	= Trichloroethene.
E/M	= Extraction well with pump pulled; now sampled as a monitoring well.	U	= Analyte not detected above the reporting limit.
E/O	= Extraction well with pump turned off; pump is turned on for sampling.		= Indicates a change in sampling frequency.
EPA	= U.S. Environmental Protection Agency.	µg/L	= Micrograms per liter.
M	= Monitoring well.	VOC	= Volatile organic compound.
M/D	= Monitoring well with dedicated pump installed.	X	= Never exceeded cleanup level
		NA	= Natural Attenuation

Every 5 years - these wells will be sampled next in Fall 2022.
On Hold - sampling on hold pending attainment monitoring; no sampling planned for 2021.
Wells not included in the Closure Monitoring Program and not determined to require sampling for another purpose have been deleted from this table.
Where no entries are present for one of the two constituents (TCE or Cr) for a given well, that constituent is not a COC for and has not been sampled in the well.
TCE summary data are presented as a representation of all VOCs.

TABLE 5-3. ATTAINMENT MONITORING STATUS FALL 2021

Well Name	Ready for VOC Attainment Monitoring?	Attainment Phase Complete for VOCs?	VOCs Not Completing Attainment Phase (# Results needed)	Ready for Chromium Attainment Monitoring?	Attainment Phase Complete for Chromium? (# Results Needed)
Upgradient					
AMW-8A	Yes	No	Trichlorethene (7)	NA	NA
TCE Source Area [1]					
AMW-1A	No			NA	NA
AMW-1B	Yes	No	Trichlorethene (7)	NA	NA
AMW-1C	Yes	No	Trichlorethene (7)	NA	NA
AMW-2A	No			NA	NA
AMW-2B	Yes	No	Trichlorethene (7)	NA	NA
AMW-3A	Yes	No	Bromodichloromethane (3) Chlorodibromomethane (3) Trichlorethene (3)	NA	NA
AMW-4A	Yes	No	Trichlorethene (7)	NA	NA
AMW-12A	No			NA	NA
AMW-13A	Yes	No	Trichlorethene (6)	NA	NA
AMW-19A	Yes	No	Trichlorethene (6)	NA	NA
AMW-26	Yes	No	Trichlorethene (6)	NA	NA
AMW-52A	Yes	No	Trichlorethene (6)	NA	NA
AMW-53A	No			NA	NA
AMW-54A	**Yes**	**Yes**		NA	NA
AMW-55A	**Yes**	**Yes**		NA	NA
AMW-56A	**Yes**	**Yes**		NA	NA
MW-1A	Yes	No	Trichlorethene (7)	NA	NA
MW-1B	Yes	No	Trichlorethene (5)	NA	NA
MW-1C	Yes	No	Trichlorethene (6)	NA	NA
Proximal					
AMW-58	Yes	No	Trichlorethene (6)	NA [2]	
MW-2A	Yes	No	Trichlorethene (5)	No	
MW-2B	Yes	No	Trichlorethene (4)	Yes	No (4)
MW-2C	Yes	No	Trichlorethene (5)	NA [2]	
MW-3A	NA			No	
MW-3B	Yes	No	Trichlorethene (5)	Yes	No (5)
MW-3C	Yes	No	Trichlorethene (5)	Yes	No (5)
MW-4A	Yes	No	Trichlorethene (7)	No	
MW-4B	Yes	No	Trichlorethene (7)	No	
MW-4BSHED	Yes	No	Trichlorethene (8)	Yes	No (7)
MW-4C	Yes	No	Trichlorethene (7)	Yes	No (6)
MW-6A	Yes	No	Trichlorethene (7)	Yes	No (8)
MW-6B	Yes	No	Trichlorethene (8)	Yes	No (4)
MW-6C	Yes	No	Trichlorethene (6)	Yes	No (4)
MW-6D	Yes	No	Trichlorethene (6)	Yes	No (6)
MW-7B	No			Yes	No (8)
MW-7C	Yes	No	Trichlorethene (6)	Yes	No (6)
MW-8B	Yes	No	Trichlorethene (6)	Yes	No (6)
MW-9B	Yes	No	Trichlorethene (7)	Yes	No (4)

Well Name	Ready for VOC Attainment Monitoring?	Attainment Phase Complete for VOCs?	VOCs Not Completing Attainment Phase (# Results needed)	Ready for Chromium Attainment Monitoring?	Attainment Phase Complete for Chromium? (# Results Needed)
MW-9C	Yes	No	Trichlorethene (7)	NA [2]	
MW-10B	No			Yes	No (7)
MW-10C	Yes	No	Trichlorethene (6)	Yes	No (8)
MW-12C	Yes	No	Trichlorethene (6)	Yes	No (6)
MW-13C	Yes	No	Trichlorethene (5)	Yes	
PW-1B	Yes	No	Trichlorethene (6)	Yes	No (6)
Intermediate					
AMW-59	No			NA [2]	
AMW-60	No			NA [2]	
CPU-14	Yes	No	Trichlorethene (8)	Yes	No (8)
MW-14C	Yes	No	Trichlorethene (5)	Yes	No (7)
MW-14E	No			Yes	No (8)
MW-15E	Yes	No	Trichlorethene (4)	Yes	No (4)
MW-18D	Yes	No	Trichlorethene (4)	No	
MW-18E	Yes	No	Trichlorethene (4)	Yes	No (5)
MW-19D	No			Yes	No (5)
MW-20D	No			Yes	No (8)
MW-40	Yes	No	Trichlorethene (4)	No	
PZ-39	No			NA [2]	
Church of God					
AMW-27	**Yes**	**Yes**		Yes	No (3)
AMW-61	No			No	
CPU-12	**Yes**	No	Trichloroethene (1)	**Yes**	**Yes**
CPU-13	**Yes**	**Yes**		**Yes**	**Yes**
MW-22D	Yes	No	Trichlorethene (4)	Yes	No (4)
MW-25D	**Yes**	**Yes**		**Yes**	**Yes**
MW-26D	**Yes**	**Yes**		**Yes**	**Yes**
MW-27D	**Yes**	**Yes**		**Yes**	**Yes**
MW-49	**Yes**	**Yes**		**Yes**	**Yes**
Toe of Plume					
AMW-42	**Yes**	**Yes**		**Yes**	**Yes**
MW-41	**Yes**	**Yes**		**Yes**	**Yes**
MW-48	**Yes**	**Yes**		**Yes**	**Yes**
Troutdale					
AMW-24	No			NA	
BENNETT	**Yes**	**Yes**		NA	
MW-33	Yes	No	Trichloroethene (1)	NA	

Notes:

[1] Chromium is not a COC for TCE Source Area wells.

[2] Designated as NA since contaminant(s) never exceeded cleanup level.

Well names in bold have completed attainment monitoring

Per the Closure Monitoring Plan, the determination of whether Attainment Phase is complete is based on analysis of the most recent eight samples for each contaminant of concern.

NA = Not applicable

VOC = Volatile organic compound

TABLE 5-4. SUMMARY OF 2022 WELL SAMPLING FREQUENCIES

Well Name	Recommendation							Rationale for Recommendation
	Well Type	Quarterly [a]	Semi-annual	Annual	Biennial[b]	Every 5 Years[c]	NFS[d]	
Closure Monitoring Program Wells								
Upgradient Wells								
AMW-8A	M	VOCs						TCE background well; in attainment monitoring
TCE Source Wells								
AMW-1A	M		VOCs, DO/ORP					OU-2 well; well cluster. Inlcudes DO/ORP for in-situ monitoring.
AMW-1B	M	VOCs						OU-2 well; in attainment monitoring
AMW-1C	M	VOCs						OU-2 well; in attainment monitoring
AMW-2A	M		VOCs, DO/ORP					OU-2 well; well cluster. Inlcudes DO/ORP for in-situ monitoring.
AMW-2B	M	VOCs						OU-2 well; well cluster - in attainment monitoring
AMW-3A	M		VOCs					OU-2 well; in attainment monitoring
AMW-4A	M	VOCs						OU-2 well; in attainment monitoring
AMW-12A	M		VOCs, DO/ORP					OU-2 well; Inlcudes DO/ORP for in-situ monitoring.
AMW-13A	M	VOCs						OU-2 well; in attainment monitoring
AMW-19A	M	VOCs						OU-2 boundary well; in attainment monitoring
AMW-26	M	VOCs						OU-2 boundary well; in attainment monitoring
AMW-52A	M	VOCs						OU-2 well; in attainment monitoring
AMW-53A	M		VOCs, DO/ORP					OU-2 well; Inlcudes DO/ORP for in-situ monitoring.
AMW-54A	M					X		OU-2 boundary well; remediation and attainment monitoring complete
AMW-55A	M						X	OU-2 well; remediation and attainment monitoring complete
AMW-56A	M					VOCs		OU-2 boundary well; remediation and attainment monitoring complete
MW-1A	M	VOCs						OU-2 well; Inlcudes DO/ORP for in-situ monitoring.
MW-1B	M		VOCs					OU-2 well; well cluster - in attainment monitoring
MW-1C	M	VOCs						OU-2 well; well cluster - in attainment monitoring

TABLE 5-4. SUMMARY OF 2022 WELL SAMPLING FREQUENCIES

Well Name	Recommendation							Rationale for Recommendation
	Well Type	Quarterly [a]	Semi-annual	Annual	Biennial[b]	Every 5 Years[c]	NFS[d]	
Proximal Wells								
AMW-58	M	VOCs						In attainment monitoring for VOCs; Cr never exceeded cleanup level
MW-2A	M		VOCs	Cr				Well cluster - remediation monitoring for Cr; attainment monitoring for VOCs
MW-2B	M		X					Well cluster - attainment monitoring for VOCs and Cr
MW-2C	M		X					Well cluster - attainment monitoring for VOCs; Cr never exceeded cleanup level
MW-3A	M		Cr					Well cluster - remediation monitoring for Cr; VOCs never exceeded cleanup level. Frequency of Cr monitoring is semiannual to measure impacts of system shut down.
MW-3B	M	X						Well cluster - attainment monitoring for VOCs and Cr
MW-3C	M	X						Well cluster - not optimal depth; attainment monitoring for VOCs and Cr
MW-4A	M	VOCs	Cr					Well cluster - not optimal depth; attainment monitoring for VOCs, remediation monitoring for Cr. Frequency of Cr monitoring is semiannual to measure impacts of system shut down.
MW-4B	M	VOCs	Cr					Well cluster - not optimal depth; attainment monitoring for VOCs, remediation monitoring for Cr. Frequency of Cr monitoring is semiannual to measure impacts of system shut down.
MW-4BSHED	M	X						Well cluster - attainment monitoring for VOCs and Cr
MW-4C	M	VOCs	Cr					Well cluster - not optimal depth; attainment monitoring for VOCs and Cr. Frequency of Cr monitoring is semiannual to measure impacts of system shut down.
MW-6A	M	X						Well cluster - not optimal depth; attainment monitoring for VOCs and Cr. Frequency of Cr monitoring is semiannual to measure impacts of system shut down.
MW-6B	E/M	VOCs	Cr					Extraction well - inactive; attainment monitoring for VOCs and Cr (also well cluster, previously most impacted). Frequency of Cr monitoring is semiannual to measure impacts of system shut down.
MW-6C	M	X						Well cluster - not optimal depth; attainment monitoring for VOCs and Cr
MW-6D	M	X						Well cluster - not optimal depth; attainment monitoring for VOCs and Cr
MW-7B	M	VOCs		Cr				Well cluster - adjacent to MW-4 cluster; remediation monitorin for VOCs, attainment monitoring for Cr.
MW-7C	M	X						Well cluster - attainment monitoring for VOCs and Cr
MW-8B	M	X						Attainment monitoring for VOCs and Cr
MW-9B	M	VOCs	Cr					Well cluster - previously most TCE impacted; attainment monitoring for VOCs and Cr. Frequency of Cr monitoring is semiannual to measure impacts of system shut down.
MW-9C	M	VOCs						Well cluster - not optimum depth; attainment monitoring for VOCs; Cr never exceeded cleanup level

TABLE 5-4. SUMMARY OF 2022 WELL SAMPLING FREQUENCIES

Well Name	Recommendation							Rationale for Recommendation
	Well Type	Quarterly [a]	Semi-annual	Annual	Biennial[b]	Every 5 Years[c]	NFS[d]	
MW-10B	E/M	X						Extraction well - inactive (also well cluster); remediation monitoring for VOCs, attainment monitoring for Cr
MW-10C	E/M	VOCs	Cr					Extraction well - inactive (also well cluster); attainment monitoring for VOCs and Cr
MW-12C	M	X						TCE Plume boundary; attainment monitoring for VOCs and Cr
MW-13C	M		X					TCE Plume boundary; attainment monitoring for VOCs and Cr
PW-1B	E/M	X						Extraction well - inactive; attainment monitoring for VOCs and Cr
Intermediate Wells								
AMW-59	E/M		VOCs, I					Plume area - silt well; remediation monitoring for VOCs. Cr never exceeded cleanup level. Monitored semiannually for in-situ performance including NA parameters.
AMW-60	M		VOCs					Silt well, remediation monitoring for 1-1 dichlorethene only, Cr never exceeded cleanup level
CPU-14	M	VOCs	Cr					Plume boundary; attainment monitoring for VOCs and Cr
MW-14C	E/M		X, I					Extraction well - inactive, (also well cluster); attainment monitoring for VOCs and Cr, NA parameters included for in-situ performance monitoring.
MW-14E	E/M		X, I					Plume area - silt well; attainment monitoring for VOCs. Monitored semiannually for in-situ performance including NA parameters.
MW-15E	M		X					Attainment monitoring for VOCs and Cr.
MW-18D	E/M		X					Extraction well - inactive; attainment monitoring for VOCs and Cr
MW-18E	E/M		X					Attainment monitoring for VOCs and Cr

TABLE 5-4. SUMMARY OF 2022 WELL SAMPLING FREQUENCIES

Well Name	Recommendation							Rationale for Recommendation
	Well Type	Quarterly [a]	Semi-annual	Annual	Biennial[b]	Every 5 Years[c]	NFS[d]	
MW-19D	E/M		X, I					Extraction well - inactive, remediation monitoring for VOCs, Cr. NA parameters included for in-situ performance monitoring.
MW-20D	E		X, I					Extraction well - inactive; remediation monitoring for VOCs,attainment monitoring for Cr. NA parameters included for in-situ performance monitoring.
MW-40	M		VOCs	Cr				Remediation monitoring for Cr, attainment monitoring for VOCs
PZ-39	M		VOCs, I					Remediation monitoring for VOCs; Cr never exceeded cleanup level. NA parameters included for in-situ performance monitoring.
Church of God Wells								
AMW-27	E/M		Cr					Plume area - silt well; attainment monitoring for VOCs and Cr
AMW-61	M			X				Silt well, remediation monitoring for VOCs and Cr
CPU-12	M			VOCs				Plume boundary; attainment monitoring for VOCs and Cr
CPU-13	E/O						X	Extraction well - inactive, (also well cluster); remediation and attainment monitoring complete. No further sampling.
MW-22D	E/M		X					Inactive extraction well. Attainment monitoring for VOCs and Cr
MW-25D	E/O						X	Former extraction well; remediation and attainment monitoring complete. No further sampling.
MW-26D	E/O						X	Former extraction well; remediation and attainment monitoring complete. No further sampling.
MW-27D	E/M						X	Former extraction well; remediation and attainment monitoring complete. No further sampling.
MW-49	E/O						X	Former extraction well; remediation and attainment monitoring complete. No further sampling.
Toe Wells								
AMW-42	M						X	Remediation and attainment monitoring complete. No further sampling.
MW-41	E/M						X	Remediation and attainment monitoring complete. No further sampling.
MW-48	M						X	Remediation and attainment monitoring complete for VOCs; Cr never exceeded cleanup level. No further sampling
Troutdale Wells								
AMW-24	M/D			VOCs				Troutdale well - TCE impacted; remediation monitoring for VOCs, Cr never exceeded cleanup level
MW-33	M/D		VOCs					Troutdale well - TCE impacted; attainment monitoring for VOCs, Cr never exceeded cleanup level
BENNETT	Other		VOCs					Troutdale well - TCE impacted; attainment monitoring for VOCs, Cr never exceeded cleanup level

TABLE 5-4. SUMMARY OF 2022 WELL SAMPLING FREQUENCIES

Well Name	Recommendation							Rationale for Recommendation
	Well Type	Quarterly [a]	Semi-annual	Annual	Biennial[b]	Every 5 Years[c]	NFS[d]	
Wells Excluded from Closure Monitoring Program								
Northern Plume Wells								
AMW-16	M		VOCs					Northern Plume monitoring well
AMW-17	M		VOCs					Northern Plume monitoring well
AMW-18	M		VOCs					Northern Plume monitoring well
AMW-23	M			VOCs				Northern Plume monitoring well
AMW-64	M		VOCs					Northern Plume monitoring well
MW-21D	E/M		VOCs, I	Cr				Extraction well - not pumping as of June 2018; attainment monitoring complete for Cr; monitor TCE for Northern Plume impacts
MW-23D	M		VOCs					Northern Plume monitoring well
MW-38	M		VOCs					Northern Plume monitring well
Toe Wells								
AMW-63	M						X	Remediation and attainment monitoring complete. No further sampling.
Infiltration Gallery Wells								
AMW-6A	M/D						X	Infiltration gallery monitoring well-discontinue
AMW-7A	M/D						X	Infiltration gallery monitoring well-discontinue
AMW-10A	M/D						X	Infiltration gallery monitoring well-discontinue
AMW-11A	M/D						X	Infiltration gallery monitoring well-discontinue

Notes:

Wells to be sampled once in 2022.
Wells to be sampled twice in 2022.
Wells to be sampled 3 times in 2022
Wells to be sampled 4 times in 2022.

Wells excluded from the Closure Monitoring Program have been deleted from this table.

[a] The Closure Plan recommends quarterly sampling for events 1-4 of Attainment Monitoring and semiannual sampling for events 5-8 of Attainment Monitoring. Due to this, "quarterly" sampling may only occur for 3 quarters of the year when transitioning from Event 4 to Event 5.

[b] Biennial sampling (every 2 years) - these wells will be sampled next in Fall 2021.
[c] Every 5 years - these wells will be sampled next in Fall 2022.
[d] No Further Sampling - Attainment Monitoring complete for all relevant COCs; no sampling planned for 2022.

Cr	= Chromium	E	= Extraction well
EPA	= U.S. Environmental Protection Agency	E/M	= Extraction well with pump pulled; now sampled as a monitoring well
TCE	= Trichlorethene		
VOC	= Volatile organic compound	M	= Monitoring well
X	= Cr and VOCs	M/D	= Monitoring well with dedicated pump installed
I	= Includes collection of perfomance monitoring parameters for in-situ treatment		
E/O	= Extraction well with pump turned off; pump is turned on for sampling.		

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Appendix A

Chain-of-Custody Documentation and Analytical Results Summary for Groundwater Samples

Summer 2021
Chain-of-Custody Documentation and Analytical Results Summary for Groundwater Samples

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CHAIN OF CUSTODY

K2108516

Laboratory Information

Address: 1317 South 13th Ave., Kelso, WA 98626

Phone #: 360-577-7222 POC: Mark Harris

COC # | Cooler # 3 of

Lab Quote # | Lab Job #:

Client / Reporting Information

C

Company Name: EA Engineering, Science, and Technology, Inc., PBC

Address: 2200 6th Ave., Suite 707

City: Seattle State: WA Zip: 98121

Project Contact: Jonathan Reeve and per contract

Phone #: 206-452-5358

Samplers's Name/Signature: Phil Ehrman

Project Information

Project Name: Boomsnub

Street: 7608 NE 47th Ave

City: Vancouver State: WA

Project #: 1611303

Email: jreeve@eaest.com, skettlewell@eaest.com, asmith@eaest.com, and esullivan@eaest.com

Purchase Order #: 17578

Matrix Codes

W - Water
GW - Ground Water
SW - Surface Water
SO - Soil
OI - Oil
WP - Wipe
LIQ - Non-aqueous Liquid
AIR
DW - Drinking Water (Perchlorate Only)

Lab Sample ID	Sample ID	Collection Date	Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	ENCORE	NaHSO4	MEOH	NONE	Analytical Information: EPA 8260C/ VOCs	EPA 6020A/ TOTAL CHROMIUM	EPA 6010C/ METALS (As, Ca, Mg, Mn), DISSOLVED IRON	EPA 300.0/ ANIONS	SM 5310C/ TOC, DOC	SM5220C/ COD	ORGANIC ACIDS/ VOLATILE FATTY ACIDS	RSK 175/ DISSOLVED GASES			Dissolved Chromium (field filtered)	Dissolved metals (As, Ca, Mg, Mn) (field filtered)	Notes
	2129-062	7/22/21	0905	PE	GW	4	3		1						X	X										
	2129-063	7/22/21	0925	PE	GW	4	3		1						X	X										
	2129-059	7/22/21	0836	PE	GW	1			1							X										
	2129-061	7/22/21	0905	HH	GW	1			1							X										
	2129-060	7/22/21	0834	PE	GW	1			1							X										
	2129-051	7/21/21	1429	PE	GW	1			1							X										
	2129-055	7/21/21	1516	PE	GW	4	3		1						X	X										
	2129-048	7/21/21	1348	PE	GW	3	3								X											
	2129-044	7/21/21	1119	PE	GW	3	3								X											
	2129-040	7/21/21	1014	PE	GW	4	3		1						X	X										
	2129-033	7/21/21	0952	PE	GW	3	3								X											

Turnaround Time (Business days): standard

Data Deliverable Information: Per contract

Comments / Remarks: Samples from Site Boomsnub O&M / Project 1611303/ Phase 0004
Metals: As, Ca, Mg, Mn
O&M

Sample Custody must be documented below each time samples change possession.

	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
Relinquished by Sampler: 1	7/22/21 1100	1	2		2
Relinquished by: 3 3		3	4		4
Relinquished by: 5 5		5			

On Ice Y / N Trip Blank Y / N Cooler Temp. _____ °C

Labels Match Coc? Y / N

K2108518

CHAIN OF CUSTODY

Laboratory Information

Address: 1317 South 13th Ave., Kelso, WA 98626

Phone #: 360-577-7222 POC: Mark Harris

COC # | Cooler # 1 of 1

Lab Quote # | Lab Job #:

Client / Reporting Information

C

Company Name: EA Engineering, Science, and Technology, Inc., PBC

Address: 2200 6th Ave., Suite 707

City: Seattle State: WA Zip: 98121

Project Contact: Jonathan Reeve and per contract

Phone #: 206-452-5358

Samplers's Name/Signature: Phil Ehrman

Project Information

Project Name: Boomsnub

Street: 7608 NE 47th Ave

City: Vancouver State: WA

Project #: 1611303

Email: jreeve@eaest.com, skettlewell@eaest.com, asmith@eaest.com, and esullivan@eaest.com

Purchase Order #: 17578

Matrix Codes

W - Water
GW - Ground Water
SW - Surface Water
SO - Soil
OI - Oil
WP - Wipe
LIQ - Non-aqueous Liquid
AIR
DW - Drinking Water (Perchlorate Only)

Lab Sample ID	Sample ID	Collection: Date	Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	ENCORE	NaHSO4	MEOH	NONE	EPA 8260C/ VOCs	EPA 6020A/ TOTAL CHROMIUM	EPA 6010C/ METALS (As, Ca, Mg, Mn), DISSOLVED IRON	EPA 300.0/ ANIONS	SM 5310C/ TOC, DOC	SM5220C/ COD	ORGANIC ACIDS/ VOLATILE FATTY ACIDS	RSK 175/ DISSOLVED GASES			Dissolved Chromium (field filtered)	Dissolved metals (As, Ca, Mg, Mn) (field filtered)	Notes
	2129-042	7/21/21	1107	PE	GW	1			1							X											
	2129-058	7/21/21	1540	PE	GW	4	3		1						X	X											
	2129-057	7/21/21	1534	PE	GW	4	3		1						X	X											
	2129-050	7/21/21	1405	PE	GW	3	3								X												
	2129-052	7/21/21	1450	PE	GW	4	3		1						X	X											
	2129-054	7/21/21	1455	PE	GW	3	3								X												
	2129-056	7/21/21	1503	PE	GW	3	3								X												
	2129-041	7/21/21	1011	PE	GW	3	3								X												
	2129-045	7/21/21	1121	PE	GW	3	3								X												
	2129-035	7/21/21	1004	PE	GW	3	3								X												
	2129-049	7/21/21	1329	PE	GW	4	3		1						X	X											

Turnaround Time (Business days): standard

Per contract

Data Deliverable Information

Comments / Remarks

Samples from Site Boomsnub O&M / Project 1611303/ Phase 0004
Metals: As, Ca, Mg, Mn
O&M

Sample Custody must be documented below each time samples change possession.

	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
Relinquished by Sampler: 1	7/22/21 1100	1	2		2
Relinquished by: 3 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5 5	Date Time:	Received By: 5	On Ice Y / N; Labels Match Coc? Y / N	Trip Blank Y / N	Cooler Temp. ____ °C

CHAIN OF CUSTODY

K2108519

Laboratory Information

Address: 1317 South 13th Ave., Kelso, WA 98626

Phone #: 360-577-7222 POC: Mark Harris

COC # | Cooler # 1 of 1

Lab Quote # | Lab Job #:

Client / Reporting Information

C

Company Name: EA Engineering, Science, and Technology, Inc., PBC

Address: 2200 6th Ave., Suite 707

City: Seattle | State: WA | Zip: 98121

Project Contact: Jonathan Reeve and per contract

Phone #: 206-452-5358

Samplers's Name/Signature: Phil Ehrman

Project Information

Project Name: Boomsnub

Street: 7608 NE 47th Ave

City: Vancouver | State: WA

Project #: 1611303

Email: jreeve@eaest.com, skettlewell@eaest.com, asmith@eaest.com, and esullivan@eaest.com

Purchase Order #: 17578

Analytical Information

Matrix Codes

W - Water
GW - Ground Water
SW - Surface Water
SO - Soil
OI - Oil
WP - Wipe
LIQ - Non-aqueous Liquid
AIR
DW - Drinking Water (Perchlorate Only)

Lab Sample ID	Sample ID	Collection: Date	Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	ENCORE	NaHSO4	MEOH	NONE	EPA 8260C/ VOCs	EPA 6020A/ TOTAL CHROMIUM	EPA 6010C/ METALS (As, Ca, Mg, Mn), DISSOLVED IRON	EPA 300.0/ ANIONS	SM 5310C/ TOC, DOC	SM5220C/ COD	ORGANIC ACIDS/ VOLATILE FATTY ACIDS	RSK 175/ DISSOLVED GASES			Dissolved Chromium (field filtered)	Dissolved metals (As, Ca, Mg, Mn) (field filtered)	Notes
	2129-047	7/21/21	1201	PE	GW	4	3		1						X	X										
	2129-046	7/21/21	1249	PE	GW	3	3								X											
	2129-053	7/21/21	1509	PE	GW	4	3		1						X	X										
	2124-043	7/21/21	1015	PE	GW	3	3								X											
	2129-064	7/21/21	0930	PE	GW	2	2								X											Trip Blank
																										PE

Turnaround Time (Business days): standard

Data Deliverable Information: Per contract

Comments / Remarks: Samples from Site Boomsnub O&M / Project 1611303/ Phase 0004
Metals: As, Ca, Mg, Mn
O&M

Sample Custody must be documented below each time samples change possession.

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		7/22/21 1100	1 7/22/21 1100	2		2
3	Relinquished by:	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
5	Relinquished by:	Date Time:	Received By: 5	On Ice Y / N; Labels Match Coc? Y / N	Trip Blank Y / N	Cooler Temp. ____ oC

K2108472

CHAIN OF CUSTODY

Laboratory Information

Address: 1317 South 13th Ave., Kelso, WA 98626

Phone #: 360-577-7222 POC: Mark Harris

COC # | Cooler # 3 of ___

Lab Quote # | Lab Job #:

Client / Reporting Information

C

Company Name: EA Engineering, Science, and Technology, Inc., PBC

Address: 2200 6th Ave., Suite 707

City: Seattle | State: WA | Zip: 98121

Project Contact: Jonathan Reeve and per contract

Phone #: 206-452-5358

Samplers's Name/Signature: Phil Ehrman

Project Information

Project Name: Boomsnub

Street: 7608 NE 47th Ave

City: Vancouver | State: WA

Project #: 1611303

Email: jreeve@eaest.com, skettlewell@eaest.com, asmith@eaest.com, and esullivan@eaest.com

Purchase Order #: 17578

Matrix Codes

W - Water
GW - Ground Water
SW - Surface Water
SO - Soil
OI - Oil
WP - Wipe
LIQ - Non-aqueous Liquid
AIR
DW - Drinking Water (Perchlorate Only)

Lab Sample ID	Sample ID	Collection: Date	Time	Sampled by	Matrix	# of bottles	Preserved Bottles: HCl	NaOH	HNO3	H2SO4	ENCORE	NaHSO4	MEOH	NONE	Analytical Information: EPA 8260C/ VOCs	EPA 6020A/ TOTAL CHROMIUM	EPA 6010C/ METALS (As, Ca, Mg, Mn). DISSOLVED IRON	EPA 300.0/ ANIONS	SM 5310C/ TOC, DOC	SM5220C/ COD	ORGANIC ACIDS/ VOLATILE FATTY ACIDS	RSK 175/ DISSOLVED GASES			Dissolved Chromium (field filtered)	Dissolved metals (As, Ca, Mg, Mn) (field filtered)	Notes
	2129-011	7/19/21	1345	RR	GW	3	3								X												
	2129-010	7/19/21	1305	PE	GW	3	3								X												
	2129-012	7/19/21	1330	PE	GW	3	3								X												
	2129-032	7/20/21	1339	PE	GW	4	3		1						X	X											
	2129-034	7/20/21	1433	PE	GW	4	3		1						X	X											
	2129-036	7/20/21	1448	PE	GW	4	3		1						X	X											
	2129-037	7/20/21	1533	PE	GW	4	3		1						X	X											
	2129-022	7/20/21	0429	PE	GW	4	3		1						X	X											
	2129-024	7/20/21	1010	PE	GW	4	3		1						X	X											
	2129-028	7/20/21	1111	PE	GW	3	3								X												
	2129-030	7/20/21	1154	PE	GW	4	3		1						X											X	

Turnaround Time (Business days): standard

Data Deliverable Information: Per contract

Comments / Remarks: Samples from Site Boomsnub O&M / Project 1611303/ Phase 0004
Metals: As, Ca, Mg, Mn
O&M

Sample Custody must be documented below each time samples change possession.

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Phil Ehrman	7/21/21 0450	ACS 7/21/21 0450			
2						
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3						
4						
5	Relinquished by:	Date Time:	Received By:	On Ice Y / N	Trip Blank Y / N	Cooler Temp.
5				Labels Match Coc? Y / N		___ °C

K2108472

CHAIN OF CUSTODY

Laboratory Information

Address: 1317 South 13th Ave., Kelso, WA 98626

Phone #: 360-577-7222 POC: Mark Harris

COC # | Cooler # 3 of ___

Lab Quote # | Lab Job #:

Client / Reporting Information

C

Company Name: EA Engineering, Science, and Technology, Inc., PBC

Address: 2200 6th Ave., Suite 707

City: Seattle | State: WA | Zip: 98121

Project Contact: Jonathan Reeve and per contract

Phone #: 206-452-5358

Samplers's Name/Signature: Phil Ehrman

Project Information

Project Name: Boomsnub

Street: 7608 NE 47th Ave

City: Vancouver | State: WA

Project #: 1611303

Email: jreeve@eaest.com, skettlewell@eaest.com, asmith@eaest.com, and esullivan@eaest.com

Purchase Order #: 17578

Analytical Information

Matrix Codes

W - Water
GW - Ground Water
SW - Surface Water
SO - Soil
OI - Oil
WP - Wipe
LIQ - Non-aqueous Liquid
AIR
DW - Drinking Water (Perchlorate Only)

Lab Sample ID	Sample ID	Collection: Date	Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	ENCORE	NaHSO4	MEOH	NONE	EPA 8260C/ VOCs	EPA 6020A/ TOTAL CHROMIUM	EPA 6010C/ METALS (As, Ca, Mg, Mn), DISSOLVED IRON	EPA 300.0/ ANIONS	SM 5310C/ TOC, DOC	SM5220C/ COD	ORGANIC ACIDS/ VOLATILE FATTY ACIDS	RSK 175/ DISSOLVED GASES			Dissolved Chromium (field filtered)	Dissolved metals (As, Ca, Mg, Mn) (field filtered)	Notes
	2129-020	7/20/21	0855	PE	GW	1			1							X											
	2129-026	7/20/21	1051	PE	GW	1			1							X											
	2129-008	7/19/21	1451	PE	GW	3	3								X												
	2129-016	7/19/21	1450	PE	GW	9	9								X												MS/MSD
	2129-014	7/19/21	1442	PE	GW	3	3								X												
	2129-039	7/19/21	1130	PE	W	2	2								X												Trip Blank

Turnaround Time (Business days): standard

Data Deliverable Information: Per contract

Comments / Remarks: Samples from Site Boomsnub O&M / Project 1611303/ Phase 0004
Metals: As, Ca, Mg, Mn
O&M

Sample Custody must be documented below each time samples change possession.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	7/21/21 0930	1 AS 7/21/21 1200	2		2
Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3 3		3	4		4
Relinquished by:	Date Time:	Received By:	On Ice Y / N	Trip Blank Y / N	Cooler Temp.
5 5		5	Labels Match Coc? Y / N		___ °C

CHAIN OF CUSTODY

K2108474

Laboratory Information

Address: 1317 South 13th Ave., Kelso, WA 98626

Phone #: 360-577-7222 POC: Mark Harris

COC #	Cooler # 1 of ___
Lab Quote #	Lab Job #:

Client / Reporting Information

C

Company Name: EA Engineering, Science, and Technology, Inc., PBC

Address: 2200 6th Ave., Suite 707

City: Seattle State: WA Zip: 98121

Project Contact: Jonathan Reeve and per contract

Phone #: 206-452-5358

Samplers's Name/Signature: Phil Ehrman

Project Information

Project Name: Boomsnub

Street: 7608 NE 47th Ave

City: Vancouver State: WA

Project #: 1611303

Email: jreeve@eaest.com, skettlewell@eaest.com, asmith@eaest.com, and esullivan@eaest.com

Purchase Order #: 17578

Analytical Information

Matrix Codes

W - Water
GW - Ground Water
SW - Surface Water
SO - Soil
OI - Oil
WP - Wipe
LIQ - Non-aqueous Liquid
AIR
DW - Drinking Water (Perchlorate Only)

Lab Sample ID	Sample ID	Collection: Date	Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	ENCORE	NaHSO4	MEOH	NONE	EPA 8260C/ VOCs	EPA 6020A/ TOTAL CHROMIUM	EPA 6010C/ METALS (As, Ca, Mg, Mn), DISSOLVED IRON	EPA 300.0/ ANIONS	SM 5310C/ TOC, DOC	SM5220C/ COD	ORGANIC ACIDS/ VOLATILE FATTY ACIDS	RSK 175/ DISSOLVED GASES			Dissolved Chromium (field filtered)	Dissolved metals (As, Ca, Mg, Mn) (field filtered)	Notes
	2129-025	7/20/21	1335	RR	GW	11	7		2	1				1	X		X	X	X	X		X					
	2129-003	7/19/21	1100	RR	GW	12	7		3	1				1	X	X	X	X	X	X		X					
	2129-005	7/19/21	1110	RR	GW	3	3								X												
	2129-007	7/19/21	1204	RR	GW	11	7		2	1				1	X		X	X	X	X		X					
	2129-009	7/19/21	1331	RR	GW	12	7		3	1				1	X	X	X	X	X	X		X					
	2129-021	7/20/21	1023	RR	GW	36	21		9	3				3	X	X	X	X	X	X		X					MS/MSD
	2129-001	7/19/21	1100	RR	W	2	2									X											Trip Blank
																											PE

Turnaround Time (Business days): standard

Per contract

Data Deliverable Information

Comments / Remarks

Samples from Site Boomsnub O&M / Project 1611303/ Phase 0004
Metals: As, Ca, Mg, Mn
O&M

Sample Custody must be documented below each time samples change possession.

Relinquished by Sampler: 1	Date Time: 7/21/20 0930	Received By: 1	Relinquished By: 2	Date Time:	Received By: 2
Relinquished by: 3 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5 5	Date Time:	Received By: 5	On Ice Y / N Labels Match Coc? Y / N	Trip Blank Y / N	Cooler Temp. ___ °C

CHAIN OF CUSTODY

K2108476

Laboratory Information

Address: 1317 South 13th Ave., Kelso, WA 98626

Phone #: 360-577-7222 POC: Mark Harris

COC # | Cooler # 2 of ___

Lab Quote # | Lab Job #:

Client / Reporting Information

C

Company Name: EA Engineering, Science, and Technology, Inc., PBC

Address: 2200 6th Ave., Suite 707

City: Seattle State: WA Zip: 98121

Project Contact: Jonathan Reeve and per contract

Phone #: 206-452-5358

Samplers's Name/Signature: Phil Ehrman

Project Information

Project Name: Boomsnub

Street: 7608 NE 47th Ave

City: Vancouver State: WA

Project #: 1611303

Email: jreeve@eaest.com, skettlewell@eaest.com, asmith@eaest.com, and esullivan@eaest.com

Purchase Order #: 17578

Matrix Codes

W - Water
GW - Ground Water
SW - Surface Water
SO - Soil
OI - Oil
WP - Wipe
LIQ - Non-aqueous Liquid
AIR
DW - Drinking Water (Perchlorate Only)

Lab Sample ID	Sample ID	Collection Date	Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	ENCORE	NaHSO4	MEOH	NONE	Analytical Information: EPA 8260C/ VOCs	EPA 6020A/ TOTAL CHROMIUM	EPA 6010C/ METALS (As, Ca, Mg, Mn). DISSOLVED IRON	EPA 300.0/ ANIONS	SM 5310C/ TOC, DOC	SM5220C/ COD	ORGANIC ACIDS/ VOLATILE FATTY ACIDS	RSK 175/ DISSOLVED GASES			Dissolved Chromium (field filtered)	Dissolved metals (As, Ca, Mg, Mn) (field filtered)	Notes
	2129-002	7/19/21	1036	PE	GW	12	7		3	1				1	X	X	X	X	X	X		X					
	2129-004	7/19/21	1041	PE	GW	4	3		1						X	X											
	2129-018	7/19/21	1515	PE	GW	11	7		2	1				1	X	X	X	X	X	X		X					No Dis. Iron.
	2129-015	7/20/21	0849	RR	GW	12	7		3	1				1	X	X	X	X	X	X		X					
	2129-017	7/20/21	0859	RR	GW	4	3		1						X	X											
	2129-029	7/20/21	1405	RR	GW	3	3								X												
	2129-027	7/20/21	1356	RR	GW	3	3								X												
	2129-031	7/20/21	1551	RR	GW	9/12	9		3						X	X											MS/MSD.
	2129-023	7/20/21	1205	RR	GW	4	3		1						X	X											
	2129-006	7/19/21	1151	PE	GW	4	3		1						X	X											
	2129-013	7/19/21	1527	RR	GW	4	3		1						X	X											

Turnaround Time (Business days): standard

Data Deliverable Information: Per contract

Comments / Remarks: Samples from Site Boomsnub O&M / Project 1611303/ Phase 0004
Metals: As, Ca, Mg, Mn
O&M

Sample Custody must be documented below each time samples change possession.

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Phil Ehrman	7/21/21 0930	ACS		7/21/21 1200	
2						
3 3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
5 5	Relinquished by:	Date Time:	Received By:	On Ice Y / N	Trip Blank Y / N	Cooler Temp.
				Labels Match Coc? Y / N		___ oC

CHAIN OF CUSTODY

K2108476

Laboratory Information

Address: 1317 South 13th Ave., Kelso, WA 98626

Phone #: 360-577-7222 POC: Mark Harris

COC # | Cooler # 2 of ___

Lab Quote # | Lab Job #:

Client / Reporting Information

C

Company Name: EA Engineering, Science, and Technology, Inc., PBC

Address: 2200 6th Ave., Suite 707

City: Seattle State: WA Zip: 98121

Project Contact: Jonathan Reeve and per contract

Phone #: 206-452-5358

Samplers's Name/Signature: Phil Ehman

Project Information

Project Name: Boomsnub

Street: 7608 NE 47th Ave

City: Vancouver State: WA

Project #: 1611302

Email: jreeve@eaest.com, skettlewell@eaest.com, asmith@eaest.com, and esullivan@eaest.com

Purchase Order #: 22030

Analytical Information

Matrix Codes

W - Water
GW - Ground Water
SW - Surface Water
SO - Soil
OI - Oil
WP - Wipe
LIQ - Non-aqueous Liquid
AIR
DW - Drinking Water (Perchlorate Only)

Lab Sample ID	Sample ID	Collection: Date	Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	ENCORE	NaHSO4	MEOH	NONE	EPA 8260C/ VOCs	EPA 6020A/ TOTAL CHROMIUM	EPA 6010C/ METALS (As, Ca, Mg, Mn), DISSOLVED IRON	EPA 300.0/ ANIONS	SM 5310C/ TOC, DOC	SM5220C/ COD	ORGANIC ACIDS/ VOLATILE FATTY ACIDS	RSK 175/ DISSOLVED GASES			Dissolved Chromium (field filtered)	Dissolved metals (As, Ca, Mg, Mn) (field filtered)	Notes
	2129-019	7/20/21	0919	RR	GW	3	3								X												
	2129-038	7/19/21	1030	PE	W	2	2								X												Trip Blank

Turnaround Time (Business days): standard

Data Deliverable Information: Per contract

Comments / Remarks: Samples from Site Boomsnub O&M / Project 1611303/ Phase 0004
Metals: As, Ca, Mg, Mn
Northern Plume

Sample Custody must be documented below each time samples change possession.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	7/21/21 0930	1	2	7/21/21 1100	2
Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3 3		3	4		4
Relinquished by:	Date Time:	Received By:	On Ice Y / N	Trip Blank Y / N	Cooler Temp.
5 5		5	Labels Match Coc? Y / N		___ oC

Groundwater Analysis

Sample Name AMW-1A Sampling Method PDB

Sample Date 7/19/2021

Sample Type N

Sample ID 2129-014

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.65		ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	8.5		ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.21	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	5.3		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-2A Sampling Method PDB

Sample Date 7/19/2021

Sample Type N

Sample ID 2129-016

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	1.5		ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	4.9		ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.61		ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.91		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	52		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-3A Sampling Method PDB

Sample Date 7/19/2021

Sample Type N

Sample ID 2129-012

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.15	J	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.49	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.11	J	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.80		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-4A Sampling Method PDB

Sample Date 7/19/2021

Sample Type N

Sample ID 2129-008

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-12A

Sampling Method LOW-FLOW

Sample Date 7/20/2021

Sample Type N

Sample ID 2129-025

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	CHLORIDE	7.16		mg/l	16887-00-6
E300.0	NITRATE AS NITROGEN	0.95		mg/l	14797-55-8
E300.0	SULFATE	6.51		mg/l	14808-79-8
RSK 175	ETHANE	0.60	U	ug/l	74-84-0
RSK 175	ETHYLENE	1.0	U	ug/l	74-85-1
RSK 175	METHANE	33		ug/l	74-82-8
SM5220C	Chemical Oxygen Demand	6	J	mg/l	COD
SW6010C	ARSENIC	21	U	ug/l	7440-38-2
SW6010C	CALCIUM METAL	25600		ug/l	7440-70-2
SW6010C	IRON	224		ug/l	7439-89-6
SW6010C	MAGNESIUM	9630		ug/l	7439-95-4
SW6010C	MANGANESE	427		ug/l	7439-96-5
SW8260C	1,1,1-TRICHLOROETHANE	0.24	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5

Groundwater Analysis

Sample Name AMW-12A

Sampling Method LOW-FLOW

Sample Date 7/20/2021

Sample Type N

Sample ID 2129-025

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	CFC-11	1.2		ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.16	J	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.40	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	6.6		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4
SW9060	Dissolved Organic Carbon	0.70		mg/l	DOC
SW9060	TOTAL ORGANIC CARBON	0.80		mg/l	TOC

Groundwater Analysis

Sample Name AMW-13A Sampling Method PDB

Sample Date 7/19/2021

Sample Type N

Sample ID 2129-010

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.45	J	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-19A

Sampling Method LOW-FLOW

Sample Date 7/20/2021

Sample Type N

Sample ID 2129-027

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.16	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	2.0		ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.30	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	1.6		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-26 Sampling Method LOW-FLOW

Sample Date 7/20/2021

Sample Type N

Sample ID 2129-029

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.67		ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	14		ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.31	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	2.9		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-27 Sampling Method LOW-FLOW

Sample Date 7/20/2021

Sample Type N

Sample ID 2129-031

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	38.3		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.39	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	1.6		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-52A Sampling Method PDB

Sample Date 7/21/2021

Sample Type N

Sample ID 2129-054

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.57		ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-53A Sampling Method PDB

Sample Date 7/21/2021

Sample Type N

Sample ID 2129-056

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	1.7		ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	9.5		ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.28	J	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	1.3		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	22		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-58 Sampling Method LOW-FLOW

Sample Date 7/21/2021

Sample Type N

Sample ID 2129-052

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	12.6		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-59 Sampling Method LOW-FLOW

Sample Date 7/19/2021

Sample Type N

Sample ID 2129-003

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	CHLORIDE	14.7		mg/l	16887-00-6
E300.0	NITRATE AS NITROGEN	0.10	U	mg/l	14797-55-8
E300.0	SULFATE	4.69		mg/l	14808-79-8
RSK 175	ETHANE	2.3		ug/l	74-84-0
RSK 175	ETHYLENE	3.1		ug/l	74-85-1
RSK 175	METHANE	4600		ug/l	74-82-8
SM5220C	Chemical Oxygen Demand	22		mg/l	COD
SW6010C	ARSENIC	21	U	ug/l	7440-38-2
SW6010C	CALCIUM METAL	89400		ug/l	7440-70-2
SW6010C	IRON	5070		ug/l	7439-89-6
SW6010C	MAGNESIUM	30900		ug/l	7439-95-4
SW6010C	MANGANESE	1700		ug/l	7439-96-5
SW6020A	CHROMIUM	11.1		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	1.8		ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4

Groundwater Analysis

Sample Name AMW-59 Sampling Method LOW-FLOW

Sample Date 7/19/2021

Sample Type N

Sample ID 2129-003

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	17		ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.71		ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	9.3		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	3.5		ug/l	75-01-4
SW9060	Dissolved Organic Carbon	7.20		mg/l	DOC
SW9060	TOTAL ORGANIC CARBON	7.10		mg/l	TOC

Groundwater Analysis

Sample Name AMW-59-DUP Sampling Method LOW-FLOW

Sample Date 7/19/2021

Sample Type FD

Sample ID 2129-005

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	1.8		ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	17		ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.74		ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	8.8		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name BENNETT Sampling Method PDB

Sample Date 7/21/2021

Sample Type N

Sample ID 2129-044

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.28	J	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.64		ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	2.5		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name CPU-14 Sampling Method LOW-FLOW

Sample Date 7/21/2021

Sample Type N

Sample ID 2129-046

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.14	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.12	J	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	4.4		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-1A

Sampling Method LOW-FLOW

Sample Date 7/21/2021

Sample Type N

Sample ID 2129-033

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.44	J	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-1B Sampling Method LOW-FLOW

Sample Date 7/21/2021

Sample Type N

Sample ID 2129-035

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-1C

Sampling Method LOW-FLOW

Sample Date 7/21/2021

Sample Type N

Sample ID 2129-041

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.24	J	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-1C-DUP Sampling Method PDB

Sample Date 7/21/2021

Sample Type FD

Sample ID 2129-043

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-2A Sampling Method LOW-FLOW

Sample Date 7/21/2021

Sample Type N

Sample ID 2129-045

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.49	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.82		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-2B

Sampling Method LOW-FLOW

Sample Date 7/21/2021

Sample Type N

Sample ID 2129-049

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	10.5		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.41	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	1.6		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-2C Sampling Method LOW-FLOW

Sample Date 7/21/2021

Sample Type N

Sample ID 2129-047

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	28.3		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.38	J	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-3A Sampling Method LOW-FLOW

Sample Date 7/21/2021

Sample Type N

Sample ID 2129-051

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	113		ug/l	7440-47-3

Groundwater Analysis

Sample Name MW-3B Sampling Method LOW-FLOW

Sample Date 7/21/2021

Sample Type N

Sample ID 2129-053

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	6.85		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.45	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	1.4		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-3B-DUP Sampling Method LOW-FLOW

Sample Date 7/21/2021

Sample Type FD

Sample ID 2129-055

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	7.16		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.39	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	1.3		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-3C Sampling Method LOW-FLOW

Sample Date 7/21/2021

Sample Type N

Sample ID 2129-057

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	31.2		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	1.3		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-4A Sampling Method LOW-FLOW

Sample Date 7/22/2021

Sample Type N

Sample ID 2129-059

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	890		ug/l	7440-47-3

Groundwater Analysis

Sample Name MW-4B Sampling Method LOW-FLOW

Sample Date 7/22/2021

Sample Type N

Sample ID 2129-061

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	204		ug/l	7440-47-3

Groundwater Analysis

Sample Name MW-4C Sampling Method LOW-FLOW

Sample Date 7/22/2021

Sample Type N

Sample ID 2129-060

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	52.2		ug/l	7440-47-3

Groundwater Analysis

Sample Name MW-6A Sampling Method LOW-FLOW

Sample Date 7/20/2021

Sample Type N

Sample ID 2129-020

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	37.9		ug/l	7440-47-3

Groundwater Analysis

Sample Name MW-6B Sampling Method LOW-FLOW

Sample Date 7/20/2021

Sample Type N

Sample ID 2129-026

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	33.1		ug/l	7440-47-3

Groundwater Analysis

Sample Name MW-6C Sampling Method LOW-FLOW

Sample Date 7/20/2021

Sample Type N

Sample ID 2129-022

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	13.9		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.11	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.47	J	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-6D

Sampling Method LOW-FLOW

Sample Date 7/20/2021

Sample Type N

Sample ID 2129-024

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	13.8		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.12	J	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	1.2		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-7C Sampling Method LOW-FLOW

Sample Date 7/21/2021

Sample Type N

Sample ID 2129-058

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	10.8		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.21	J	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-8B

Sampling Method LOW-FLOW

Sample Date 7/20/2021

Sample Type N

Sample ID 2129-037

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	15.1		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.33	J	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.72		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	1.2		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-9B Sampling Method LOW-FLOW

Sample Date 7/21/2021

Sample Type N

Sample ID 2129-042

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	18.3		ug/l	7440-47-3

Groundwater Analysis

Sample Name MW-9C

Sampling Method LOW-FLOW

Sample Date 7/21/2021

Sample Type N

Sample ID 2129-040

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	17.4		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.23	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	1.2		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-10B Sampling Method PDB

Sample Date 7/20/2021

Sample Type N

Sample ID 2129-028

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.29	J	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.65		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	2.6		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-10C Sampling Method LOW-FLOW

Sample Date 7/20/2021

Sample Type N

Sample ID 2129-030

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	238		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.12	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.90		ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.48	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	2.0		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-12C

Sampling Method LOW-FLOW

Sample Date 7/20/2021

Sample Type N

Sample ID 2129-034

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	11.3		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.33	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	3.3		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-13C Sampling Method LOW-FLOW

Sample Date 7/20/2021

Sample Type N

Sample ID 2129-032

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	46.3		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.10	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.19	J	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.74		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	2.8		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-14C

Sampling Method LOW-FLOW

Sample Date 7/19/2021

Sample Type N

Sample ID 2129-007

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	CHLORIDE	7.62		mg/l	16887-00-6
E300.0	NITRATE AS NITROGEN	3.23		mg/l	14797-55-8
E300.0	SULFATE	22.1		mg/l	14808-79-8
RSK 175	ETHANE	0.51		ug/l	74-84-0
RSK 175	ETHYLENE	1.0	U	ug/l	74-85-1
RSK 175	METHANE	390		ug/l	74-82-8
SM5220C	Chemical Oxygen Demand	5	J	mg/l	COD
SW6010C	ARSENIC	21	U	ug/l	7440-38-2
SW6010C	CALCIUM METAL	20100		ug/l	7440-70-2
SW6010C	IRON	36	J	ug/l	7439-89-6
SW6010C	MAGNESIUM	9650		ug/l	7439-95-4
SW6010C	MANGANESE	169		ug/l	7439-96-5
SW8260C	1,1,1-TRICHLOROETHANE	0.11	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5

Groundwater Analysis

Sample Name MW-14C

Sampling Method LOW-FLOW

Sample Date 7/19/2021

Sample Type N

Sample ID 2129-007

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	CFC-11	0.17	J	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.65		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	2.8		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4
SW9060	Dissolved Organic Carbon	0.60		mg/l	DOC
SW9060	TOTAL ORGANIC CARBON	0.50		mg/l	TOC

Groundwater Analysis

Sample Name MW-14E Sampling Method LOW-FLOW

Sample Date 7/19/2021

Sample Type N

Sample ID 2129-013

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	176		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.11	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.14	J	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	2.7		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	12		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-15E

Sampling Method LOW-FLOW

Sample Date 7/20/2021

Sample Type N

Sample ID 2129-023

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	11.2		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.12	J	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.35	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	2.6		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-18D Sampling Method LOW-FLOW

Sample Date 7/19/2021

Sample Type N

Sample ID 2129-009

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	CHLORIDE	4.97		mg/l	16887-00-6
E300.0	NITRATE AS NITROGEN	0.96		mg/l	14797-55-8
E300.0	SULFATE	15.1		mg/l	14808-79-8
RSK 175	ETHANE	11		ug/l	74-84-0
RSK 175	ETHYLENE	1.0	U	ug/l	74-85-1
RSK 175	METHANE	21000		ug/l	74-82-8
SM5220C	Chemical Oxygen Demand	8	J	mg/l	COD
SW6010C	ARSENIC	21	U	ug/l	7440-38-2
SW6010C	CALCIUM METAL	18400		ug/l	7440-70-2
SW6010C	IRON	905		ug/l	7439-89-6
SW6010C	MAGNESIUM	9940		ug/l	7439-95-4
SW6010C	MANGANESE	532		ug/l	7439-96-5
SW6020A	CHROMIUM	177		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.13	J	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4

Groundwater Analysis

Sample Name MW-18D Sampling Method LOW-FLOW

Sample Date 7/19/2021

Sample Type N

Sample ID 2129-009

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	6.9		ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.56		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	3.6		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.090	J	ug/l	75-01-4
SW9060	Dissolved Organic Carbon	0.60		mg/l	DOC
SW9060	TOTAL ORGANIC CARBON	0.60		mg/l	TOC

Groundwater Analysis

Sample Name MW-18E Sampling Method PDB

Sample Date 7/19/2021

Sample Type N

Sample ID 2129-011

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.32	J	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	1.7		ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.43	J	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.43	J	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-19D Sampling Method LOW-FLOW

Sample Date 7/20/2021

Sample Type N

Sample ID 2129-021

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	CHLORIDE	5.99		mg/l	16887-00-6
E300.0	NITRATE AS NITROGEN	1.14		mg/l	14797-55-8
E300.0	SULFATE	11.0		mg/l	14808-79-8
RSK 175	ETHANE	5.6		ug/l	74-84-0
RSK 175	ETHYLENE	0.59		ug/l	74-85-1
RSK 175	METHANE	2900		ug/l	74-82-8
SM5220C	Chemical Oxygen Demand	27		mg/l	COD
SW6010C	ARSENIC	21	U	ug/l	7440-38-2
SW6010C	CALCIUM METAL	49300		ug/l	7440-70-2
SW6010C	IRON	1140		ug/l	7439-89-6
SW6010C	MAGNESIUM	25100		ug/l	7439-95-4
SW6010C	MANGANESE	1560		ug/l	7439-96-5
SW6020A	CHROMIUM	66.1		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.20	J	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4

Groundwater Analysis

Sample Name MW-19D Sampling Method LOW-FLOW

Sample Date 7/20/2021

Sample Type N

Sample ID 2129-021

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	6.8		ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	1.1		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.10	J	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	6.0		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4
SW9060	Dissolved Organic Carbon	12.2		mg/l	DOC
SW9060	TOTAL ORGANIC CARBON	10.2		mg/l	TOC

Groundwater Analysis

Sample Name MW-20D

Sampling Method LOW-FLOW

Sample Date 7/19/2021

Sample Type N

Sample ID 2129-002

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	CHLORIDE	4.12		mg/l	16887-00-6
E300.0	NITRATE AS NITROGEN	1.75	*	mg/l	14797-55-8
E300.0	SULFATE	14.4		mg/l	14808-79-8
RSK 175	ETHANE	0.60	U	ug/l	74-84-0
RSK 175	ETHYLENE	1.0	U	ug/l	74-85-1
RSK 175	METHANE	38		ug/l	74-82-8
SM5220C	Chemical Oxygen Demand	10	U	mg/l	COD
SW6010C	ARSENIC	6	J	ug/l	7440-38-2
SW6010C	CALCIUM METAL	29700		ug/l	7440-70-2
SW6010C	IRON	25	J	ug/l	7439-89-6
SW6010C	MAGNESIUM	14400		ug/l	7439-95-4
SW6010C	MANGANESE	105		ug/l	7439-96-5
SW6020A	CHROMIUM	81.4		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.16	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.15	J	ug/l	75-27-4

Groundwater Analysis

Sample Name MW-20D

Sampling Method LOW-FLOW

Sample Date 7/19/2021

Sample Type N

Sample ID 2129-002

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.14	J	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.85		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	6.4		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4
SW9060	Dissolved Organic Carbon	0.50		mg/l	DOC
SW9060	TOTAL ORGANIC CARBON	0.50		mg/l	TOC

Groundwater Analysis

Sample Name MW-20D-DUP Sampling Method LOW-FLOW

Sample Date 7/19/2021

Sample Type FD

Sample ID 2129-004

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	81.5		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.10	J	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.81		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	6.8		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-22D

Sampling Method LOW-FLOW

Sample Date 7/19/2021

Sample Type N

Sample ID 2129-006

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	57.4		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	1.9		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	3.5		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-33 Sampling Method LOW-FLOW

Sample Date 7/21/2021

Sample Type N

Sample ID 2129-048

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.99		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-38 Sampling Method PDB

Sample Date 7/20/2021

Sample Type N

Sample ID 2129-019

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.080	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.15	J	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.90		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	27		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name PW-1B Sampling Method LOW-FLOW

Sample Date 7/22/2021

Sample Type N

Sample ID 2129-062

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	61.4		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.14	J	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.58		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	2.7		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name PZ-39 Sampling Method LOW-FLOW

Sample Date 7/20/2021

Sample Type N

Sample ID 2129-015

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	CHLORIDE	4.88		mg/l	16887-00-6
E300.0	NITRATE AS NITROGEN	1.49		mg/l	14797-55-8
E300.0	SULFATE	18.7		mg/l	14808-79-8
RSK 175	ETHANE	0.60	U	ug/l	74-84-0
RSK 175	ETHYLENE	0.40		ug/l	74-85-1
RSK 175	METHANE	2.0		ug/l	74-82-8
SM5220C	Chemical Oxygen Demand	10	U	mg/l	COD
SW6010C	ARSENIC	21	U	ug/l	7440-38-2
SW6010C	CALCIUM METAL	75000		ug/l	7440-70-2
SW6010C	IRON	23	J	ug/l	7439-89-6
SW6010C	MAGNESIUM	19600		ug/l	7439-95-4
SW6010C	MANGANESE	94.0		ug/l	7439-96-5
SW6020A	CHROMIUM	7.66		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.62		ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	2.0		ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4

Groundwater Analysis

Sample Name PZ-39 Sampling Method LOW-FLOW

Sample Date 7/20/2021

Sample Type N

Sample ID 2129-015

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	1.7		ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	5.6		ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.86		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	40		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4
SW9060	Dissolved Organic Carbon	0.70		mg/l	DOC
SW9060	TOTAL ORGANIC CARBON	0.80		mg/l	TOC

Groundwater Analysis

Sample Name PZ-39-DUP
Sampling Method LOW-FLOW
Sample Date 7/20/2021
Sample Type FD
Sample ID 2129-017

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	7.78		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.61		ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	2.1		ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	1.5		ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	5.5		ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.83		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	42		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name RINSATE 01 Sampling Method GRAB

Sample Date 7/19/2021

Sample Type RB

Sample ID 2129-018

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	CHLORIDE	0.03	J	mg/l	16887-00-6
E300.0	NITRATE AS NITROGEN	0.10	*,U	mg/l	14797-55-8
E300.0	SULFATE	0.08	J	mg/l	14808-79-8
RSK 175	ETHANE	0.60	U	ug/l	74-84-0
RSK 175	ETHYLENE	1.0	U	ug/l	74-85-1
RSK 175	METHANE	1.3	U	ug/l	74-82-8
SM5220C	Chemical Oxygen Demand	10	U	mg/l	COD
SW6020A	CHROMIUM	0.27		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2

Groundwater Analysis

Sample Name RINSATE 01 Sampling Method GRAB

Sample Date 7/19/2021

Sample Type RB

Sample ID 2129-018

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4
SW9060	Dissolved Organic Carbon	0.28	J	mg/l	DOC
SW9060	TOTAL ORGANIC CARBON	0.22	J	mg/l	TOC

Groundwater Analysis

Sample Name RINSATE 02 Sampling Method GRAB

Sample Date 7/21/2021

Sample Type RB

Sample ID 2129-050

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name RINSATE 03 Sampling Method GRAB

Sample Date 7/22/2021

Sample Type RB

Sample ID 2129-063

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	2.26		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name RINSATE 04 Sampling Method LOW-FLOW

Sample Date 7/20/2021

Sample Type RB

Sample ID 2129-036

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	1.16		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name Trip Blank 01 Sampling Method GRAB

Sample Date 7/19/2021

Sample Type TB

Sample ID 2129-038

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name Trip Blank 02 Sampling Method GRAB

Sample Date 7/19/2021

Sample Type TB

Sample ID 2129-001

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name Trip Blank 03 Sampling Method GRAB

Sample Date 7/19/2021

Sample Type TB

Sample ID 2129-039

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name Trip Blank 04 Sampling Method GRAB

Sample Date 7/21/2021

Sample Type TB

Sample ID 2129-064

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Fall 2021
Chain-of-Custody Documentation and Analytical Results Summary for Groundwater Samples

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CHAIN OF CUSTODY

Laboratory Information

Address: 1317 South 13th Ave., Kelso, WA 98626

Phone #: 360-577-7222 POC: Mark Harris

COC # | Cooler #___ of ___

Lab Quote # | Lab Job #: K2117058

Client / Reporting Information

C

Company Name: EA Engineering, Science, and Technology, Inc., PBC

Address: 2200 6th Ave., Suite 707

City: Seattle State: WA Zip: 98121

Project Contact: Jonathan Reeve and per contract

Phone #: 206-452-5358

Samplers's Name/Signature: HANNAH DENNIS

Project Information

Project Name: Boomsnub

Street: 7608 NE 47th Ave

City: Vancouver State: WA

Project #: 1611303

Email: jreeve@eaest.com, skettlewell@eaest.com, asmith@eaest.com, and esullivan@eaest.com

Purchase Order #: ~~17678~~ 21872

Matrix Codes

W - Water
GW - Ground Water
SW - Surface Water
SO - Soil
OI - Oil
WP - Wipe
LIQ - Non-aqueous Liquid
AIR
DW - Drinking Water (Perchlorate Only)

Lab Sample ID	Sample ID	Collection: Date	Time	Sampled by	Matrix	# of bottles	Preserved: HCl	HNO3	H2SO4	NONE	EPA 8260C/ VOCs	EPA 6020A/ TOTAL CHROMIUM	EPA 6010C/TOTAL METALS (As, Ca, Mg, Mn)	EPA 300.0/ ANIONS (NO3, SO4)	SM 5310C/ DOC (Field Filtered)	SM5220C/ COD	RSK 175/ DISSOLVED GASES	EPA 6020A/ DISSOLVED CHROMIUM (field filtered)	EPA 6010C/DISSOLVED METALS (As, Ca, Mg, Mn) (field filtered)	6010C/DISSOLVED IRON (FIELD FILTERED)	Notes
	2141-013	10/12/2021	1454	HH	GW	13	7	4	1	1	X	X		X	X	X	X	X	X	X	
	2141-012	10/13/2021	1004	HH	GW	36	21	9	3	3	X	X	X	X	X	X	X			X	MS/MSD
	2141-009	10/12/2021	247	HD	GW	12	7	3	1	1	X	X	X	X	X	X	X			X	
	2141-005	10/12/2021	1020	HD	GW	11	7	2	1	1	X		X	X	X	X	X			X	
	2141-010	10/12/2021	1126	HD	GW	12	7	3	1	1	X	X	X	X	X	X	X			X	
	2141-675	10/12/2021	1004	HH	W	2	2				X										TRIP BLANK
																					140

Turnaround Time (Business days): standard

Data Deliverable Information: Per contract

Comments / Remarks: Samples from Site Boomsnub O&M / Project 1611303/ Phase 0007
Metals: As, Ca, Mg, Mn
O&M

Sample Custody must be documented below each time samples change possession.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 Hannah Dennis	10/13/2021 1630	1 M. Mulligan 10/13/21 1645	2		2
Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3 3		3	4		4
Relinquished by:	Date Time:	Received By:	On Ice Y / N	Trip Blank Y / N	Cooler Temp.
5 5		5	Labels Match Coc? Y / N		_____ oC

K2112062 PAGE 1 of 2

CHAIN OF CUSTODY

Laboratory Information

Address: 1317 South 13th Ave., Kelso, WA 98626

Phone #: 360-577-7222 POC: Mark Harris

COC #	Cooler #___ of ___
Lab Quote #	Lab Job #:

Client / Reporting Information

C

Company Name: EA Engineering, Science, and Technology, Inc., PBC

Address: 2200 6th Ave., Suite 707

City: Seattle State: WA Zip: 98121

Project Contact: Jonathan Reeve and per contract

Phone #: 206-452-5358

Samplers's Name/Signature: HANNAH DENNIS

Project Information

Project Name: Boomsnub

Street: 7608 NE 47th Ave

City: Vancouver State: WA

Project #: 1611303

Email: jreeve@eaest.com, skettlewell@eaest.com, asmith@eaest.com, and esullivan@eaest.com

Purchase Order #: ~~17578~~ 21872

Matrix Codes

W - Water
GW - Ground Water
SW - Surface Water
SO - Soil
OI - Oil
WP - Wipe
LIQ - Non-aqueous Liquid
AIR
DW - Drinking Water (Perchlorate Only)

Lab Sample ID	Sample ID	Collection: Date	Time	Sampled by	Matrix	# of bottles	Preserved: HCl	HNO3	H2SO4	NONE	EPA 8260C/ VOCs	EPA 6020A/ TOTAL CHROMIUM	EPA 6010C/TOTAL METALS (As, Ca, Mg, Mn)	EPA 300.0/ ANIONS (NO3, SO4)	SM 5310C/ DOC (Field Filtered)	SM5220C/ COD	RSK 175/ DISSOLVED GASES	EPA 6020A/ DISSOLVED CHROMIUM (field filtered)	EPA 6010C/DISSOLVED METALS (As, Ca, Mg, Mn) (field filtered)	Notes
	2141-043	10/13/2021	1442	HH	GW	3	3				X									
	2141-050	10/13/2021	1346	HH	GW	3	3				X									
	2141-044	10/13/2021	1448	HH	GW	3	3				X									
	2141-051	10/13/2021	1432	HH	GW	3	3				X									
	2141-046	10/13/2021	1508	HH	GW	3	3				X									
	2141-047	10/13/2021	1516	HH	GW	3	3				X									
	2141-045	10/13/2021	1415	HH	GW	3	3				X									
	2141-048	10/13/2021	1303	HH	GW	3	3				X									
	2141-059	10/13/2021	1316	HH	GW	3	3				X									
	2141-052	10/13/2021	1357	HH	GW	3	3				X									
	2141-049	10/13/2021	1406	HH	GW	11	7	2	1	1	X		X	X	X	X	X			

Turnaround Time (Business days): standard

Per contract

Data Deliverable Information

Comments / Remarks: Samples from Site Boomsnub O&M / Project 1611303/ Phase 0007
Metals: As, Ca, Mg, Mn
O&M

Sample Custody must be documented below each time samples change possession.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 Hannah Dennis	10/13/2021 1630	1 Reeleisen 1645 10/13/21	2		2
Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3 3		3	4		4
Relinquished by:	Date Time:	Received By:	On Ice Y / N	Trip Blank Y / N	Cooler Temp.
5 5		5	Labels Match Coc? Y / N		_____ oC

K2112062 PAGE 2 OF 2

CHAIN OF CUSTODY

Laboratory Information

Address: 1317 South 13th Ave., Kelso, WA 98626

Phone #: 360-577-7222 POC: Mark Harris

COC #	Cooler #___ of ___
Lab Quote #	Lab Job #:

Client / Reporting Information

C

Company Name: EA Engineering, Science, and Technology, Inc., PBC

Address: 2200 6th Ave., Suite 707

City: Seattle State: WA Zip: 98121

Project Contact: Jonathan Reeve and per contract

Phone #: 206-452-5358

Samplers's Name/Signature: HANNAH DENNIS

Project Information

Project Name: Boomsnub

Street: 7608 NE 47th Ave

City: Vancouver State: WA

Project #: 1611303

Email: jreeve@eaest.com, skettlewell@eaest.com, asmith@eaest.com, and esullivan@eaest.com

Purchase Order #: ~~17578~~ 2872

Matrix Codes

W - Water
GW - Ground Water
SW - Surface Water
SO - Soil
OI - Oil
WP - Wipe
LIQ - Non-aqueous Liquid
AIR
DW - Drinking Water (Perchlorate Only)

Lab Sample ID	Sample ID	Collection: Date	Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	HNO3	H2SO4	NONE	EPA 8260C/ VOCs	EPA 6020A/ TOTAL CHROMIUM	EPA 6010C/TOTAL METALS (As, Ca, Mg, Mn)	EPA 300.0/ ANIONS (NO3, SO4)	SM 5310C/ DOC (Field Filtered)	SM5220C/ COD	RSK 175/ DISSOLVED GASES	EPA 6020A/ DISSOLVED CHROMIUM (field filtered)	EPA 6010C/DISSOLVED METALS (As, Ca, Mg, Mn) (field filtered)	Notes
	2141-076	10/13/2021	1303	HH	W	2	2				X									TRIP BLANK

Turnaround Time (Business days): standard

Per contract

Data Deliverable Information

Comments / Remarks: Samples from Site Boomsnub O&M / Project 1611303/ Phase 0007
Metals: As, Ca, Mg, Mn
O&M

Sample Custody must be documented below each time samples change possession.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	10/13/2021 1630	10/13/21 1645	2		2
Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3 3		3	4		4
Relinquished by:	Date Time:	Received By:	On Ice Y / N	Trip Blank Y / N	Cooler Temp.
5 5		5	Labels Match Coc? Y / N		____ °C

KZ112063

CHAIN OF CUSTODY

Laboratory Information

Address: 1317 South 13th Ave., Kelso, WA 98626

Phone #: 360-577-7222 POC: Mark Harris

COC # | Cooler #___ of ___

Lab Quote # | Lab Job #:

Client / Reporting Information

C

Company Name: EA Engineering, Science, and Technology, Inc., PBC

Address: 2200 6th Ave., Suite 707

City: Seattle State: WA Zip: 98121

Project Contact: Jonathan Reeve and per contract

Phone #: 206-452-5358

Samplers's Name/Signature: HANNAH DENNIS

Project Information

Project Name: Boomsnub

Street: 7608 NE 47th Ave

City: Vancouver State: WA

Project #: 1611303

Email: jreeve@eaest.com, skettlewell@eaest.com, asmith@eaest.com, and esullivan@eaest.com

Purchase Order # ~~47578~~ 21872

Analytical Information

Lab Sample ID	Sample ID	Collection: Date	Time	Sampled by	Matrix	# of bottles	Preserved: HCl	HNO3	H2SO4	NONE	EPA 8260C/ VOCs	EPA 6020A/ TOTAL CHROMIUM	EPA 6010C/TOTAL METALS (As, Ca, Mg, Mn)	EPA 300.0/ ANIONS (NO3, SO4)	SM 5310C/ DOC (Field Filtered)	SM5220C/ COD	RSK 175/ DISSOLVED GASES	EPA 6020A/ DISSOLVED CHROMIUM (field filtered)	EPA 6010C/DISSOLVED METALS (As, Ca, Mg, Mn) (field filtered)	Notes
	2141-026	10/11/2021	1534	HH	GW	4	3	1			X	X								
	2141-028	10/11/2021	1617	HH	GW	4	3	1			X	X								
	2141-040	10/11/2021	1603	HD	GW	12	9	3			X	X								MS/MSD
	2141-017	10/13/2021	1043	HD	GW	3	3				X									
	2141-002	10/13/2021	1046	HD	GW	3	3				X									
	2141-058	10/13/2021	1314	HD	GW	3	3				X									
	2141-056	10/13/2021	1309	HD	GW	3	3				X									
	2141-053	10/13/2021	1108	HD	GW	9[3]	9[3]				X									MS/MSD
	2141-001	10/13/2021	1023	HD	GW	3	3				X									
	2141-006	10/13/2021	0933	HD	GW	3	3				X									
	2141-004	10/13/2021	0842	HD	GW	3	3				X									

Matrix Codes

W - Water
GW - Ground Water
SW - Surface Water
SO - Soil
OI - Oil
WP - Wipe
LIQ - Non-aqueous Liquid
AIR
DW - Drinking Water (Perchlorate Only)

Turnaround Time (Business days): standard

Data Deliverable Information: Per contract

Comments / Remarks: Samples from Site Boomsnub O&M / Project 1611303/ Phase 0007
Metals: As, Ca, Mg, Mn
O&M

Sample Custody must be documented below each time samples change possession.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 Hannah Dennis	10/13/2021 1630	1 10/13/21 1648	2		2
Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3 3		3	4		4
Relinquished by:	Date Time:	Received By:	On Ice Y / N	Trip Blank Y / N	Cooler Temp.
5 5		5	Labels Match Coc? Y / N		____ oC

K2112063

CHAIN OF CUSTODY

Laboratory Information

Address: 1317 South 13th Ave., Kelso, WA 98626

Phone #: 360-577-7222 POC: Mark Harris

COC # | Cooler #___ of ___

Lab Quote # | Lab Job #:

Client / Reporting Information

C

Company Name: EA Engineering, Science, and Technology, Inc., PBC

Address: 2200 6th Ave., Suite 707

City: Seattle State: WA Zip: 98121

Project Contact: Jonathan Reeve and per contract

Phone #: 206-452-5358

Samplers's Name/Signature: HANNAH DENNIS

Project Information

Project Name: Boomsnub

Street: 7608 NE 47th Ave

City: Vancouver State: WA

Project #: 1611303

Email: jreeve@eaest.com, skettlewell@eaest.com, asmith@eaest.com, and esullivan@eaest.com

Purchase Order # ~~17578~~ 21872

Matrix Codes

W - Water
GW - Ground Water
SW - Surface Water
SO - Soil
OI - Oil
WP - Wipe
LIQ - Non-aqueous Liquid
AIR
DW - Drinking Water (Perchlorate Only)

Lab Sample ID	Sample ID	Collection: Date	Time	Sampled by	Matrix	# of bottles	Preserved: HCl	HNO3	H2SO4	NONE	EPA 8260C/ VOCs	EPA 6020A/ TOTAL CHROMIUM	EPA 6010C/TOTAL METALS (As, Ca, Mg, Mn)	EPA 300.0/ ANIONS (NO3, SO4)	SM 5310C/ DOC (Field Filtered)	SM5220C/ COD	RSK 175/ DISSOLVED GASES	EPA 6020A/ DISSOLVED CHROMIUM (field filtered)	EPA 6010C/DISSOLVED METALS (As, Ca, Mg, Mn) (field filtered)	DISSOLVED IRON (field Filtered) 6010C			Notes
	2141-054	10/13/2021	1253	HD	GW	3	3				X												
	2141-055	10/13/2021	1305	HD	GW	3	3				X												
	2141-057	10/13/2021	1319	HD	GW	3	3				X												
	2141-037	10/12/2021	1348	HD	GW	3	3				X												
	2141-003	10/12/2021	1547	AD	GW	3	3				X												
	2141-016	10/12/2021	1119	HH	GW	11	7	2	1	1	X		X	X	X	X	X				X		
	2141-008	10/12/2021	1242	HD	GW	12	7	3	1	1	X	X	X	X	X	X	X				X		
	2141-074	10/11/2021	1534	HH	GW	2	2				X												TRIP BLANK

Turnaround Time (Business days): standard

Data Deliverable Information: Per contract

Comments / Remarks: Samples from Site Boomsnub O&M / Project 1611303/ Phase 0007
Metals: As, Ca, Mg, Mn
O&M

Sample Custody must be documented below each time samples change possession.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 Hannah Dennis	10/13/2021 1630	1 J Redersen 10/13 1645	2		2
Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3 3		3	4		4
Relinquished by:	Date Time:	Received By:	On Ice Y / N	Trip Blank Y / N	Cooler Temp.
5 5		5	Labels Match Coc? Y / N		____ °C

KJ1120064 PAGE 1 OF 2

CHAIN OF CUSTODY

Laboratory Information

Address: 1317 South 13th Ave., Kelso, WA 98626

Phone #: 360-577-7222 POC: Mark Harris

COC # | Cooler #___ of ___

Lab Quote # | Lab Job #:

Client / Reporting Information

C

Company Name: EA Engineering, Science, and Technology, Inc., PBC

Address: 2200 6th Ave., Suite 707

City: Seattle State: WA Zip: 98121

Project Contact: Jonathan Reeve and per contract

Phone #: 206-452-5358

Samplers's Name/Signature: HANNAH DENNIS

Project Information

Project Name: Boomsnub

Street: 7608 NE 47th Ave

City: Vancouver State: WA

Project #: 1611303

Email: jreeve@eaest.com, skettlewell@eaest.com, asmith@eaest.com, and esullivan@eaest.com

Purchase Order # ~~17578~~ Z1872

Matrix Codes

W - Water
GW - Ground Water
SW - Surface Water
SO - Soil
OI - Oil
WP - Wipe
LIQ - Non-aqueous Liquid
AIR
DW - Drinking Water (Perchlorate Only)

Lab Sample ID	Sample ID	Collection: Date	Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	HNO3	H2SO4	NONE					EPA 8260C/ VOCs	EPA 6020A/ TOTAL CHROMIUM	EPA 6010C/TOTAL METALS (As, Ca, Mg, Mn)	EPA 300.0/ ANIONS (NO3, SO4)	SM 5310C/ DOC (Field Filtered)	SM5220C/ COD	RSK 175/ DISSOLVED GASES	EPA 6020A/ DISSOLVED CHROMIUM (field filtered)	EPA 6010C/DISSOLVED METALS (As, Ca, Mg, Mn) (field filtered)				Notes
	2141-033	10/11/2021	1225	HD	GW	4	3	1							X	X											
	2141-030	10/11/2021	1104	HD	GW	4	3	1							X	X											
	2141-032	10/11/2021	1154	HD	GW	4	3	1							X	X											
	2141-068	10/11/2021	1642	HH	GW	4	3	1							X	X											
	2141-038	10/11/2021	1445	HD	GW	4	3	1							X	X											
	2141-041	10/11/2021	1525	HD	GW	4	3	1							X	X											
	2141-029	10/11/2021	1059	HD	GW	4	3	1							X	X											
	2141-031	10/11/2021	1316	HD	GW	4	3	1							X	X											
	2141-039	10/11/2021	1415	HD	GW	4	3	1							X	X											
	2141-069	10/12/2021	1622	HH	GW	4	3	1							X	X											
	2141-014	10/12/2021	~~2027~~ 1238	HH	GW	4	3	1							X	X											

Turnaround Time (Business days): standard

Per contract

Data Deliverable Information

Comments / Remarks: Samples from Site Boomsnub O&M / Project 1611303/ Phase 0007
Metals: As, Ca, Mg, Mn
O&M

Sample Custody must be documented below each time samples change possession.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	10/13/2021 1630	1 10/13/21	2		2
Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3 3		3	4		4
Relinquished by:	Date Time:	Received By:	On Ice Y / N	Trip Blank Y / N	Cooler Temp.
5 5		5	Labels Match Coc? Y / N		____ °C

CHAIN OF CUSTODY

Laboratory Information

Address: 1317 South 13th Ave., Kelso, WA 98626

Phone #: 360-577-7222 POC: Mark Harris

COC #	Cooler #___ of ___
Lab Quote #	Lab Job #:

Client / Reporting Information

C

Company Name: EA Engineering, Science, and Technology, Inc., PBC

Address: 2200 6th Ave., Suite 707

City: Seattle State: WA Zip: 98121

Project Contact: Jonathan Reeve and per contract

Phone #: 206-452-5358

Samplers's Name/Signature: HANNAH DENNIS Hannah Dennis

Project Information

Project Name: Boomsnub

Street: 7608 NE 47th Ave

City: Vancouver State: WA

Project #: 1611303

Email: jreeve@eaest.com, skettlewell@eaest.com, asmith@eaest.com, and esullivan@eaest.com

Purchase Order #: ~~17578~~ 21872

Matrix Codes

W - Water
GW - Ground Water
SW - Surface Water
SO - Soil
OI - Oil
WP - Wipe
LIQ - Non-aqueous Liquid
AIR
DW - Drinking Water (Perchlorate Only)

Lab Sample ID	Sample ID	Collection: Date	Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	HNO3	H2SO4	NONE	Analytical Information: EPA 8260C/ VOCs	EPA 6020A/ TOTAL CHROMIUM	EPA 6010C/TOTAL METALS (As, Ca, Mg, Mn)	EPA 300.0/ ANIONS (NO3, SO4)	SM 5310C/ DOC (Field Filtered)	SM5220C/ COD	RSK 175/ DISSOLVED GASES	EPA 6020A/ DISSOLVED CHROMIUM (field filtered)	EPA 6010C/DISSOLVED METALS (As, Ca, Mg, Mn) (field filtered)	Notes
	2141-034	10/12/2021	1557	HH	~~GW~~	~~4~~ 3 HD	3	1			X	X								
	2141-070	10/13/2021	123	HH	GW	4	3	1			X	X								
	2141-011	10/13/2021	1104	HH	GW	4	3	1			X	X								
	2141-072	10/11/2021	1059	HD	~~GW~~ HD W	2	2				X									TRIP BLANK
																				HD

Turnaround Time (Business days): standard

Per contract

Data Deliverable Information

Comments / Remarks: Samples from Site Boomsnub O&M / Project 1611303/ Phase 0007
Metals: As, Ca, Mg, Mn
O&M

Sample Custody must be documented below each time samples change possession.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 Hannah Dennis	10/13/2021 1630	1 [signature] 10/13/21 1645	2		2
Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3 3		3	4		4
Relinquished by:	Date Time:	Received By:	On Ice Y / N	Trip Blank Y / N	Cooler Temp.
5 5		5	Labels Match Coc? Y / N		____ °C

K2112068

CHAIN OF CUSTODY

Laboratory Information

Address: 1317 South 13th Ave., Kelso, WA 98626

Phone #: 360-577-7222 POC: Mark Harris

COC # | Cooler # 1 of 1

Lab Quote # | Lab Job #:

Client / Reporting Information

Company Name: EA Engineering, Science, and Technology, Inc., PBC

Address: 2200 6th Ave., Suite 707

City: Seattle State: WA Zip: 98121

Project Contact: Jonathan Reeve and per contract

Phone #: 206-452-5358

Samplers's Name/Signature: HANNAH DENNIS

Project Information

Project Name: Boomsnub

Street: 7608 NE 47th Ave

City: Vancouver State: WA

Project #: 1611302

Email: jreeve@eaest.com, skettlewell@eaest.com, asmith@eaest.com, and esullivan@eaest.com

Purchase Order #: 22030

Matrix Codes

W - Water
GW - Ground Water
SW - Surface Water
SO - Soil
OI - Oil
WP - Wipe
LIQ - Non-aqueous Liquid
AIR
DW - Drinking Water (Perchlorate Only)

Lab Sample ID	Sample ID	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NONE	Analytical Information: EPA 8260C/ VOCs	Notes
	2141-060	10/13/2021	0916	HD	GW	3	3		X	
	2141-061	10/13/2021	0955	HD	GW	3	3		X	
	2141-062	10/13/2021	1000	HD	GW	3	3		X	
	2141-063	10/13/2021	1012	HD	GW	3	3		X	
	2141-064	10/13/2021	0946	HD	GW	3	3		X	
	2141-065	10/13/2021	0907	HD	GW	3	3		X	
	2141-066	10/13/2021	0855	HD	GW	3	3		X	
	2141-067	10/13/2021	0928	HD	GW	3	3		X	
	2141-071	10/13/2021	0855	HD	W	2	2		X	TRIP BLANK

Turnaround Time (Business days): standard

Data Deliverable Information: Per contract

Comments / Remarks: Samples from Boomsnub Northern Plume, 1611302/1 Northern Plume

Sample Custody must be documented below each time samples change possession.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 Hannah Dennis	10/13/21 1630	1	2		2
Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3 3		3	4		4
Relinquished by:	Date Time:	Received By:	On Ice Y / N	Trip Blank Y / N	Cooler Temp.
5 5		5	Labels Match Coc? Y / N		____ °C

10/13/21 1645

CHAIN OF CUSTODY

Laboratory Information

Address: 1317 South 13th Ave., Kelso, WA 98626

Phone #: 360-577-7222 POC: Mark Harris

COC #

Cooler #___ of ___

Lab Quote #

Lab Job #: K2112070

Client / Reporting Information

C

Company Name: EA Engineering, Science, and Technology, Inc., PBC

Address: 2200 6th Ave., Suite 707

City: Seattle State: WA Zip: 98121

Project Contact: Jonathan Reeve and per contract

Phone #: 206-452-5358

Samplers's Name/Signature: HANNAH DENNIS

Project Information

Project Name: Boomsnub

Street: 7608 NE 47th Ave

City: Vancouver State: WA

Project #: 1611303

Email: jreeve@eaest.com, skettlewell@eaest.com, asmith@eaest.com, and esullivan@eaest.com

Purchase Order #: ~~17078~~ 21972

Analytical Information

Matrix Codes

W - Water
GW - Ground Water
SW - Surface Water
SO - Soil
OI - Oil
WP - Wipe
LIQ - Non-aqueous Liquid
AIR
DW - Drinking Water (Perchlorate Only)

Lab Sample ID	Sample ID	Collection: Date	Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	HNO3	H2SO4	NONE	EPA 8260C/ VOCs	EPA 6020A/ TOTAL CHROMIUM	EPA 6010C/TOTAL METALS (As, Ca, Mg, Mn)	EPA 300.0/ ANIONS (NO3, SO4)	SM 5310C/ DOC (Field Filtered)	SM5220C/ COD	RSK 175/ DISSOLVED GASES	EPA 6020A/ DISSOLVED CHROMIUM (field filtered)	EPA 6010C/DISSOLVED METALS (As, Ca, Mg, Mn) (field filtered)	Notes
	2141-035	10/12/2021	1459	HD	GW	4	3	1			X	X								
	2141-036	10/12/2021	1419	HD	GW	4	3	1			X	X								
	2141-007	10/12/2021	0918	HD	GW	4	3	1			X	X								
	2141-027	10/12/2021	0929	HH	GW	4	3	1			X	X								
	2141-042	10/12/2021	1007	HH	GW	4	3	1			X	X								
	2141-015	10/12/2021	1239	HH	GW	4	3	1			X	X								
	2141-018	10/11/2021	1120	HH	GW	4	3	1			X	X								
	2141-019	10/11/2021	1125	HH	GW	4	3	1			X	X								
	2141-020	10/11/2021	1052	HH	GW	4	3	1			X	X								
	2141-023	10/11/2021	1238	HH	GW	4	3	1			X	X								
	2141-024	10/11/2021	1356	HH	GW	4	3	1			X	X								

Turnaround Time (Business days): standard

Per contract

Data Deliverable Information

Comments / Remarks

Samples from Site Boomsnub O&M / Project 1611303/ Phase 0007
Metals: As, Ca, Mg, Mn
O&M

Sample Custody must be documented below each time samples change possession.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 Hannah Dennis		1 10/13/21 1045	2		2
Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3 3		3	4		4
Relinquished by:	Date Time:	Received By:	On Ice Y / N	Trip Blank Y / N	Cooler Temp.
5 5		5	Labels Match Coc? Y / N		____ °C

CHAIN OF CUSTODY

Laboratory Information

Address: 1317 South 13th Ave., Kelso, WA 98626

Phone #: 360-577-7222 POC: Mark Harris

COC #

Cooler #___ of ___

Lab Quote #

Lab Job #: K2117070

Client / Reporting Information

C

Company Name: EA Engineering, Science, and Technology, Inc., PBC

Address: 2200 6th Ave., Suite 707

City: Seattle State: WA Zip: 98121

Project Contact: Jonathan Reeve and per contract

Phone #: 206-452-5358

Samplers's Name/Signature: HANNAH DENNIS

Project Information

Project Name: Boomsnub

Street: 7608 NE 47th Ave

City: Vancouver State: WA

Project #: 1611303

Email: jreeve@eaest.com, skettlewell@eaest.com, asmith@eaest.com, and esullivan@eaest.com

Purchase Order # ~~17576~~ 21872

Analytical Information

Matrix Codes

W - Water
GW - Ground Water
SW - Surface Water
SO - Soil
OI - Oil
WP - Wipe
LIQ - Non-aqueous Liquid
AIR
DW - Drinking Water (Perchlorate Only)

Lab Sample ID	Sample ID	Collection: Date	Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	HNO3	H2SO4	NONE	EPA 8260C/ VOCs	EPA 6020A/ TOTAL CHROMIUM	EPA 6010C/TOTAL METALS (As, Ca, Mg, Mn)	EPA 300.0/ ANIONS (NO3, SO4)	SM 5310C/ DOC (Field Filtered)	SM5220C/ COD	RSK 175/ DISSOLVED GASES	EPA 6020A/ DISSOLVED CHROMIUM (field filtered)	EPA 6010C/DISSOLVED METALS (As, Ca, Mg, Mn) (field filtered)	Notes
	2141-022	10/11/2021	1213	HH	GW	1		1				X								
	2141-021	10/11/2021	1133	HH	GW	3	3				X									
	2141-025	10/11/2021	1457	HH	GW	4	3	1			X	X								
	2141-073	10/11/2021	1052	HH	W	2	2				X									TRIP BLANK

Turnaround Time (Business days): standard

Per contract

Data Deliverable Information

Comments / Remarks

Samples from Site Boomsnub O&M / Project 1611303/ Phase 0007
Metals: As, Ca, Mg, Mn
O&M

Sample Custody must be documented below each time samples change possession.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		1	10/13/21 1645 2		2
Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3 3		3	4		4
Relinquished by:	Date Time:	Received By:	On Ice Y / N	Trip Blank Y / N	Cooler Temp.
5 5		5	Labels Match Coc? Y / N		____ oC

Groundwater Analysis

Sample Name AMW-1A Sampling Method PBD

Sample Date 10/13/2021

Sample Type N

Sample ID 2141-043

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	2.5		ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	17		ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.21	J	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.38	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	15		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-1B

Sampling Method PBD

Sample Date 10/13/2021

Sample Type N

Sample ID 2141-044

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.15	J	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-1C Sampling Method PBD

Sample Date 10/13/2021

Sample Type N

Sample ID 2141-045

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-2A

Sampling Method PBD

Sample Date 10/13/2021

Sample Type N

Sample ID 2141-046

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	2.3		ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	6.9		ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.38	J	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	1.1		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	47		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-2B Sampling Method PBD

Sample Date 10/13/2021

Sample Type N

Sample ID 2141-047

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.23	J	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-4A Sampling Method PBD

Sample Date 10/13/2021

Sample Type N

Sample ID 2141-048

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-8A Sampling Method PBD

Sample Date 10/13/2021

Sample Type N

Sample ID 2141-059

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.57		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-12A

Sampling Method LOW-FLOW

Sample Date 10/13/2021

Sample Type N

Sample ID 2141-049

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	NITRATE AS NITROGEN	0.86		mg/l	14797-55-8
E300.0	SULFATE	6.14		mg/l	14808-79-8
RSK 175	ETHANE	2	U	ug/l	74-84-0
RSK 175	ETHYLENE	1	U	ug/l	74-85-1
RSK 175	METHANE	1.7		ug/l	74-82-8
SM5220C	Chemical Oxygen Demand	10	U	mg/l	COD
SW6010C	ARSENIC	21	U	ug/l	7440-38-2
SW6010C	CALCIUM METAL	10400		ug/l	7440-70-2
SW6010C	MAGNESIUM	2950		ug/l	7439-95-4
SW6010C	MANGANESE	0.5	J	ug/l	7439-96-5
SW8260C	1,1,1-TRICHLOROETHANE	0.28	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	1.0		ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1

Groundwater Analysis

Sample Name AMW-12A

Sampling Method LOW-FLOW

Sample Date 10/13/2021

Sample Type N

Sample ID 2141-049

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.34	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	5.6		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4
SW9060	Dissolved Organic Carbon	3.00	*	mg/l	DOC

Groundwater Analysis

Sample Name AMW-13A Sampling Method PBD

Sample Date 10/13/2021

Sample Type N

Sample ID 2141-050

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.46	J	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-16 Sampling Method PBD

Sample Date 10/13/2021

Sample Type N

Sample ID 2141-060

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.25	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.21	J	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	27		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-17 Sampling Method PBD

Sample Date 10/13/2021

Sample Type N

Sample ID 2141-061

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.20	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	37		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-17-DUP Sampling Method PBD

Sample Date 10/13/2021

Sample Type FD

Sample ID 2141-062

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.080	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.23	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	42		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-18 Sampling Method PBD

Sample Date 10/13/2021

Sample Type N

Sample ID 2141-063

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	16		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-19A

Sampling Method PBD

Sample Date 10/13/2021

Sample Type N

Sample ID 2141-051

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.15	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.10	J	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	2.0		ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.29	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	1.2		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-24 Sampling Method PBD

Sample Date 10/13/2021

Sample Type N

Sample ID 2141-001

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.48	J	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.99		ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	4.9		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-26 Sampling Method PBD

Sample Date 10/13/2021

Sample Type N

Sample ID 2141-052

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.74		ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	13		ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.38	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	2.9		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-52A Sampling Method PBD

Sample Date 10/13/2021

Sample Type N

Sample ID 2141-053

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.71		ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-53A

Sampling Method PBD

Sample Date 10/13/2021

Sample Type N

Sample ID 2141-054

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.88		ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	5.1		ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.12	J	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.88		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	18		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-58 Sampling Method PBD

Sample Date 10/13/2021

Sample Type N

Sample ID 2141-017

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-58-DUP Sampling Method PBD

Sample Date 10/13/2021

Sample Type FD

Sample ID 2141-002

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-59 Sampling Method LOW-FLOW

Sample Date 10/12/2021

Sample Type N

Sample ID 2141-005

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	NITRATE AS NITROGEN	0.07	J	mg/l	14797-55-8
E300.0	SULFATE	1.30		mg/l	14808-79-8
RSK 175	ETHANE	4		ug/l	74-84-0
RSK 175	ETHYLENE	7.1		ug/l	74-85-1
RSK 175	METHANE	12000		ug/l	74-82-8
SM5220C	Chemical Oxygen Demand	18		mg/l	COD
SW6010C	ARSENIC	21	U	ug/l	7440-38-2
SW6010C	CALCIUM METAL	97100		ug/l	7440-70-2
SW6010C	IRON	7200		ug/l	7439-89-6
SW6010C	MAGNESIUM	32100		ug/l	7439-95-4
SW6010C	MANGANESE	1690		ug/l	7439-96-5
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.27	J	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4

Groundwater Analysis

Sample Name AMW-59 Sampling Method LOW-FLOW

Sample Date 10/12/2021

Sample Type N

Sample ID 2141-005

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	5.7		ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.46	J	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.39	J	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	4.7		ug/l	75-01-4
SW9060	Dissolved Organic Carbon	3.80		mg/l	DOC

Groundwater Analysis

Sample Name AMW-60 Sampling Method PBD

Sample Date 10/13/2021

Sample Type N

Sample ID 2141-006

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	3.8		ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.69		ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.26	J	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	7.2		ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-61 Sampling Method PBD

Sample Date 10/13/2021

Sample Type N

Sample ID 2141-004

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.080	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.14	J	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	2.0		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	5.5		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-64 Sampling Method PBD

Sample Date 10/13/2021

Sample Type N

Sample ID 2141-064

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.10	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.070	J	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	9.3		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name CPU-14 Sampling Method Low Flow

Sample Date 10/12/2021

Sample Type N

Sample ID 2141-007

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	165		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	1.0		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-1A Sampling Method PBD

Sample Date 10/13/2021

Sample Type N

Sample ID 2141-055

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	0.12	J	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.32	J	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-1B

Sampling Method PBD

Sample Date 10/13/2021

Sample Type N

Sample ID 2141-056

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-1C Sampling Method PBD

Sample Date 10/13/2021

Sample Type N

Sample ID 2141-057

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-1C-DUP Sampling Method PBD

Sample Date 10/13/2021

Sample Type FD

Sample ID 2141-058

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-2A

Sampling Method Low Flow

Sample Date 10/11/2021

Sample Type N

Sample ID 2141-018

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	330		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.35	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.76		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-2A-DUP
Sampling Method Low Flow
Sample Date 10/11/2021
Sample Type FD
Sample ID 2141-019

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	255		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.32	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.70		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-2B

Sampling Method Low Flow

Sample Date 10/11/2021

Sample Type N

Sample ID 2141-020

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	7.28		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.29	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.97		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-2C Sampling Method PBD

Sample Date 10/11/2021

Sample Type N

Sample ID 2141-021

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.27	J	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-3A

Sampling Method Low Flow

Sample Date 10/11/2021

Sample Type N

Sample ID 2141-022

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	129		ug/l	7440-47-3

Groundwater Analysis

Sample Name MW-3B
Sampling Method Low Flow
Sample Date 10/11/2021
Sample Type N
Sample ID 2141-023

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	6.74		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.45	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	1.3		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-3C

Sampling Method Low Flow

Sample Date 10/11/2021

Sample Type N

Sample ID 2141-024

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	10.5		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.39	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	1.6		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-4A
Sampling Method Low Flow
Sample Date 10/11/2021
Sample Type N
Sample ID 2141-025

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	589		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.60		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	2.0		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-4B

Sampling Method LOW-FLOW

Sample Date 10/11/2021

Sample Type N

Sample ID 2141-026

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	124		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.11	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.10	J	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.24	J	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.49	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	2.5		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-4BSHED Sampling Method Low Flow

Sample Date 10/12/2021

Sample Type N

Sample ID 2141-027

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	72.7		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.56		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	2.4		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-4C

Sampling Method LOW-FLOW

Sample Date 10/11/2021

Sample Type N

Sample ID 2141-028

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	45.4		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.36	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	1.0		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-6A Sampling Method LOW-FLOW

Sample Date 10/11/2021

Sample Type N

Sample ID 2141-029

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	68.1		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-6A-DUP

Sampling Method LOW-FLOW

Sample Date 10/11/2021

Sample Type FD

Sample ID 2141-030

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	65.4		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-6B Sampling Method LOW-FLOW

Sample Date 10/11/2021

Sample Type N

Sample ID 2141-031

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	35.4		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	1.8		ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.30	J	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.10	J	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	8.9		ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.76		ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.46	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	30		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-6C

Sampling Method LOW-FLOW

Sample Date 10/11/2021

Sample Type N

Sample ID 2141-032

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	23.8		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.47	J	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-6D
Sampling Method LOW-FLOW
Sample Date 10/11/2021
Sample Type N
Sample ID 2141-033

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	17.2		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.48	J	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-7C

Sampling Method LOW-FLOW

Sample Date 10/12/2021

Sample Type N

Sample ID 2141-034

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	8.50		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.30	J	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-8B Sampling Method Low Flow

Sample Date 10/12/2021

Sample Type N

Sample ID 2141-035

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	7.65		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.10	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	1.3		ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.43	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	1.2		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-9B

Sampling Method Low Flow

Sample Date 10/12/2021

Sample Type N

Sample ID 2141-036

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	12.1		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.14	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	5.1		ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.53		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	1.4		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-9C Sampling Method LOW-FLOW

Sample Date 10/12/2021

Sample Type N

Sample ID 2141-037

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.16	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.83		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-10B

Sampling Method LOW-FLOW

Sample Date 10/11/2021

Sample Type N

Sample ID 2141-038

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	116		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.12	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	1.2		ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.25	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	1.4		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-10C Sampling Method LOW-FLOW

Sample Date 10/11/2021

Sample Type N

Sample ID 2141-039

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	74.5		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.37	J	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.38	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	2.6		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-12C

Sampling Method LOW-FLOW

Sample Date 10/11/2021

Sample Type N

Sample ID 2141-040

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	13.8		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.25	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	1.2		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-13C
Sampling Method LOW-FLOW
Sample Date 10/11/2021
Sample Type N
Sample ID 2141-041

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	43.2		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.63		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	1.3		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-14C

Sampling Method LOW-FLOW

Sample Date 10/12/2021

Sample Type N

Sample ID 2141-008

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	NITRATE AS NITROGEN	3.20		mg/l	14797-55-8
E300.0	SULFATE	20.5		mg/l	14808-79-8
RSK 175	ETHANE	2	U	ug/l	74-84-0
RSK 175	ETHYLENE	1	U	ug/l	74-85-1
RSK 175	METHANE	1400		ug/l	74-82-8
SM5220C	Chemical Oxygen Demand	10	U	mg/l	COD
SW6010C	ARSENIC	21	U	ug/l	7440-38-2
SW6010C	CALCIUM METAL	20800		ug/l	7440-70-2
SW6010C	IRON	23	J	ug/l	7439-89-6
SW6010C	MAGNESIUM	9360		ug/l	7439-95-4
SW6010C	MANGANESE	98.2		ug/l	7439-96-5
SW6020A	CHROMIUM	37.7		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5

Groundwater Analysis

Sample Name MW-14C

Sampling Method LOW-FLOW

Sample Date 10/12/2021

Sample Type N

Sample ID 2141-008

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	CFC-11	0.12	J	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.53		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	2.3		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4
SW9060	Dissolved Organic Carbon	0.50	U	mg/l	DOC

Groundwater Analysis

Sample Name MW-14C-DUP Sampling Method LOW-FLOW

Sample Date 10/12/2021

Sample Type FD

Sample ID 2141-009

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	NITRATE AS NITROGEN	3.20		mg/l	14797-55-8
E300.0	SULFATE	20.6		mg/l	14808-79-8
RSK 175	ETHANE	2		ug/l	74-84-0
RSK 175	ETHYLENE	1	U	ug/l	74-85-1
RSK 175	METHANE	1600		ug/l	74-82-8
SM5220C	Chemical Oxygen Demand	10	U	mg/l	COD
SW6010C	ARSENIC	21	U	ug/l	7440-38-2
SW6010C	CALCIUM METAL	20600		ug/l	7440-70-2
SW6010C	IRON	12	J	ug/l	7439-89-6
SW6010C	MAGNESIUM	9190		ug/l	7439-95-4
SW6010C	MANGANESE	99.6		ug/l	7439-96-5
SW6020A	CHROMIUM	37.6		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5

Groundwater Analysis

Sample Name MW-14C-DUP Sampling Method LOW-FLOW

Sample Date 10/12/2021

Sample Type FD

Sample ID 2141-009

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	CFC-11	0.12	J	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.58		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	2.5		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4
SW9060	Dissolved Organic Carbon	0.70		mg/l	DOC

Groundwater Analysis

Sample Name MW-14E

Sampling Method LOW-FLOW

Sample Date 10/12/2021

Sample Type N

Sample ID 2141-010

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	NITRATE AS NITROGEN	2.21		mg/l	14797-55-8
E300.0	SULFATE	32.4		mg/l	14808-79-8
RSK 175	ETHANE	2	U	ug/l	74-84-0
RSK 175	ETHYLENE	1	U	ug/l	74-85-1
RSK 175	METHANE	2.1		ug/l	74-82-8
SM5220C	Chemical Oxygen Demand	10	U	mg/l	COD
SW6010C	ARSENIC	21	U	ug/l	7440-38-2
SW6010C	CALCIUM METAL	29500		ug/l	7440-70-2
SW6010C	IRON	7250		ug/l	7439-89-6
SW6010C	MAGNESIUM	10500		ug/l	7439-95-4
SW6010C	MANGANESE	21.0		ug/l	7439-96-5
SW6020A	CHROMIUM	192		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.16	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5

Groundwater Analysis

Sample Name MW-14E

Sampling Method LOW-FLOW

Sample Date 10/12/2021

Sample Type N

Sample ID 2141-010

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.58		ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	3.3		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	19		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4
SW9060	Dissolved Organic Carbon	0.50		mg/l	DOC

Groundwater Analysis

Sample Name MW-15E Sampling Method LOW-FLOW

Sample Date 10/13/2021

Sample Type N

Sample ID 2141-011

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	10.5		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.12	J	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.29	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	3.0		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-19D

Sampling Method LOW-FLOW

Sample Date 10/13/2021

Sample Type N

Sample ID 2141-012

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	NITRATE AS NITROGEN	0.93		mg/l	14797-55-8
E300.0	SULFATE	12.7		mg/l	14808-79-8
RSK 175	ETHANE	9		ug/l	74-84-0
RSK 175	ETHYLENE	1.1		ug/l	74-85-1
RSK 175	METHANE	8500		ug/l	74-82-8
SM5220C	Chemical Oxygen Demand	4	J	mg/l	COD
SW6010C	ARSENIC	21	U	ug/l	7440-38-2
SW6010C	CALCIUM METAL	38300		ug/l	7440-70-2
SW6010C	IRON	301		ug/l	7439-89-6
SW6010C	MAGNESIUM	19800		ug/l	7439-95-4
SW6010C	MANGANESE	1560		ug/l	7439-96-5
SW6020A	CHROMIUM	63.2		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5

Groundwater Analysis

Sample Name MW-19D

Sampling Method LOW-FLOW

Sample Date 10/13/2021

Sample Type N

Sample ID 2141-012

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	1.1		ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	1.1		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	7.4		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4
SW9060	Dissolved Organic Carbon	1.10		mg/l	DOC

Groundwater Analysis

Sample Name MW-20D
Sampling Method LOW-FLOW
Sample Date 10/12/2021
Sample Type N
Sample ID 2141-013

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	NITRATE AS NITROGEN	1.48		mg/l	14797-55-8
E300.0	SULFATE	18.2		mg/l	14808-79-8
RSK 175	ETHANE	2	U	ug/l	74-84-0
RSK 175	ETHYLENE	1	U	ug/l	74-85-1
RSK 175	METHANE	1	U	ug/l	74-82-8
SM5220C	Chemical Oxygen Demand	10	U	mg/l	COD
SW6010C	ARSENIC	21	U	ug/l	7440-38-2
SW6010C	CALCIUM METAL	38200		ug/l	7440-70-2
SW6010C	CHROMIUM	69.2		ug/l	7440-47-3
SW6010C	IRON	380		ug/l	7439-89-6
SW6010C	MAGNESIUM	14900		ug/l	7439-95-4
SW6010C	MANGANESE	185		ug/l	7439-96-5
SW6020A	CHROMIUM	67.9		ug/l	7440-47-3
SW6020A	CHROMIUM	115		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.10	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.16	J	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2

Groundwater Analysis

Sample Name MW-20D Sampling Method LOW-FLOW

Sample Date 10/12/2021

Sample Type N

Sample ID 2141-013

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.13	J	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	1.2		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	9.4		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4
SW9060	Dissolved Organic Carbon	0.80		mg/l	DOC

Groundwater Analysis

Sample Name MW-21D

Sampling Method PBD

Sample Date 10/13/2021

Sample Type N

Sample ID 2141-065

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	1.5		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-23D Sampling Method PBD

Sample Date 10/13/2021

Sample Type N

Sample ID 2141-066

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.44	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.80		ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.27	J	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	61		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-33 Sampling Method LOW-FLOW

Sample Date 10/12/2021

Sample Type N

Sample ID 2141-003

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.30	J	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50		ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	2.4		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-38 Sampling Method PBD

Sample Date 10/13/2021

Sample Type N

Sample ID 2141-067

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.090	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.080	J	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.17	J	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.84		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	25		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-40 Sampling Method LOW-FLOW

Sample Date 10/12/2021

Sample Type N

Sample ID 2141-014

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	131		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.48	J	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.74		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-40-DUP

Sampling Method Bailed

Sample Date 10/12/2021

Sample Type FD

Sample ID 2141-015

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	135		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.54		ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.96		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name PW-1B

Sampling Method Low Flow

Sample Date 10/12/2021

Sample Type N

Sample ID 2141-042

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	40.3		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.11	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.17	J	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.52		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	3.1		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name PZ-39 Sampling Method Bailed

Sample Date 10/12/2021

Sample Type N

Sample ID 2141-016

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	NITRATE AS NITROGEN	1.84		mg/l	14797-55-8
E300.0	SULFATE	19.4		mg/l	14808-79-8
RSK 175	ETHANE	2	U	ug/l	74-84-0
RSK 175	ETHYLENE	1.2		ug/l	74-85-1
RSK 175	METHANE	1	U	ug/l	74-82-8
SM5220C	Chemical Oxygen Demand	5	J	mg/l	COD
SW6010C	ARSENIC	21	U	ug/l	7440-38-2
SW6010C	CALCIUM METAL	78800		ug/l	7440-70-2
SW6010C	IRON	33	J	ug/l	7439-89-6
SW6010C	MAGNESIUM	19200		ug/l	7439-95-4
SW6010C	MANGANESE	63.4		ug/l	7439-96-5
SW8260C	1,1,1-TRICHLOROETHANE	0.65		ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	1.7		ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	2.0		ug/l	75-69-4

Groundwater Analysis

Sample Name PZ-39 Sampling Method Bailed

Sample Date 10/12/2021

Sample Type N

Sample ID 2141-016

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	8.0		ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.91		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	37		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4
SW9060	Dissolved Organic Carbon	0.80		mg/l	DOC

Groundwater Analysis

Sample Name EQUIPMENT BLANK-1 Sampling Method Grab

Sample Date 10/11/2021

Sample Type EB

Sample ID 2141-068

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	0.29		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name EQUIPMENT BLANK-2 Sampling Method Grab

Sample Date 10/12/2021

Sample Type EB

Sample ID 2141-069

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	0.59		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name EQUIPMENT BLANK-3 Sampling Method Grab

Sample Date 10/13/2021

Sample Type EB

Sample ID 2141-070

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	0.89		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name TRIP BLANK-1 Sampling Method Grab

Sample Date 10/13/2021

Sample Type TB

Sample ID 2141-071

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name TRIP BLANK-2 Sampling Method Grab

Sample Date 10/11/2021

Sample Type TB

Sample ID 2141-072

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name TRIP BLANK-3 Sampling Method Grab

Sample Date 10/11/2021

Sample Type TB

Sample ID 2141-073

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name TRIP BLANK-4 Sampling Method Grab

Sample Date 10/11/2021

Sample Type TB

Sample ID 2141-074

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name TRIP BLANK-5 Sampling Method Grab

Sample Date 10/12/2021

Sample Type TB

Sample ID 2141-075

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name TRIP BLANK-6 Sampling Method Grab

Sample Date 10/13/2021

Sample Type TB

Sample ID 2141-076

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

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Appendix B

Site Groundwater Extraction/Treatment System

Appendix B.1
System Operation Table

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APPENDIX B.1 TABLE 1
OU-3 GROUNDWATER EXTRACTION SUMMARY
BOOMSNUB/AIRCO SUPERFUND SITE

Date	Total Flow gpd[1]	System Operating Hours[2]	System Operating Percentage
01/01/21	53,809	24.00	100.00%
01/02/21	53,671	24.00	100.00%
01/03/21	5,144	2.30	9.58%
01/04/21	0	0.00	0.00%
01/05/21	0	0.00	0.00%
01/06/21	0	0.00	0.00%
01/07/21	0	0.00	0.00%
01/08/21	0	0.00	0.00%
01/09/21	0	0.00	0.00%
01/10/21	0	0.00	0.00%
01/11/21	0	0.00	0.00%
01/12/21	0	0.00	0.00%
01/13/21	0	0.00	0.00%
01/14/21	0	0.00	0.00%
01/15/21	8,799	4.48	18.67%
01/16/21	0	0.00	0.00%
01/17/21	0	0.00	0.00%
01/18/21	0	0.00	0.00%
01/19/21	0	0.00	0.00%
01/20/21	0	0.00	0.00%
01/21/21	0	0.00	0.00%
01/22/21	0	0.00	0.00%
01/23/21	0	0.00	0.00%
01/24/21	0	0.00	0.00%
01/25/21	0	0.00	0.00%
01/26/21	0	0.00	0.00%
01/27/21	0	0.00	0.00%
01/28/21	0	0.00	0.00%
01/29/21	0	0.00	0.00%
01/30/21	0	0.00	0.00%
01/31/21	0	0.00	0.00%
Subtotals	**121,423**	**54.78**	**7.36%**
Scheduled Downtime/Maintenance[3]			
Total Hours/Month		744	
Total Operating Hours/Availability %		**54.78**	**7.36%**
Daily Breakdown		***January 2021***	**Permit Limits**
Average Daily Flow (gallons)		3,917	230,400
Average Discharge Flow (gpm)[1]		37	
Maximum Daily Flow (gallons)		53,809	230,400
Flow to City of Vancouver		0	
Hundreds of Cubic Feet Breakdown			
Total Flow (hundreds of cubic feet)		162	9549
Average Daily Flow (hundreds of cubic feet)		5	308

APPENDIX B.1 TABLE 1
OU-3 GROUNDWATER EXTRACTION SUMMARY
BOOMSNUB/AIRCO SUPERFUND SITE

Notes:

[1] gpd = gallons per day; gpm = gallons per minute

[2] Based on minutes of operation as reported by data logger

[3] Planned shutdown periods for routine maintenance or monitoring activities - see monthly notes for details

Appendix B.2
Mass Removal Table

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APPENDIX B.2 - TABLE 1
OU-3 CHROMIUM AND TCE MASS REMOVAL ESTIMATION
BOOMSNUB/AIRCO SUPERFUND SITE

Date	Monthly Flow (Gallons)	Influent Chromium (ug/L)	Influent TCE (ug/L)	Monthly Chromium Removal (lbs)	Monthly TCE Removal (lbs)	Cumulative Chromium Removed (lbs)	Cumulative TCE Removed (lbs)
1990 to 1995[1]						13,751.0	
1995 to May 1999[1]						20,538.0	
1990 to 1999[1]							1,645.7
Ave. Jun-Dec 1999	5,303,734	634.4	160.7	27.9	7.2	20,733.6	1,696.3
Ave. for 2000	5,429,513	593.4	197.5	27.0	8.9	21,057.0	1,803.6
Ave. for 2001	5,482,077	450.6	139.2	20.7	6.4	21,305.7	1,879.9
Ave. for 2002	5,587,227	379.0	102.1	17.7	4.8	21,518.0	1,937.3
Ave. for 2003	6,279,889	281.8	74.7	14.7	3.9	21,694.7	1,984.1
Ave. for 2004	6,463,796	194.1	59.8	10.5	3.2	21,820.2	2,022.8
Ave. for 2005	6,213,535	165.5	54.8	8.6	2.8	21,923.2	2,056.8
Ave. for 2006	6,409,175	153.8	55.8	8.2	3.0	22,022.0	2,092.2
Ave. for 2007	6,366,615	108.7	40.1	5.7	2.1	22,090.9	2,117.3
Ave. for 2008	6,547,878	84.2	26.3	4.6	1.4	22,146.3	2,134.6
Ave. for 2009	6,628,721	64.6	22.3	3.6	1.2	22,189.7	2,149.4
Ave. for 2010	6,835,587	60.5	20.8	3.5	1.2	22,230.8	2,163.6
Ave. for 2011	6,585,675	54.0	17.5	3.0	1.0	22,266.5	2,175.2
Ave. for 2012	6,868,867	49.4	16.8	2.8	1.0	22,300.8	2,186.8
Ave. for 2013	5,566,626	56.1	19.1	2.6	0.9	22,332.0	2,197.4
Ave. for 2014	5,466,047	54.5	17	2.5	0.8	22,361.8	2,206.6
Ave. for 2015	5,471,175	51.3	15	2.3	0.7	22,389.9	2,214.9
Ave. for 2016	5,474,936	48.8	13.2	2.2	0.6	22,416.7	2,222.1
Ave. for 2017	5,595,195	43.5	13	2.0	0.6	22,440.7	2,229.4
Jan-18	5,686,640	43.9	11	2.1	0.5	22,442.8	2,229.9
Feb-18	5,136,129	42.7	12	1.8	0.5	22,444.6	2,230.4
Mar-18	5,654,944	43.7	13	2.1	0.6	22,446.7	2,231.1
Apr-18	5,493,023	42.4	13	1.9	0.6	22,448.7	2,231.6
May-18	5,690,489	41.9	12	2.0	0.6	22,450.6	2,232.2
Jun-18	5,392,921	41.0	13	1.8	0.6	22,452.5	2,232.8
Jul-18	5,302,102	42.1	11	1.9	0.5	22,454.4	2,233.3
Aug-18	4,932,325	39.8	11	1.6	0.5	22,456.0	2,233.7
Sep-18	4,413,403	38.0	12	1.4	0.4	22,457.4	2,234.2
Oct-18	4,533,790	37.0	10	1.4	0.4	22,458.8	2,234.6
Nov-18	4,361,354	39.5	9.6	1.4	0.3	22,460.2	2,234.9
Dec-18	4,463,485	39.9	12	1.5	0.4	22,461.7	2,235.4
Jan-19	4,413,928	41.3	11	1.5	0.4	22,463.2	2,235.8
Feb-19	3,933,978	42.3	12	1.4	0.4	22,464.6	2,236.2
Mar-19	3,934,035	46.5	8.3	1.5	0.3	22,466.2	2,236.4
Apr-19	4,388,532	41.2	11	1.5	0.4	22,467.7	2,236.8
May-19	4,498,487	43.6	10	1.6	0.4	22,469.3	2,237.2
Jun-19	4,305,498	42.7	9.6	1.5	0.3	22,470.8	2,237.6
Jul-19	4,394,334	41.3	11.0	1.5	0.4	22,472.4	2,238.0
Aug-19	4,401,675	41.4	8.6	1.5	0.3	22,473.9	2,238.3
Sep-19	4,238,615	40.5	8.9	1.4	0.3	22,475.3	2,238.6
Oct-19	3,694,136	42.7	8.4	1.3	0.3	22,476.6	2,238.9
Nov-19	2,954,631	32.2	6.3	0.8	0.2	22,477.4	2,239.0
Dec-19	3,044,436	35.6	5.6	0.9	0.1	22,478.3	2,239.1
Jan-20	3,085,887	37.4	5.4	1.0	0.1	22,479.3	2,239.3
Feb-20	2,964,380	38.3	5.9	0.9	0.1	22,480.2	2,239.4
Mar-20	3,090,940	38.3	5.4	1.0	0.1	22,481.2	2,239.6
Apr-20	2,939,574	38.6	6.3	0.9	0.2	22,482.2	2,239.7
May-20	2,598,158	37.9	6.3	0.8	0.1	22,483.0	2,239.9
Jun-20	2,370,415	31.2	3.0	0.6	0.1	22,483.6	2,239.9
Jan-21	121,423	45.7	5.3	0.0	0.0	22,483.7	2,239.9

Notes:
June 1999 through March 2002 data provided by URS
Shaded area represents the reporting period.
[1] - Provided by ICF Kaiser
lbs = pounds
ug/L = micrograms per liter

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Appendix B.3
Report to the City of Vancouver and Supporting Flow Data

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

2200 Sixth Avenue, Suite 707
Seattle, Washington 98121
Telephone: 206-452-5350
Fax: 206-443-7646
www.eaest.com

23 April 2021
1611303 LN1731

Mr. Nick Imbery
Industrial Pretreatment Coordinator
City of Vancouver
Marine Park Engineering Office
P.O. Box 1995
Vancouver, Washington 98668-1995

Subject: Self-Monitoring Report – 30 April 2021
Boomsnub/Airco Superfund Site
Hazel Dell, Washington

Dear Mr. Imbery:

On behalf of Messer LLC (Messer), we are submitting the Self-Monitoring Report for the Boomsnub/Airco Superfund Site, prepared in accordance with the City of Vancouver Industrial Wastewater Discharge Permit 2019-06. The time period covered includes January through March 2021. However, due to system shut down only January 2021 data is included in this Self-Monitoring Report. Flow data are being reported from the flow meter on the air stripper. During the reporting period, the discharges were made to the infiltration gallery on Messer property.

The system, with EPA approval, was planned to be shut off and disconnected on 7 January 2021. However, on 3 January 2021, the system shut off due to a heavy rain event triggering a failsafe shutdown in flooded containment vaults. The system remained off as containment vaults were pumped dry. The system was turned on again for a brief period on 15 January 2021 to verify restored functionality of all system components and collect influent/effluent samples for the City sewer discharge permit. Following this system check and sample collection, the system was turned off, drained, and winterized. The Groundwater Treatment System will remain in this "mothballed" state unless the EPA elects to reactivate the system at a later time.

Effluent samples were collected by EA Engineering, Science, and Technology, Inc., PBC on January 15, 2021. ALS Environmental, located in Kelso, Washington, is our analytical laboratory. The analytical data for the monthly sampling event is included, along with the case narrative, sample Chain-of-Custody forms, and a list of data qualifiers. The pH values reported were based on bi-monthly field pH readings. The results indicate that concentrations of trichloroethene and chromium in effluent are lower than effluent discharge limits.

Please let me know if you have any questions regarding the enclosed information.

Sincerely,



Jonathan Reeve, LHG
Project Manager

JR/lw
cc: Dave Sordi
Philipp Sieber

Enclosures: City of Vancouver Self-Monitoring Report
List of Data Qualifiers
Laboratory Case Narratives, Chain of Custody forms, and Analytical Results

Industrial Wastewater Discharge Monitoring Report

CITY OF Vancouver WASHINGTON

Industrial Pretreatment
P.O. Box 1995
Vancouver, WA 98668
Office: 360-487-7130
Fax: 360- 487-7139

Industry Name: **Messer (Boomsnub Airco Superfund)** Permit Number: 2019-06
Report Due Date (check one): □ April 30 □ July 30 □ October 30 ■ **January 31**
Sample Collection Date: 15 January 2021

Parameter	Result	Daily Maximum Limit	Monthly Average	Instantaneous Maximum	Reporting Frequency	Sample Type
Flow, Daily Max Month #1 - January	0	230,400 gpd	NA	NA	Quarterly	Recording
Flow, Daily Max Month #2 - NA	NA	NA	NA	NA	Quarterly	Recording
Flow, Daily Max Month #3 – NA	NA	NA	NA	NA	Quarterly	Recording
pH, Max	7.98	5.5 to 10.0 S.U.	NA	NA	Quarterly	Grab
pH, Min	7.85	5.5 to 10.0 S.U.	NA	NA	Quarterly	Grab
Max/Ave Total Chromium Month #1 - January	0.0943 mg/l	7.22 mg/l	0.572 mg/l	14.44 mg/l	Quarterly	Composite
Max/Ave Total Chromium Month #2 - NA	NA	7.22 mg/l	0.572 mg/l	14.44 mg/l	Quarterly	Composite
Max/Ave Total Chromium Month #3 - NA	NA	7.22 mg/l	0.572 mg/l	14.44 mg/l	Quarterly	Composite
Trichloroethylene Month #1 - January	0.00015 J	0.33 mg/l	NA	NA	Quarterly	Grab
Trichloroethylene Month #2 - NA	NA	0.33 mg/l	NA	NA	Quarterly	Grab
Trichloroethylene Month #3 - NA	NA	0.33 mg/l	NA	NA	Quarterly	Grab
Chromium VI*	NA	4.28 mg/l	NA	8.56 mg/l	Quarterly	Composite

* Chromium VI results required if Messer discharges IX/AS treatment system wastewater to City sanitary sewer for a period of ten (10) consecutive days or more.

General Certification Statement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Representative Sampling Certification Statement

"I certify under penalty of law that the sample(s) collected by Messer LLC or its agent for the purpose of compliance monitoring was collected in accordance with 40 CFR 136 and represents the character of wastewater discharged to the city treatment system."

Signature *Title* *Date*

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

January 15, 2021
Laboratory Analytical Results

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Client: EA Engineering, Science, and Technology (EAEST) **Service Request:** K2100478
Project: Boomsnub **Date Received:** 01/18/2021
Sample Matrix: Water

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

Three water samples were received for analysis at ALS Environmental on 01/18/2021. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Metals:

No significant anomalies were noted with this analysis.

Volatiles by GC/MS:

Method 8260C, 01/21/2021: The following analyte was flagged as outside the control criterion for Continuing Calibration Verification (CCV) MS13\0121F006.D: Dibromochloromethane. In accordance with the EPA Method, 80% or more of the CCV analytes must pass within 20% of the true value. The ALS SOP allows for 40% difference for the remaining analytes. The CCV met these criteria. The quality of the sample data was not significantly affected. No further corrective action was required.

Approved by _____ Date 01/29/2021

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ALS Environmental

CHAIN OF CUSTODY
87369

004

SR# K2100478

COC Set 1 of 1

COC#

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name: Boomsnub	Project Number: 1611303.001
Project Manager: Jonathan Reeve	
Company: EA Engineering	
Address: 2200 6th Ave, Suite 707 Seattle, WA 98121	
Phone #: (206) 452-5°	email: jreeve@eaest.com
Sampler Signature: [signature]	Sampler Printed Name: Rick READ

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	0H SM 4500-H+ B / pH	14D 8260C / VOC FP	180D 200.7 / Metals T	1	2	3	4	5	Remarks
1. INF-011521		1/15/21	10:00	H_2O	4		X	X						
2. EFF-011521		↓	10:08	↓	4		X	X						
3. TB-011521		↓	10:12	↓	2		X							
4.														
5.														
6.														
7.														
8.														
9.														
10.														

Report Requirements

- ___ I. Routine Report: Method Blank, Surrogate, as required
- ___ II. Report Dup., MS, MSD as required
- X III. CLP Like Summary (no raw data)
- ___ IV. Data Validation Report
- X V. EDD

Invoice Information

P.O.#

Bill To:

Turnaround Requirements

___ 24 hr. ___ 48 hr.
___ 5 Day
X Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co (Cr) Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

VOCs - 8260c
Total Metals - Cr

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
[signature]	[signature]				
Signature: Rick READ	Signature: KMoore	Signature	Signature	Signature	Signature
Printed Name: EA	Printed Name: [illegible]	Printed Name	Printed Name	Printed Name	Printed Name
Firm: 1/18/21 9:00	Firm: 1/18/21 1250	Firm	Firm	Firm	Firm
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

PM MH

Cooler Receipt and Preservation Form

Client Jamsnub Service Request K21 0047 8

Received: 1/18/21 Opened: 1/18/21 By: [illegible] Unloaded: 1/18/21 By: [illegible]

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* (*Courier*) *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other*_____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? FRONT
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N
4. Was a Temperature Blank present in cooler? NA Y (N) If yes, notate the temperature in the appropriate column below:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA (Y) N
   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. (NA) Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with "X"	PM Notified if out of temp	Tracking Number (NA)	Filed
N/A	5.2	IR01	87369	—	—		

6. Packing material: (*Inserts*) *Baggies* (*Bubble Wrap*) *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
8. Were samples received in good condition (unbroken) NA (Y) N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA (Y) N
10. Did all sample labels and tags agree with custody papers? NA (Y) N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA (Y) N
13. Were VOA vials received without headspace? *Indicate in the table below.* NA (Y) N
14. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2100478
Project:	Boomsnub/1611303.001	**Date Collected:**	01/15/21 10:00
Sample Matrix:	Water	**Date Received:**	01/18/21 12:50
Sample Name:	IN-011521	**Basis:**	NA
Lab Code:	K2100478-001		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Chromium	200.7	**45.7**	ug/L	8.4	2.1	1	01/28/21 13:15	01/22/21	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2100478
Project:	Boomsnub/1611303.001	**Date Collected:**	01/15/21 10:08
Sample Matrix:	Water	**Date Received:**	01/18/21 12:50
Sample Name:	EFF-011521	**Basis:**	NA
Lab Code:	K2100478-002		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Chromium	200.7	**94.3**	ug/L	8.4	2.1	1	01/28/21 13:18	01/22/21	

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2100478
Project:	Boomsnub/1611303.001	**Date Collected:**	01/15/21 10:00
Sample Matrix:	Water	**Date Received:**	01/18/21 12:50
Sample Name:	IN-011521	**Units:**	ug/L
Lab Code:	K2100478-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Bromodichloromethane	**0.20**	**J**	0.50	0.091	1	01/21/21 17:57	
Carbon Tetrachloride	ND	U	0.50	0.096	1	01/21/21 17:57	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	01/21/21 17:57	
Dibromochloromethane	ND	U	0.50	0.14	1	01/21/21 17:57	*
1,2-Dichloroethane (EDC)	ND	U	0.50	0.080	1	01/21/21 17:57	
1,1-Dichloroethene	ND	U	0.50	0.080	1	01/21/21 17:57	
cis-1,2-Dichloroethene	ND	U	0.50	0.067	1	01/21/21 17:57	
trans-1,2-Dichloroethene	ND	U	0.50	0.072	1	01/21/21 17:57	
Hexachlorobutadiene	ND	U	2.0	0.11	1	01/21/21 17:57	
Methylene Chloride	ND	U	2.0	0.10	1	01/21/21 17:57	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.16	1	01/21/21 17:57	
Tetrachloroethene (PCE)	**0.62**		0.50	0.099	1	01/21/21 17:57	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.075	1	01/21/21 17:57	
Trichloroethene (TCE)	**5.3**		0.50	0.10	1	01/21/21 17:57	
Trichlorofluoromethane (CFC 11)	**0.17**	**J**	0.50	0.12	1	01/21/21 17:57	
Vinyl Chloride	ND	U	0.50	0.075	1	01/21/21 17:57	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	84	68 - 117	01/21/21 17:57	
Dibromofluoromethane	95	73 - 122	01/21/21 17:57	
Toluene-d8	96	65 - 144	01/21/21 17:57	

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2100478
Project:	Boomsnub/1611303.001	**Date Collected:**	01/15/21 10:08
Sample Matrix:	Water	**Date Received:**	01/18/21 12:50
Sample Name:	EFF-011521	**Units:**	ug/L
Lab Code:	K2100478-002	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Bromodichloromethane	ND U	0.50	0.091	1	01/21/21 18:24	
Carbon Tetrachloride	ND U	0.50	0.096	1	01/21/21 18:24	
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	01/21/21 18:24	
Dibromochloromethane	ND U	0.50	0.14	1	01/21/21 18:24	*
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	01/21/21 18:24	
1,1-Dichloroethene	ND U	0.50	0.080	1	01/21/21 18:24	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	01/21/21 18:24	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	01/21/21 18:24	
Hexachlorobutadiene	ND U	2.0	0.11	1	01/21/21 18:24	
Methylene Chloride	ND U	2.0	0.10	1	01/21/21 18:24	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	01/21/21 18:24	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	01/21/21 18:24	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	01/21/21 18:24	
Trichloroethene (TCE)	**0.15 J**	0.50	0.10	1	01/21/21 18:24	
Trichlorofluoromethane (CFC 11)	ND U	0.50	0.12	1	01/21/21 18:24	
Vinyl Chloride	ND U	0.50	0.075	1	01/21/21 18:24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	90	68 - 117	01/21/21 18:24	
Dibromofluoromethane	96	73 - 122	01/21/21 18:24	
Toluene-d8	98	65 - 144	01/21/21 18:24	

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2100478
Project:	Boomsnub/1611303.001	**Date Collected:**	01/15/21 10:12
Sample Matrix:	Water	**Date Received:**	01/18/21 12:50
Sample Name:	TB-011521	**Units:**	ug/L
Lab Code:	K2100478-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Bromodichloromethane	ND	U	0.50	0.091	1	01/21/21 18:51	
Carbon Tetrachloride	ND	U	0.50	0.096	1	01/21/21 18:51	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	01/21/21 18:51	
Dibromochloromethane	ND	U	0.50	0.14	1	01/21/21 18:51	*
1,2-Dichloroethane (EDC)	ND	U	0.50	0.080	1	01/21/21 18:51	
1,1-Dichloroethene	ND	U	0.50	0.080	1	01/21/21 18:51	
cis-1,2-Dichloroethene	ND	U	0.50	0.067	1	01/21/21 18:51	
trans-1,2-Dichloroethene	ND	U	0.50	0.072	1	01/21/21 18:51	
Hexachlorobutadiene	ND	U	2.0	0.11	1	01/21/21 18:51	
Methylene Chloride	**0.13**	**J**	2.0	0.10	1	01/21/21 18:51	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.16	1	01/21/21 18:51	
Tetrachloroethene (PCE)	ND	U	0.50	0.099	1	01/21/21 18:51	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.075	1	01/21/21 18:51	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	01/21/21 18:51	
Trichlorofluoromethane (CFC 11)	ND	U	0.50	0.12	1	01/21/21 18:51	
Vinyl Chloride	ND	U	0.50	0.075	1	01/21/21 18:51	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	85	68 - 117	01/21/21 18:51	
Dibromofluoromethane	94	73 - 122	01/21/21 18:51	
Toluene-d8	95	65 - 144	01/21/21 18:51	

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

2200 Sixth Avenue, Suite 707
Seattle, Washington 98121
Telephone: 206-452-5350
Fax: 206-443-7646
www.eaest.com

30 July 2021
1611303 LN1739

Mr. Nick Imbery
Industrial Pretreatment Coordinator
City of Vancouver
Marine Park Engineering Office
P.O. Box 1995
Vancouver, Washington 98668-1995

Subject: Self-Monitoring Report – 30 July 2021
Boomsnub/Airco Superfund Site
Hazel Dell, Washington

Dear Mr. Imbery:

On behalf of Messer LLC (Messer), we are submitting the Self-Monitoring Report for the Boomsnub/Airco Superfund Site, prepared in accordance with the City of Vancouver Industrial Wastewater Discharge Permit 2019-06. The time period covered includes April through June 2021. However, please note that due to system shut down in January 2021 no data is included in this Self-Monitoring Report.

The system was turned off, drained, and winterized on 15 January 2021 with prior approval from the Environmental Protection Agency (EPA). The Groundwater Treatment System will remain in this "mothballed" state unless the EPA or Messer elects to reactivate the system at a later time.

Please let me know if you have any questions regarding the enclosed information.

Sincerely,

Jonathan Reeve, LHG
Project Manager

JR/lw
cc: Dave Sordi
Philipp Sieber

Enclosures: City of Vancouver Self-Monitoring Report

Industrial Wastewater Discharge Monitoring Report

Industrial Pretreatment
P.O. Box 1995
Vancouver, WA 98668
Office: 360-487-7130
Fax: 360- 487-7139

Industry Name: **Messer (Boomsnub Airco Superfund)** Permit Number: 2019-06
Report Due Date (check one): □ April 30 ■ **July 30** □ October 30 □ January 31
Sample Collection Date: System Off – No Samples Collected

Parameter	Result	Daily Maximum Limit	Monthly Average	Instantaneous Maximum	Reporting Frequency	Sample Type
Flow, Daily Max Month #1 - January	0	230,400 gpd	NA	NA	Quarterly	Recording
Flow, Daily Max Month #2 - NA	NA	230,400 gpd	NA	NA	Quarterly	Recording
Flow, Daily Max Month #3 – NA	NA	230,400 gpd	NA	NA	Quarterly	Recording
pH, Max	NA	5.5 to 10.0 S.U.	NA	NA	Quarterly	Grab
pH, Min	NA	5.5 to 10.0 S.U.	NA	NA	Quarterly	Grab
Max/Ave Total Chromium Month #1 - January	NA	7.22 mg/l	NA	NA	Quarterly	Composite
Max/Ave Total Chromium Month #2 - NA	NA	7.22 mg/l	NA	NA	Quarterly	Composite
Max/Ave Total Chromium Month #3 - NA	NA	7.22 mg/l	NA	NA	Quarterly	Composite
Trichloroethylene Month #1 - January	NA	0.33 mg/l	NA	NA	Quarterly	Grab
Trichloroethylene Month #2 - NA	NA	0.33 mg/l	NA	NA	Quarterly	Grab
Trichloroethylene Month #3 - NA	NA	0.33 mg/l	NA	NA	Quarterly	Grab
Chromium VI*	NA	4.28 mg/l	NA	NA	Quarterly	Composite

* Chromium VI results required if Messer discharges IX/AS treatment system wastewater to City sanitary sewer for a period of ten (10) consecutive days or more.

General Certification Statement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Representative Sampling Certification Statement

"I certify under penalty of law that the sample(s) collected by Messer LLC or its agent for the purpose of compliance monitoring was collected in accordance with 40 CFR 136 and represents the character of wastewater discharged to the city treatment system."

	Project Coordinator	7-30-2021
Signature	*Title*	*Date*

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

2200 Sixth Avenue, Suite 707
Seattle, Washington 98121
Telephone: 206-452-5350
Fax: 206-443-7646
www.eaest.com

27 October 2021
1611303 LN1744

Mr. Nick Imbery
Industrial Pretreatment Coordinator
City of Vancouver
Marine Park Engineering Office
P.O. Box 1995
Vancouver, Washington 98668-1995

Subject: Self-Monitoring Report – 30 October 2021
Boomsnub/Airco Superfund Site
Hazel Dell, Washington

Dear Mr. Imbery:

On behalf of Messer LLC (Messer), we are submitting the Self-Monitoring Report for the Boomsnub/Airco Superfund Site, prepared in accordance with the City of Vancouver Industrial Wastewater Discharge Permit 2019-06. The time period covered includes July through September 2021. However, please note that due to system shut down in January 2021 no data is included in this Self-Monitoring Report.

The system was turned off, drained, and winterized on 15 January 2021 with prior approval from the Environmental Protection Agency (EPA). The Groundwater Treatment System will remain in this "mothballed" state unless the EPA or Messer elects to reactivate the system at a later time.

Please let me know if you have any questions regarding the enclosed information.

Sincerely,

Jonathan Reeve, LHG
Project Manager

JR/lw
cc: Dave Sordi
Philipp Sieber

Enclosures: City of Vancouver Self-Monitoring Report

Industrial Wastewater Discharge Monitoring Report

Industrial Pretreatment
P.O. Box 1995
Vancouver, WA 98668
Office: 360-487-7130
Fax: 360- 487-7139

Industry Name: **Messer (Boomsnub Airco Superfund)** Permit Number: 2019-06
Report Due Date (check one): □ April 30 □ July 30 ■ **October 30** □ January 31
Sample Collection Date: System Off – No Samples Collected

Parameter	Result	Daily Maximum Limit	Monthly Average	Instantaneous Maximum	Reporting Frequency	Sample Type
Flow, Daily Max Month #1 - January	NA**	230,400 gpd	NA	NA	Quarterly	Recording
Flow, Daily Max Month #2 - NA	NA	230,400 gpd	NA	NA	Quarterly	Recording
Flow, Daily Max Month #3 – NA	NA	230,400 gpd	NA	NA	Quarterly	Recording
pH, Max	NA	5.5 to 10.0 S.U.	NA	NA	Quarterly	Grab
pH, Min	NA	5.5 to 10.0 S.U.	NA	NA	Quarterly	Grab
Max/Ave Total Chromium Month #1 - January	NA	7.22 mg/l	NA	NA	Quarterly	Composite
Max/Ave Total Chromium Month #2 - NA	NA	7.22 mg/l	NA	NA	Quarterly	Composite
Max/Ave Total Chromium Month #3 - NA	NA	7.22 mg/l	NA	NA	Quarterly	Composite
Trichloroethylene Month #1 - January	NA	0.33 mg/l	NA	NA	Quarterly	Grab
Trichloroethylene Month #2 - NA	NA	0.33 mg/l	NA	NA	Quarterly	Grab
Trichloroethylene Month #3 - NA	NA	0.33 mg/l	NA	NA	Quarterly	Grab
Chromium VI*	NA	4.28 mg/l	NA	NA	Quarterly	Composite

* Chromium VI results required if Messer discharges IX/AS treatment system wastewater to City sanitary sewer for a period of ten (10) consecutive days or more.
** NA – Not applicable.

General Certification Statement
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Representative Sampling Certification Statement
"I certify under penalty of law that the sample(s) collected by Messer LLC or its agent for the purpose of compliance monitoring was collected in accordance with 40 CFR 136 and represents the character of wastewater discharged to the city treatment system."

Signature	Project Manager *Title*	10/27/2021 *Date*

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

2200 Sixth Avenue, Suite 707
Seattle, Washington 98121
Telephone: 206-452-5350
Fax: 206-443-7646
www.eaest.com

24 January 2022
1611303 LN1748

Mr. Nick Imbery
Industrial Pretreatment Coordinator
City of Vancouver
Marine Park Engineering Office
P.O. Box 1995
Vancouver, Washington 98668-1995

Subject: Self-Monitoring Report – 31 December 2021
Boomsnub/Airco Superfund Site
Hazel Dell, Washington

Dear Mr. Imbery:

On behalf of Messer LLC (Messer), we are submitting the Self-Monitoring Report for the Boomsnub/Airco Superfund Site, prepared in accordance with the City of Vancouver Industrial Wastewater Discharge Permit 2019-06. The time period covered includes October through December 2021. However, please note that due to system shut down in January 2021 no data is included in this Self-Monitoring Report.

The system was turned off, drained, and winterized on 3 January 2021 with prior approval from the Environmental Protection Agency (EPA). The Groundwater Treatment System will remain in this "mothballed" state unless the EPA or Messer elects to reactivate the system at a later time.

Please let me know if you have any questions regarding the enclosed information.

Sincerely,

Jonathan Reeve, LHG
Project Manager

JR/lw
cc: Kevin Svitana

Enclosures: City of Vancouver Self-Monitoring Report

Industrial Wastewater Discharge Monitoring Report

Industrial Pretreatment
P.O. Box 1995
Vancouver, WA 98668
Office: 360-487-7130
Fax: 360- 487-7139

Industry Name: **Messer (Boomsnub Airco Superfund)** Permit Number: 2019-06
Report Due Date (check one): □ April 30 □ July 30 □ October 30 ■ **January 31**
Sample Collection Date: System Off – No Samples Collected

Parameter	Result	Daily Maximum Limit	Monthly Average	Instantaneous Maximum	Reporting Frequency	Sample Type
Flow, Daily Max Month #1 - January	NA**	230,400 gpd	NA	NA	Quarterly	Recording
Flow, Daily Max Month #2 - NA	NA	230,400 gpd	NA	NA	Quarterly	Recording
Flow, Daily Max Month #3 – NA	NA	230,400 gpd	NA	NA	Quarterly	Recording
pH, Max	NA	5.5 to 10.0 S.U.	NA	NA	Quarterly	Grab
pH, Min	NA	5.5 to 10.0 S.U.	NA	NA	Quarterly	Grab
Max/Ave Total Chromium Month #1 - January	NA	7.22 mg/l	NA	NA	Quarterly	Composite
Max/Ave Total Chromium Month #2 - NA	NA	7.22 mg/l	NA	NA	Quarterly	Composite
Max/Ave Total Chromium Month #3 - NA	NA	7.22 mg/l	NA	NA	Quarterly	Composite
Trichloroethylene Month #1 - January	NA	0.33 mg/l	NA	NA	Quarterly	Grab
Trichloroethylene Month #2 - NA	NA	0.33 mg/l	NA	NA	Quarterly	Grab
Trichloroethylene Month #3 - NA	NA	0.33 mg/l	NA	NA	Quarterly	Grab
Chromium VI*	NA	4.28 mg/l	NA	NA	Quarterly	Composite

* Chromium VI results required if Messer discharges IX/AS treatment system wastewater to City sanitary sewer for a period of ten (10) consecutive days or more.
** NA – Not applicable.

General Certification Statement
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Representative Sampling Certification Statement
"I certify under penalty of law that the sample(s) collected by Messer LLC or its agent for the purpose of compliance monitoring was collected in accordance with 40 CFR 136 and represents the character of wastewater discharged to the city treatment system."

Signature	Project Manager *Title*	1/24/2022 *Date*

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Appendix C

Groundwater Purge and Sampling Forms

Summer 2021
Groundwater Purge and Sampling Forms

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Ground Water Purge and Sampling Form

Well Identification	AMW-12A
Well Diameter (inches)	4
Well Monument Locked and Good Condition?	Y no bolts
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	
Well Total Depth (ft btoc)	

Site Location: Boomsnub Date: 7/20/2021

Project Number: 1611303 Personnel: HH, RR

Purge Method: ___Low Flow ___Conventional ✓None

Purge Equipment: ___Extraction Well ___Redi-flo Pump (Ded) ✓Other

Sampling Equipment: ___Extraction Well ___Redi-flo Pump ___Diffusion Bag

Weather Conditions: Bailer

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1324	1347									
Depth to Ground water (ft btoc)											
Total Groundwater Purged(gallons, liters, other)											
Purge Rate (gpm, ft^3/min, ml/min, other)											
pH		6.46									
Conductivity (mS/cm)		0.275									
Turbidity (NTU)											
Disssolved Oxygen (mg/L)		5.50									
Temperature (°C)		22.0									
ORP/eH (mV)		90.6									
Color of Purged Water (gray, brown, red, clear)											

Sample Identification: 2129-025

Time Sampled: 1335

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓VOCs by 8260C	11
~~DUP~~ Total Chromium	___
✓Other	___

Comments:

Ground Water Purge and Sampling Form

Well Identification	A-MW-19A
Well Diameter (inches)	4
Well Monument Locked and Good Condition?	
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	
Well Casing Plug Locked and Good Condition?	
PID Reading in Well (ppm)	
Well Total Depth (ft btoc)	

Site Location: Boomsnub Date: 7/20/2021

Project Number: 1611303 Personnel: HH, RR

Purge Method: ___Low Flow ___Conventional ✓None

Purge Equipment: ___Extraction Well ___Redi-flo Pump (Ded) ___Other

Sampling Equipment: ___Extraction Well ___Redi-flo Pump ___Diffusion Bag

Weather Conditions: bailer

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1356										
Depth to Ground water (ft btoc)											
Total Groundwater Purged(gallons, liters, other)											
Purge Rate (gpm, ft^3/min, ml/min, other)											
pH	6.74										
Conductivity (mS/cm)	0.146										
Turbidity (NTU)											
Disssolved Oxygen (mg/L)	9.24										
Temperature (°C)											
ORP/eH (mV)	185.8										
Color of Purged Water (gray, brown, red, clear)											

Sample Identification: 2129-027

Time Sampled: 1356

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	3
___ Total Chromium	___
___ Other	___

Comments:

Ground Water Purge and Sampling Form

Well Identification	AMW-26
Well Diameter (inches)	
Well Monument Locked and Good Condition?	
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	
Well Casing Plug Locked and Good Condition?	
PID Reading in Well (ppm)	
Well Total Depth (ft btoc)	

Site Location: Boomsnub Date: 7/20/2021

Project Number: 1611303 Personnel: HH, RR

Purge Method: ___Low Flow ___Conventional ___None

Purge Equipment: ___Extraction Well ___Redi-flo Pump (Ded) ___Other

Sampling Equipment: ___Extraction Well ___Redi-flo Pump X Diffusion Bag

Weather Conditions:

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1401										
Depth to Ground water (ft btoc)											
Total Groundwater Purged(gallons, liters, other)											
Purge Rate (gpm, ft^3/min, ml/min, other)											
pH	7.05										
Conductivity (mS/cm)	0.179										
Turbidity (NTU)											
Disssolved Oxygen (mg/L)	6.37										
Temperature (°C)											
ORP/eH (mV)	177.9										
Color of Purged Water (gray, brown, red, clear)											

Sample Identification: 219-029

Time Sampled: 1405

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	___
___ Total Chromium	___
___ Other	___

Comments:

Ground Water Purge and Sampling Form

Well Identification	AMW-27
Well Diameter (inches)	6.in
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WBC
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	
Well Total Depth (ft btoc)	

Site Location: Boomsnub Date: 7/20/2021

Project Number: 1611303 Personnel: HH, RR

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ✓ Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: Sunny 73° F

Begin Purge 1512

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1500	1517	1522	1527	1532	1537	1542	1547		
Depth to Ground water (ft btoc)	32.32	32.83	32.83	32.83	32.83	32.83	32.83	32.83		
Total Groundwater Purged(gallons, liters, other)		1.5	3.0	4.5	6.0	7.5	9.0	10.5		
Purge Rate (gpm, ft³/min, ml/min, other)		300	300	300	300	300	300	300		
pH		8.01	7.85	7.75	7.53	8.01	7.51	7.35		
Conductivity (mS/cm)		0.296	0.296	0.295	0.294	0.294	0.294	0.293		
Turbidity (NTU)		2.32	2.22	2.06	1.82	1.85	1.77	1.58		
Disssolved Oxygen (mg/L)		1.20	1.17	1.10	1.07	1.06	1.05	1.05		
Temperature (°C)		15.2	15.4	15.3	15.6	15.7	15.8	15.8		
ORP/eH (mV)		110.5	95.5	92.3	90.8	84.5	85.0	87.0		
Color of Purged Water (gray, brown, red, clear)		clear	clear	clear	clear	clear	clear	clear		

Sample Identification: 2129-031

Time Sampled: 1551

Purge water disposed To: Boomsnub

Analysis

✓ VOCs by 8260C

✓ Total Chromium

___ Other

12 # of Bottles

Comments: MS/MSD

pH probe having issues not reading properly even after calibration. Jumping

Ground Water Purge and Sampling Form

Well Identification	AMW-58
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	114.73

Site Location: Boomsnub Date: 7/21/21

Project Number: 1611303 Personnel: PE, BH

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ✓ Extraction Well ___ Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: 77° sunny

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1420	1425	1430	1435	1440	1445	1450 collect sample			
Depth to Ground water (ft btoc)	60.81	60.81	60.81	60.81	60.81	60.81				
Total Groundwater Purged(gallons, liters, other)	—	1.5	3.0	4.5	6.0	7.5				
Purge Rate (gpm, ft³/min, ml/min, other)	0.3	0.3	0.3	0.3	0.3	0.3				
pH		7.54	7.55	7.58	7.55	7.55				
Conductivity (mS/cm)		371.0	367.5	362.9	361.8	360.2				
Turbidity (NTU)		9.04	6.05	4.80	4.62	4.81				
Disssolved Oxygen (mg/L)		0.33	1.0	0.07	0.06	0.06				
Temperature (°C)		15.3	16.1	16.6	16.5	16.6				
ORP/eH (mV)		157.8	166.5	167.6	167.5	167.4				
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear	clear				BH

Sample Identification: 2129-052

Time Sampled: 1450

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	3
✓ Total Chromium	1
___ Other	

Comments:

Ground Water Purge and Sampling Form

Well Identification	AMW-59
Well Diameter (inches)	4
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	
Well Total Depth (ft btoc)	

Site Location: Boomsnub Date: 7/19/21

Project Number: 1611303 Personnel: HH, RR

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ✓ Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: Sunny, 76, wind SW 3mph

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	0940	1005	1015	1020	1025	1030	1035	1040	1045	1050
Depth to Ground water (ft btoc)	19.91	20.20	20.67	20.95	20.97	21.02	21.03	21.03	21.52	21.53
Total Groundwater Purged(gallons, liters, other)	300	7.5	10.5	12	13.5	15.0	16.5	18.0	19.5	21.0
Purge Rate (gpm, ft³/min, ml/min, other)	300	300	300	300	300	300	300	300	300	300
pH		6.89	6.91	6.94	7.02	7.02	7.04	7.08	7.14	7.14
Conductivity (mS/cm) C-45 cm		620	614	600	581	583	584	579	572	574
Turbidity (NTU)		144.7	28.6	15.18	8.40	8.42	9.32	9.72	9.14	9.17
Disssolved Oxygen ~~(mg/L) %~~ HH 7/19 mg/L		0.05	0.14	0.13	0.04	0.04	0.04	0.03	~~0.0~~ 0.03 HH 7/21/21	0.02
Temperature (°C)		14.7	15.3	14.8	14.7	14.8	14.8	14.8	14.9 °C	15.0
ORP/eH (mV)		-123.4	-141.1	-148.9	-167.8	-169.6	-176.8	-183.5	-192.8	-194.9
Color of Purged Water (gray, brown, red, clear)		gray	gray	clear	clear	clear	clear	clear	clear	clear

Sample Identification: 2129-003

Time Sampled: 1100 12 bottles

Dup 2129-005 1110 3 bottles

Purge water disposed To: Boomsnub

Analysis	# of Bottles
___ VOCs by 8260C	___
___ Total Chromium	___
___ Other	___

Comments:

98 1/2

AMW-59 cont...

Ground Water Purge and Sampling Form

Well Identification	AMW-59
Well Diameter (inches)	
Well Monument Locked and Good Condition?	
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	
Well Casing Plug Locked and Good Condition?	
PID Reading in Well (ppm)	
Well Total Depth (ft btoc)	

Site Location: Boomsnub Date:

Project Number: 1611303 Personnel:

Purge Method: ___Low Flow ___Conventional ___None

Purge Equipment: ___Extraction Well ___Redi-flo Pump (Ded) ___Other

Sampling Equipment: ___Extraction Well ___Redi-flo Pump ___Diffusion Bag

Weather Conditions:

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1055
Depth to Ground water (ft btoc)	21.54
Total Groundwater Purged(gallons, liters, other)	
Purge Rate (gpm, ft^3/min, ml/min, other)	300
pH	7.16
Conductivity (mS/cm) C-$\frac{us}{cm}$	572
Turbidity (NTU)	9.31
Disssolved Oxygen (mg/L)	0.02
Temperature (°C)	15.0
ORP/eH (mV)	-196.8
Color of Purged Water (gray, brown, red, clear)	clear

STABILIZED

Sample Identification: 2129-003

Time Sampled: 1100

DW 2129-005 1110

Purge water disposed To: Boomsnub

Analysis	# of Bottles	Comments:
___ VOCs by 8260C	12	
___ Total Chromium	___	
___ Other	___	

pg 2/2

Ground Water Purge and Sampling Form

Well Identification	CPW-14
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	N
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	N
Well Casing Plug Locked and Good Condition?	N
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	71.43

Site Location: Boomsnub Date: 7/21/21

Project Number: 1611303 Personnel: PE, BH

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ✓ Extraction Well ___ Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: 70° sunny

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1219	1224	1229	1234	1239	1244	1249	collect Samples
Depth to Ground water (ft btoc)	18.83	18.83	18.83	18.83	18.83	18.83		
Total Groundwater Purged(gallons, liters, other)	—	1.5	3.0	4.5	6.0	7.5		
Purge Rate (gpm, ft^3/min, ml/min, other)	0.3	0.3	0.3	0.3	0.3	0.3		
pH		6.93	6.82	6.83	6.83	6.83		
Conductivity (mS/cm)		415.2	413.6	412.5	412.1	410.9		
Turbidity (NTU)		12.27	10.46	10.09	10.34	10.48		
Disssolved Oxygen (mg/L)		1.45	1.27	1.23	1.24	1.25		
Temperature (°C)		13.1	13.1	13.2	13.3	13.3		
ORP/eH (mV)		143.0	125.0	117.8	113.1	109.9		
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear	clear		BH

Sample Identification: 2129-046

Time Sampled: 1249

Purge water disposed To: Boomsnub

Analysis	# of Bottles	Comments:
✓ VOCs by 8260C	3	
___ Total Chromium	___	
___ Other	___	

Ground Water Purge and Sampling Form

Well Identification	MW-1A
Well Diameter (inches)	2
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	
Well Total Depth (ft btoc)	

Site Location: Boomsnub Date: 7/21/2021

Project Number: 1611303 Personnel: HH, RR

Purge Method: ___Low Flow ___Conventional ✓None

Purge Equipment: ___Extraction Well ___Redi-flo Pump (Ded) ✓Other

Sampling Equipment: ___Extraction Well ___Redi-flo Pump ✓Diffusion Bag

Weather Conditions: PDB

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	~~0952~~	0943									
Depth to Ground water (ft btoc)		32.22									
Total Groundwater Purged(gallons, liters, other)											
Purge Rate (gpm, ft^3/min, ml/min, other)											
pH		6.84									
Conductivity (mS/cm)		0.001									
Turbidity (NTU)											
Disssolved Oxygen (mg/L)		2.15									
Temperature (°C)											
ORP/eH (mV)		174.9									
Color of Purged Water (gray, brown, red, clear)											

Sample Identification: 2129-033

Time Sampled: 0952

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓VOCs by 8260C	3
___ Total Chromium	___
___ Other	___

Comments: New Redeployed PDB

Ground Water Purge and Sampling Form

Well Identification	MW-3B
Well Diameter (inches)	2
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	
Well Total Depth (ft btoc)	

Site Location: Boomsnub Date: 7/21/2021

Project Number: 1611303 Personnel: HH, RE

Purge Method: ___Low Flow ___Conventional ✓None

Purge Equipment: ___Extraction Well ___Redi-flo Pump (Ded) ✓Other

Sampling Equipment: ___Extraction Well ___Redi-flo Pump ✓Diffusion Bag

Weather Conditions: PDR

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	0957										
Depth to Ground water (ft btoc)	32.26										
Total Groundwater Purged(gallons, liters, other)											
Purge Rate (gpm, ft^3/min, ml/min, other)											
pH											
Conductivity (mS/cm)											
Turbidity (NTU)											
Disssolved Oxygen (mg/L)											
Temperature (°C)											
ORP/eH (mV)											
Color of Purged Water (gray, brown, red, clear)											

Sample Identification: 2129-035

Time Sampled: 1004

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓VOCs by 8260C	___
___ Total Chromium	___
___ Other	___

Comments: Deployed new PDB

Ground Water Purge and Sampling Form

Well Identification	MW-1C
Well Diameter (inches)	2
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	
Well Total Depth (ft btoc)	

Site Location: Boomsnub Date:. 7/2/2021

Project Number: 1611303 Personnel: LH, RR

Purge Method: ___Low Flow ___Conventional ✓None

Purge Equipment: ___Extraction Well ___Redi-flo Pump (Ded) ___Other

Sampling Equipment: ___Extraction Well ___Redi-flo Pump ✓Diffusion Bag

Weather Conditions: PDB

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1007										
Depth to Ground water (ft btoc)	32.27										
Total Groundwater Purged(gallons, liters, other)											
Purge Rate (gpm, ft^3/min, ml/min, other)											
pH											
Conductivity (mS/cm)											✓
Turbidity (NTU)											
Disssolved Oxygen (mg/L)											
Temperature (°C)											
ORP/eH (mV)											
Color of Purged Water (gray, brown, red, clear)											

Sample Identification: 2129-041

Time Sampled: 1011

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓VOCs by 8260C	___
___ Total Chromium	___
___ Other	___

Comments:
DUP 2129-043
Time: 1015
Bottles = 3

Deployed new PDB

Ground Water Purge and Sampling Form

Well Identification	MW-2A
Well Diameter (inches)	2
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	
Well Total Depth (ft btoc)	

Site Location: Boomsnub Date: 7/21/2021

Project Number: 1611303 Personnel: HH, RR

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ___ Redi-flo Pump (Ded) ✓ Other peri pump

Sampling Equipment: ___ Extraction Well ___ Redi-flo Pump ___ Diffusion Bag

Weather Conditions:

Begin Purge: 1035 Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1020	1040	1045	1050	1055	1100	1105	1110	1115	
Depth to Ground water (ft btoc)	29.77	29.88	29.88	29.89	29.88	29.88	29.88	29.88	29.88	
Total Groundwater Purged(gallons, liters, other)		1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	
Purge Rate (gpm, ft³/min, ml/min, other)	200	200	200	200	200	200	200	200	200	
pH ±0.2		3.35	5.69	6.50	6.30	5.97	5.80	5.83	5.87	
Conductivity (mS/cm) ±10%		0.109	0.111	0.114	0.117	0.120	0.123	0.124	0.125	
Turbidity (NTU) ±10% or		14.04	13.95	7.55	7.71	6.07	5.33	4.97	5.13	
Disssolved Oxygen (mg/L) ±0.1/±10%		8.04	7.72	7.66	7.70	7.62	7.59	7.53	7.56	
Temperature (°C)		14.3	14.3	14.3	14.4	14.3	14.3	14.3	14.4	
ORP/eH (mV) ±10		196.7	200.3	207.7	208.5	213.9	217.4	219.3	220.9	
Color of Purged Water (gray, brown, red, clear)		clear	clear	clear	clear	clear	clear	clear	clear	

Sample Identification: 2129-045

Time Sampled: 1121

Purge water disposed To: Boomsnub

Analysis / # of Bottles

✓ VOCs by 8260C 3

___ Total Chromium ___

___ Other ___

Comments: Unsure of pH probe accuracy. Probe readings kept jumping. Calibration did it help problem w/ probe?

Ground Water Purge and Sampling Form

Well Identification	MW-2B
Well Diameter (inches)	2
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	
Well Total Depth (ft btoc)	57.94

Site Location: Boomsnub Date: 7/21/2021

Project Number: 1611303 Personnel: MH, RR

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ✓ Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions:

Begin Purge: 1249

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1204	1254	1259	1304	1309	1314	1319	1324		
Depth to Ground water (ft btoc)	29.82	30.20	30.20	30.20	30.20	30.20	30.20	30.20		
Total Groundwater Purged(gallons, liters, other)		1.5	3.0	4.5	6.0	7.5	9.0	10.5	Stabilized	
Purge Rate (gpm, ft³/min, ml/min, other)		300	300	300	300	300	300	300	✓	
pH		5.36	7.97	8.19	7.33	6.26	5.75	5.55		
Conductivity (mS/cm)		0.180	0.181	0.181	0.180	0.180	0.180	0.180		
Turbidity (NTU)		44.44	27.24	16.03	14.02	10.14	9.23 7.23	7.12	pH probe unreliable	
Disssolved Oxygen (mg/L)		9.20	9.24	9.27	9.27	9.28	9.29	9.29		
Temperature (°C)		16.7	17.3	17.4	17.5	17.5	17.6	17.6		
ORP/eH (mV)		134.1	138.7	139.6	138.8	138.1	138.7	140.0		
Color of Purged Water (gray, brown, red, clear)		cloudy	cloudy	cloudy	clear	clear	clear	clear		

Sample Identification: 2129-049

Time Sampled: 1329

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	4
✓ Total Chromium	
___ Other	

Comments:

pH probe not functioning properly. Jumping a lot. Calibrating did not help

pH unreliable

Tested w/ pH strip reading ~ 6.5 but probe keeps jumping

Ground Water Purge and Sampling Form

Well Identification	MW-2C
Well Diameter (inches)	2
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	
Well Total Depth (ft btoc)	86.94

Site Location: Boomsnub Date: 7/21/2021

Project Number: 1611303 Personnel: HH, RR

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ✓ Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions:

Begin Purge 1126

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1125	1131	1136	1141	1146	1151	1156	Stabilized		
Depth to Ground water (ft btoc)	30.00	31.38	31.38	31.39	31.41	31.40	31.39			
Total Groundwater Purged(gallons, liters, other)	3 HH meter	1.5	3.0	4.5	6.0	~~7.0~~ 7.5	9.0			
Purge Rate (gpm, ft³/min, ml/min, other)	300	300	300	300	300	300	300			
pH		5.13	5.08	5.08	4.94	4.96	4.98			
Conductivity (mS/cm)		0.188	0.189	0.189	0.188	0.190	0.190			
Turbidity (NTU)		20.69	24.51	23.58	13.35	11.89	12.48			
Disssolved Oxygen (mg/L)		9.00	8.74	8.64	8.84	8.86	8.87			
Temperature (°C)		14.9	15.4	15.4	15.8	16.0	15.9			
ORP/eH (mV)		124.1	122.8	124.1	125.1	129.8	129.4			
Color of Purged Water (gray, brown, red, clear)		clear	slightly cloudy	slightly cloudy	clear	clear	clear			

Sample Identification: ~~2129-DUP~~ HH/RR/Rem 2129-047

Time Sampled: 1201

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	___
✓ Total Chromium	___
___ Other	___

Comments: pH probe on YSI not functioning correctly. Calibration did not help, pH taking 1hr+ to stabilize on other wells. Not sure about pH accuracy.

Ground Water Purge and Sampling Form

Well Identification	MW-3A
Well Diameter (inches)	2
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	
Well Total Depth (ft btoc)	36.67

Site Location: Boomsnub Date: 7/21/2011

Project Number: 1611303 Personnel: HH, RR

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ___ Redi-flo Pump (Ded) ✓ Other

Sampling Equipment: ___ Extraction Well ___ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: Sunny Peri Pump

Begin Purge 1405

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1348	1410	1415	1420	1425	
Depth to Ground water (ft btoc)	26.67	27.81	27.85	27.82	27.82	Stabilized
Total Groundwater Purged(gallons, liters, other)		1.0	2.0	3.0	4.0	
Purge Rate (gpm, ft^3/min, ml/min, other)		200	200	200	200	
pH		5.91	5.29	5.24	5.18	
Conductivity (mS/cm)		0.160	0.157	0.156	0.156	
Turbidity (NTU)		2.60	2.35	1.84	1.79	
Disssolved Oxygen (mg/L)		8.07	8.03	8.00	7.99	
Temperature (°C)		14.3	14.3	14.3	14.3	
ORP/eH (mV)		194.5	203.5	208.7	211.9	
Color of Purged Water (gray, brown, red, clear)		clear	clear	clear	clear	

Sample Identification: 2129-~~050~~051

Time Sampled: 1429

Purge water disposed To: Boomsnub

Analysis	# of Bottles
___ VOCs by 8260C	___
✓ Total Chromium	___
___ Other	___

Comments: pH probe unreliable

Ground Water Purge and Sampling Form

Well Identification	MW-38
Well Diameter (inches)	2
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	
Well Total Depth (ft btoc)	56.69

Site Location: Boomsnub Date: 7/21/2021

Project Number: 1611303 Personnel: HH, RR

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ___ Redi-flo Pump (Ded) ✓ Other

Sampling Equipment: ___ Extraction Well ___ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: Pert pump

Begin Purge: 1443

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1434	1448	1453	1458	1503					
Depth to Ground water (ft btoc)	27.90	27.95	27.95	27.95	27.95					
Total Groundwater Purged(gallons, liters, other)		1.0	2.0	3.0	3.0	Stabilized				
Purge Rate (gpm, ft³/min, ml/min, other)		200	200	200	200					
pH ±.2		5.47	5.09	4.95	4.94					
Conductivity (mS/cm)		0.175	0.176	0.176	0.176					
Turbidity (NTU)		2.54	2.24	1.44	1.44					
Disssolved Oxygen (mg/L)		8.70	8.67	8.59	8.65					
Temperature (°C)		14.8	14.7	14.7	15.0					
ORP/eH (mV)		212.9	216.2	219.1	215.2					
Color of Purged Water (gray, brown, red, clear)		clear	clear	clear	clear					

Sample Identification: 2129-053

Time Sampled: 1509

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	3
✓ Total Chromium	1
___ Other	

Comments:
Dup: 2129-055
Time: 1516
Bottle #: 4

pH not reliable

Ground Water Purge and Sampling Form

Well Identification	MW-3C
Well Diameter (inches)	2
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	
Well Total Depth (ft btoc)	83.69

Site Location: Boomsnub Date: 7/21/2021

Project Number: 1611303 Personnel: HH, RR

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ✓ Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions:

Begin Purge: 1519

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1518	1524	1529	1534						
Depth to Ground water (ft btoc)	28.32	28.37	28.37	28.37	Stabilized					
Total Groundwater Purged(gallons, liters, other)		1.0	2.0	3.0						
Purge Rate (gpm, ft³/min, ml/min, other)		200	200	200						
pH Ex2		5.28	5.36	5.38						
Conductivity (mS/cm)		0.177	0.177	0.177						
Turbidity (NTU)		4.44	3.17	2.95						
Disssolved Oxygen (mg/L)		9.13	9.11	9.09						
Temperature (°C)		16.1	16.1	16.3						
ORP/eH (mV)		125.3	126.3	126.2						
Color of Purged Water (gray, brown, red, clear)		clear	clear	clear						

Sample Identification: 2129-057

Time Sampled: 1539

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	4
✓ Total Chromium	1
___ Other	___

Comments:

Ground Water Purge and Sampling Form

Well Identification	MW-4A
Well Diameter (inches)	2
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	
Well Total Depth (ft btoc)	

Site Location: Boomsnub Date: 7/22/2021

Project Number: 1611303 Personnel: LH, RR

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ___ Redi-flo Pump (Ded) ✓ Other

Sampling Equipment: ___ Extraction Well ___ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: 50°F, sunny Peri pump

Begin Purge 8:04 Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	0800	0809	0814	0819	0824	0828	0832			
Depth to Ground water (ft btoc)	27.86	28.39	28.39	28.39	28.39	28.39	28.39			
Total Groundwater Purged(gallons, liters, other)		1.5	3.0	4.5	6.0	7.5	9.0			
Purge Rate (gpm, ft³/min, ml/min, other)		300	300	300	300	300	300			
pH		4.40	5.09	5.44	5.59	5.65	5.66	stable 1.2		
Conductivity (mS/cm)		0.183	0.188	0.187	0.186	0.185	0.185			
Turbidity (NTU)		37.39	35.69	12.78	9.91	7.11	6.83			
Disssolved Oxygen (mg/L)		7.28	7.18	7.10	7.05	7.00	6.96			
Temperature (°C)		14.0	14.0	14.0	13.9	14.0	14.0			
ORP/eH (mV)		161.0	168.7	174.4	178.5	181.0	181.6			
Color of Purged Water (gray, brown, red, clear)		clear	clear	clear	clear	clear	clear			

Sample Identification: 2129-~~04~~ 059 MW-7R, -7A, -4A

Time Sampled: 0836

Purge water disposed To: Boomsnub

Analysis	# of Bottles
___ VOCs by 8260C	___
✓ Total Chromium	1
___ Other	___

Comments: pH unstable bubbles in flow cell from peri pump

Ground Water Purge and Sampling Form

Well Identification	MW-4B
Well Diameter (inches)	2
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	
Well Total Depth (ft btoc)	

Site Location: Boomsnub Date: 7/22/2021

Project Number: 1611303 Personnel: HH, RE

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ___ Redi-flo Pump (Ded) ✓ Other Peri Pump

Sampling Equipment: ___ Extraction Well ___ Redi-flo Pump ___ Diffusion Bag

Weather Conditions:

Begin 0842 HH 7/27/2021 Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	0840	0847	0852	0856	~~0900~~ 0901						
Depth to Ground water (ft btoc)	27.76	28.37	28.37	28.37	28.37	Stabilized					
Total Groundwater Purged(gallons, liters, other)		1.5	3.0	4.5	6.0						
Purge Rate (gpm, ft^3/min, ml/min, other)		300	300	300	300						
pH		5.67	5.60	5.59	5.52						
Conductivity (mS/cm)		0.130	0.130	0.130	0.129						
Turbidity (NTU)		2.92	1.64	2.54	6.80						
Disssolved Oxygen (mg/L)		7.80	7.76	7.79	7.94						
Temperature (°C)		14.1	14.2	14.3	14.1						
ORP/eH (mV)		183.3	187.0	188.9	192.1						
Color of Purged Water (gray, brown, red, clear)		clear	clear	clear	clear						

Sample Identification: 2129-061

Time Sampled: 0905

Purge water disposed To: Boomsnub

Analysis	# of Bottles
___ VOCs by 8260C	___
✓ Total Chromium	1
___ Other	___

Comments:

Ground Water Purge and Sampling Form

Well Identification	MW-4C
Well Diameter (inches)	2
Well Monument Locked and Good Condition?	N
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	80

Site Location: Boomsnub ~~(Fall 2014)~~ Date: 7/22/21

Project Number: ~~1449545 2014.5~~ Personnel: HH, BH

Purge Method: ✓Low Flow ___Conventional ___None

Purge Equipment: ✓Extraction Well ___Redi-flo Pump (Ded) ___Other

Sampling Equipment: ___Extraction Well ✓Redi-flo Pump ___Diffusion Bag

Weather Conditions: 60° sunny

Well Volume Calculation: 0"=.16, 3"=.64, 6"=1.44 gallons

Time	0809	0814	0819	0824	0829	0834	collect	sample		
Depth to Ground water (ft btoc)	28.51	28.51	28.51	28.51	28.51					
Total Groundwater Purged(gallons, liters, other)	—	1.5	3.0	4.5	6.0					
Purge Rate (gpm, ft³/min, ml/min, other)	0.3	0.3	0.3	0.3	0.3					
pH		6.40	6.40	6.38	6.37					
Conductivity (mS/cm)		200.8	198.3	198.3	198.2					
Turbidity (NTU)		3.03	1.67	<1.49	1.29					
Disssolved Oxygen (mg/L)		7.39	8.13	8.17	8.19					
Temperature (°C)		15.1	15.1	15.1	15.2					
ORP/eH (mV)		145.5	140.0	139.3	139.6					
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear					BH

Sample Identification: 2129-060

Time Sampled: 0834

Purge water disposed To: Boomsnub

Analysis	# of Bottles
___ VOCs by 8260C	___
✓Total Chromium	1
___ Other	

Comments:

Ground Water Purge and Sampling Form

Well Identification	MW-6A
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	31.5

Site Location: Boomsnub Date: 7/20/21

Project Number: 1611303 Personnel: PE, BH

Purge Method: ✓Low Flow ___Conventional ___None

Purge Equipment: ✓Extraction Well ___Redi-flo Pump (Ded) ___Other

Sampling Equipment: ___Extraction Well ✓Redi-flo Pump ___Diffusion Bag

Weather Conditions: 66° cloudy

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	0830	0835	0840	0845	0850	0855	collect sample			
Depth to Ground water (ft btoc)	26.51	26.62	27.18	27.26	27.48					
Total Groundwater Purged(gallons, liters, other)	—	1.0	2.0	3.0	4.0					
Purge Rate (gpm, ft³/min, ml/min, other)	0.2	0.2	0.2	0.2	0.2					
pH		5.80	5.80	5.81	5.82					
Conductivity (mS/cm)		156.4	151.6	150.4	148.6					
Turbidity (NTU)		7.47	4.67	3.77	3.26					
Disssolved Oxygen (mg/L)		5.27	5.29	5.31	5.35					
Temperature (°C)		16.0	16.0	16.3	16.4					
ORP/eH (mV)		201.6	196.5	194.6	192.5					
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear					BH

Sample Identification: 2129-020

Time Sampled:

Purge water disposed To: Boomsnub

Analysis	# of Bottles
___VOCs by 8260C	___
✓Total Chromium	1
___Other	___

Comments: wasps in lid.

Ground Water Purge and Sampling Form

Well Identification	MW-6B
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	59

Site Location: Boomsnub Date: 7/20/21

Project Number: 1611303 Personnel: PE, BH

Purge Method: ✓Low Flow ___Conventional ___None

Purge Equipment: ✓Extraction Well ___Redi-flo Pump (Ded) ___Other

Sampling Equipment: ___Extraction Well ✓Redi-flo Pump ___Diffusion Bag

Weather Conditions:

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1026	1031	1036	1041	1046	1051	collect	Sample		
Depth to Ground water (ft btoc)	21.92	21.92	21.92	21.92	21.92					
Total Groundwater Purged(gallons, liters, other)	—	1.5	3.0	4.5	6.0					
Purge Rate (gpm, ft^3/min, ml/min, other)	0.3	0.3	0.3	0.3	0.3					
pH		6.31	6.31	6.31	6.31					
Conductivity (mS/cm)		162.5	~~173.5~~ 162.1	161.9	160.7					
Turbidity (NTU)		2.65	2.25	2.15	2.06					
Disssolved Oxygen (mg/L)		6.24	6.18	6.22	6.26					
Temperature (°C)		15.5	15.7	15.7	15.8					
ORP/eH (mV)		176.8	168.6	166.2	164.6					
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear					BH

Sample Identification: 2129-026

Time Sampled:

Purge water disposed To: Boomsnub

Analysis	# of Bottles
___ VOCs by 8260C	___
✓Total Chromium	1
___ Other	___

Comments:

Ground Water Purge and Sampling Form

Well Identification	MW-8C
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	84.8

Site Location: Boomsnub Date: 7/20/21

Project Number: 1611303 Personnel: PE, BH

Purge Method: ✓Low Flow ___Conventional ___None

Purge Equipment: ✓Extraction Well ___Redi-flo Pump (Ded) ___Other

Sampling Equipment: ___Extraction Well ✓Redi-flo Pump ___Diffusion Bag

Weather Conditions: 68° cloudy

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	0904	0909	0914	0919	0924	0929	collect sample			
Depth to Ground water (ft btoc)	26.64	26.82	27.21	27.21	27.21					
Total Groundwater Purged(gallons, liters, other)	—	1.5	3.0	4.5	6.0					
Purge Rate (gpm, ft³/min, ml/min, other)	0.3	0.3	0.3	0.3	0.3					
pH		6.16	6.16	6.18	6.19					
Conductivity (mS/cm)		191.0	190.5	190.7	190.7					
Turbidity (NTU)		10.23	1.48	7.04	5.53					
Disssolved Oxygen (mg/L)		8.96	8.91	8.96	8.96					
Temperature (°C)		15.0	15.1	15.1	15.1					
ORP/eH (mV)		163.2	159.2	158.4	158.6					
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear					BH

Sample Identification: 2129-022

Time Sampled: 0929

Purge water disposed To: Boomsnub

Analysis	# of Bottles	Comments:
✓VOCs by 8260C	3	
✓Total Chromium	1	
___Other		

Ground Water Purge and Sampling Form

Well Identification	mw-6D
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	113.7

Site Location: Boomsnub Date: 7/20/21

Project Number: 1611303 Personnel: PE, BH

Purge Method: ✓Low Flow ___Conventional ___None

Purge Equipment: ✓Extraction Well ___Redi-flo Pump (Ded) ___Other

Sampling Equipment: ___Extraction Well ✓Redi-flo Pump ___Diffusion Bag

Weather Conditions: 68° Sunny

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	0945	0950	0955	1000	1005	1010 Collect Sample				
Depth to Ground water (ft btoc)	27.26	27.26	27.26	27.26	27.26					
Total Groundwater Purged(gallons, liters, other)	—	2.0	4.0	6.0	8.0					
Purge Rate (gpm, ft³/min, ml/min, other)	0.4	0.4	0.4	0.4	0.4					
pH		6.53	6.52	6.51	6.51					
Conductivity (mS/cm)		193.0	193.6	195.0	196.1					
Turbidity (NTU)		8.57	9.96	10.34	10.44					
Disssolved Oxygen (mg/L)		4.21	4.18	4.61	5.06					
Temperature (°C)		14.4	14.6	14.6	14.6					
ORP/eH (mV)		145.8	132.6	131.2	131.5					
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear					BH

Sample Identification: 2129-024

Time Sampled:

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓VOCs by 8260C	3
✓Total Chromium	1
___Other	

Comments:

Ground Water Purge and Sampling Form

Well Identification	MW-7C
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	80.5

Site Location: Boomsnub (Fall 2014) Date: 7/21/21

Project Number: 1449545 2014 5 Personnel: PB, BH

Purge Method: ✓Low Flow ___Conventional ___None

Purge Equipment: ✓Extraction Well ___Redi-flo Pump (Ded) ___Other

Sampling Equipment: ___Extraction Well ✓Redi-flo Pump ___Diffusion Bag

Weather Conditions: 77° sunny

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1515	1520	1525	1530	1535	1540 collect sample				
Depth to Ground water (ft btoc)	27.38	27.38	27.38	27.38	27.38					
Total Groundwater Purged(gallons, liters, other)	—	1.5	3.0	4.5	6.0					
Purge Rate (gpm, ft^3/min, ml/min, other)	0.3	0.3	0.3	0.3	0.3					
pH		6.48	6.48	6.48	6.49					
Conductivity (mS/cm)		195.6	195.8	195.5	195.4					
Turbidity (NTU)		1.05	0.89	0.43	0.80					
Disssolved Oxygen (mg/L)		8.84	8.85	8.80	8.80					
Temperature (°C)		15.3	15.7	15.8	15.9					
ORP/eH (mV)		152.3	144.9	141.0	140.9					
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear					BA

Sample Identification: 2129-658

Time Sampled: 1540

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓VOCs by 8260C	3
✓Total Chromium	1
___ Other	

Comments:

Ground Water Purge and Sampling Form

Well Identification	MW-8B
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	60

Site Location: Boomsnub Date: 7/20/21

Project Number: 1611303 Personnel: PE, BH

Purge Method: ✓Low Flow ___Conventional ___None

Purge Equipment: ✓Extraction Well ___Redi-flo Pump (Ded) ___Other

Sampling Equipment: ___Extraction Well ✓Redi-flo Pump ___Diffusion Bag

Weather Conditions: 76° sunny

Well Volume Calculation: 2"=.16, 3"=.64, 6"=1.44 gallons

Time	1508	1513	1518	1523	1528	1533	collect Sample			
Depth to Ground water (ft btoc)	28.22	28.22	28.22	28.22	28.22					
Total Groundwater Purged(gallons, liters, other)	—	1.5	3.0	4.5	6.0					
Purge Rate (gpm, ft^3/min, ml/min, other)	0.3	0.3	0.3	0.3	0.3					
pH		6.33	6.32	6.32	6.32					
Conductivity (mS/cm)		181.5	181.1	181.1	181.0					
Turbidity (NTU)		16.47	12.32	13.46	12.48					
Disssolved Oxygen (mg/L)		8.54	8.57	8.57	8.58					
Temperature (°C)		16.9	16.0	16.1	16.2					
ORP/eH (mV)		154.5	149.0	148.3	147.8					
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear					BH

Sample Identification: 2124-037

Time Sampled: 1533

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓VOCs by 8260C	3
✓Total Chromium	1
___Other	

Comments:

Ground Water Purge and Sampling Form

Well Identification	MW-93
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	58

Site Location: Boomsnub Date: 7/21/21

Project Number: 1611303 Personnel: PE, BH

Purge Method: ✓Low Flow ___Conventional ___None

Purge Equipment: ✓Extraction Well ___Redi-flo Pump (Ded) ___Other

Sampling Equipment: ___Extraction Well ✓Redi-flo Pump ___Diffusion Bag

Weather Conditions: 70° sunny

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1042	1047	1052	1057	1102	1107 Collect Sample				
Depth to Ground water (ft btoc)	23.57	23.57	23.57	23.57	23.57					
Total Groundwater Purged(gallons, liters, other)	—	1.5	3.0	4.5	6.0					
Purge Rate (gpm, ft^3/min, ml/min, other)	0.3	0.3	0.3	0.3	0.3					
pH		6.35	6.35	6.36	6.36					
Conductivity (mS/cm)		148.1	147.8	148.8	149.5					
Turbidity (NTU)		5.27	5.26	5.10	5.31					
Disssolved Oxygen (mg/L)		7.49	7.41	7.40	7.41					
Temperature (°C)		16.2	16.7	16.8	16.6					
ORP/eH (mV)		149.3	138.5	135.1	134.2					
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear					BH

Sample Identification: 2129-042

Time Sampled: 1107

Purge water disposed To: Boomsnub

Analysis	# of Bottles
___ VOCs by 8260C	___
✓Total Chromium	1
___ Other	___

Comments: Did not remove PDB

Ground Water Purge and Sampling Form

Well Identification	MW-9C
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	76.5

Site Location: Boomsnub Date: 7/21/21

Project Number: 1611303 Personnel: PE, BH

Purge Method: ✓Low Flow ___Conventional ___None

Purge Equipment: ✓Extraction Well ___Redi-flo Pump (Ded) ___Other

Sampling Equipment: ___Extraction Well ✓Redi-flo Pump ___Diffusion Bag

Weather Conditions: 65° Sunny

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	0939	0944	0949	0954	0959	1004	1009	1014 Collect Sample		
Depth to Ground water (ft btoc)	23.60	23.60	23.60	23.60	23.60	23.60	23.60			
Total Groundwater Purged(gallons, liters, other)	—	2.0	4.0	6.0	8.0	10.0	12.0			
Purge Rate (gpm, ft^3/min, ml/min, other)	0.4	0.4	0.4	0.4	0.4	0.4	0.4			
pH		6.35	6.24	6.14	6.08	6.06	6.08			
Conductivity (mS/cm)		192.3	188.3	187.7	187.1	186.9	186.6			
Turbidity (NTU)		50.20	34.78	29.48	24.50	19.42	17.66			
Disssolved Oxygen (mg/L)		8.32	8.71	8.78	8.81	8.85	8.87			
Temperature (°C)		15.0	15.2	15.5	15.5	15.7	15.7			
ORP/eH (mV)		157.2	150.4	148.9	150.7	153.7	153.6			
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear	clear	clear			BH

Sample Identification: 2129-040

Time Sampled: 1014

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓VOCs by 8260C	3
✓Total Chromium	1
___Other	

Comments:

Ground Water Purge and Sampling Form

Well Identification	MW-10C
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	81.5

Site Location: Boomsnub Date: 7/20/21

Project Number: 1611303 Personnel: PE, BH

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ✓ Extraction Well ___ Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: 70° Sunny

Well Volume Calculation: 2"=.16, 3"=.64, 6"=1.44 gallons

Time	~~2119~~ 2143	1124	1129	1134	1139	1144	1149	1154	collect Sample
Depth to Ground water (ft btoc)	21.43	21.43	21.43	21.43	21.43	21.43	21.43		
Total Groundwater Purged(gallons, liters, other)	—	2.0	4.0	6.0	8.0	10.0	12.0		
Purge Rate (gpm, ft³/min, ml/min, other)	0.4	0.4	0.4	0.4	0.4	0.4	0.4		
pH		6.19	6.20	6.22	6.22	6.22	6.20		
Conductivity (mS/cm)		183.1	182.1	182.5	182.6	181.5	181.7		
Turbidity (NTU)			1105	90.12	79.36	72.13	80.28		
Disssolved Oxygen (mg/L)		7.00	7.00	7.00	7.02	7.02	7.03		
Temperature (°C)		15.7	16.1	16.1	16.2	16.2	16.2		
ORP/eH (mV)		184.6	176.8	170.1	168.2	166.3	164.5		
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear	clear	clear		BH

Sample Identification: 2129-030

Time Sampled: 1154

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	3
✓ Total Chromium	1
___ Other	

Comments: Field Filtered

Ground Water Purge and Sampling Form

Well Identification	MW-12C
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	N
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WBC
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	82.7

Site Location: Boomsnub Date: 7/20/21

Project Number: 1611303 Personnel: PE, HH

Purge Method: ✓Low Flow ___Conventional ___None

Purge Equipment: ✓Extraction Well ___Redi-flo Pump (Ded) ___Other

Sampling Equipment: ___Extraction Well ✓Redi-flo Pump ___Diffusion Bag

Weather Conditions: 72° sunny

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1403	1408	1413	1418	1423	1428	1433	Collect	Sample	
Depth to Ground water (ft btoc)	22.73	22.73	22.73	22.73	22.73	22.73				
Total Groundwater Purged(gallons, liters, other)	—	1.5	3.0	4.5	6.0	8.0				
Purge Rate (gpm, ft^3/min, ml/min, other)	0.3	0.3	0.3	0.3	0.3	0.3				
pH		6.41	6.41	6.41	6.40	6.40				
Conductivity (mS/cm)		197.6	197.1	196.4	195.5	194.2				
Turbidity (NTU)		30.75	12.87	8.57	7.11	5.48				
Disssolved Oxygen (mg/L)		8.37	8.43	8.47	8.46	8.44				
Temperature (°C)		14.8	15.1	15.2	15.2	15.2				
ORP/eH (mV)		120.9	124.8	130.4	132.2	133.8				
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear	clear				

Sample Identification: 2129-034

Time Sampled: 1433

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓VOCs by 8260C	3
✓Total Chromium	1
___ Other	

Comments:

Ground Water Purge and Sampling Form

Well Identification	MW-13C
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	76.53

Site Location: Boomsnub Date: 7/20/21

Project Number: 1611303 Personnel: PE, BH

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ✓ Extraction Well ___ Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: 71° Sunny

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1309	1314	1319	1324	1329	1334	1339	Collect Sample			
Depth to Ground water (ft btoc)	20.43	20.51	20.51	20.51	20.51	20.51					
Total Groundwater Purged(gallons, liters, other)	—	2.0	4.0	6.0	8.0	10.0					
Purge Rate (gpm, ft^3/min, ml/min, other)	0.4	0.4	0.4	0.4	0.4	0.4					
pH		6.35	6.34	6.34	6.33	6.33					
Conductivity (mS/cm)		201.3	198.7	196.2	195.3	193.8					
Turbidity (NTU)		10.13	7.80	5.46	4.28	3.62					
Disssolved Oxygen (mg/L)		5.45	5.87	6.35	6.65	6.75					
Temperature (°C)		15.5	15.6	15.8	15.8	15.8					
ORP/eH (mV)		133.3	136.1	139.4	141.2	142.8					
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear	clear					BH

Sample Identification: 2129-032

Time Sampled: 1334

Purge water disposed To: Boomsnub

Analysis	# of Bottles	Comments:
✓ VOCs by 8260C	3	
✓ Total Chromium	1	
___ Other		

Ground Water Purge and Sampling Form

Well Identification	MW-14C	Site Location: Boomsnub					Date: 7/19/2024				
Well Diameter (inches)	4	Project Number: 1611303					Personnel: HH, RR				
Well Monument Locked and Good Condition?	Y	Purge Method: ✓ Low Flow ___ Conventional ___ None									
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)		Purge Equipment: ___ Extraction Well ✓ Redi-flo Pump (Ded) ___ Other									
Well Casing Plug Locked and Good Condition?		Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag									
PID Reading in Well (ppm)		Weather Conditions: 74°F, Sunny, wind NE 6mph									
Well Total Depth (ft btoc)		Begin Purge 11:38 @ 0.3L/min					Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons				
Time	1129	1143	1148	1153	1158						
Depth to Ground water (ft btoc)	19.98	20.19	20.16	20.18	20.19	Stabilized					
Total Groundwater Purged(gallons, liters, other)		1.5	3.0	4.5	6.0						
Purge Rate (gpm, ft³/min, ml/min, other)	300mL/min	300mL/min	300mL/min	300mL/min	300mL/min						
pH		6.61	6.48	6.47	6.48						
Conductivity (mS/cm) SpC-mS/cm		0.238	0.237	0.236	0.236						
Turbidity (NTU)		5.37	4.43	3.87	4.00						
Disssolved Oxygen (mg/L)		0.21	0.12	0.10	0.09						
Temperature (°C)		15.7	15.9	16.0	16.0						
ORP/eH (mV)		39.2	46.9	51.9	56.6						
Color of Purged Water (gray, brown, red, clear)		clear	clear	clear	clear						

Sample Identification: 2129-007	Analysis	# of Bottles	Comments:
Time Sampled: 1204	✓ VOCs by 8260C	3	
	___ Total Chromium	___	
Purge water disposed To: Boomsnub	✓ Other	11	

Ground Water Purge and Sampling Form

Well Identification	MW-14E
Well Diameter (inches)	
Well Monument Locked and Good Condition?	
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	
Well Casing Plug Locked and Good Condition?	
PID Reading in Well (ppm)	
Well Total Depth (ft btoc)	

Site Location: Boomsnub Date: 7/19/2021

Project Number: 1611303 Personnel: HH, RR

Purge Method: ✓ Low Flow ___ Conventional ___ None HH 7/19/2021

Purge Equipment: ___ Extraction Well ✓ Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag RH 7/19/2021

Weather Conditions:

Begin Purge 1457 Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	14:51	1502	1507	1512	1517	1522					
Depth to Ground water (ft btoc)	18.19	18.47	18.56	18.58	18.58	18.58	Stabilized				
Total Groundwater Purged(gallons, liters, other)	0	1.5	3.0	4.5	6.0	7.5					
Purge Rate (gpm, ft³/min, ml/min, other)	300	300	300	300	300	300					
pH		7.76	7.16	6.98	6.91	6.85					
Conductivity (mS/cm)		0.252	0.252	0.252	0.252	0.252					
Turbidity (NTU)		35.76	18.81	15.41	13.17	12.01					
Disssolved Oxygen (mg/L)		0.72	0.60	0.56	0.56	0.56					
Temperature (°C)		15.9	15.8	15.8	15.9	15.9					
ORP/eH (mV)		87.5	85.9	84.2	83.3	~~82.9~~ 83.9 RH 7/19/2021					
Color of Purged Water (gray, brown, red, clear)		brown	brown	brown	brown	brown					

Sample Identification: 2129-013 Analysis 4 # of Bottles Comments:

Time Sampled: 1527

___ VOCs by 8260C ____

___ Total Chromium ____

Purge water disposed To: Boomsnub ___ Other ____

Ground Water Purge and Sampling Form

Well Identification	MW-15E
Well Diameter (inches)	4
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	
Well Total Depth (ft btoc)	

Site Location: Boomsnub Date: 7/20/2011

Project Number: 1611303 Personnel: RA, HH

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ✓ Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions:

Begin Purge 1055

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1046	1100	1105	1110	1115	1120	1125	1130	1135	1140
Depth to Ground water (ft btoc)	15.73	16.11	16.11	16.11	16.11	16.11	16.11	16.11	16.11	16.11
Total Groundwater Purged(gallons, liters, other)		1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.5
Purge Rate (gpm, ft^3/min, ~~ml/min~~, other)		300	300	300	300	300	300	300	300	300
pH		6.84	6.82	6.89	6.95	7.01	7.08	7.18	7.37	7.60
Conductivity (mS/cm)		0.279	0.283	0.286	0.288	0.289	0.290	0.290	0.290	0.289
Turbidity (NTU)		34.38	14.54	9.99	8.08	6.92	6.54	5.90	5.56	4.94
Disssolved Oxygen (mg/L)		5.81	5.64	5.49	5.41	5.33	5.26	5.21	5.11	5.08
Temperature (°C)		14.8	14.9	15.0	15.0	15.0	15.0	15.0	15.1	15.0
ORP/eH (mV)		81.9	88.7	92.7	96.6	99.4	102.3	104.0	106.1	107.4
Color of Purged Water (gray, brown, red, clear)		clear	clear	clear	clear	clear	clear	clear	clear	clear

Sample Identification: 2129-023

Time Sampled: 1205

Purge water disposed To: Boomsnub

Analysis	# of Bottles	Comments:
✓ VOCs by 8260C	4	
✓ Total Chromium	1	
___ Other	___	

Pg 1/2

Continued Ground Water Purge and Sampling Form

Well Identification	MW-15E	Site Location: Boomsnub	Date: 7/20/2021
Well Diameter (inches)		Project Number: 1611303	Personnel: RR, MH
Well Monument Locked and Good Condition?		Purge Method: ✓ Low Flow ___ Conventional ___ None	
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)		Purge Equipment: ___ Extraction Well ✓ Redi-flo Pump (Ded) ___ Other	
Well Casing Plug Locked and Good Condition?		Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag	
PID Reading in Well (ppm)		Weather Conditions:	
Well Total Depth (ft btoc)		Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons	

Time	1145	1150	1155	1200							
Depth to Ground water (ft btoc)	16.11	16.11	16.11	16.11							
Total Groundwater Purged(gallons, liters, other)	15.0	16.5	18.0	19.5							
Purge Rate (gpm, ft³/min, ml/min, other)	300	300	300	300							
pH	7.78	8.20	8.22	8.29							
Conductivity (mS/cm)	0.290	0.292	0.291	0.292							
Turbidity (NTU)	4.87	3.71	3.80	3.62							
Disssolved Oxygen (mg/L)	4.98	4.98	4.90	4.88							
Temperature (°C)	15.1	15.1	15.1	15.1							
ORP/eH (mV)	108.5	243.9	241.5	239.0							
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear							

stabilized

Sample Identification: 2129-023	Analysis	4 # of Bottles	Comments:
Time Sampled: 1205	___ VOCs by 8260C	___	1147 disconnected flow cell, dumped water and reconnected to see if pH would stabilize
	___ Total Chromium	___	
Purge water disposed To: Boomsnub	___ Other	___	

Ground Water Purge and Sampling Form

Well Identification	MW-18D
Well Diameter (inches)	4
Well Monument Locked and Good Condition?	
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	
Well Casing Plug Locked and Good Condition?	
PID Reading in Well (ppm)	
Well Total Depth (ft btoc)	

Site Location: Boomsnub Date: 07/19/2021

Project Number: 1611303 Personnel: HH, RR

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ___ Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ___ Extraction Well ___ Redi-flo Pump ___ Diffusion Bag

Weather Conditions:

Begin Purge @ 1245 300 mL/min 0.3L/min Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1239	1250	1255	1300	1305	1310	1315	1320	1325	
Depth to Ground water (ft btoc)	10.05	10.84	10.86	10.84	10.85	10.88	10.86	10.87	10.86	SX
Total Groundwater Purged(gallons, liters, other)		1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0	SX
Purge Rate (gpm, ft³/min, ~~ml/min~~, other)	300	300	300	300	300	300	300	300	300	SX
pH		7.40	6.83	6.70	6.60	6.58	6.56	6.53	6.50	SX
Conductivity (mS/cm) Spec mS/cm		0.219	0.215	0.214	0.214	0.214	0.214	0.216	0.216	SX
Turbidity (NTU)		209.61	118.29	88.79	128.71	38.49	32.39	27.39	25.92	
Disssolved Oxygen (mg/L)		0.13	0.09	0.07	0.07	0.04	0.03	0.02	0.01	
Temperature (°C)		15.2	14.9	14.7	13.8	14.7	14.7	14.5	14.5	
ORP/eH (mV)		-25.8	-9.0	-0.5	3.2	9.5	10.2	10.0	9.4	
Color of Purged Water (gray, brown, red, clear)		gray, cloudy	clear, some sediment	clear with sediment	slightly white	clear	clear	clear	clear	

Sample Identification: 2129-009

Time Sampled: 1331

Purge water disposed To: Boomsnub

Analysis

___ VOCs by 8260C

___ Total Chromium

___ Other

12 # of Bottles

Comments:

Ground Water Purge and Sampling Form

Well Identification	MW-18E
Well Diameter (inches)	4
Well Monument Locked and Good Condition?	
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	
Well Casing Plug Locked and Good Condition?	
PID Reading in Well (ppm)	
Well Total Depth (ft btoc)	

Site Location: Boomsnub Date: 7/19/2021

Project Number: 1611303 Personnel: HH RR

Purge Method: ___Low Flow ___Conventional ✓None

Purge Equipment: ___Extraction Well ___Redi-flo Pump (Ded) ___Other

Sampling Equipment: ___Extraction Well ___Redi-flo Pump ✓Diffusion Bag

Weather Conditions:

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1345	1345									
Depth to Ground water (ft btoc)											
Total Groundwater Purged(gallons, liters, other)	HH 7/19/21										
Purge Rate (gpm, ft^3/min, ml/min, other)											
pH	8.21	7.43									
Conductivity (mS/cm)	0.018	0.022									
Turbidity (NTU)											
Disssolved Oxygen (mg/L)	1.31	1.09									
Temperature (°C)	21.4	22.3									
ORP/eH (mV)	21.4	47.4									
Color of Purged Water (gray, brown, red, clear)											

Sample Identification: 2129-011

Time Sampled: 1345

Purge water disposed To: Boomsnub

Analysis	# of Bottles
___ VOCs by 8260C	3
___ Total Chromium	___
___ Other	___

Comments:

Did NOT deploy new PDB

Ground Water Purge and Sampling Form

Well Identification	MW-19D
Well Diameter (inches)	4
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	
Well Total Depth (ft btoc)	

Site Location: Boomsnub Date: 7/20/2021

Project Number: 1611303 Personnel: RR, MH

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ✓ Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions:

Begin Purge 0940 Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	0931	0945	0950	0955	1000	1005	1010	1015	Sampled	
Depth to Ground water (ft btoc)	10.63	10.50	10.50	10.50	10.50	10.50	10.51	10.50		
Total Groundwater Purged(gallons, liters, other)		1.5	3.0	4.5	6.0	7.5	9.0	10.5		
Purge Rate (gpm, ft³/min, ml/min, other)		300	300	300	300	300	300	300		
pH		6.92	6.85	6.74	6.65	6.64	6.64	6.64		
Conductivity (mS/cm)		0.606	0.557	0.487	0.477	0.472	0.462	0.461		
Turbidity (NTU)		56.95	37.92	16.27	9.67	8.37	8.53	6.92		
Disssolved Oxygen (mg/L)		0.22	0.16	0.47	0.22	0.16	0.10	0.07		
Temperature (°C)		14.0	14.1	14.0	14.2	14.2	14.2	14.3		
ORP/eH (mV)		-109.4	-99.6	-33.7	-25.5	-21.8	-19.2	-17.2		
Color of Purged Water (gray, brown, red, clear)		black cloudy	black cloudy	clear	clear	clear	clear	clear		

Sample Identification: 2129-021

Time Sampled: 1023

Purge water disposed To: Boomsnub

Analysis	# of Bottles	Comments:
✓ VOCs by 8260C	36	
✓ Total Chromium		
___ Other		

Ground Water Purge and Sampling Form

Well Identification	MW-20D
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	87

Site Location: Boomsnub Date: 7/19/21

Project Number: 1611303 Personnel: PE, BH

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ✓ Extraction Well ___ Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: 75°, sunx

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1006	1011	1016	1021	1026	1031	Collect Sample 1036				
Depth to Ground water (ft btoc)	21.81	22.04	22.04	22.04	22.04	22.04					
Total Groundwater Purged(gallons, liters, other)	—	2.0	4.0	6.0	8.0	10.0					
Purge Rate (gpm, ft³/min, ~~ml/min~~, other)	0.4 L/min	0.4	0.4	0.4	0.4	0.4					
pH		6.45	6.43	6.43	6.44	6.47					
Conductivity (mS/cm)		245.1	242.4	245.4	251.8	258.1					
Turbidity (NTU)		5.41	4.93	4.85	4.39	4.40					
Disssolved Oxygen (mg/L)		1.00	0.81	0.59	0.44	0.36					
Temperature (°C)		14.7	14.8	14.8	14.9	15.0					
ORP/eH (mV)		122.2	118.9	117.4	116.0	114.1					
Color of Purged Water (gray, brown, red, clear)		clear	clear	clear	clear	clear					BH

Sample Identification: 2129-002/2129-004

Time Sampled: 1036 / 1041

Purge water disposed To: Boomsnub

Analysis	# of Bottles
6 VOCs by 8260C	6
1 Total Chromium	2
✓ Other	8

Comments: VOC/TCr duplicate

Ground Water Purge and Sampling Form

Well Identification	MW-220
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WBC
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	65.2

Site Location: Boomsnub Date: 7/19/21

Project Number: 1611303 Personnel: PG, BH

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ✓ Extraction Well ___ Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: 80° sunny

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1126	1131	1136	1141	1146	1151	collect	Sample		
Depth to Ground water (ft btoc)	21.02	21.13	21.13	21.3	21.3					
Total Groundwater Purged(gallons, liters, other)	2.0	4.0	6.0	8.0	10.0					
Purge Rate (gpm, ft³/min, ~~ml~~/min, other)	0.4	0.4	0.4	0.4	0.4					
pH		7.03	7.03	7.03	7.02					
Conductivity (mS/cm)		388.8	387.9	387.3	386.7					
Turbidity (NTU)		BH ~~388.8~~ 2.35	2.10	2.05	2.00					
Disssolved Oxygen (mg/L)		1.76	1.62	1.59	1.56					
Temperature (°C)		14.2	14.3	14.3	14.3					
ORP/eH (mV)		119.3	104.1	99.8	98.1					
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear					BH

Sample Identification: 2129-006

Time Sampled: 1151

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	~~4~~ BH 3
✓ Total Chromium	1
~~BH~~ ✓ Other	1 BH

Comments:

Ground Water Purge and Sampling Form

Well Identification	MW-33
Well Diameter (inches)	4
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	215

Site Location: Boomsnub Date: 7/21/21

Project Number: 1611303 Personnel: PE, BH

Purge Method: ✓Low Flow ___Conventional ___None

Purge Equipment: ✓Extraction Well ___Redi-flo Pump (Ded) ___Other

Sampling Equipment: ✓Extraction Well ___Redi-flo Pump ___Diffusion Bag

Weather Conditions: 75° sunny

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1318	1323	1328	1333	1338	1343	1348				
Depth to Ground water (ft btoc)	132.93	132.93	132.93	132.93	132.93	132.93					
Total Groundwater Purged(gallons, liters, other)	—	2.0	4.0	6.0	8.0	10.0					
Purge Rate (gpm, ft^3/min, ml/min, other)	0.4	0.4	0.4	0.4	0.4	0.4					
pH		7.10	7.12	7.13	7.13	7.13					
Conductivity (mS/cm)		229.6	253.1	257.7	261.4	262.7					
Turbidity (NTU)		25.21	10.76	6.18	4.10	3.10					
Disssolved Oxygen (mg/L)		3.47	3.16	3.06	3.05	3.04					
Temperature (°C)		14.6	14.6	14.7	15.1	15.3					
ORP/eH (mV)		137.6	129.0	120.7	110.7	109.8					
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear	clear					

Sample Identification: 2124-648

Time Sampled: 1349

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓VOCs by 8260C	3
___ Total Chromium	___
___ Other	___

Comments: Put pump at 256 ½

Ground Water Purge and Sampling Form

Well Identification	MW-38
Well Diameter (inches)	2
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WAC
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	
Well Total Depth (ft btoc)	

Site Location: Boomsnub Date: 7/20/2021

Project Number: 1611303 Personnel: JH, RR

Purge Method: ___Low Flow ___Conventional ✓None

Purge Equipment: ___Extraction Well ___Redi-flo Pump (Ded) ✓Other

Sampling Equipment: ___Extraction Well ___Redi-flo Pump ✓Diffusion Bag

Weather Conditions: cloudy

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	0907
Depth to Ground water (ft btoc)	15.68
Total Groundwater Purged(gallons, liters, other)	—
Purge Rate (gpm, ft^3/min, ml/min, other)	—
pH	6.29
Conductivity (mS/cm)	0.000
Turbidity (NTU)	0
Disssolved Oxygen (mg/L)	3.93
Temperature (°C)	17.2
ORP/eH (mV)	159.0
Color of Purged Water (gray, brown, red, clear)	clear

Sample Identification: 2129-019

Time Sampled: 0919

Purge water disposed To: Boomsnub

Analysis	# of Bottles	Comments:
✓ VOCs by 8260C	___	
___ Total Chromium	___	
___ Other	___	

Did not deploy new PDB

Ground Water Purge and Sampling Form

Well Identification	PW-1B
Well Diameter (inches)	6"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	58.0

Site Location: Boomsnub ~~(Fall 2014)~~ Date:

Project Number: ~~1449545 2014 5~~ Personnel:

Purge Method: ✓Low Flow ___Conventional ___None

Purge Equipment: ✓Extraction Well ___Redi-flo Pump (Ded) ___Other

Sampling Equipment: ___Extraction Well ✓Redi-flo Pump ___Diffusion Bag

Weather Conditions: 60° sunny

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	0840	0845	0850	0855	0900	0905 collect sample				
Depth to Ground water (ft btoc)	28.10	28.10	28.10	28.10	28.10					
Total Groundwater Purged(gallons, liters, other)	-	1.5	3.0	4.5	6.0					
Purge Rate (gpm, ft^3/min, ml/min, other)	0.3	0.3	0.3	0.3	0.3					
pH		5.95	5.92	5.93	5.94					
Conductivity (mS/cm)		144.9	144.5	144.8	144.9					
Turbidity (NTU)		3.07	2.91	2.74	3.16					
Disssolved Oxygen (mg/L)		6.48	6.38	6.41	6.39					
Temperature (°C)		15.6	15.8	15.8	15.9					
ORP/eH (mV)		161.1	164.6	166.6	166.1					
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear					BH

Sample Identification: 2129.062

Time Sampled: 0905

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓VOCs by 8260C	3
✓Total Chromium	1
___Other	

Comments:

Ground Water Purge and Sampling Form

Well Identification	PZ-39
Well Diameter (inches)	2
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WBC
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	
Well Total Depth (ft btoc)	

Site Location: Boomsnub Date: 7/20/2021

Project Number: 1611303 Personnel: HH, RR

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ✓ Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions:

Begin Purge @ 0819

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	0808	0824	0829	0833	0838	0843	Stabilized			
Depth to Ground water (ft btoc)	17.15	17.29	17.29	17.29	17.29	17.29				
Total Groundwater Purged(gallons, liters, other)		1.5	3.0	4.5	6.0	7.5				
Purge Rate (gpm, ft³/min, ml/min, other)		300	300	300	300	300				
pH		7.45	7.64	7.68	7.68	7.68				
Conductivity (mS/cm)		0.509	0.520	0.520	0.520	0.519				
Turbidity (NTU)		50.47	17.90	7.54	4.62	3.94				
Disssolved Oxygen (mg/L)		0.40	0.28	0.21	0.17	0.14				
Temperature (°C)		15.1	15.3	15.3	15.4	15.4				
ORP/eH (mV)		-103.4	-102.6	-101.9	-101.1	-101.3				
Color of Purged Water (gray, brown, red, clear)		clear	clear	clear	clear	clear				

Sample Identification: 2129-015

Time Sampled: 0849

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	12
✓ Total Chromium	___
✓ Other	___

Comments: Dup sample ID 2129-017

Dup bottles = 4

Sample time: ~~0850~~ 0854

HH 7/21/21

Fall 2021
Groundwater Purge and Sampling Forms

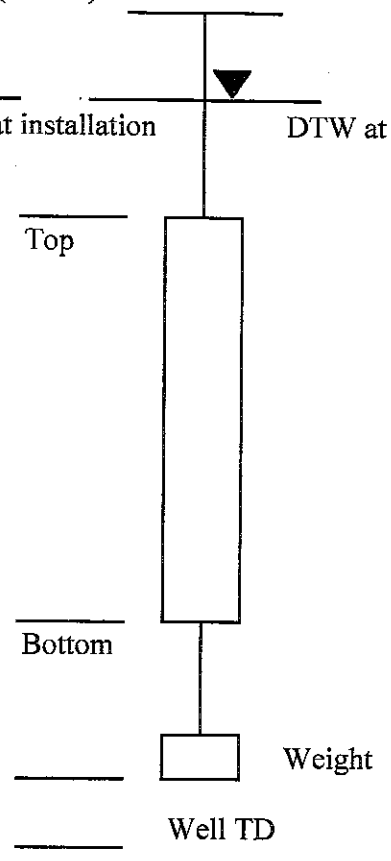
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Passive Diffusion Bag Sampling Form

Well Identification: AMW-1A

Depth (BTOC)

DTW at installation _____ DTW at sampling 31.51



Site Location: Boomsnub

Project Number: _____

Well Diameter: _____

PDB Installation Date: _____ Time: _____

Sample Information

Sample No: 2141-043

Sample Date: 10/13/2021 Time: 1442

Sampling Personnel: HH, RR

Analyses: VOCs 8260C

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : D

Well Casing Plug Locked and in Good Condition? Y

Comments: _____

Parameters

pH = 5.83

ORP = 187.6 mV

DO = ~~0.13 mS/cm~~ 3.86 mg/L HH 10/13/21

COND = 0.013 mS/cm

Passive Diffusion Bag Sampling Form

Well Identification: AMW-1B

Depth (BTOC)

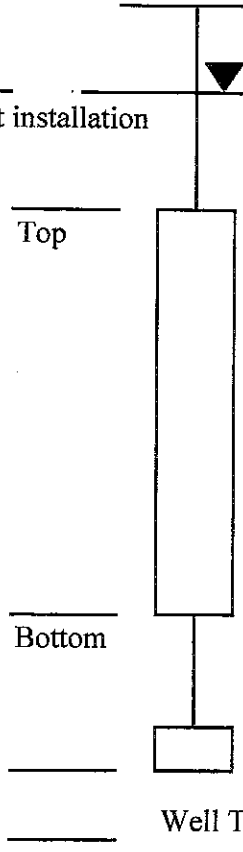
DTW at installation _____ DTW at sampling 31.6

Top _____

Bottom _____

Weight _____

Well TD _____



Site Location: Boomsnub

Project Number: _____

Well Diameter: _____

PDB Installation Date: _____ Time: _____

Sample Information

Sample No: 2141-044

Sample Date: 10/13/2021 Time: 1448

Sampling Personnel: HH, RR

Analyses: VOC 8260C

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : D

Well Casing Plug Locked and in Good Condition? Y

Comments: _____

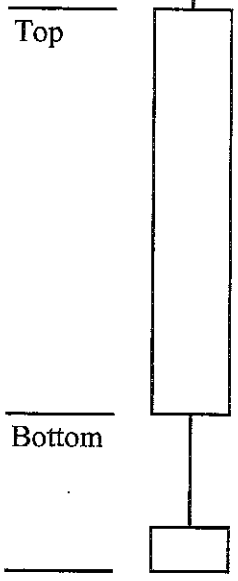
Passive Diffusion Bag Sampling Form

Well Identification: AMW-1C

Depth (BTOC) _____

_____ 31.82

DTW at installation DTW at sampling



Top

Bottom

Weight

Well TD

Site Location: Boomsnub

Project Number: _____

Well Diameter: _____

PDB Installation Date: _____ Time: _____

Sample Information

Sample No: 2141-045

Sample Date: 10/13/2021 Time: 1454

Sampling Personnel: HH, RR

Analyses: VOC 8260C

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : D

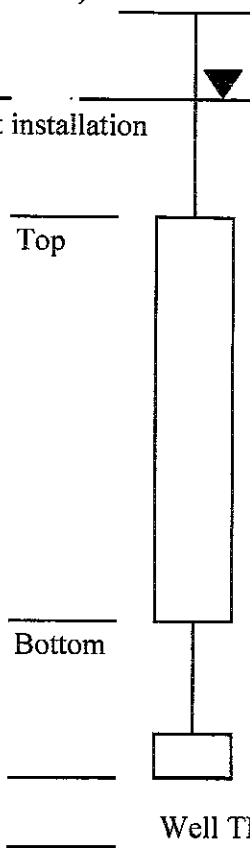
Well Casing Plug Locked and in Good Condition? Y

Comments: _____

Passive Diffusion Bag Sampling Form

Well Identification: AMW-2A

Depth (BTOC)



Site Location: Boomsnub

Project Number:

Well Diameter:

PDB Installation Date: Time:

Sample Information

Sample No: 2141-046

Sample Date: 10/13/2021 Time: 1508

Sampling Personnel: HH, RR

Analyses: VOC 8260C

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : WBC

Well Casing Plug Locked and in Good Condition? Y

Comments:

Parameters

pH = 4.26

ORP = 39.8 mV

DO = 3.00 mg/L

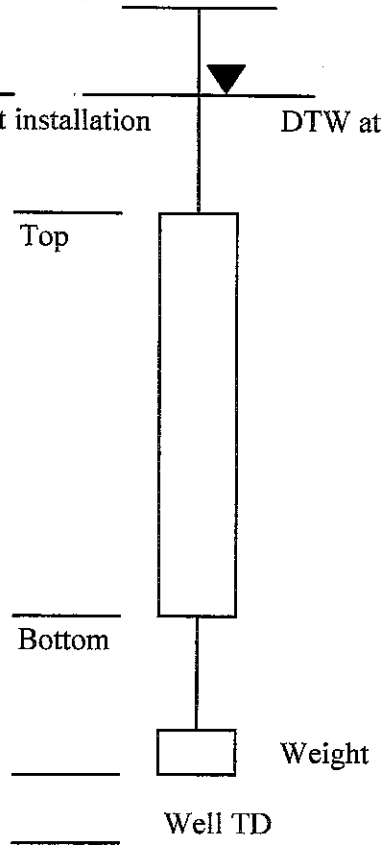
COND = 0.009 mS/cm

Passive Diffusion Bag Sampling Form

Well Identification: AMW-2B

Depth (BTOC)

DTW at installation _____ DTW at sampling 31.78



Site Location: Boomsnub

Project Number: _____

Well Diameter: _____

PDB Installation Date: _____ Time: _____

Sample Information

Sample No: 2141-047

Sample Date: 10/13/2021 Time: 1516

Sampling Personnel: HH, RR

Analyses: VOC 8260C

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : WBC

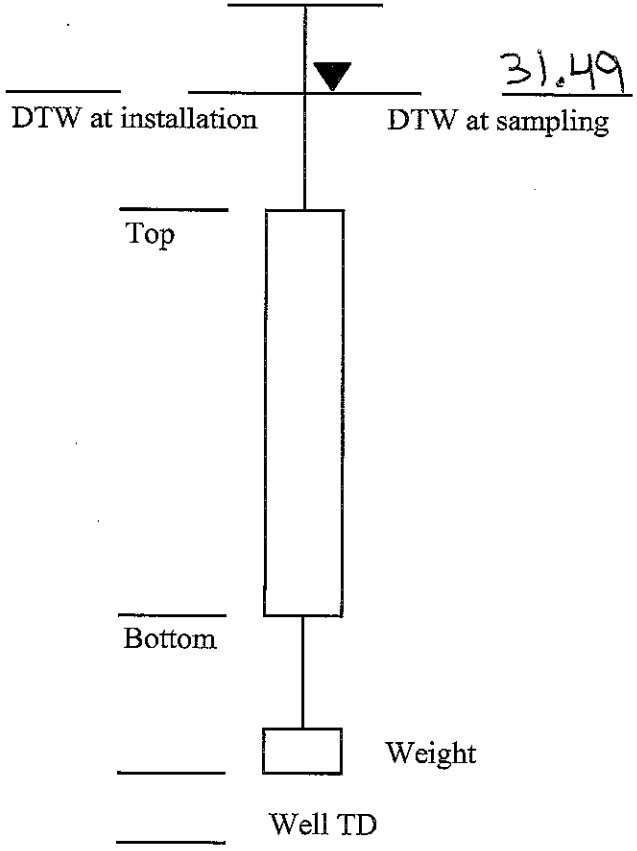
Well Casing Plug Locked and in Good Condition? Y

Comments: _____

Passive Diffusion Bag Sampling Form

Well Identification: AMW-4A

Depth (BTOC)



Site Location: Boomsnub

Project Number:

Well Diameter: 4in

PDB Installation Date: Time:

Sample Information

Sample No: 2141-048

Sample Date: 10/13/2021 Time: 1303

Sampling Personnel: HH, RR

Analyses: VOC 8260C

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : WBC

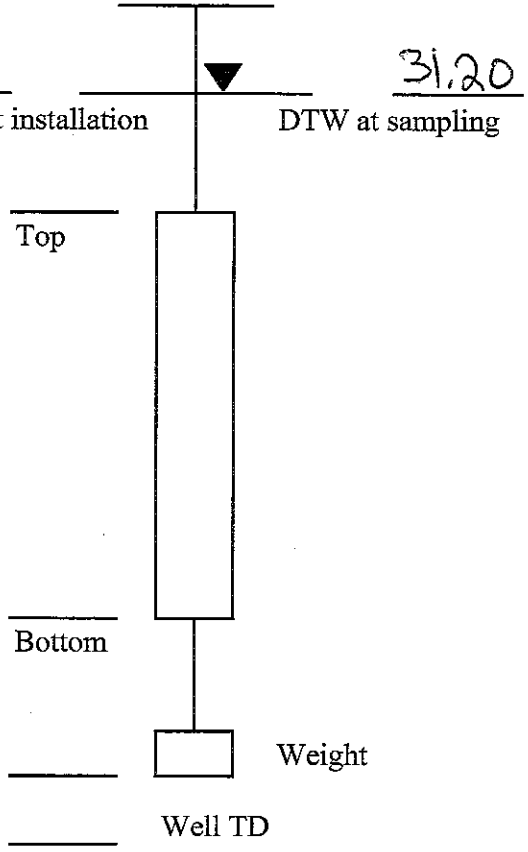
Well Casing Plug Locked and in Good Condition? Y

Comments:

Passive Diffusion Bag Sampling Form

Well Identification: AMW-8A

Depth (BTOC)



Site Location: Boomsnub

Project Number:

Well Diameter:

PDB Installation Date: Time:

Sample Information

Sample No: 2141-059

Sample Date: 10/13/2021 Time: 1316

Sampling Personnel: HH, RR

Analyses: VOC 8260C

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : D

Well Casing Plug Locked and in Good Condition? Y

Comments:

Ground Water Purge and Sampling Form

Well Identification	AMW-12A
Well Diameter (inches)	4
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WAC
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	—
Well Total Depth (ft btoc)	34.85

Site Location: Boomsnub Date: 10/13/2021

Project Number: 1611303 Personnel: HH, RR

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ___ Redi-flo Pump (Ded) ✓ Other

Sampling Equipment: ___ Extraction Well ___ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: Rain, 52° ✓ per

Begin Purge: 1336

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1323	1341	1344	1347	1350	1353	1356	1359	1402	
Depth to Ground water (ft btoc)	30.95	31.18	31.26	31.39	31.55	31.71	31.91	32.01	32.04	
Total Groundwater Purged(gallons, liters, other)		1.5	2.4	3.3	4.2	5.1	6.0	6.9	7.8	
Purge Rate (gpm, ft³/min, ml/min, other)		300	300	300	300	300	300	300	300	Stabilized
pH ±0.2		7.20	6.90	6.65	6.53	6.38	6.38	6.38	6.39	—
Conductivity (mS/cm) ±10%		0.265	0.266	0.265	0.264	0.265	0.264	0.265	0.265	
Turbidity (NTU) ±10% or <20		4.25	2.53	3.32	3.58	5.72	5.65	5.75	4.79	
Disssolved Oxygen (mg/L) ±10% or ±0.1		4.33	3.64	3.00	3.22	3.59	3.83	3.81	3.74	HH 10/13/2021
Temperature (°C)		15.7	15.7	15.6	15.7	15.8	15.8	15.9	15.9	
ORP/eH (mV) ±10		117.2	123.3	135.2	142.6	153.6	156.9	157.6	158.6	
Color of Purged Water (gray, brown, red, clear)		clear	clear	clear	clear	clear	clear	clear	clear	

Sample Identification: 2141-049

Time Sampled: 1406

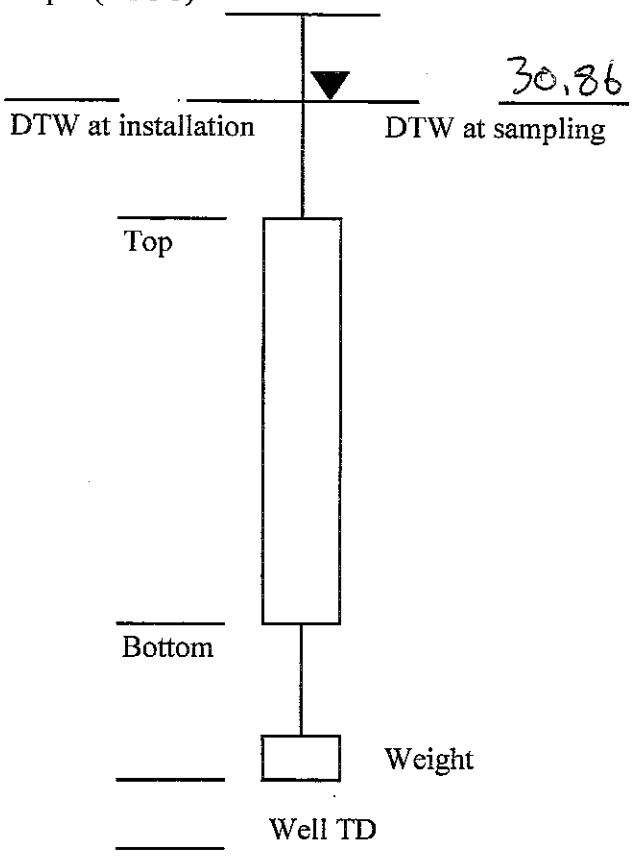
Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	3
___ Total Chromium	
✓ Other	8

Comments: VOC, metal, DISSFe, anion, DOC, COD, DISS gas

Passive Diffusion Bag Sampling Form

Well Identification: AMW-13A



Site Location: Boomsnub

Project Number:

Well Diameter:

PDB Installation Date: Time:

Sample Information

Sample No: 2141-050

Sample Date: 10/13/2021 Time: 1346

Sampling Personnel: HH, RR

Analyses: VOC 8260C

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : D

Well Casing Plug Locked and in Good Condition? Y

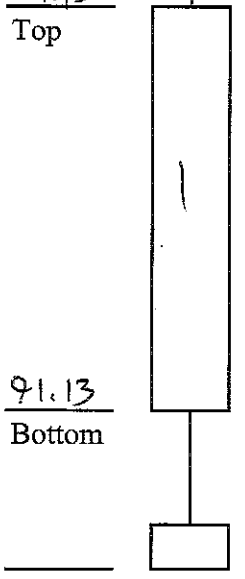
Comments:

Passive Diffusion Bag Sampling Form

Well Identification: AMW-16

Depth (BTOC) _____

DTW at installation _____ DTW at sampling 19.79



Well TD _____

Site Location: Boomsnub

Project Number: _____

Well Diameter: _____

PDB Installation Date: _____ Time: _____

Sample Information

Sample No: 2141-060

Sample Date: 10/13/21 Time: 0916

Sampling Personnel: HD, BH

Analyses: VOC

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : D

Well Casing Plug Locked and in Good Condition? Y

Comments: None

Passive Diffusion Bag Sampling Form

Well Identification: AMW-17

Depth (BTOC)

DTW at installation: 7.55 ~~9.38~~ BH

DTW at sampling: 12.03

Top

Bottom: 8.38

Weight

Well TD

Site Location: Boomsnub

Project Number:

Well Diameter:

PDB Installation Date: Time:

Sample Information

Sample No: 2141-061, 2141-062

Sample Date: 10/13/12 Time: 0955, 1000

Sampling Personnel: HD, BH

Analyses: VOC

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing): WBC

Well Casing Plug Locked and in Good Condition? Y

Comments: None.

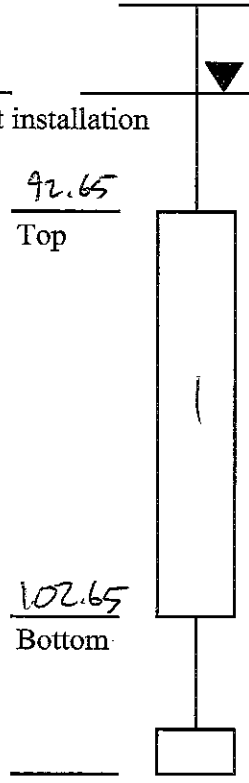
Passive Diffusion Bag Sampling Form

Well Identification: AMW-18

Depth (BTOC)

DTW at installation: _____

DTW at sampling: 29.32



Site Location: Boomsnub

Project Number: _____

Well Diameter: _____

PDB Installation Date: _____ Time: _____

Sample Information

Sample No: 2141-063

Sample Date: 10/13/21 Time: 1012

Sampling Personnel: HD, BH

Analyses: VOC

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? _____

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : _____

Well Casing Plug Locked and in Good Condition? _____

Comments: _____

Passive Diffusion Bag Sampling Form

Well Identification: AMW-19A

Depth (BTOC)

31.17
DTW at installation — DTW at sampling

Top

Bottom

Weight

Well TD

Site Location: Boomsnub

Project Number:

Well Diameter:

PDB Installation Date: Time:

Sample Information

Sample No: 2141-051

Sample Date: 10/13/2021 Time: 1432

Sampling Personnel: HH, RR

Analyses: VOC 8260C

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : D

Well Casing Plug Locked and in Good Condition? Y

Comments:

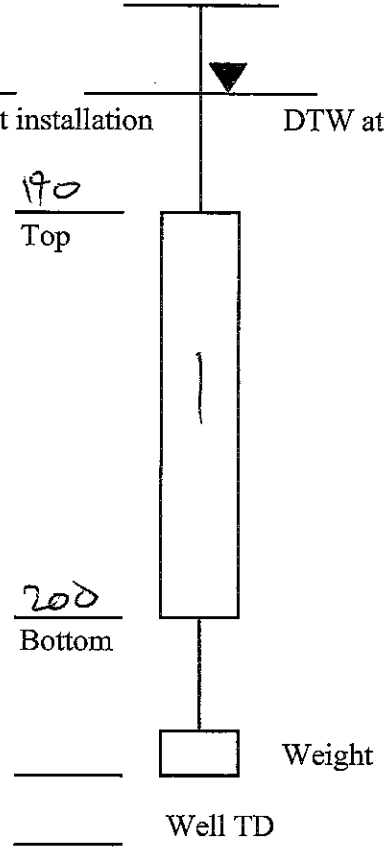
Passive Diffusion Bag Sampling Form

Well Identification: AMW-24

Depth (BTOC)

DTW at installation: _____

DTW at sampling: 132.35



Site Location: Boomsnub

Project Number: _____

Well Diameter: _____

PDB Installation Date: _____ Time: _____

Sample Information

Sample No: 2121-001

Sample Date: 10/13/21 Time: 1023

Sampling Personnel: HD, BH

Analyses: VOC

Biofilm Present (Y/N): NA

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : D

Well Casing Plug Locked and in Good Condition? Y

Comments: None.

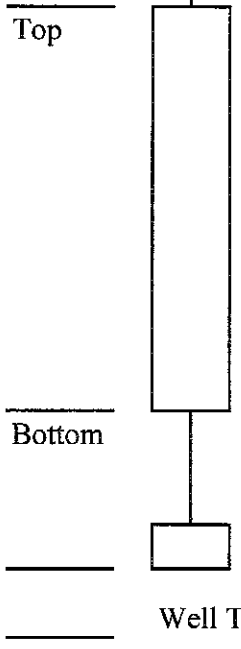
Passive Diffusion Bag Sampling Form

Well Identification: AMW-26

Depth (BTOC) _____

_____ 31.21

DTW at installation DTW at sampling



Site Location: Boomsnub

Project Number: _____

Well Diameter: _____

PDB Installation Date: _____ Time: _____

Sample Information

Sample No: 2141-052

Sample Date: 10/13/2021 Time: 1357

Sampling Personnel: HH, RR

Analyses: VOC 8260C

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : D

Well Casing Plug Locked and in Good Condition? Y

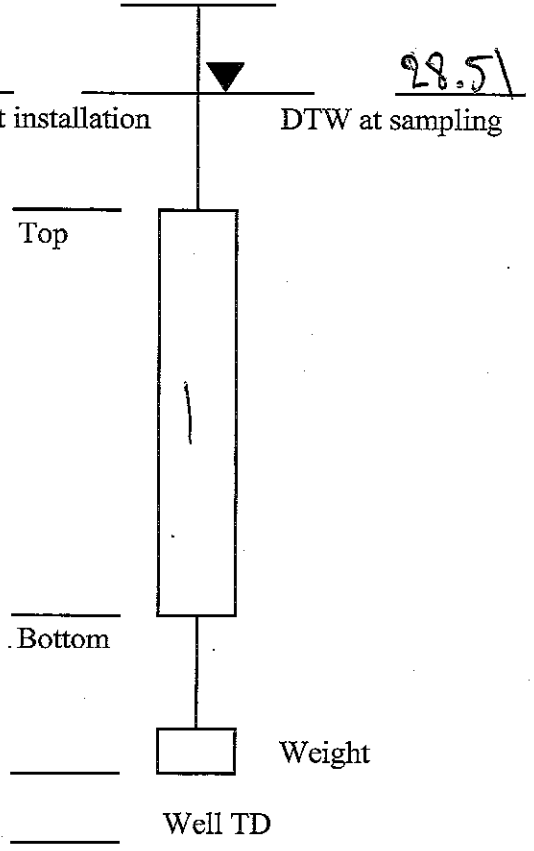
Comments: _____

Passive Diffusion Bag Sampling Form

Well Identification: AMW-52A

Depth (BTOC)

DTW at installation _____ DTW at sampling 28.51



Site Location: Boomsnub

Project Number: _____

Well Diameter: _____

PDB Installation Date: _____ Time: _____

Sample Information

Sample No: 2141-053

Sample Date: 10/13/21 Time: 1108

Sampling Personnel: HD, BH

Analyses: VOC

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? N

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : WBC

Well Casing Plug Locked and in Good Condition? Y

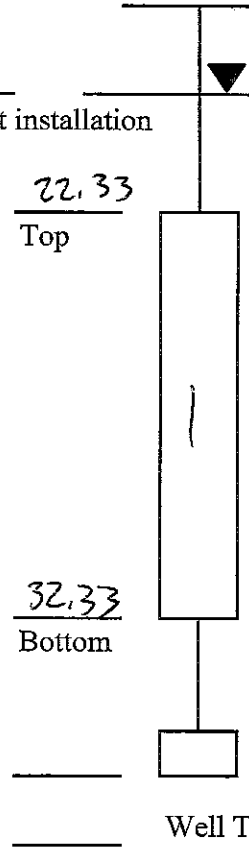
Comments: MS/MSD

Passive Diffusion Bag Sampling Form

Well Identification: AMW-53A

Depth (BTOC) _____

DTW at installation _____ DTW at sampling 29.06



Site Location: Boomsnub

Project Number: _____

Well Diameter: _____

PDB Installation Date: _____ Time: _____

Sample Information

Sample No: 2141-054

Sample Date: 10/13/21 Time: 1253

Sampling Personnel: HD, BH

Analyses: VOC

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : D

Well Casing Plug Locked and in Good Condition? Y

Comments: pH - 5.42, ORP - 313.5, DO - 5.41, cond - 0.022

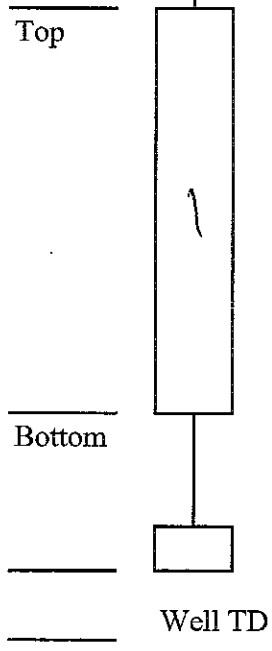
Passive Diffusion Bag Sampling Form

Well Identification: AMW-58

Depth (BTOC) _____

_____ 61.88

DTW at installation DTW at sampling



Site Location: Boomsnub

Project Number: _____

Well Diameter: _____

PDB Installation Date: _____ Time: _____

Sample Information

Sample No: 2141-017, 2141-002

Sample Date: 10/13/21 Time: 1043, ~~1048~~ 1046 BH

Sampling Personnel: HD, BH

Analyses: VOC

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): X

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : D

Well Casing Plug Locked and in Good Condition? Y

Comments: ~~NOTE~~ BH Sample # 2141-002 has been reassigned from AMW-34R DUP to AMW-58 DUP.

Ground Water Purge and Sampling Form

Well Identification	AMW-59
Well Diameter (inches)	4
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	140.04

Site Location: Boomsnub Date: 10/12/21

Project Number: 1611303 Personnel: ~~HD~~, BH

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ✓ Redi-flo Pump ~~(Ded)~~ ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: 52°, cloudy

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	0954	0957	~~0959~~ BH 1000	1003	1006	1009	1012	1015	Collect	Sample
Depth to Ground water (ft btoc)	21.08	21.15	21.15	21.15	21.15	21.15	21.15	21.15		
Total Groundwater Purged(gallons, liters, other)	—	1.00	2.00	3.00	4.00	5.00	6.00	7.00		
Purge Rate (gpm, ft³/min, ml/min, other)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2		
pH		6.80	6.98	7.03	7.07	7.00	7.00	6.99		
Conductivity (mS/cm)		0.787	0.818	0.819	0.811	0.799	0.793	0.789		
Turbidity (NTU)		32.10	106.74	31.21	32.81	19.68	18.51	13.69		
Disssolved Oxygen (mg/L)		2.02	1.55	1.46	1.48	1.46	1.48	1.50		
Temperature (°C)		13.5	13.5	13.6	13.7	13.8	13.7	13.7		
ORP/eH (mV)	↓	13.3	-74.1	-109.7	-115.7	-118.6	-120.3	-121.0		
Color of Purged Water (gray, brown, red, clear)	Clear	~~Clear~~	~~Brown~~ BH	clear	brown	brown	clear	clear		BH

Sample Identification: 2141-005

Time Sampled: ~~1025~~ BH 1020

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ 3 HD VOCs by 8260C	3
— Total Chromium	0
✓ 3 HD Other	8

Comments: Pump @ 136.5' bgs

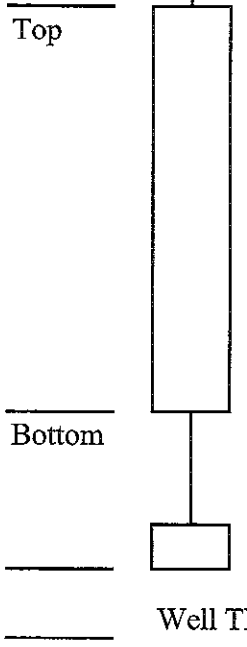
Passive Diffusion Bag Sampling Form

Well Identification: Amw-60

Depth (BTOC) _____

_____ _____ 9.19

DTW at installation DTW at sampling



_____ Top

_____ Bottom

_____ Weight

_____ Well TD

Site Location: Boomsnub

Project Number: _____

Well Diameter: _____

PDB Installation Date: _____ Time: _____

Sample Information

Sample No: 2141-006

Sample Date: 10/13/21 Time: 0933

Sampling Personnel: HD, BH

Analyses: VOC

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? _____

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : _____

Well Casing Plug Locked and in Good Condition? _____

Comments: _____

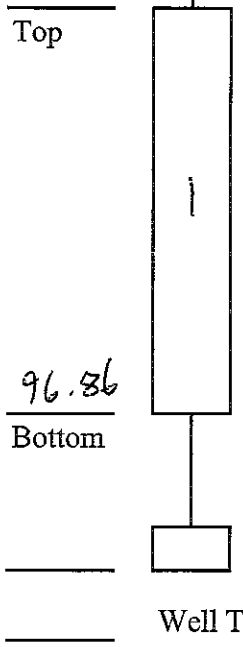
Passive Diffusion Bag Sampling Form

Well Identification: AMW-61

Depth (BTOC)

45.49
DTW at sampling

DTW at installation



Site Location: Boomsnub

Project Number:

Well Diameter:

PDB Installation Date: Time:

Sample Information

Sample No: 2141-0024

Sample Date: 10/13/21 Time: 0842

Sampling Personnel: HD, BH

Analyses: VOC

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): X

Well Condition at Sampling

Well Monument Locked and in Good Condition? N

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : WAC

Well Casing Plug Locked and in Good Condition? N

Comments: Bolts stripped

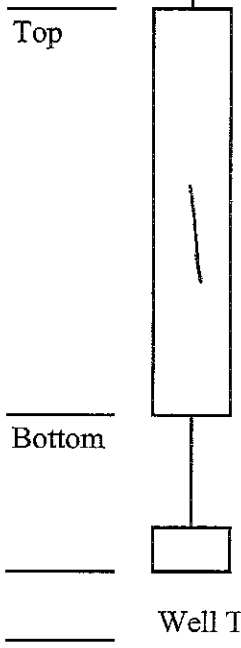
Passive Diffusion Bag Sampling Form

Well Identification: AMW-64

Depth (BTOC) _____

_____ _____ 18.51

DTW at installation DTW at sampling



Site Location: Boomsnub

Project Number: _____

Well Diameter: _____

PDB Installation Date: _____ Time: _____

Sample Information

Sample No: 2141-064

Sample Date: 10/13/21 Time: 0946

Sampling Personnel: HD, BH

Analyses: VOC

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? N

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : D

Well Casing Plug Locked and in Good Condition? Y

Comments: Bolts stripped

Ground Water Purge and Sampling Form

Well Identification	CPU-14
Well Diameter (inches)	4
Well Monument Locked and Good Condition?	No
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WBC
Well Casing Plug Locked and Good Condition?	NO
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	71.43

Site Location: Boomsnub Date: 10/12/21

Project Number: 1611303 Personnel: HD, BH

Purge Method: ✓Low Flow ___Conventional ___None

Purge Equipment: ___Extraction Well ✓Redi-flo Pump (Ded) ___Other

Sampling Equipment: ___Extraction Well ✓Redi-flo Pump ___Diffusion Bag

Weather Conditions: 48°, cloudy

Well Volume Calculation: 2"=.16 4"=.64, 6"=1.44 gallons

Time	0901	0904	0907	0910	0913	collect Sample				
Depth to Ground water (ft btoc)	19.69	19.77	19.77	19.77	19.77					
Total Groundwater Purged(gallons, liters, other)	—	1.00	2.00	3.00	4.00					
Purge Rate (gpm, ft^3/min, ml/min, other)	0.2	0.2	0.2	0.2	0.2					
pH		6.41	6.51	6.58	6.66					
Conductivity (mS/cm)		0.336	0.336	0.337	0.337					
Turbidity (NTU)		6.55	6.31	6.04	5.81					
Disssolved Oxygen (mg/L)		1.79	1.71	1.66	1.60					
Temperature (°C)		11.7	11.9	12.1	12.2					
ORP/eH (mV)		145.5	141.4	138.1	134.2					
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear					BH

Sample Identification: 2141-007

Time Sampled: 0918

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓VOCs by 8260C	3
✓Total Chromium	1
— Other	0

Comments: none

Passive Diffusion Bag Sampling Form

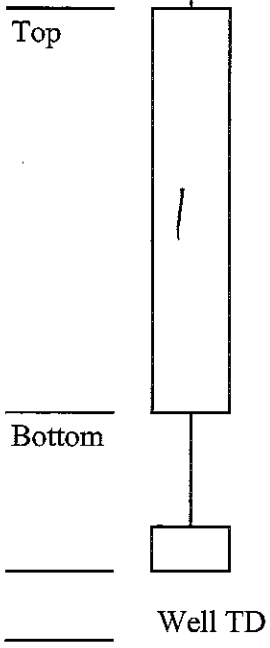
Well Identification: MW-1A

Depth (BTOC)

33.40 BH

DTW at installation

DTW at sampling



Site Location: Boomsnub

Project Number:

Well Diameter:

PDB Installation Date: Time:

Sample Information

Sample No: 2141-055 BH

Sample Date: 10/13/21 Time: 1305

Sampling Personnel: HD, BH

Analyses: VOC

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : D

Well Casing Plug Locked and in Good Condition? Y

Comments: pH - 5.04, ORP - 29.1, DO - 4.79, cond - 0.005

Black residue on wire PDB cord.

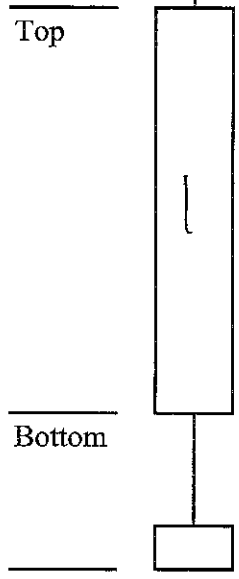
Passive Diffusion Bag Sampling Form

Well Identification: MW-1B

Depth (BTOC)

33.44

DTW at installation | DTW at sampling



Site Location: Boomsnub

Project Number:

Well Diameter:

PDB Installation Date: Time:

Sample Information

Sample No: 2141-~~660~~ 656 BH

Sample Date: 10/13/21 Time: 1309

Sampling Personnel: HD, BH

Analyses: VOC

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : D

Well Casing Plug Locked and in Good Condition? X

Comments: None.

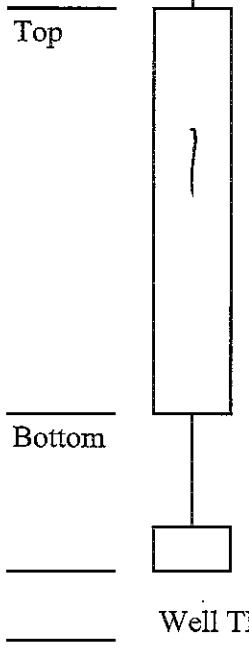
Passive Diffusion Bag Sampling Form

Well Identification: MW-1C

Depth (BTOC) _____

_____ _____ 33.45

DTW at installation DTW at sampling



Site Location: Boomsnub

Project Number: _____

Well Diameter: _____

PDB Installation Date: _____ Time: _____

Sample Information

Sample No: 2141-~~215~~ 058, 2141-057

Sample Date: 10/13/21 Time: 1314, 1319

Sampling Personnel: HD, BH

Analyses: VOC

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : D

Well Casing Plug Locked and in Good Condition? X

Comments: None

Ground Water Purge and Sampling Form

Well Identification	MW-2A
Well Diameter (inches)	2in
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	N
Well Total Depth (ft btoc)	37,48

Site Location: Boomsnub Date: 10/11/2021

Project Number: 1611303 Personnel: HH, RR

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ___ Redi-flo Pump (Ded) ✓ Other

Sampling Equipment: ___ Extraction Well ___ Redi-flo Pump ___ Diffusion Bag ✓ per!

Weather Conditions: cloudy, 48°F

Begin Purge: 1056

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1054	1101	1106	1111	1116					
Depth to Ground water (ft btoc)	30.83	31,02	31,02	31,02	31,02					
Total Groundwater Purged(gallons, liters, other)		2,0	4,0	6,0	8,0	Stabilized				
Purge Rate (gpm, ft³/min, ~~ml/min~~, other)		400	400	400	400					
pH ±0.2		5,98 ~~7,24~~ HH 10/12	5,86	5,80	5,79					
Conductivity (mS/cm) ±10%		0,160	0,178	0,187	0,191					
Turbidity (NTU) <20 or 10%		4,83	3,04	3,17	3,00	HH 10/11/2021				
Disssolved Oxygen (mg/L) ±10% or ±0.1		7,24	7,11	7,06	7,01					
Temperature (°C)		13,9	13,8	13,8	13,9					
ORP/eH (mV) ±10		169,4	177,8	184,0	187,0					
Color of Purged Water (gray, brown, red, clear)		clear	clear	clear	clear					

Sample Identification: 2141-018

Time Sampled: ~~1020~~ HH 10/12 1120

DUP: 2141-019 Time 1125

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	3
✓ Total Chromium	1
___ Other	

Comments: DUP Sample ID: 2141-019

✓ VOC # bottles 3

✓ Tcr 1

Time Sampled: 1125

Ground Water Purge and Sampling Form

Well Identification	MW-28
Well Diameter (inches)	2in
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	N
Well Total Depth (ft btoc)	57.94

Site Location: Boomsnub Date: 10/11/2021

Project Number: 1611303 Personnel: HH, BR

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ___ Redi-flo Pump (Ded) ✓ Other

Sampling Equipment: ___ Extraction Well ___ Redi-flo Pump ___ Diffusion Bag ✓ peristaltic pump

Weather Conditions: cloudy, 48°F,

Begin Purge: 1018

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1005	1023	1028	1032	1036	1041	1046			
Depth to Ground water (ft btoc)	30.92	31.27	31.28	31.28	31.28	31.28	31.28	Stabilized		
Total Groundwater Purged(gallons, liters, other)		2.0	4.0	6.0	8.0	10.0	10.0			
Purge Rate (gpm, ft³/min, ml/min, other)		400	400	400	400	400	400			
pH ±0.2		7.00	6.48	6.28	6.08	6.04	6.03			
Conductivity (mS/cm) ±10%		0.188	0.188	0.188	0.187	0.187	0.187			
Turbidity (NTU) <20		18.51	7.50	5.37	4.86	3.84	3.45			
Disssolved Oxygen (mg/L) ±10% or 0.1		7.99	7.77	7.68	7.77	8.10	8.24			
Temperature (°C)		14.0	14.0	14.0	14.0	14.1	14.0			
ORP/eH (mV) ±10		120.0	128.1	135.6	146.9	149.9	154.9			
Color of Purged Water (gray, brown, red, clear)		brown	clear	clear	clear	clear	clear			

Sample Identification: 2141-020

Time Sampled: 1052

Purge water disposed To: Boomsnub

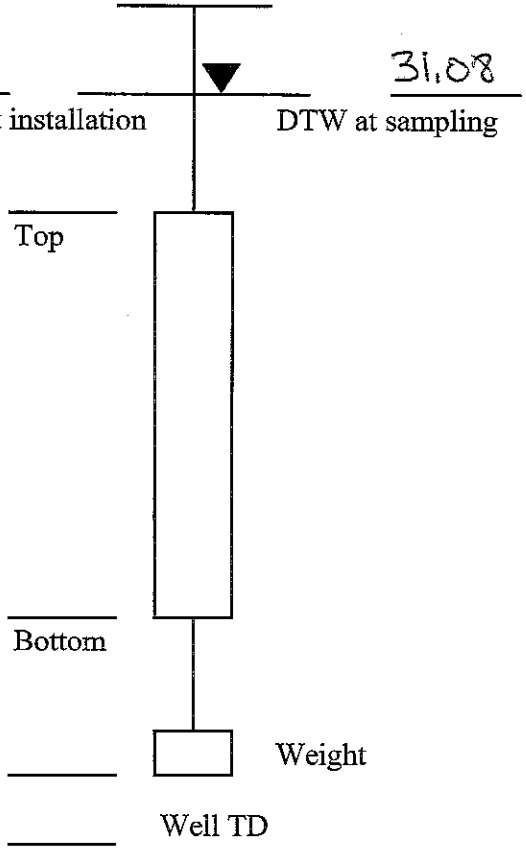
Analysis	# of Bottles
✓ VOCs by 8260C	3
✓ Total Chromium	1
___ Other	

Comments: None.

Passive Diffusion Bag Sampling Form

Well Identification: MW-2C

Depth (BTOC) 31.08 HH 10/11/2021



Site Location: Boomsnub

Project Number:

Well Diameter: 2 in

PDB Installation Date: _____ Time: _____

Sample Information

Sample No: 2141-021

Sample Date: 10/11/2021 Time: 1133

Sampling Personnel: HH, RR

Analyses: 8260C

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : D

Well Casing Plug Locked and in Good Condition? Y

Comments: Minimal H_2O for parameter reading

pH=5.00 DO=9.42 mg/L

ORP=203.4 mV SpecCond=0.015 mS/cm

Ground Water Purge and Sampling Form

Well Identification	MW-3A	Site Location: Boomsnub				Date: 10/11/2021				
Well Diameter (inches)	2in	Project Number: 1611303				Personnel: HH, RR				
Well Monument Locked and Good Condition?	N/A	Purge Method: ~~Low Flow~~ ___Conventional ___None								
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WBC	Purge Equipment: ___Extraction Well ___Redi-flo Pump (Ded) ✓Other								
Well Casing Plug Locked and Good Condition?	Y	Sampling Equipment: ___Extraction Well ___Redi-flo Pump ___Diffusion Bag								
PID Reading in Well (ppm)	—	Weather Conditions: Sunny 50°F ✓Open								
Well Total Depth (ft btoc)	32.67	Begin Purge: 1150				Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons				
Time	1145	1155	1200	1205	1210					
Depth to Ground water (ft btoc)	28.76	28.92	28.92	28.92	28.92	Stabilized				
Total Groundwater Purged(gallons, liters, other)		2.0	4.0	6.0	8.0					
Purge Rate (gpm, ft^3/min, ml/min, other)		400	400	400	400					
pH ±.2		5.66	5.80	5.79	5.75					
Conductivity (mS/cm) ± 10%		0.163	0.164	0.164	0.163					
Turbidity (NTU) <20 ±10%		2.92	3.15	2.80	2.74	HH 10/11/2021				
Disssolved Oxygen (mg/L) ±10% or 0.1		7.69	7.48	7.46	7.46					
Temperature (°C)		13.9	14.0	14.0	13.9					
ORP/eH (mV) ±10		201.4	199.8	202.1	204.6					
Color of Purged Water (gray, brown, red, clear)		clear	clear	clear	clear					

Sample Identification: 2141-022	Analysis	# of Bottles	Comments: Bottom 32.7'
Time Sampled: 1213	___VOCs by 8260C	___	well monument lid is detached
	✓Total Chromium	1	
Purge water disposed To: Boomsnub	___Other	___	

Ground Water Purge and Sampling Form

Well Identification	MW-3B
Well Diameter (inches)	2in
Well Monument Locked and Good Condition?	N
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WBC
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	—
Well Total Depth (ft btoc)	56.69

Site Location: Boomsnub Date: 10/11/2021

Project Number: 1611303 Personnel: HH, RR HH 10/11/2021

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ___ Redi-flo Pump (Ded) ✓ Other

Sampling Equipment: ___ Extraction Well ___ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: Sunny, 50°F ✓ psi

Begin Purge: 1216 Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1215	1221	1226	1231	1236						
Depth to Ground water (ft btoc)	28.97	29.01	29.01	29.01	29.01	Stabilized					
Total Groundwater Purged(gallons, liters, other)		2.0	4.0	6.0	8.0						
Purge Rate (gpm, ft³/min, ml/min, other)		400	400	400	400						
pH ±0.2		5.83	5.73	5.70	5.77						
Conductivity (mS/cm) ± 10%		0.187	0.188	0.188	0.188						
Turbidity (NTU) <20, ±10%		29.59	8.78	5.52	4.17						
Disssolved Oxygen (mg/L) 10% or ±0.1		8.28	8.30	8.27	8.27						
Temperature (°C)		14.1	14.2	14.2	14.2						
ORP/eH (mV) ±10		206.5	210.9	211.8	208.2						
Color of Purged Water (gray, brown, red, clear)		clear, bubbles	clear, bubbles	clear, bubbles	clear, bubbles						

HH 10/11/2021

Sample Identification: 2141-023

Time Sampled: 1238

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	3
✓ Total Chromium	1
___ Other	___

Comments: Bubbles in flow cell. Tapped before reading to release bubbles. well monument lid is detached

Ground Water Purge and Sampling Form

Well Identification	MW-3C
Well Diameter (inches)	2in
Well Monument Locked and Good Condition?	~~N~~ N
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WBC
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	—
Well Total Depth (ft btoc)	83.69

Site Location: Boomsnub Date: 10/11/2021

Project Number: 1611303 Personnel: HH, RR

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ___ Redi-flo Pump (Ded) ✓ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: Sunny 51°F

Begin Purge 1332

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1322	1337	1342	1347	1352						
Depth to Ground water (ft btoc)	29.05	29.85	30.29	30.30	30.30	Stabilized					
Total Groundwater Purged(gallons, liters, other)		1.5	3.0	4.5	6.0						
Purge Rate (gpm, ft³/min, ml/min, other)		300	300	300	300						
pH		6.04	5.85	5.81	5.80						
Conductivity (mS/cm)		0.188	0.188	0.188	0.187						
Turbidity (NTU)		30.60	9.34	8.50	8.52						
Disssolved Oxygen (mg/L)		9.06	8.98	8.98	8.95						
Temperature (°C)		14.3	14.9	15.1	15.3						
ORP/eH (mV)		148.1	150.4	154.2	157.2						
Color of Purged Water (gray, brown, red, clear)		slightly cloudy	clear	clear	clear						

HH 10/11/2021

Sample Identification: 2141-024

Time Sampled: 1356

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	3
✓ Total Chromium	1
___ Other	

Comments: well monument lid is detached

Ground Water Purge and Sampling Form

Well Identification	MW-4A	Site Location: Boomsnub							Date: 10/11/2021		
Well Diameter (inches)	2in	Project Number: 1611303							Personnel: HH, RR		
Well Monument Locked and Good Condition?	U	Purge Method: ✓Low Flow ___Conventional ___None									
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D	Purge Equipment: ___Extraction Well ___Redi-flo Pump (Ded) ✓Other									
Well Casing Plug Locked and Good Condition?	Y	Sampling Equipment: ___Extraction Well ___Redi-flo Pump ___Diffusion Bag ✓peripump									
PID Reading in Well (ppm)	—	Weather Conditions: sunny 51°F									
Well Total Depth (ft btoc)	37.69	~~1424~~ HH 10/11/21 Begin Purge: 1424							Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons		
Time	1415	1429	1434	1439	1444	1449	1454				
Depth to Ground water (ft btoc)	28.92	29.46	29.46	29.46	29.46	29.46	29.46	Stabilized			
Total Groundwater Purged(gallons, liters, other)		2.0	4.0	6.0	8.0	10.0	12.0				
Purge Rate (gpm, ft³/min, ml/min, other)		400	400	400	400	400	400				
pH ±0.2		5.86	5.71	5.67	5.62	5.60	5.59				
Conductivity (mS/cm) ±10%		0.194	0.200	0.202	0.203	0.203	0.203				
Turbidity (NTU) <20 or ±10%		3.52	2.79	2.38	2.03	2.08	1.90				
Disssolved Oxygen (mg/L) ±10% or ±0.1		7.25	7.17	7.12	7.07	7.07	7.07		HH 10/11/2021		
Temperature (°C)		14.0	14.0	14.0	14.0	14.0	14.0				
ORP/eH (mV) ±10		175.5	184.7	190.9	197.6	201.0	204.8				
Color of Purged Water (gray, brown, red, clear)		clear	clear	clear	clear	clear	clear				

Sample Identification: 2141-025	Analysis	# of Bottles	Comments: well monument lid is detached
Time Sampled: 1457	✓ VOCs by 8260C	3	
	✓ Total Chromium	1	
Purge water disposed To: Boomsnub	___ Other		

Ground Water Purge and Sampling Form

Well Identification	MW-4B	Site Location: Boomsnub						Date: 10/11/2021		
Well Diameter (inches)	2in	Project Number: 1611303						Personnel: HH, RR		
Well Monument Locked and Good Condition?	N	Purge Method: ___Low Flow ___Conventional ✓None								
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D	Purge Equipment: ___Extraction Well ___Redi-flo Pump (Ded) ✓Other								
Well Casing Plug Locked and Good Condition?	Y	Sampling Equipment: ___Extraction Well ___Redi-flo Pump ___Diffusion Bag ✓ per pump								
PID Reading in Well (ppm)	—	Weather Conditions: Sunny, 51°F								
Well Total Depth (ft btoc)	44.77	Begin Purge: 1504						Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons		
Time	1500	1509	1514	1519	1524	1529				
Depth to Ground water (ft btoc)	29.04	29.42	29.42	29.42	29.42	29.42				
Total Groundwater Purged(gallons, liters, other)	/	2.0	4.0	6.0	8.0	10.0	Stabilized			
Purge Rate (gpm, ft^3/min, ml/min, other)	/	400	400	400	400	400				
pH ±0.2		5.61	5.57	5.55	5.59	5.60				
Conductivity (mS/cm) ±10%		0.121	0.120	0.121	0.124	0.123				
Turbidity (NTU) <20 or ±10%		119.97	10.09	5.76	3.08	5.34		HH 10/11/2021		
Disssolved Oxygen (mg/L) ±10% or ±0.1		7.52	7.91	7.87	7.53	7.50				
Temperature (°C)		14.1	14.3	14.2	14.2	14.2				
ORP/eH (mV) ±10		206.6	206.7	207.1	207.3	207.2				
Color of Purged Water (gray, brown, red, clear)		Brown	clear	clear	clear	clear				

Sample Identification: 2141-026	Analysis	# of Bottles	Comments:
Time Sampled: 1534	✓ VOCs by 8260C	3	Flow cell dark initially
	✓ Total Chromium	1	Manwell lid not connected
Purge water disposed To: Boomsnub	___ Other	___	

Ground Water Purge and Sampling Form

Well Identification	MW-4BSHED
Well Diameter (inches)	2
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	—
Well Total Depth (ft btoc)	58.2

Site Location: Boomsnub Date: 10/12/2021

Project Number: 1611303 Personnel: HH, RR

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ___ Redi-flo Pump (Ded) ✓ Other

Sampling Equipment: ___ Extraction Well ___ Redi-flo Pump ___ Diffusion Bag ✓ Peri

Weather Conditions: 40°F, Fog

Begin Purge: 0900

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	0837	0905	0910	0915	0920	0925				
Depth to Ground water (ft btoc)	29.16	29.74	29.74	29.74	29.74	29.74	Stabilized			
Total Groundwater Purged(gallons, liters, other)		2.0	4.0	6.0	8.0	10.0				
Purge Rate (gpm, ft³/min, ml/min, other)		400	400	400	400	400				
pH ±0.2		6.00	6.41	6.43	6.37	6.33				
Conductivity (mS/cm) ±10%		0.155	0.155	0.154	0.156	0.164				
Turbidity (NTU) <20 or ±10%		5.65	4.52	4.54	5.41	4.20				
Disssolved Oxygen (mg/L) ±10% or ±0.1		9.49	9.30	8.80	8.36	8.32		HH 10/12/2021		
Temperature (°C)		13.7	13.6	13.7	13.8	13.8				
ORP/eH (mV) ±10		257.8	243.7	241.2	240.1	240.9				
Color of Purged Water (gray, brown, red, clear)		clear	clear	clear	clear	clear				

Sample Identification: 2141-027

Time Sampled: 0929

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	3
✓ Total Chromium	1
— Other	0

Comments: None.

Ground Water Purge and Sampling Form

Well Identification	MW-4C
Well Diameter (inches)	2
Well Monument Locked and Good Condition?	N
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	—
Well Total Depth (ft btoc)	80.0

Site Location: Boomsnub Date: 10/11/2021

Project Number: 1611303 Personnel: HH, RR

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ___ Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: sunny 47°F

Begin Purge: 1542 Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1537	1547	1552	1557	1602	1607	1612			
Depth to Ground water (ft btoc)	28.91	30.94	31.05	31.06	31.06	31.06	31.06	Stabilized		
Total Groundwater Purged(gallons, liters, other)		~~0.3~~ 1.5	3.0	4.5	6.0	7.5	9.0			
Purge Rate (gpm, ft³/min, ml/min, other)		300	300	300	300	300	300			
pH ±0.2		5.72	5.84	6.02	6.12	6.13	6.12			
Conductivity (mS/cm) ±10%		0.209	0.207	0.207	0.208	0.208	0.208			
Turbidity (NTU) <20 or ±10%		7.99	5.49	4.41	7.05	3.93	3.81			
Disssolved Oxygen (mg/L) ±10% or ±0.1		6.29	7.46	7.78	7.96	8.06	8.08			
Temperature (°C)		14.0	14.5	14.8	14.9	14.9	14.9			
ORP/eH (mV) ±10		197.9	177.6	160.2	148.8	145.2	142.0			
Color of Purged Water (gray, brown, red, clear)		slightly cloudy	clear	clear	clear	clear	clear			

HH, 10/11/2021

Sample Identification: 2141-028	Analysis	# of Bottles	Comments:
Time Sampled: 1617	✓ VOCs by 8260C	3	Monument lid not connected
	✓ Total Chromium	1	
Purge water disposed To: Boomsnub	___ Other		

Ground Water Purge and Sampling Form

Well Identification	MW-6A	Site Location: Boomsnub	Date: 10/11/21
Well Diameter (inches)	4	Project Number: 1611303	Personnel: HD, BH
Well Monument Locked and Good Condition?	Yes	Purge Method: ✓Low Flow ___Conventional ___None	
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WBC DAC (BH)	Purge Equipment: ___Extraction Well ✓Redi-flo Pump ~~(Bad)~~ ___Other	
Well Casing Plug Locked and Good Condition?	Y	Sampling Equipment: ___Extraction Well ✓Redi-flo Pump ___Diffusion Bag	
PID Reading in Well (ppm)	NA	Weather Conditions: 52°, cloudy	
Well Total Depth (ft btoc)	31.5	Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons	

Time	1029	1034	1039	1044	1049	1054	collect sample			
Depth to Ground water (ft btoc)	28.73	27.97	28.05	28.06	28.07	28.07				
Total Groundwater Purged(gallons, liters, other)	—	.750	1.500	2.250	3.000	3.75				
Purge Rate (gpm, ft³/min, ml/min, other)	150 (BH)	150	150	150	150	150				
pH		5.92	5.78	5.78	5.79	5.79				
Conductivity (mS/cm)		0.171	0.170	0.168	~~1.66 (BH)~~ 0.166	0.162				
Turbidity (NTU)		3.60	2.82	2.63	2.56	2.58				
Disssolved Oxygen (mg/L)		5.74	5.78	5.67	5.72	5.78				
Temperature (°C)		16.1	16.6	16.7	16.8	16.9				
ORP/eH (mV)		131.6	149.7	159.4	162.2	168.9				
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear	clear				BH

Sample Identification: 2141-029, 2141-030	Analysis	# of Bottles	Comments: None.
Time Sampled: 1059, 1104	✓ (BH) VOCs by 8260C	6	
	✓ Total Chromium	2	
Purge water disposed To: Boomsnub	___ Other		

Ground Water Purge and Sampling Form

MW-6B

Well Identification	~~MW-6B~~ HD
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WBC
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	59'

Site Location: Boomsnub Date: 10/11/21

Project Number: 1611303 Personnel: HD, BH

Purge Method: ✓Low Flow ___Conventional ___None

Purge Equipment: ___Extraction Well ✓Redi-flo Pump ~~(Ded)~~ ___Other

Sampling Equipment: ___Extraction Well ✓Redi-flo Pump ___Diffusion Bag

Weather Conditions: 56°, sunny

Well Volume Calculation: 2"=.16, ④=.64, 6"=1.44 gallons

Time	1246	1251	1256	1301	1306	1311	collect Samp IC			
Depth to Ground water (ft btoc)	23.28	23.51	23.51	23.51	23.51	23.51				
Total Groundwater Purged(gallons, liters, other)	—	1.00	2.00	3.00	43.00 BH	5.00				
Purge Rate (gpm, ft³/min, ml/min, other)	200	200	200	200	200	200				
pH		6.31	6.27	6.18	6.16	6.17				
Conductivity (mS/cm)		0.184	0.190	0.190	0.190	0.189				
Turbidity (NTU)		4.66	4.19	3.82	3.54	3.39				
Disssolved Oxygen (mg/L)		6.39	6.29	6.21	6.17	6.15				
Temperature (°C)		15.3	15.5	15.6	15.6	15.7				
ORP/eH (mV)	↓	169.9	170.0	169.7	169.5	169.4				
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear	clear				BH

Sample Identification: 2141-031

Time Sampled: 1316

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓3 VOCs by 8260C	3
✓X Total Chromium	1
___ Other	

Comments: Pump @ 57 ft BTOC

Ground Water Purge and Sampling Form

Well Identification	MW-6C
Well Diameter (inches)	4
Well Monument Locked and Good Condition?	Yes
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WBC
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	84.8

Site Location: Boomsnub Date: 10/11/21

Project Number: 1611303 Personnel: HD, BH

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ✓ Redi-flo Pump (~~Ded~~) ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: 54°, Cloudy

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1119	1124	1129	1134	1139	1144	1149	Collect Sample		
Depth to Ground water (ft btoc)	27.81	27.81	27.80	27.80	27.80	27.80	27.80			
Total Groundwater Purged(gallons, ~~liters~~, other)	~~300~~ BH	1.00	2.00	3.00	4.00	5.00	6.00			
Purge Rate (gpm, ft^3/min, ~~ml/min~~, other)	200	200	200	200	200	200	200			
pH		6.31	6.28	6.32	6.33	6.34	6.34			
Conductivity (mS/cm)		0.210	0.211	0.210	0.209	0.209	0.209			
Turbidity (NTU)		25.03	55.18	15.13	12.67	9.94	9.66			
Disssolved Oxygen (mg/L)		8.30	8.29	8.41	8.58	8.73	8.74			
Temperature (°C)		15.2	15.2	15.3	15.4	15.5	15.6			
ORP/eH (mV)		159.9	160.3	158.3	159.7	159.0	159.3			
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	cloudy	clear	clear	clear			BH

Sample Identification: 2141-032

Time Sampled: 1154

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	3
✓ Total Chromium	1
___ Other	___

Comments: @ Pump @ 76.5 ft BTOC

Ground Water Purge and Sampling Form

Well Identification	MW-6D
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	Missing 2 Bolts
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WBC
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	113.7

Site Location: Boomsnub Date: 10/11/21

Project Number: 1611303 Personnel: HD, BH

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ✓ Redi-flo Pump ~~(Dedi)~~ ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: 56° Sunny

Well Volume Calculation: 2"=.16, ~~3"=.37~~ 4"=.64, 6"=1.44 gallons

Time	1204	1209	1212	1215	1218	1221	1225	Collect sample		
Depth to Ground water (ft btoc)	28.78	28.57	28.57	28.57	28.57	28.57				
Total Groundwater Purged(gallons, liters, other)	—	0.75	1.50 N2O	2.25	3.0	3.75				
Purge Rate (gpm, ft³/min, ml/min, other)	150	150	150	150	150	150				
pH		6.90	6.47	6.38	6.35	6.34				
Conductivity (mS/cm)		0.207	0.221	0.225	0.225	0.225				
Turbidity (NTU)		7.41	6.61	6.15	6.04	5.97				
Disssolved Oxygen (mg/L)		7.45	7.60	7.63	7.63	7.60				
Temperature (°C)		14.9	15.0	15.1	15.1	15.1				
ORP/eH (mV)		173.3	169.2	167.9	165.7	164.5				
Color of Purged Water (gray, brown, red, clear)		Clear	Clear	Clear	Clear	Clear				

Sample Identification: 2141-033

Time Sampled: 1225

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	3
✓ Total Chromium	1
___ Other	___

Comments: Pump @ 105 ft BTOC

Ground Water Purge and Sampling Form

Well Identification	MW-7C
Well Diameter (inches)	4in
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	—
Well Total Depth (ft btoc)	80.5

Site Location: Boomsnub Date: 10/12/2021

Project Number: 1611303 Personnel: HH, RR

Purge Method: ___Low Flow ___Conventional ___None

Purge Equipment: ___Extraction Well ___Redi-flo Pump (Ded) ✓Other

Sampling Equipment: ___Extraction Well ✓Redi-flo Pump ___Diffusion Bag

Weather Conditions: 55°F, cloudy

Begin Purge 1527

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1517	1532	1537	1542	1547	1552				
Depth to Ground water (ft btoc)	28.46	28.51	28.51	28.51	28.51	28.51				
Total Groundwater Purged(gallons, liters, other)		2.0	4.0	6.0	8.0	10.0				
Purge Rate (gpm, ft³/min, ~~ml/min~~, other)		400	400	400	400	400				
pH ±0.2		6.99	6.86	6.78	6.75	6.71				
Conductivity (mS/cm) ±10%		0.219	0.217	0.216	0.215	0.215				
Turbidity (NTU) <20 or ±10%		3.83	3.44	3.03	2.93	2.73				
Disssolved Oxygen (mg/L) ±10% or ±0.1		8.77	8.75	8.75	8.75	8.76				
Temperature (°C)		14.9	15.0	15.1	15.1	15.2				
ORP/eH (mV) ±10		93.0	95.4	97.9	100.2	102.7				
Color of Purged Water (gray, brown, red, clear)		clear	clear	clear	clear	clear				

Stabilized

HH 10/12/2021

Sample Identification: 2141-034	Analysis	# of Bottles
Time Sampled: 1557	✓ VOCs by 8260C	3
	✓ Total Chromium	1
Purge water disposed To: Boomsnub	~ Other	0

Comments: None

Ground Water Purge and Sampling Form

Well Identification	MW-8B
Well Diameter (inches)	4
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	60

Site Location: Boomsnub Date: 10/12/21

Project Number: 1611303 Personnel: HD, DH

Purge Method: ✓Low Flow ___Conventional ___None

Purge Equipment: ___Extraction Well ✓Redi-flo Pump ~~(Ded)~~ ___Other

Sampling Equipment: ___Extraction Well ✓Redi-flo Pump ___Diffusion Bag

Weather Conditions: 58°, cloudy

Well Volume Calculation: 2"=.16, ~~4~~=.64, 6"=1.44 gallons

Time	1442	1445	1448	1451	1454	Collect Sample				
Depth to Ground water (ft btoc)	29.41	29.43	29.43	29.43	29.43					
Total Groundwater Purged(gallons, liters, other)	—	1.00	2.00	3.00	4.00					
Purge Rate (gpm, ft³/min, ml/min, other)	0.2	0.2	0.2	0.2	0.2					
pH		6.22	6.14	6.11	6.10					
Conductivity (mS/cm)		0.194	0.194	0.194	0.194					
Turbidity (NTU)		9.39	8.72	7.05	6.50					
Disssolved Oxygen (mg/L)		8.61	8.57	8.54	8.53					
Temperature (°C)		14.1	14.6	14.7	14.9					
ORP/eH (mV)		148.8	149.3	149.9	156.9					
Color of Purged Water (gray, brown, red, clear)	Clear	Clear	Clear	Clear	Clear					

Sample Identification: 2141-035

Time Sampled: 1459

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	3
✓ Total Chromium	1
— Other	0

Comments:

Pump @ 55 ft bgs

Lock very hard to open.

Ground Water Purge and Sampling Form

Well Identification	MW-9B	Site Location: Boomsnub							Date: 10/22/21	
Well Diameter (inches)	4	Project Number: 1611303							Personnel: HD, BH	
Well Monument Locked and Good Condition?	Missing 1 bolt	Purge Method: ✓ Low Flow				___ Conventional			___ None	
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D	Purge Equipment: ___ Extraction Well				✓ Redi-flo Pump ~~(Ded)~~			___ Other	
Well Casing Plug Locked and Good Condition?	Y	Sampling Equipment: ___ Extraction Well				✓ Redi-flo Pump			___ Diffusion Bag	
PID Reading in Well (ppm)	NA	Weather Conditions: 58°, cloudy								
Well Total Depth (ft btoc)	58	Well Volume Calculation: 2"=.16 ~~45~~=.64, 6"=1.44 gallons								
Time	1402	1405	1408	1411	1414	collect sample				
Depth to Ground water (ft btoc)	24.64	24.82	24.82	24.82	24.82					
Total Groundwater Purged(gallons, liters, other)	—	1.0	2.0	3.0	4.0					
Purge Rate (gpm, ft³/min, ml/min, other)	0.2 BH	0.2	0.2	0.2	0.2					
pH		6.30	6.21	6.18	6.16					
Conductivity (mS/cm)		0.176	0.176	0.176	0.176					
Turbidity (NTU)		5.90	5.25	5.30	5.52					
Disssolved Oxygen (mg/L)		7.86	7.82	7.81	7.82					
Temperature (°C)		14.7	15.3	15.4	15.5					
ORP/eH (mV)		133.6	136.2	138.0	139.4					
Color of Purged Water (gray, brown, red, clear)	Clear	Clear	clear	clear	clear					BH

Sample Identification: 2141-036	Analysis	# of Bottles	Comments: Pump @ 49 ft bgs
Time Sampled: ~~1402~~ BH 1419	✓ VOCs by 8260C	3	
	✓ Total Chromium	1	
Purge water disposed To: Boomsnub	— Other	0	

Ground Water Purge and Sampling Form

Well Identification	MW-9C
Well Diameter (inches)	4
Well Monument Locked and Good Condition?	N
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	76.5

Site Location: Boomsnub Date: 10/12/21

Project Number: 1611303 Personnel: HD, BH

Purge Method: ✓Low Flow ___Conventional ___None

Purge Equipment: ___Extraction Well ✓Redi-flo Pump (Ded) ___Other

Sampling Equipment: ___Extraction Well ✓Redi-flo Pump ___Diffusion Bag

Weather Conditions: 58°, cloudy

Well Volume Calculation: 2"=.16, 3"=.64, 6"=1.44 gallons

Time	1331	1334	1337	1340	1343	collect sample				
Depth to Ground water (ft btoc)	24.81 BH	24.90	24.90	24.90	24.90					
Total Groundwater Purged(gallons, liters, other)	—	1.0	2.0	3.0	4.0					
Purge Rate (gpm, ft³/min, ml/min, other)	0.2	0.2	0.2	0.2	0.2					
pH		6.46	6.30	6.23	6.21					
Conductivity (mS/cm)		0.200	0.200	0.200	0.200					
Turbidity (NTU)		7.93	7.92	7.43	6.70					
Disssolved Oxygen (mg/L)		9.12	9.10	9.09	9.08					
Temperature (°C)		14.1	14.3	14.5	14.6					
ORP/eH (mV)		117.8	124.4	128.1	130.3					
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear					BH

Sample Identification: 21411-037

Time Sampled: 1348

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓VOCs by 8260C	3
—Total Chromium	0
— Other	0

Comments: None,

Ground Water Purge and Sampling Form

Well Identification	MW-103
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WBC
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	61.5

Site Location: Boomsnub Date: 10/11/21

Project Number: 1611303 Personnel: HD, BH

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ✓ Redi-flo Pump ~~(Ded)~~ ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: 60°, Sunny

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1431	1434	1437	1440	collect sample					
Depth to Ground water (ft btoc)	22.57	22.71	22.71	22.71						
Total Groundwater Purged(gallons, liters, other)	—	1.00	2.00	3.00						
Purge Rate (gpm, ft³/min, ml/min, other)	200	200	200	200						
pH		6.38	6.39	6.20						
Conductivity (mS/cm)		0.156	0.156	0.156						
Turbidity (NTU)		2.06	2.03	2.01						
Disssolved Oxygen (mg/L)		6.44	6.40	6.35						
Temperature (°C)		15.5	15.7	15.9						
ORP/eH (mV)		163.7	165.5	167.1						
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear						BH

Sample Identification: 2141-038

Time Sampled: 1445

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	3
✓ Total Chromium	1
___ Other	

Comments: Pump at 43' BTOC

Ground Water Purge and Sampling Form

Well Identification	MW-10C
Well Diameter (inches)	4
Well Monument Locked and Good Condition?	NO
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	81.5

Site Location: Boomsnub Date: 10/11/21

Project Number: 1611303 Personnel: HD, BH

Purge Method: ✓Low Flow ___Conventional ___None

Purge Equipment: ___Extraction Well ___Redi-flo Pump (Ded) ___Other

Sampling Equipment: ___Extraction Well ✓Redi-flo Pump ___Diffusion Bag

Weather Conditions: 60°, Sunny

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1400	1403	1406	1409	1412	1415	collect Sample			
Depth to Ground water (ft btoc)	22.67	~~22.75~~ 22.70	~~22.75~~ 22.70 all	22.78	22.78					
Total Groundwater Purged(gallons, liters, other)	—	0.750	1.56	2.25	3.00					
Purge Rate (gpm, ft³/min, ml/min, other)	~~200~~ 150 all	150	150	150	150					
pH		6.87	6.56	6.44	6.40					
Conductivity (mS/cm)		0.221	0.218	0.217	0.217					
Turbidity (NTU)		8.29	7.82	6.83	6.78					
Disssolved Oxygen (mg/L)		8.76	8.73	8.70	8.66					
Temperature (°C)		15.0	15.1	15.1	15.2					
ORP/eH (mV)		167.3	166.1	165.9	165.7					
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear					BH

Sample Identification: 2141-039

Time Sampled: 1415

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓VOCs by 8260C	3
✓Total Chromium	1
___ Other	

Comments: ~~none~~ MD

White, crystalline residue on WL meter prob

Ground Water Purge and Sampling Form

Well Identification	MW-12C
Well Diameter (inches)	4
Well Monument Locked and Good Condition?	NO
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WBC
Well Casing Plug Locked and Good Condition?	NO
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	82.7

Site Location: Boomsnub Date: 10/11/21

Project Number: 1611303 Personnel: H D, BH

Purge Method: 2 ~~Low~~ Flow ___Conventional ___None

Purge Equipment: ___Extraction Well 1 Redi-flo Pump (Ded) ___Other

Sampling Equipment: ___Extraction Well 1 Redi-flo Pump ___Diffusion Bag

Weather Conditions: 60°, sunny

Well Volume Calculation: 2"=.16, ~~4"~~=.64, 6"=1.44 gallons

Time	1546	1549	1552	1555	1558	Collect Sample					
Depth to Ground water (ft btoc)	23.89	23.91	23.91	23.91	23.91						
Total Groundwater Purged(gallons, liters, other)	—	1.00	2.00	3.00	4.00						
Purge Rate (gpm, ft³/min, ml/min, other)	200	200	200	200	200						
pH		6.64	6.42	6.35	6.30						
Conductivity (mS/cm)		0.208	0.212	0.212	0.212						
Turbidity (NTU)		9.90	9.23	8.94	8.63						
Disssolved Oxygen (mg/L)		8.83	8.83	8.80	8.80						
Temperature (°C)		14.5	14.6	14.7	14.8						
ORP/eH (mV)		172.7	167.1	164.3	162.1						
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear						BH

Sample Identification: 2141-040

Time Sampled: 1603

Purge water disposed To: Boomsnub

Analysis	# of Bottles
BH ✓ VOCs by 8260C	9
✓ Total Chromium	3
___ Other	

Comments: None

Ground Water Purge and Sampling Form

Well Identification	MW-13C
Well Diameter (inches)	4
Well Monument Locked and Good Condition?	NO
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WBC
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	76.53

Site Location: Boomsnub Date: 10/11/21

Project Number: 1611303 Personnel: HD, BH

Purge Method: ✓Low Flow ___Conventional ___None

Purge Equipment: ___Extraction Well ✓Redi-flo Pump (Ded) ___Other

Sampling Equipment: ___Extraction Well ✓Redi-flo Pump ___Diffusion Bag

Weather Conditions: 60° sunny

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1509	15 R311	15 R314	15 R317	15 R320	collect Sample				
Depth to Ground water (ft btoc)	21.54	21.61	21.61	21.61	21.61					
Total Groundwater Purged(gallons, liters, other)	—	1.25	2.50	3.75	5.0					
Purge Rate (gpm, ft³/min, ml/min, other)	0.25	0.25	0.25	0.25	0.25					
pH	↓	7.89	7.18	6.59	6.43					
Conductivity (mS/cm)		0.216	0.217	0.216	0.216					
Turbidity (NTU)		1.88	1.78	1.92	1.89					
Disssolved Oxygen (mg/L)		7.68	7.69	7.69	7.68					
Temperature (°C)		14.5	14.7	14.9	15.0					
ORP/eH (mV)	✓	170.9	171.3	171.8	172.1					
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear					BH

Sample Identification: 2141-041

Time Sampled: 15 R325 BH

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓VOCs by 8260C	3
✓Total Chromium	1
___Other	

Comments: None

Ground Water Purge and Sampling Form

Well Identification	MW-14C
Well Diameter (inches)	4
Well Monument Locked and Good Condition?	N
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	81.5

Site Location: Boomsnub Date: 10/12/21

Project Number: 1611303 Personnel: HD, BH

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ✓ Redi-flo Pump ~~(Ded)~~ ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: 56°, overcast

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1219	1222	1225	1228	1231	1234	1237	Collect Sample		
Depth to Ground water (ft btoc)	20.98	21.04	21.04	21.04	21.04	21.04	21.04			
Total Groundwater Purged(gallons, liters, other)	—	0.750	1.500	2,250	3.00	3.750	4.500			
Purge Rate (gpm, ft³/min, ml/min, other)	0.15	0.15	0.15	0.15	0.15	0.15	0.15			
pH		6.67	6.44	6.33	6.29	6.28	6.27			
Conductivity (mS/cm)		0.249	0.250	0.249	0.249	0.249	0.248			
Turbidity (NTU)		3.38	2.52	2.24 1.58 pH	2.14	2.75	2.48			
Disssolved Oxygen (mg/L)		1.84	1.66	1.58	1.52	1.49	1.46			
Temperature (°C)		14.4	14.6	14.7	14.9	15.1	15.1			
ORP/eH (mV)		115.0	110.0	105.0	100.5	98.2	95.5			
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear	clear	clear			BH

Sample Identification: 2141-008 / 2141-009 (dup)

Time Sampled: 1242 / 1247

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	6
✓ Total Chromium	2
✓ Other	HD 16

Comments: Pump @ 75 ft bgs

Ground Water Purge and Sampling Form

Well Identification	MW-14
Well Diameter (inches)	4
Well Monument Locked and Good Condition?	N
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	126

Site Location: Boomsnub Date: 10/12/21

Project Number: 1611303 Personnel: HD, BH

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ✓ Redi-flo Pump ~~(Ded)~~ ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: 52°, cloudy

Well Volume Calculation: 2"=.16, 3"=.64, 6"=1.44 gallons

Time	1100	1103	1106	1109	1112	1115	1118	1121	collect	Sample
Depth to Ground water (ft btoc)	19.20	19.28	19.28	19.28	19.28	19.28	19.28	19.28		
Total Groundwater Purged(gallons, liters, other)	—	1.0	2.0	3.0	4.0	5.0	6.0	7.0		
Purge Rate (gpm, ft³/min, ml/min, other)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2		
pH		7.35	6.88	6.80	6.72	6.67	6.63	6.61		
Conductivity (mS/cm)		0.271	0.276	0.277	0.276	0.276	0.276	0.276		
Turbidity (NTU)		328.19	46.24	13.41	5.97	4.22	3.54	3.20		
Disssolved Oxygen (mg/L)		3.06	2.54	2.94	3.57	3.64	3.93	4.19		
Temperature (°C)		14.6	14.5	14.4	14.4	14.3	14.4	14.3		
ORP/eH (mV)		6.8	8.1	12.9	~~18.8~~ 16.78	20.78	22.90	28.25		
Color of Purged Water (gray, brown, red, clear)	clear	black	clear	clear	clear	clear	clear	clear		BH

Sample Identification: 214-010

Time Sampled: 1126

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	3
✓ Total Chromium	1
✓ Other	8

Comments: Pump @ 120 ft bgs

Ground Water Purge and Sampling Form

Well Identification	MW-15E	Site Location: Boomsnub						Date: 10/13/2021		
Well Diameter (inches)	4	Project Number: 1611303						Personnel: RR, HH		
Well Monument Locked and Good Condition?	Y	Purge Method: ✓ Low Flow		___ Conventional		___ None				
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D	Purge Equipment: ___ Extraction Well		___ Redi-flo Pump (Ded)		✓ Other				
Well Casing Plug Locked and Good Condition?	Y	Sampling Equipment: ___ Extraction Well		✓ Redi-flo Pump		___ Diffusion Bag				
PID Reading in Well (ppm)	—	Weather Conditions: 43°F, cloudy								
Well Total Depth (ft btoc)	107.23	Begin Purge: 1034					Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons			
Time	1027	1039	1044	1049	1054	1059				
Depth to Ground water (ft btoc)	16.65	16.79	16.79	16.79	16.79	16.79	Stabilized			
Total Groundwater Purged(gallons, liters, other)		1.5	3.0	4.5	6.0	7.5				
Purge Rate (gpm, ft³/min, ml/min, other)		300	300	300	300	300				
pH ±0.2		6.92	6.85	6.79	6.75	6.73				
Conductivity (mS/cm) ±10%		0.258	0.257	0.257	0.258	0.258				
Turbidity (NTU) ±10% or <20		7.85	6.54	5.83	5.44	5.14	HH 10/13/2021			
Disssolved Oxygen (mg/L) ±10% or ±0.1		5.91	6.03	5.90	5.70	5.64				
Temperature (°C)		14.4	14.5	14.6	14.6	14.6				
ORP/eH (mV) ±10		85.7	88.0	93.7	96.8	100.5				
Color of Purged Water (gray, brown, red, clear)		clear	clear	clear	clear	clear				

Sample Identification: 2141-011	Analysis	# of Bottles	Comments:
Time Sampled: 1104	✓ VOCs by 8260C	3	
	✓ Total Chromium	1	
Purge water disposed To: Boomsnub	___ Other		

Ground Water Purge and Sampling Form

Well Identification	MW-19D
Well Diameter (inches)	4
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	—
Well Total Depth (ft btoc)	92.2

Site Location: Boomsnub Date: 6/13/2021

Project Number: 1611303 Personnel: HH, RR

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ___ Redi-flo Pump (Ded) ✓ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: 46°F, cloudy, drizzle

Begin Purge: 0924

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	0901	0929	0934	0939	0944	0949	0954	0959		
Depth to Ground water (ft btoc)	11.51	11.60	11.61	11.61	11.61	11.61	11.61	11.61		
Total Groundwater Purged(gallons, liters, other)		1.5	3.0	4.5	6.0	7.5	9.0	10.5		
Purge Rate (gpm, ft³/min, ml/min, other)		300	300	300	300	300	300	300		
pH ±0.2		6.37	6.53	6.62	6.69	6.76	6.79	6.79		
Conductivity (mS/cm) ±10%		0.362	0.366	0.355	0.350	0.345	0.342	0.341		
Turbidity (NTU) ±10% or <20		20.74	19.08	19.55	13.17	14.54	7.09	9.10		
Disssolved Oxygen (mg/L) ±10% or ±0.1		1.44	0.84	0.72	0.58	0.50	0.44	0.43		
Temperature (°C)		12.6	12.8	12.8	13.2	13.2	12.9	12.8		
ORP/eH (mV) ±10		122.0	13.1	9.4	7.3	6.1	8.0	8.5		
Color of Purged Water (gray, brown, red, clear)		clear	clear	clear	clear	clear	clear	clear		

Stabil. 1.2 HH 6/13/2021

Sample Identification: 2141-012 MS/MSD

Time Sampled: 1004

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	9
✓ Total Chromium	3
✓ Other	24

Comments: MS/MSD

some drift in flow cell causing higher turbidity initially

Ground Water Purge and Sampling Form

Well Identification	MW-200
Well Diameter (inches)	4
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	—
Well Total Depth (ft btoc)	87

Site Location: Boomsnub Date: 10/12/2021

Project Number: 1611303 Personnel: HH, RR

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ___ Redi-flo Pump (Ded) ✓ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: Mostly cloudy 51°F

Begin Purge: 1400 Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1356	1405	1410	1415	1420	1425	1430	1435	1440	1445	1450
Depth to Ground water (ft btoc)	22.83	23.00	23.01	23.01	23.01	23.01	23.01	23.01	23.01	23.01	23.01
Total Groundwater Purged(gallons, liters, other)		1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0
Purge Rate (gpm, ft³/min, ml/min, other)		300	300	300	300	300	300	300	300	300	300
pH ±0.2		7.60	7.43	7.29	7.14	7.07	7.03	6.98	6.93	6.90	6.88
Conductivity (mS/cm) ±10%		0.523	0.497	0.464	0.427	0.423	0.411	0.394	0.375	0.369	0.366
Turbidity (NTU) <20 or ±10%		49.43	44.89	46.02	43.14	37.06	33.63	27.74	27.03	25.55	26.56
Disssolved Oxygen (mg/L) ±10% or ±0.1		0.82	0.59	0.57	0.63	0.63	0.67	0.75	0.83	0.85	0.88
Temperature (°C)		13.9	14.0	14.1	14.2	14.2	14.2	14.3	14.2	14.3	14.3
ORP/eH (mV) ±10		60.8	22.6	15.0	20.7	23.9	27.9	32.5	38.6	41.2	45.5
Color of Purged Water (gray, brown, red, clear)		cloudy	cloudy	cloudy	cloudy	cloudy	cloudy	cloudy	cloudy	cloudy	cloudy

Stabilized

Sample Identification: 2141-013

Time Sampled: 1454

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	3
✓ Total Chromium	1
✓ Other	89 HH 10/12/2021

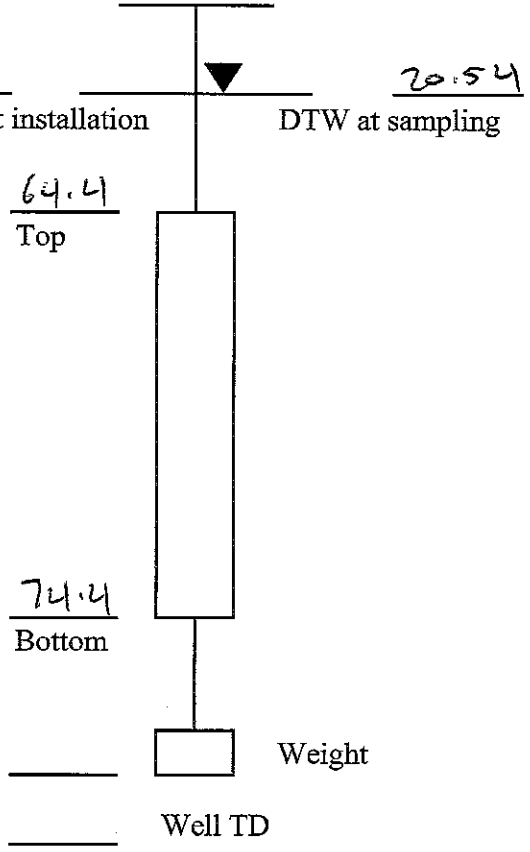
Comments:
Metals, Pb, Fe, Anion, DOC, COD, D.Ss gas
Turb > 20 NTU
add 1 bottle filtered for Tcr
Filtered Metals scan bottle

Passive Diffusion Bag Sampling Form

Well Identification: MW-21D

Depth (BTOC)

DTW at installation: _____ DTW at sampling: 20.54



Site Location: Boomsnub

Project Number: _____

Well Diameter: _____

PDB Installation Date: _____ Time: _____

Sample Information

Sample No: 2141-065

Sample Date: 10/13/21 Time: 0907

Sampling Personnel: HD, BH

Analyses: VOC

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? N

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing): WBC

Well Casing Plug Locked and in Good Condition? Y

Comments: None.

Passive Diffusion Bag Sampling Form

Well Identification: MW-23D

Depth (BTOC)

DTW at installation: _____

DTW at sampling: 21.09

71.86 Top

86.86 Bottom

Weight: _____

Well TD: _____

Site Location: Boomsnub

Project Number: _____

Well Diameter: _____

PDB Installation Date: _____ Time: _____

Sample Information

Sample No: 2141-066

Sample Date: 10/13/21 Time: 0855

Sampling Personnel: HD, BH

Analyses: VOC

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? N

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : WBC

Well Casing Plug Locked and in Good Condition? N BH Y

Comments: no bolts

Ground Water Purge and Sampling Form

Well Identification	MW-33
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	215

Site Location: Boomsnub Date: 10/12/21

Project Number: 1611303 Personnel: HD, BH

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ✓ Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: 54°, overcast

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1527	1531	1534	1537	1540	1543	1547	Collect sample	
Depth to Ground water (ft btoc)	134.66	134.68	134.68	134.68	134.68	134.68			
Total Groundwater Purged(gallons, liters, other)	0.0	0.6	1.2	1.8	2.4	3.0			
Purge Rate (gpm, ft³/min, ml/min, other)	200	200	200	200	200	200			
pH		6.58	6.50	6.51	6.53	6.56			
Conductivity (mS/cm)		0.283	0.288	0.285	0.293	0.296			
Turbidity (NTU)		5.40	3.79	3.25	2.75	2.45			
Disssolved Oxygen (mg/L)		5.31	4.06	3.72	3.47	3.40			
Temperature (°C)		12.1	12.1	12.1	12.2	12.2			
ORP/eH (mV)		159.0	160.4	158.9	157.4	155.5			
Color of Purged Water (gray, brown, red, clear)		Clear	Clear	Clear	Clear	Clear			

Sample Identification: 2141-003

Time Sampled: 1547

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	3
— Total Chromium	0
— Other	0

Comments: Pump @ 210' ~~bgs~~ btoc

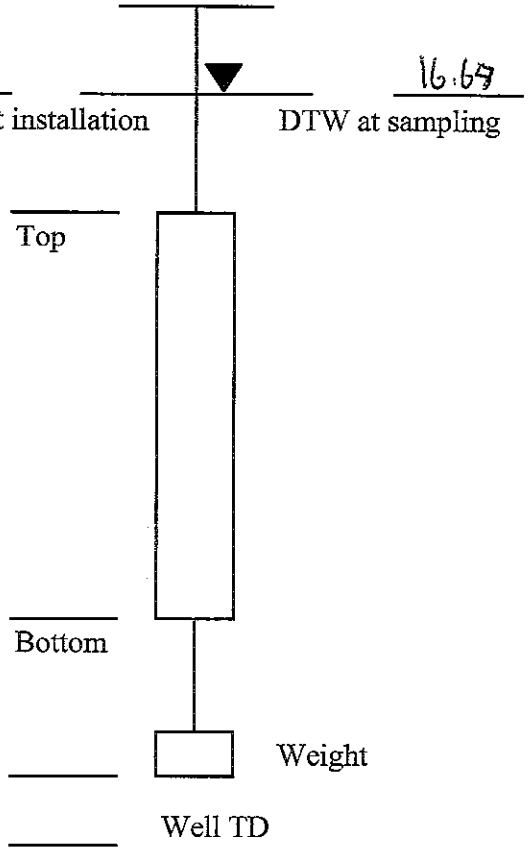
Passive Diffusion Bag Sampling Form

Well Identification: MW-38

Depth (BTOC)

DTW at installation: _____

DTW at sampling: 16.69



Site Location: Boomsnub

Project Number: _____

Well Diameter: _____

PDB Installation Date: _____ Time: _____

Sample Information

Sample No: 2141-067

Sample Date: 10/13/21 Time: 0928

Sampling Personnel: HD, BH

Analyses: VOC

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? X

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : WBC

Well Casing Plug Locked and in Good Condition? Y

Comments: None

Ground Water Purge and Sampling Form

Well Identification	MW-40
Well Diameter (inches)	2
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WAC
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	—
Well Total Depth (ft btoc)	66

Site Location: Boomsnub Date: 10/12/2021

Project Number: 1611303 Personnel: HH, RR

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ___ Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: 48°F, cloudy

Begin Purge: 1155

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1142	1200	1205	1210	1215	1220	1225	1230		
Depth to Ground water (ft btoc)	18.97	19.27	19.27	19.27	19.27	19.27	19.27	19.27		
Total Groundwater Purged(gallons, liters, other)		2.0	4.0	6.0	8.0	10.0	12.0	14.0	Stabilized	
Purge Rate (gpm, ft³/min, ml/min, other)	4	400	400	400	400	400	400	400		
pH ±0.2		7.09	6.82	6.66	6.53	6.46	6.42	6.39		
Conductivity (mS/cm) ±10%		0.256	0.255	0.255	0.256	0.256	0.257	0.256		
Turbidity (NTU) <20 or ±10%		23.95	13.91	8.68	6.07	5.27	4.70	4.75	HH 10/12/2021	
Disssolved Oxygen (mg/L) ±10% or ±0.1		3.82	3.49	3.37	3.30	3.26	3.25	3.23		
Temperature (°C)		15.0	15.2	15.3	15.3	15.4	15.4	15.5		
ORP/eH (mV) ±10		71.5	81.7	91.3	101.7	107.8	111.0	113.5		
Color of Purged Water (gray, brown, red, clear)		cloudy	clear	clear	clear	clear	clear	clear		

Sample Identification: 2141-014

Time Sampled: 1235

DUP: 2141-015

Time: 1239

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	3
✓ Total Chromium	1
— Other	0

Comments: DUP ID: 2141-015

Time: 1239

VOC, TCR

Bailed

Ground Water Purge and Sampling Form

Well Identification	PW-18
Well Diameter (inches)	6
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	—
Well Total Depth (ft btoc)	58

Site Location: Boomsnub Date: 10/12/2021

Project Number: 1611303 Personnel: HH, RR

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ___ Redi-flo Pump (Ded) ✓ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: Cloudy, 41°F

Begin Purge 0942

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	0935	0947	0952	0957	1002					
Depth to Ground water (ft btoc)	25.17	25.31	25.31	25.31	25.31	Stabilized				
Total Groundwater Purged(gallons, liters, other)		1.5	3.0	4.5	6.0					
Purge Rate (gpm, ft³/min, ml/min, other)		300	300	300	300					
pH ±0.2		6.04	6.29	6.28	6.26		HH 10/12/2021			
Conductivity (mS/cm) ±10%		0.151	0.148	0.148	0.148					
Turbidity (NTU) <10 or ±10%		3.76	3.53	3.46	3.34					
Disssolved Oxygen (mg/L) ±10% or ±0.1		2.92	2.51	2.44	2.45					
Temperature (°C)		14.7	15.0	15.0	15.0					
ORP/eH (mV) ±10		192.2	165.8	163.0	161.2					
Color of Purged Water (gray, brown, red, clear)		clear	clear	clear	clear					

Sample Identification: 2141-042

Time Sampled: 1007

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	3
✓ Total Chromium	1
— Other	0

Comments: None

Ground Water Purge and Sampling Form

Well Identification	PZ-39
Well Diameter (inches)	2
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WAC
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	—
Well Total Depth (ft btoc)	91.2

Site Location: Boomsnub Date: 10/12/2021

Project Number: 1611303 Personnel: HH, RR

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ___ Redi-flo Pump (Ded) ✓ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: 48°F, Cloudy

Begin Purge 1044

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1039	1049	1054	1059	1104	1109	1114			
Depth to Ground water (ft btoc)	18.01	18.11	18.11	18.11	18.11	18.11	18.11	Stabilized		
Total Groundwater Purged(gallons, ~~liters~~, ~~other~~)		1.5	3.0	4.5	6.0	7.5	9.0			
Purge Rate (gpm, ft³/min, ~~ml/min~~, ~~other~~)		300	300	300	300	300	300			
pH ±0.2		6.99	7.52	7.69	7.74	7.76	7.79			
Conductivity (mS/cm) ±10%		0.534	0.550	0.553	0.553	0.554	0.554			
Turbidity (NTU) <20 or ±10%		50.67	26.67	10.77	5.78	4.13	3.70	HH 10/12/2021		
Disssolved Oxygen (mg/L) ±10% or ±0.1		1.31	0.71	0.65	0.56	0.50	0.48			
Temperature (°C)		14.1	14.5	14.4	14.5	14.6	14.6			
ORP/eH (mV) ±10		-65.7	-88.1	-89.1	-91.3	-90.4	-89.4			
Color of Purged Water (gray, brown, red, clear)		cloudy	cloudy	clear	clear	clear	clear			

Sample Identification: 2141-016

Time Sampled: 1119

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	3
— Total Chromium	0
✓ Other	8

Comments: Metal Scan, Diss. Iron, Anion Sem, DOC, COD, Diss. Gases

Bailed

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Appendix D

Monthly Data Quality Assurance/Quality Control Summary of Groundwater Data/Validation Report

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DATA VALIDATION REPORT
SAMPLE DELIVERY GROUP NO. K2112064

PROJECT NO: 1611310.2
PROJECT NAME: Boomsnub/Airco Superfund Site
LABORATORY: ALS Environmental, Kelso, Washington
REVIEWER: Brenda O. Nuding, Project Chemist
DATE: 16 February 2022

Date(s) Collected	11 through 13 October 2021			
Sample Delivery Group No.	K2112064			
ANALYSIS (METHOD)	Water Sample(s)	Equipment Blank(s)	Trip Blank(s)	Field Duplicate(s)
Volatile organic compounds (SW8260C)	10	3	1	1
Chromium (SW602A)	10	3	0	1

The analytical data were reviewed with respect to quality assurance and quality control (QA/QC) parameters as specified in the *Quality Assurance and Sampling Plan for the Groundwater Treatment System Operation and Maintenance at Boomsub/Airco Superfund Site, Hazel Dell, Washington* (EA, 2019). In addition, the following guidance documents were used while assessing the validity of these data: the U.S. Environmental Protection Agency (USEPA) Contract Laboratory Program, *National Functional Guidelines for Inorganic Superfund Data Review*, January 2017, and *National Functional Guidelines for Organic Superfund Methods Data Review*, January 2017; and the USEPA Office of Solid Waste, *SW-846 Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods*, April 1998 and the associated updates. As applicable to referenced methodology, QA/QC parameters reviewed include:

- Chain-of-custody/ Sample receipt
- Holding times
- Instrument performance checks
- Initial and continuing calibrations
- Method and calibration blanks
- Interference check samples
- Laboratory control samples (LCSs)
- Surrogate recovery
- Matrix spike (MS), matrix spike duplicate, and laboratory replicate samples
- Field QC samples
- Serial dilution
- Internal standards
- Target compound identification
- Compound quantitation
- Data qualifiers

SAMPLE DELIVERY GROUP	K2112064

Chain-of-custody/Sample Receipt:
The sample cooler(s) and the samples contained within were received intact at the laboratory with the proper chemical preservatives at temperatures below 6 degrees Celsius. No qualification of sample data is necessary on the condition at sample receipt or chain of custody.

Holding Times:
The project samples were prepared and analyzed within the holding times specified by the referenced methods of analysis.

Instrument Performance Check:
Instrument performance checks are performed to ensure mass resolution, identification, and sensitivity. The instrument performance check results associated with samples from this sample delivery group (SDG) are within the method-established QC limits.

Initial and Continuing Calibrations:
Initial and continuing calibrations were performed at the required frequencies. The results for target analytes are within the laboratory and project-established QC limits, or the indicated bias is high, and the associated sample results are nondetectable, with the following exception.

Percent differences were reported above QC limits (<20%) for three compounds for one of the continuing calibration verification standards associated with project samples. The results for the samples associated with this standard are nondetectable; therefore, no qualification has been performed on the basis of potential high bias.

Method and Calibration Blanks:
Method and calibration blanks were prepared and analyzed as recommended by the referenced method. The results for the method and calibration blank samples are nondetectable.

Interference Check Samples:
Inductively coupled plasma (ICP) interference check samples (ICSA/ICSAB) verify the interelement and background correction factors. ICSA/ICSAB standards were analyzed at the beginning of each analytical sequence. The ICSAB standard associated with samples from this SDG are within the laboratory and project-established QC limits.

Laboratory Control Samples:
LCSs were prepared and analyzed as recommended by the referenced USEPA method. The percent recoveries (%R) and relative percent differences (RPDs) for LCSs are within the laboratory and project-established QC limits for the analytical batches containing the samples from this SDG.

Surrogate Recovery:
Surrogates were added to environmental and QC samples and standards for analysis of organic compounds as required by the referenced methodology. The surrogate %Rs are within the laboratory and project-established QC limits.

SAMPLE DELIVERY GROUP	K2112064

Matrix Spikes / Matrix Spike Duplicates / Laboratory Replicates:
The results for matrix spikes and laboratory replicate samples were reviewed. No matrix spikes or duplicates were prepared for volatile organic compounds in this SDG. The %Rs and RPDs for these QC samples are within the laboratory and project-established QC limits.

Field Quality Control Samples:

Field Duplicate(s): One field duplicate was collected with this SDG. The analytical results reported for the duplicate were compared those for the primary samples. The RPDs for field duplicate results greater than the associated reporting limits are less than 25 percent.

Trip Blank(s): One trip blank was collected with this SDG (sample ID 2141-072). The analytical results for the trip blank samples are below the RLs and method detection limits.

Equipment Rinsate Blank(s): Three equipment rinsate blank were collected with this SDG (sample IDs 2141-068, 2141-069, and 2141-070). The analytical results for these blank samples are below the RLs and MDLs, with the exception of low-level detections of chromium. Because the results for the associated samples are greater than 10 times the amounts reported for the equipment blanks, no qualification of sample results has been performed due to equipment blank results.

Serial Dilution:
The ICP serial dilution determines whether significant physical or chemical interferences exist due to sample matrix. Serial dilution was performed at a minimum rate of one per 20 samples per matrix. The percent difference for the serial dilution results were within the laboratory and project-established QC limits for the analytical batches containing the samples from this SDG.

Internal Standards:
Internal standards were added to environmental and QC samples and standards to monitor sensitivity and response during every analytical run, as appropriate for the analytical method. The internal standard area counts and retention times were within the method-specified control limits.

Target Compound Identification:
Organic analysis performed by gas chromatograph mass spectrometry methods requires reporting mass spectra comparison to verify compound identification. For project samples, mass spectra criteria were within method-specified criteria for the detectable target analytes.

Compound Quantitation:
The reported quantitation results and reported detection limits were reviewed and found to be accurate and to meet project requirements.

Data Qualifiers:
The appropriate data flags were used and defined in the analytical report. During data validation, no additional qualifiers have been applied to data.

Summary:
The analytical data contained in this report have been reviewed for completeness, accuracy, and precision. The data as qualified meet the quality objectives for the intended use.

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MW-6D

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2112064
Project:	Boomsnub/1611303	**Date Collected:**	10/11/21 12:25
Sample Matrix:	Ground Water	**Date Received:**	10/13/21 16:45
Sample Name:	2141-033	**Basis:**	NA
Lab Code:	K2112064-001		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Chromium	6020A	**17.2**	ug/L	0.20	0.03	1	10/26/21 17:14	10/20/21	

Renewed 2/14/2022 JC

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dba ALS Environmental

Analytical Report

MW-6 DA
duplicate

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2112064
Project:	Boomsnub/1611303	**Date Collected:**	10/11/21 11:04
Sample Matrix:	Ground Water	**Date Received:**	10/13/21 16:45
Sample Name:	2141-030	**Basis:**	NA
Lab Code:	K2112064-002		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Chromium	6020A	**65.4**	ug/L	0.20	0.03	1	10/26/21 17:21	10/20/21	

Renewed 2/14/22
JB

ALS Group USA, Corp.
dba ALS Environmental

MW-6C

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2112064
Project:	Boomsnub/1611303	**Date Collected:**	10/11/21 11:54
Sample Matrix:	Ground Water	**Date Received:**	10/13/21 16:45
Sample Name:	2141-032	**Basis:**	NA
Lab Code:	K2112064-003		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Chromium	6020A	**23.8**	ug/L	0.20	0.03	1	10/26/21 17:23	10/20/21	

Reviewed
2/14/22
RF

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Equipment Blank

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2112064
Project:	Boomsnub/1611303	**Date Collected:**	10/11/21 16:42
Sample Matrix:	Ground Water	**Date Received:**	10/13/21 16:45
Sample Name:	2141-068	**Basis:**	NA
Lab Code:	K2112064-004		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Chromium	6020A	**0.29**	ug/L	0.20	0.03	1	10/26/21 17:24	10/20/21	

Reviewed 2/16/22
BC

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dba ALS Environmental

MW-10B

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2112064
Project:	Boomsnub/1611303	**Date Collected:**	10/11/21 14:45
Sample Matrix:	Ground Water	**Date Received:**	10/13/21 16:45
Sample Name:	2141-038	**Basis:**	NA
Lab Code:	K2112064-005		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Chromium	6020A	**116**	ug/L	0.20	0.03	1	10/26/21 17:28	10/20/21	

Reviewed 2/16/22
BG

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dba ALS Environmental

MW-13C

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2112064
Project:	Boomsnub/1611303	**Date Collected:**	10/11/21 15:25
Sample Matrix:	Ground Water	**Date Received:**	10/13/21 16:45
Sample Name:	2141-041	**Basis:**	NA
Lab Code:	K2112064-006		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Chromium	6020A	**43.2**	ug/L	0.20	0.03	1	10/26/21 17:29	10/20/21	

Reviewed 2/16/22

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dba ALS Environmental

MW-6A

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2112064
Project:	Boomsnub/1611303	**Date Collected:**	10/11/21 10:59
Sample Matrix:	Ground Water	**Date Received:**	10/13/21 16:45
Sample Name:	2141-029	**Basis:**	NA
Lab Code:	K2112064-007		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Chromium	6020A	**68.1**	ug/L	0.20	0.03	1	10/26/21 17:31	10/20/21	

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MW-6B

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2112064
Project:	Boomsnub/1611303	**Date Collected:**	10/11/21 13:16
Sample Matrix:	Ground Water	**Date Received:**	10/13/21 16:45
Sample Name:	2141-031	**Basis:**	NA
Lab Code:	K2112064-008		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Chromium	6020A	**35.4**	ug/L	0.20	0.03	1	10/26/21 17:32	10/20/21	

Reviewed 2/14/22 BC

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MW-10C

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2112064
Project:	Boomsnub/1611303	**Date Collected:**	10/11/21 14:15
Sample Matrix:	Ground Water	**Date Received:**	10/13/21 16:45
Sample Name:	2141-039	**Basis:**	NA
Lab Code:	K2112064-009		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Chromium	6020A	**74.5**	ug/L	0.20	0.03	1	10/26/21 17:34	10/20/21	

Reviewed
2/16/22
BF

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Equipment Blank

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2112064
Project:	Boomsnub/1611303	**Date Collected:**	10/12/21 16:22
Sample Matrix:	Ground Water	**Date Received:**	10/13/21 16:45
Sample Name:	2141-069	**Basis:**	NA
Lab Code:	K2112064-010		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Chromium	6020A	**0.59**	ug/L	0.20	0.03	1	10/26/21 17:35	10/20/21	

Reviewed 2/10/22

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MW-40C

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2112064
Project:	Boomsnub/1611303	**Date Collected:**	10/12/21 12:35
Sample Matrix:	Ground Water	**Date Received:**	10/13/21 16:45
Sample Name:	2141-014	**Basis:**	NA
Lab Code:	K2112064-011		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Chromium	6020A	**131**	ug/L	0.20	0.03	1	10/26/21 17:36	10/20/21	

Reviewed 2/10/22
DL

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dba ALS Environmental

MW-7C

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2112064
Project:	Boomsnub/1611303	**Date Collected:**	10/12/21 15:57
Sample Matrix:	Ground Water	**Date Received:**	10/13/21 16:45
Sample Name:	2141-034	**Basis:**	NA
Lab Code:	K2112064-012		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Chromium	6020A	**8.50**	ug/L	0.20	0.03	1	10/26/21 17:38	10/20/21	

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Equipment Blank

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2112064
Project:	Boomsnub/1611303	**Date Collected:**	10/13/21 12:31
Sample Matrix:	Ground Water	**Date Received:**	10/13/21 16:45
Sample Name:	2141-070	**Basis:**	NA
Lab Code:	K2112064-013		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Chromium	6020A	**0.89**	ug/L	0.20	0.03	1	10/26/21 17:39	10/20/21	

Reviewed 2/16/22 BB

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MW-15E

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2112064
Project:	Boomsnub/1611303	**Date Collected:**	10/13/21 11:04
Sample Matrix:	Ground Water	**Date Received:**	10/13/21 16:45
Sample Name:	2141-011	**Basis:**	NA
Lab Code:	K2112064-014		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Chromium	6020A	**10.5**	ug/L	0.20	0.03	1	10/26/21 17:40	10/20/21	

Reviewed 2/16/22

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MW-6D

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2112064
Project:	Boomsnub/1611303	**Date Collected:**	10/11/21 12:25
Sample Matrix:	Ground Water	**Date Received:**	10/13/21 16:45
Sample Name:	2141-033	**Units:**	ug/L
Lab Code:	K2112064-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Bromodichloromethane	ND U	0.50	0.091	1	10/18/21 18:05	
Carbon Tetrachloride	ND U	0.50	0.096	1	10/18/21 18:05	
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	10/18/21 18:05	
Dibromochloromethane	ND U	0.50	0.14	1	10/18/21 18:05	
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	10/18/21 18:05	
1,1-Dichloroethene	ND U	0.50	0.080	1	10/18/21 18:05	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	10/18/21 18:05	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	10/18/21 18:05	
Hexachlorobutadiene	ND U	2.0	0.11	1	10/18/21 18:05	
Methylene Chloride	ND U	2.0	0.10	1	10/18/21 18:05	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	10/18/21 18:05	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	10/18/21 18:05	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	10/18/21 18:05	
Trichloroethene (TCE)	**0.48 J**	0.50	0.10	1	10/18/21 18:05	
Trichlorofluoromethane (CFC 11)	ND U	0.50	0.12	1	10/18/21 18:05	
Vinyl Chloride	ND U	0.50	0.075	1	10/18/21 18:05	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	95	68 - 117	10/18/21 18:05	
Dibromofluoromethane	101	73 - 122	10/18/21 18:05	
Toluene-d8	98	65 - 144	10/18/21 18:05	

Reviewed 2/10/2022
BF

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dba ALS Environmental

MW-6 D[BR] A
Duplicate

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2112064
Project:	Boomsnub/1611303	**Date Collected:**	10/11/21 11:04
Sample Matrix:	Ground Water	**Date Received:**	10/13/21 16:45
Sample Name:	2141-030	**Units:**	ug/L
Lab Code:	K2112064-002	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Bromodichloromethane	ND U	0.50	0.091	1	10/18/21 18:28	
Carbon Tetrachloride	ND U	0.50	0.096	1	10/18/21 18:28	
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	10/18/21 18:28	
Dibromochloromethane	ND U	0.50	0.14	1	10/18/21 18:28	
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	10/18/21 18:28	
1,1-Dichloroethene	ND U	0.50	0.080	1	10/18/21 18:28	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	10/18/21 18:28	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	10/18/21 18:28	
Hexachlorobutadiene	ND U	2.0	0.11	1	10/18/21 18:28	
Methylene Chloride	ND U	2.0	0.10	1	10/18/21 18:28	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	10/18/21 18:28	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	10/18/21 18:28	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	10/18/21 18:28	
Trichloroethene (TCE)	ND U	0.50	0.10	1	10/18/21 18:28	
Trichlorofluoromethane (CFC 11)	ND U	0.50	0.12	1	10/18/21 18:28	
Vinyl Chloride	ND U	0.50	0.075	1	10/18/21 18:28	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	68 - 117	10/18/21 18:28	
Dibromofluoromethane	103	73 - 122	10/18/21 18:28	
Toluene-d8	98	65 - 144	10/18/21 18:28	

Reviewed 2/16/2022

MW-6C

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Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2112064
Project:	Boomsnub/1611303	**Date Collected:**	10/11/21 11:54
Sample Matrix:	Ground Water	**Date Received:**	10/13/21 16:45
Sample Name:	2141-032	**Units:**	ug/L
Lab Code:	K2112064-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Bromodichloromethane	ND U	0.50	0.091	1	10/18/21 18:51	
Carbon Tetrachloride	ND U	0.50	0.096	1	10/18/21 18:51	
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	10/18/21 18:51	
Dibromochloromethane	ND U	0.50	0.14	1	10/18/21 18:51	
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	10/18/21 18:51	
1,1-Dichloroethene	ND U	0.50	0.080	1	10/18/21 18:51	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	10/18/21 18:51	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	10/18/21 18:51	
Hexachlorobutadiene	ND U	2.0	0.11	1	10/18/21 18:51	
Methylene Chloride	ND U	2.0	0.10	1	10/18/21 18:51	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	10/18/21 18:51	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	10/18/21 18:51	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	10/18/21 18:51	
Trichloroethene (TCE)	**0.47 J**	0.50	0.10	1	10/18/21 18:51	
Trichlorofluoromethane (CFC 11)	ND U	0.50	0.12	1	10/18/21 18:51	
Vinyl Chloride	ND U	0.50	0.075	1	10/18/21 18:51	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	68 - 117	10/18/21 18:51	
Dibromofluoromethane	101	73 - 122	10/18/21 18:51	
Toluene-d8	98	65 - 144	10/18/21 18:51	

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Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2112064
Project:	Boomsnub/1611303	**Date Collected:**	10/11/21 16:42
Sample Matrix:	Ground Water	**Date Received:**	10/13/21 16:45
Sample Name:	2141-068	**Units:**	ug/L
Lab Code:	K2112064-004	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Bromodichloromethane	ND U	0.50	0.091	1	10/18/21 19:13	
Carbon Tetrachloride	ND U	0.50	0.096	1	10/18/21 19:13	
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	10/18/21 19:13	
Dibromochloromethane	ND U	0.50	0.14	1	10/18/21 19:13	
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	10/18/21 19:13	
1,1-Dichloroethene	ND U	0.50	0.080	1	10/18/21 19:13	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	10/18/21 19:13	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	10/18/21 19:13	
Hexachlorobutadiene	ND U	2.0	0.11	1	10/18/21 19:13	
Methylene Chloride	ND U	2.0	0.10	1	10/18/21 19:13	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	10/18/21 19:13	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	10/18/21 19:13	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	10/18/21 19:13	
Trichloroethene (TCE)	ND U	0.50	0.10	1	10/18/21 19:13	
Trichlorofluoromethane (CFC 11)	ND U	0.50	0.12	1	10/18/21 19:13	
Vinyl Chloride	ND U	0.50	0.075	1	10/18/21 19:13	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	68 - 117	10/18/21 19:13	
Dibromofluoromethane	102	73 - 122	10/18/21 19:13	
Toluene-d8	98	65 - 144	10/18/21 19:13	

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MW-10B

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2112064
Project:	Boomsnub/1611303	**Date Collected:**	10/11/21 14:45
Sample Matrix:	Ground Water	**Date Received:**	10/13/21 16:45
Sample Name:	2141-038	**Units:**	ug/L
Lab Code:	K2112064-005	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Bromodichloromethane	ND	U	0.50	0.091	1	10/18/21 19:36	
Carbon Tetrachloride	ND	U	0.50	0.096	1	10/18/21 19:36	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	10/18/21 19:36	
Dibromochloromethane	ND	U	0.50	0.14	1	10/18/21 19:36	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.080	1	10/18/21 19:36	
1,1-Dichloroethene	ND	U	0.50	0.080	1	10/18/21 19:36	
cis-1,2-Dichloroethene	ND	U	0.50	0.067	1	10/18/21 19:36	
trans-1,2-Dichloroethene	ND	U	0.50	0.072	1	10/18/21 19:36	
Hexachlorobutadiene	ND	U	2.0	0.11	1	10/18/21 19:36	
Methylene Chloride	ND	U	2.0	0.10	1	10/18/21 19:36	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.16	1	10/18/21 19:36	
Tetrachloroethene (PCE)	**0.25**	**J**	0.50	0.099	1	10/18/21 19:36	
1,1,1-Trichloroethane (TCA)	**0.12**	**J**	0.50	0.075	1	10/18/21 19:36	
Trichloroethene (TCE)	**1.4**		0.50	0.10	1	10/18/21 19:36	
Trichlorofluoromethane (CFC 11)	**1.2**		0.50	0.12	1	10/18/21 19:36	
Vinyl Chloride	ND	U	0.50	0.075	1	10/18/21 19:36	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	96	68 - 117	10/18/21 19:36	
Dibromofluoromethane	98	73 - 122	10/18/21 19:36	
Toluene-d8	97	65 - 144	10/18/21 19:36	

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MW-13C

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2112064
Project:	Boomsnub/1611303	**Date Collected:**	10/11/21 15:25
Sample Matrix:	Ground Water	**Date Received:**	10/13/21 16:45
Sample Name:	2141-041	**Units:**	ug/L
Lab Code:	K2112064-006	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Bromodichloromethane	ND U	0.50	0.091	1	10/19/21 12:59	*
Carbon Tetrachloride	ND U	0.50	0.096	1	10/19/21 12:59	*
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	10/19/21 12:59	
Dibromochloromethane	ND U	0.50	0.14	1	10/19/21 12:59	*
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	10/19/21 12:59	
1,1-Dichloroethene	ND U	0.50	0.080	1	10/19/21 12:59	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	10/19/21 12:59	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	10/19/21 12:59	
Hexachlorobutadiene	ND U	2.0	0.11	1	10/19/21 12:59	
Methylene Chloride	ND U	2.0	0.10	1	10/19/21 12:59	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	10/19/21 12:59	
Tetrachloroethene (PCE)	**0.63**	0.50	0.099	1	10/19/21 12:59	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	10/19/21 12:59	
Trichloroethene (TCE)	**1.3**	0.50	0.10	1	10/19/21 12:59	
Trichlorofluoromethane (CFC 11)	ND U	0.50	0.12	1	10/19/21 12:59	
Vinyl Chloride	ND U	0.50	0.075	1	10/19/21 12:59	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	81	68 - 117	10/19/21 12:59	
Dibromofluoromethane	95	73 - 122	10/19/21 12:59	
Toluene-d8	102	65 - 144	10/19/21 12:59	

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Analytical Report

MW-6A duplicate

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2112064
Project:	Boomsnub/1611303	**Date Collected:**	10/11/21 10:59
Sample Matrix:	Ground Water	**Date Received:**	10/13/21 16:45
Sample Name:	2141-029	**Units:**	ug/L
Lab Code:	K2112064-007	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Bromodichloromethane	ND U	0.50	0.091	1	10/19/21 13:26	*
Carbon Tetrachloride	ND U	0.50	0.096	1	10/19/21 13:26	*
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	10/19/21 13:26	
Dibromochloromethane	ND U	0.50	0.14	1	10/19/21 13:26	*
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	10/19/21 13:26	
1,1-Dichloroethene	ND U	0.50	0.080	1	10/19/21 13:26	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	10/19/21 13:26	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	10/19/21 13:26	
Hexachlorobutadiene	ND U	2.0	0.11	1	10/19/21 13:26	
Methylene Chloride	ND U	2.0	0.10	1	10/19/21 13:26	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	10/19/21 13:26	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	10/19/21 13:26	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	10/19/21 13:26	
Trichloroethene (TCE)	ND U	0.50	0.10	1	10/19/21 13:26	
Trichlorofluoromethane (CFC 11)	ND U	0.50	0.12	1	10/19/21 13:26	
Vinyl Chloride	ND U	0.50	0.075	1	10/19/21 13:26	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	82	68 - 117	10/19/21 13:26	
Dibromofluoromethane	98	73 - 122	10/19/21 13:26	
Toluene-d8	101	65 - 144	10/19/21 13:26	

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MW-6B

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2112064
Project:	Boomsnub/1611303	**Date Collected:**	10/11/21 13:16
Sample Matrix:	Ground Water	**Date Received:**	10/13/21 16:45
Sample Name:	2141-031	**Units:**	ug/L
Lab Code:	K2112064-008	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Bromodichloromethane	**0.10 J**	0.50	0.091	1	10/19/21 13:52	*
Carbon Tetrachloride	ND U	0.50	0.096	1	10/19/21 13:52	*
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	10/19/21 13:52	
Dibromochloromethane	ND U	0.50	0.14	1	10/19/21 13:52	*
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	10/19/21 13:52	
1,1-Dichloroethene	**0.30 J**	0.50	0.080	1	10/19/21 13:52	
cis-1,2-Dichloroethene	**0.76**	0.50	0.067	1	10/19/21 13:52	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	10/19/21 13:52	
Hexachlorobutadiene	ND U	2.0	0.11	1	10/19/21 13:52	
Methylene Chloride	ND U	2.0	0.10	1	10/19/21 13:52	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	10/19/21 13:52	
Tetrachloroethene (PCE)	**0.46 J**	0.50	0.099	1	10/19/21 13:52	
1,1,1-Trichloroethane (TCA)	**1.8**	0.50	0.075	1	10/19/21 13:52	
Trichloroethene (TCE)	**30**	0.50	0.10	1	10/19/21 13:52	
Trichlorofluoromethane (CFC 11)	**8.9**	0.50	0.12	1	10/19/21 13:52	
Vinyl Chloride	ND U	0.50	0.075	1	10/19/21 13:52	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	80	68 - 117	10/19/21 13:52	
Dibromofluoromethane	97	73 - 122	10/19/21 13:52	
Toluene-d8	100	65 - 144	10/19/21 13:52	

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MW-10C

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Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2112064
Project:	Boomsnub/1611303	**Date Collected:**	10/11/21 14:15
Sample Matrix:	Ground Water	**Date Received:**	10/13/21 16:45
Sample Name:	2141-039	**Units:**	ug/L
Lab Code:	K2112064-009	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Bromodichloromethane	ND U	0.50	0.091	1	10/19/21 14:18	*
Carbon Tetrachloride	ND U	0.50	0.096	1	10/19/21 14:18	*
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	10/19/21 14:18	
Dibromochloromethane	ND U	0.50	0.14	1	10/19/21 14:18	*
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	10/19/21 14:18	
1,1-Dichloroethene	ND U	0.50	0.080	1	10/19/21 14:18	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	10/19/21 14:18	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	10/19/21 14:18	
Hexachlorobutadiene	ND U	2.0	0.11	1	10/19/21 14:18	
Methylene Chloride	ND U	2.0	0.10	1	10/19/21 14:18	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	10/19/21 14:18	
Tetrachloroethene (PCE)	**0.38 J**	0.50	0.099	1	10/19/21 14:18	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	10/19/21 14:18	
Trichloroethene (TCE)	**2.6**	0.50	0.10	1	10/19/21 14:18	
Trichlorofluoromethane (CFC 11)	**0.37 J**	0.50	0.12	1	10/19/21 14:18	
Vinyl Chloride	ND U	0.50	0.075	1	10/19/21 14:18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	81	68 - 117	10/19/21 14:18	
Dibromofluoromethane	98	73 - 122	10/19/21 14:18	
Toluene-d8	99	65 - 144	10/19/21 14:18	

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Analytical Report

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Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2112064
Project:	Boomsnub/1611303	**Date Collected:**	10/12/21 16:22
Sample Matrix:	Ground Water	**Date Received:**	10/13/21 16:45
Sample Name:	2141-069	**Units:**	ug/L
Lab Code:	K2112064-010	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Bromodichloromethane	ND U	0.50	0.091	1	10/19/21 14:45	*
Carbon Tetrachloride	ND U	0.50	0.096	1	10/19/21 14:45	*
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	10/19/21 14:45	
Dibromochloromethane	ND U	0.50	0.14	1	10/19/21 14:45	*
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	10/19/21 14:45	
1,1-Dichloroethene	ND U	0.50	0.080	1	10/19/21 14:45	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	10/19/21 14:45	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	10/19/21 14:45	
Hexachlorobutadiene	ND U	2.0	0.11	1	10/19/21 14:45	
Methylene Chloride	ND U	2.0	0.10	1	10/19/21 14:45	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	10/19/21 14:45	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	10/19/21 14:45	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	10/19/21 14:45	
Trichloroethene (TCE)	ND U	0.50	0.10	1	10/19/21 14:45	
Trichlorofluoromethane (CFC 11)	ND U	0.50	0.12	1	10/19/21 14:45	
Vinyl Chloride	ND U	0.50	0.075	1	10/19/21 14:45	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	81	68 - 117	10/19/21 14:45	
Dibromofluoromethane	97	73 - 122	10/19/21 14:45	
Toluene-d8	99	65 - 144	10/19/21 14:45	

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MW-48

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2112064
Project:	Boomsnub/1611303	**Date Collected:**	10/12/21 12:35
Sample Matrix:	Ground Water	**Date Received:**	10/13/21 16:45
Sample Name:	2141-014	**Units:**	ug/L
Lab Code:	K2112064-011	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Bromodichloromethane	**0.48 J**	0.50	0.091	1	10/19/21 15:11	*
Carbon Tetrachloride	ND U	0.50	0.096	1	10/19/21 15:11	*
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	10/19/21 15:11	
Dibromochloromethane	ND U	0.50	0.14	1	10/19/21 15:11	*
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	10/19/21 15:11	
1,1-Dichloroethene	ND U	0.50	0.080	1	10/19/21 15:11	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	10/19/21 15:11	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	10/19/21 15:11	
Hexachlorobutadiene	ND U	2.0	0.11	1	10/19/21 15:11	
Methylene Chloride	ND U	2.0	0.10	1	10/19/21 15:11	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	10/19/21 15:11	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	10/19/21 15:11	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	10/19/21 15:11	
Trichloroethene (TCE)	**0.74**	0.50	0.10	1	10/19/21 15:11	
Trichlorofluoromethane (CFC 11)	ND U	0.50	0.12	1	10/19/21 15:11	
Vinyl Chloride	ND U	0.50	0.075	1	10/19/21 15:11	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	79	68 - 117	10/19/21 15:11	
Dibromofluoromethane	98	73 - 122	10/19/21 15:11	
Toluene-d8	100	65 - 144	10/19/21 15:11	

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MW-7C

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2112064
Project:	Boomsnub/1611303	**Date Collected:**	10/12/21 15:57
Sample Matrix:	Ground Water	**Date Received:**	10/13/21 16:45
Sample Name:	2141-034	**Units:**	ug/L
Lab Code:	K2112064-012	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Bromodichloromethane	ND U	0.50	0.091	1	10/19/21 15:38	*
Carbon Tetrachloride	ND U	0.50	0.096	1	10/19/21 15:38	*
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	10/19/21 15:38	
Dibromochloromethane	ND U	0.50	0.14	1	10/19/21 15:38	*
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	10/19/21 15:38	
1,1-Dichloroethene	ND U	0.50	0.080	1	10/19/21 15:38	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	10/19/21 15:38	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	10/19/21 15:38	
Hexachlorobutadiene	ND U	2.0	0.11	1	10/19/21 15:38	
Methylene Chloride	ND U	2.0	0.10	1	10/19/21 15:38	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	10/19/21 15:38	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	10/19/21 15:38	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	10/19/21 15:38	
Trichloroethene (TCE)	**0.30 J**	0.50	0.10	1	10/19/21 15:38	
Trichlorofluoromethane (CFC 11)	ND U	0.50	0.12	1	10/19/21 15:38	
Vinyl Chloride	ND U	0.50	0.075	1	10/19/21 15:38	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	82	68 - 117	10/19/21 15:38	
Dibromofluoromethane	99	73 - 122	10/19/21 15:38	
Toluene-d8	101	65 - 144	10/19/21 15:38	

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Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2112064
Project:	Boomsnub/1611303	**Date Collected:**	10/13/21 12:31
Sample Matrix:	Ground Water	**Date Received:**	10/13/21 16:45
Sample Name:	2141-070	**Units:**	ug/L
Lab Code:	K2112064-013	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Bromodichloromethane	ND U	0.50	0.091	1	10/19/21 16:04	*
Carbon Tetrachloride	ND U	0.50	0.096	1	10/19/21 16:04	*
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	10/19/21 16:04	
Dibromochloromethane	ND U	0.50	0.14	1	10/19/21 16:04	*
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	10/19/21 16:04	
1,1-Dichloroethene	ND U	0.50	0.080	1	10/19/21 16:04	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	10/19/21 16:04	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	10/19/21 16:04	
Hexachlorobutadiene	ND U	2.0	0.11	1	10/19/21 16:04	
Methylene Chloride	ND U	2.0	0.10	1	10/19/21 16:04	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	10/19/21 16:04	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	10/19/21 16:04	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	10/19/21 16:04	
Trichloroethene (TCE)	ND U	0.50	0.10	1	10/19/21 16:04	
Trichlorofluoromethane (CFC 11)	ND U	0.50	0.12	1	10/19/21 16:04	
Vinyl Chloride	ND U	0.50	0.075	1	10/19/21 16:04	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	80	68 - 117	10/19/21 16:04	
Dibromofluoromethane	101	73 - 122	10/19/21 16:04	
Toluene-d8	102	65 - 144	10/19/21 16:04	

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Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2112064
Project:	Boomsnub/1611303	**Date Collected:**	10/13/21 11:04
Sample Matrix:	Ground Water	**Date Received:**	10/13/21 16:45
Sample Name:	2141-011	**Units:**	ug/L
Lab Code:	K2112064-014	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Bromodichloromethane	ND U	0.50	0.091	1	10/19/21 16:31	*
Carbon Tetrachloride	ND U	0.50	0.096	1	10/19/21 16:31	*
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	10/19/21 16:31	
Dibromochloromethane	ND U	0.50	0.14	1	10/19/21 16:31	*
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	10/19/21 16:31	
1,1-Dichloroethene	ND U	0.50	0.080	1	10/19/21 16:31	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	10/19/21 16:31	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	10/19/21 16:31	
Hexachlorobutadiene	ND U	2.0	0.11	1	10/19/21 16:31	
Methylene Chloride	ND U	2.0	0.10	1	10/19/21 16:31	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	10/19/21 16:31	
Tetrachloroethene (PCE)	**0.29 J**	0.50	0.099	1	10/19/21 16:31	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	10/19/21 16:31	
Trichloroethene (TCE)	**3.0**	0.50	0.10	1	10/19/21 16:31	
Trichlorofluoromethane (CFC 11)	**0.12 J**	0.50	0.12	1	10/19/21 16:31	
Vinyl Chloride	ND U	0.50	0.075	1	10/19/21 16:31	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	79	68 - 117	10/19/21 16:31	
Dibromofluoromethane	101	73 - 122	10/19/21 16:31	
Toluene-d8	102	65 - 144	10/19/21 16:31	

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Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2112064
Project:	Boomsnub/1611303	**Date Collected:**	10/11/21 10:59
Sample Matrix:	Water	**Date Received:**	10/13/21 16:45
Sample Name:	2141-072	**Units:**	ug/L
Lab Code:	K2112064-015	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Bromodichloromethane	ND U	0.50	0.091	1	10/19/21 16:58	*
Carbon Tetrachloride	ND U	0.50	0.096	1	10/19/21 16:58	*
1,2-Dibromo-3-chloropropane	ND U	2.0	0.22	1	10/19/21 16:58	
Dibromochloromethane	ND U	0.50	0.14	1	10/19/21 16:58	*
1,2-Dichloroethane (EDC)	ND U	0.50	0.080	1	10/19/21 16:58	
1,1-Dichloroethene	ND U	0.50	0.080	1	10/19/21 16:58	
cis-1,2-Dichloroethene	ND U	0.50	0.067	1	10/19/21 16:58	
trans-1,2-Dichloroethene	ND U	0.50	0.072	1	10/19/21 16:58	
Hexachlorobutadiene	ND U	2.0	0.11	1	10/19/21 16:58	
Methylene Chloride	ND U	2.0	0.10	1	10/19/21 16:58	
1,1,2,2-Tetrachloroethane	ND U	0.50	0.16	1	10/19/21 16:58	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	10/19/21 16:58	
1,1,1-Trichloroethane (TCA)	ND U	0.50	0.075	1	10/19/21 16:58	
Trichloroethene (TCE)	ND U	0.50	0.10	1	10/19/21 16:58	
Trichlorofluoromethane (CFC 11)	ND U	0.50	0.12	1	10/19/21 16:58	
Vinyl Chloride	ND U	0.50	0.075	1	10/19/21 16:58	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	80	68 - 117	10/19/21 16:58	
Dibromofluoromethane	99	73 - 122	10/19/21 16:58	
Toluene-d8	101	65 - 144	10/19/21 16:58	

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Appendix E

Chromium Concentrations in Groundwater

Appendix E-1

Chromium Concentrations – Summary Table

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Table E-1. Chromium Concentrations – Summary Table

Well Group	Well	Winter 2020	Spring 2020	Fall 2020	Winter 2021	Spring 2021	Summer 2021	Fall 2021
TCE Upgradient Wells	AMW-4A	--	--	--	--	--	--	--
	AMW-12A	--	--	8.4U	--	0.9	--	--
Proximal Wells	AMW-58	--	--	--	--	--	12.6	--
	MW-2A	--	--	601	--	--	--	330
	MW-2B	--	--	--	5.9	--	10.5	7.3
	MW-2C	--	--	--	--	--	28.3	--
	MW-3A	--	--	--	131	140	113	129
	MW-3B	--	--	--	--	--	7.2	6.7
	MW-3C	--	--	--	--	--	31.2	10.5
	MW-4A	--	--	556	263	380	890	589
	MW-4B	--	--	318	87.1	107	204	124
	MW-4BSHED	--	--	--	--	--	--	72.7
	MW-4C	--	--	--	65	97.2	52.2	45.4
	MW-6A	--	--	149	15.9	11.1	37.9	68.1
	MW-6B	--	--	14.9	38.5	70.8	33.1	35.4
	MW-6C	--	--	--	--	--	13.9	23.8
	MW-6D	--	--	--	--	--	13.8	17.2
	MW-7C	--	--	--	--	--	10.8	8.5
	MW-8B	--	--	--	--	--	15.1	7.6
	MW-9B	--	--	--	13.6	5.7	18.3	12.1
	MW-9C	--	--	--	--	--	17.4	--
	MW-10B	--	--	32.1	--	--	--	116
	MW-10C	--	--	57.9	--	--	238	74.5
	MW-12C	--	--	--	--	--	11.3	13.8
	MW-13C	--	--	--	39.8	--	46.3	43.2
	PW-1B	--	--	31.9	--	0.9	--	--
Intermediate Plume Wells	AMW-59	70.9	100	19.2	11.6	12.2	11.1	--
	CPU-14	--	--	--	--	--	--	165
	MW-14C	62.9	73.8	10.2	74.6	84.1	--	37.7
	MW-14E	38.1	54.4	173	166	234	176	192
	MW-15E	--	--	--	10.3	--	11.2	10.5

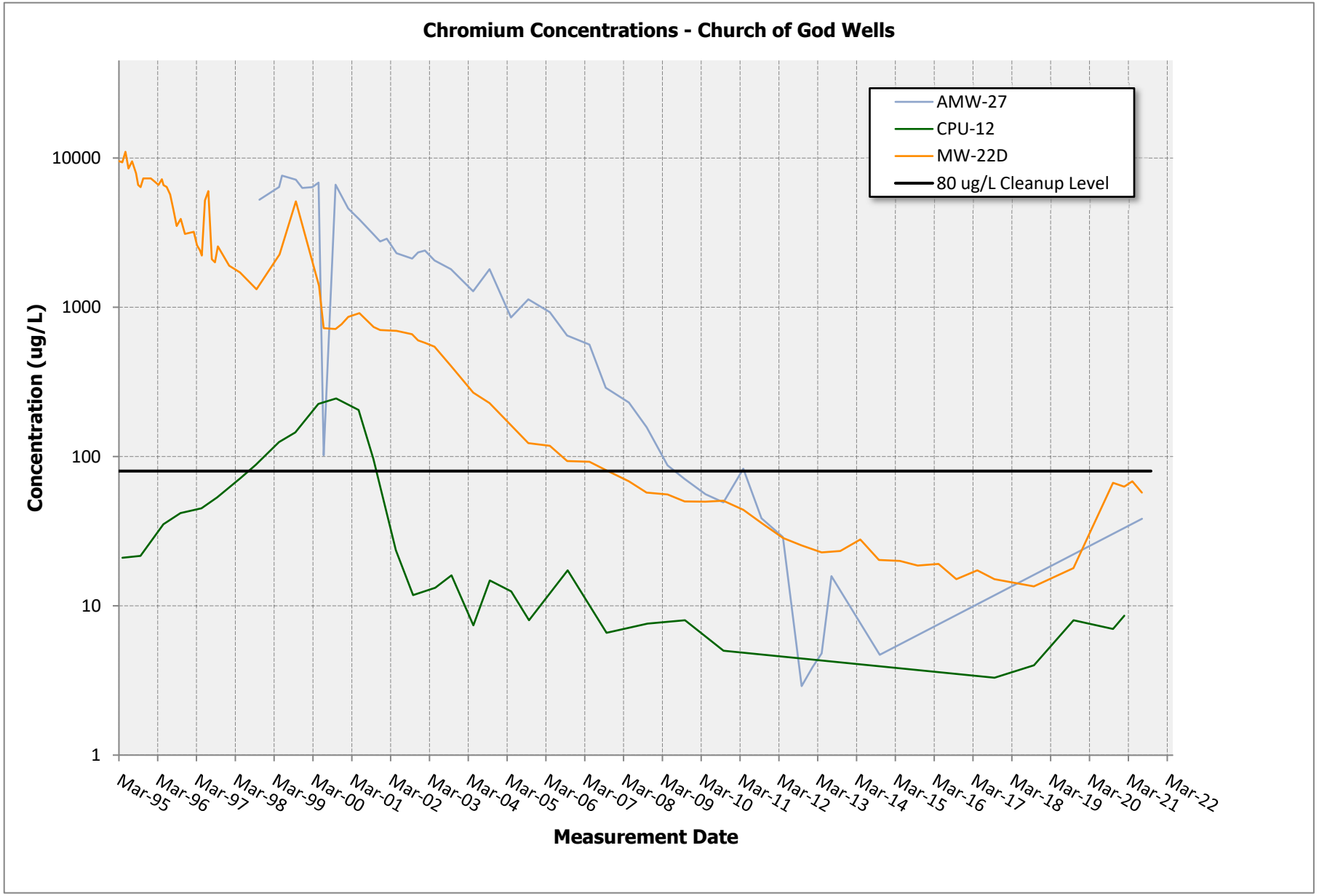
Well Group	Well	Winter 2020	Spring 2020	Fall 2020	Winter 2021	Spring 2021	Summer 2021	Fall 2021
	MW-18D	46.4	**89.8**	15.8	**127**	**158**	**177**	--
	MW-18E	--	8.4 U	2.9 J	4.2	--	--	--
	MW-19D	**119**	**171**	38.4	122	59.6	66.1	63.2
	MW-20D	--	--	59.9	79.2	**86.4**	**81.5**	**115**
	MW-40	--	--	**103**	**124**	--	--	**135**
	PZ-39	--	--	3.2 J	15	6.5	7.8	--
Church of God Wells	AMW-27	--	--	--	--	--	38.3	--
	CPU-12	--	--	7.0 J	8.6	--	--	--
	MW-22D	--	--	66.7	62.8	68.2	57.4	--

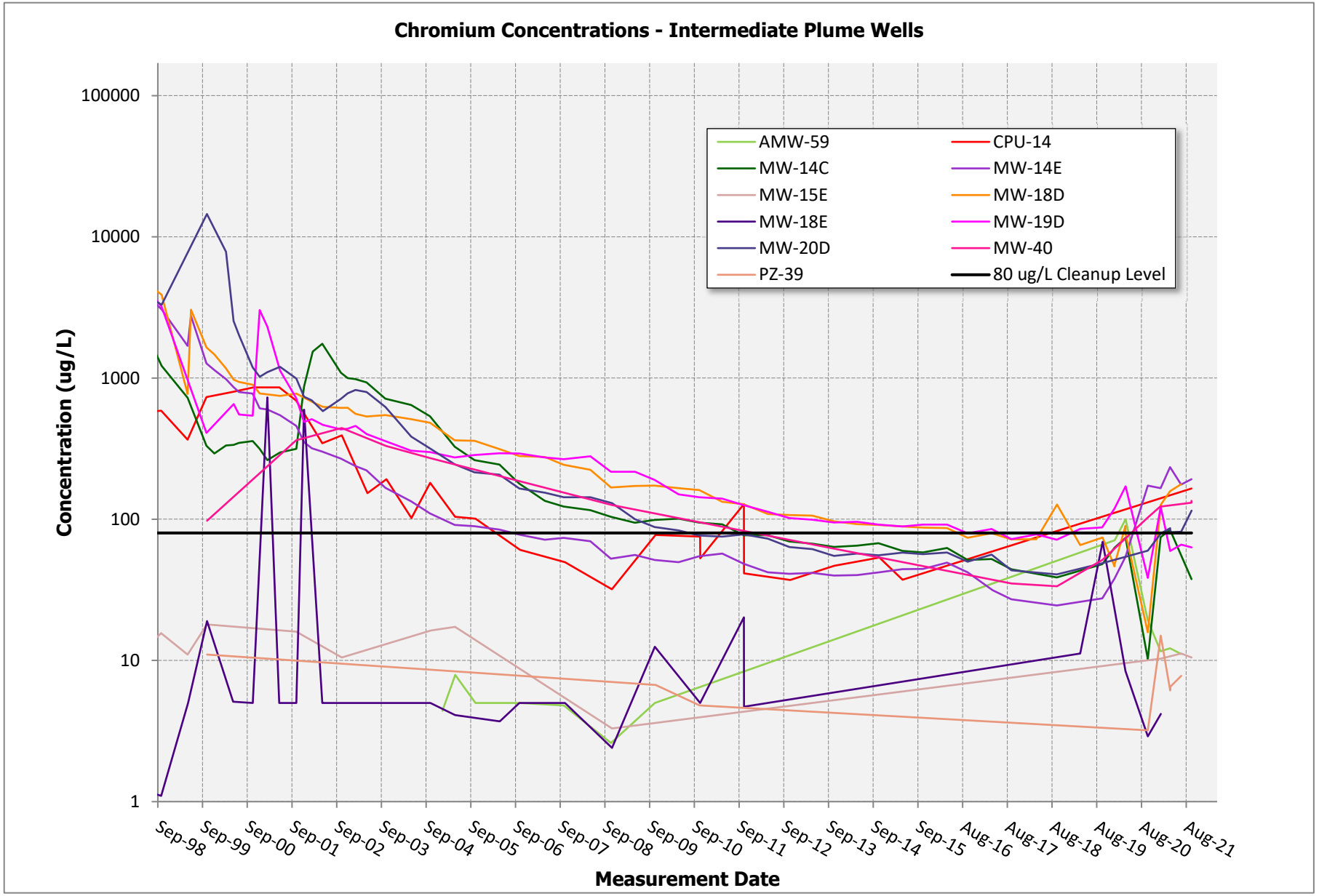
NOTES:
Results are in micrograms per liter (µg/L).
Results are for total chromium, unless otherwise noted.
Results shown in **blue bold** exceed the cleanup level of 80 µg/L.
Results shown in **red bold** for dissolved chromium rather than total.
-- = Not Sampled

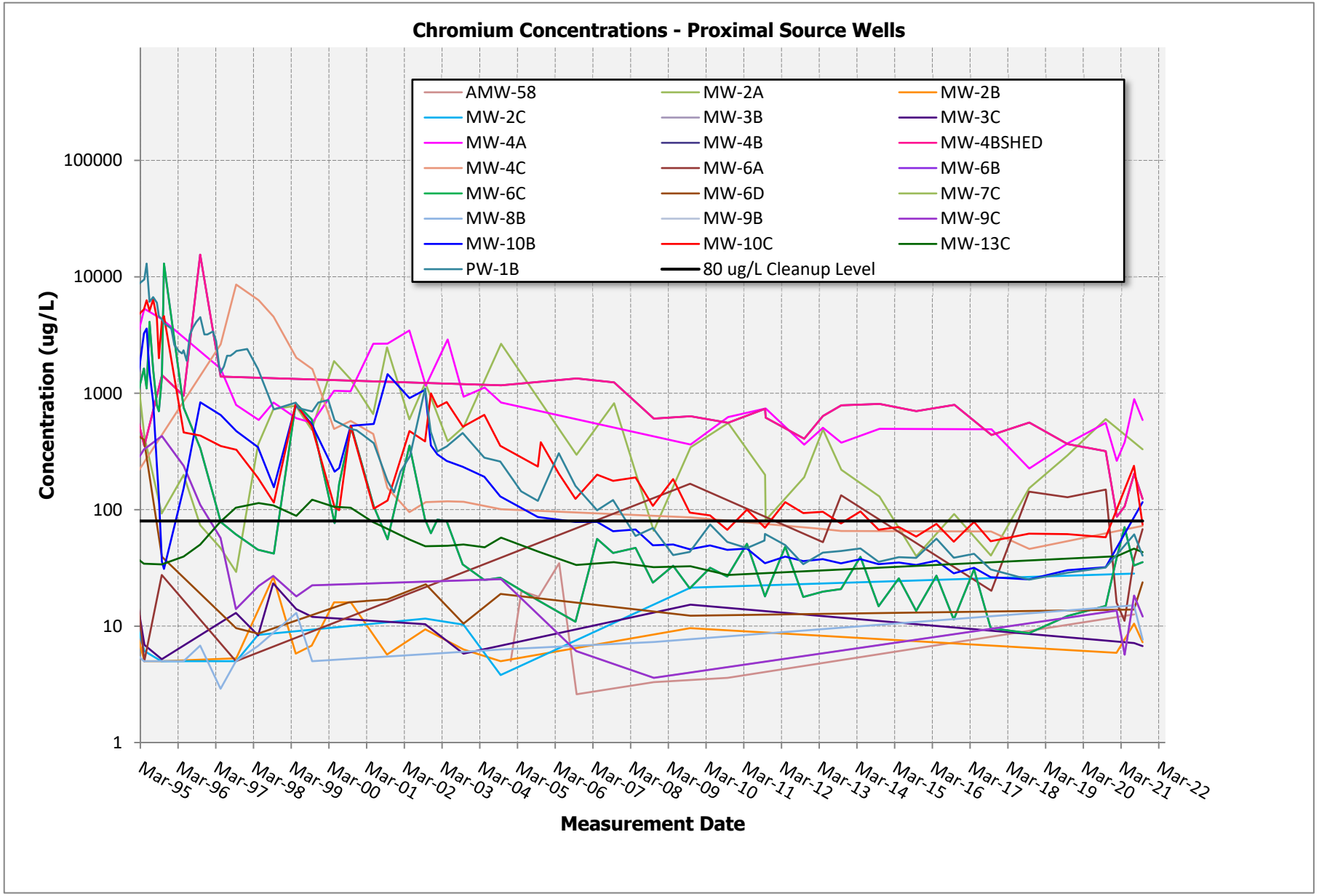
Appendix E-2

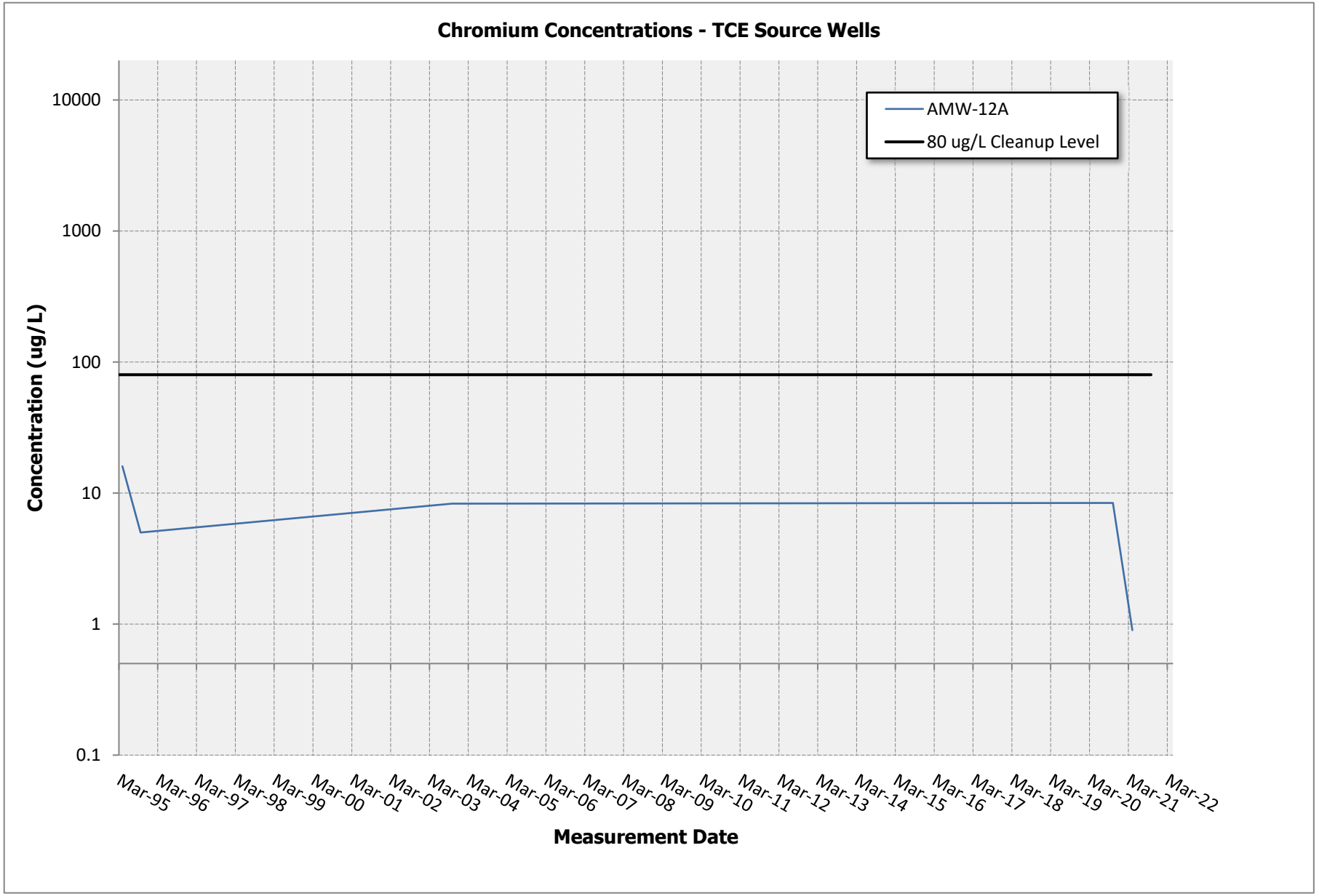
Chromium Concentrations – By Well Grouping

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Chromium Concentrations - Church of God Wells
AMW-27
CPU-12
MW-22D
80 ug/L Cleanup Level
Concentration (ug/L)
10000
1000
100
10
1
Mar-95
Mar-96
Mar-97
Mar-98
Mar-99
Mar-00
Mar-01
Mar-02
Mar-03
Mar-04
Mar-05
Mar-06
Mar-07
Mar-08
Mar-09
Mar-10
Mar-11
Mar-12
Mar-13
Mar-14
Mar-15
Mar-16
Mar-17
Mar-18
Mar-19
Mar-20
Mar-21
Mar-22
Measurement Date


Chromium Concentrations - Intermediate Plume Wells
Concentration (ug/L)
100000
10000
1000
100
10
1
AMW-59
CPU-14
MW-14C
MW-14E
MW-15E
MW-18D
MW-18E
MW-19D
MW-20D
MW-40
PZ-39
80 ug/L Cleanup Level
Sep-98
Sep-99
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15
Aug-16
Aug-17
Aug-18
Aug-19
Aug-20
Aug-21
Measurement Date

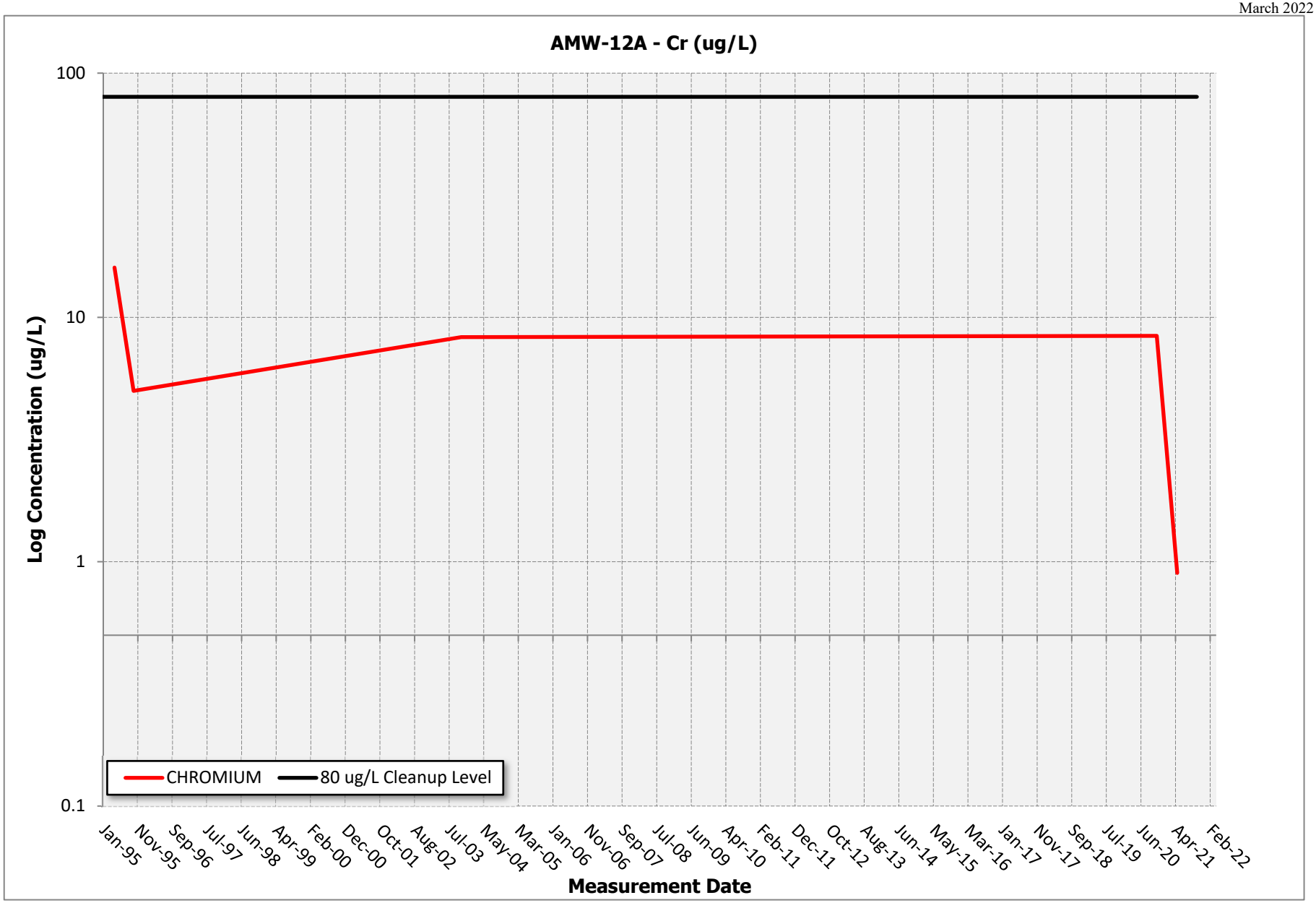

Chromium Concentrations - Proximal Source Wells
AMW-58
MW-2A
MW-2B
MW-2C
MW-3B
MW-3C
MW-4A
MW-4B
MW-4BSHED
MW-4C
MW-6A
MW-6B
MW-6C
MW-6D
MW-7C
MW-8B
MW-9B
MW-9C
MW-10B
MW-10C
MW-13C
PW-1B
80 ug/L Cleanup Level
Concentration (ug/L)
100000
10000
1000
100
10
1
Mar-95
Mar-96
Mar-97
Mar-98
Mar-99
Mar-00
Mar-01
Mar-02
Mar-03
Mar-04
Mar-05
Mar-06
Mar-07
Mar-08
Mar-09
Mar-10
Mar-11
Mar-12
Mar-13
Mar-14
Mar-15
Mar-16
Mar-17
Mar-18
Mar-19
Mar-20
Mar-21
Mar-22
Measurement Date

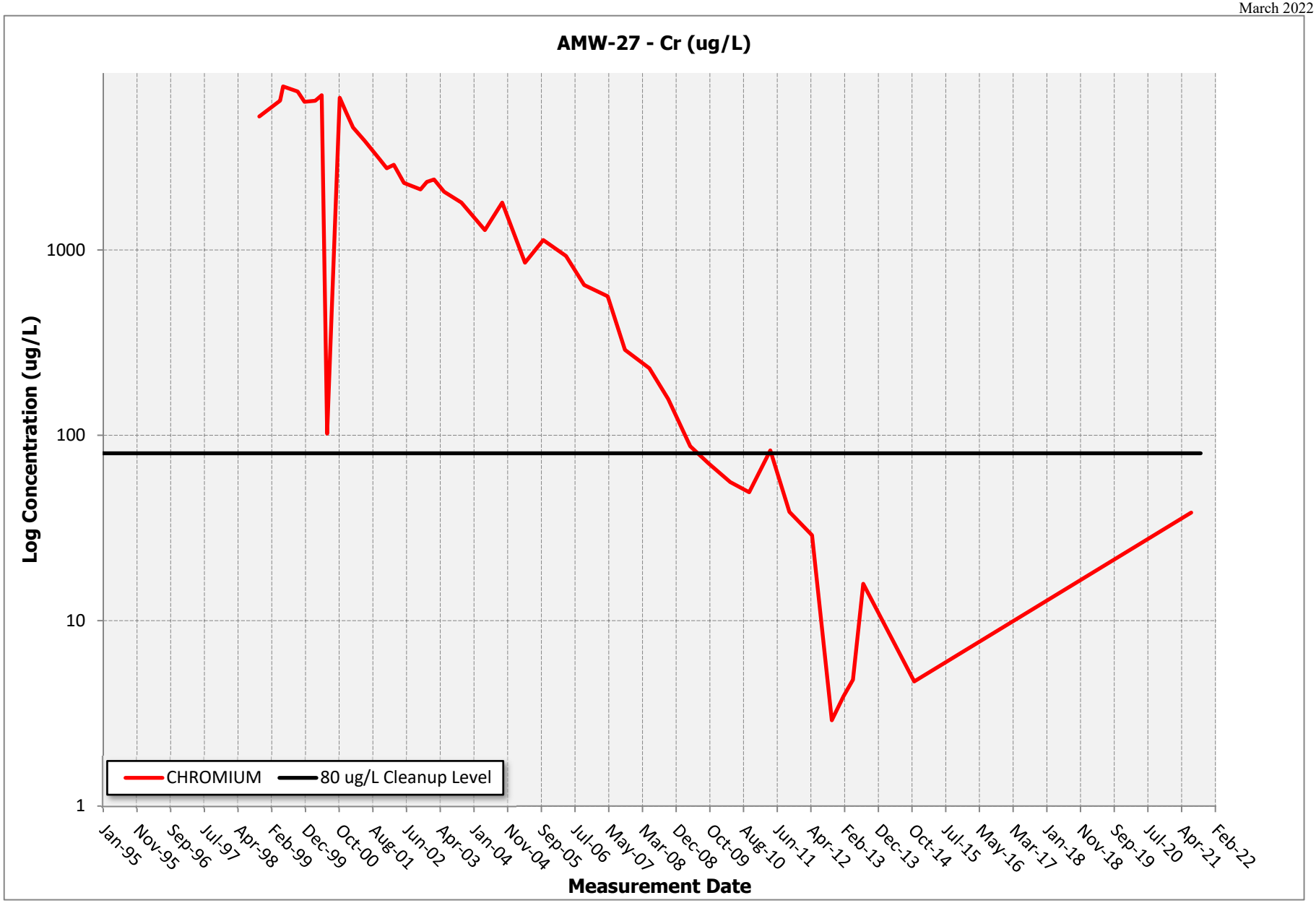

Chromium Concentrations - TCE Source Wells
AMW-12A
80 ug/L Cleanup Level
Concentration (ug/L)
10000
1000
100
10
1
0.1
Mar-95
Mar-96
Mar-97
Mar-98
Mar-99
Mar-00
Mar-01
Mar-02
Mar-03
Mar-04
Mar-05
Mar-06
Mar-07
Mar-08
Mar-09
Mar-10
Mar-11
Mar-12
Mar-13
Mar-14
Mar-15
Mar-16
Mar-17
Mar-18
Mar-19
Mar-20
Mar-21
Mar-22
Measurement Date

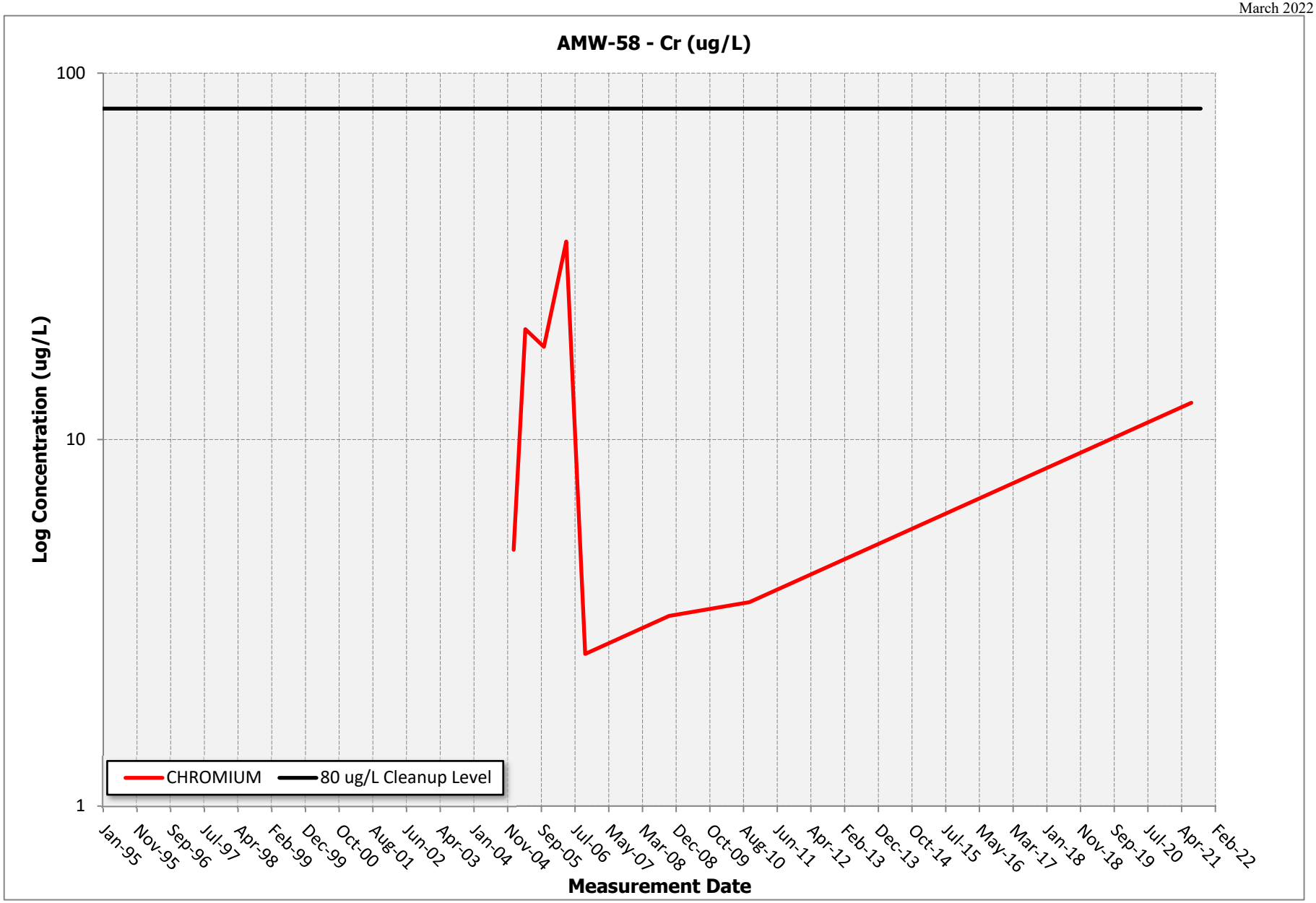
Appendix E-3

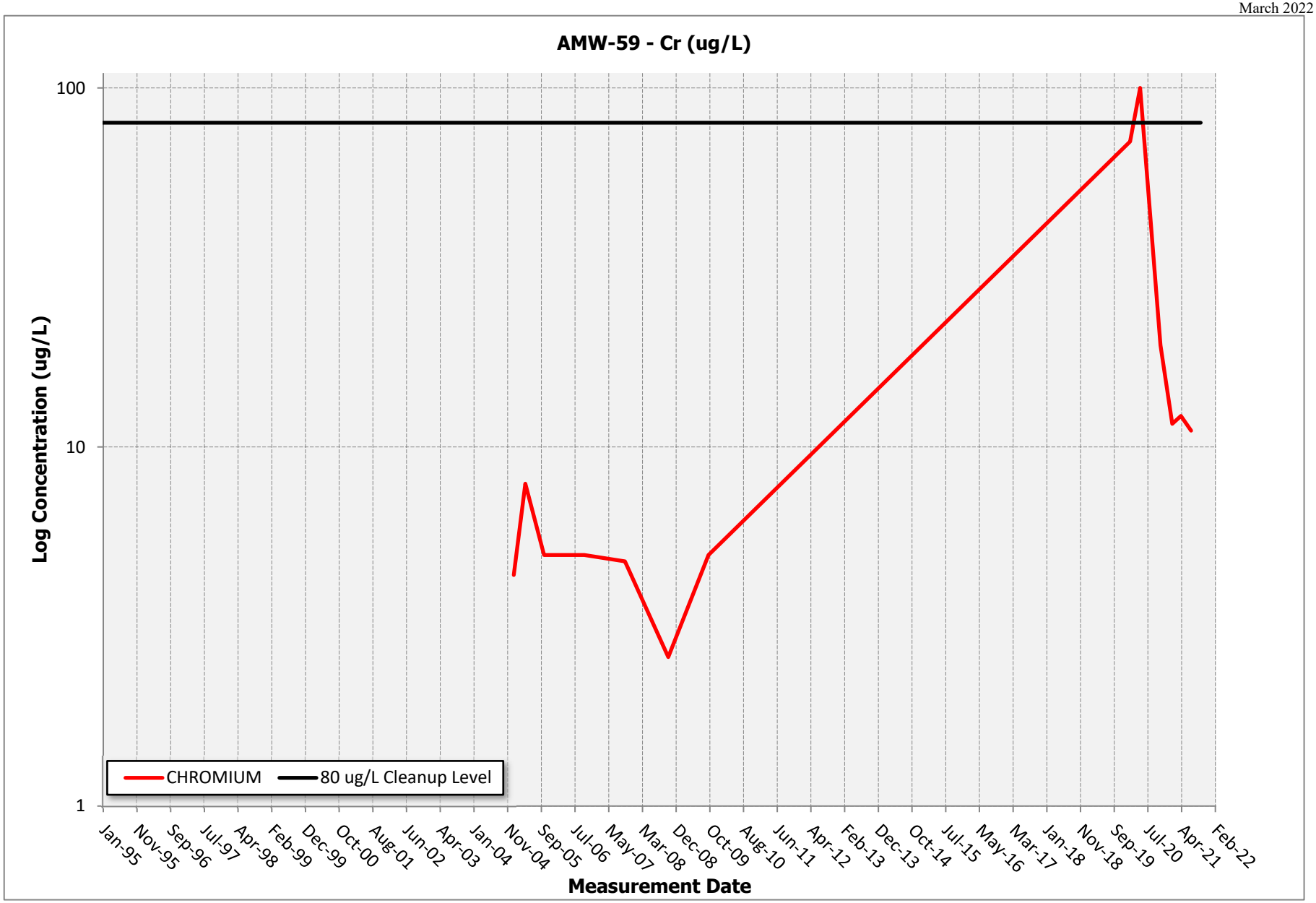
Chromium Concentrations – Individual Wells

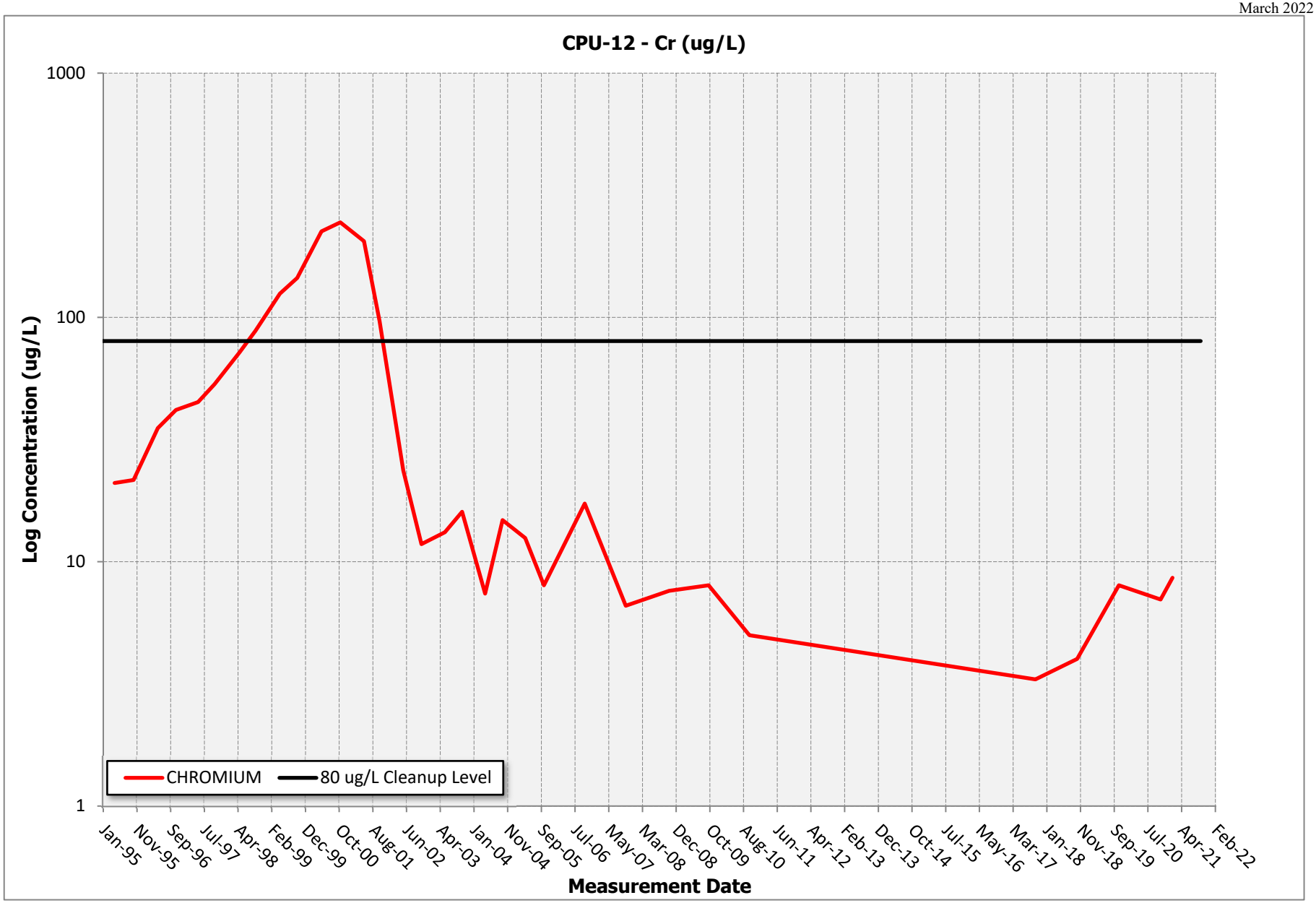
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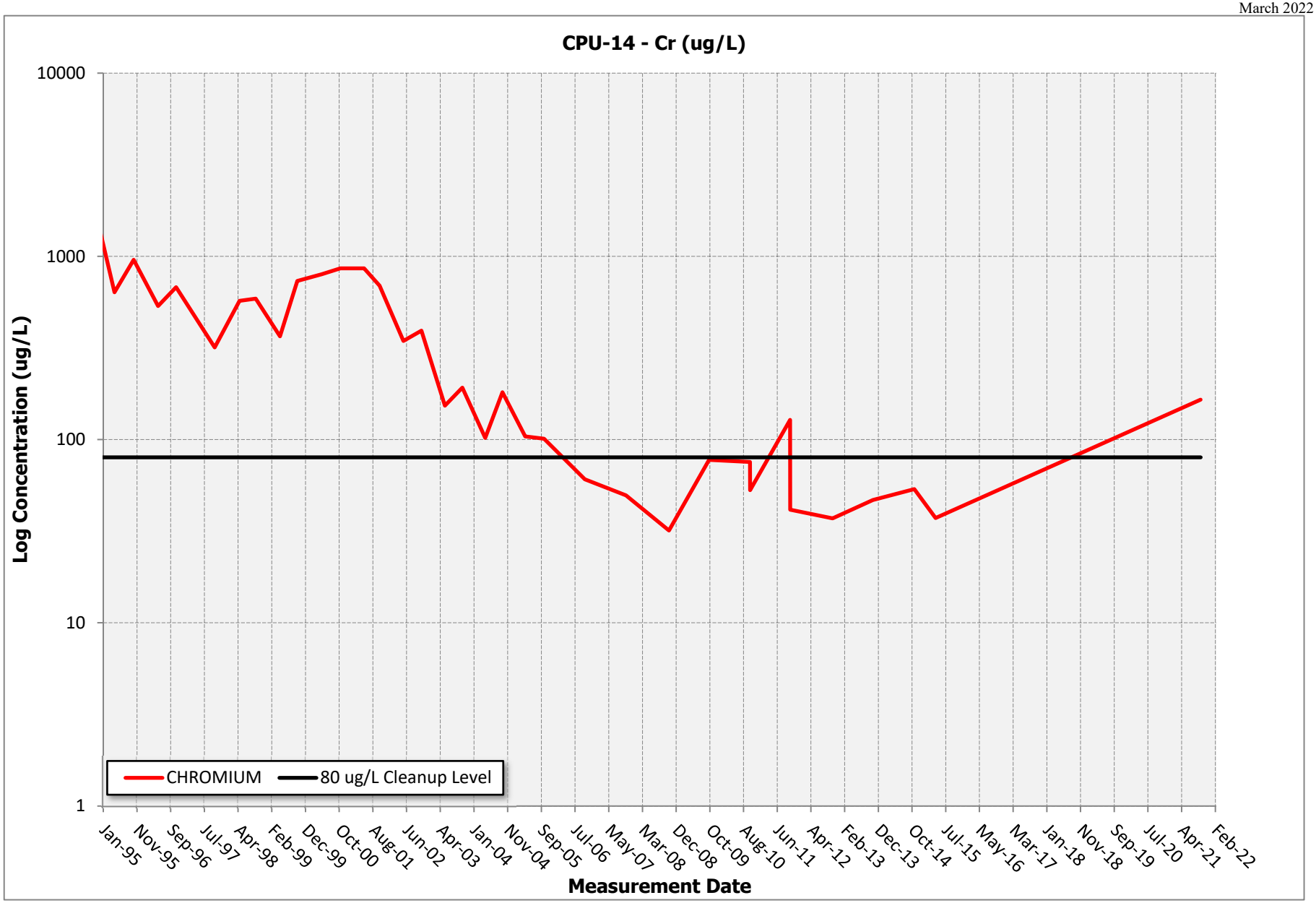

AMW-12A - Cr (ug/L)
100
10
1
0.1
Log Concentration (ug/L)
CHROMIUM
80 ug/L Cleanup Level
Jan-95
Nov-95
Sep-96
Jul-97
Jun-98
Apr-99
Feb-00
Dec-00
Oct-01
Aug-02
Jul-03
May-04
Mar-05
Jan-06
Nov-06
Sep-07
Jul-08
Jun-09
Apr-10
Feb-11
Dec-11
Oct-12
Aug-13
Jun-14
May-15
Mar-16
Jan-17
Nov-17
Sep-18
Jul-19
Jun-20
Apr-21
Feb-22
Measurement Date

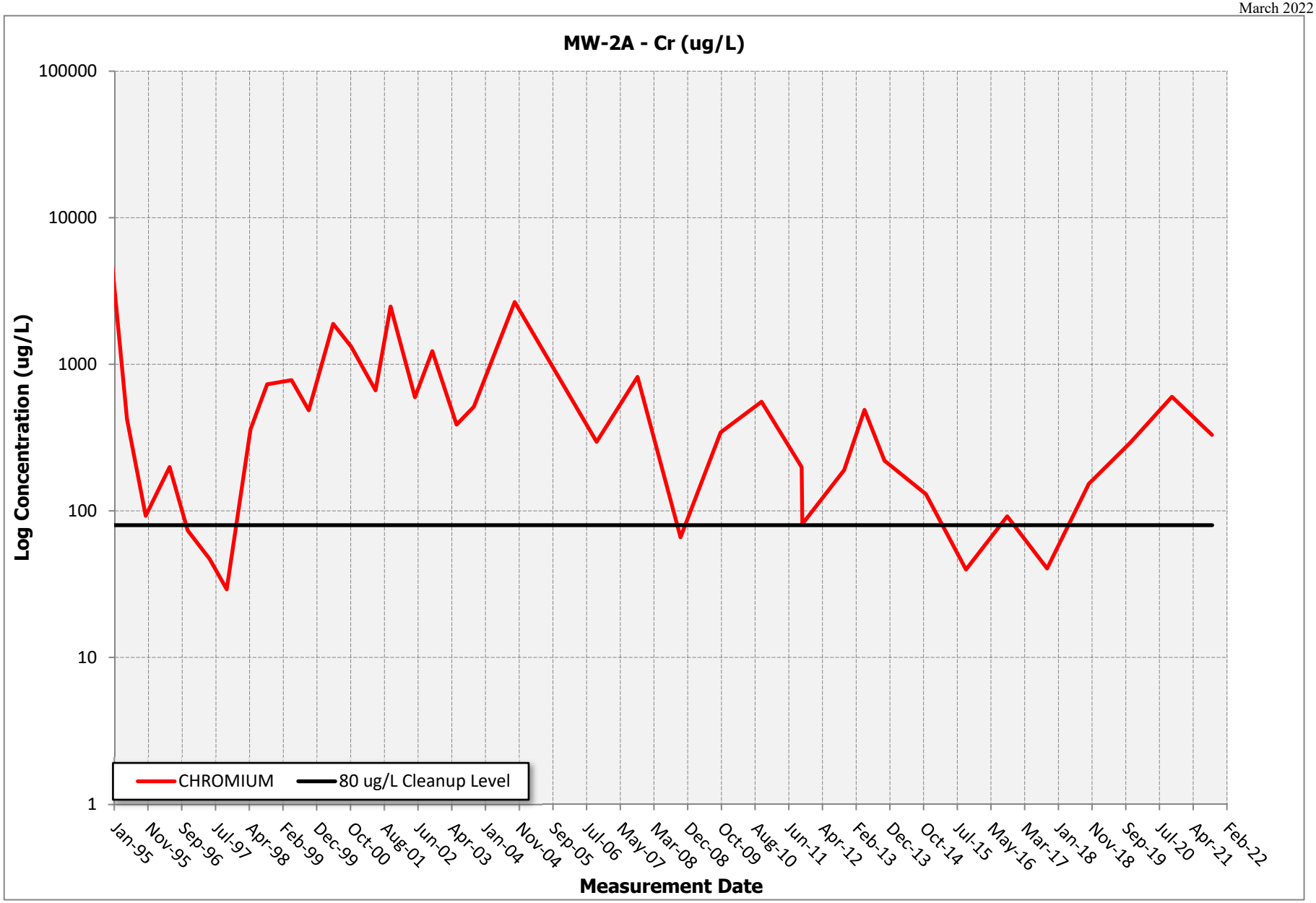

AMW-27 - Cr (ug/L)
Log Concentration (ug/L)
1000
100
10
1
CHROMIUM
80 ug/L Cleanup Level
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date

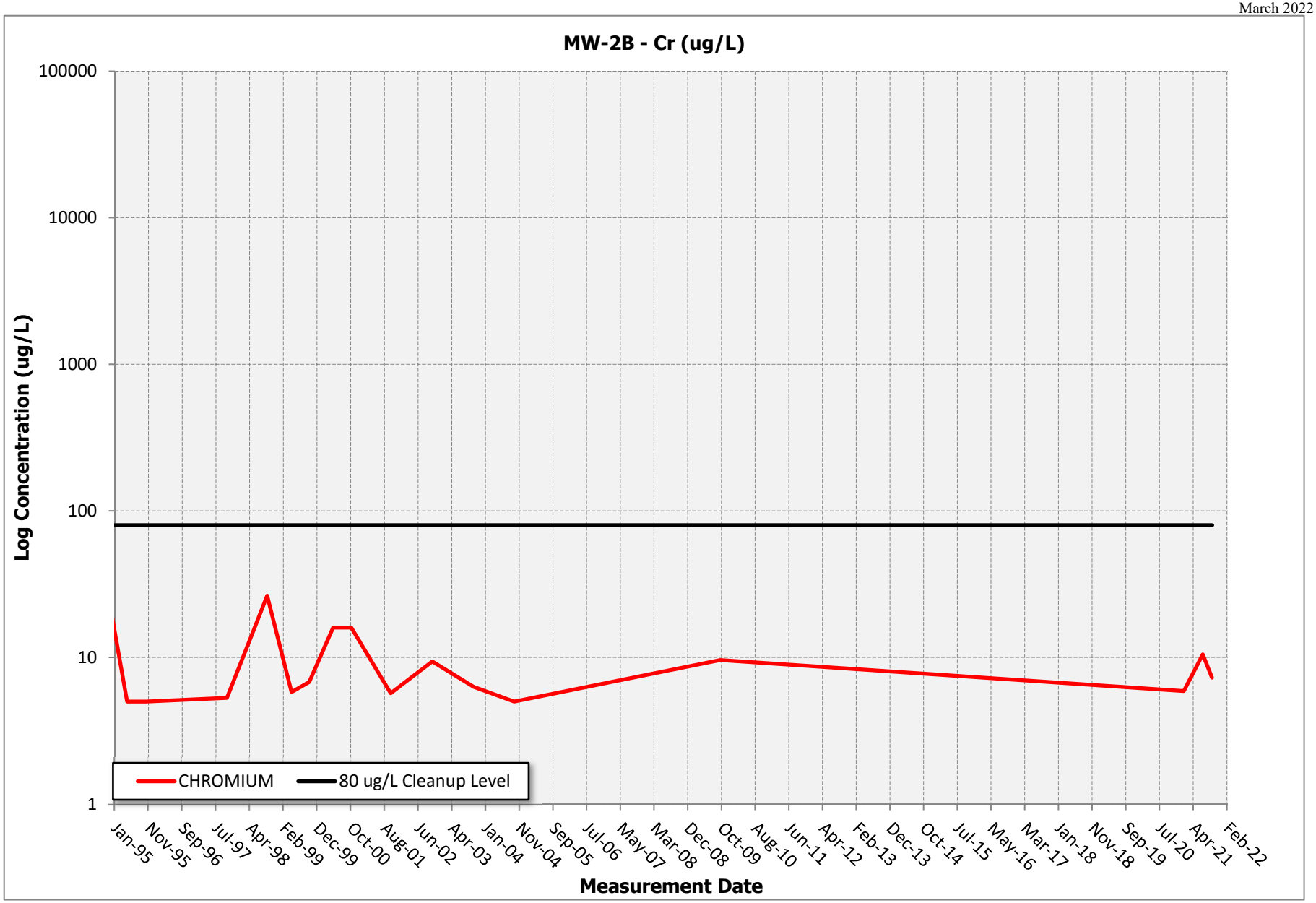

AMW-58 - Cr (ug/L)
Log Concentration (ug/L)
100
10
1
CHROMIUM
80 ug/L Cleanup Level
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date

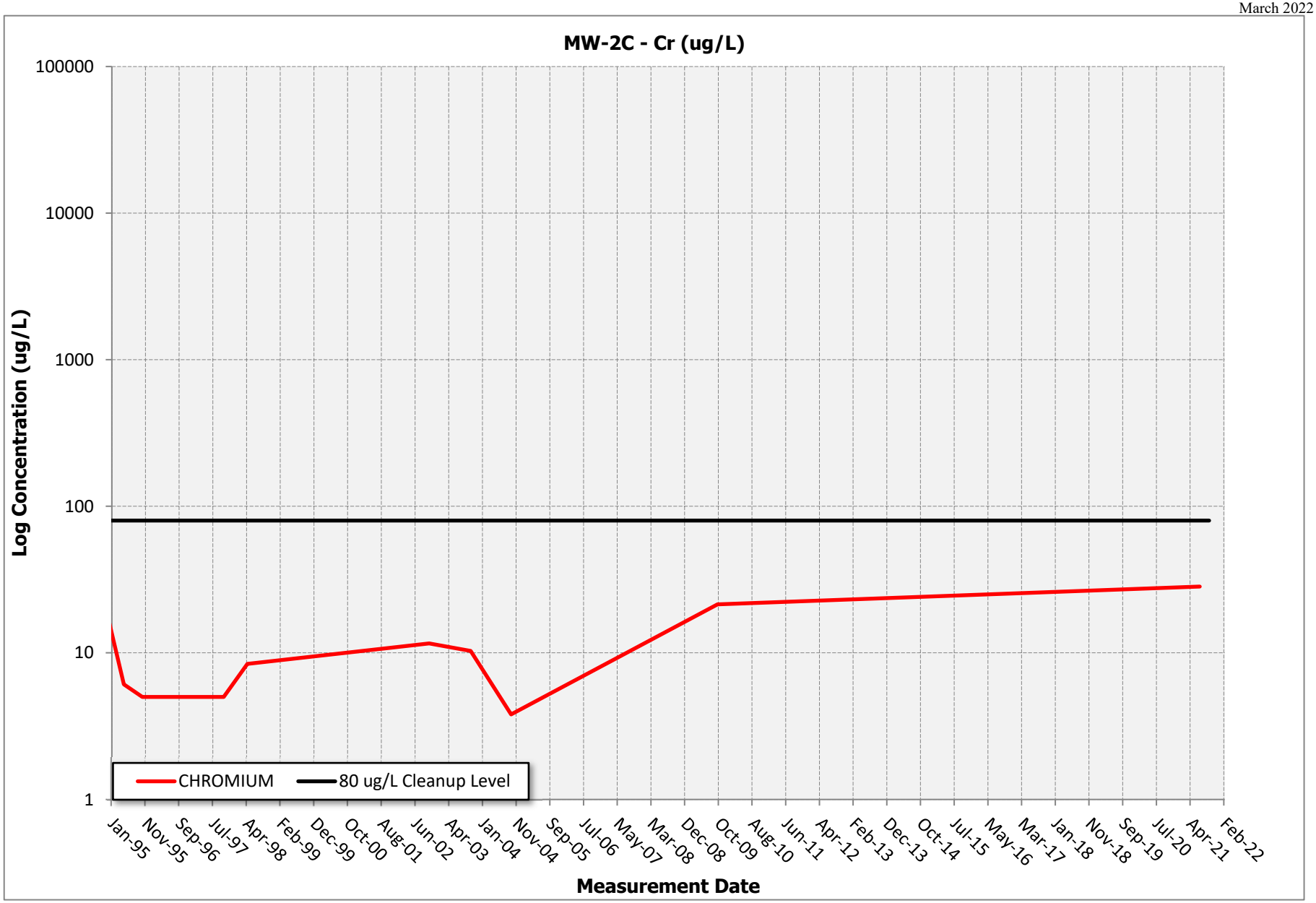

AMW-59 - Cr (ug/L)
Log Concentration (ug/L)
100
10
1
CHROMIUM
80 ug/L Cleanup Level
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date

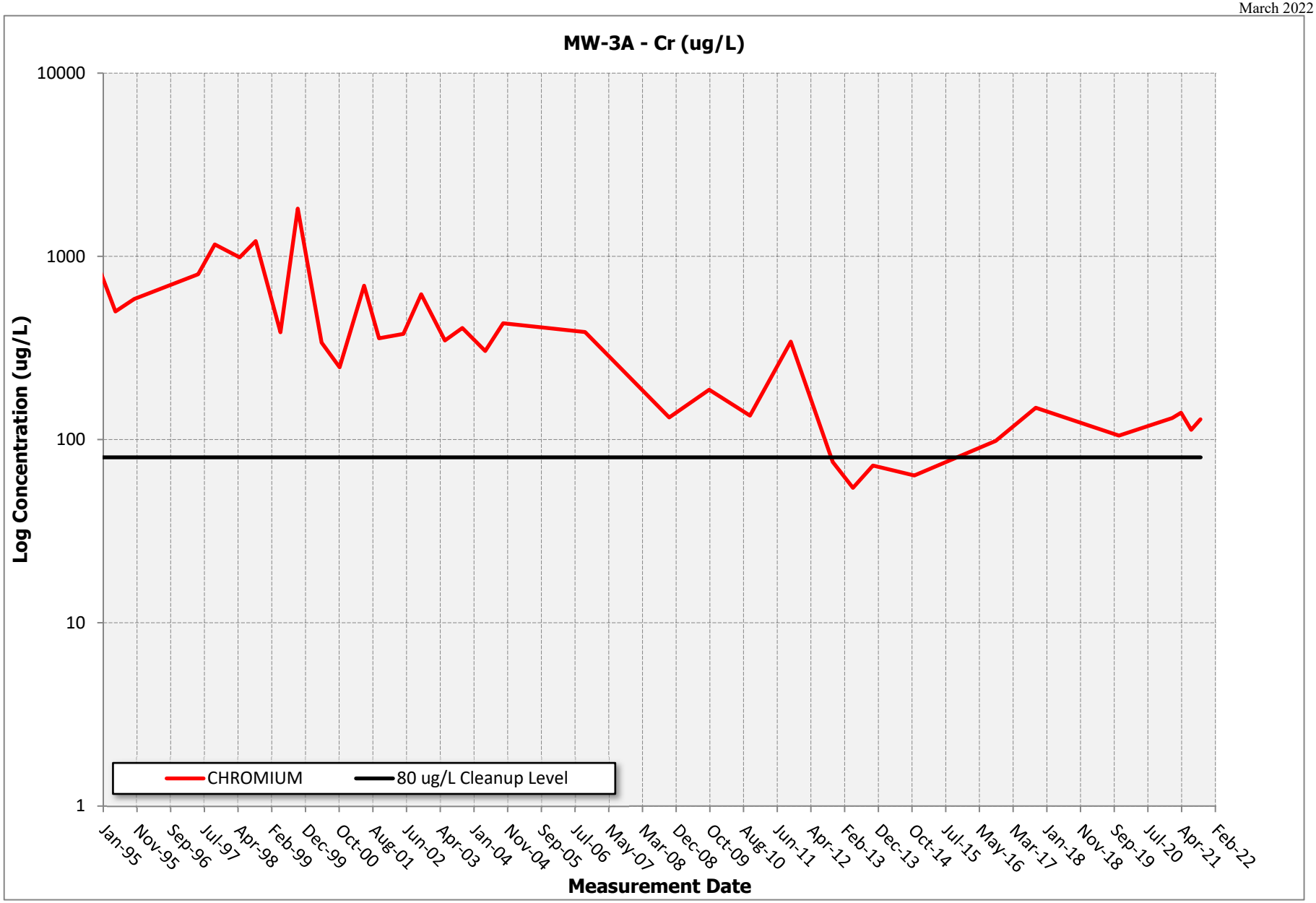

CPU-12 - Cr (ug/L)
Log Concentration (ug/L)
1000
100
10
1
CHROMIUM
80 ug/L Cleanup Level
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date

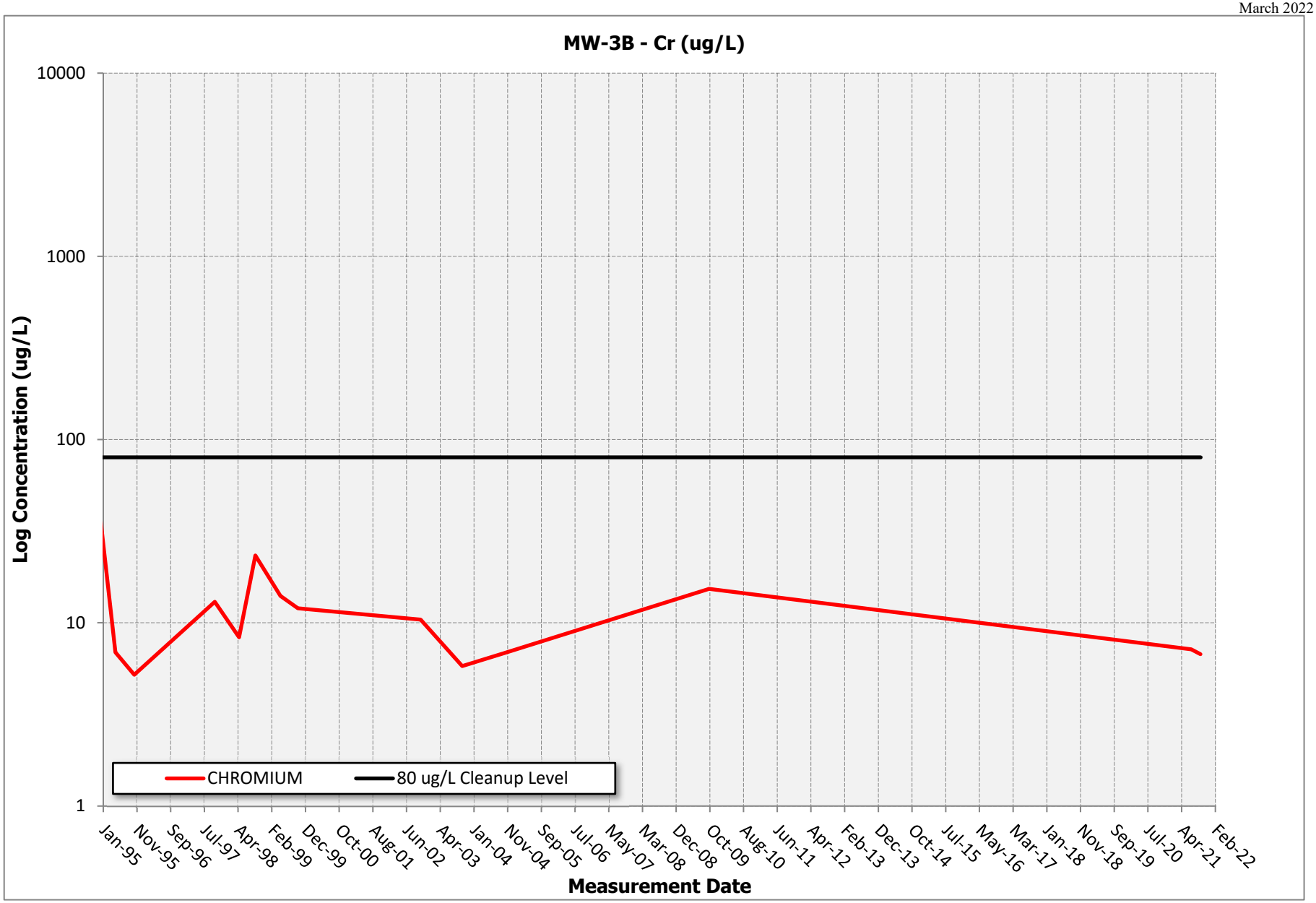

CPU-14 - Cr (ug/L)
Log Concentration (ug/L)
10000
1000
100
10
1
CHROMIUM
80 ug/L Cleanup Level
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date

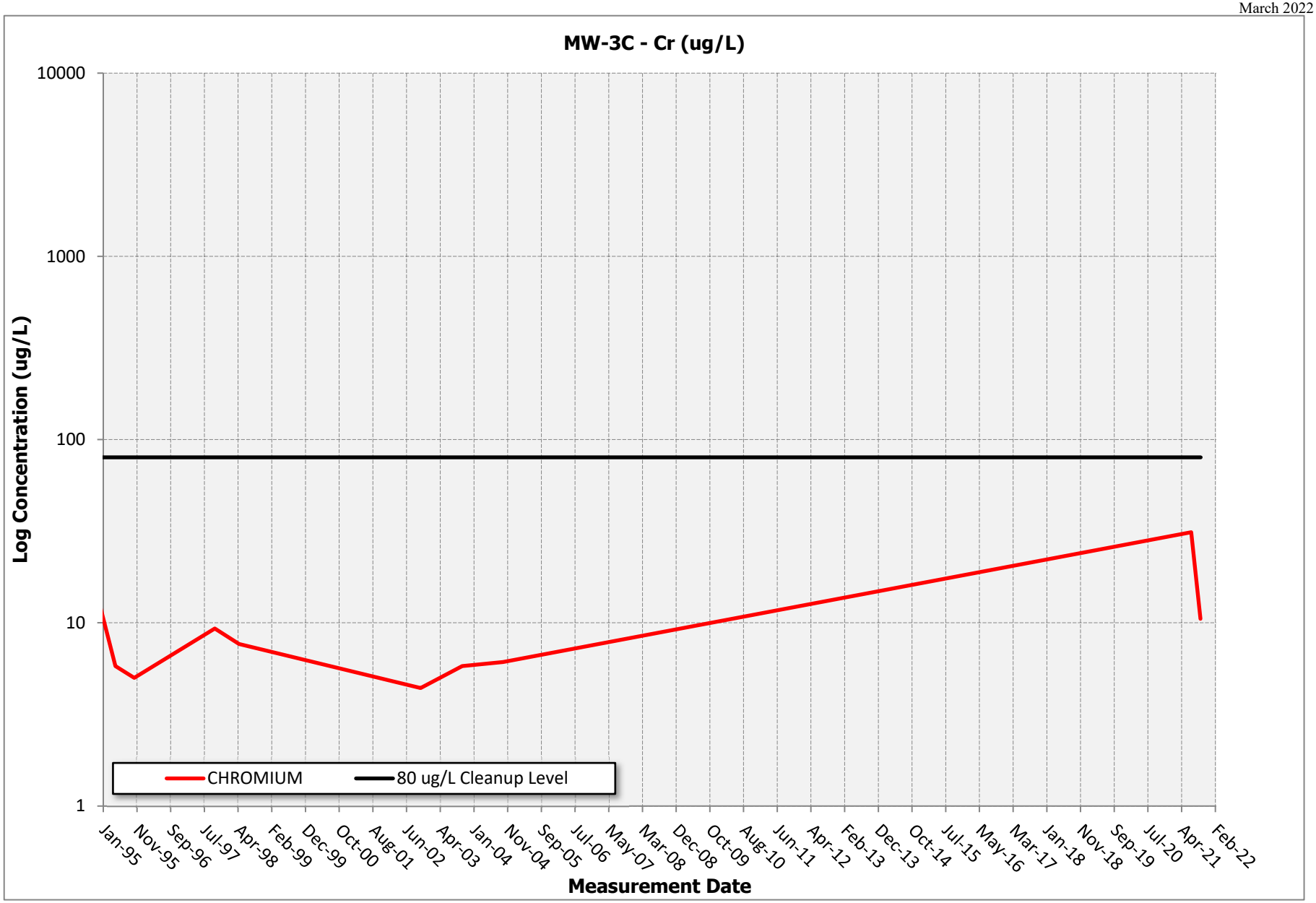

MW-2A - Cr (ug/L)
Log Concentration (ug/L)
100000
10000
1000
100
10
1
CHROMIUM
80 ug/L Cleanup Level
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date

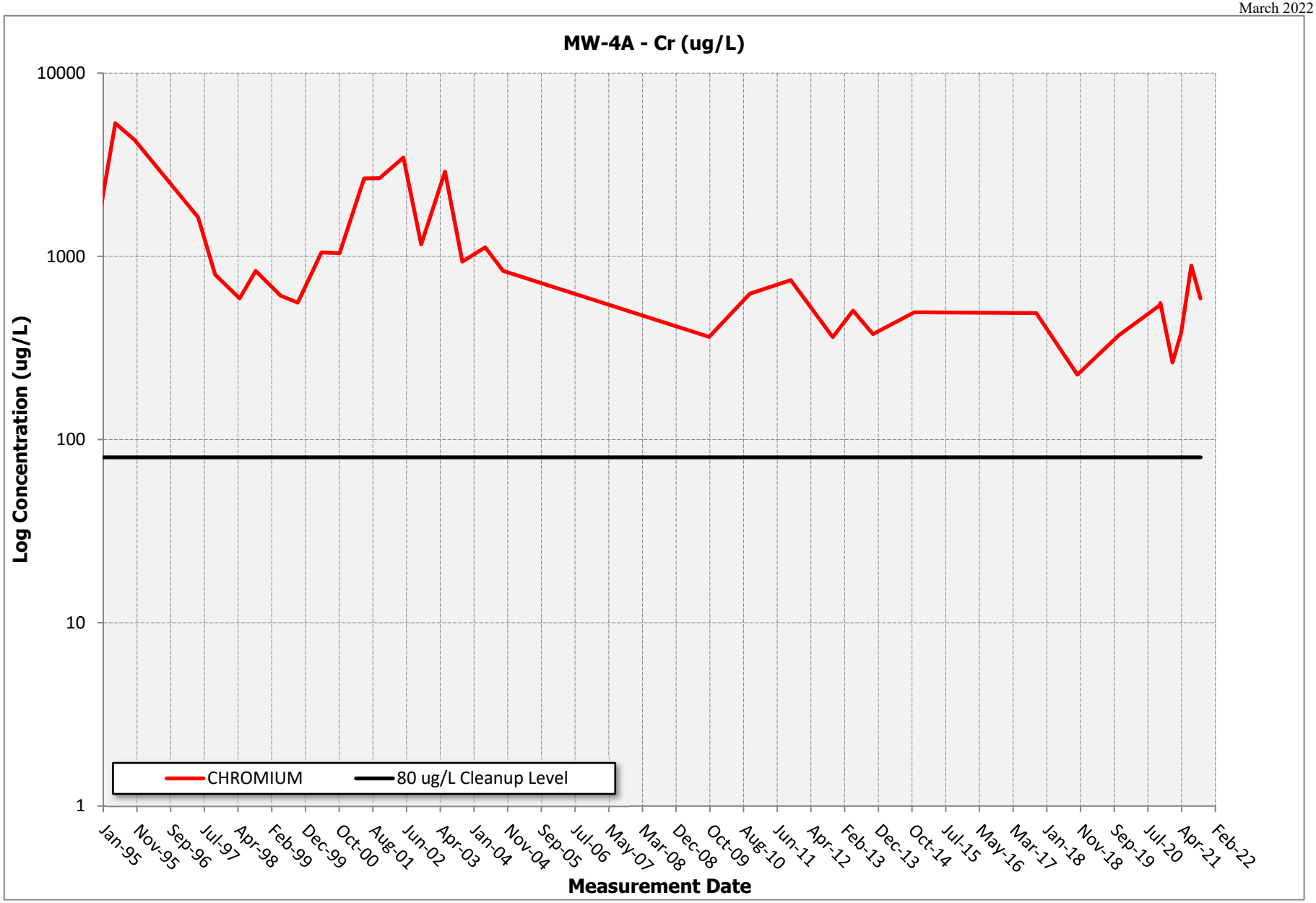

MW-2B - Cr (ug/L)
Log Concentration (ug/L)
100000
10000
1000
100
10
1
CHROMIUM
80 ug/L Cleanup Level
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date

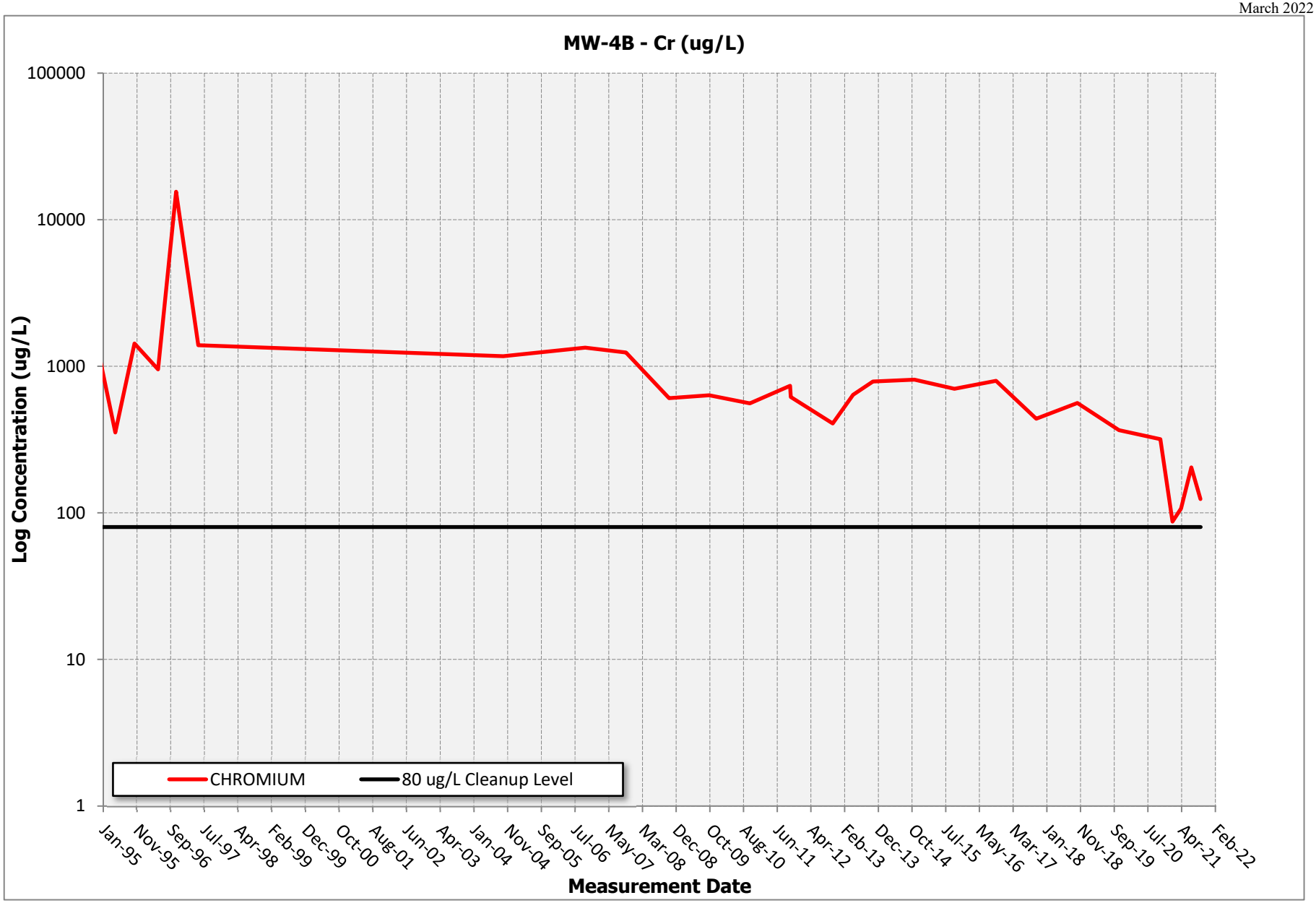

MW-2C - Cr (ug/L)
Log Concentration (ug/L)
100000
10000
1000
100
10
1
CHROMIUM
80 ug/L Cleanup Level
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
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Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date

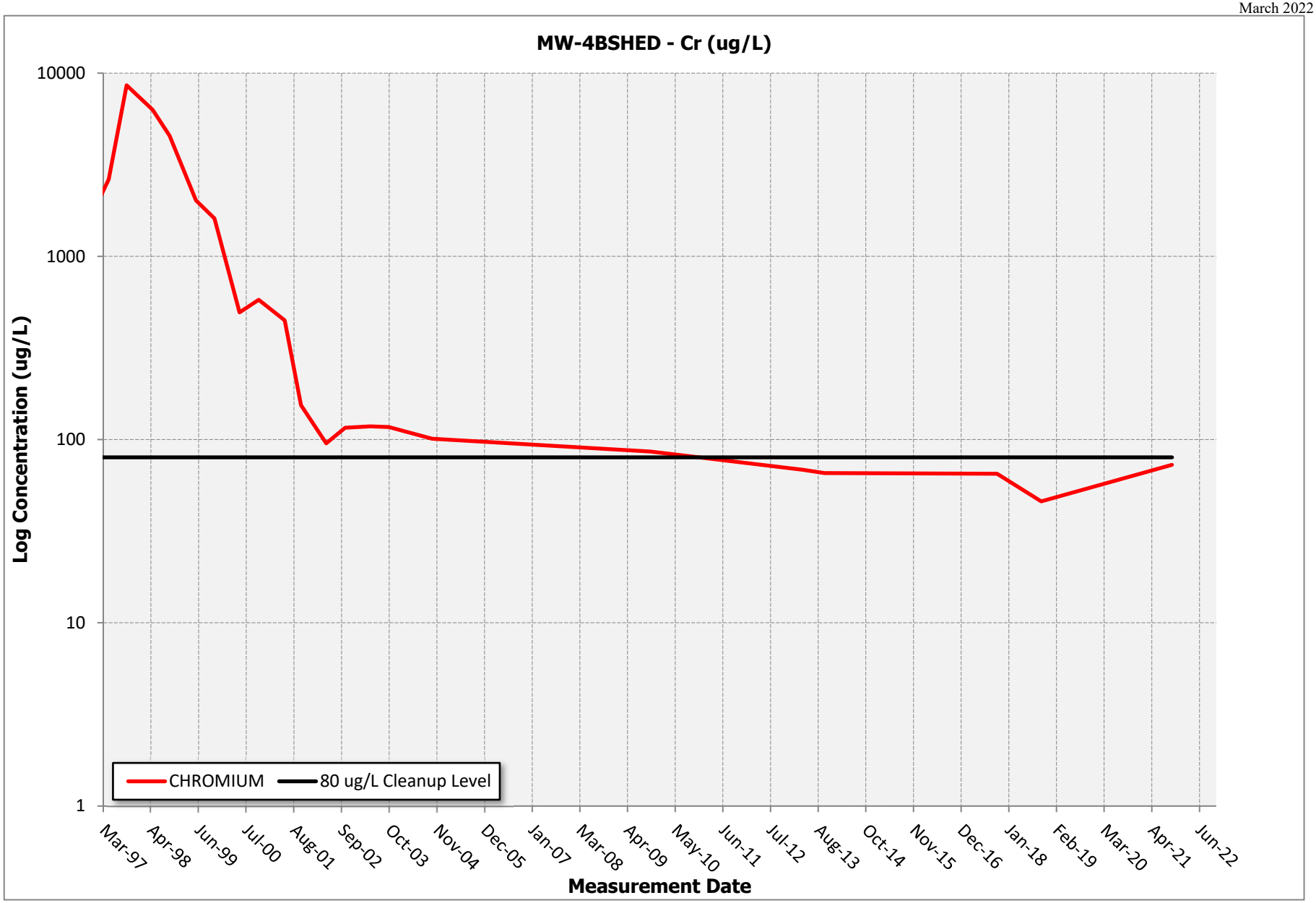

MW-3A - Cr (ug/L)
Log Concentration (ug/L)
10000
1000
100
10
1
CHROMIUM
80 ug/L Cleanup Level
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date

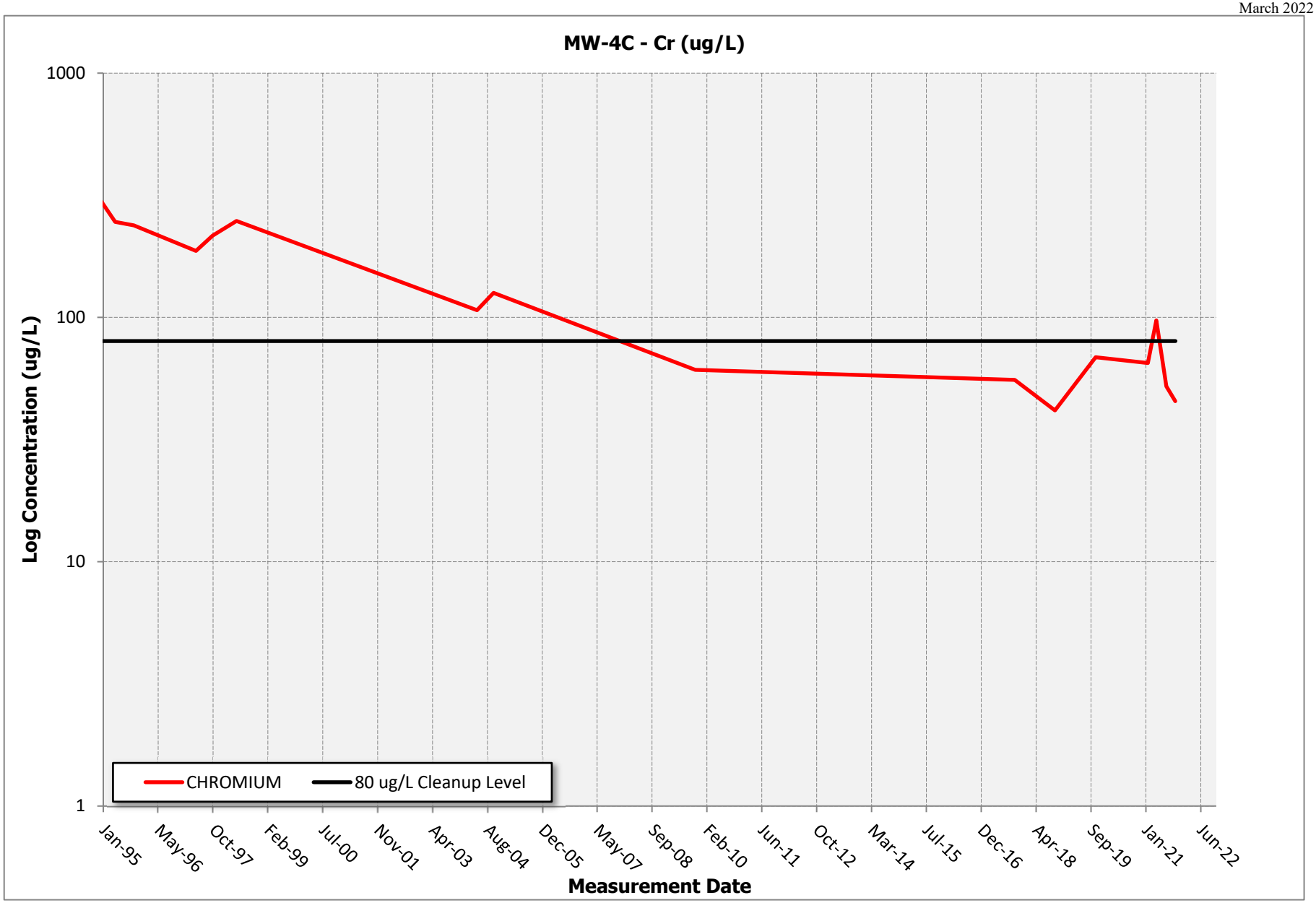

MW-3B - Cr (ug/L)
Log Concentration (ug/L)
10000
1000
100
10
1
CHROMIUM
80 ug/L Cleanup Level
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
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Jul-15
May-16
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Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date

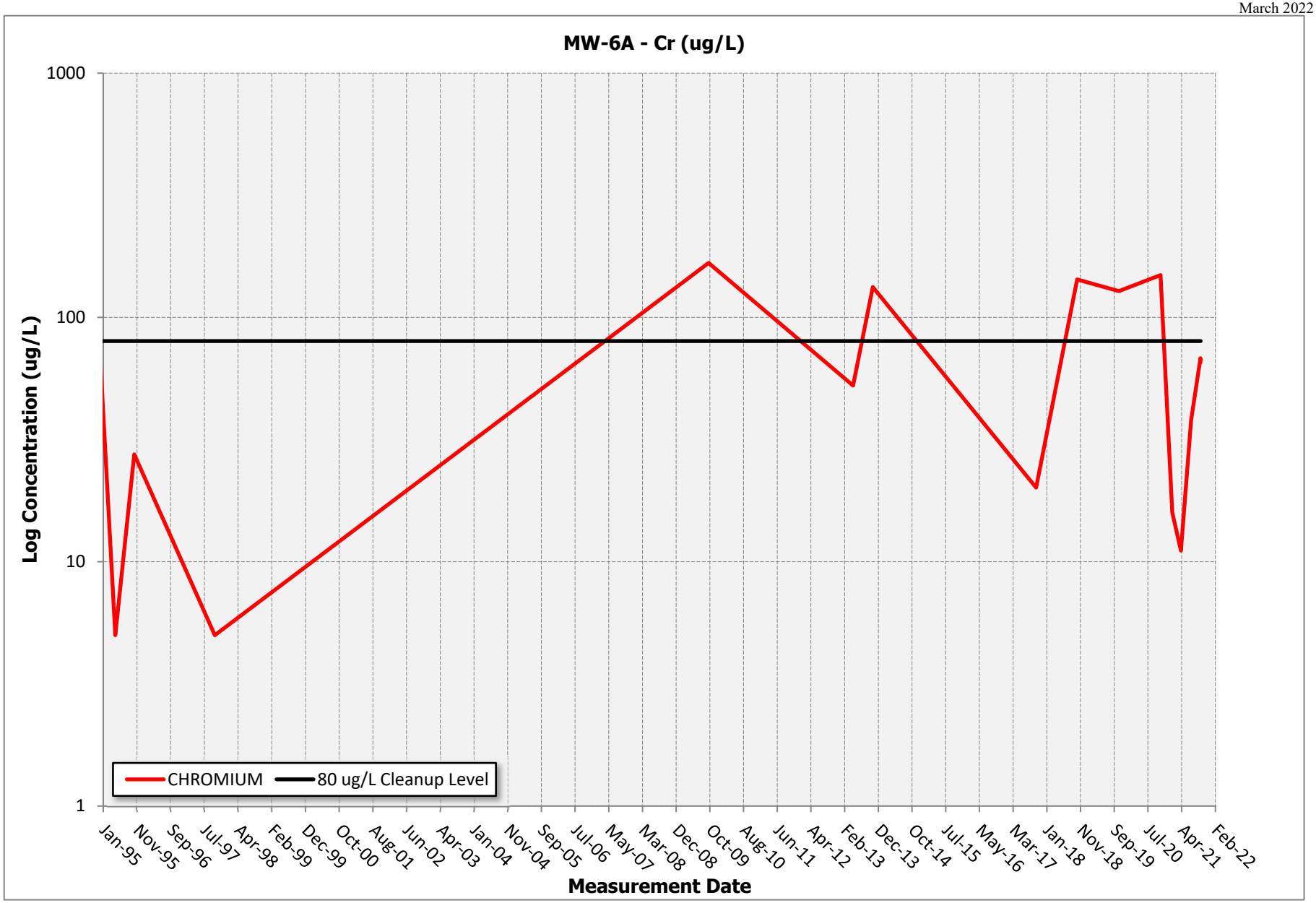

MW-3C - Cr (ug/L)
Log Concentration (ug/L)
10000
1000
100
10
1
CHROMIUM
80 ug/L Cleanup Level
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date

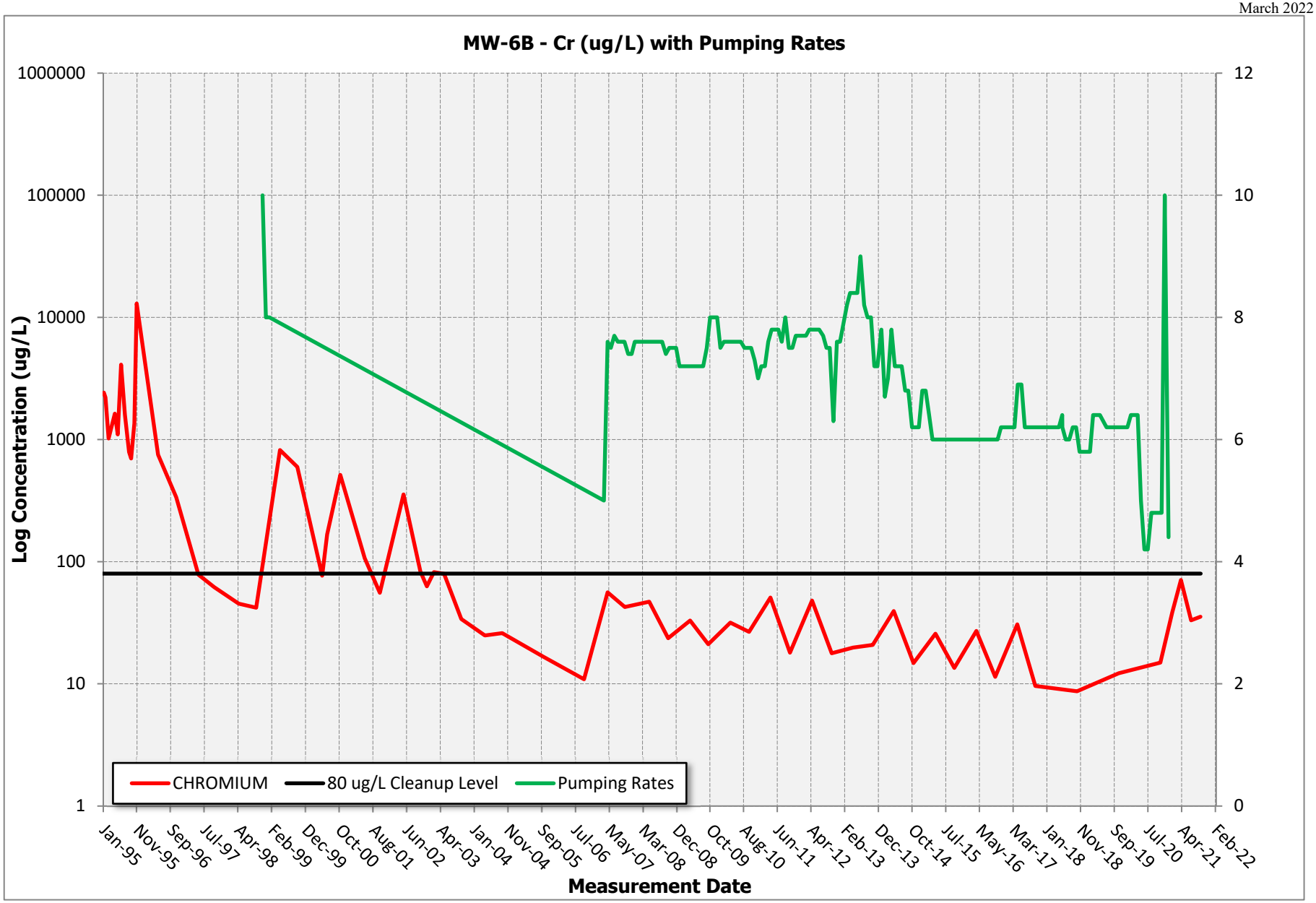

MW-4A - Cr (ug/L)
Log Concentration (ug/L)
10000
1000
100
10
1
CHROMIUM
80 ug/L Cleanup Level
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date

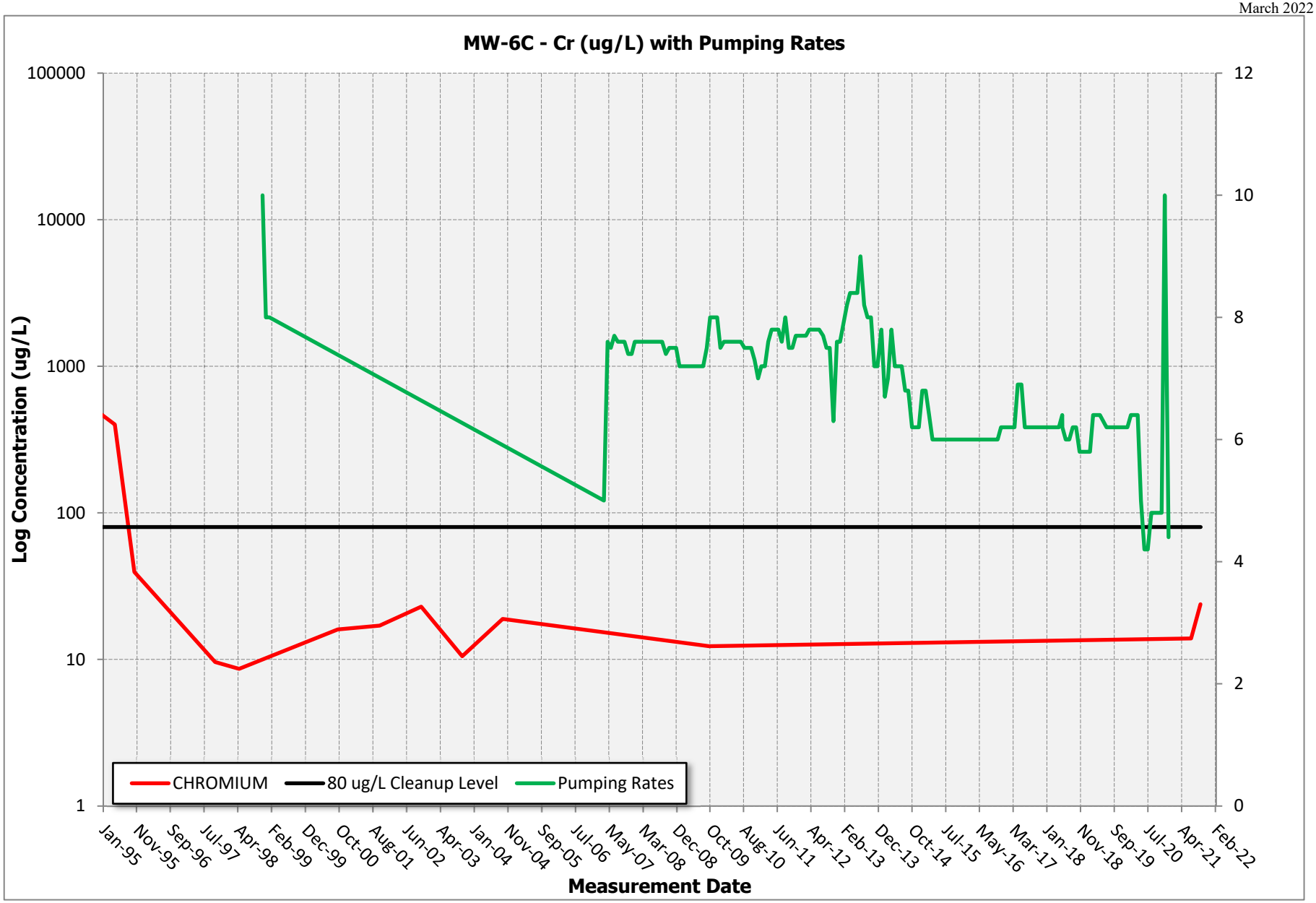

MW-4B - Cr (ug/L)
Log Concentration (ug/L)
100000
10000
1000
100
10
1
CHROMIUM
80 ug/L Cleanup Level
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date

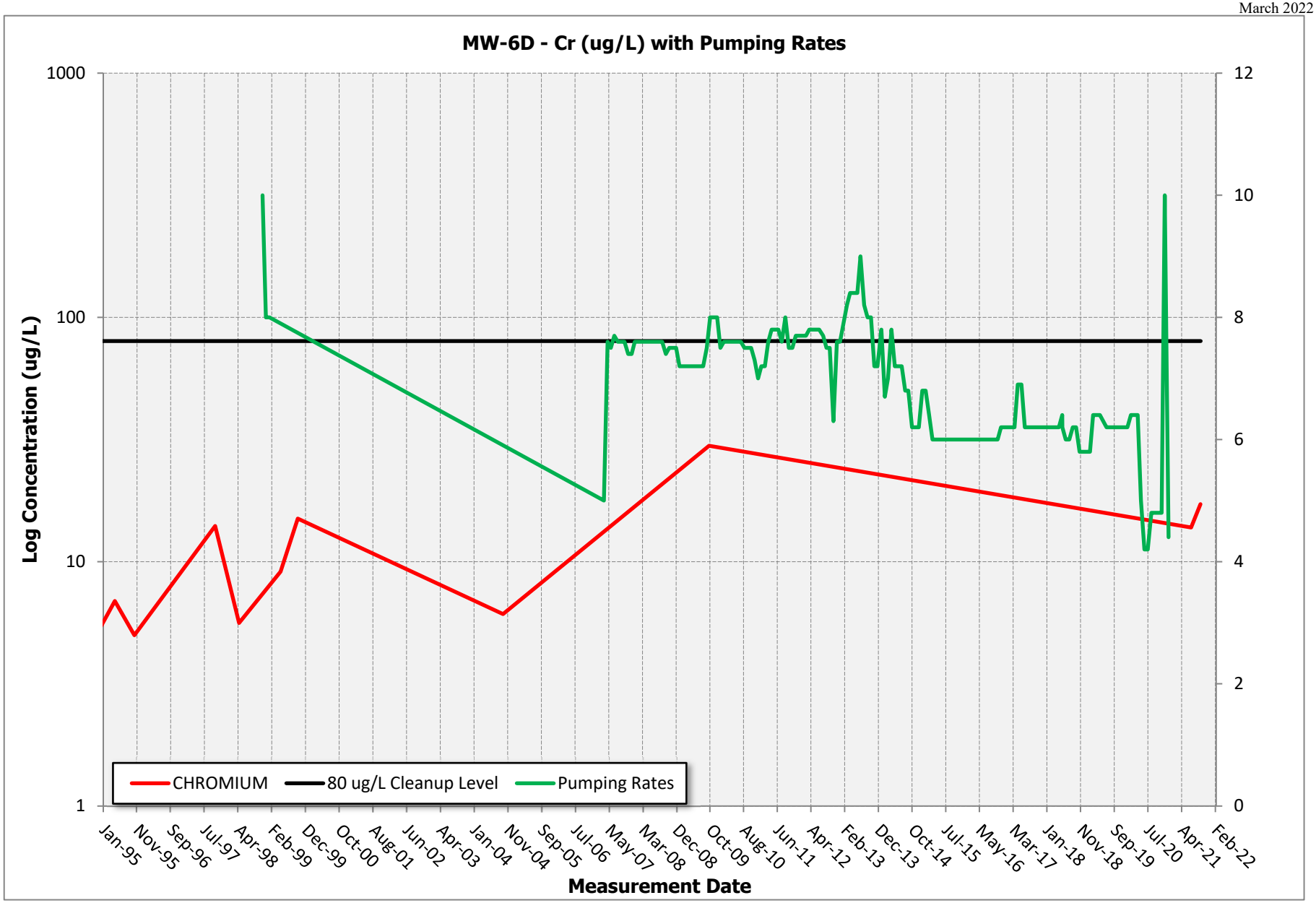

MW-4BSHED - Cr (ug/L)
Log Concentration (ug/L)
10000
1000
100
10
1
CHROMIUM
80 ug/L Cleanup Level
Mar-97
Apr-98
Jun-99
Jul-00
Aug-01
Sep-02
Oct-03
Nov-04
Dec-05
Jan-07
Mar-08
Apr-09
May-10
Jun-11
Jul-12
Aug-13
Oct-14
Nov-15
Dec-16
Jan-18
Feb-19
Mar-20
Apr-21
Jun-22
Measurement Date

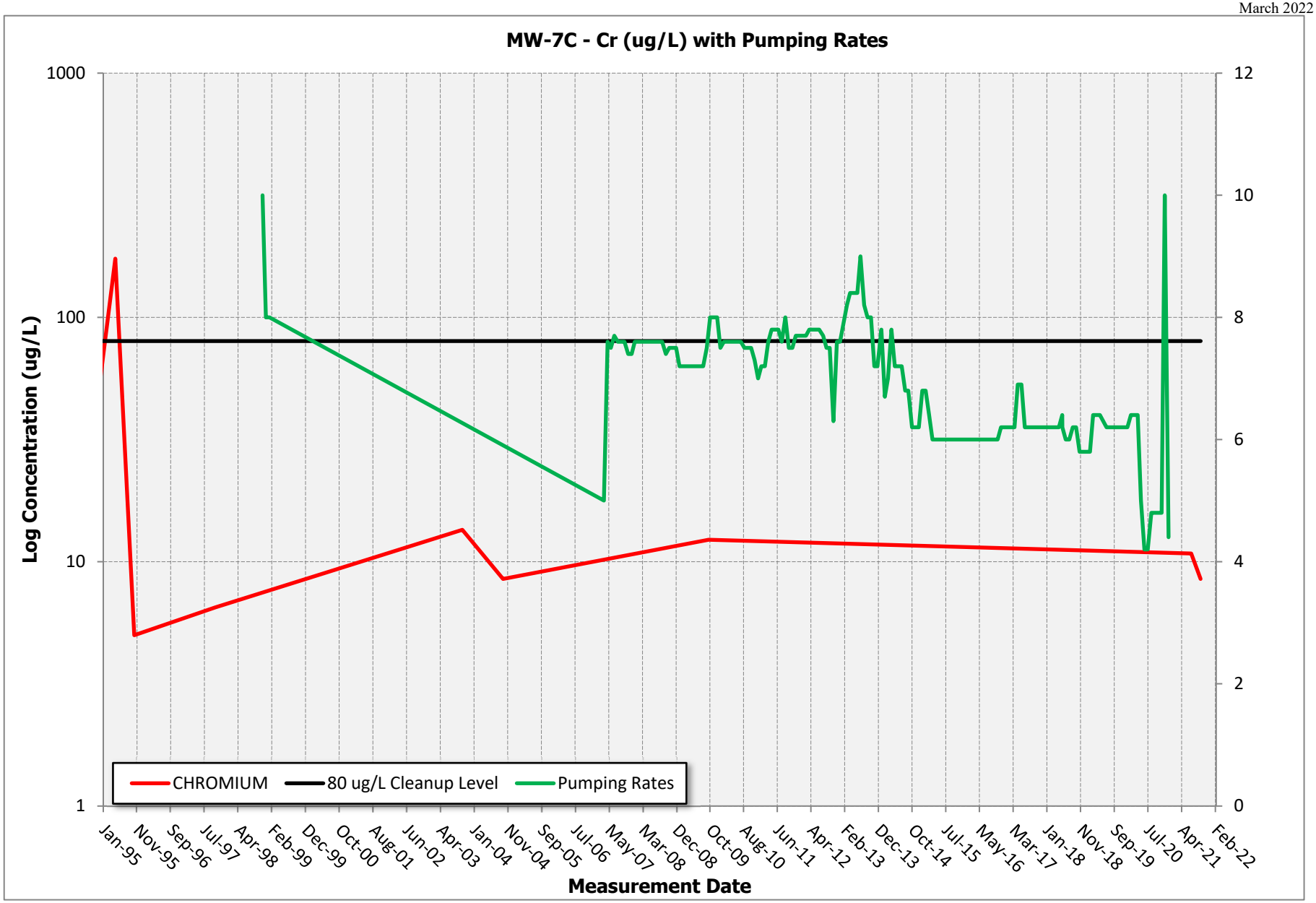

MW-4C - Cr (ug/L)
1000
100
10
1
Log Concentration (ug/L)
CHROMIUM
80 ug/L Cleanup Level
Jan-95
May-96
Oct-97
Feb-99
Jul-00
Nov-01
Apr-03
Aug-04
Dec-05
May-07
Sep-08
Feb-10
Jun-11
Oct-12
Mar-14
Jul-15
Dec-16
Apr-18
Sep-19
Jan-21
Jun-22
Measurement Date

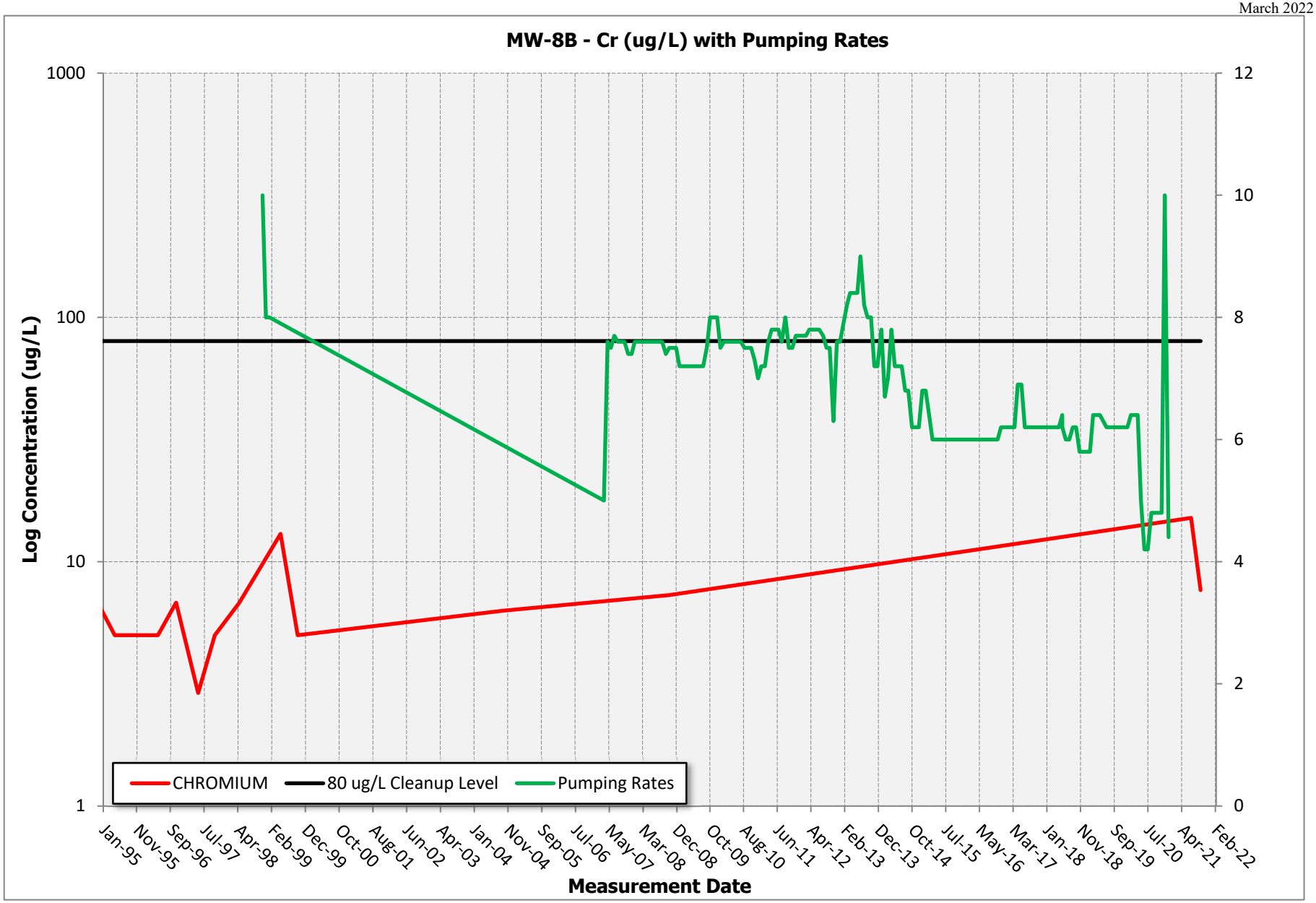

MW-6A - Cr (ug/L)
Log Concentration (ug/L)
1000
100
10
1
CHROMIUM
80 ug/L Cleanup Level
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date

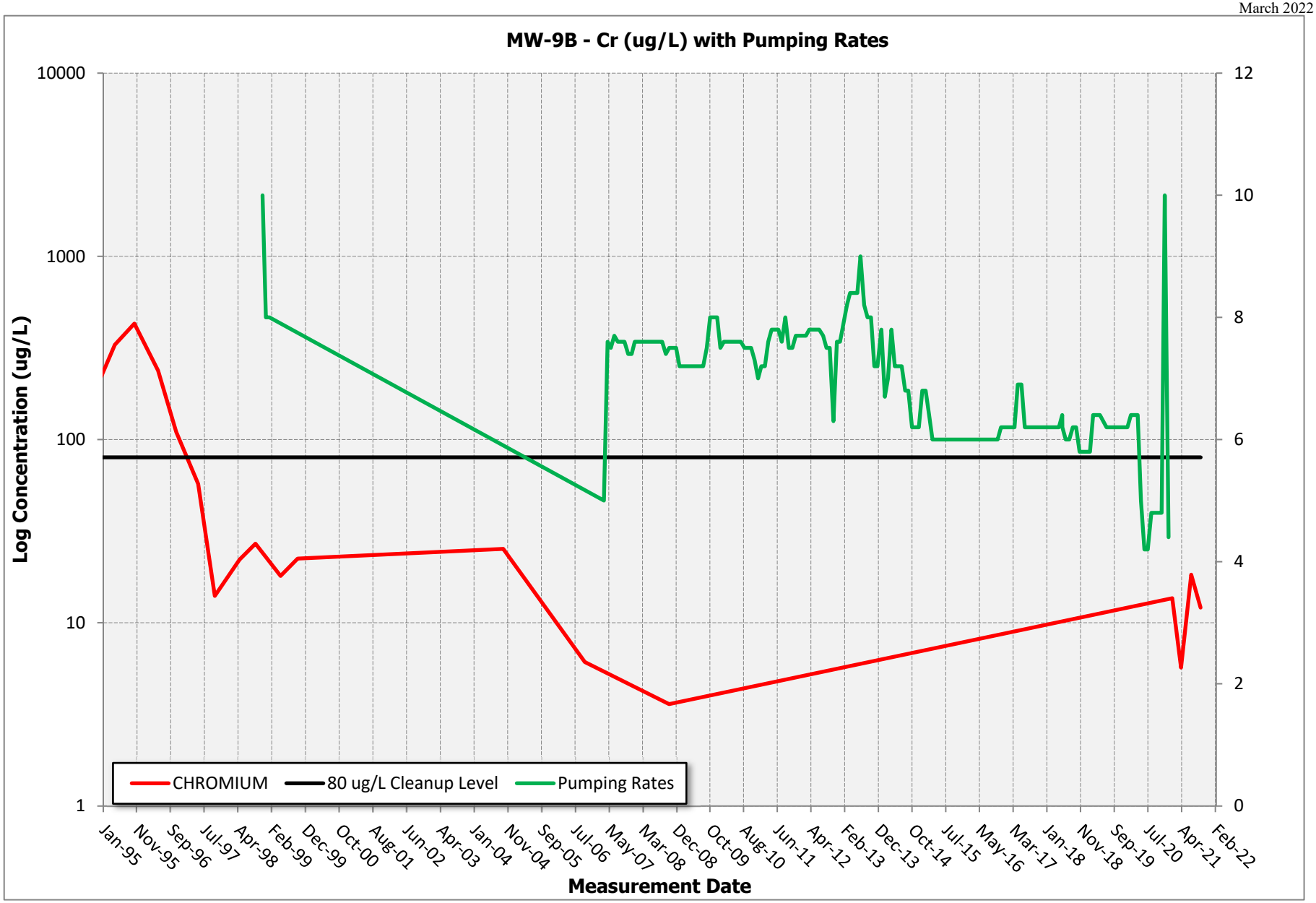

MW-6B - Cr (ug/L) with Pumping Rates
Log Concentration (ug/L)
1000000
100000
10000
1000
100
10
1
12
10
8
6
4
2
0
CHROMIUM
80 ug/L Cleanup Level
Pumping Rates
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date

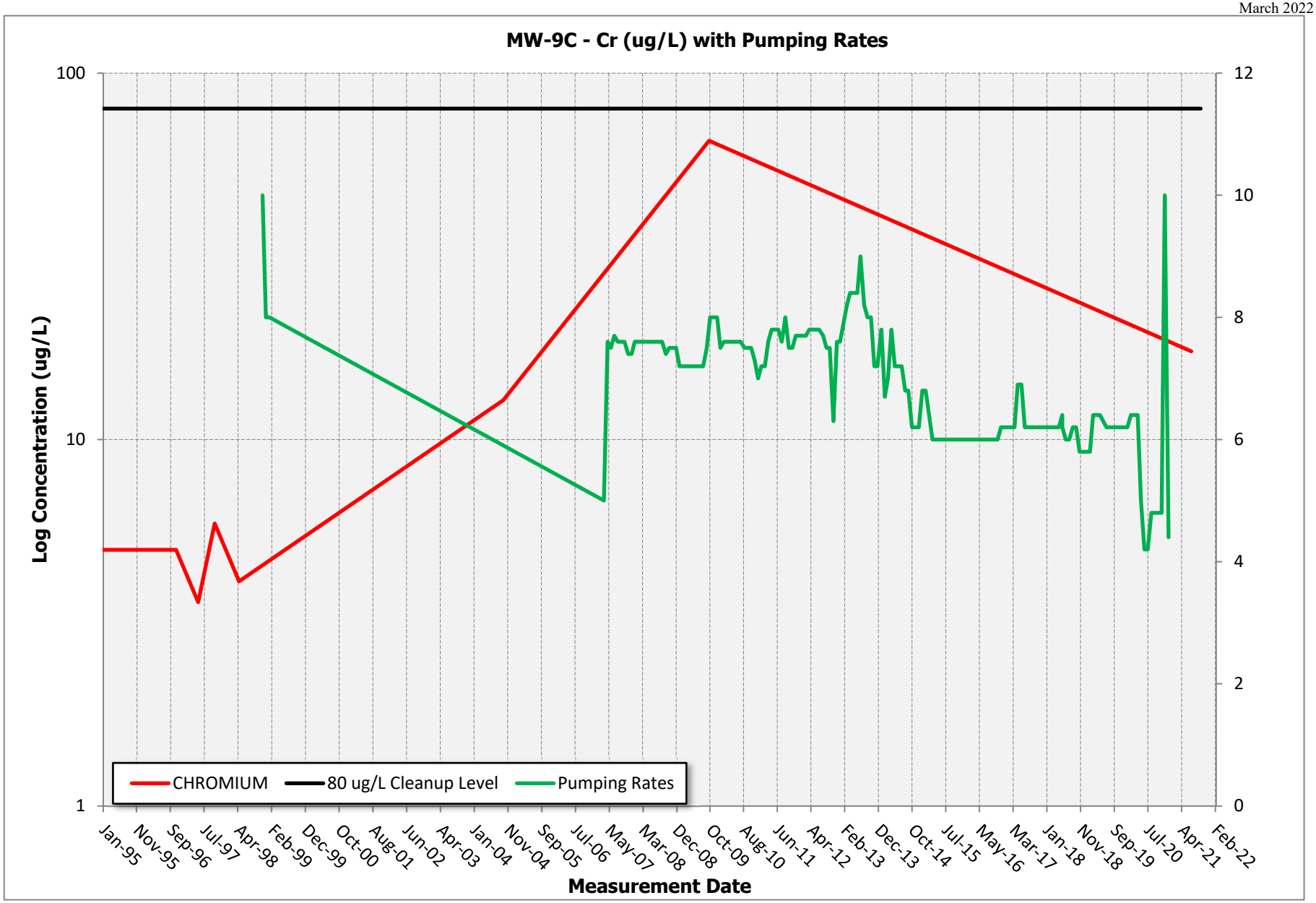

MW-6C - Cr (ug/L) with Pumping Rates
Log Concentration (ug/L)
100000
10000
1000
100
10
1
12
10
8
6
4
2
0
CHROMIUM
80 ug/L Cleanup Level
Pumping Rates
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date

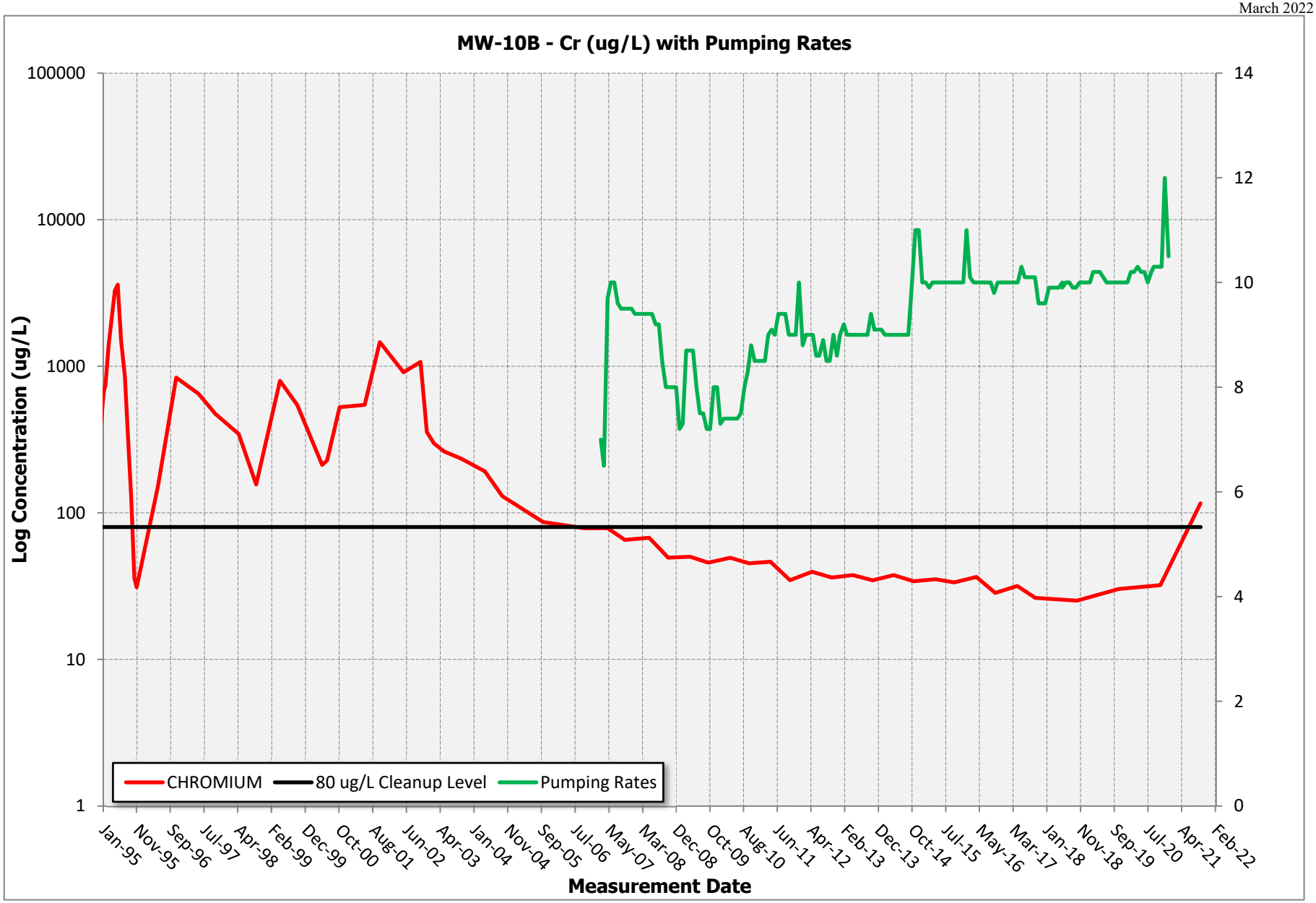

MW-6D - Cr (ug/L) with Pumping Rates
Log Concentration (ug/L)
1000
100
10
1
12
10
8
6
4
2
0
CHROMIUM
80 ug/L Cleanup Level
Pumping Rates
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date

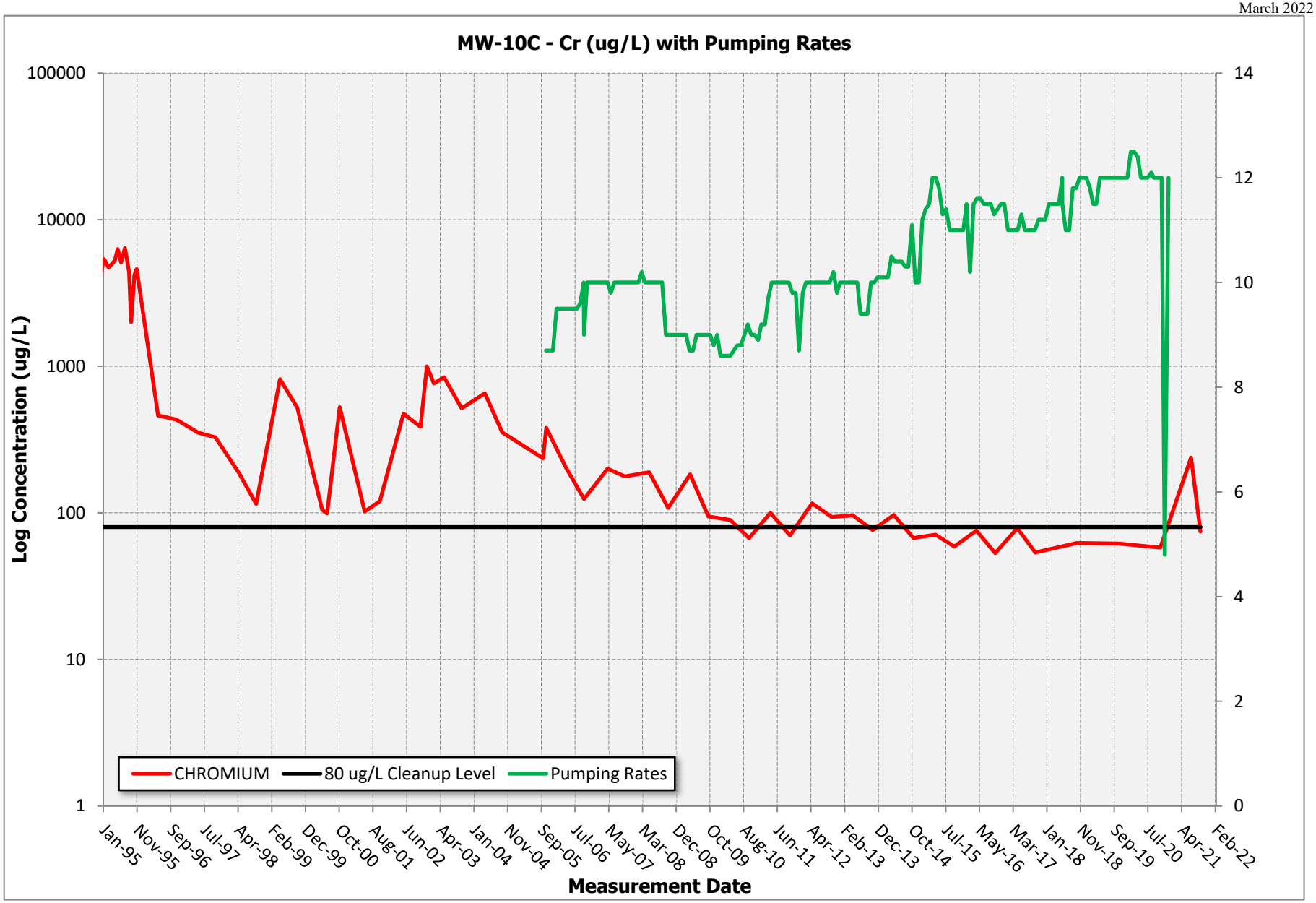

MW-7C - Cr (ug/L) with Pumping Rates
Log Concentration (ug/L)
1000
100
10
1
12
10
8
6
4
2
0
CHROMIUM
80 ug/L Cleanup Level
Pumping Rates
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date

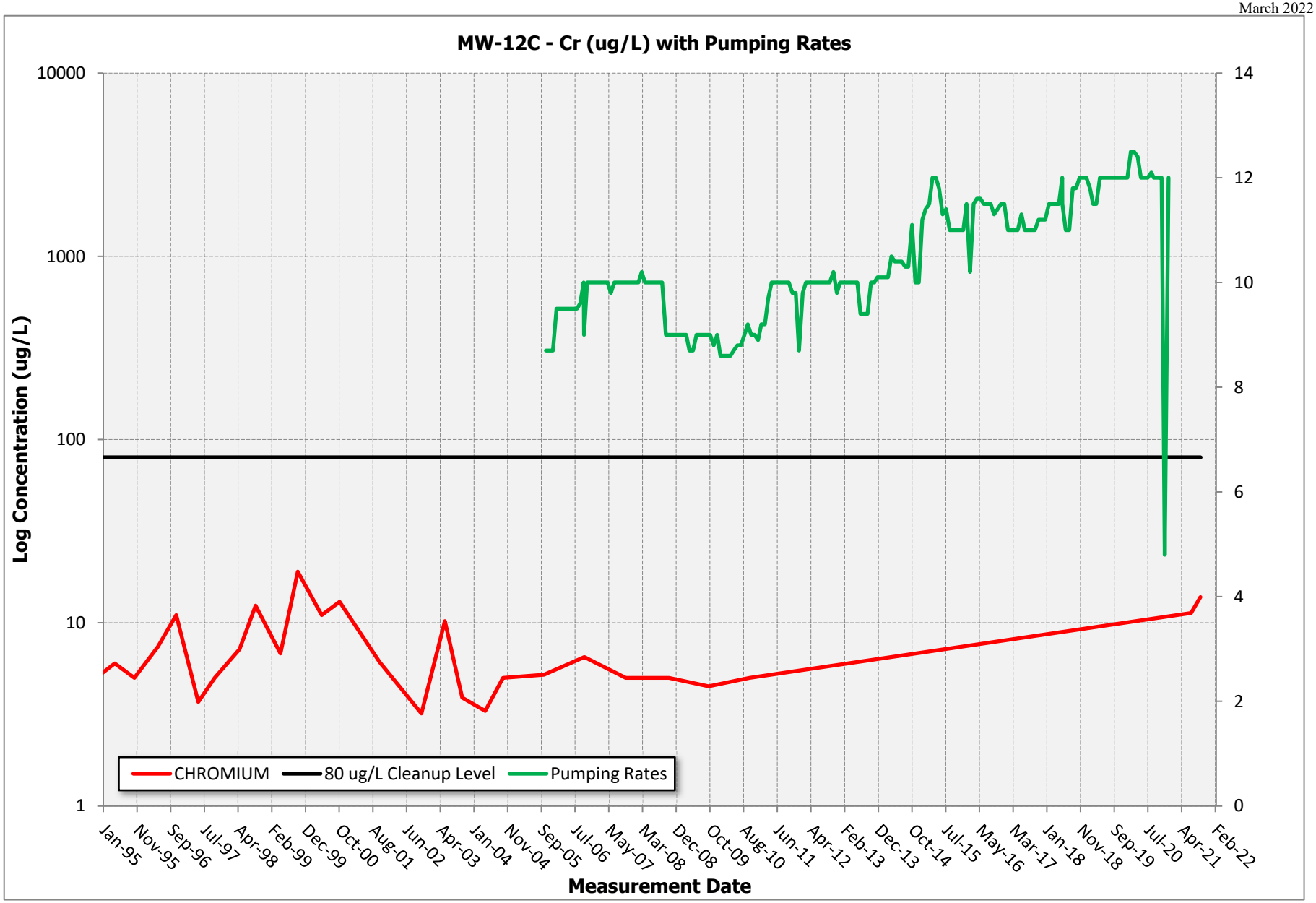

MW-8B - Cr (ug/L) with Pumping Rates
Log Concentration (ug/L)
1000
100
10
1
12
10
8
6
4
2
0
CHROMIUM
80 ug/L Cleanup Level
Pumping Rates
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date

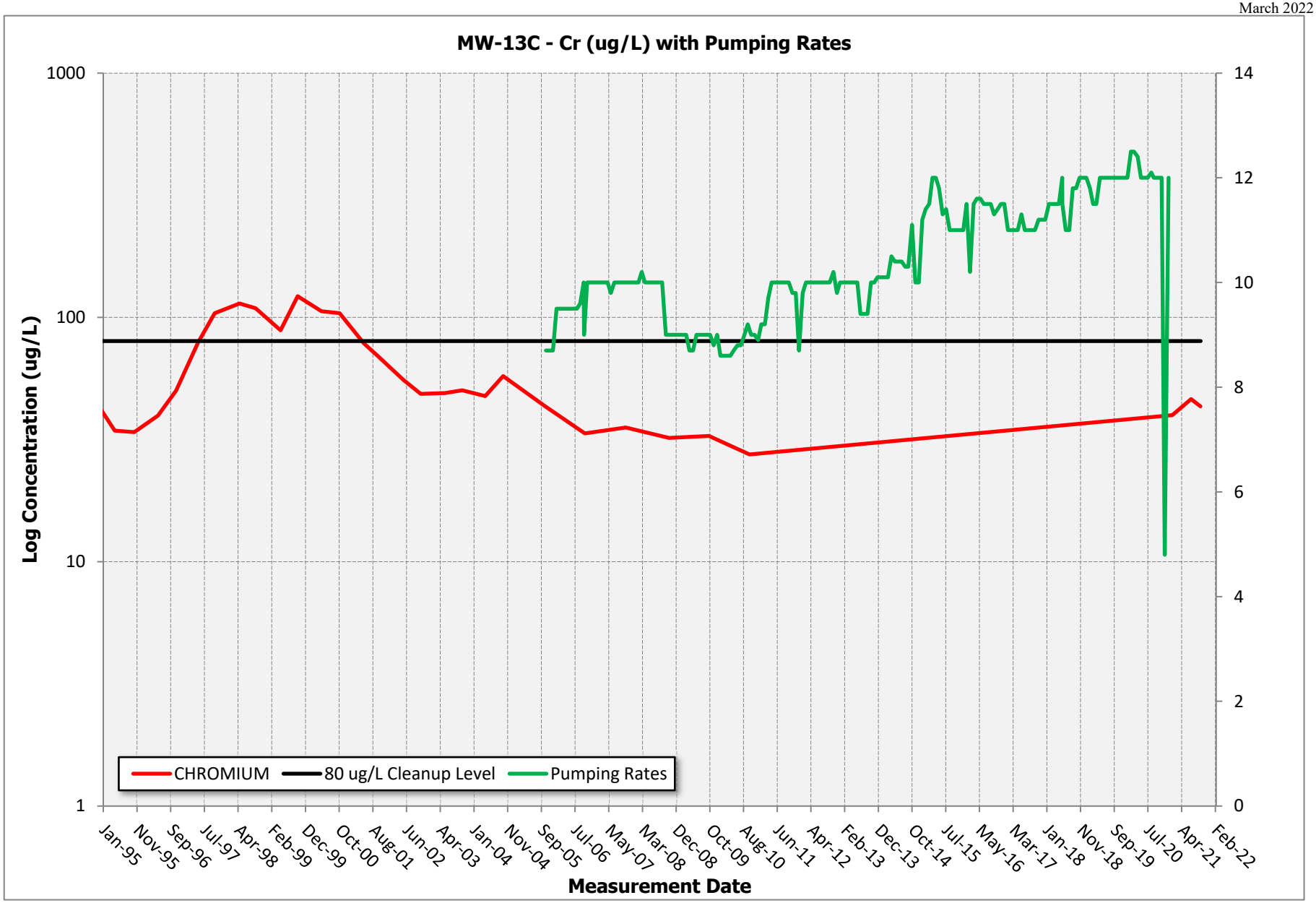

MW-9B - Cr (ug/L) with Pumping Rates
Log Concentration (ug/L)
10000
1000
100
10
1
12
10
8
6
4
2
0
CHROMIUM
80 ug/L Cleanup Level
Pumping Rates
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date

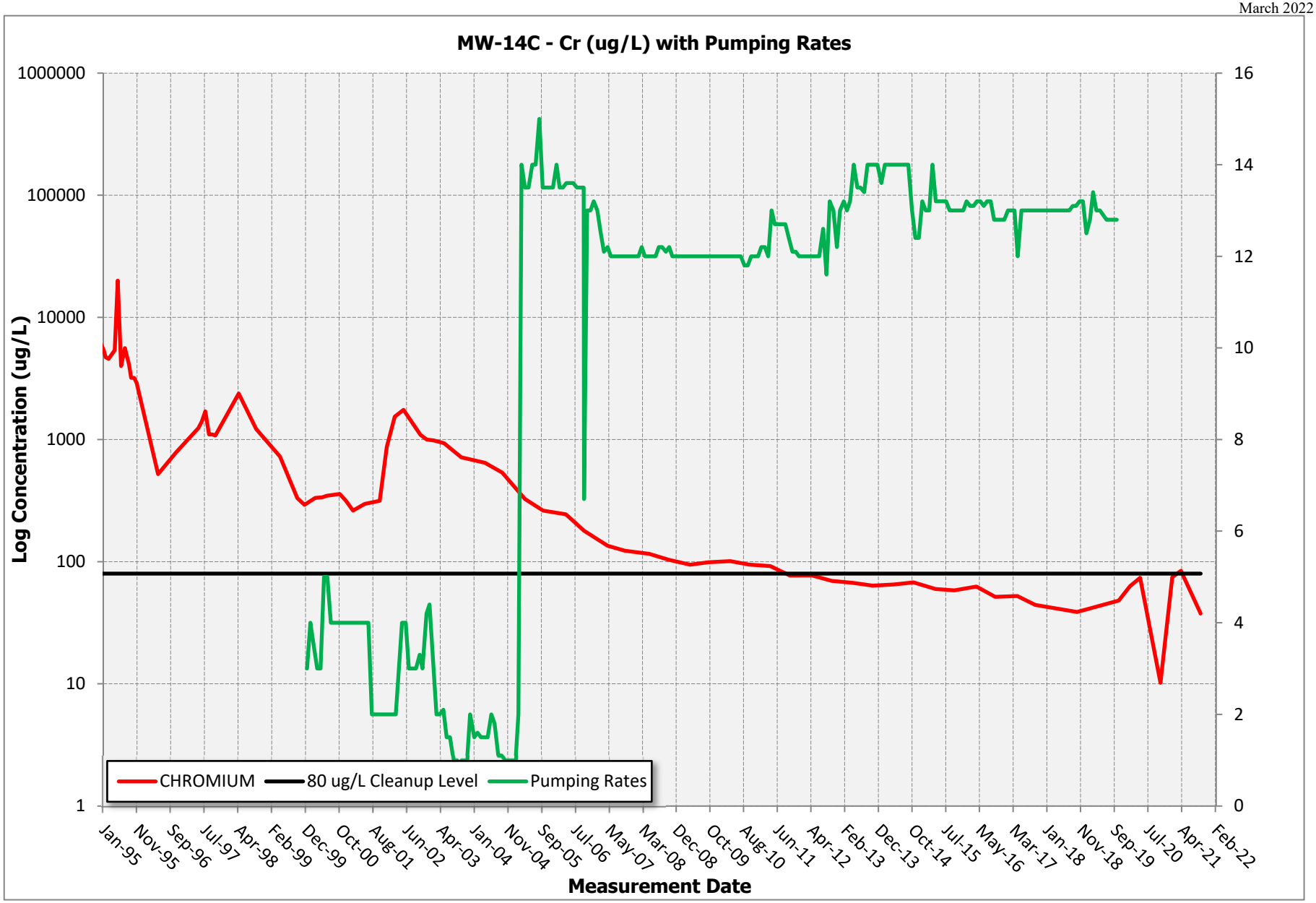

MW-9C - Cr (ug/L) with Pumping Rates
Log Concentration (ug/L)
100
10
1
12
10
8
6
4
2
0
CHROMIUM
80 ug/L Cleanup Level
Pumping Rates
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date

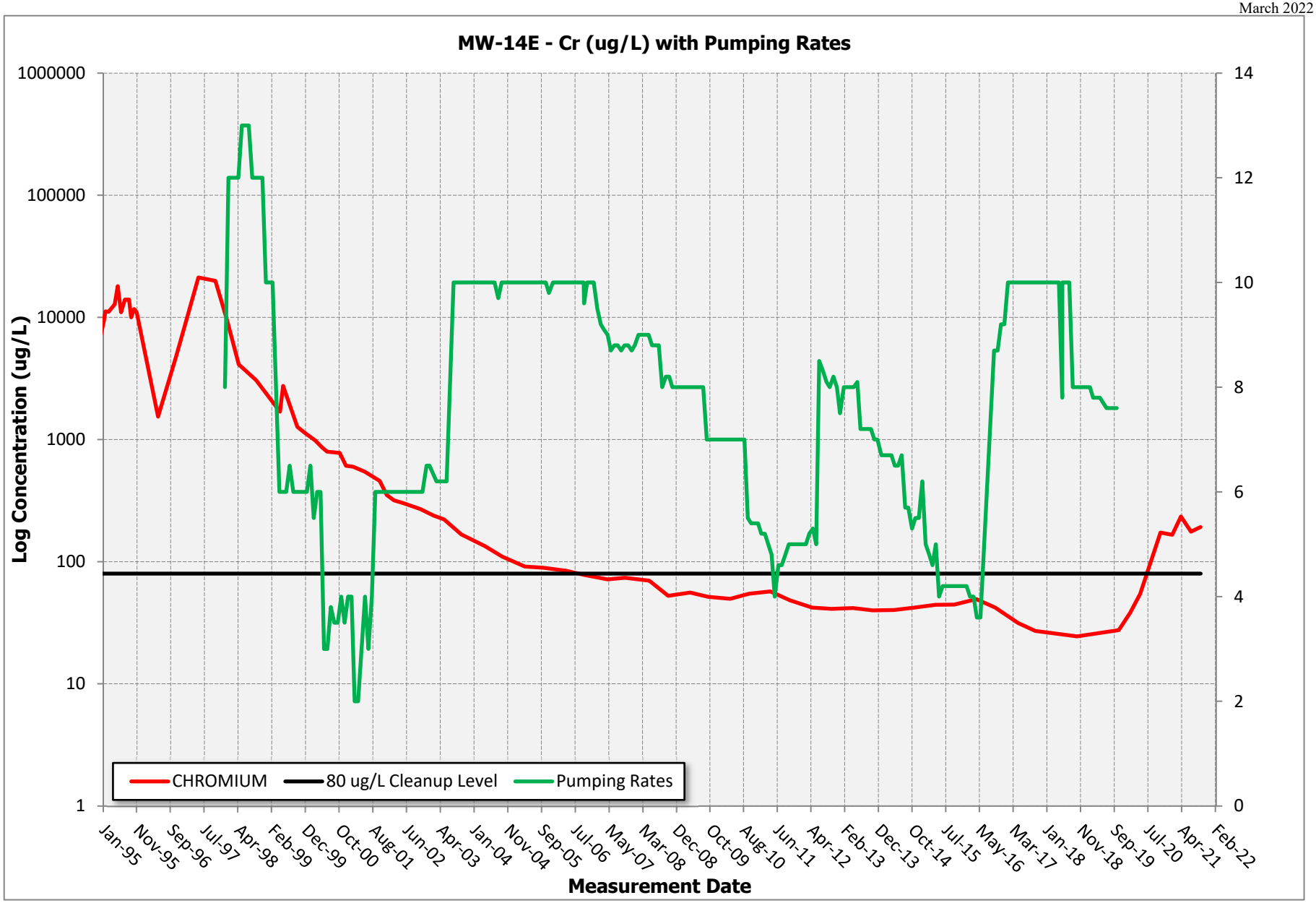

MW-10B - Cr (ug/L) with Pumping Rates
Log Concentration (ug/L)
100000
10000
1000
100
10
1
14
12
10
8
6
4
2
0
CHROMIUM
80 ug/L Cleanup Level
Pumping Rates
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date

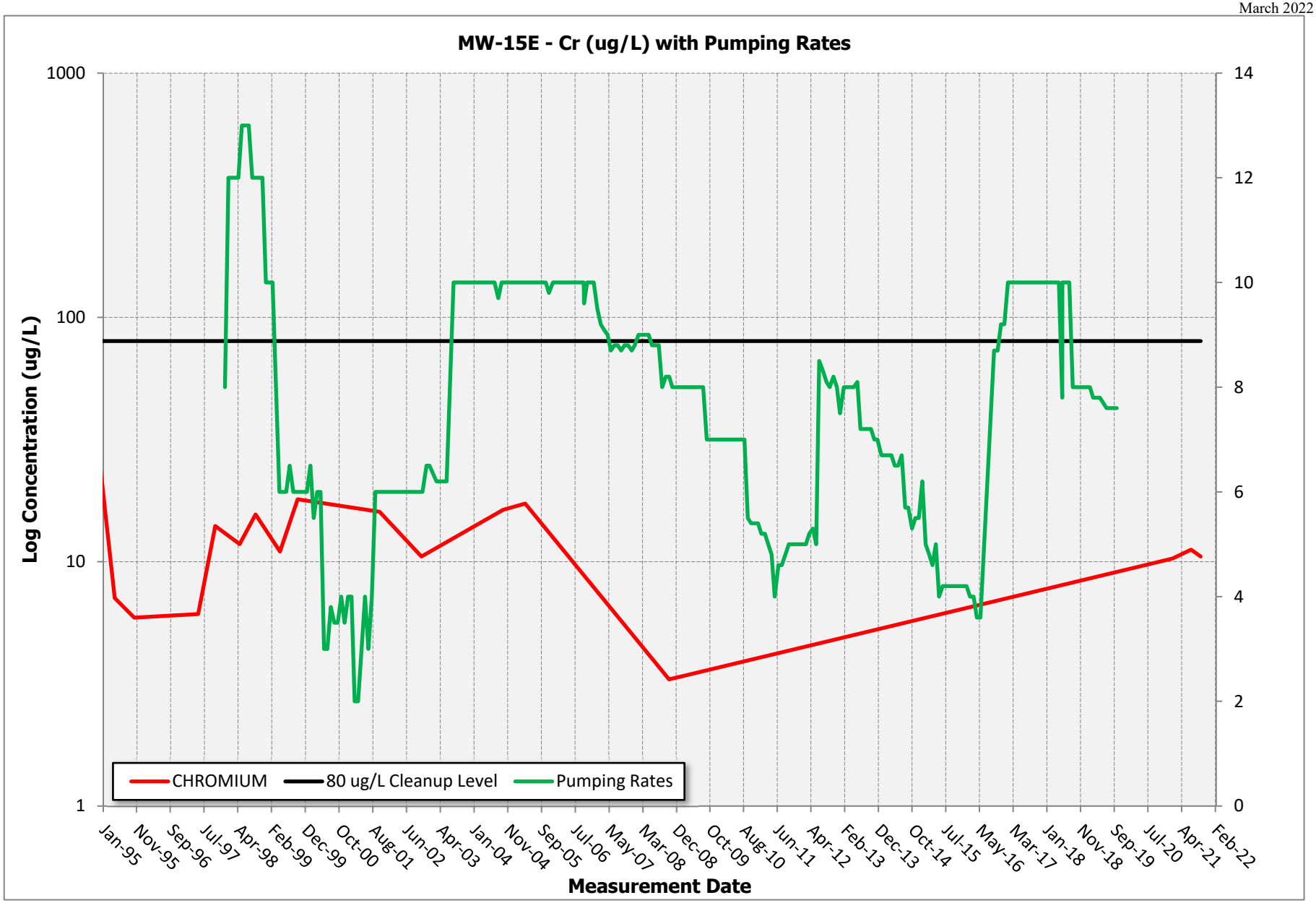

MW-10C - Cr (ug/L) with Pumping Rates
Log Concentration (ug/L)
100000
10000
1000
100
10
1
14
12
10
8
6
4
2
0
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date
CHROMIUM
80 ug/L Cleanup Level
Pumping Rates

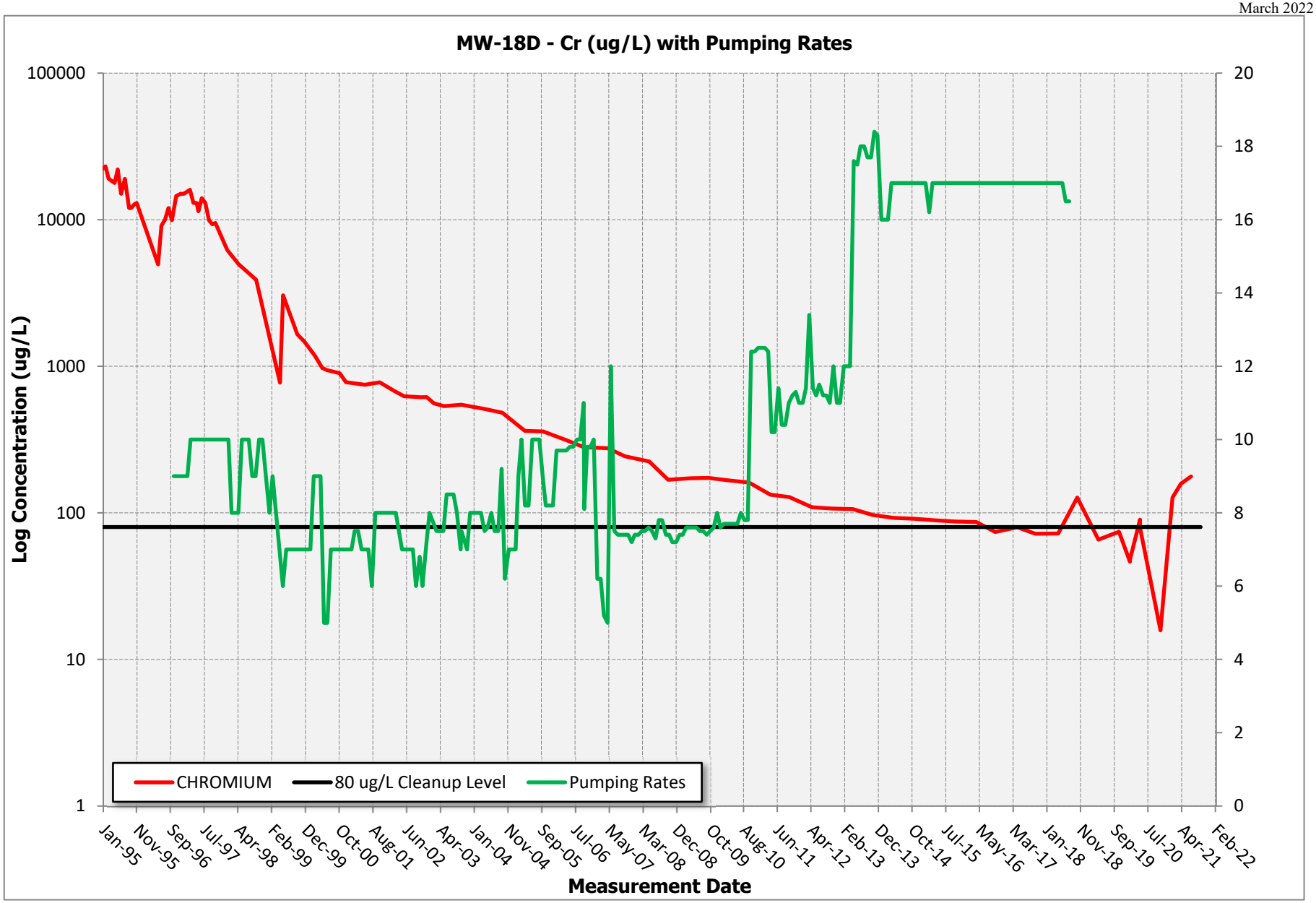

MW-12C - Cr (ug/L) with Pumping Rates
Log Concentration (ug/L)
10000
1000
100
10
1
14
12
10
8
6
4
2
0
CHROMIUM
80 ug/L Cleanup Level
Pumping Rates
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date

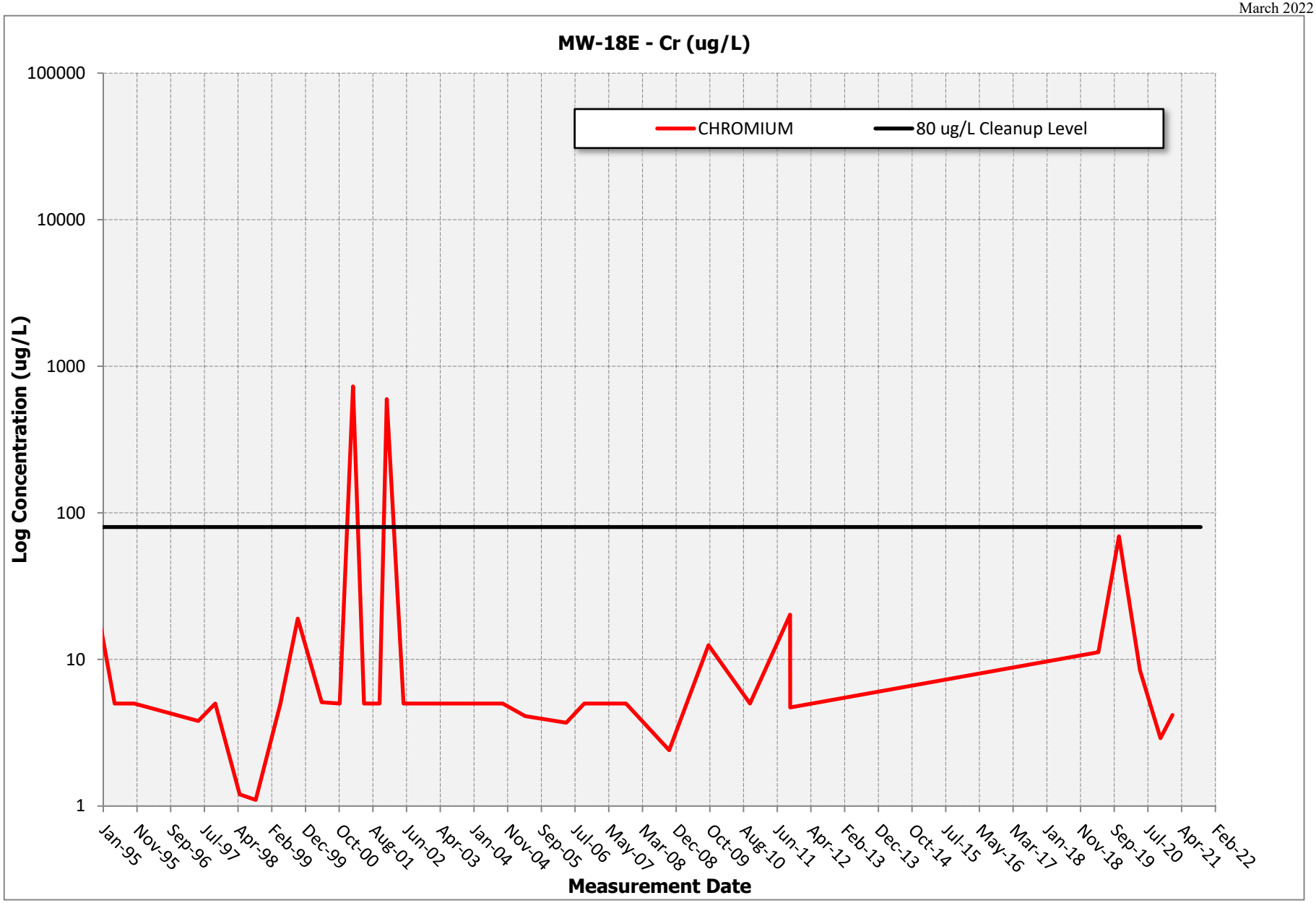

MW-13C - Cr (ug/L) with Pumping Rates
Log Concentration (ug/L)
1000
100
10
1
14
12
10
8
6
4
2
0
CHROMIUM
80 ug/L Cleanup Level
Pumping Rates
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date

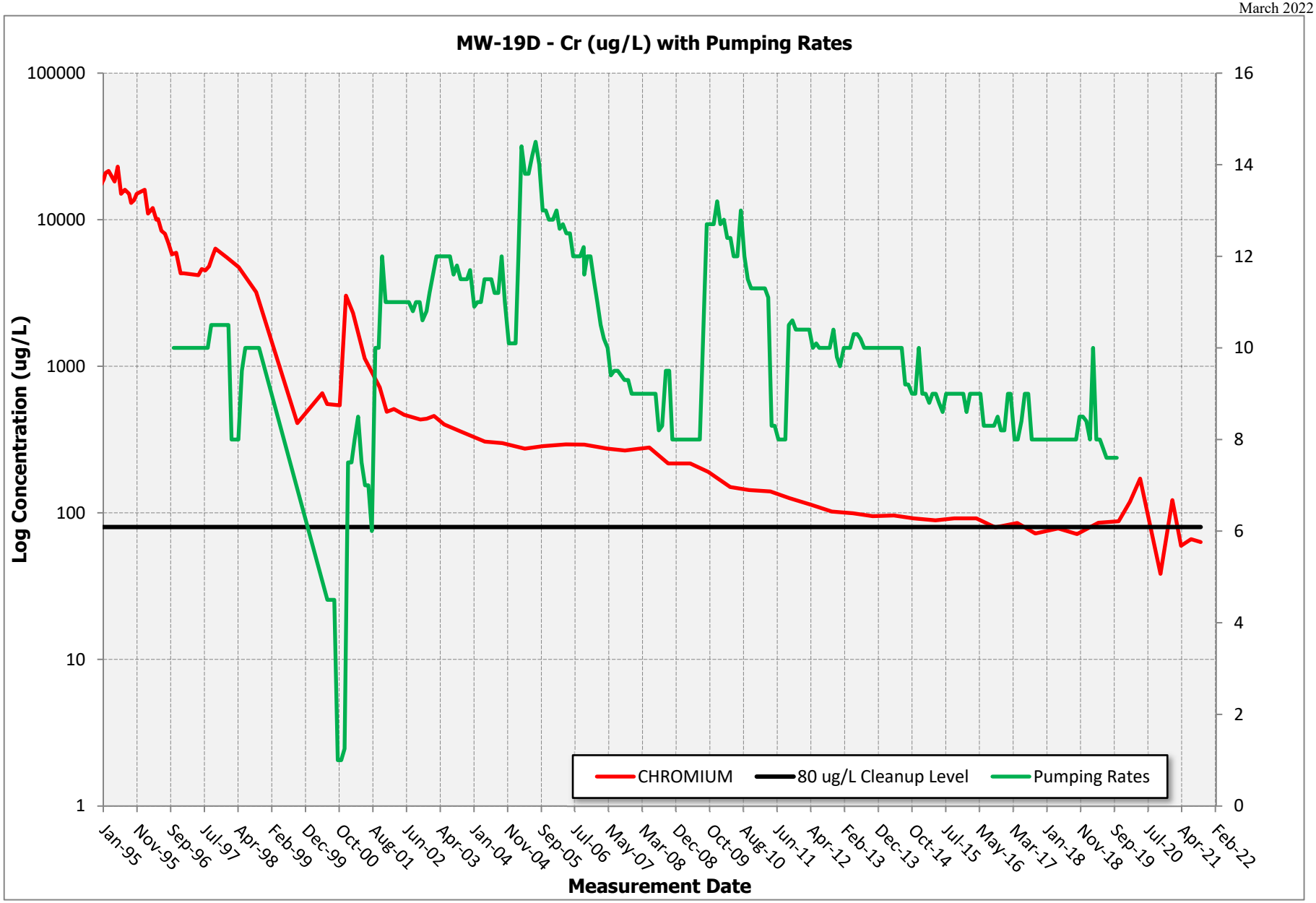

MW-14C - Cr (ug/L) with Pumping Rates
Log Concentration (ug/L)
1000000
100000
10000
1000
100
10
1
16
14
12
10
8
6
4
2
0
CHROMIUM
80 ug/L Cleanup Level
Pumping Rates
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date

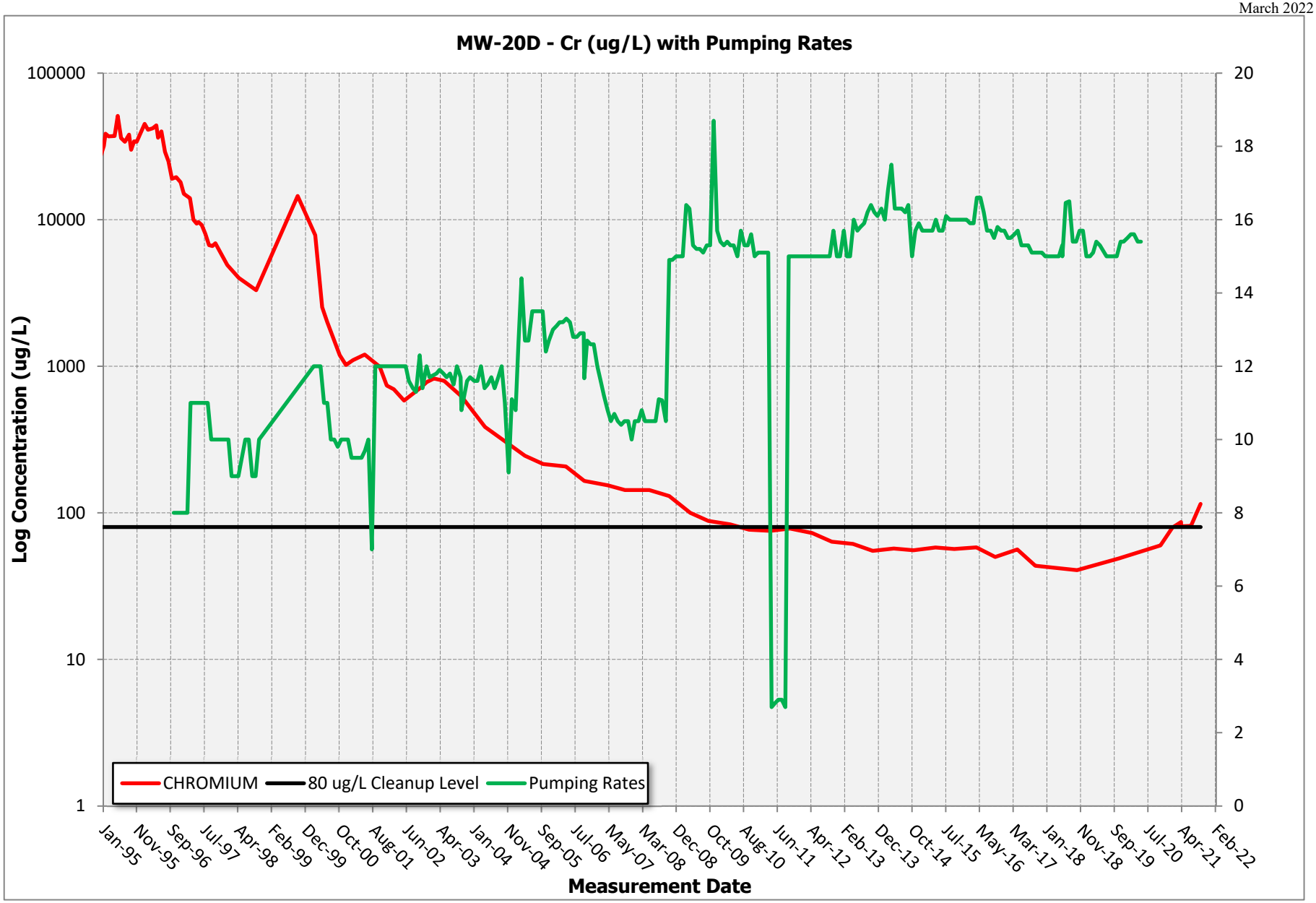

MW-14E - Cr (ug/L) with Pumping Rates
Log Concentration (ug/L)
1000000
100000
10000
1000
100
10
1
14
12
10
8
6
4
2
0
CHROMIUM
80 ug/L Cleanup Level
Pumping Rates
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date

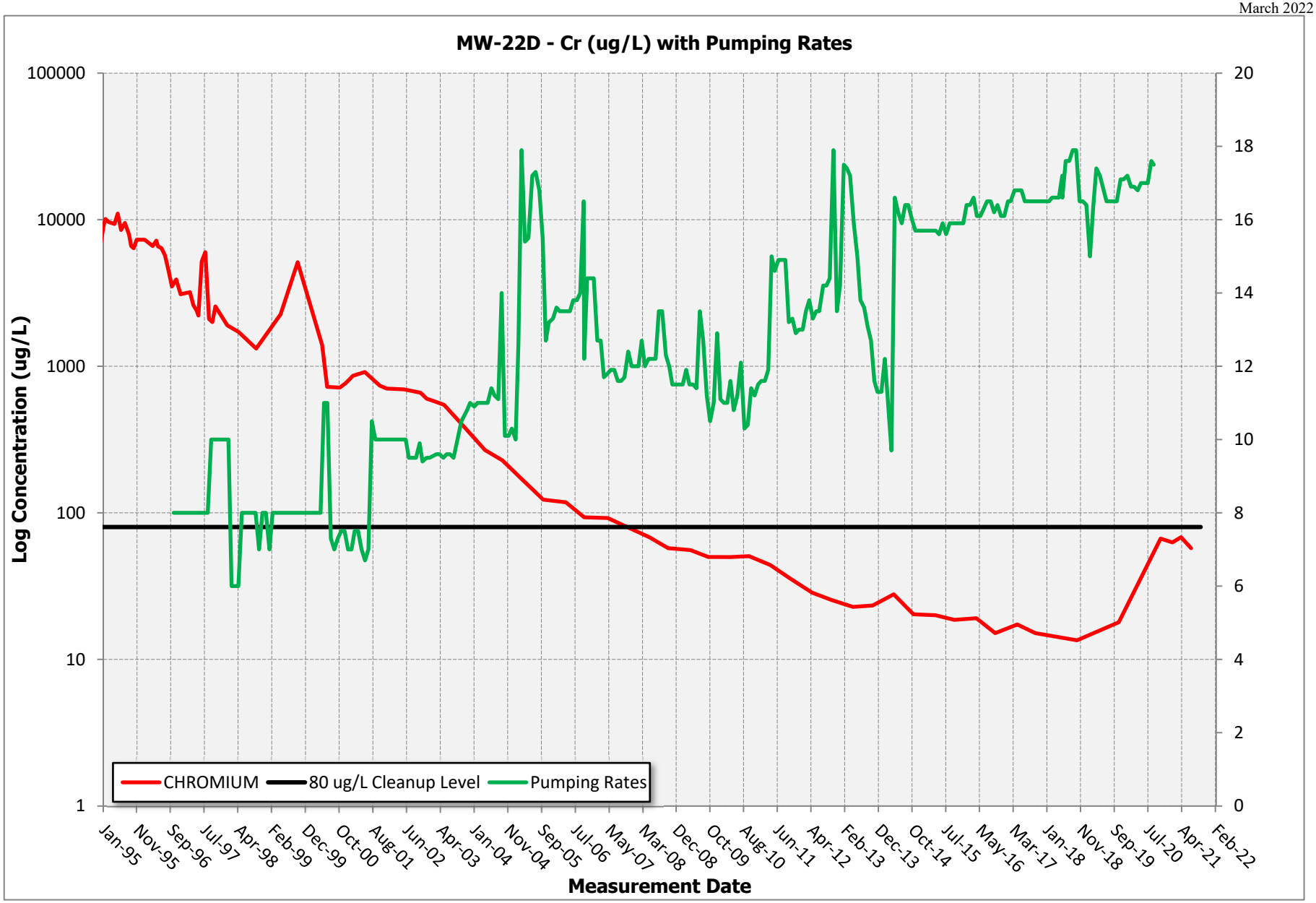

MW-15E - Cr (ug/L) with Pumping Rates
Log Concentration (ug/L)
1000
100
10
1
14
12
10
8
6
4
2
0
CHROMIUM
80 ug/L Cleanup Level
Pumping Rates
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date

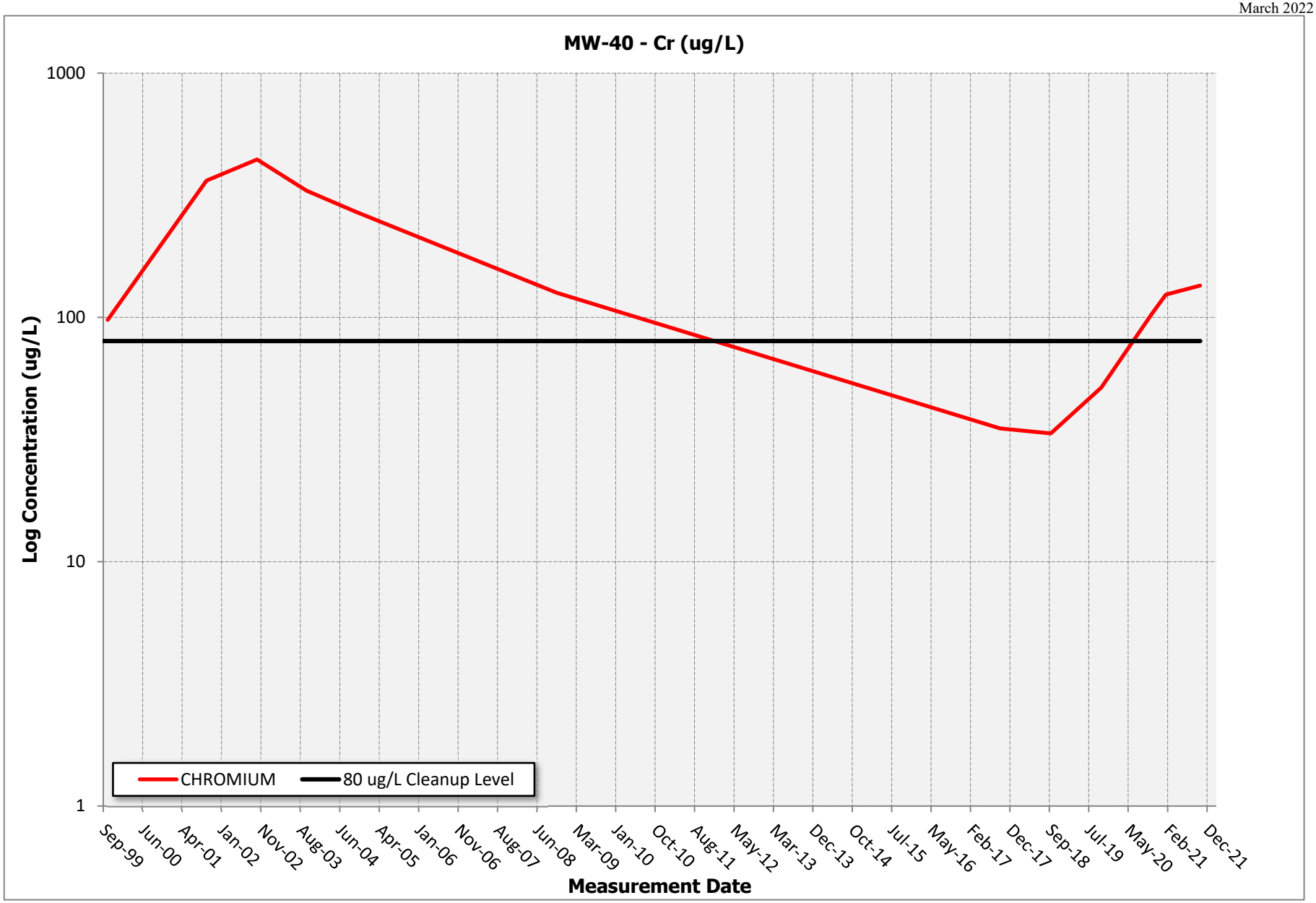

MW-18D - Cr (ug/L) with Pumping Rates
Log Concentration (ug/L)
100000
10000
1000
100
10
1
20
18
16
14
12
10
8
6
4
2
0
CHROMIUM
80 ug/L Cleanup Level
Pumping Rates
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date

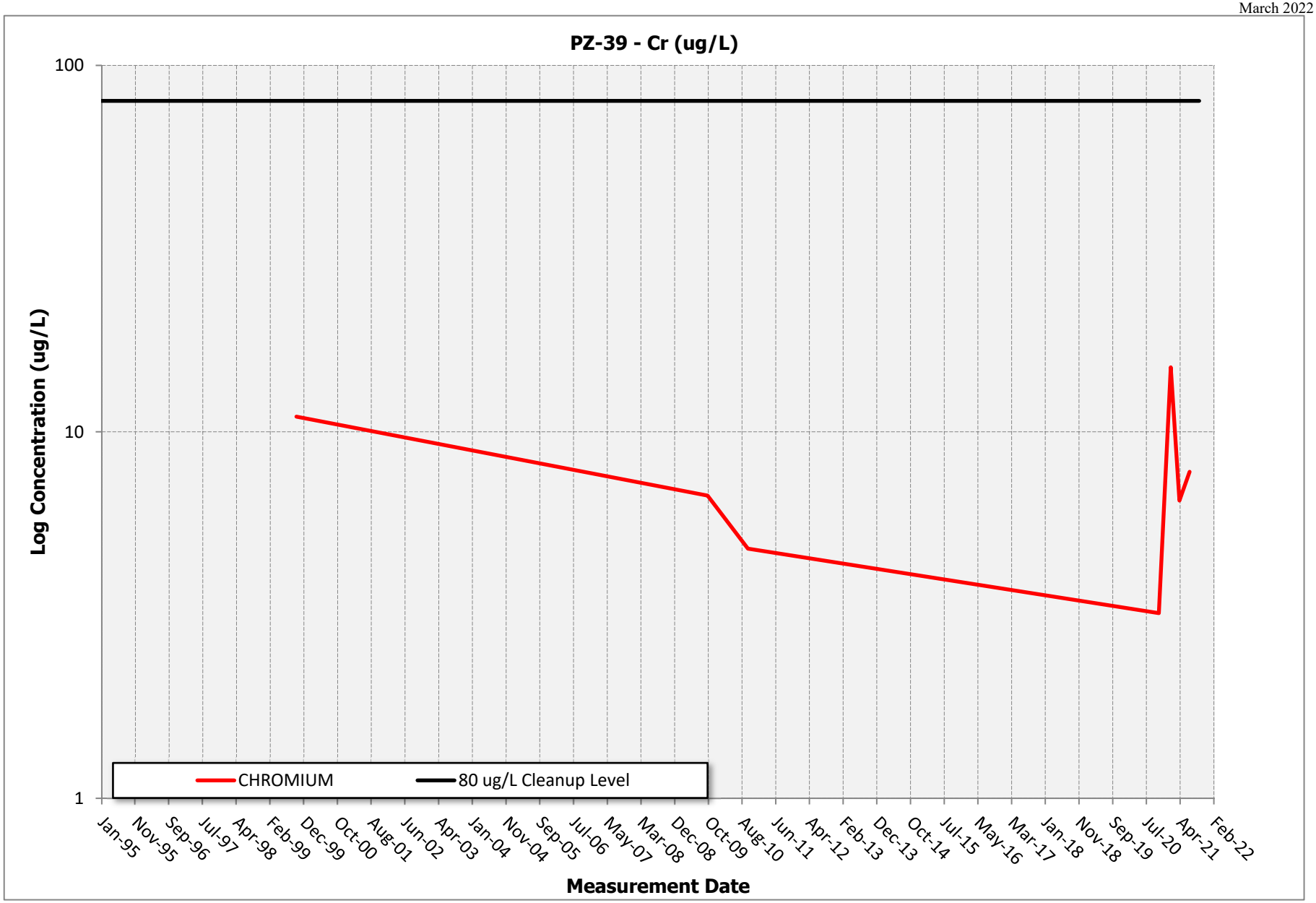

MW-18E - Cr (ug/L)
CHROMIUM
80 ug/L Cleanup Level
Log Concentration (ug/L)
100000
10000
1000
100
10
1
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date

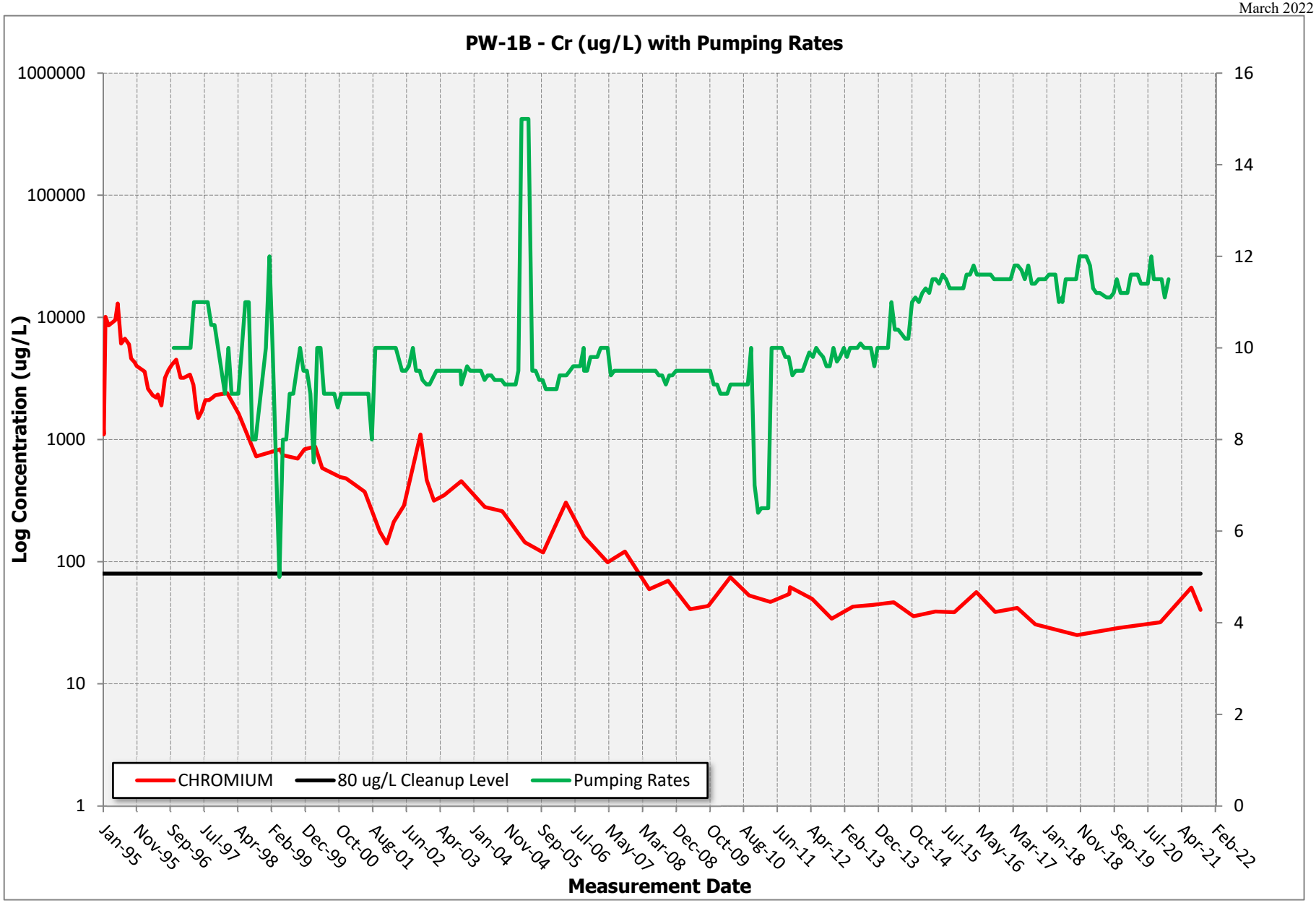

MW-19D - Cr (ug/L) with Pumping Rates
Log Concentration (ug/L)
100000
10000
1000
100
10
1
16
14
12
10
8
6
4
2
0
CHROMIUM
80 ug/L Cleanup Level
Pumping Rates
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date


MW-20D - Cr (ug/L) with Pumping Rates
Log Concentration (ug/L)
100000
10000
1000
100
10
1
20
18
16
14
12
10
8
6
4
2
0
CHROMIUM
80 ug/L Cleanup Level
Pumping Rates
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date


MW-22D - Cr (ug/L) with Pumping Rates
Log Concentration (ug/L)
100000
10000
1000
100
10
1
20
18
16
14
12
10
8
6
4
2
0
CHROMIUM
80 ug/L Cleanup Level
Pumping Rates
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date


MW-40 - Cr (ug/L)
Log Concentration (ug/L)
1000
100
10
1
CHROMIUM
80 ug/L Cleanup Level
Sep-99
Jun-00
Apr-01
Jan-02
Nov-02
Aug-03
Jun-04
Apr-05
Jan-06
Nov-06
Aug-07
Jun-08
Mar-09
Jan-10
Oct-10
Aug-11
May-12
Mar-13
Dec-13
Oct-14
Jul-15
May-16
Feb-17
Dec-17
Sep-18
Jul-19
May-20
Feb-21
Dec-21
Measurement Date


PZ-39 - Cr (ug/L)
100
10
1
Log Concentration (ug/L)
CHROMIUM
80 ug/L Cleanup Level
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date


PW-1B - Cr (ug/L) with Pumping Rates
Log Concentration (ug/L)
1000000
100000
10000
1000
100
10
1
16
14
12
10
8
6
4
2
0
CHROMIUM
80 ug/L Cleanup Level
Pumping Rates
Jan-95
Nov-95
Sep-96
Jul-97
Apr-98
Feb-99
Dec-99
Oct-00
Aug-01
Jun-02
Apr-03
Jan-04
Nov-04
Sep-05
Jul-06
May-07
Mar-08
Dec-08
Oct-09
Aug-10
Jun-11
Apr-12
Feb-13
Dec-13
Oct-14
Jul-15
May-16
Mar-17
Jan-18
Nov-18
Sep-19
Jul-20
Apr-21
Feb-22
Measurement Date

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Appendix F

TCE Concentrations in Groundwater

Appendix F-1

TCE Concentrations – Summary Table

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Table F-1. Trichloroethene Concentrations – Summary Table

Well Group	Well	Winter 2020	Spring 2020	Fall 2020	Winter 2021	Spring 2021	Summer 2021	Fall 2021
TCE Source Wells	AMW-1A	--	**9.2**	--	4.8	**6.2**	**5.3**	**15**
	AMW-1B	--	--	--	--	--	--	0.15 J
	AMW-1C	--	--	--	--	--	--	0.5 U
	AMW-2A	--	**37**	--	**6.3**	**54**	**52**	**47**
	AMW-2B	--	--	--	--	--	--	0.23 J
	AMW-3A	--	--	--	--	--	0.80	--
	AMW-4A	--	--	0.5 U	0.5 U	--	0.5 U	0.5 U
	AMW-12A	--	**20**	**12**	**11**	**12**	**6.6**	**5.6**
	AMW-13A	--	--	--	--	--	0.5 U	0.5 U
	AMW-19A	--	--	--	--	--	1.6	1.2
	AMW-26	--	--	--	--	--	2.9	2.9
	AMW-52A	--	--	--	--	--	0.5 U	0.5 U
	AMW-53A	--	--	--	**28**	**9.3**	**22**	**18**
	MW-1A	--	0.77	--	0.14 J	0.24 J	0.44 J	0.32 J
	MW-1B	--	--	--	0.5 U	--	0.5 U	0.5 U
	MW-1C	--	--	--	--	--	0.24 J	.5 U
Proximal Wells	AMW-58	--	--	--	--	--	0.5 U	.5 U
	MW-2A	--	--	--	0.94	--	0.82	0.76
	MW-2B	--	--	2.5	1.5	--	1.6	0.97
	MW-2C	--	--	--	0.38 J	--	0.38 J	0.27 J
	MW-3B	--	--	--	--	--	1.4	1.3
	MW-3C	--	--	--	--	--	1.3	1.6
	MW-4A	--	--	1.8	--	--	--	2.0
	MW-4B	--	--	--	--	--	--	2.5
	MW-4BSHED	--	--	--	--	--	--	2.4
	MW-4C	--	--	--	--	--	--	1.0
	MW-6A	--	--	0.5 U	--	--	--	0.5 U

Well Group	Well	Winter 2020	Spring 2020	Fall 2020	Winter 2021	Spring 2021	Summer 2021	Fall 2021
	MW-6B	--	--	4.2	--	--	--	**30**
	MW-6C	--	--	--	--	--	0.47 J	0.47 J
	MW-6D	--	--	--	--	--	1.2	0.48 J
	MW-7C	--	--	--	--	--	0.21 J	0.30 J
	MW-8B	--	--	--	--	--	1.2	1.2
	MW-9B	--	--	--	--	--	--	1.4
	MW-9C	--	--	1.2	--	--	1.2	0.83
	MW-10B	--	**7.4**	**8.9**	--	2.3	2.6	1.4
	MW-10C	--	--	1.3	--	--	2.0	2.6
	MW-12C	--	--	--	--	--	3.3	1.2
	MW-13C	--	--	--	4.5	--	2.8	1.3
	PW-1B	--	--	2.2	--	--	2.7	3.1
Intermediate Plume Wells	AMW-59	**41**	**14**	4.1	**16**	**6.0**	**9.3**	0.39 J
	AMW-60	--	--	--	--	--	--	0.26 J
	CPU-14	--	--	3.7	--	2.9	4.4	1.0
	MW-14C	3.9	2.6	2.4	2.9	2.8	2.8	2.5
	MW-14E	**6.7**	**9.6**	**9.2**	**10**	**8.4**	2	**19**
	MW-15E	--	--	--	1.5	--	2.6	3.0
	MW-18D	4.8	3	3.1	3.4	3.5	3.6	--
	MW-18E	--	0.25 J	0.24 J	0.22 J	0.47 J	0.43 J	--
	MW-19D	3.5	4.3	**45**	**7.7**	**9.2**	**6.0**	**7.4**
	MW-20D	--	**17**	**12**	**6.9**	**11**	**6.8**	**9.4**
	MW-40	--	--	--	0.89	--	--	0.96
	PZ-39	--	--	**42**	**36**	**39**	**42**	**37**
Church of God Wells	AMW-27	--	--	--	3.5	--	1.6	--
	AMW-61	--	--	--	--	--	--	**5.5**
	CPU-12	--	--	--	3.0	--	--	--
	MW-22D	--	--	1.6	3.1	4.0	3.5	--
TCE Upgradient Wells	AMW-8A	--	--	--	--	--	--	0.57
Troutdale	AMW-24	--	--	**5.7**	--	--	--	4.9
	BENNETT	--	--	1.3	1.0	--	2.5	--
	MW-33	--	--	3.5	3.0	0.92	0.99	2.4

Well Group	Well	Winter 2020	Spring 2020	Fall 2020	Winter 2021	Spring 2021	Summer 2021	Fall 2021
Northern Plume	AMW-16	--	**28**	**23**	--	**22**	--	**27**
	AMW-17	--	**57**	**55**	--	**46**	--	**42**
	AMW-18	--	**16**	**16**	--	**17**	--	**16**
	AMW-64	--	**7.5**	**7.1**	--	**8.4**	--	**9.3**
	MW-21D	--	**7.1**	0.31 J	--	1.5	--	1.5
	MW-23D	--	**110**	**83**	--	**72**	--	**61**
	MW-38	--	--	**12**	**14**	**22**	**27**	**25**

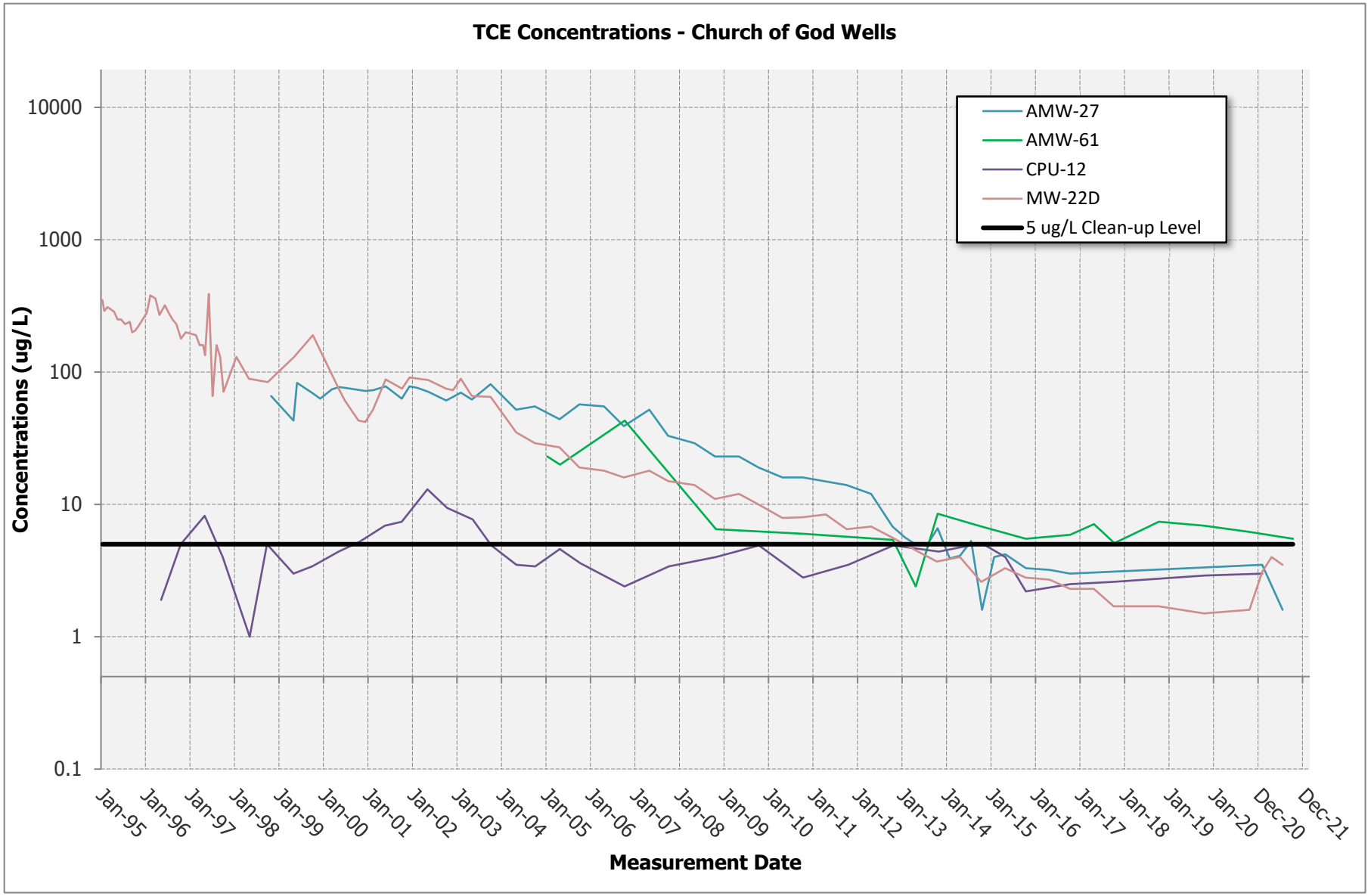
NOTES:
Results are in micrograms per liter (µg/L).
Results are for total chromium, unless otherwise noted.
Results shown in **blue bold** exceed the cleanup level of 5 µg/L.
-- = Not Sampled
E = The result is an estimated concentration because the value exceeded the instrument calibration range.
J = The result is an estimated concentration that is less than the method reporting limit but greater than or equal to the method detection limit.
TCE = Trichloroethene.
U = Analyte not detected above the specified reporting limit.

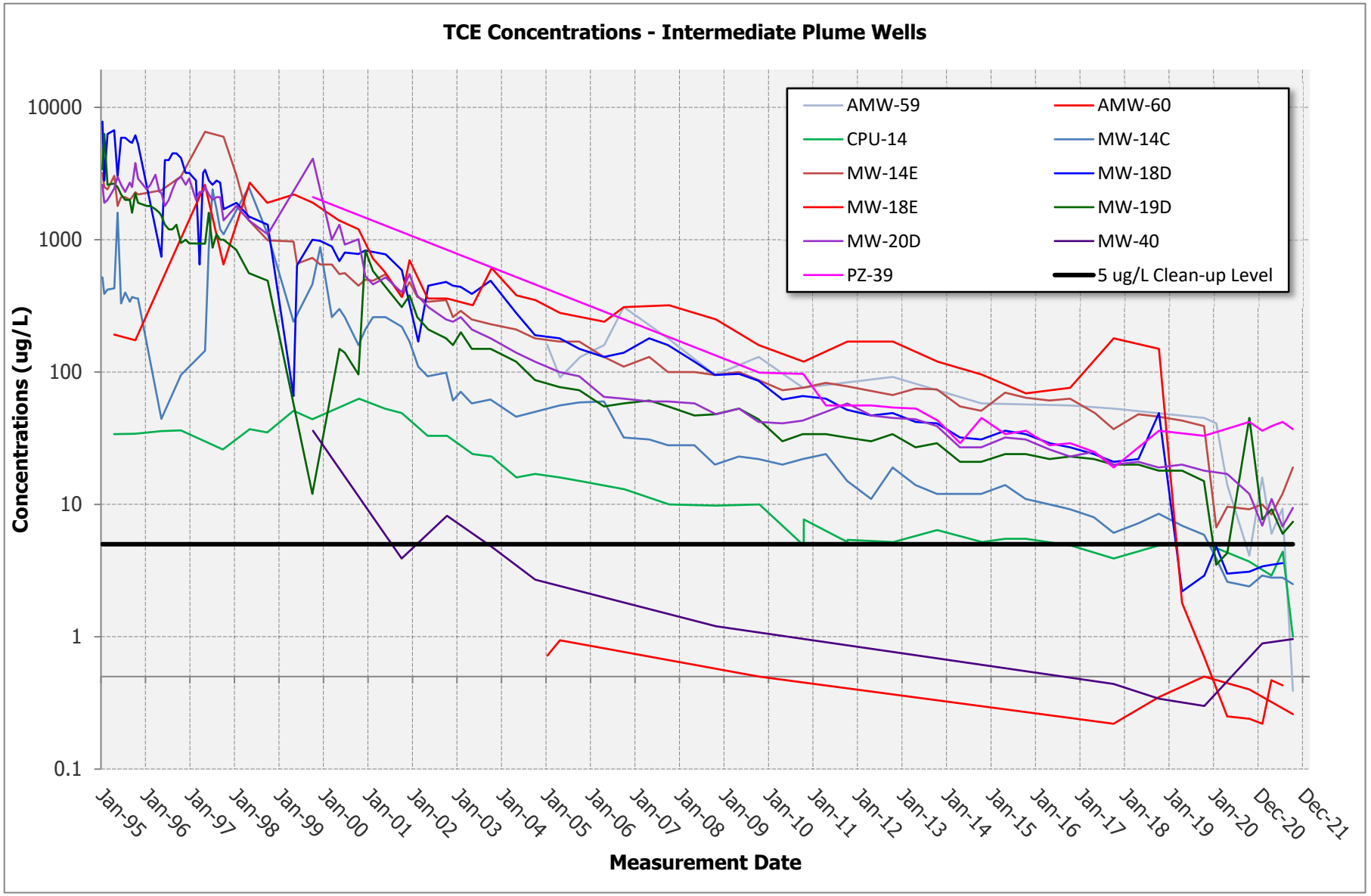
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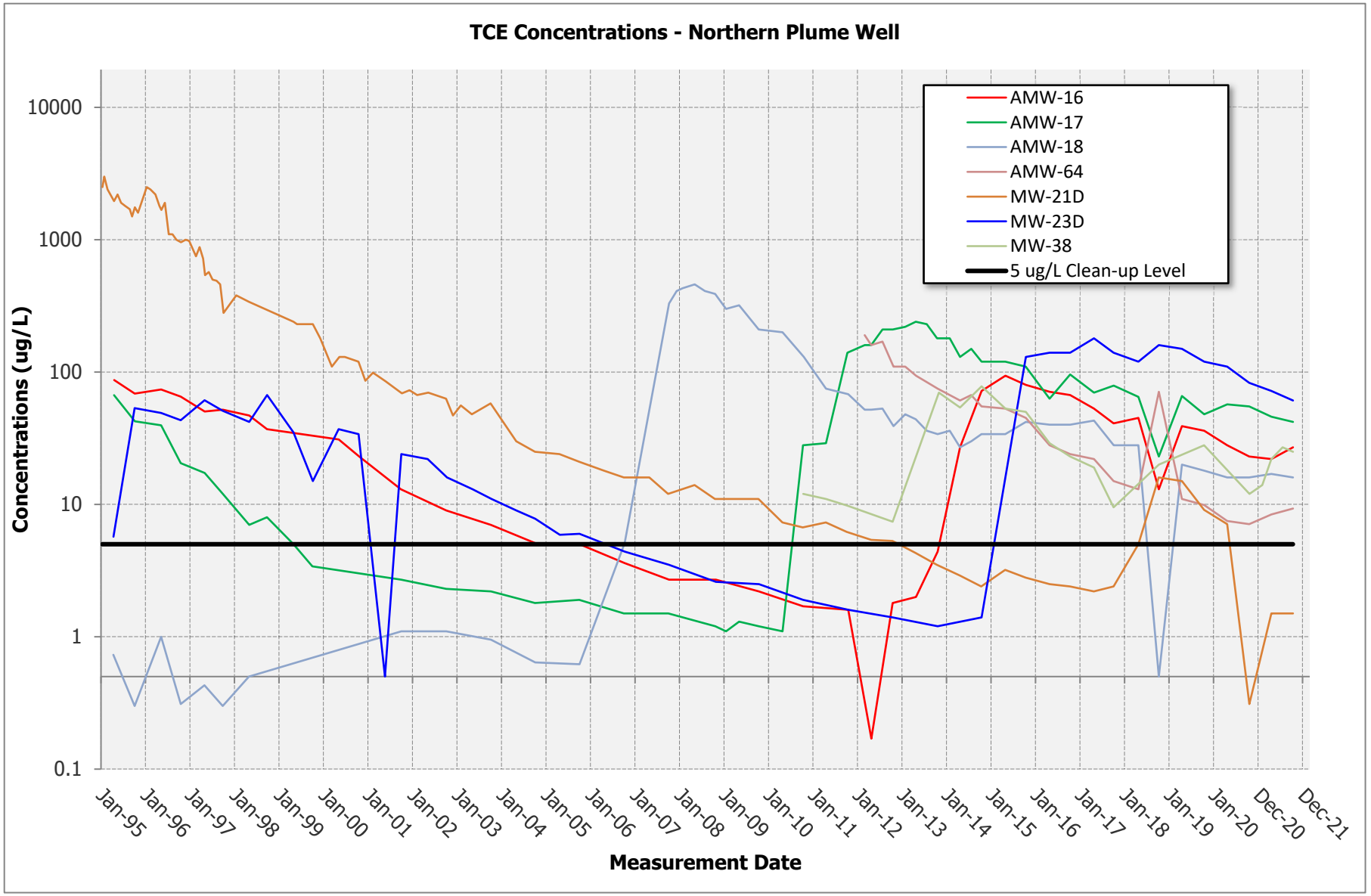
Appendix F-2

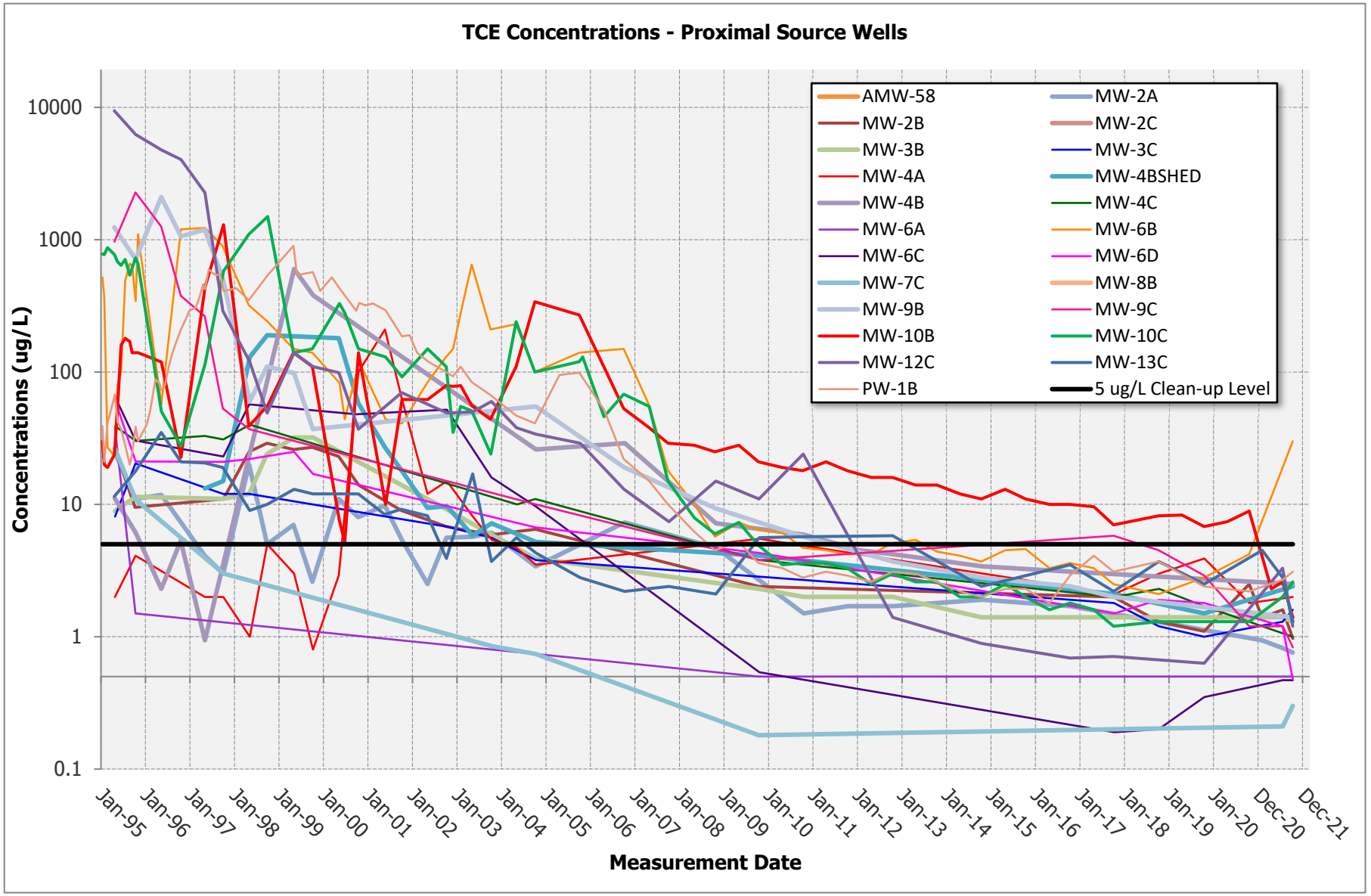
TCE Concentrations – By Well Grouping

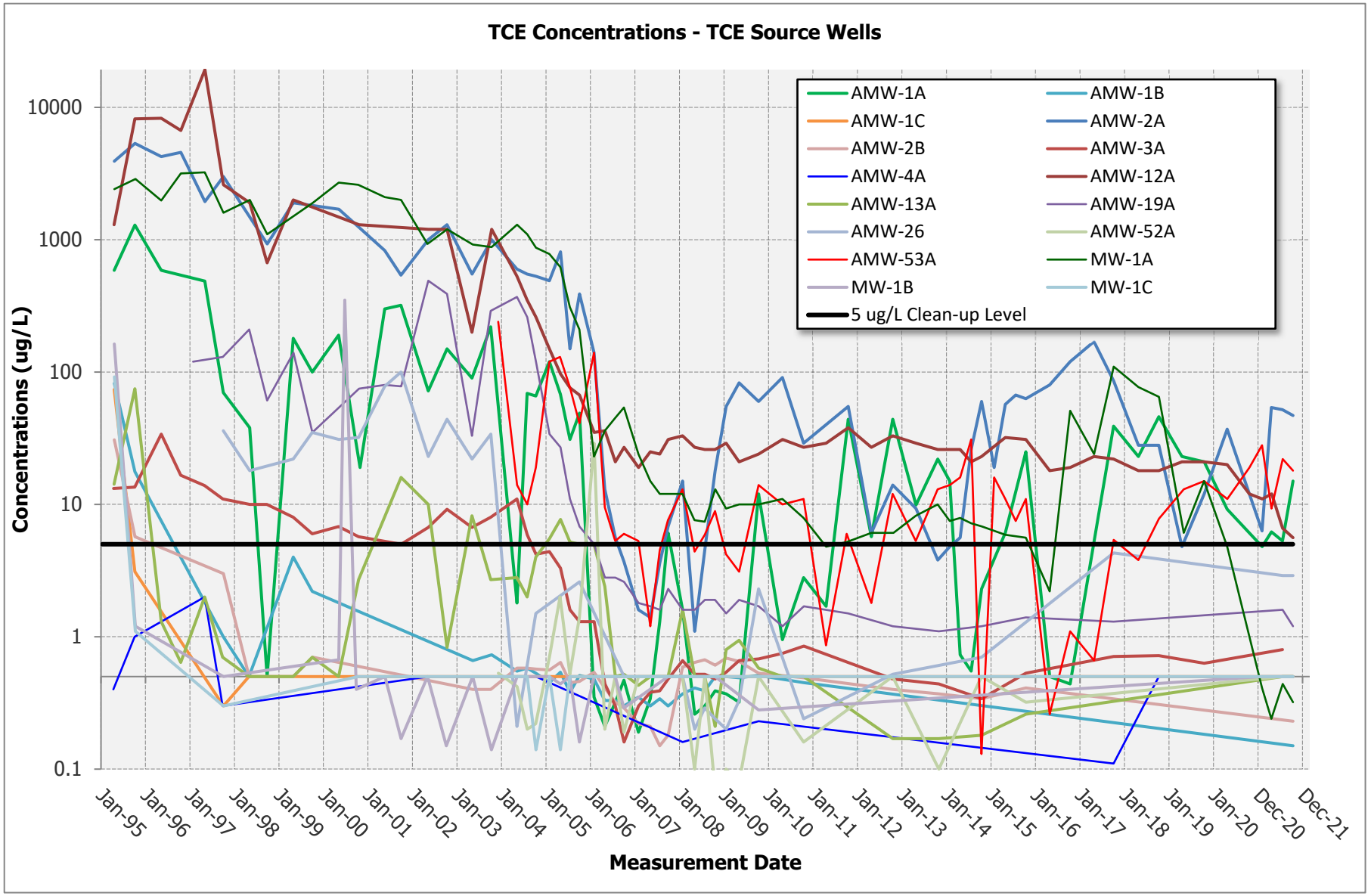
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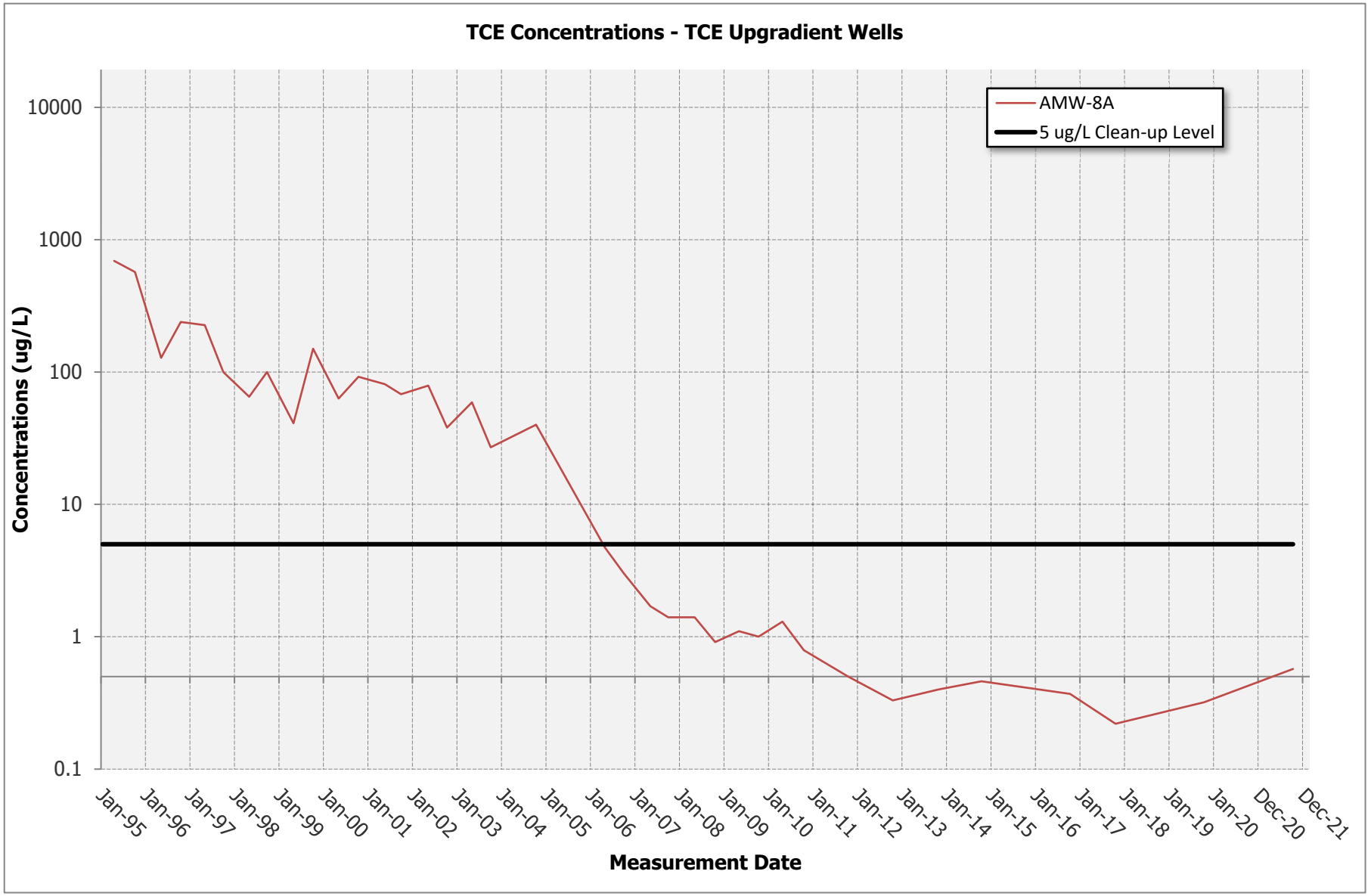

TCE Concentrations - Church of God Wells
Concentrations (ug/L)
10000
1000
100
10
1
0.1
AMW-27
AMW-61
CPU-12
MW-22D
5 ug/L Clean-up Level
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18
Jan-19
Jan-20
Dec-20
Dec-21
Measurement Date

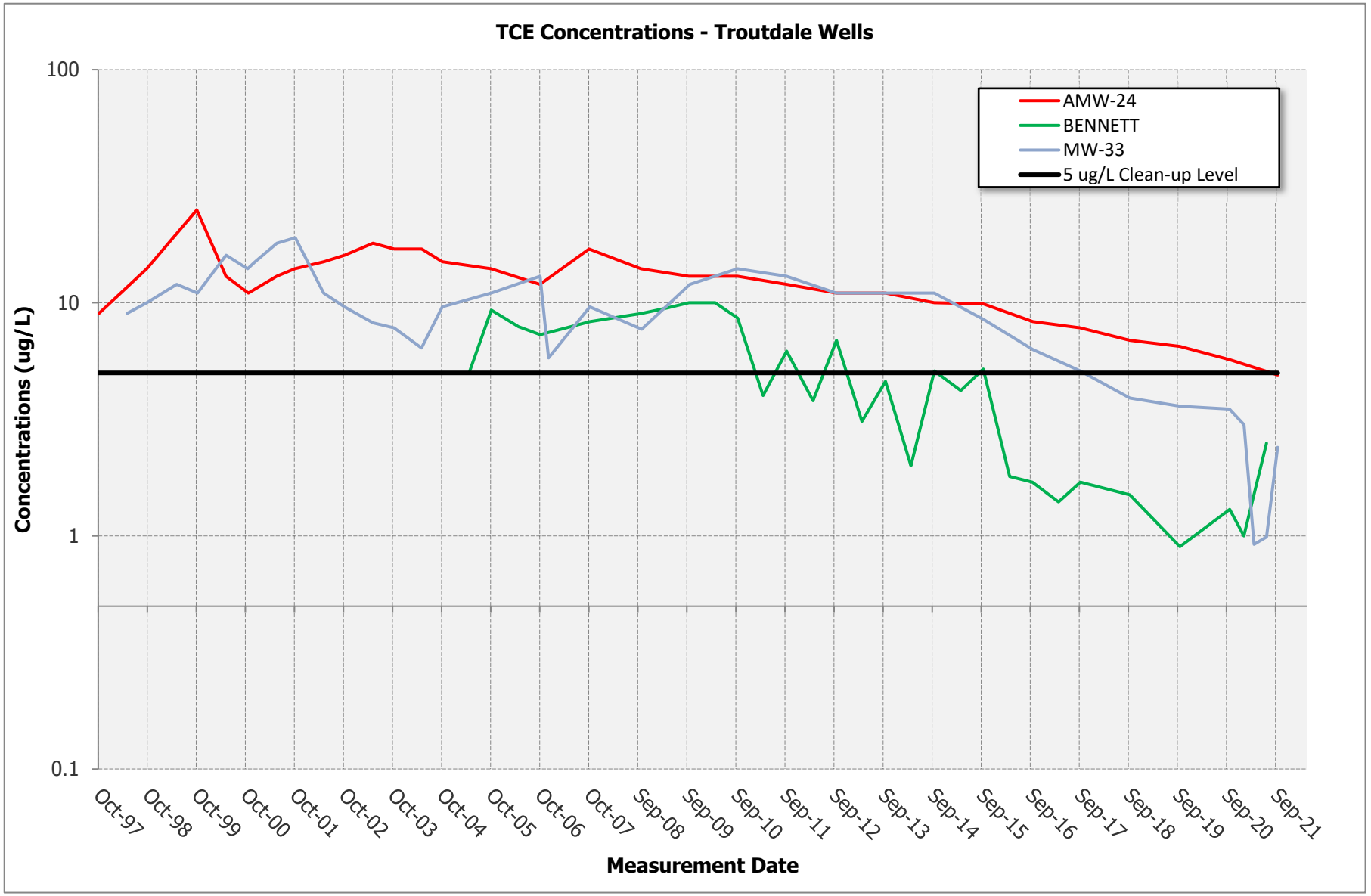

TCE Concentrations - Intermediate Plume Wells
Concentrations (ug/L)
10000
1000
100
10
1
0.1
AMW-59
AMW-60
CPU-14
MW-14C
MW-14E
MW-18D
MW-18E
MW-19D
MW-20D
MW-40
PZ-39
5 ug/L Clean-up Level
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18
Jan-19
Jan-20
Dec-20
Dec-21
Measurement Date


TCE Concentrations - Northern Plume Well
Concentrations (ug/L)
10000
1000
100
10
1
0.1
AMW-16
AMW-17
AMW-18
AMW-64
MW-21D
MW-23D
MW-38
5 ug/L Clean-up Level
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18
Jan-19
Jan-20
Dec-20
Dec-21
Measurement Date


TCE Concentrations - Proximal Source Wells
Concentrations (ug/L)
10000
1000
100
10
1
0.1
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18
Jan-19
Jan-20
Dec-20
Dec-21
Measurement Date
AMW-58
MW-2A
MW-2B
MW-2C
MW-3B
MW-3C
MW-4A
MW-4BSHED
MW-4B
MW-4C
MW-6A
MW-6B
MW-6C
MW-6D
MW-7C
MW-8B
MW-9B
MW-9C
MW-10B
MW-10C
MW-12C
MW-13C
PW-1B
5 ug/L Clean-up Level


TCE Concentrations - TCE Source Wells
Concentrations (ug/L)
10000
1000
100
10
1
0.1
AMW-1A
AMW-1B
AMW-1C
AMW-2A
AMW-2B
AMW-3A
AMW-4A
AMW-12A
AMW-13A
AMW-19A
AMW-26
AMW-52A
AMW-53A
MW-1A
MW-1B
MW-1C
5 ug/L Clean-up Level
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18
Jan-19
Jan-20
Dec-20
Dec-21
Measurement Date


TCE Concentrations - TCE Upgradient Wells
AMW-8A
5 ug/L Clean-up Level
Concentrations (ug/L)
10000
1000
100
10
1
0.1
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18
Jan-19
Jan-20
Dec-20
Dec-21
Measurement Date

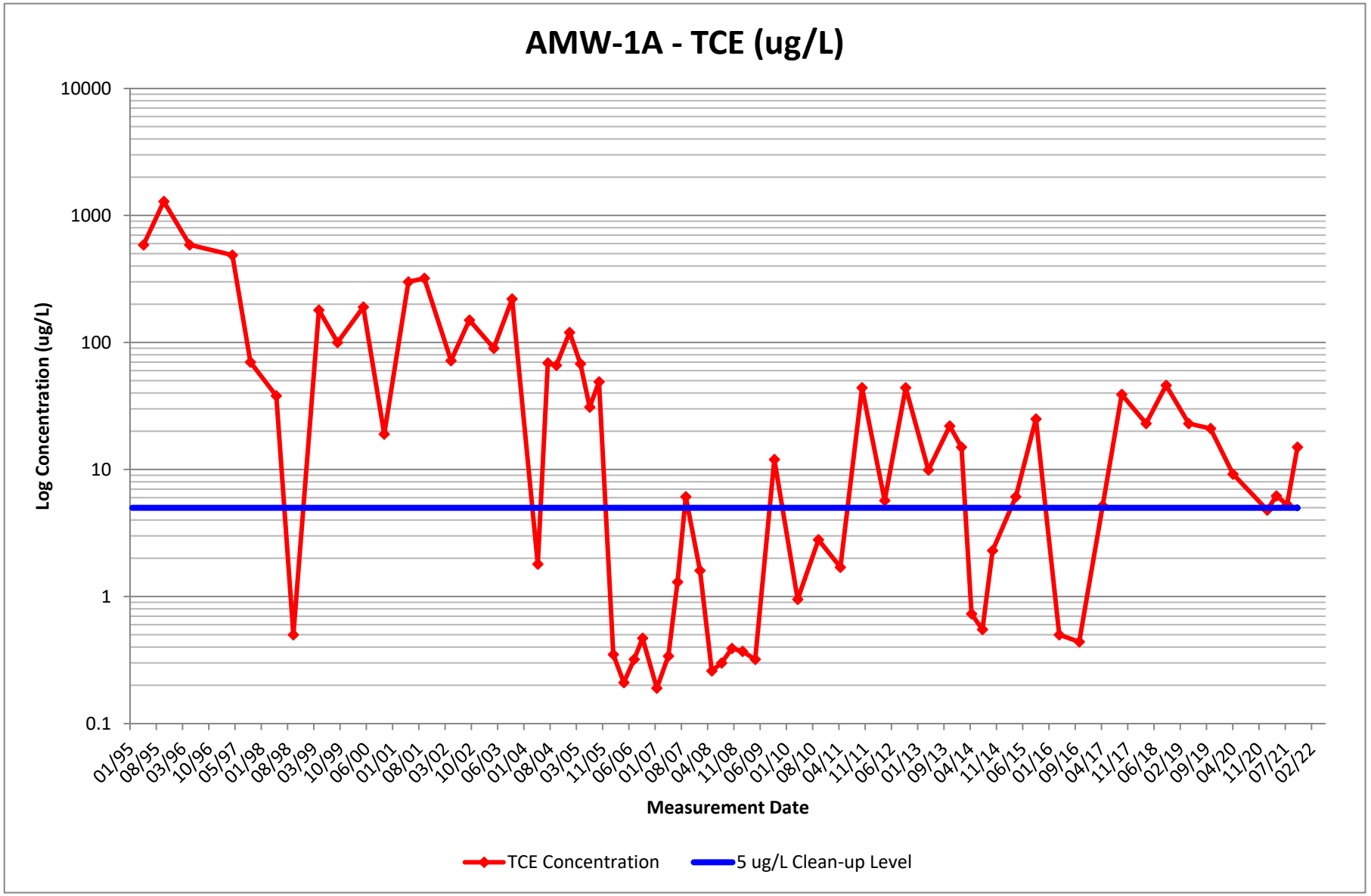

TCE Concentrations - Troutdale Wells
100
10
1
0.1
Concentrations (ug/L)
AMW-24
BENNETT
MW-33
5 ug/L Clean-up Level
Oct-97
Oct-98
Oct-99
Oct-00
Oct-01
Oct-02
Oct-03
Oct-04
Oct-05
Oct-06
Oct-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15
Sep-16
Sep-17
Sep-18
Sep-19
Sep-20
Sep-21
Measurement Date

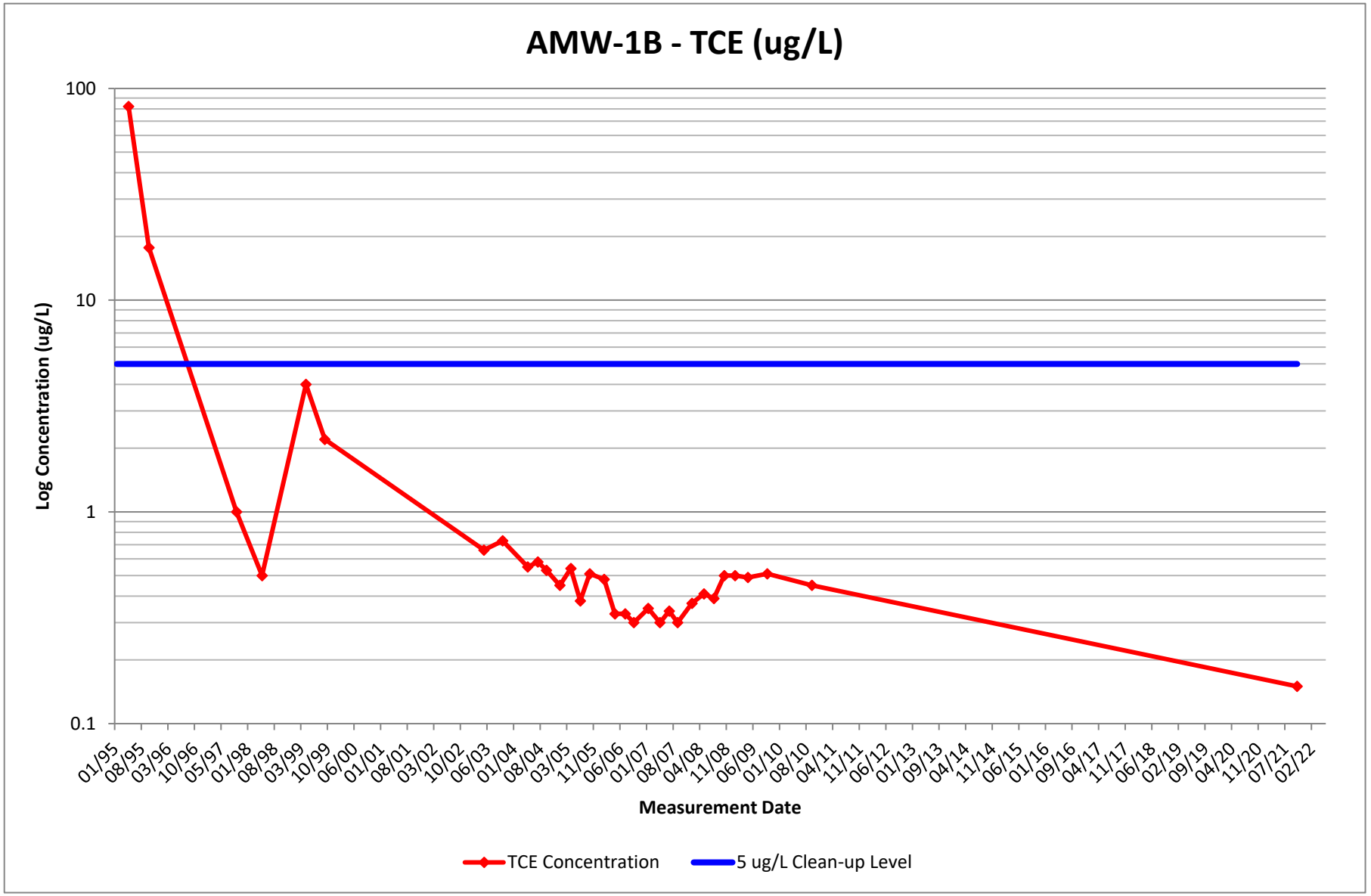
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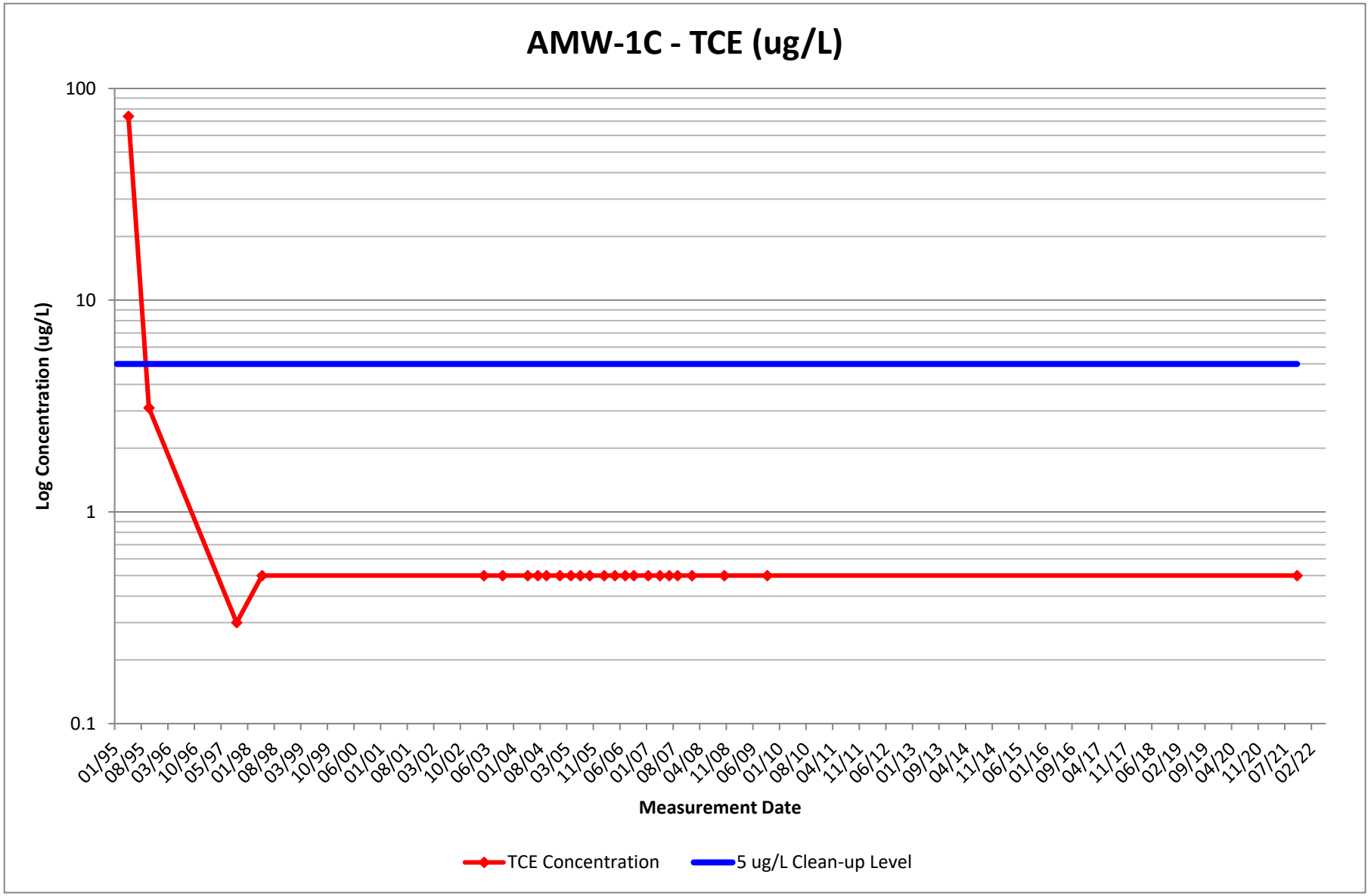
Appendix F-3

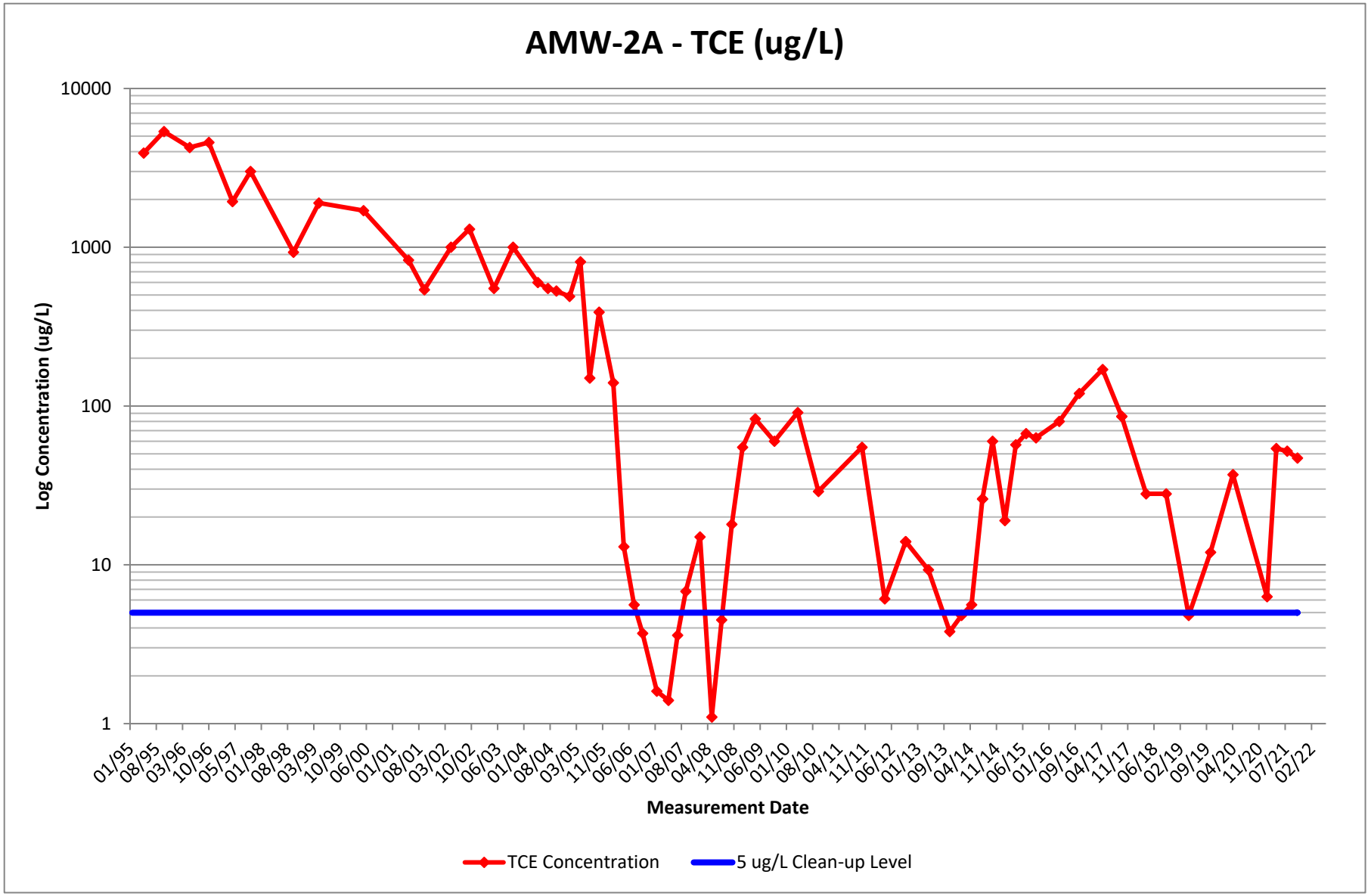
TCE Concentrations – Individual Wells

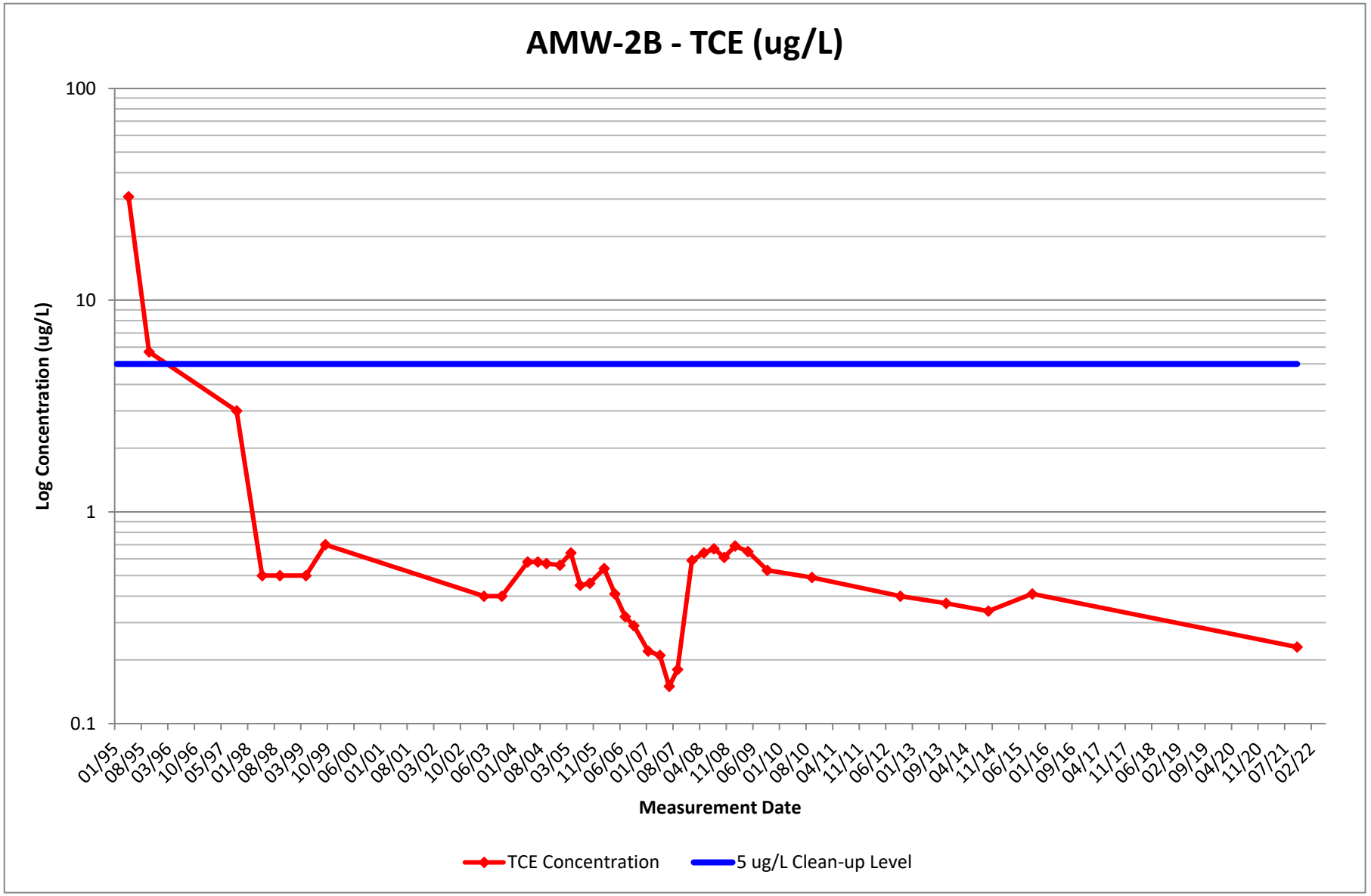
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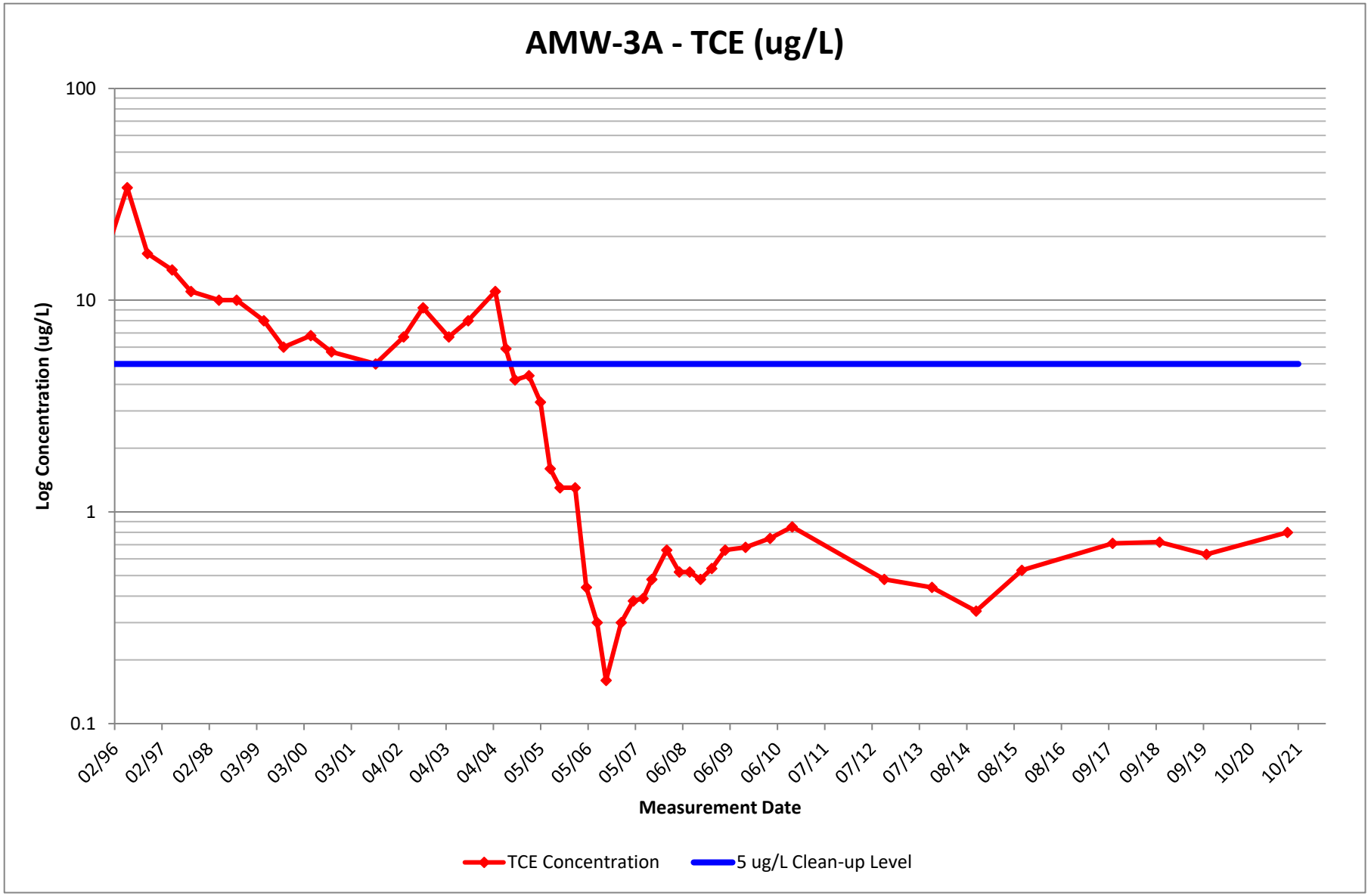

AMW-1A - TCE (ug/L)
Log Concentration (ug/L)
10000
1000
100
10
1
0.1
01/95
08/95
03/96
10/96
05/97
01/98
08/98
03/99
10/99
06/00
01/01
08/01
03/02
10/02
06/03
01/04
08/04
03/05
11/05
06/06
01/07
08/07
04/08
11/08
06/09
01/10
08/10
04/11
11/11
06/12
01/13
09/13
04/14
11/14
06/15
01/16
09/16
04/17
11/17
06/18
02/19
09/19
04/20
11/20
07/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

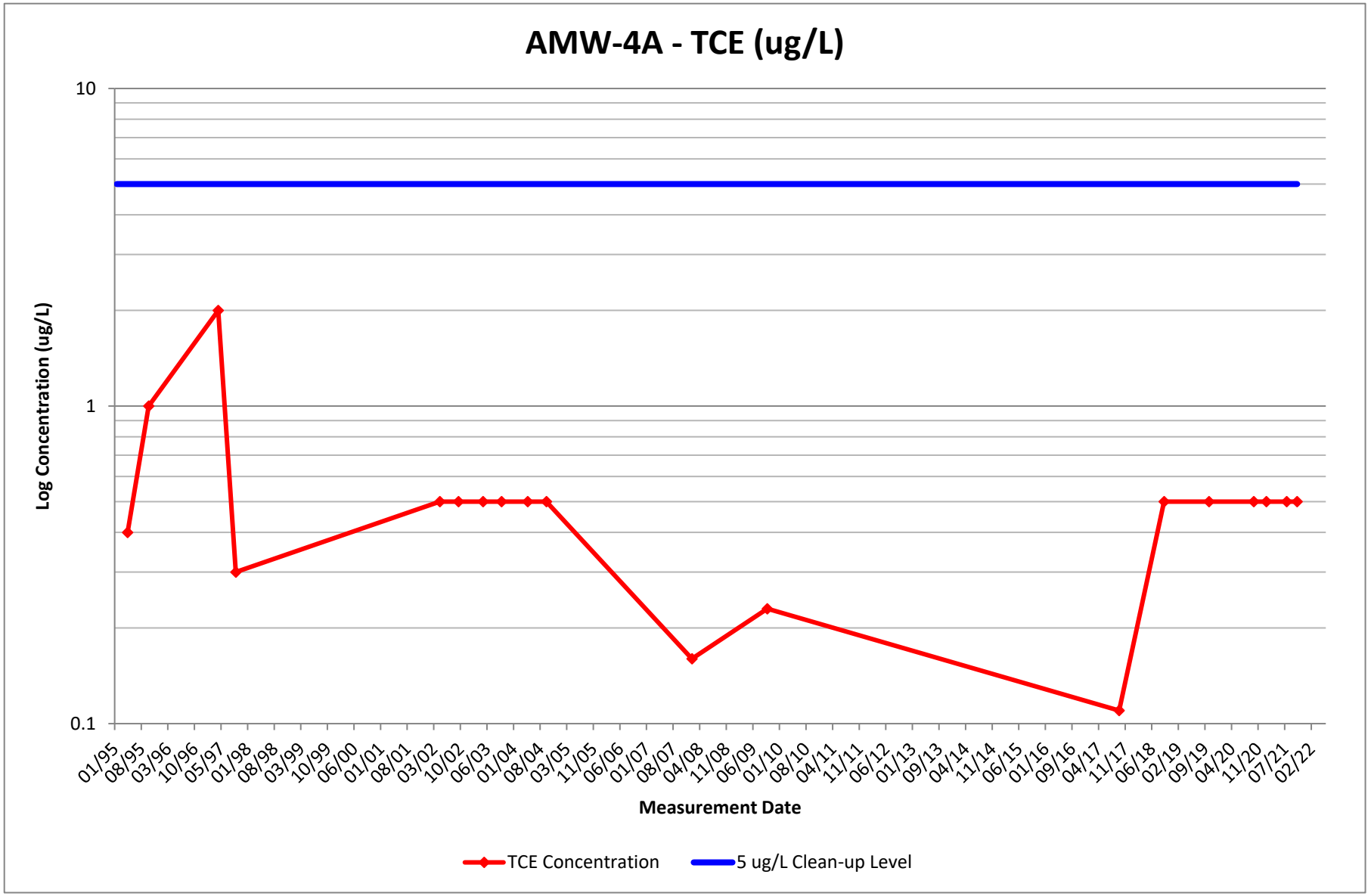

AMW-1B - TCE (ug/L)
Log Concentration (ug/L)
100
10
1
0.1
01/95
08/95
03/96
10/96
05/97
01/98
08/98
03/99
10/99
06/00
01/01
08/01
03/02
10/02
06/03
01/04
08/04
03/05
11/05
06/06
01/07
08/07
04/08
11/08
06/09
01/10
08/10
04/11
11/11
06/12
01/13
09/13
04/14
11/14
06/15
01/16
09/16
04/17
11/17
06/18
02/19
09/19
04/20
11/20
07/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

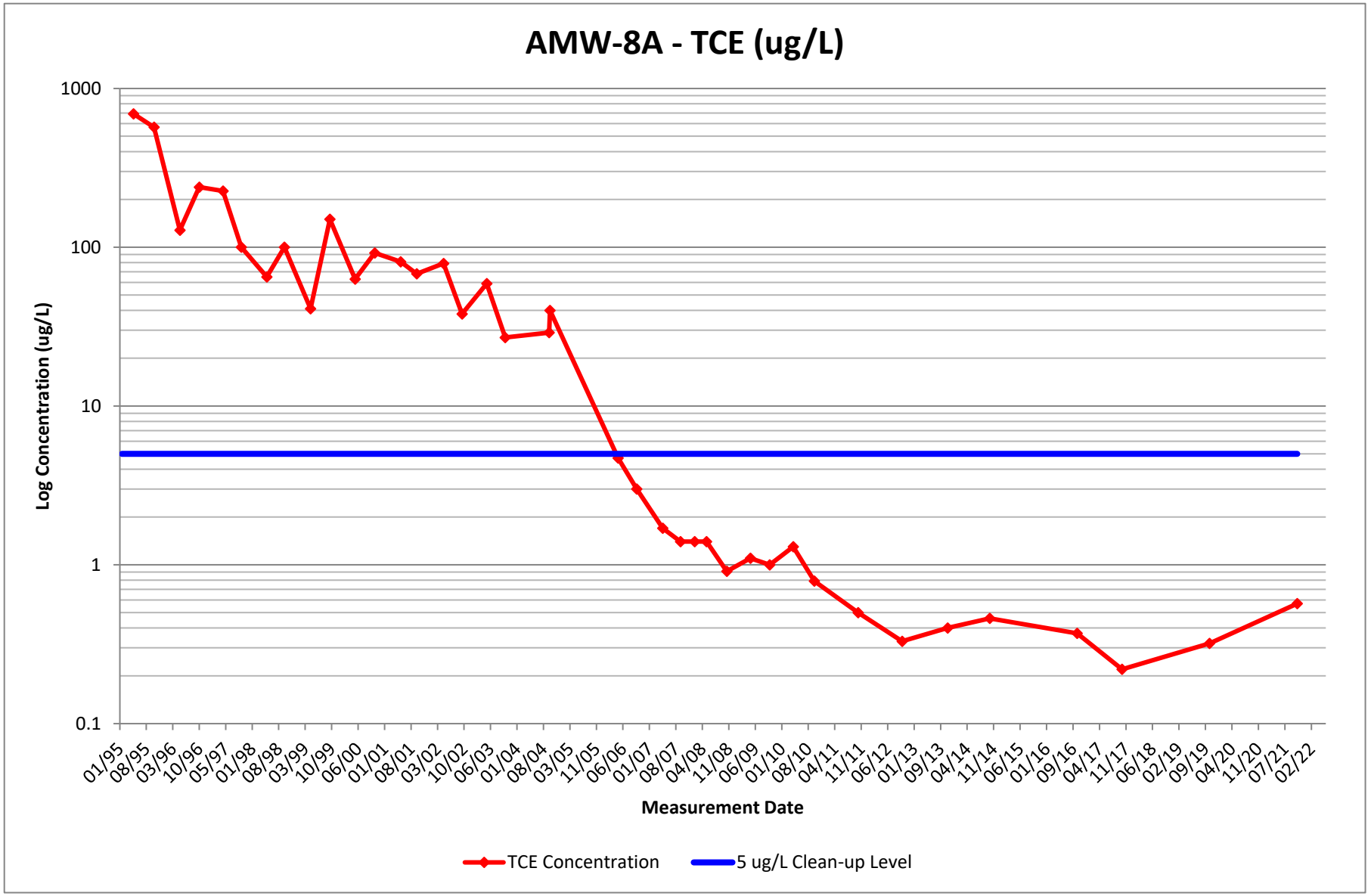

AMW-1C - TCE (ug/L)
Log Concentration (ug/L)
100
10
1
0.1
01/95
08/95
03/96
10/96
05/97
01/98
08/98
03/99
10/99
06/00
01/01
08/01
03/02
10/02
06/03
01/04
08/04
03/05
11/05
06/06
01/07
08/07
04/08
11/08
06/09
01/10
08/10
04/11
11/11
06/12
01/13
09/13
04/14
11/14
06/15
01/16
09/16
04/17
11/17
06/18
02/19
09/19
04/20
11/20
07/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

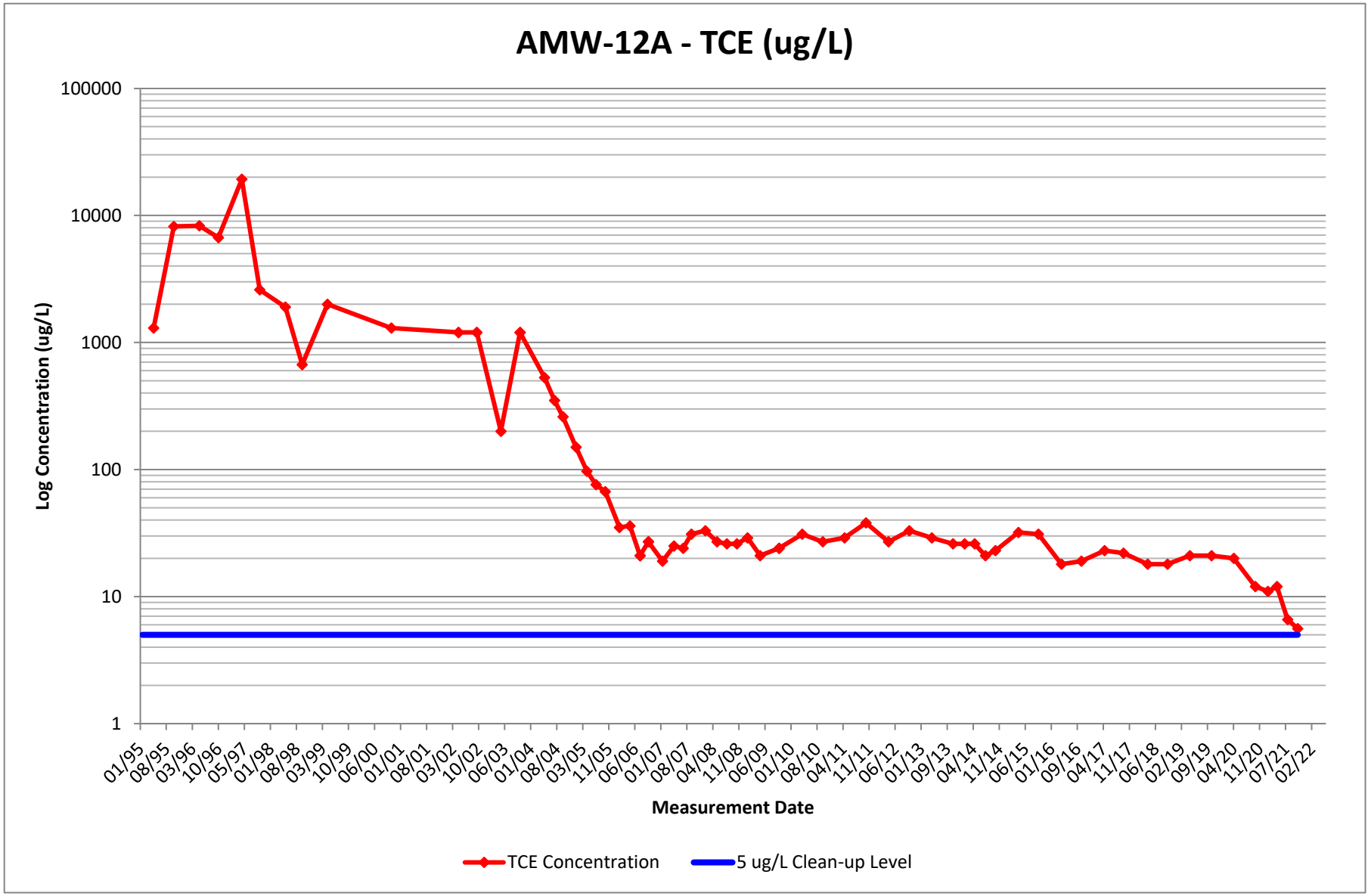

AMW-2A - TCE (ug/L)
Log Concentration (ug/L)
10000
1000
100
10
1
01/95
08/95
03/96
10/96
05/97
01/98
08/98
03/99
10/99
06/00
01/01
08/01
03/02
10/02
06/03
01/04
08/04
03/05
11/05
06/06
01/07
08/07
04/08
11/08
06/09
01/10
08/10
04/11
11/11
06/12
01/13
09/13
04/14
11/14
06/15
01/16
09/16
04/17
11/17
06/18
02/19
09/19
04/20
11/20
07/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

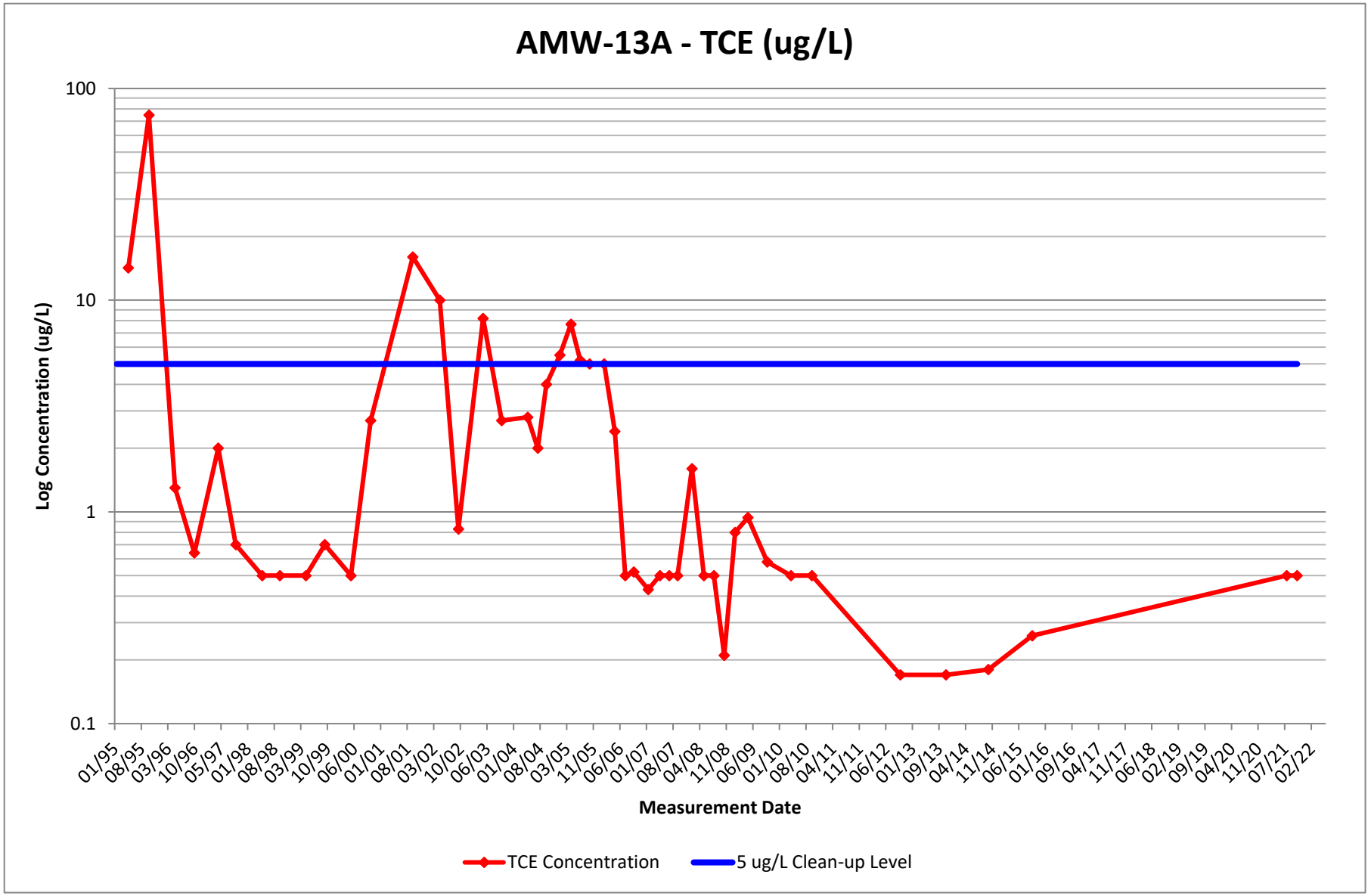

AMW-2B - TCE (ug/L)
Log Concentration (ug/L)
100
10
1
0.1
01/95
08/95
03/96
10/96
05/97
01/98
08/98
03/99
10/99
06/00
01/01
08/01
03/02
10/02
06/03
01/04
08/04
03/05
11/05
06/06
01/07
08/07
04/08
11/08
06/09
01/10
08/10
04/11
11/11
06/12
01/13
09/13
04/14
11/14
06/15
01/16
09/16
04/17
11/17
06/18
02/19
09/19
04/20
11/20
07/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

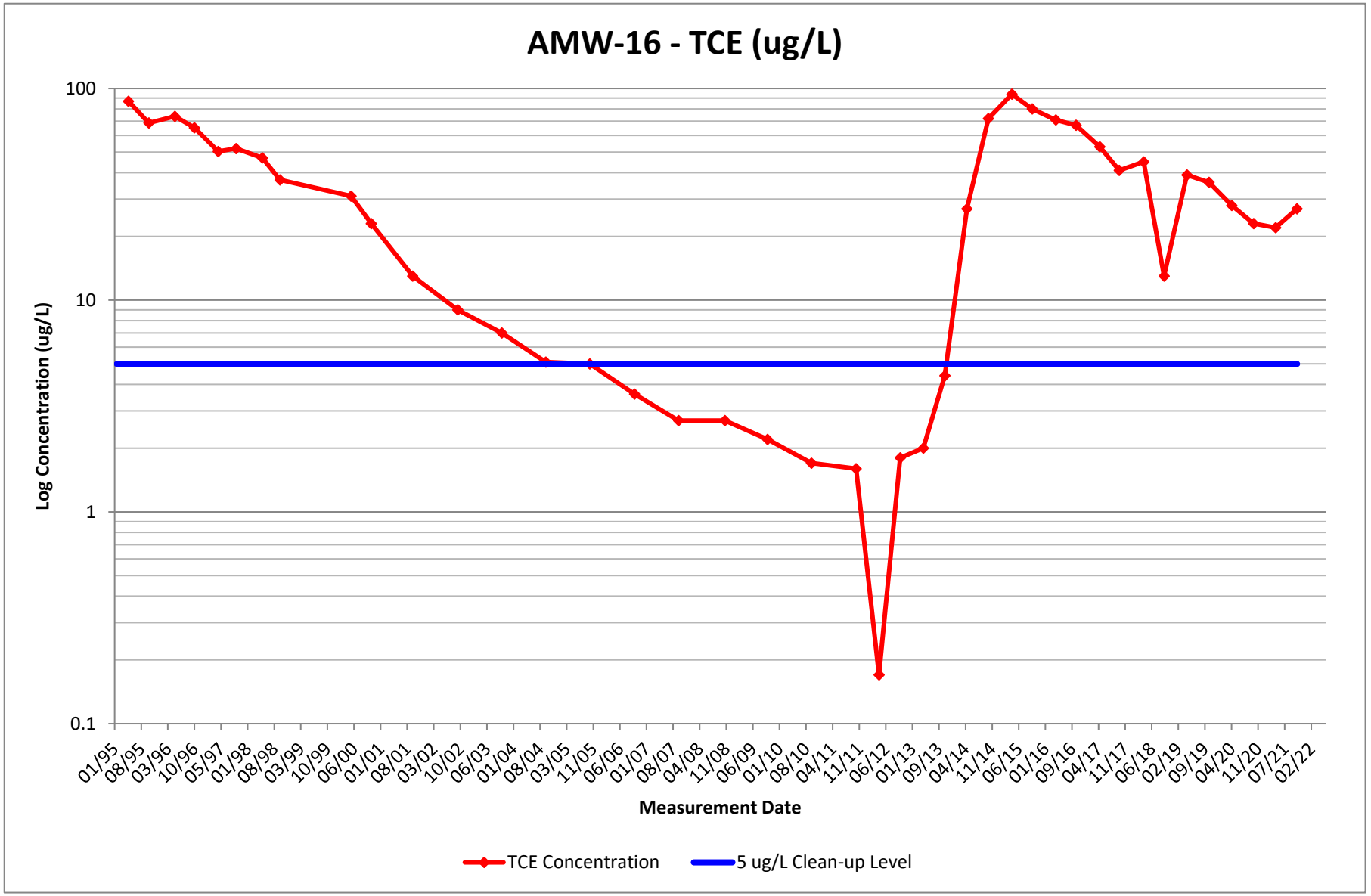

AMW-3A - TCE (ug/L)
Log Concentration (ug/L)
100
10
1
0.1
02/96
02/97
02/98
03/99
03/00
03/01
04/02
04/03
04/04
05/05
05/06
05/07
06/08
06/09
06/10
07/11
07/12
07/13
08/14
08/15
08/16
09/17
09/18
09/19
10/20
10/21
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

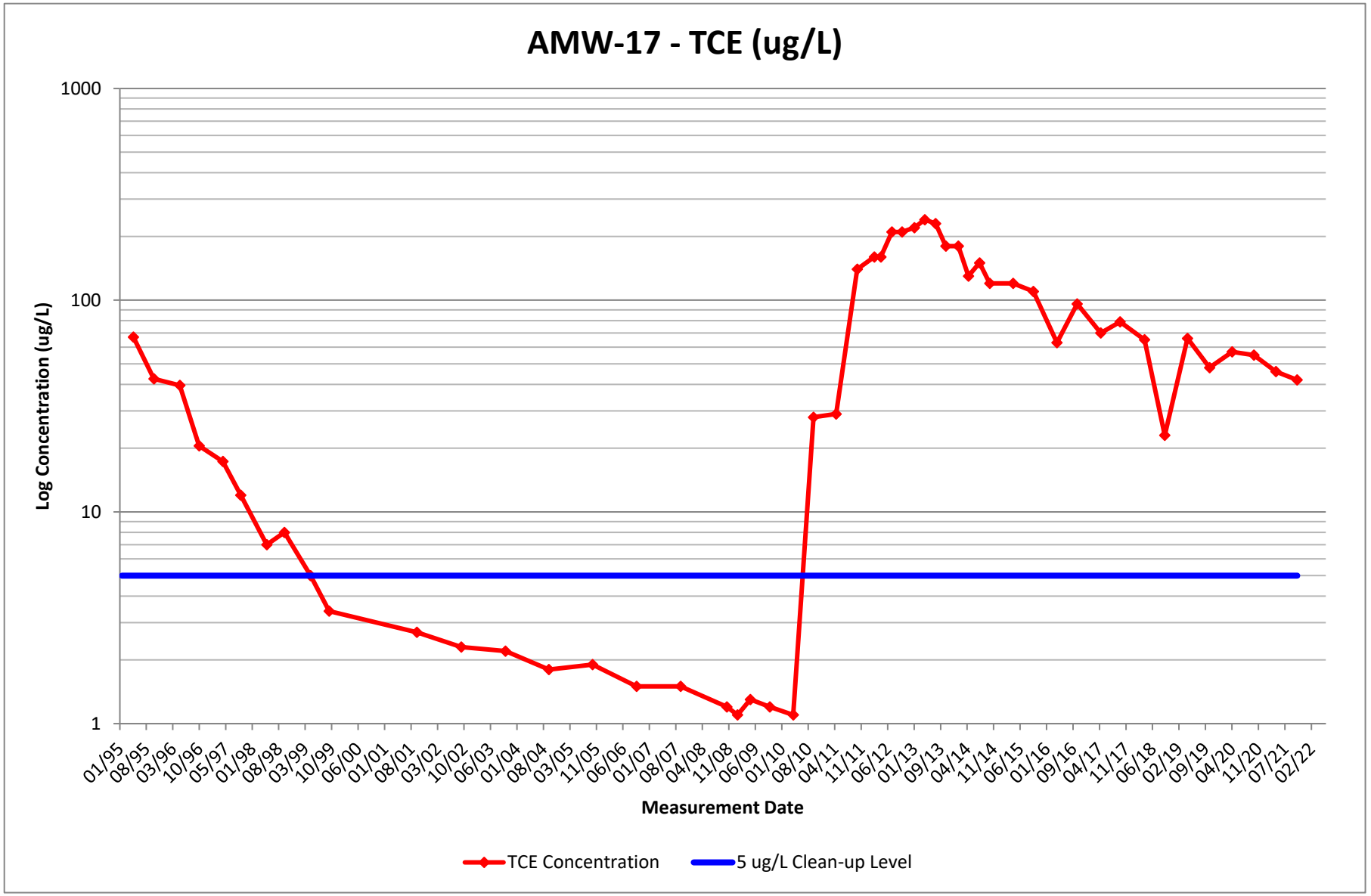

AMW-4A - TCE (ug/L)
10
1
0.1
Log Concentration (ug/L)
01/95
08/95
03/96
10/96
05/97
01/98
08/98
03/99
10/99
06/00
01/01
08/01
03/02
10/02
06/03
01/04
08/04
03/05
11/05
06/06
01/07
08/07
04/08
11/08
06/09
01/10
08/10
04/11
11/11
06/12
01/13
09/13
04/14
11/14
06/15
01/16
09/16
04/17
11/17
06/18
02/19
09/19
04/20
11/20
07/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

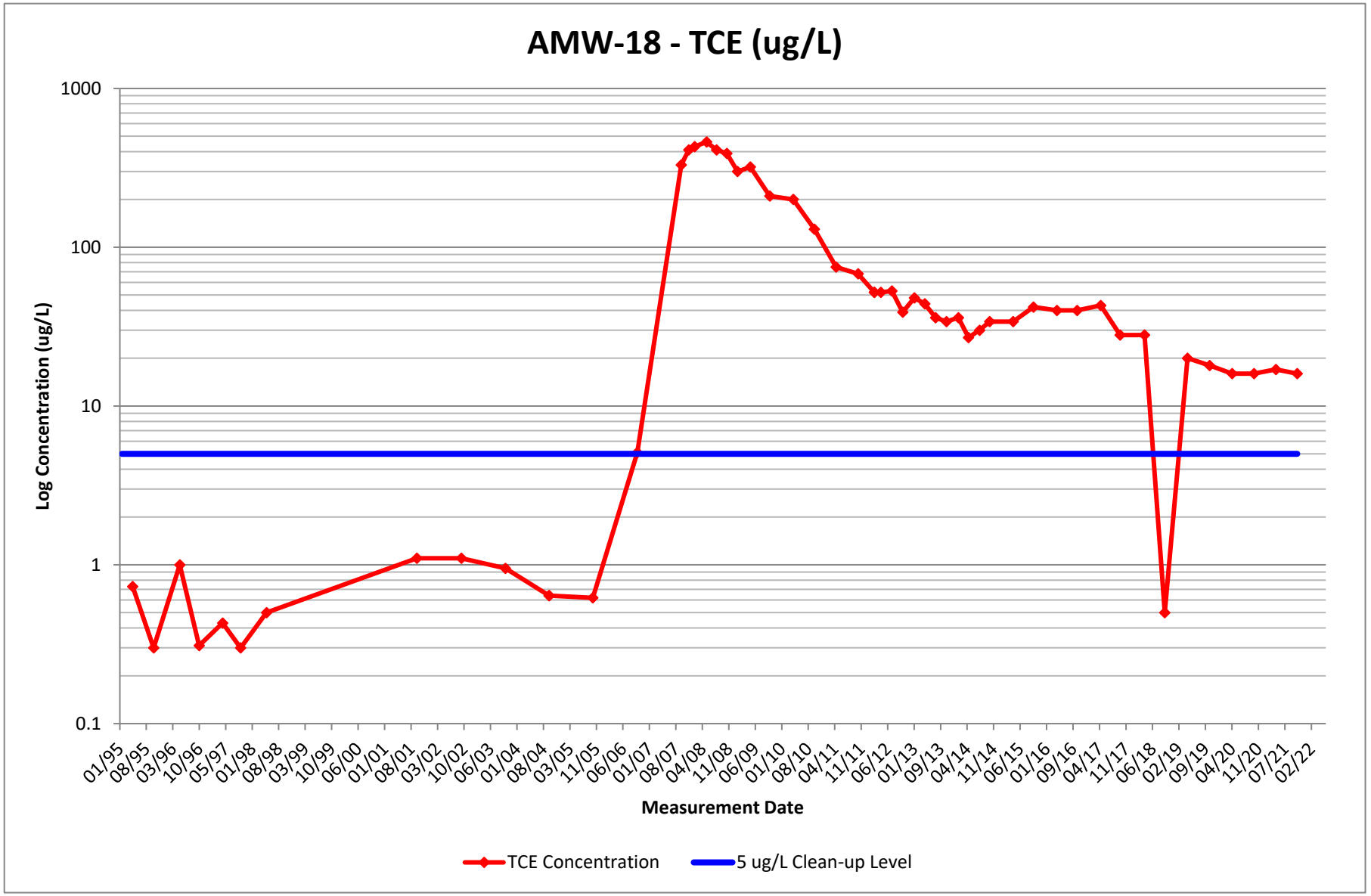

AMW-8A - TCE (ug/L)
Log Concentration (ug/L)
1000
100
10
1
0.1
01/95
08/95
03/96
10/96
05/97
01/98
08/98
03/99
10/99
06/00
01/01
08/01
03/02
10/02
06/03
01/04
08/04
03/05
11/05
06/06
01/07
08/07
04/08
11/08
06/09
01/10
08/10
04/11
11/11
06/12
01/13
09/13
04/14
11/14
06/15
01/16
09/16
04/17
11/17
06/18
02/19
09/19
04/20
11/20
07/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

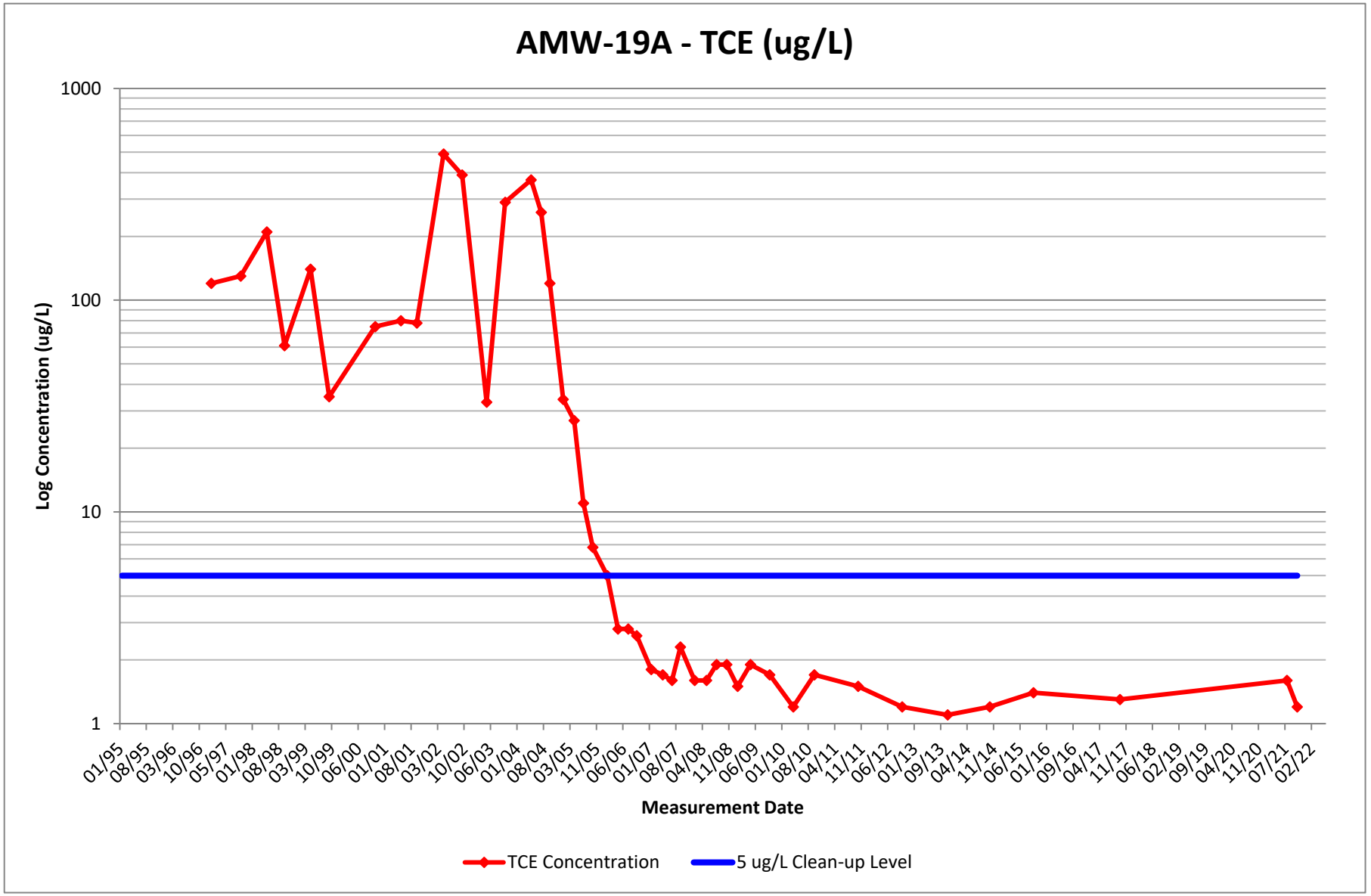

AMW-12A - TCE (ug/L)
Log Concentration (ug/L)
100000
10000
1000
100
10
1
01/95
08/95
03/96
10/96
05/97
01/98
08/98
03/99
10/99
06/00
01/01
08/01
03/02
10/02
06/03
01/04
08/04
03/05
11/05
06/06
01/07
08/07
04/08
11/08
06/09
01/10
08/10
04/11
11/11
06/12
01/13
09/13
04/14
11/14
06/15
01/16
09/16
04/17
11/17
06/18
02/19
09/19
04/20
11/20
07/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

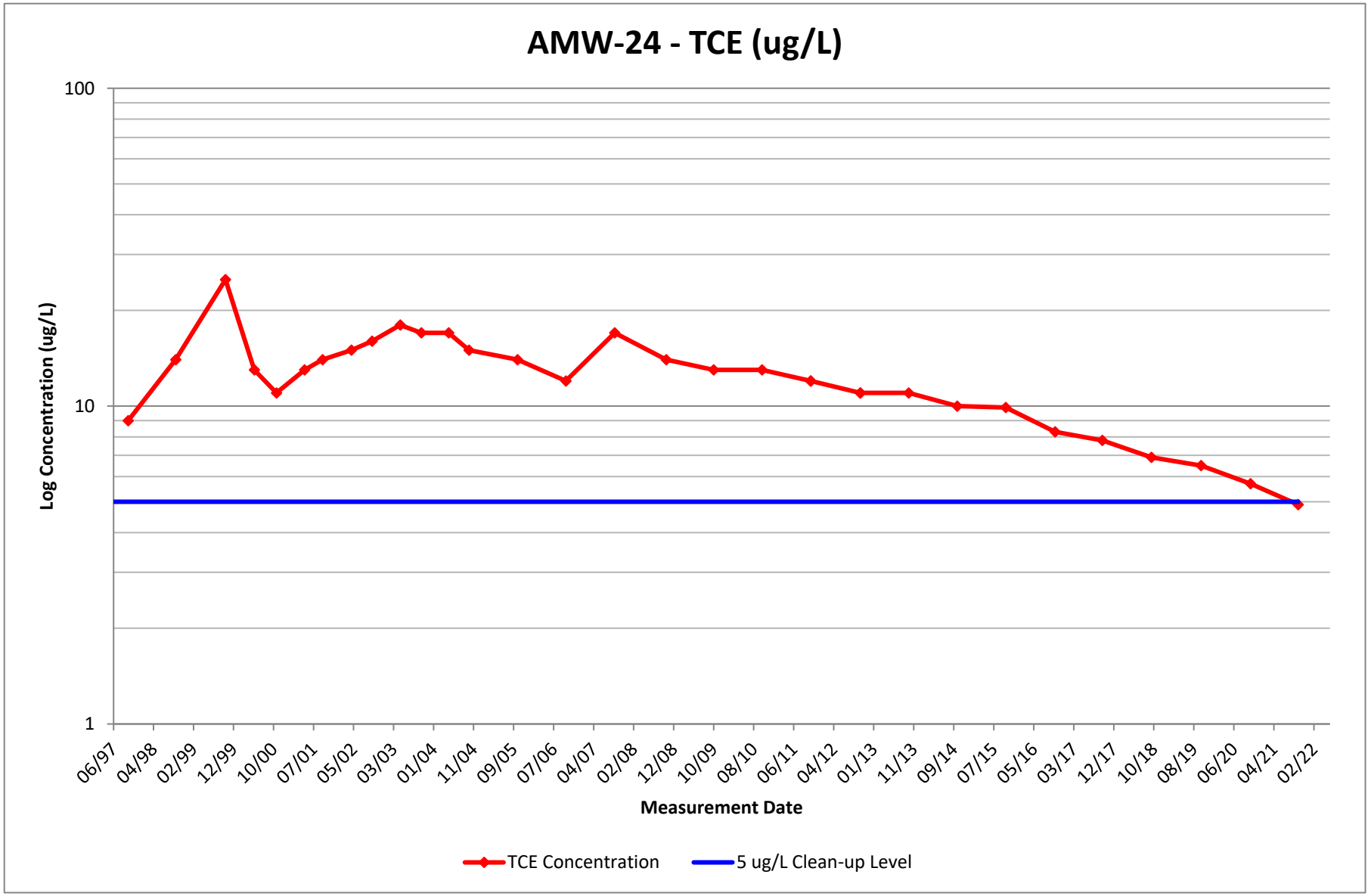

AMW-13A - TCE (ug/L)
Log Concentration (ug/L)
100
10
1
0.1
01/95
08/95
03/96
10/96
05/97
01/98
08/98
03/99
10/99
06/00
01/01
08/01
03/02
10/02
06/03
01/04
08/04
03/05
11/05
06/06
01/07
08/07
04/08
11/08
06/09
01/10
08/10
04/11
11/11
06/12
01/13
09/13
04/14
11/14
06/15
01/16
09/16
04/17
11/17
06/18
02/19
09/19
04/20
11/20
07/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

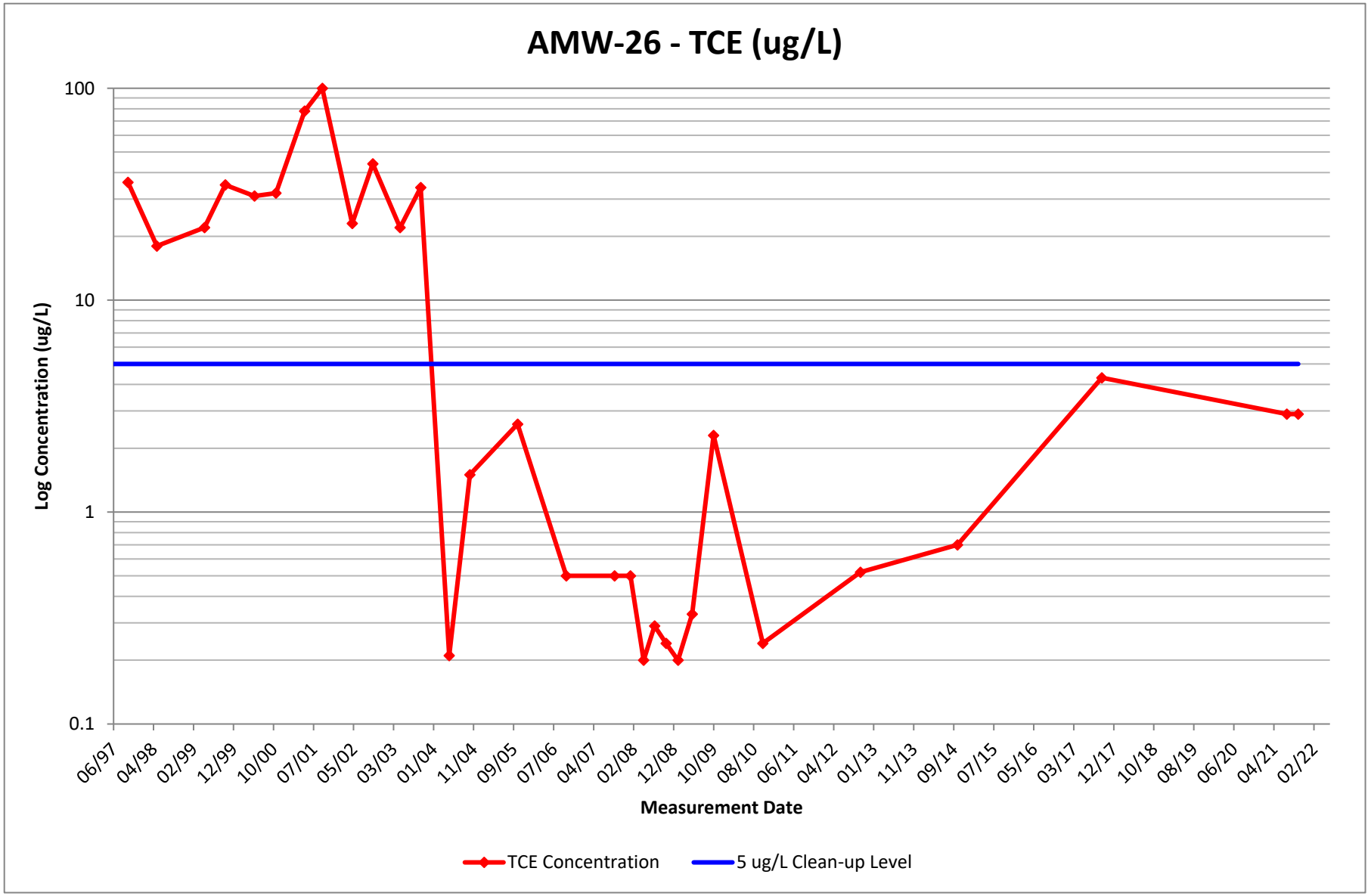

AMW-16 - TCE (ug/L)
Log Concentration (ug/L)
100
10
1
0.1
01/95
08/95
03/96
10/96
05/97
01/98
08/98
03/99
10/99
06/00
01/01
08/01
03/02
10/02
06/03
01/04
08/04
03/05
11/05
06/06
01/07
08/07
04/08
11/08
06/09
01/10
08/10
04/11
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06/12
01/13
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11/14
06/15
01/16
09/16
04/17
11/17
06/18
02/19
09/19
04/20
11/20
07/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

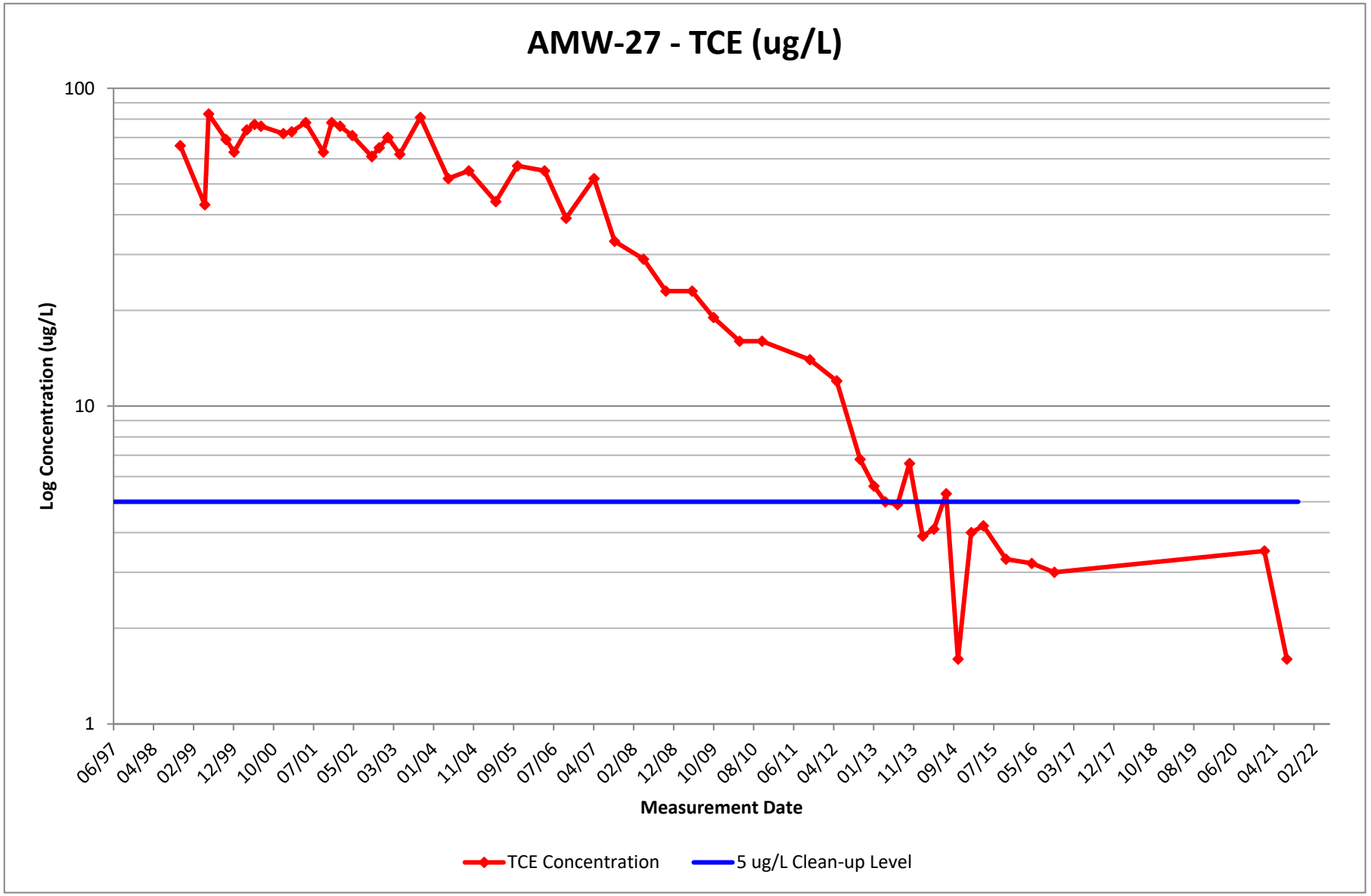

AMW-17 - TCE (ug/L)
Log Concentration (ug/L)
1000
100
10
1
01/95
08/95
03/96
10/96
05/97
01/98
08/98
03/99
10/99
06/00
01/01
08/01
03/02
10/02
06/03
01/04
08/04
03/05
11/05
06/06
01/07
08/07
04/08
11/08
06/09
01/10
08/10
04/11
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01/13
09/13
04/14
11/14
06/15
01/16
09/16
04/17
11/17
06/18
02/19
09/19
04/20
11/20
07/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

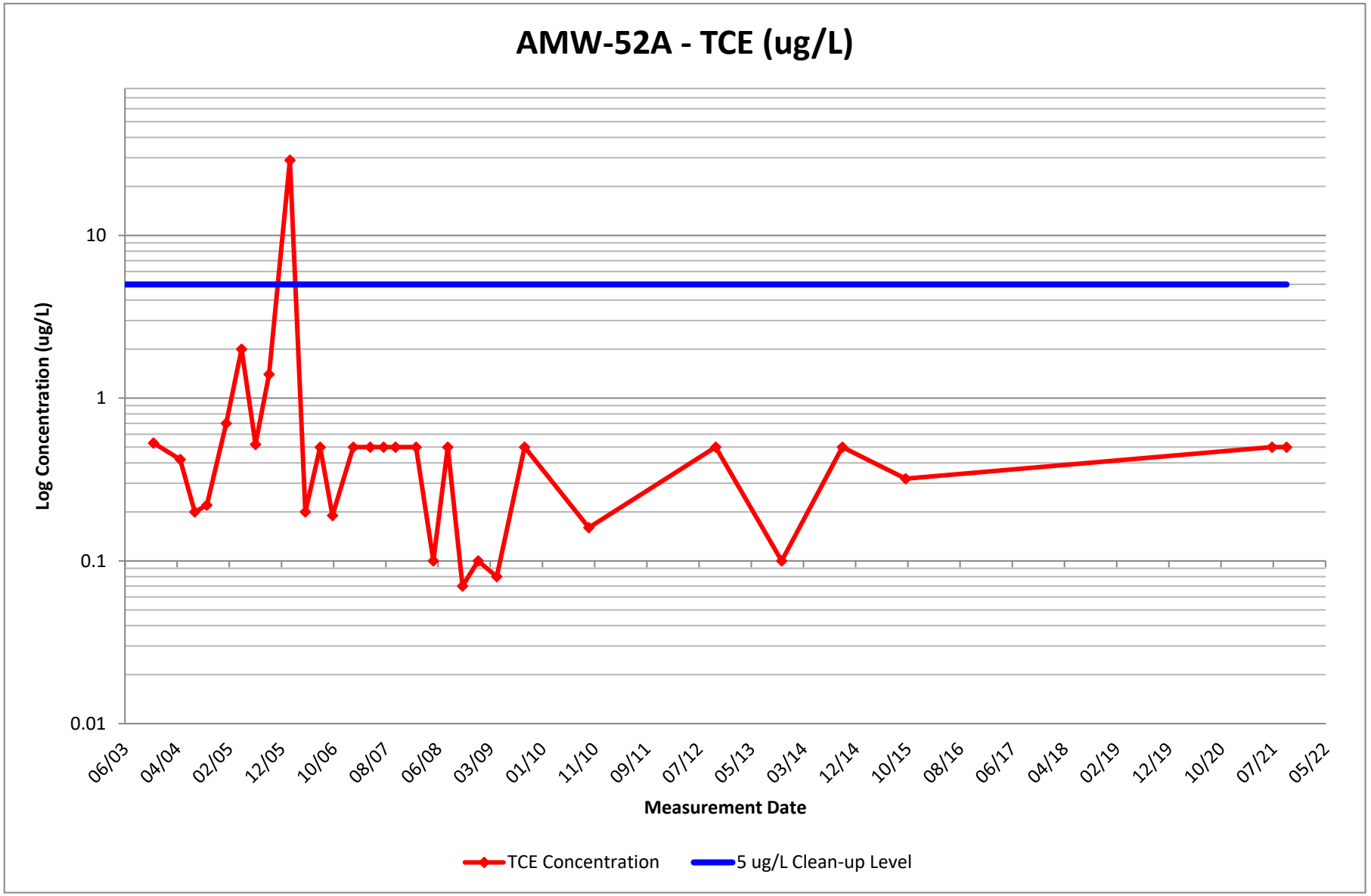

AMW-18 - TCE (ug/L)
Log Concentration (ug/L)
1000
100
10
1
0.1
01/95
08/95
03/96
10/96
05/97
01/98
08/98
03/99
10/99
06/00
01/01
08/01
03/02
10/02
06/03
01/04
08/04
03/05
11/05
06/06
01/07
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04/08
11/08
06/09
01/10
08/10
04/11
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06/12
01/13
09/13
04/14
11/14
06/15
01/16
09/16
04/17
11/17
06/18
02/19
09/19
04/20
11/20
07/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

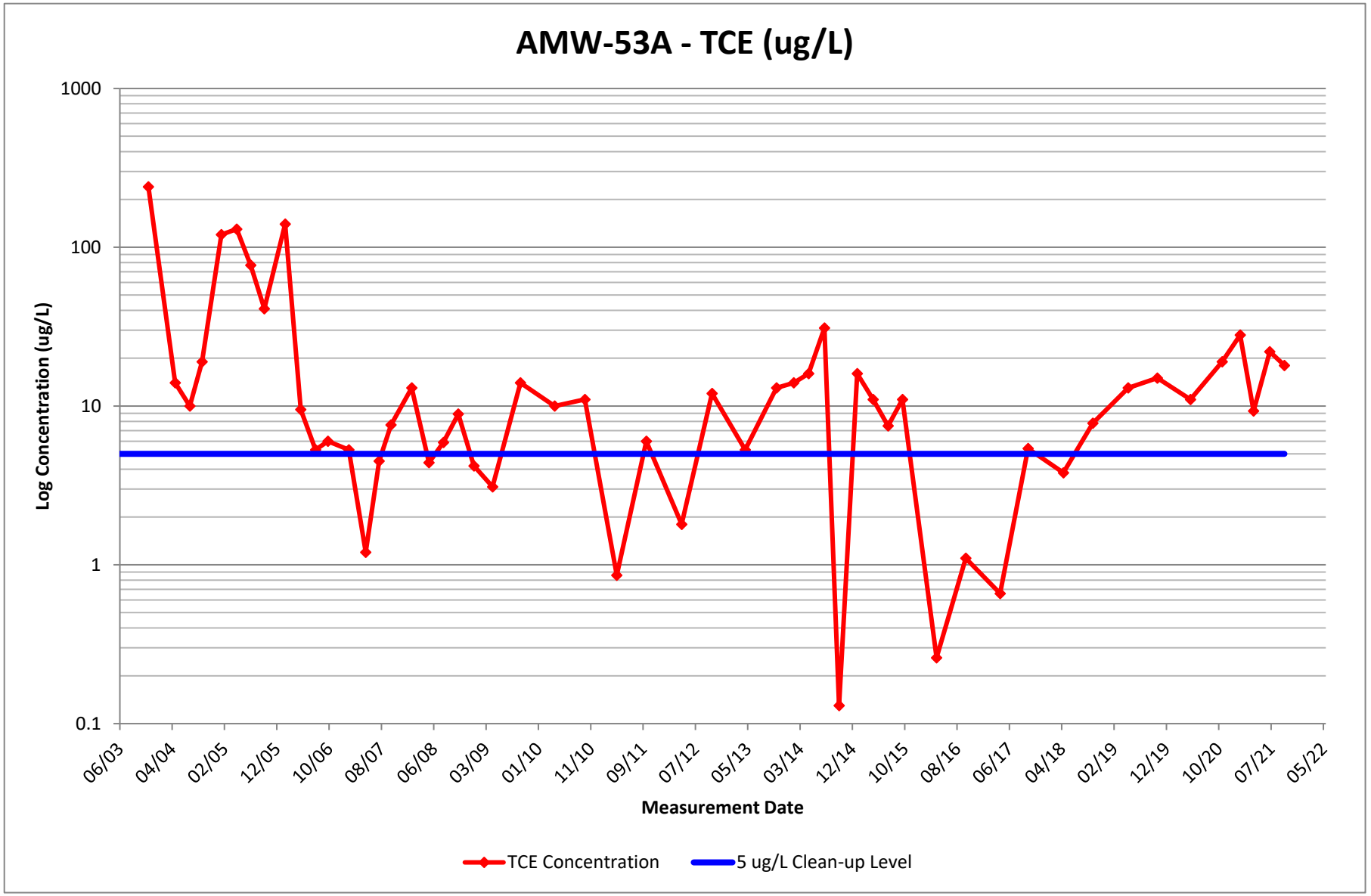

AMW-19A - TCE (ug/L)
Log Concentration (ug/L)
1000
100
10
1
01/95
08/95
03/96
10/96
05/97
01/98
08/98
03/99
10/99
06/00
01/01
08/01
03/02
10/02
06/03
01/04
08/04
03/05
11/05
06/06
01/07
08/07
04/08
11/08
06/09
01/10
08/10
04/11
11/11
06/12
01/13
09/13
04/14
11/14
06/15
01/16
09/16
04/17
11/17
06/18
02/19
09/19
04/20
11/20
07/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

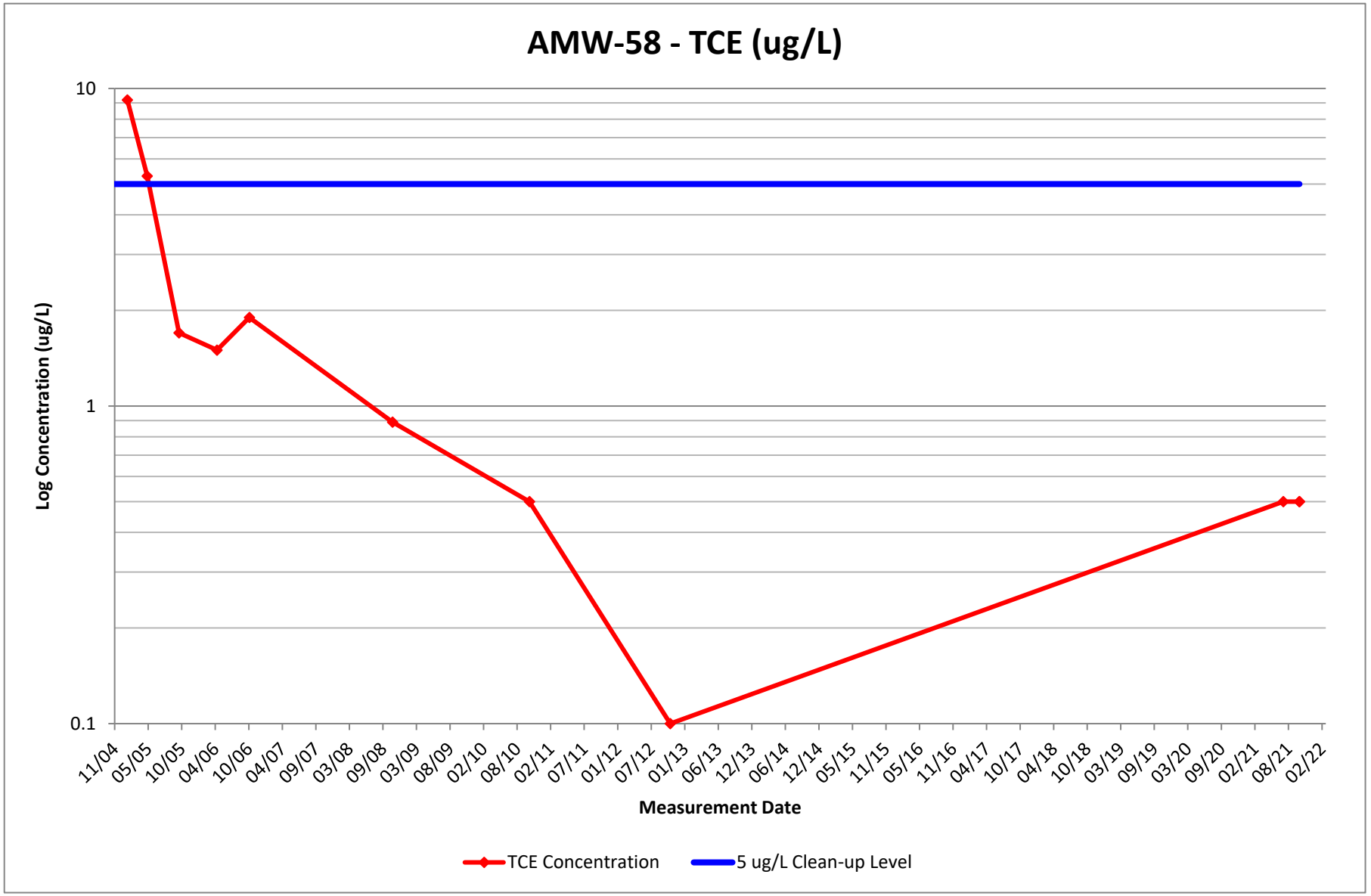

AMW-24 - TCE (ug/L)
100
10
1
Log Concentration (ug/L)
06/97
04/98
02/99
12/99
10/00
07/01
05/02
03/03
01/04
11/04
09/05
07/06
04/07
02/08
12/08
10/09
08/10
06/11
04/12
01/13
11/13
09/14
07/15
05/16
03/17
12/17
10/18
08/19
06/20
04/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

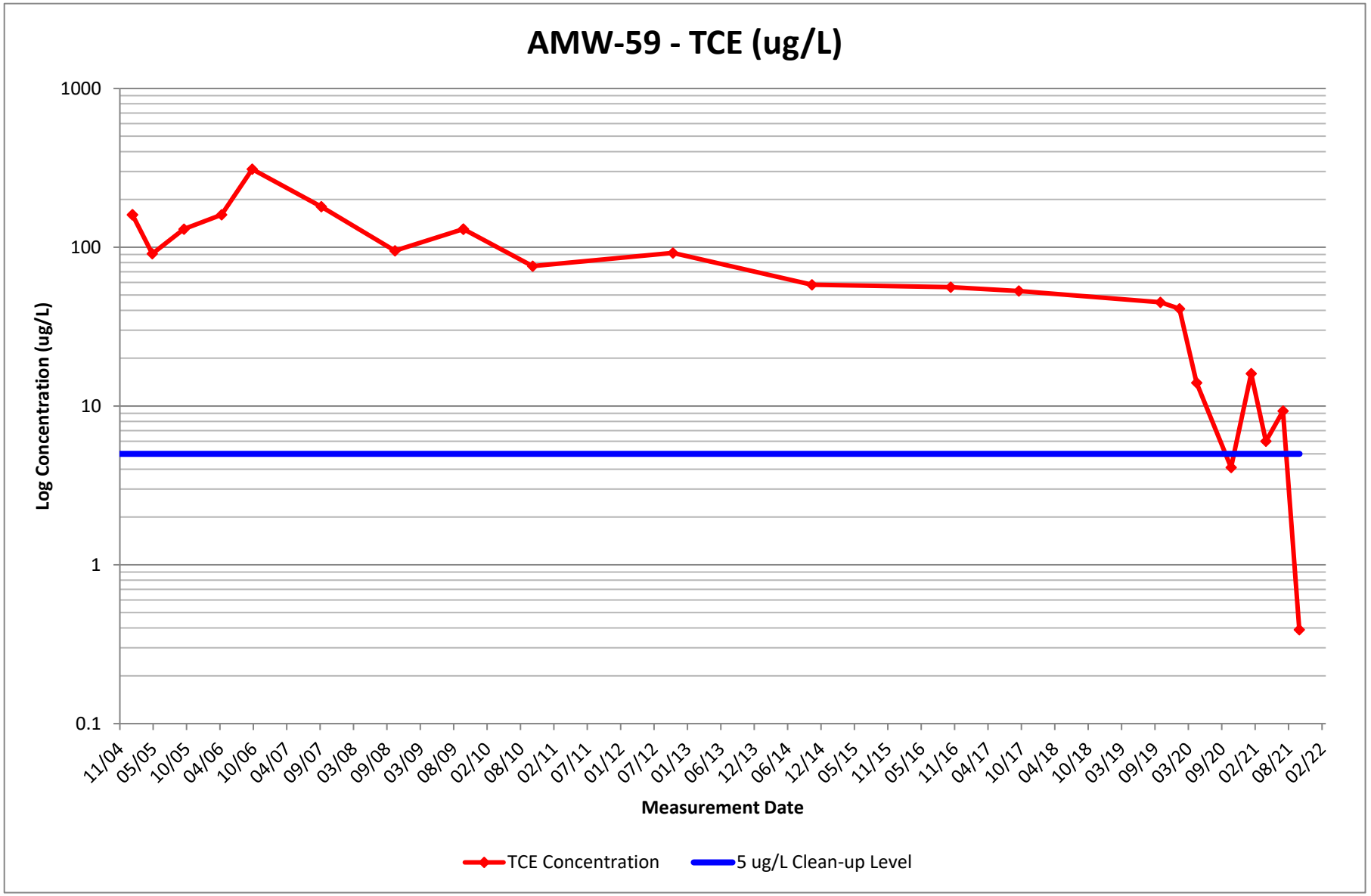

AMW-26 - TCE (ug/L)
Log Concentration (ug/L)
100
10
1
0.1
06/97
04/98
02/99
12/99
10/00
07/01
05/02
03/03
01/04
11/04
09/05
07/06
04/07
02/08
12/08
10/09
08/10
06/11
04/12
01/13
11/13
09/14
07/15
05/16
03/17
12/17
10/18
08/19
06/20
04/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

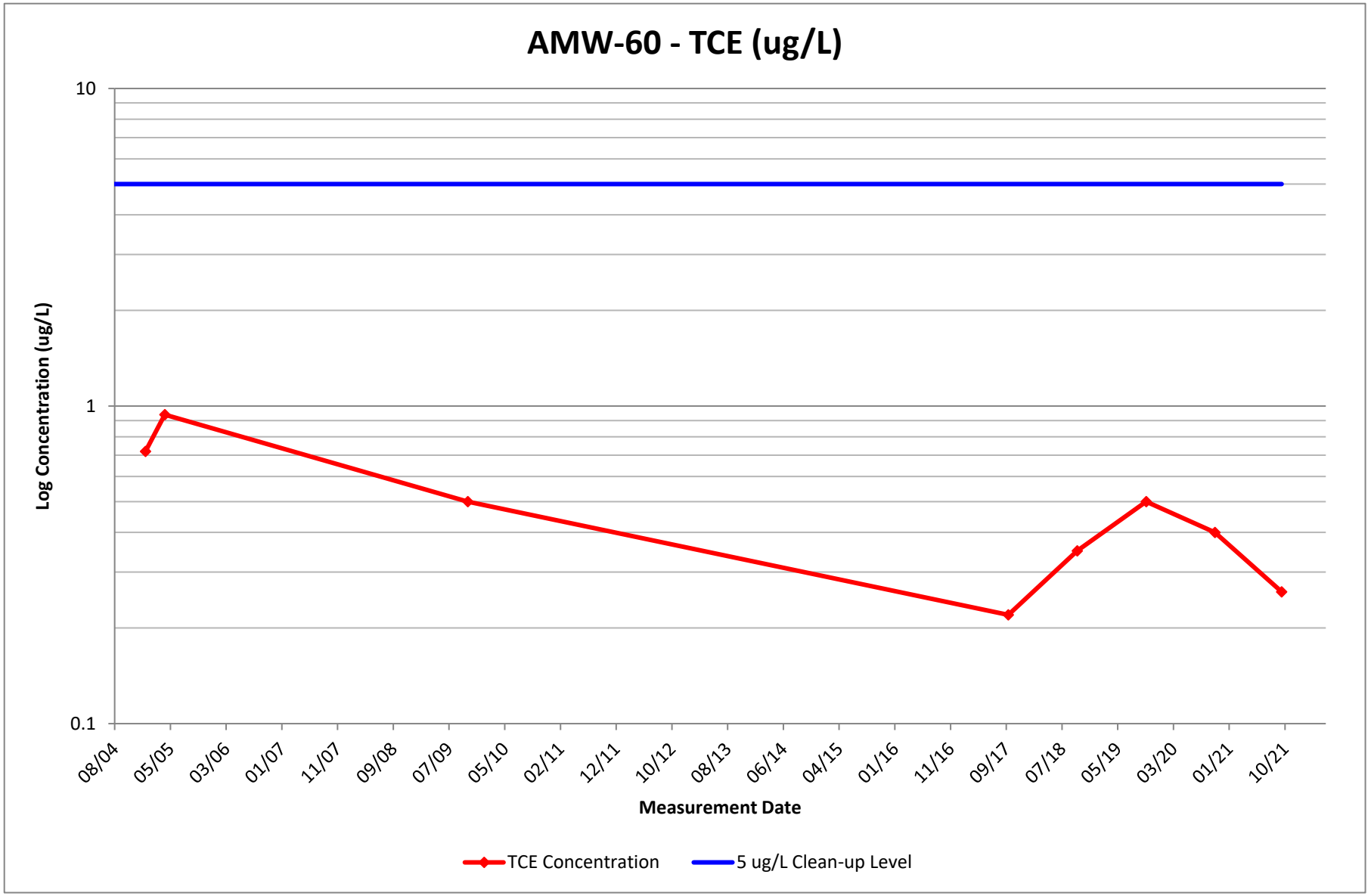

AMW-27 - TCE (ug/L)
Log Concentration (ug/L)
100
10
1
06/97
04/98
02/99
12/99
10/00
07/01
05/02
03/03
01/04
11/04
09/05
07/06
04/07
02/08
12/08
10/09
08/10
06/11
04/12
01/13
11/13
09/14
07/15
05/16
03/17
12/17
10/18
08/19
06/20
04/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

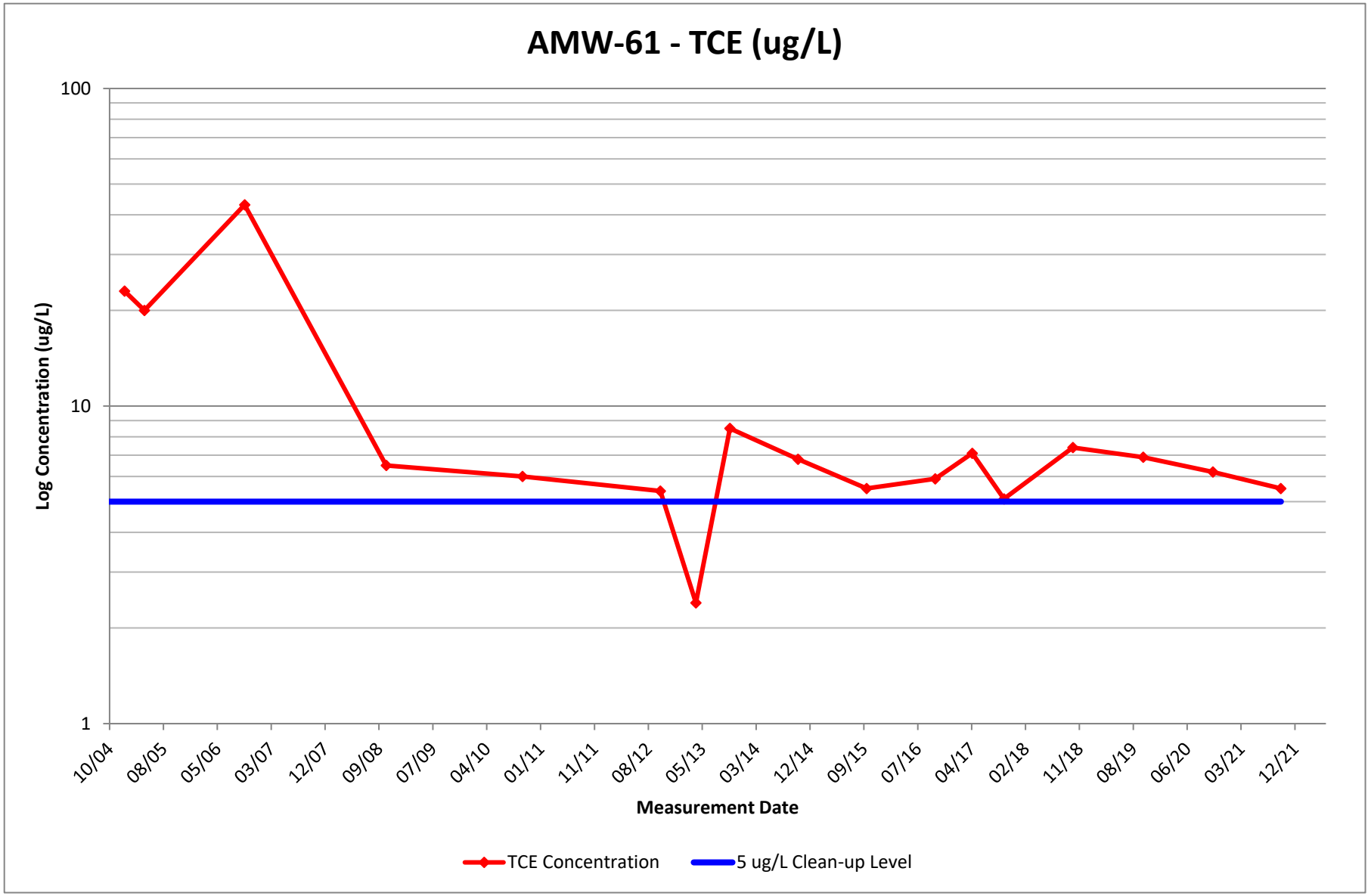

AMW-52A - TCE (ug/L)
Log Concentration (ug/L)
10
1
0.1
0.01
06/03
04/04
02/05
12/05
10/06
08/07
06/08
03/09
01/10
11/10
09/11
07/12
05/13
03/14
12/14
10/15
08/16
06/17
04/18
02/19
12/19
10/20
07/21
05/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

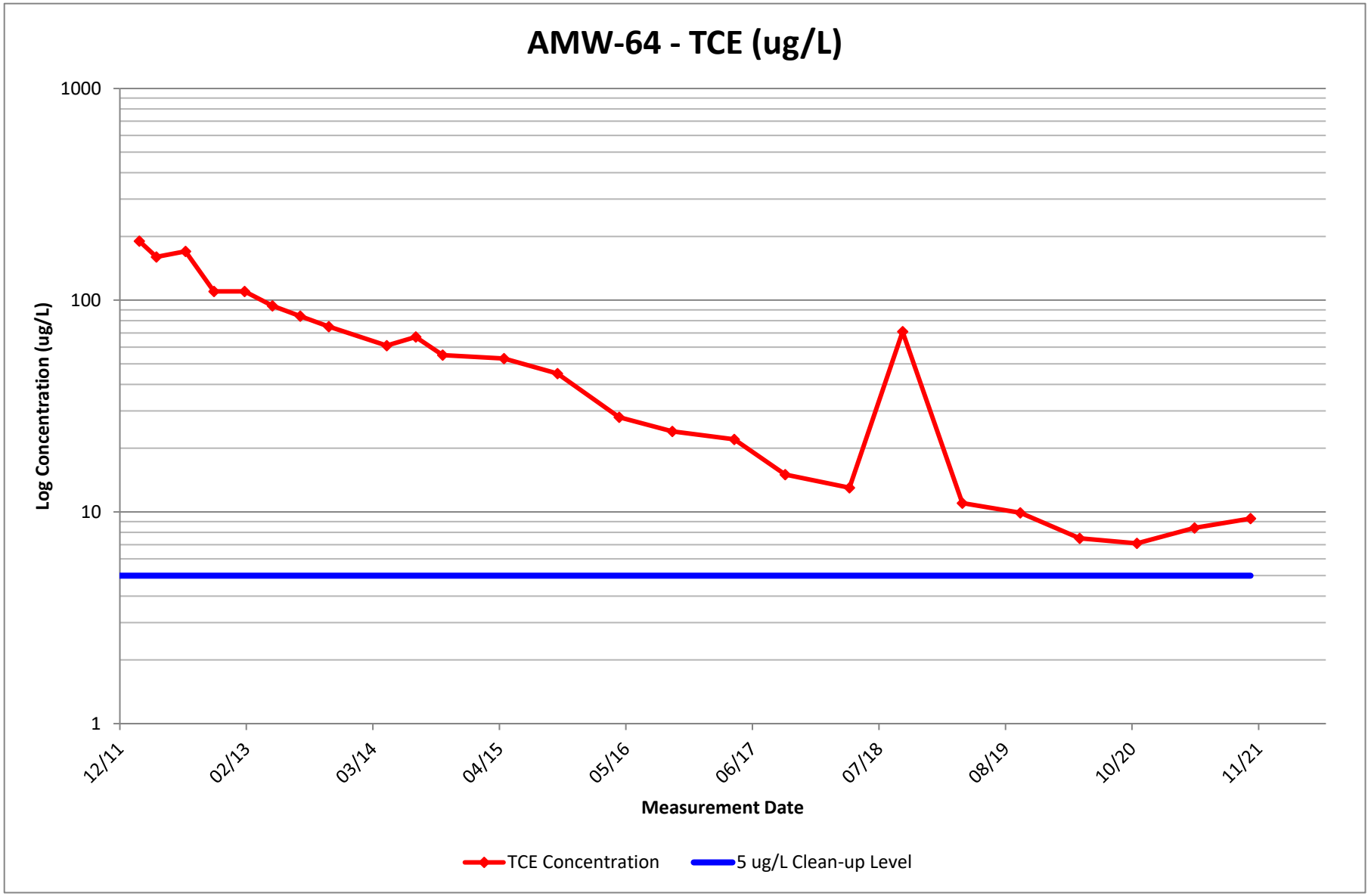

AMW-53A - TCE (ug/L)
Log Concentration (ug/L)
1000
100
10
1
0.1
06/03
04/04
02/05
12/05
10/06
08/07
06/08
03/09
01/10
11/10
09/11
07/12
05/13
03/14
12/14
10/15
08/16
06/17
04/18
02/19
12/19
10/20
07/21
05/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

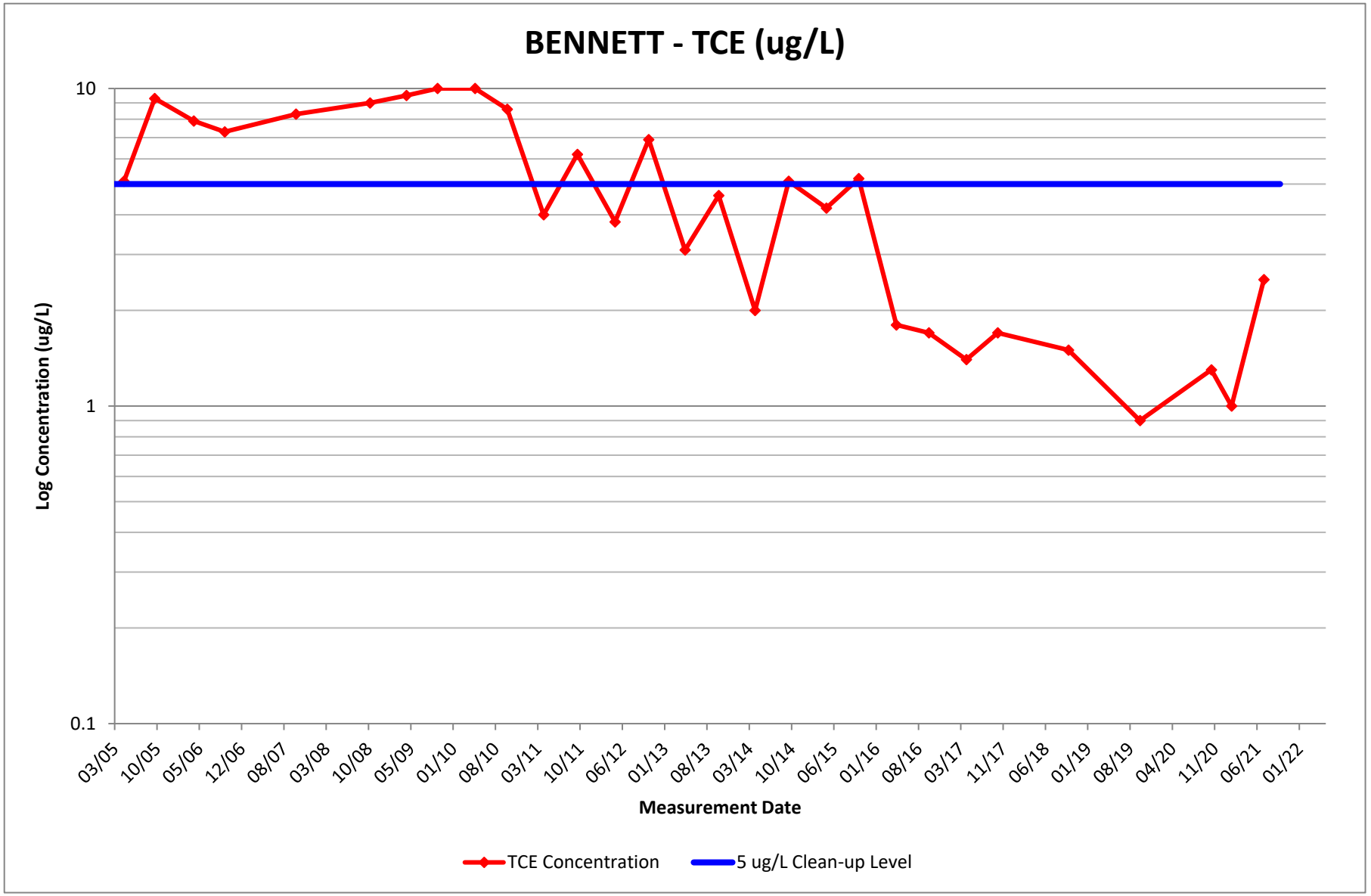

AMW-58 - TCE (ug/L)
Log Concentration (ug/L)
10
1
0.1
11/04
05/05
10/05
04/06
10/06
04/07
09/07
03/08
09/08
03/09
08/09
02/10
08/10
02/11
07/11
01/12
07/12
01/13
06/13
12/13
06/14
12/14
05/15
11/15
05/16
11/16
04/17
10/17
04/18
10/18
03/19
09/19
03/20
09/20
02/21
08/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

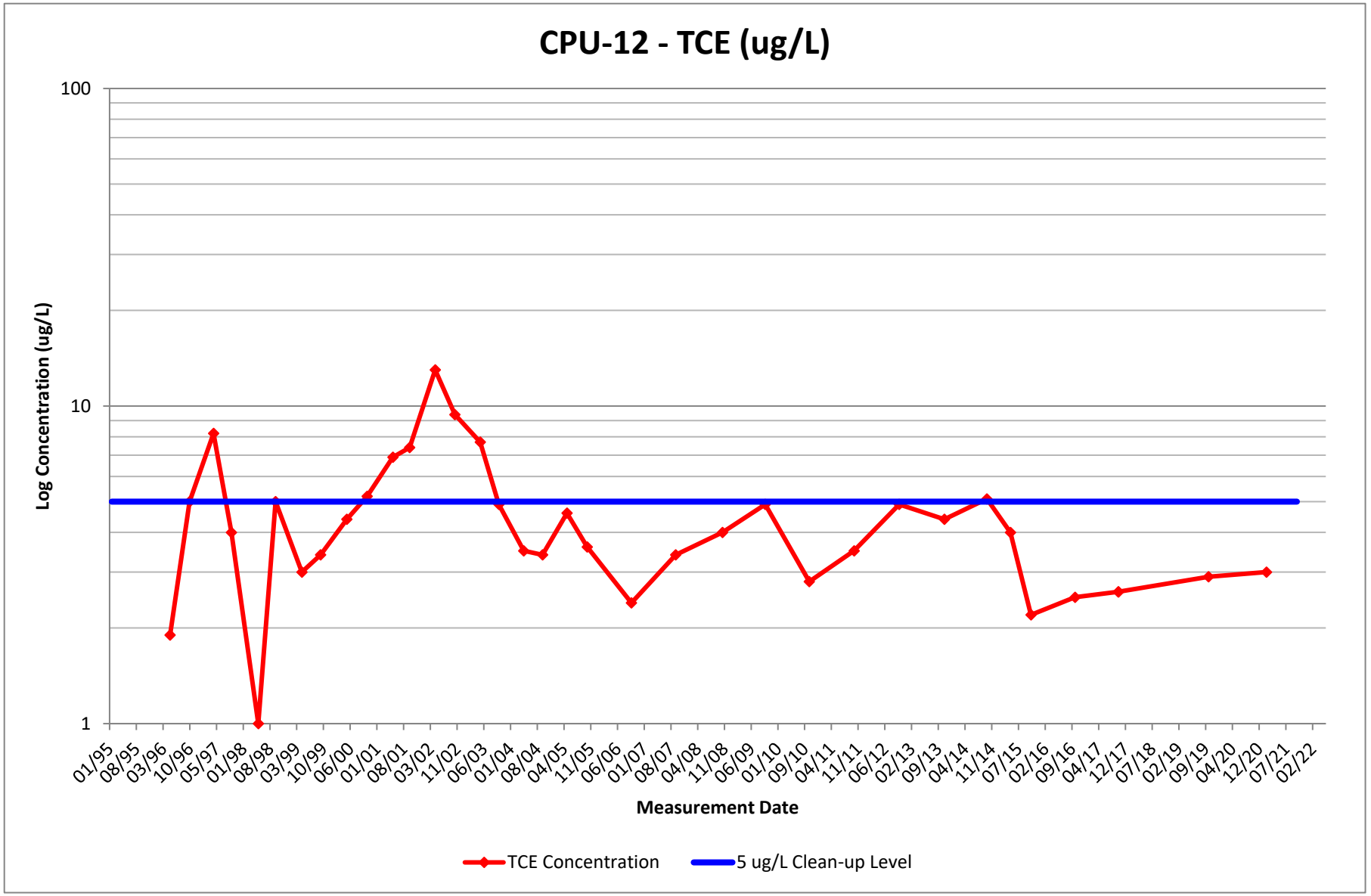

AMW-59 - TCE (ug/L)
Log Concentration (ug/L)
1000
100
10
1
0.1
11/04
05/05
10/05
04/06
10/06
04/07
09/07
03/08
09/08
03/09
08/09
02/10
08/10
02/11
07/11
01/12
07/12
01/13
06/13
12/13
06/14
12/14
05/15
11/15
05/16
11/16
04/17
10/17
04/18
10/18
03/19
09/19
03/20
09/20
02/21
08/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

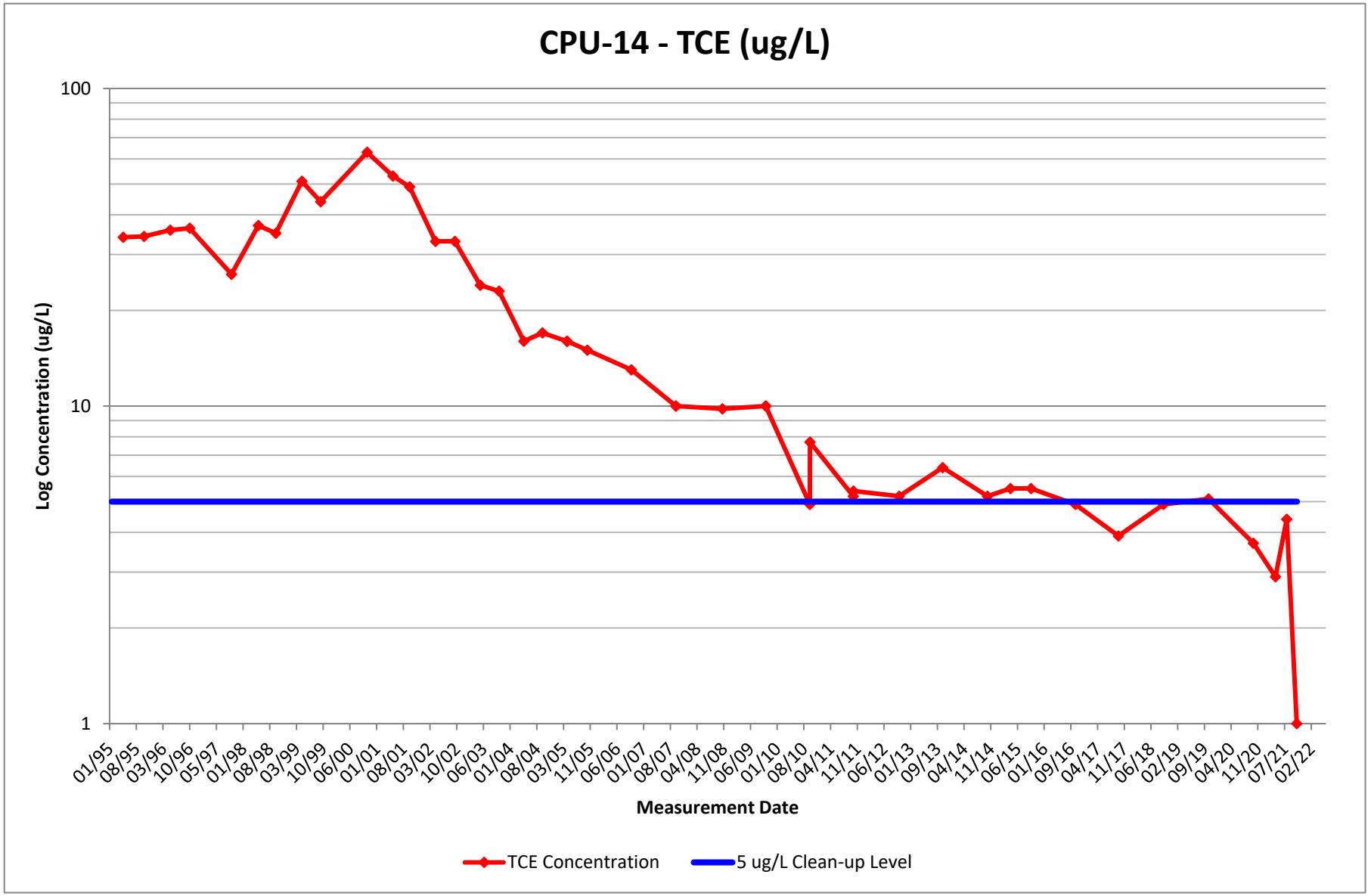

AMW-60 - TCE (ug/L)
10
1
0.1
Log Concentration (ug/L)
08/04
05/05
03/06
01/07
11/07
09/08
07/09
05/10
02/11
12/11
10/12
08/13
06/14
04/15
01/16
11/16
09/17
07/18
05/19
03/20
01/21
10/21
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

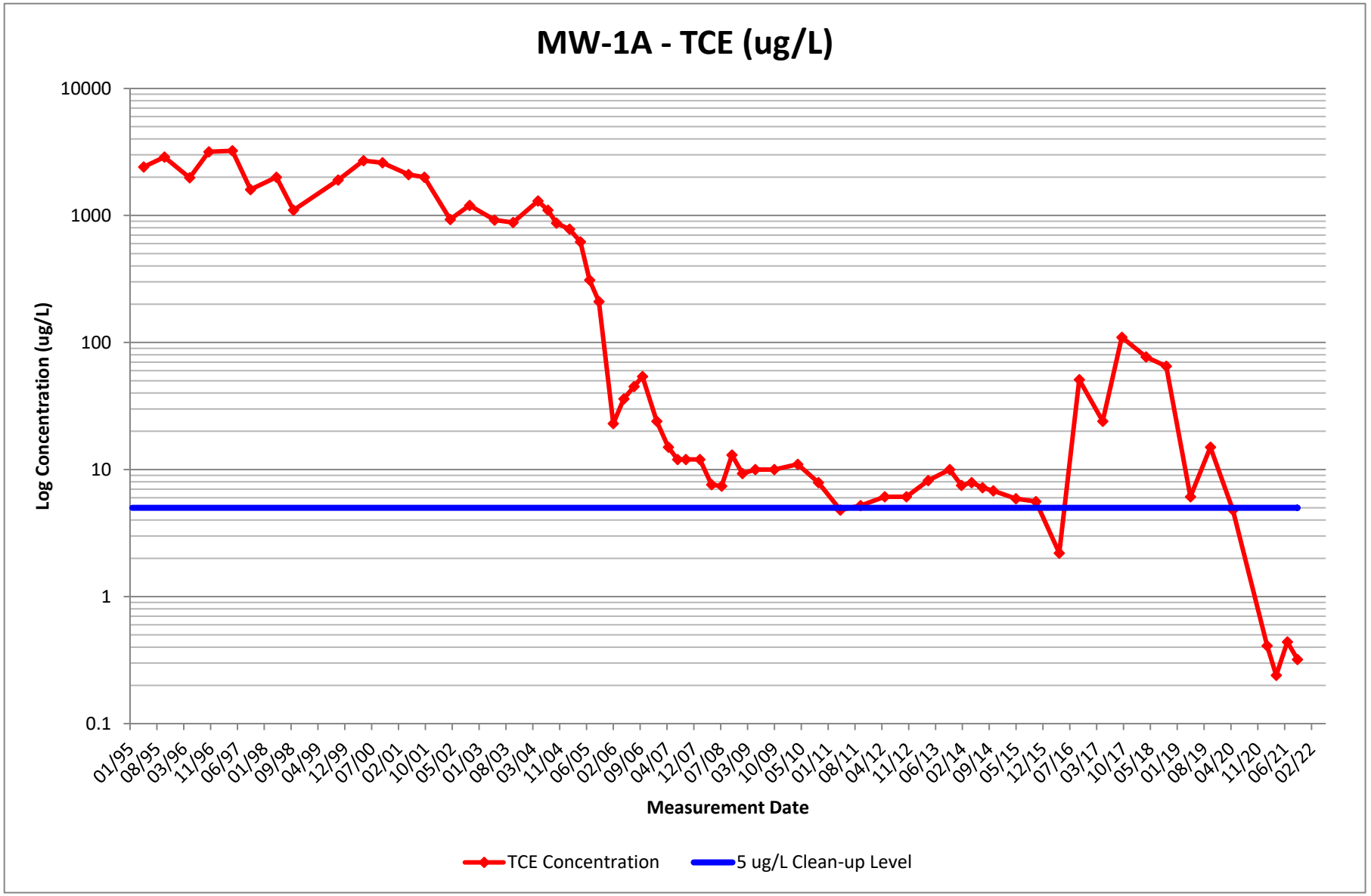

AMW-61 - TCE (ug/L)
100
10
1
Log Concentration (ug/L)
10/04
08/05
05/06
03/07
12/07
09/08
07/09
04/10
01/11
11/11
08/12
05/13
03/14
12/14
09/15
07/16
04/17
02/18
11/18
08/19
06/20
03/21
12/21
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

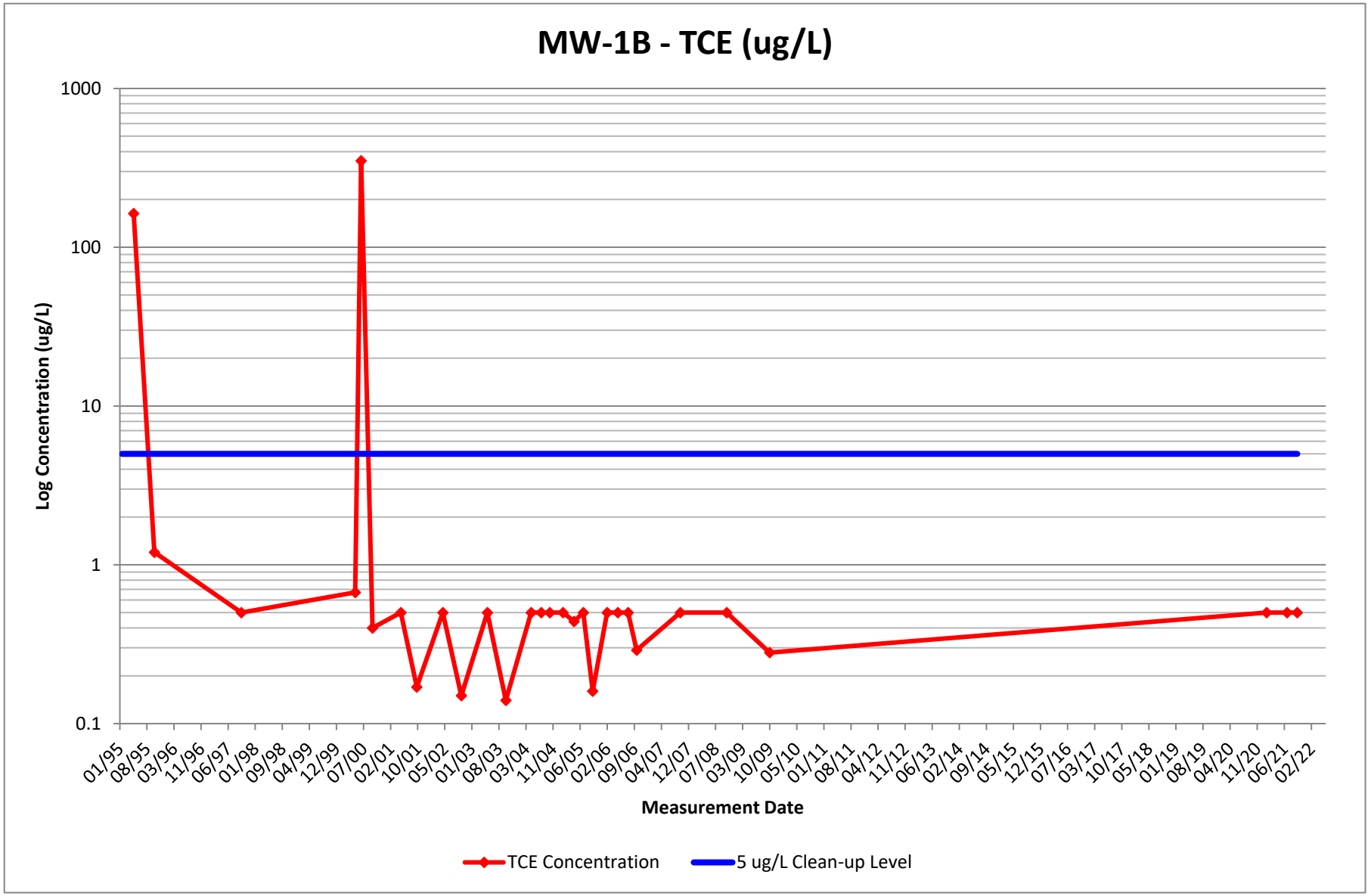

AMW-64 - TCE (ug/L)
1000
100
10
1
Log Concentration (ug/L)
12/11
02/13
03/14
04/15
05/16
06/17
07/18
08/19
10/20
11/21
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

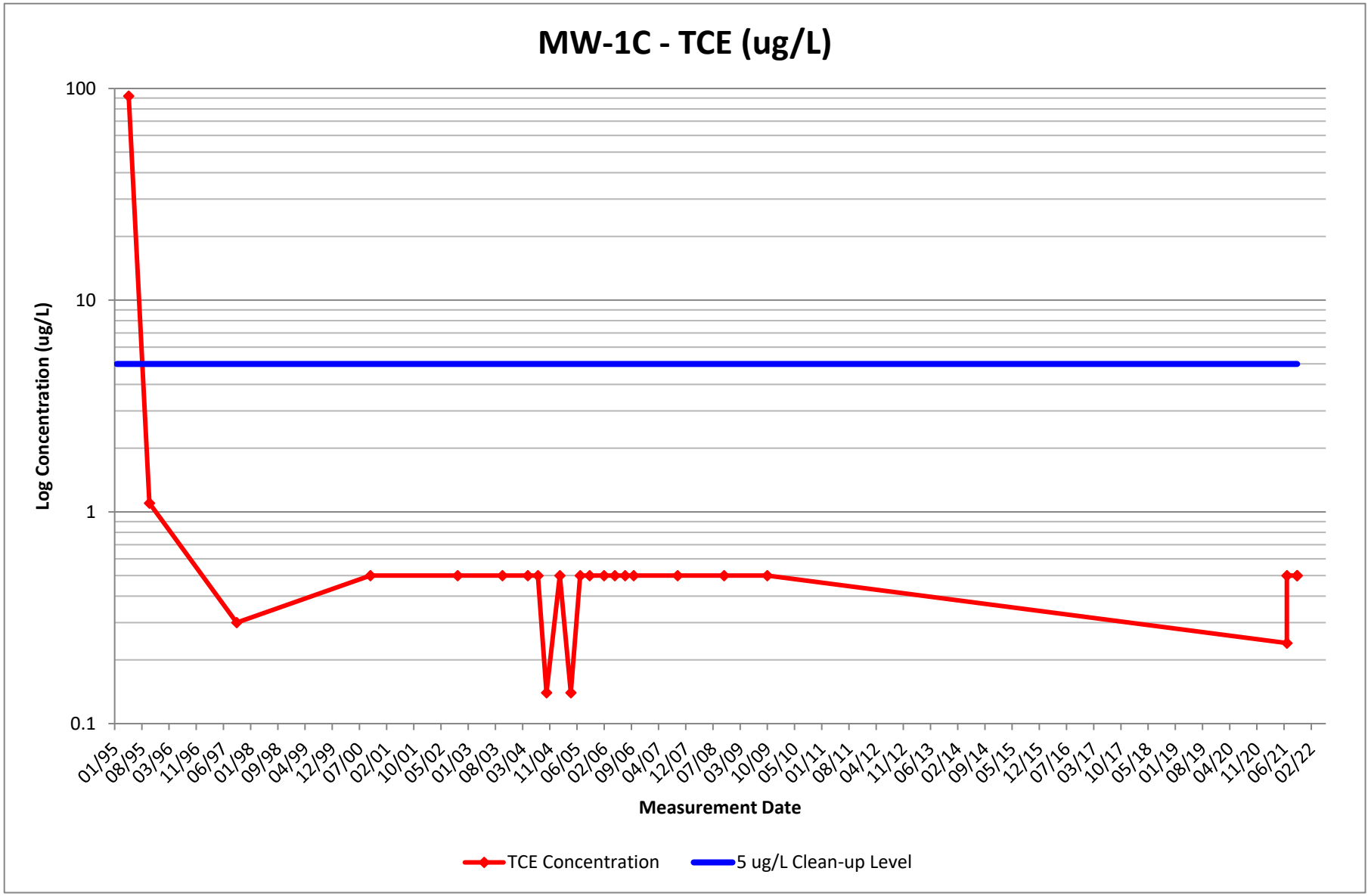

BENNETT - TCE (ug/L)
10
1
0.1
Log Concentration (ug/L)
03/05
10/05
05/06
12/06
08/07
03/08
10/08
05/09
01/10
08/10
03/11
10/11
06/12
01/13
08/13
03/14
10/14
06/15
01/16
08/16
03/17
11/17
06/18
01/19
08/19
04/20
11/20
06/21
01/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

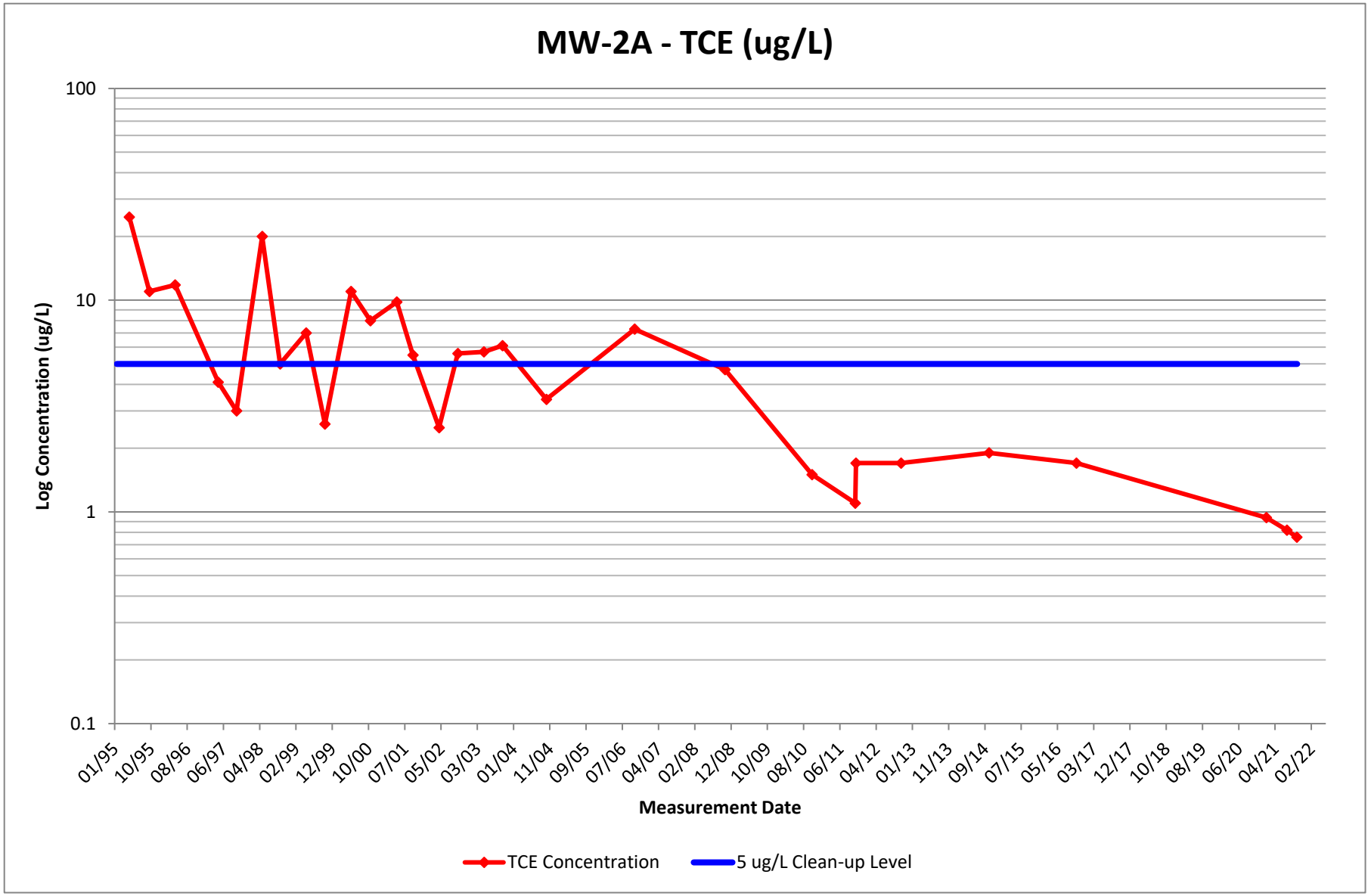

CPU-12 - TCE (ug/L)
100
10
1
Log Concentration (ug/L)
01/95
08/95
03/96
10/96
05/97
01/98
08/98
03/99
10/99
06/00
01/01
08/01
03/02
11/02
06/03
01/04
08/04
04/05
11/05
06/06
01/07
08/07
04/08
11/08
06/09
01/10
09/10
04/11
11/11
06/12
02/13
09/13
04/14
11/14
07/15
02/16
09/16
04/17
12/17
07/18
02/19
09/19
04/20
12/20
07/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

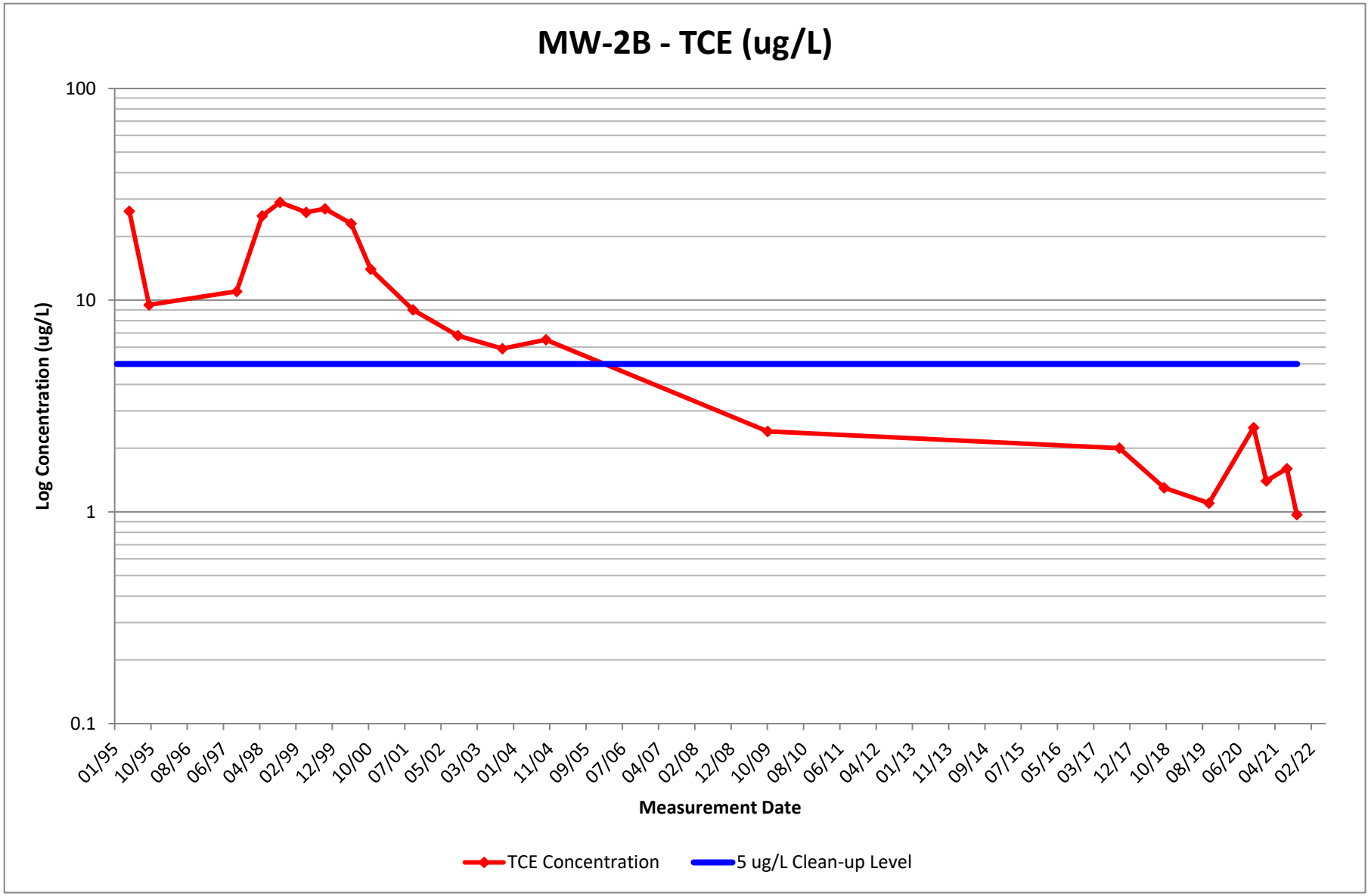

CPU-14 - TCE (ug/L)
100
10
1
Log Concentration (ug/L)
01/95
08/95
03/96
10/96
05/97
01/98
08/98
03/99
10/99
06/00
01/01
08/01
03/02
10/02
06/03
01/04
08/04
03/05
11/05
06/06
01/07
08/07
04/08
11/08
06/09
01/10
08/10
04/11
11/11
06/12
01/13
09/13
04/14
11/14
06/15
01/16
09/16
04/17
11/17
06/18
02/19
09/19
04/20
11/20
07/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

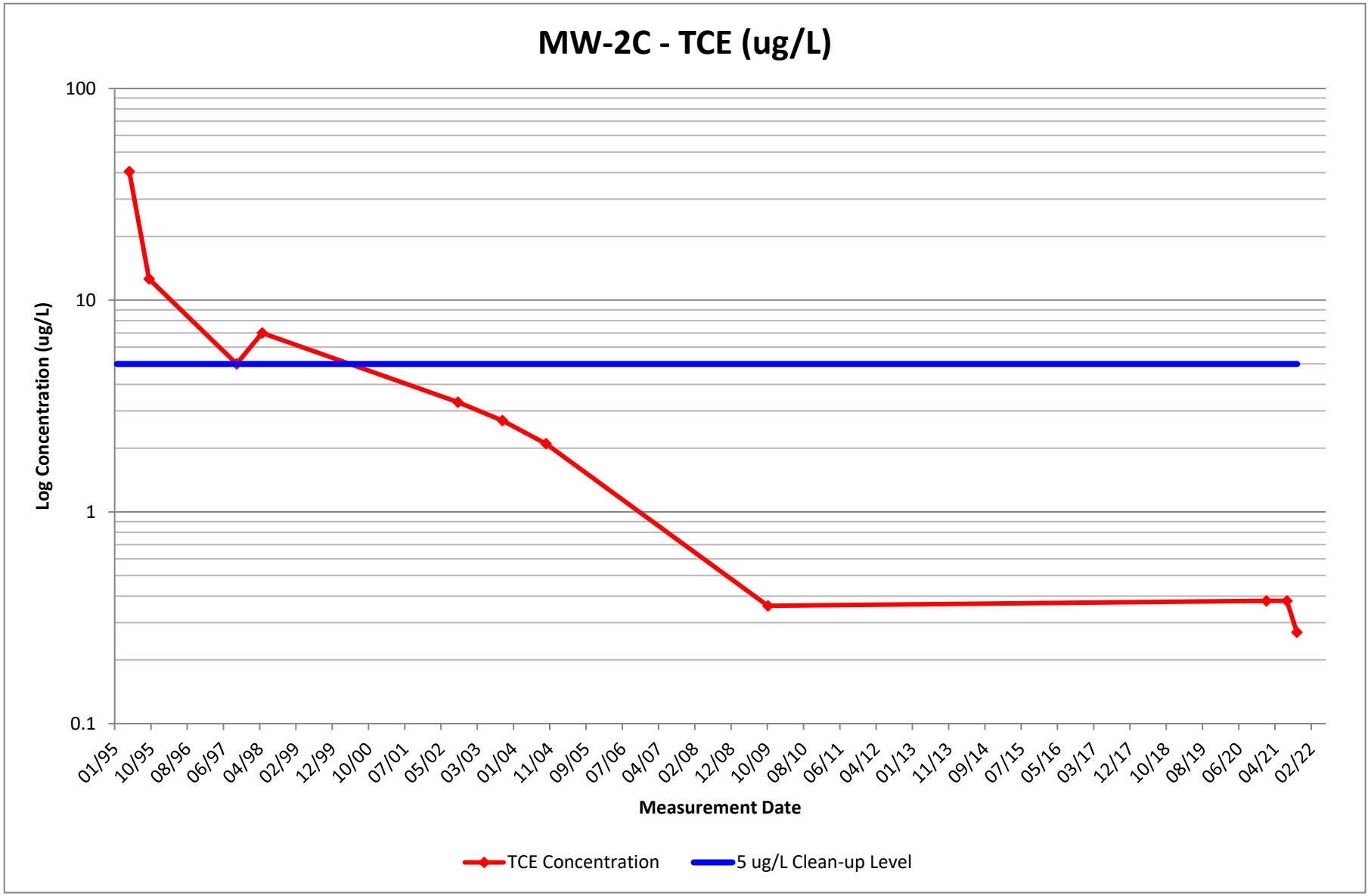

MW-1A - TCE (ug/L)
Log Concentration (ug/L)
10000
1000
100
10
1
0.1
01/95
08/95
03/96
11/96
06/97
01/98
09/98
04/99
12/99
07/00
02/01
10/01
05/02
01/03
08/03
03/04
11/04
06/05
02/06
09/06
04/07
12/07
07/08
03/09
10/09
05/10
01/11
08/11
04/12
11/12
06/13
02/14
09/14
05/15
12/15
07/16
03/17
10/17
05/18
01/19
08/19
04/20
11/20
06/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

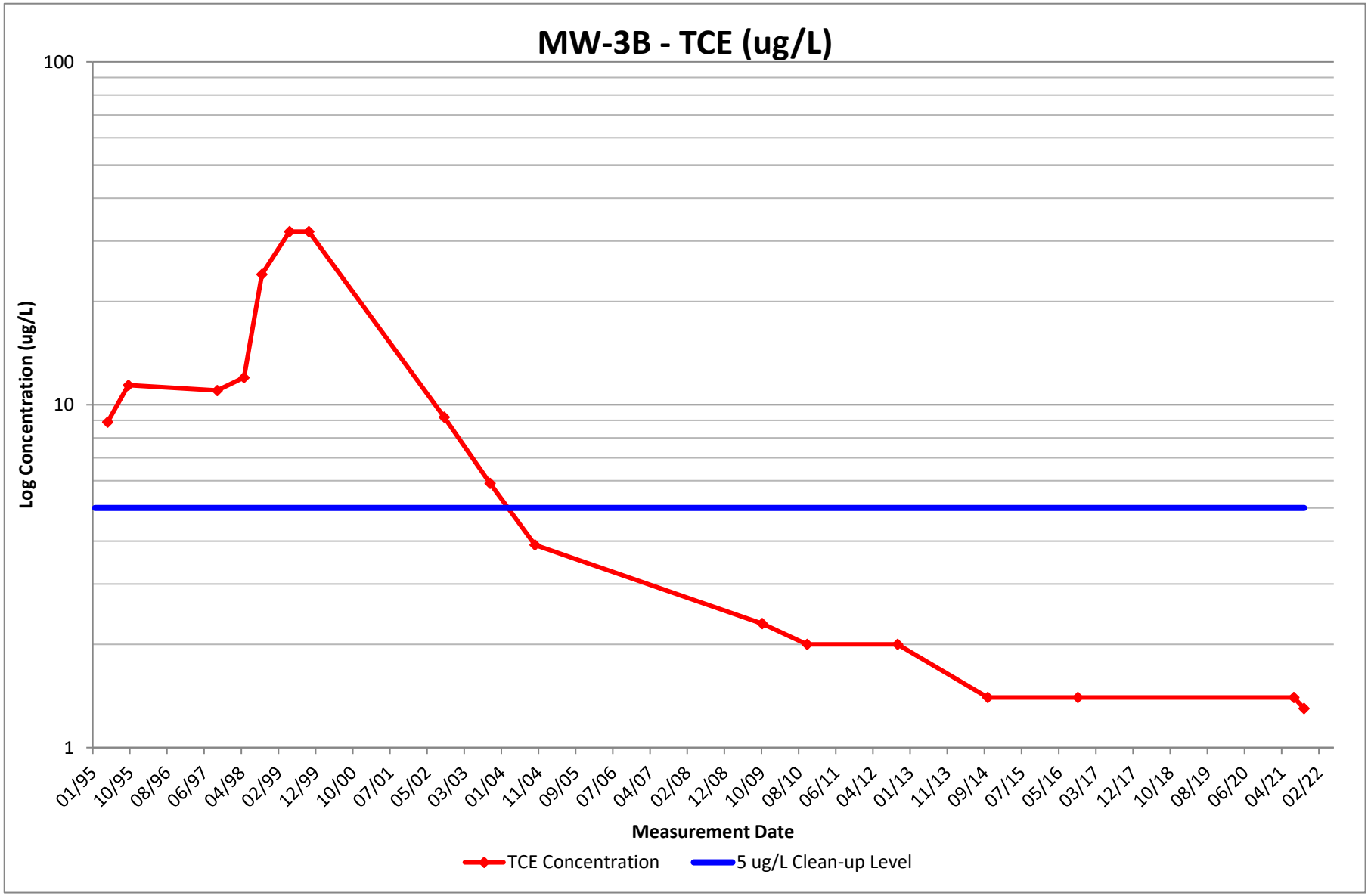

MW-1B - TCE (ug/L)
Log Concentration (ug/L)
1000
100
10
1
0.1
01/95
08/95
03/96
11/96
06/97
01/98
09/98
04/99
12/99
07/00
02/01
10/01
05/02
01/03
08/03
03/04
11/04
06/05
02/06
09/06
04/07
12/07
07/08
03/09
10/09
05/10
01/11
08/11
04/12
11/12
06/13
02/14
09/14
05/15
12/15
07/16
03/17
10/17
05/18
01/19
08/19
04/20
11/20
06/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

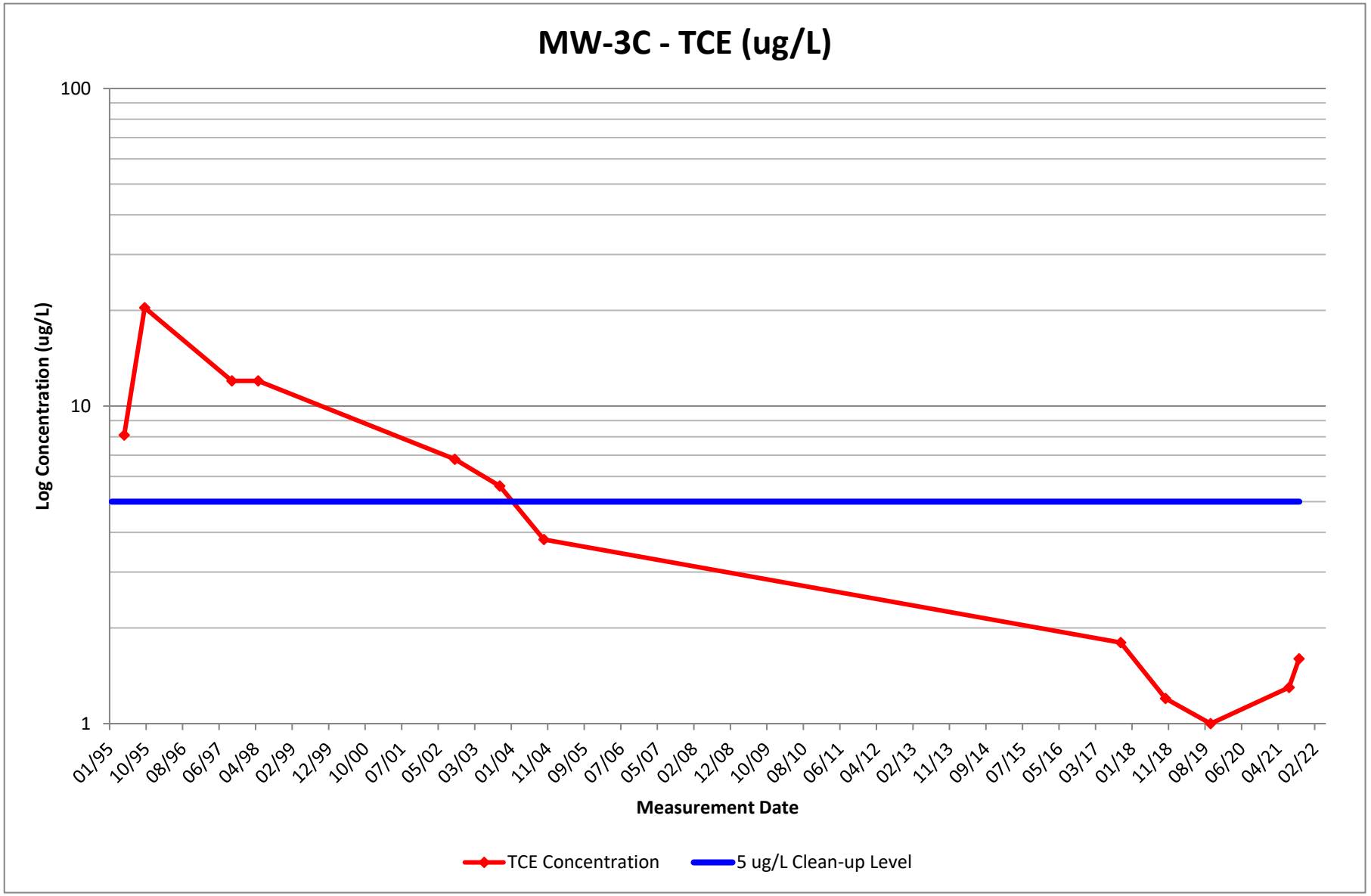

MW-1C - TCE (ug/L)
Log Concentration (ug/L)
100
10
1
0.1
01/95
08/95
03/96
11/96
06/97
01/98
09/98
04/99
12/99
07/00
02/01
10/01
05/02
01/03
08/03
03/04
11/04
06/05
02/06
09/06
04/07
12/07
07/08
03/09
10/09
05/10
01/11
08/11
04/12
11/12
06/13
02/14
09/14
05/15
12/15
07/16
03/17
10/17
05/18
01/19
08/19
04/20
11/20
06/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

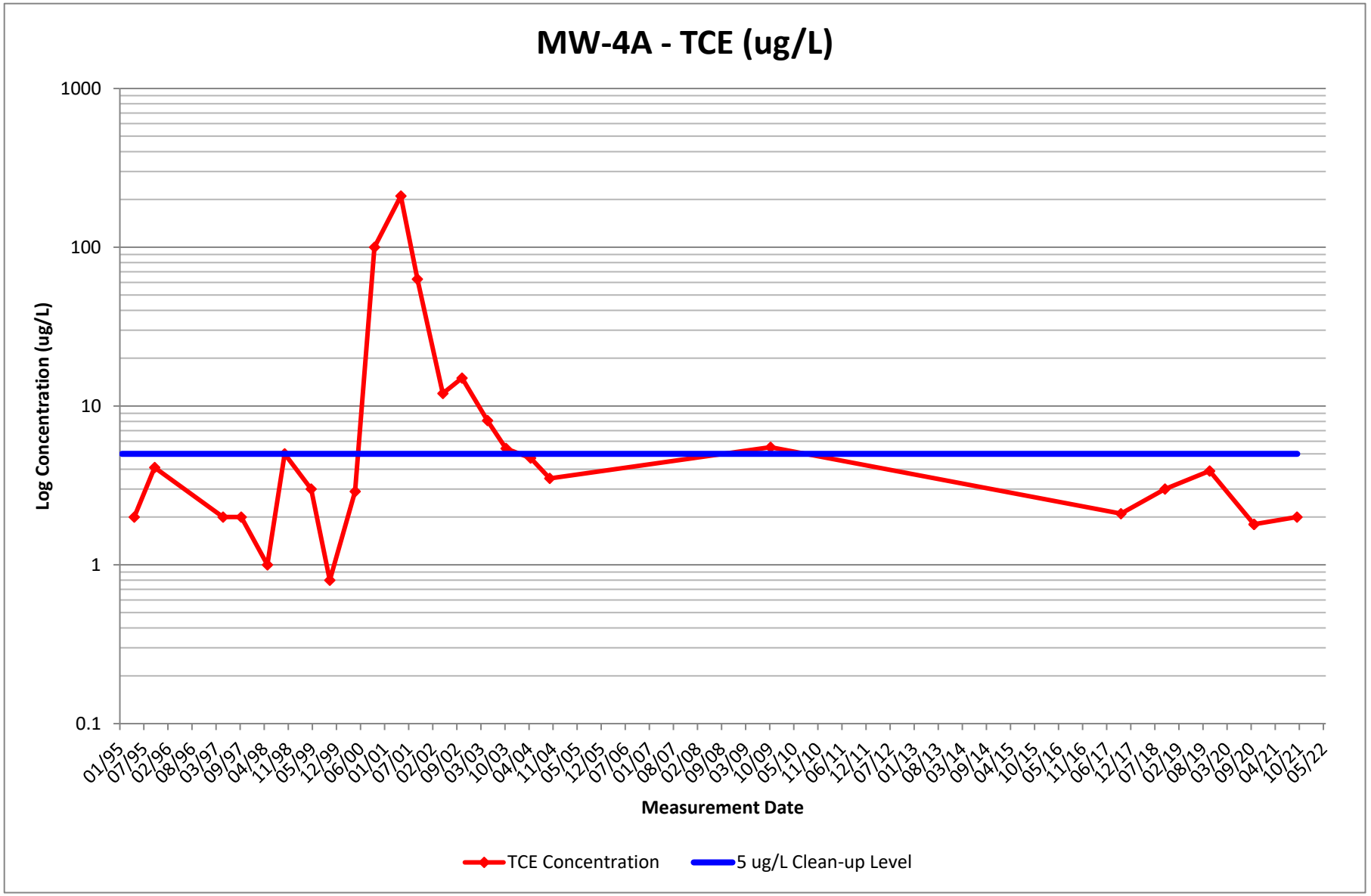

MW-2A - TCE (ug/L)
Log Concentration (ug/L)
100
10
1
0.1
01/95
10/95
08/96
06/97
04/98
02/99
12/99
10/00
07/01
05/02
03/03
01/04
11/04
09/05
07/06
04/07
02/08
12/08
10/09
08/10
06/11
04/12
01/13
11/13
09/14
07/15
05/16
03/17
12/17
10/18
08/19
06/20
04/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

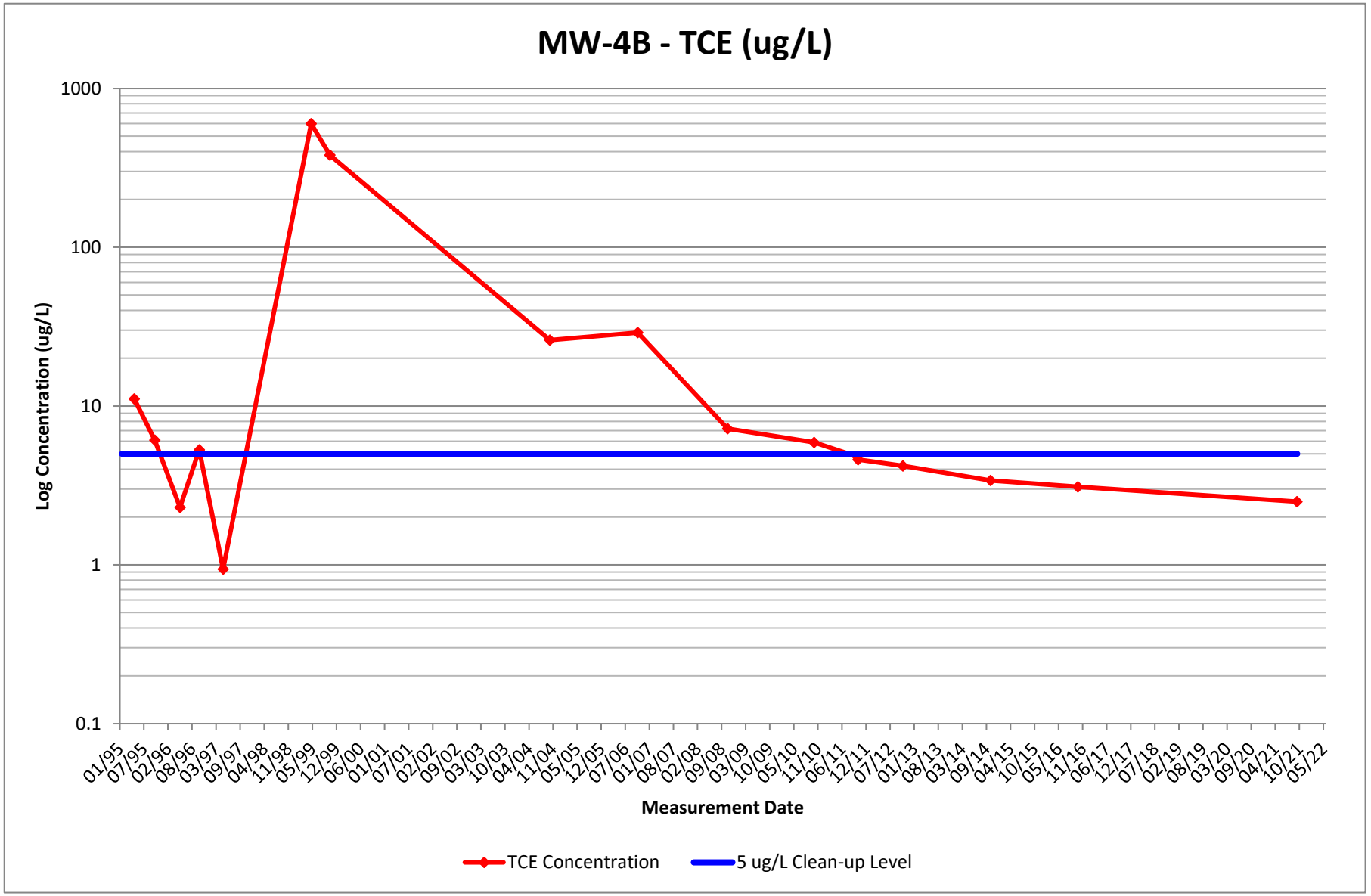

MW-2B - TCE (ug/L)
Log Concentration (ug/L)
100
10
1
0.1
01/95
10/95
08/96
06/97
04/98
02/99
12/99
10/00
07/01
05/02
03/03
01/04
11/04
09/05
07/06
04/07
02/08
12/08
10/09
08/10
06/11
04/12
01/13
11/13
09/14
07/15
05/16
03/17
12/17
10/18
08/19
06/20
04/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

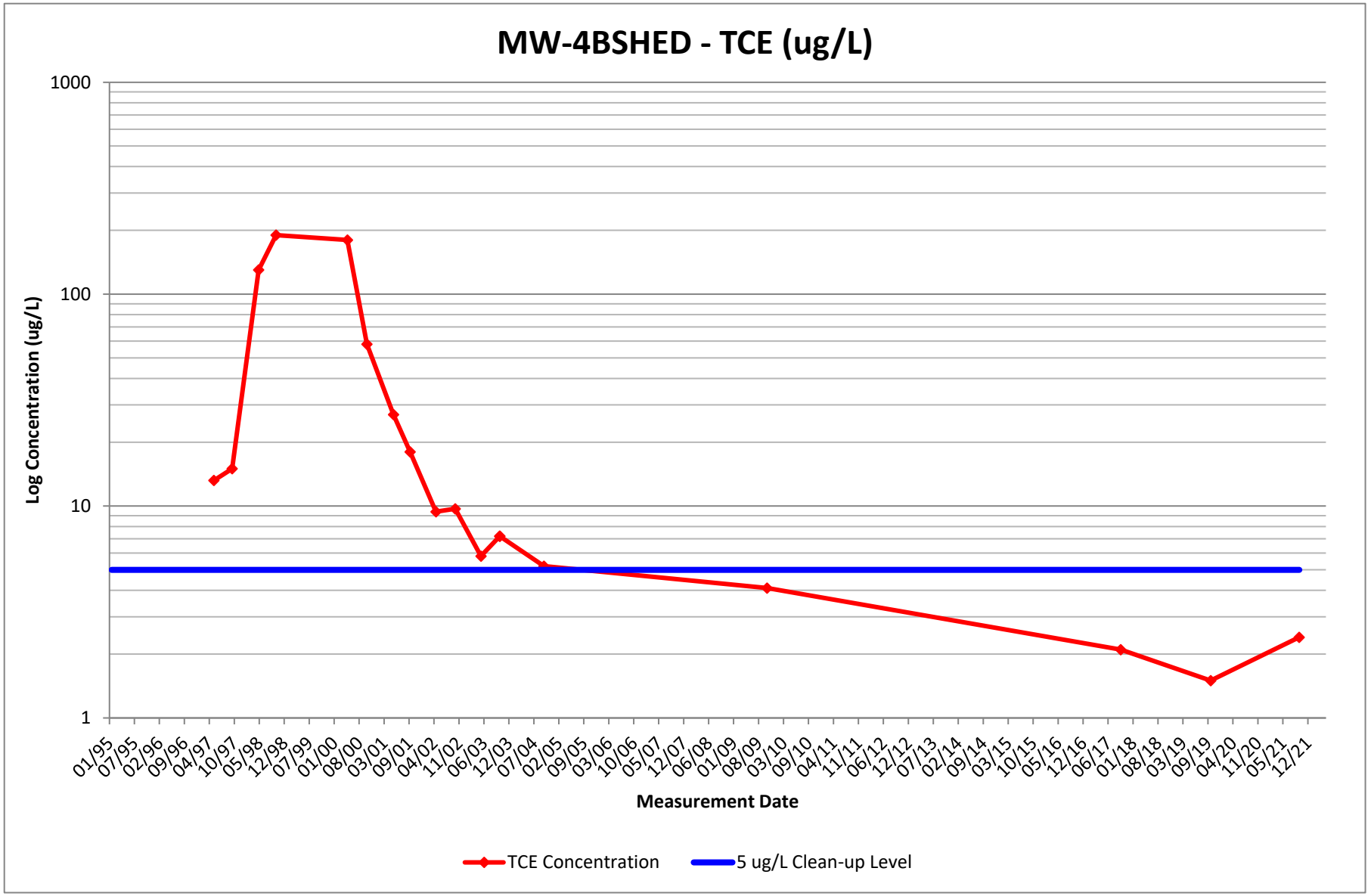

MW-2C - TCE (ug/L)
Log Concentration (ug/L)
100
10
1
0.1
01/95
10/95
08/96
06/97
04/98
02/99
12/99
10/00
07/01
05/02
03/03
01/04
11/04
09/05
07/06
04/07
02/08
12/08
10/09
08/10
06/11
04/12
01/13
11/13
09/14
07/15
05/16
03/17
12/17
10/18
08/19
06/20
04/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

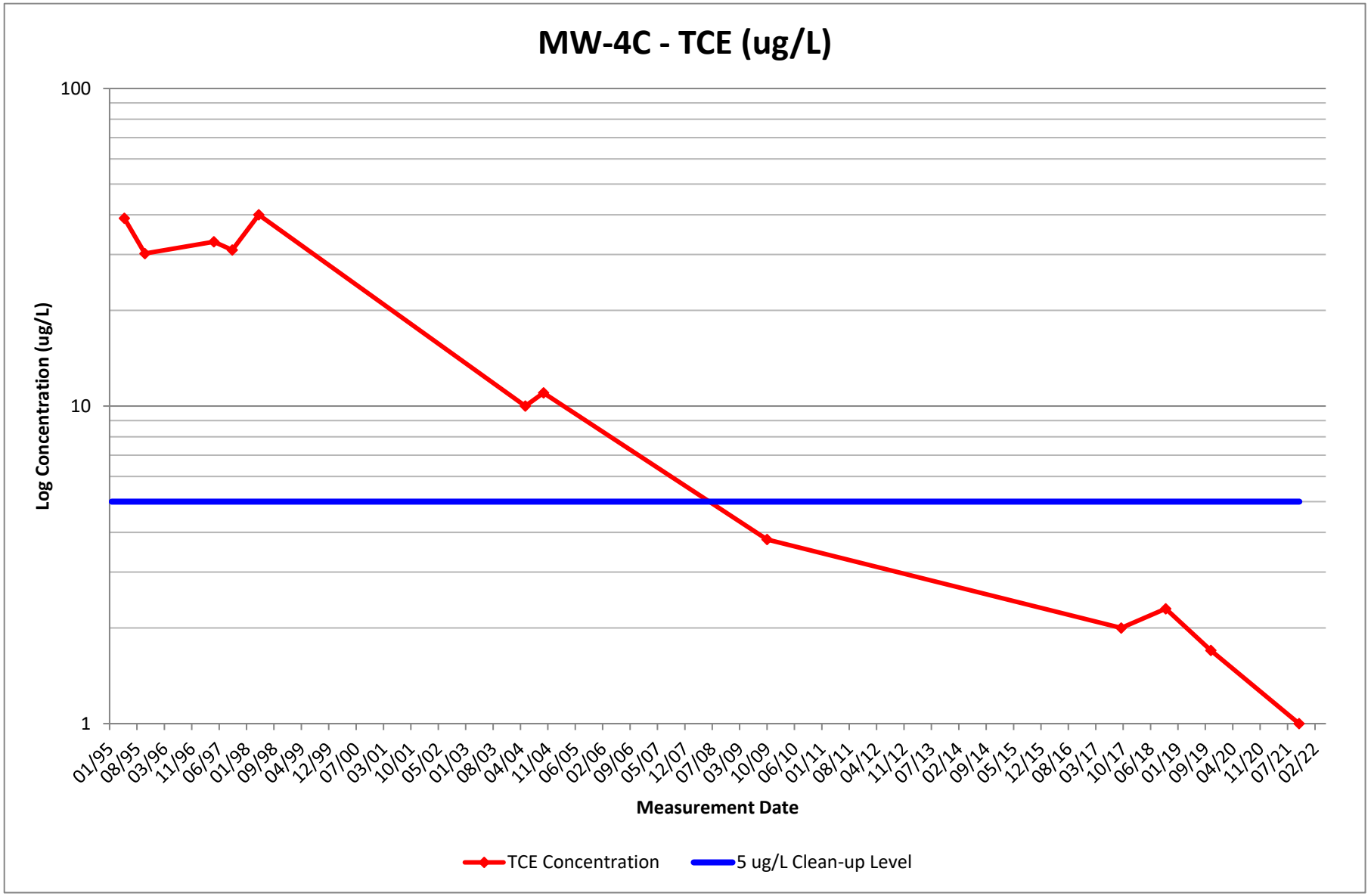

MW-3B - TCE (ug/L)
100
10
1
Log Concentration (ug/L)
01/95
10/95
08/96
06/97
04/98
02/99
12/99
10/00
07/01
05/02
03/03
01/04
11/04
09/05
07/06
04/07
02/08
12/08
10/09
08/10
06/11
04/12
01/13
11/13
09/14
07/15
05/16
03/17
12/17
10/18
08/19
06/20
04/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

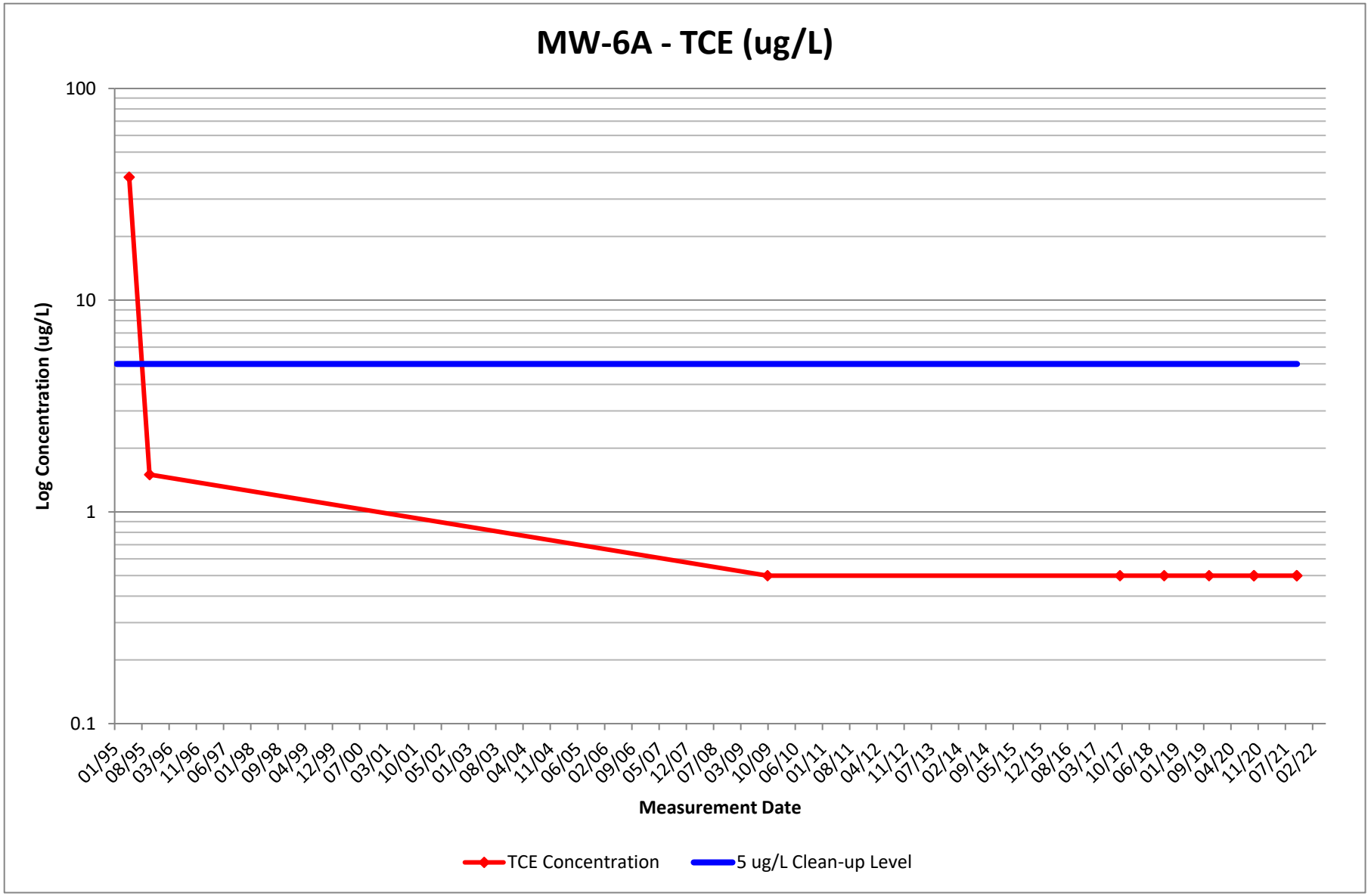

MW-3C - TCE (ug/L)
100
10
1
Log Concentration (ug/L)
01/95
10/95
08/96
06/97
04/98
02/99
12/99
10/00
07/01
05/02
03/03
01/04
11/04
09/05
07/06
05/07
02/08
12/08
10/09
08/10
06/11
04/12
02/13
11/13
09/14
07/15
05/16
03/17
01/18
11/18
08/19
06/20
04/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

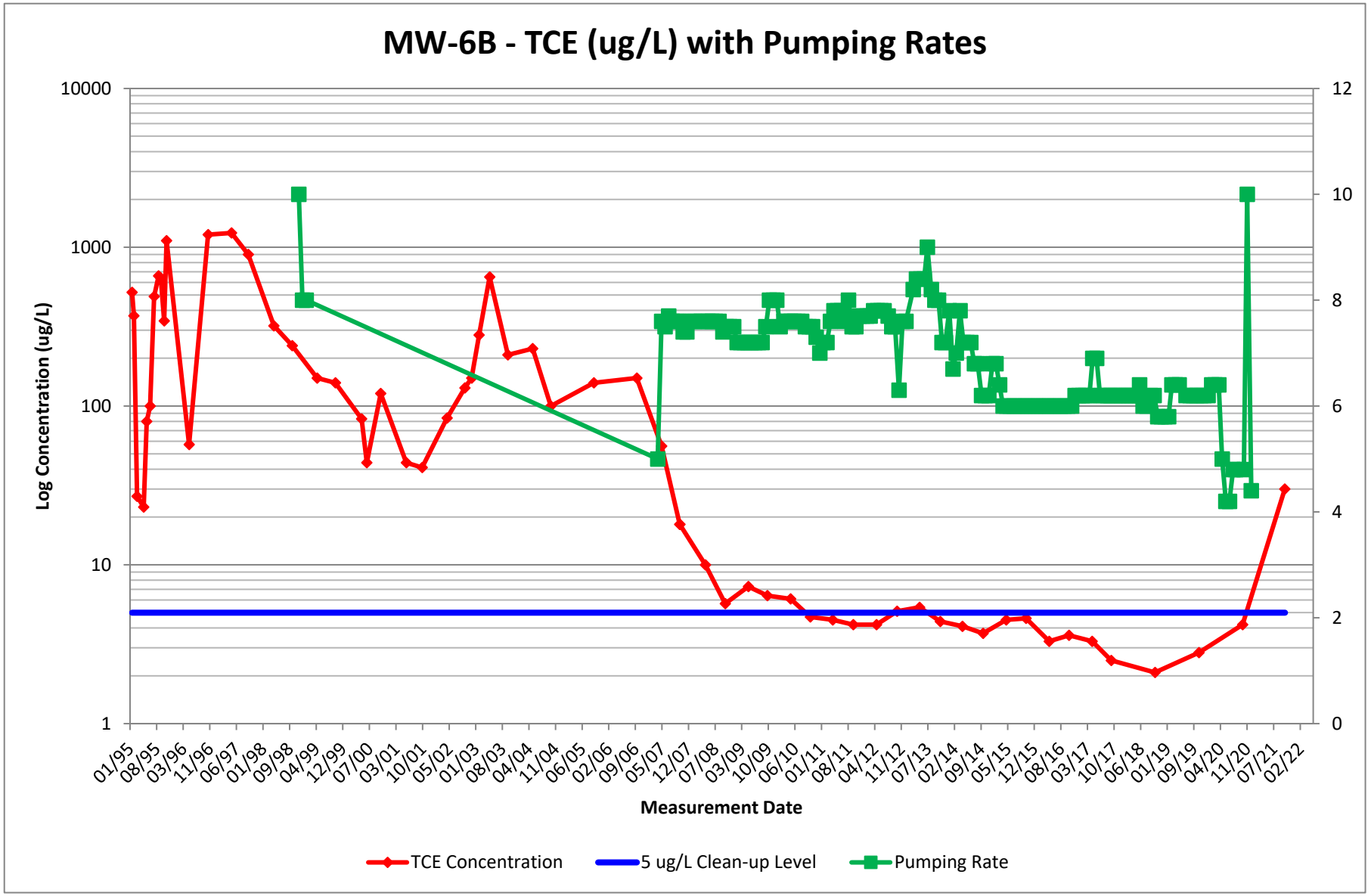

MW-4A - TCE (ug/L)
Log Concentration (ug/L)
1000
100
10
1
0.1
01/95
07/95
02/96
08/96
03/97
09/97
04/98
11/98
05/99
12/99
06/00
01/01
07/01
02/02
09/02
03/03
10/03
04/04
11/04
05/05
12/05
07/06
01/07
08/07
02/08
09/08
03/09
10/09
05/10
11/10
06/11
12/11
07/12
01/13
08/13
03/14
09/14
04/15
10/15
05/16
11/16
06/17
12/17
07/18
02/19
08/19
03/20
09/20
04/21
10/21
05/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

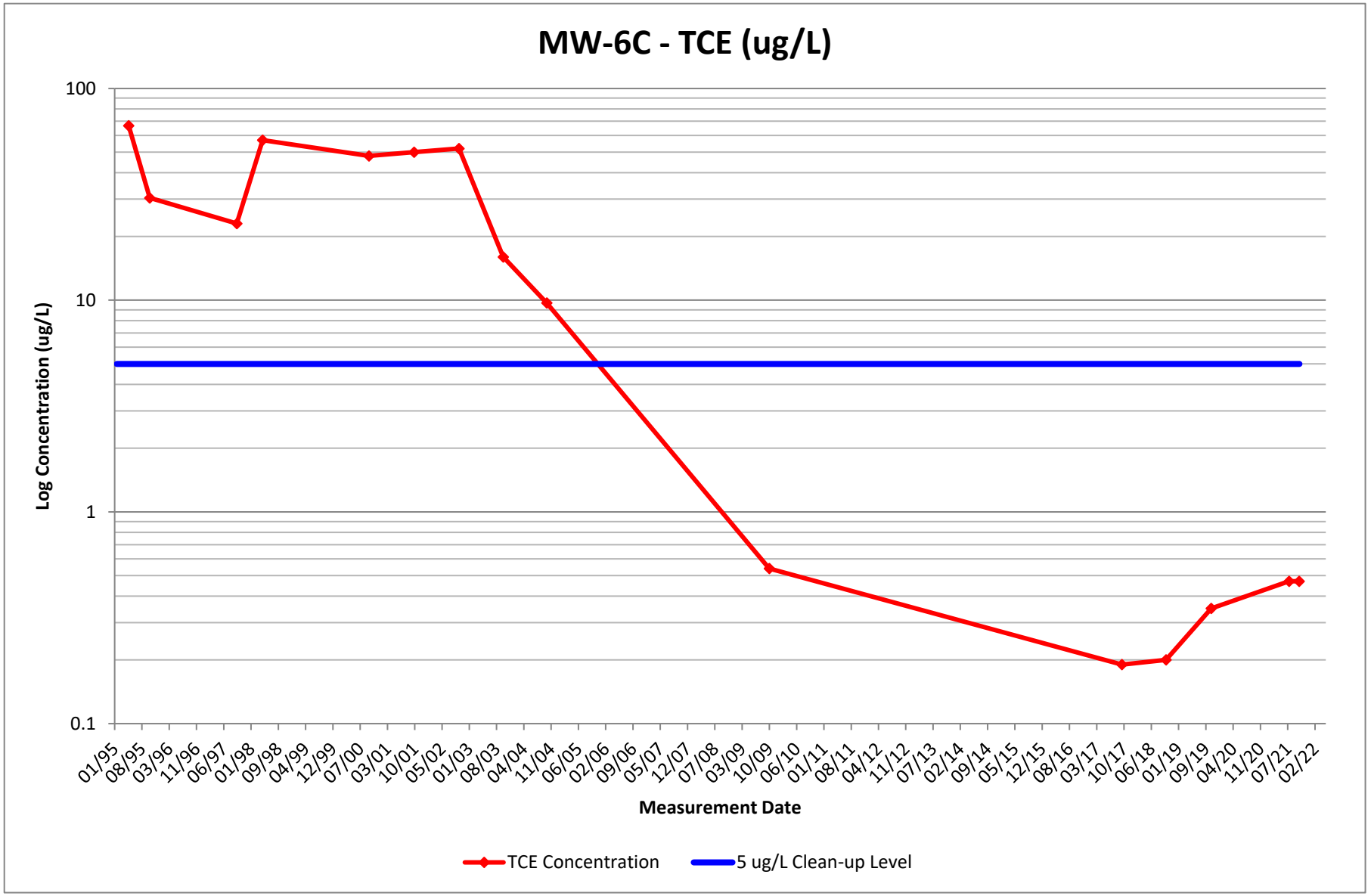

MW-4B - TCE (ug/L)
Log Concentration (ug/L)
1000
100
10
1
0.1
01/95
07/95
02/96
08/96
03/97
09/97
04/98
11/98
05/99
12/99
06/00
01/01
07/01
02/02
09/02
03/03
10/03
04/04
11/04
05/05
12/05
07/06
01/07
08/07
02/08
09/08
03/09
10/09
05/10
11/10
06/11
12/11
07/12
01/13
08/13
03/14
09/14
04/15
10/15
05/16
11/16
06/17
12/17
07/18
02/19
08/19
03/20
09/20
04/21
10/21
05/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

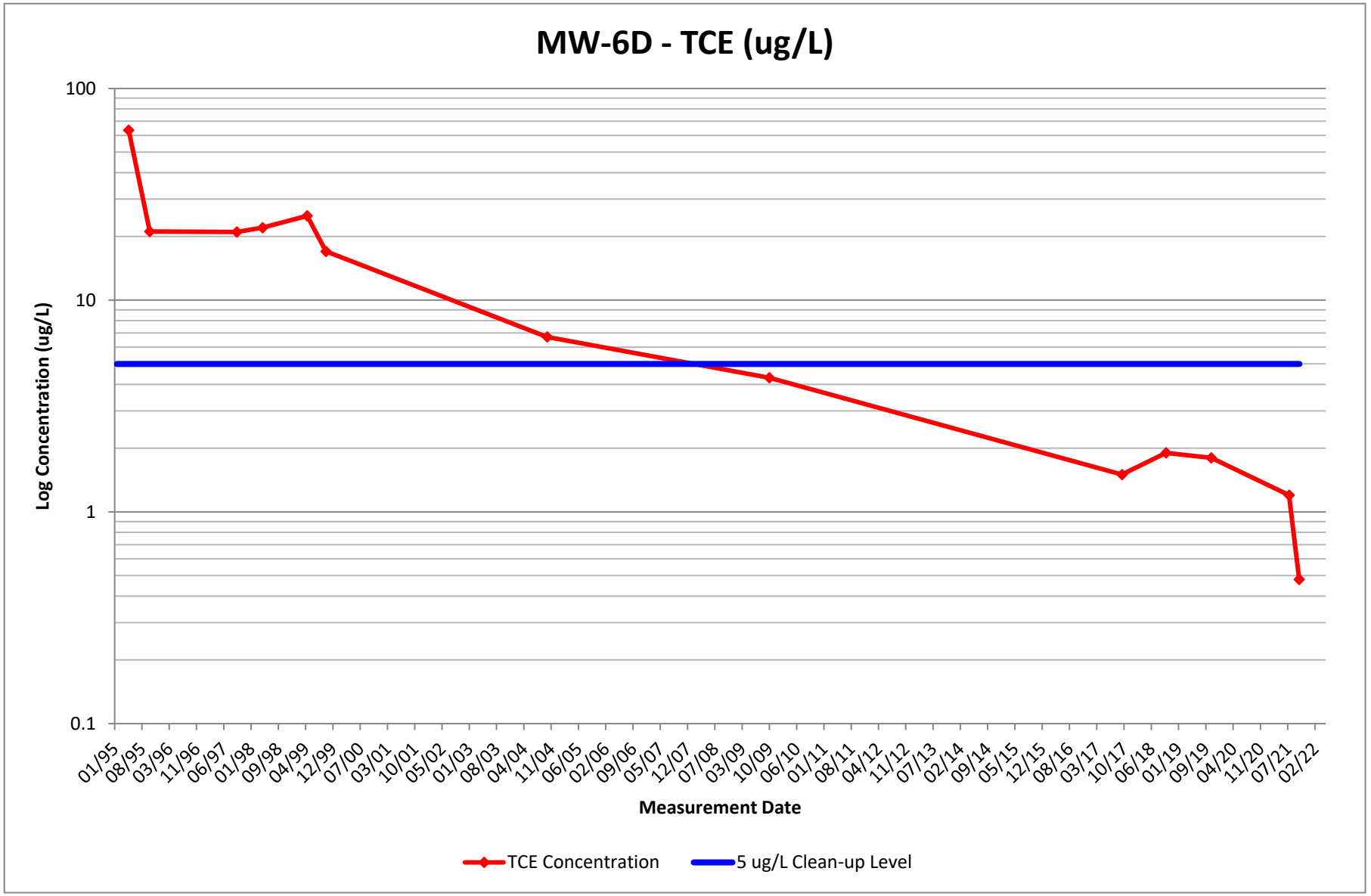

MW-4BSHED - TCE (ug/L)
Log Concentration (ug/L)
1000
100
10
1
01/95
07/95
02/96
09/96
04/97
10/97
05/98
12/98
07/99
01/00
08/00
03/01
09/01
04/02
11/02
06/03
12/03
07/04
02/05
09/05
03/06
10/06
05/07
12/07
06/08
01/09
08/09
03/10
09/10
04/11
11/11
06/12
12/12
07/13
02/14
09/14
03/15
10/15
05/16
12/16
06/17
01/18
08/18
03/19
09/19
04/20
11/20
05/21
12/21
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

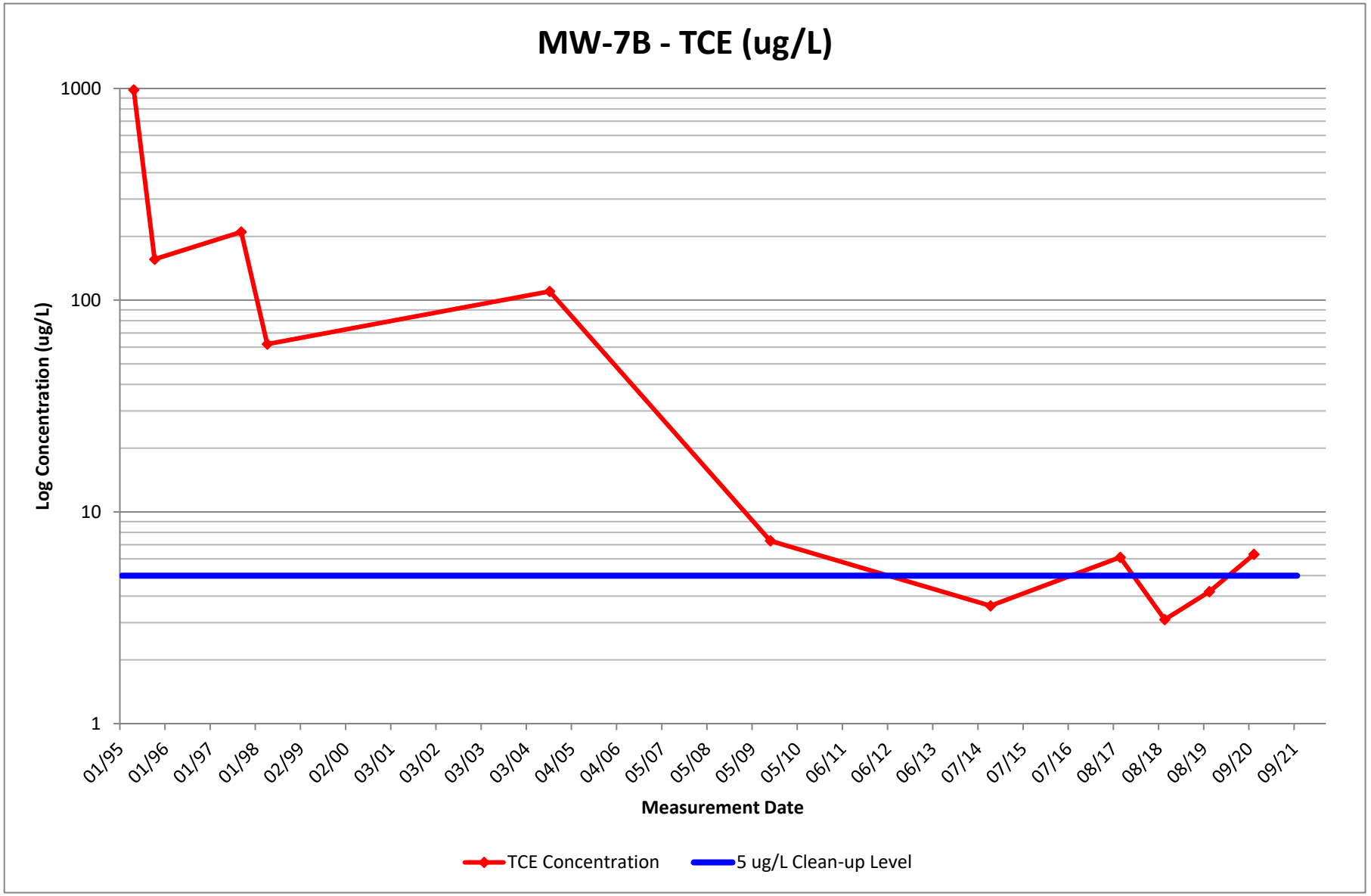

MW-4C - TCE (ug/L)
100
10
1
Log Concentration (ug/L)
01/95
08/95
03/96
11/96
06/97
01/98
09/98
04/99
12/99
07/00
03/01
10/01
05/02
01/03
08/03
04/04
11/04
06/05
02/06
09/06
05/07
12/07
07/08
03/09
10/09
06/10
01/11
08/11
04/12
11/12
07/13
02/14
09/14
05/15
12/15
08/16
03/17
10/17
06/18
01/19
09/19
04/20
11/20
07/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

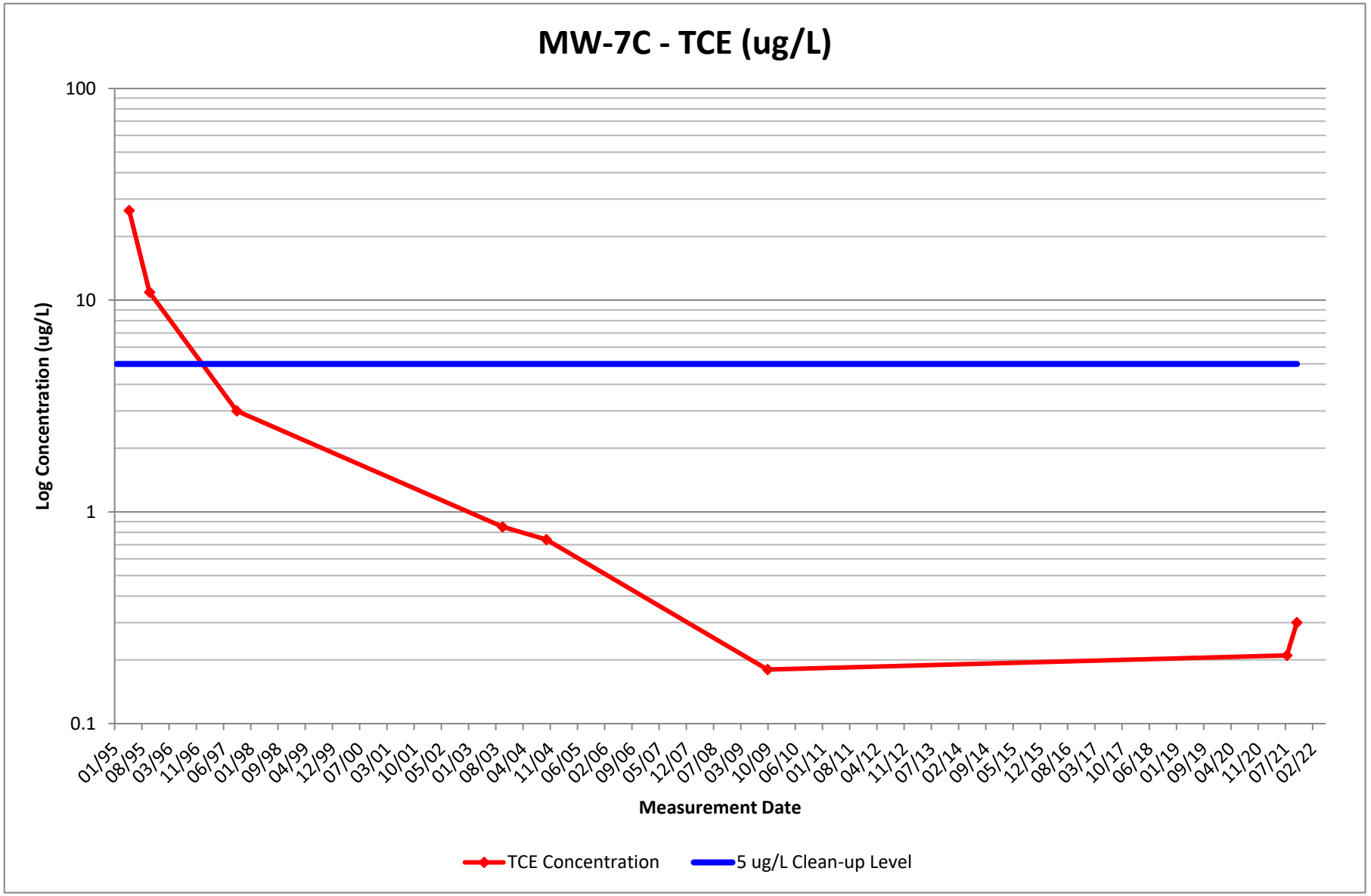

MW-6A - TCE (ug/L)
Log Concentration (ug/L)
100
10
1
0.1
01/95
08/95
03/96
11/96
06/97
01/98
09/98
04/99
12/99
07/00
03/01
10/01
05/02
01/03
08/03
04/04
11/04
06/05
02/06
09/06
05/07
12/07
07/08
03/09
10/09
06/10
01/11
08/11
04/12
11/12
07/13
02/14
09/14
05/15
12/15
08/16
03/17
10/17
06/18
01/19
09/19
04/20
11/20
07/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

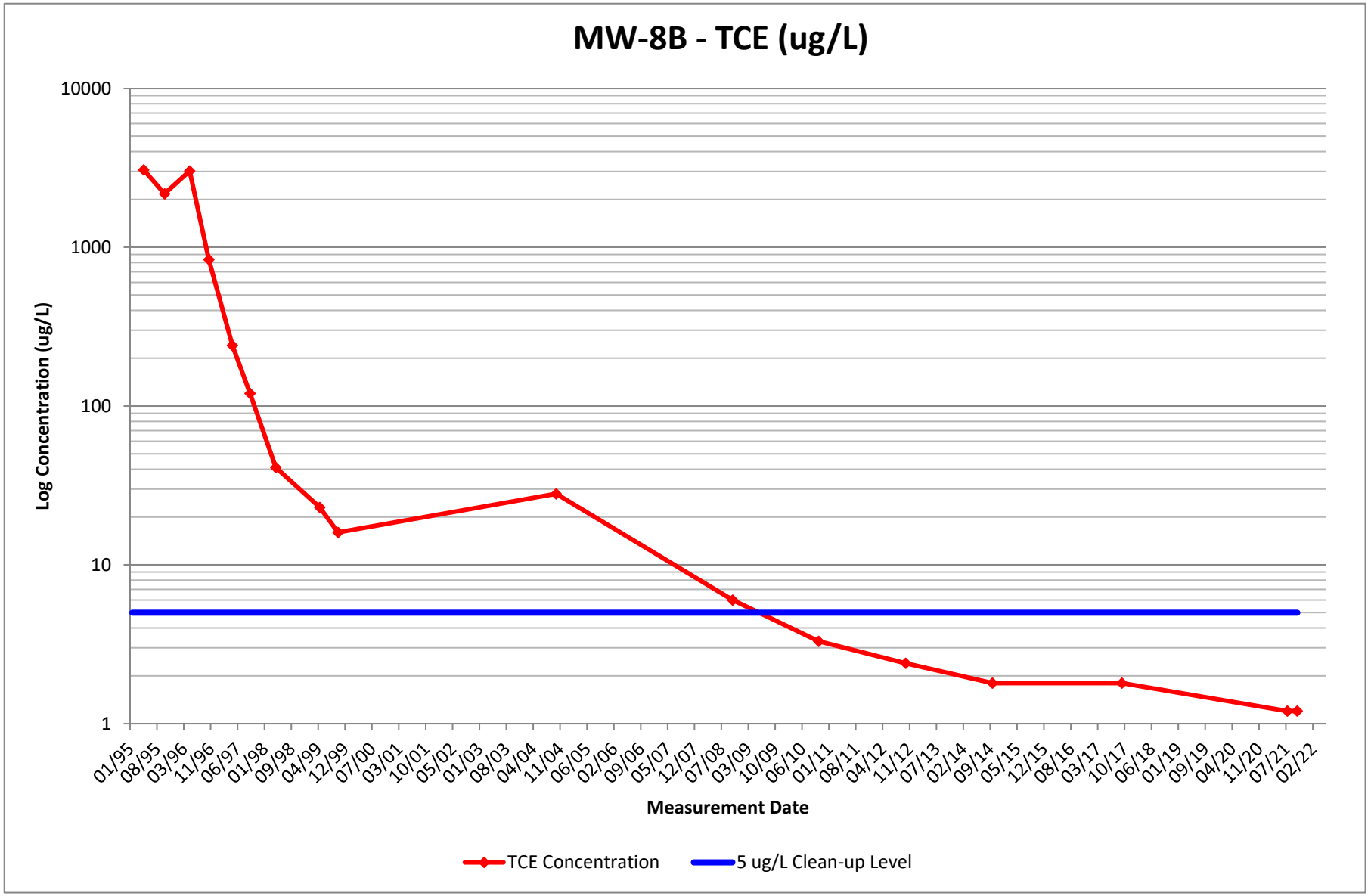

MW-6B - TCE (ug/L) with Pumping Rates
Log Concentration (ug/L)
10000
1000
100
10
1
12
10
8
6
4
2
0
01/95
08/95
03/96
11/96
06/97
01/98
09/98
04/99
12/99
07/00
03/01
10/01
05/02
01/03
08/03
04/04
11/04
06/05
02/06
09/06
05/07
12/07
07/08
03/09
10/09
06/10
01/11
08/11
04/12
11/12
07/13
02/14
09/14
05/15
12/15
08/16
03/17
10/17
06/18
01/19
09/19
04/20
11/20
07/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level
Pumping Rate

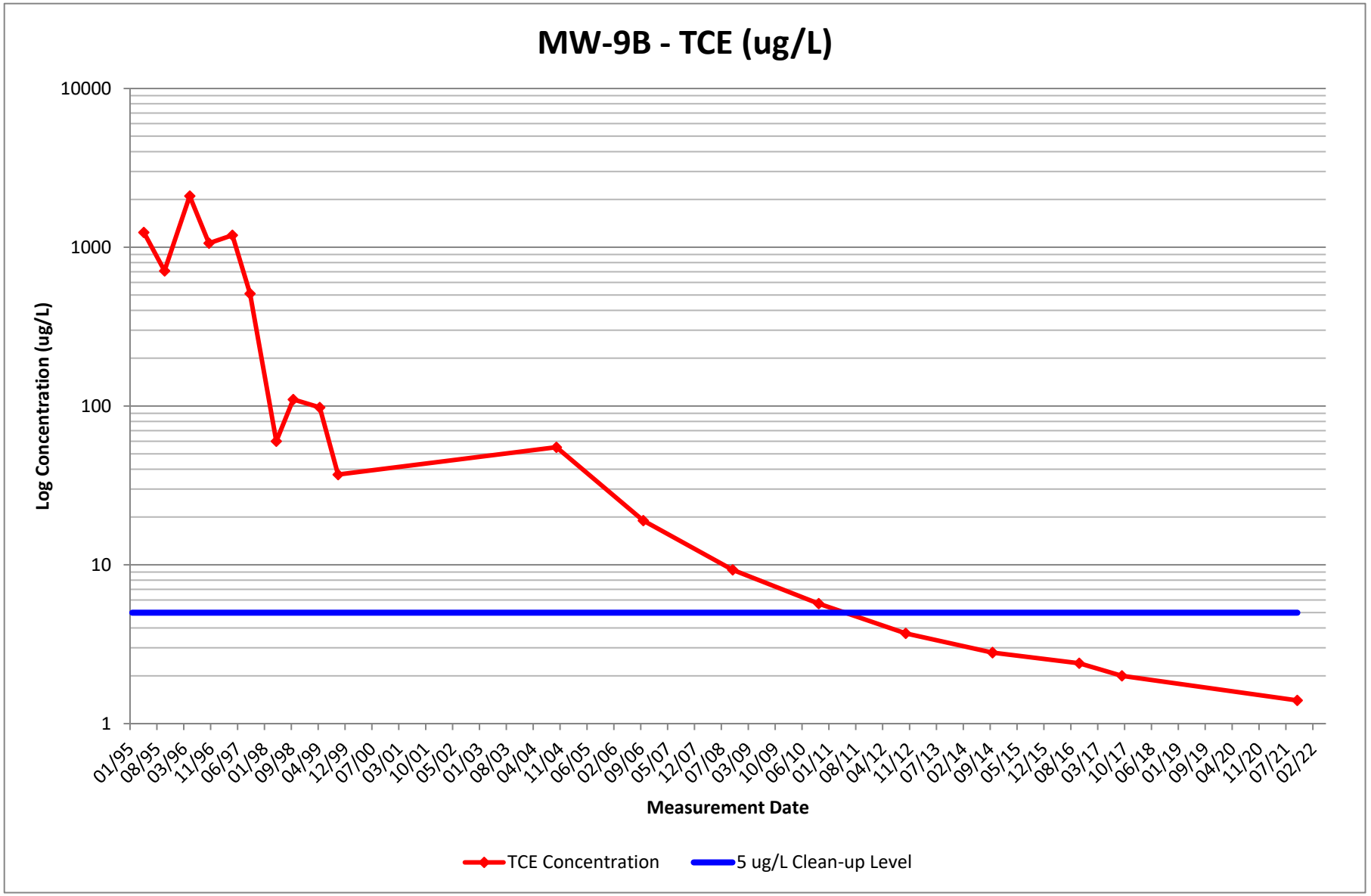

MW-6C - TCE (ug/L)
Log Concentration (ug/L)
100
10
1
0.1
01/95
08/95
03/96
11/96
06/97
01/98
09/98
04/99
12/99
07/00
03/01
10/01
05/02
01/03
08/03
04/04
11/04
06/05
02/06
09/06
05/07
12/07
07/08
03/09
10/09
06/10
01/11
08/11
04/12
11/12
07/13
02/14
09/14
05/15
12/15
08/16
03/17
10/17
06/18
01/19
09/19
04/20
11/20
07/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

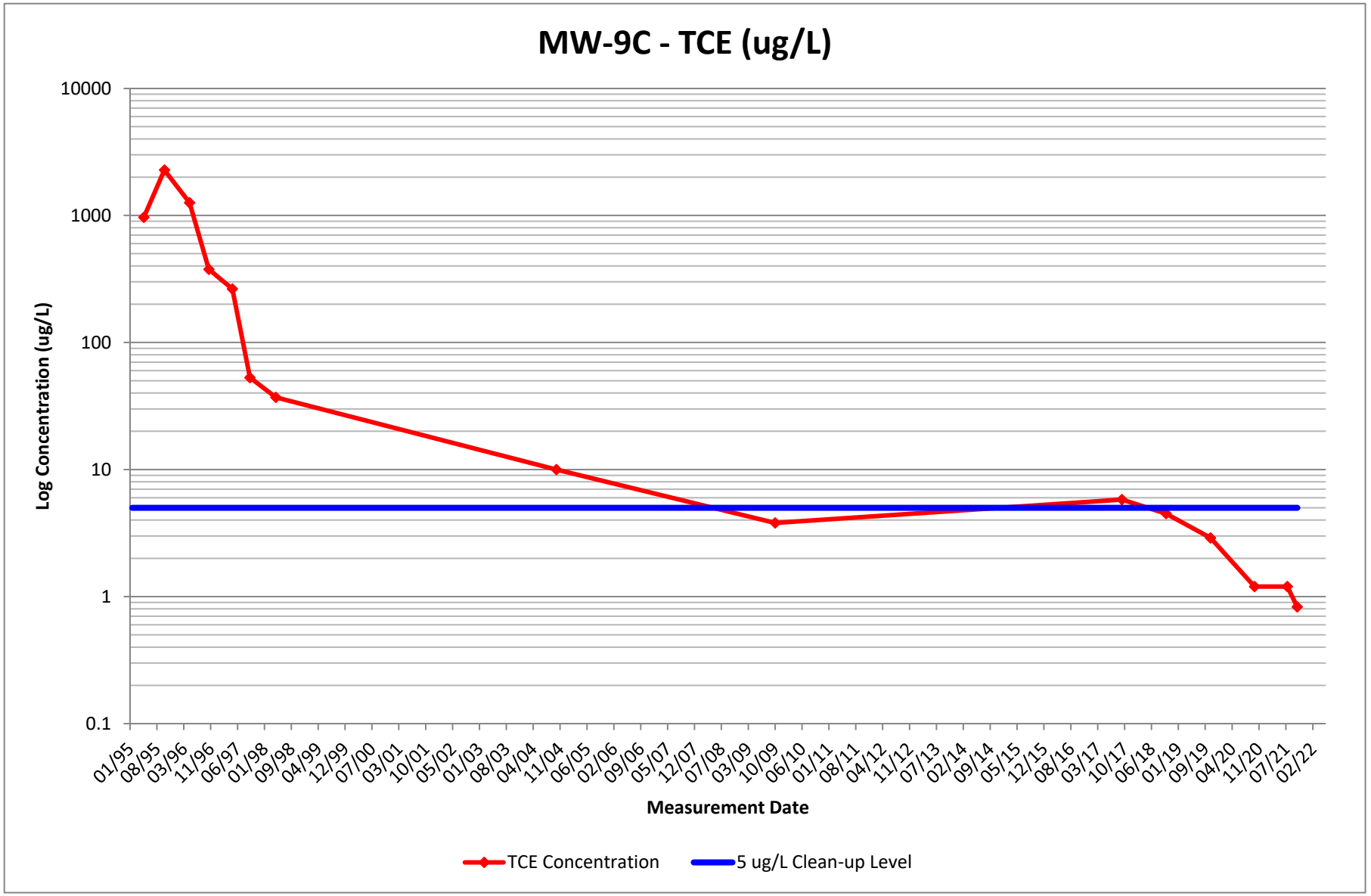

MW-6D - TCE (ug/L)
Log Concentration (ug/L)
100
10
1
0.1
01/95
08/95
03/96
11/96
06/97
01/98
09/98
04/99
12/99
07/00
03/01
10/01
05/02
01/03
08/03
04/04
11/04
06/05
02/06
09/06
05/07
12/07
07/08
03/09
10/09
06/10
01/11
08/11
04/12
11/12
07/13
02/14
09/14
05/15
12/15
08/16
03/17
10/17
06/18
01/19
09/19
04/20
11/20
07/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

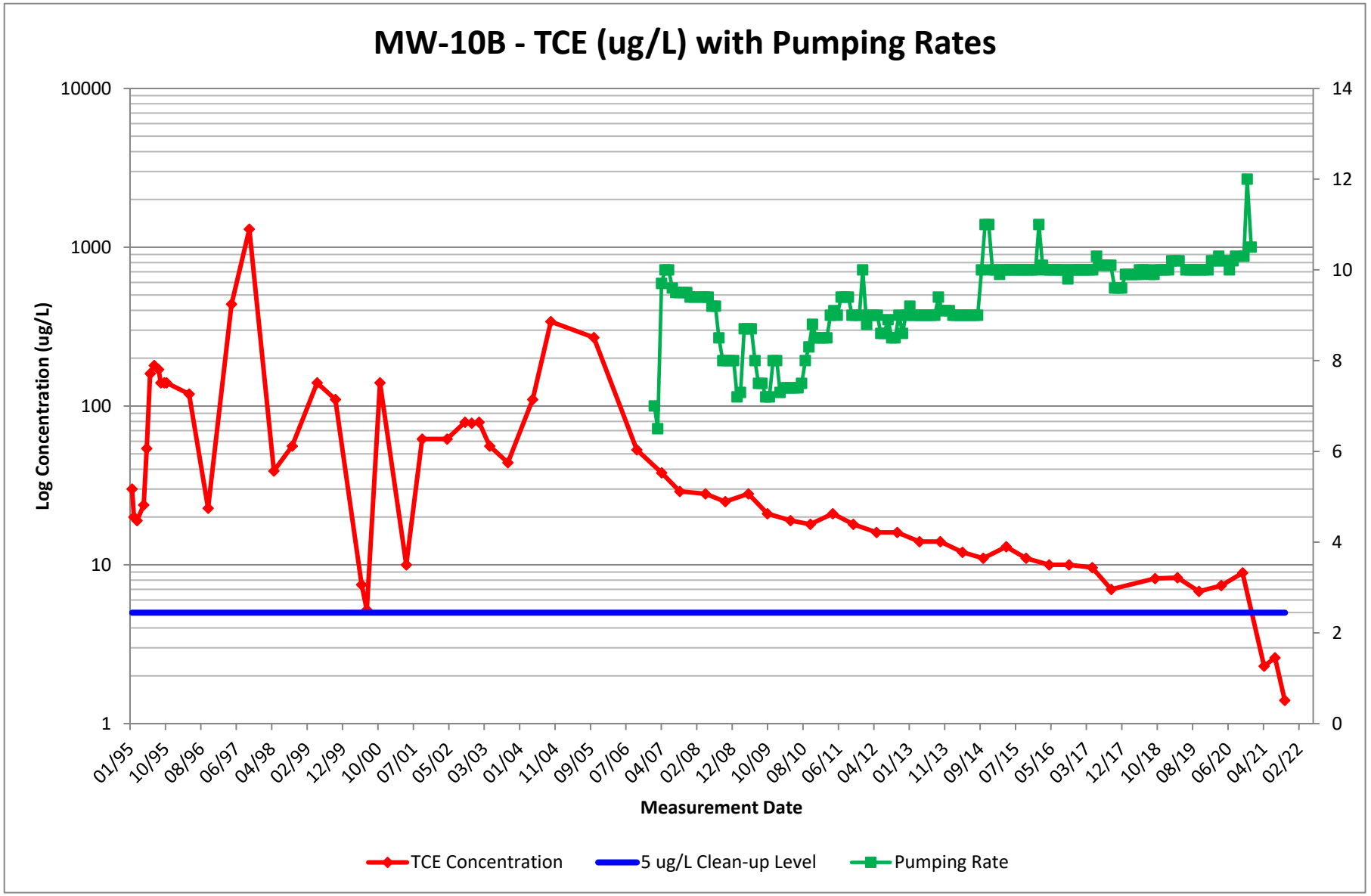

MW-7B - TCE (ug/L)
Log Concentration (ug/L)
1000
100
10
1
01/95
01/96
01/97
01/98
02/99
02/00
03/01
03/02
03/03
03/04
04/05
04/06
05/07
05/08
05/09
05/10
06/11
06/12
06/13
07/14
07/15
07/16
08/17
08/18
08/19
09/20
09/21
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

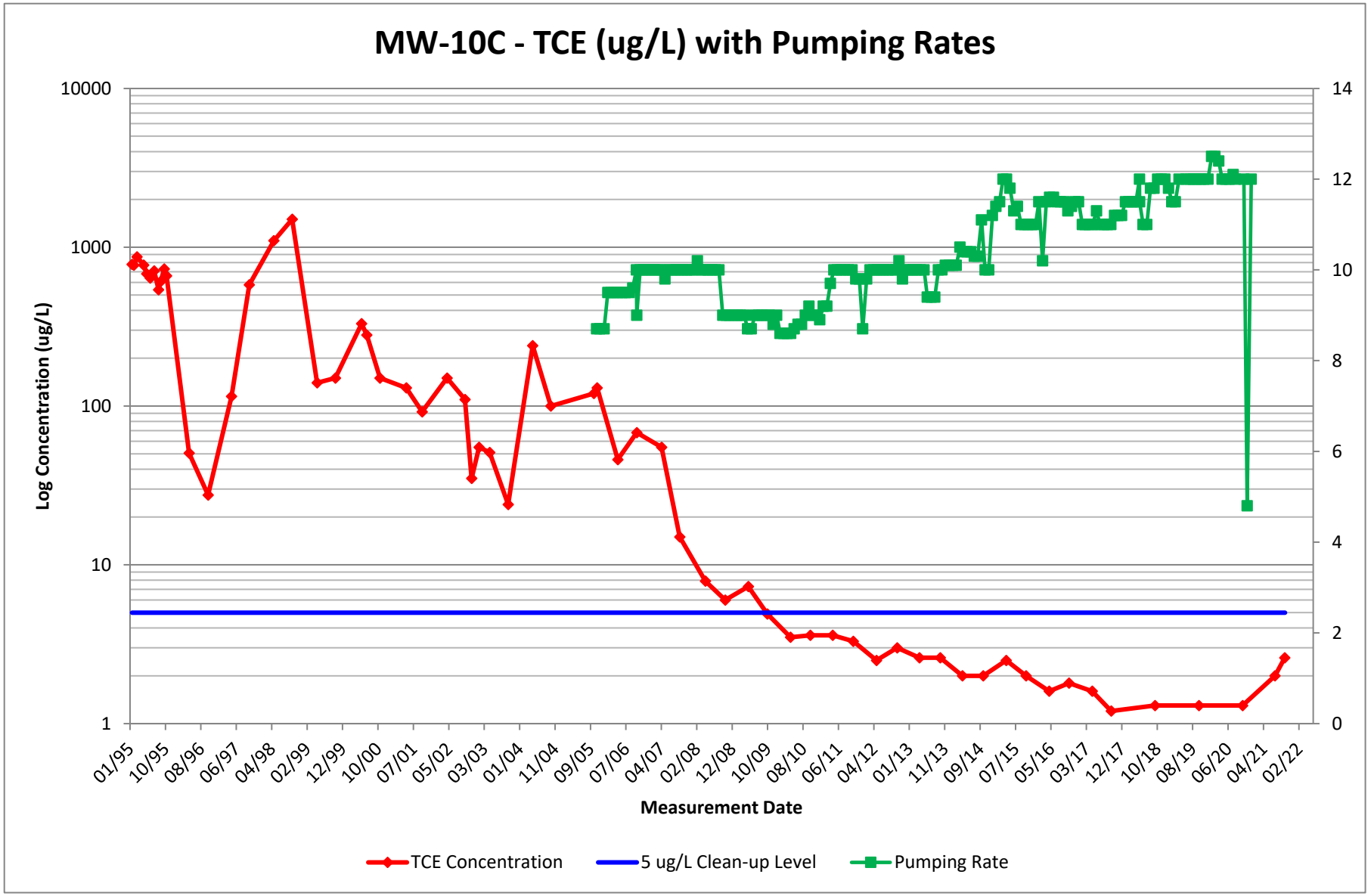

MW-7C - TCE (ug/L)
Log Concentration (ug/L)
100
10
1
0.1
01/95
08/95
03/96
11/96
06/97
01/98
09/98
04/99
12/99
07/00
03/01
10/01
05/02
01/03
08/03
04/04
11/04
06/05
02/06
09/06
05/07
12/07
07/08
03/09
10/09
06/10
01/11
08/11
04/12
11/12
07/13
02/14
09/14
05/15
12/15
08/16
03/17
10/17
06/18
01/19
09/19
04/20
11/20
07/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

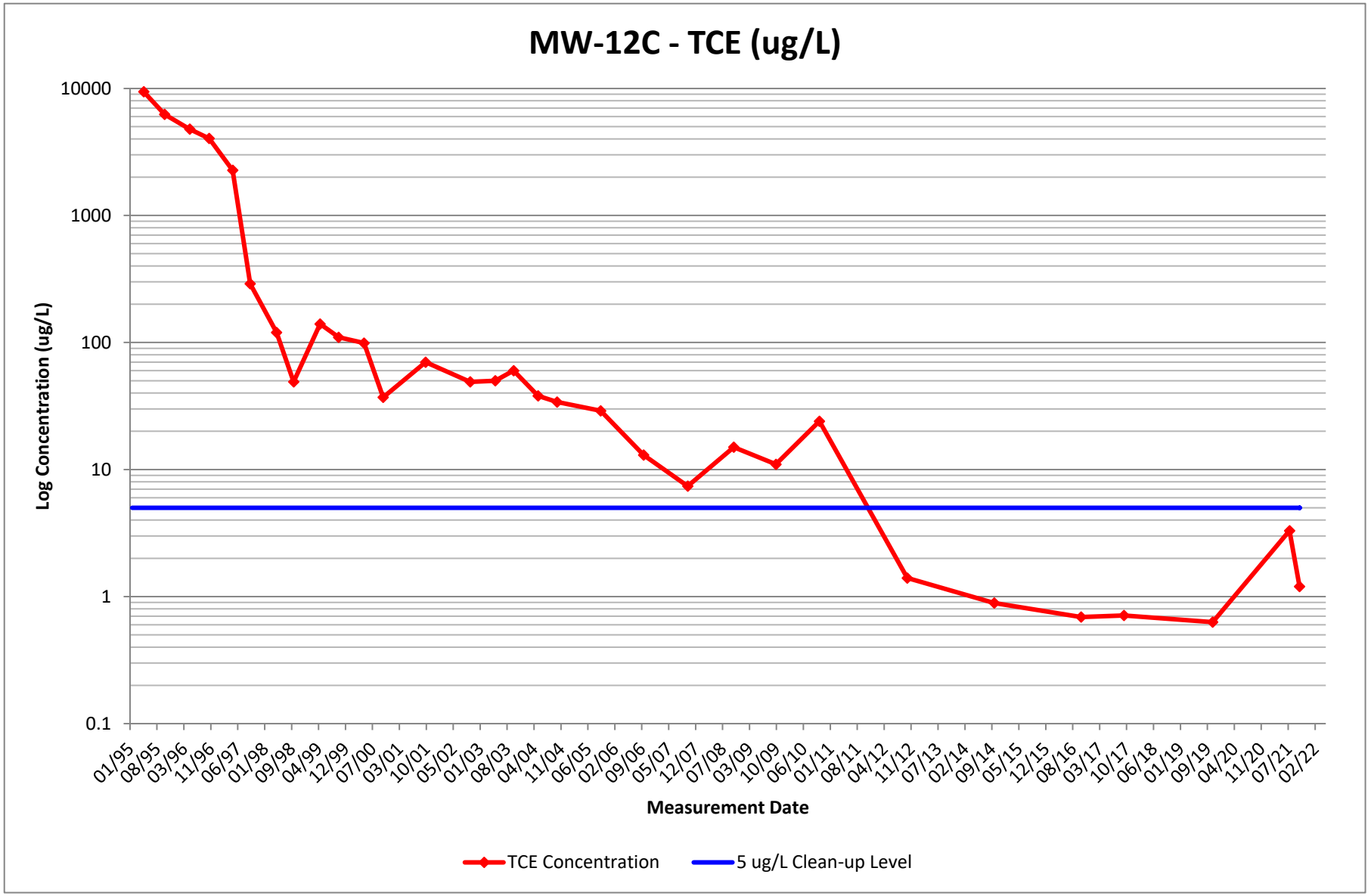

MW-8B - TCE (ug/L)
Log Concentration (ug/L)
10000
1000
100
10
1
01/95
08/95
03/96
11/96
06/97
01/98
09/98
04/99
12/99
07/00
03/01
10/01
05/02
01/03
08/03
04/04
11/04
06/05
02/06
09/06
05/07
12/07
07/08
03/09
10/09
06/10
01/11
08/11
04/12
11/12
07/13
02/14
09/14
05/15
12/15
08/16
03/17
10/17
06/18
01/19
09/19
04/20
11/20
07/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

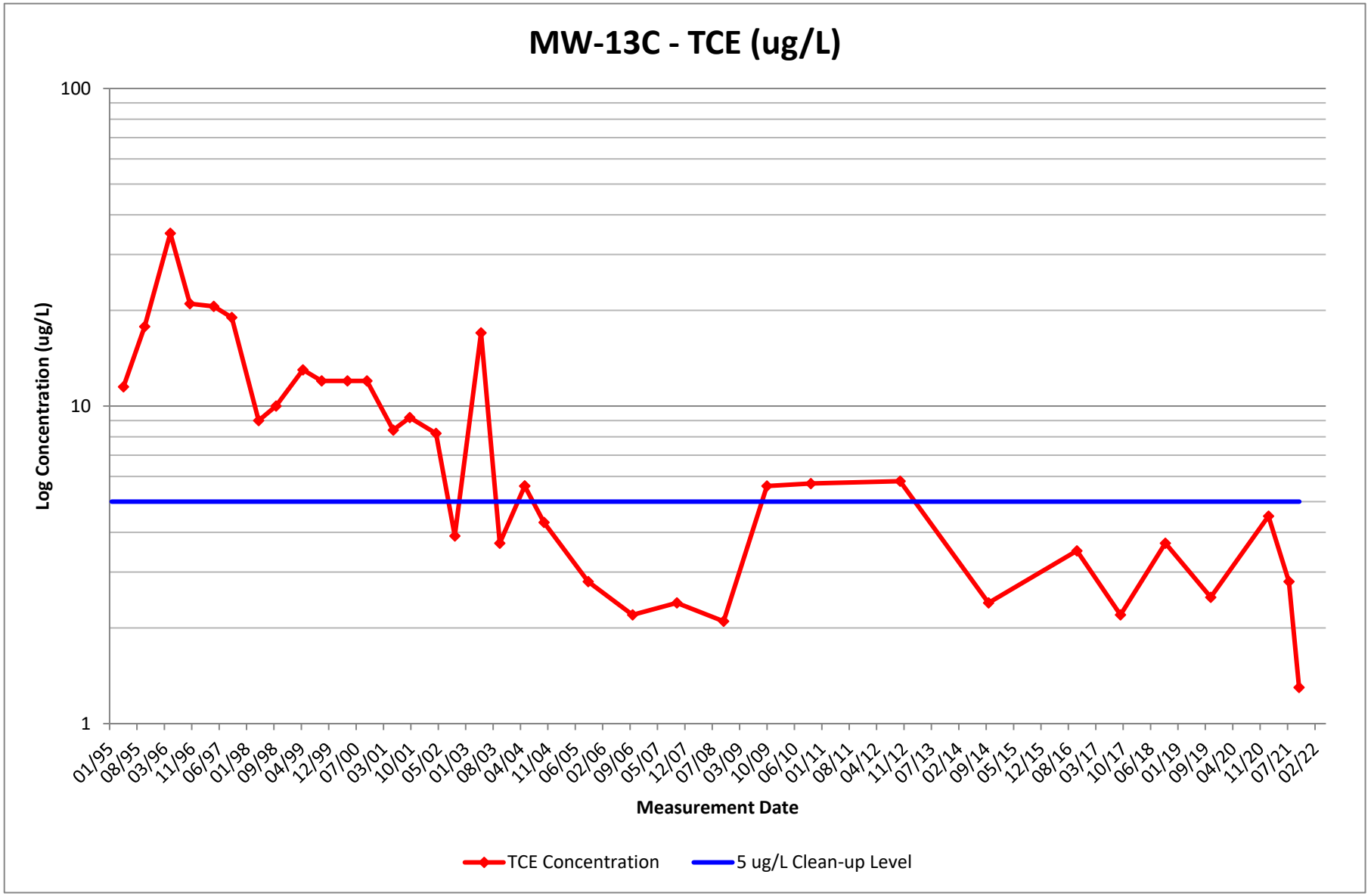

MW-9B - TCE (ug/L)
Log Concentration (ug/L)
10000
1000
100
10
1
01/95
08/95
03/96
11/96
06/97
01/98
09/98
04/99
12/99
07/00
03/01
10/01
05/02
01/03
08/03
04/04
11/04
06/05
02/06
09/06
05/07
12/07
07/08
03/09
10/09
06/10
01/11
08/11
04/12
11/12
07/13
02/14
09/14
05/15
12/15
08/16
03/17
10/17
06/18
01/19
09/19
04/20
11/20
07/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

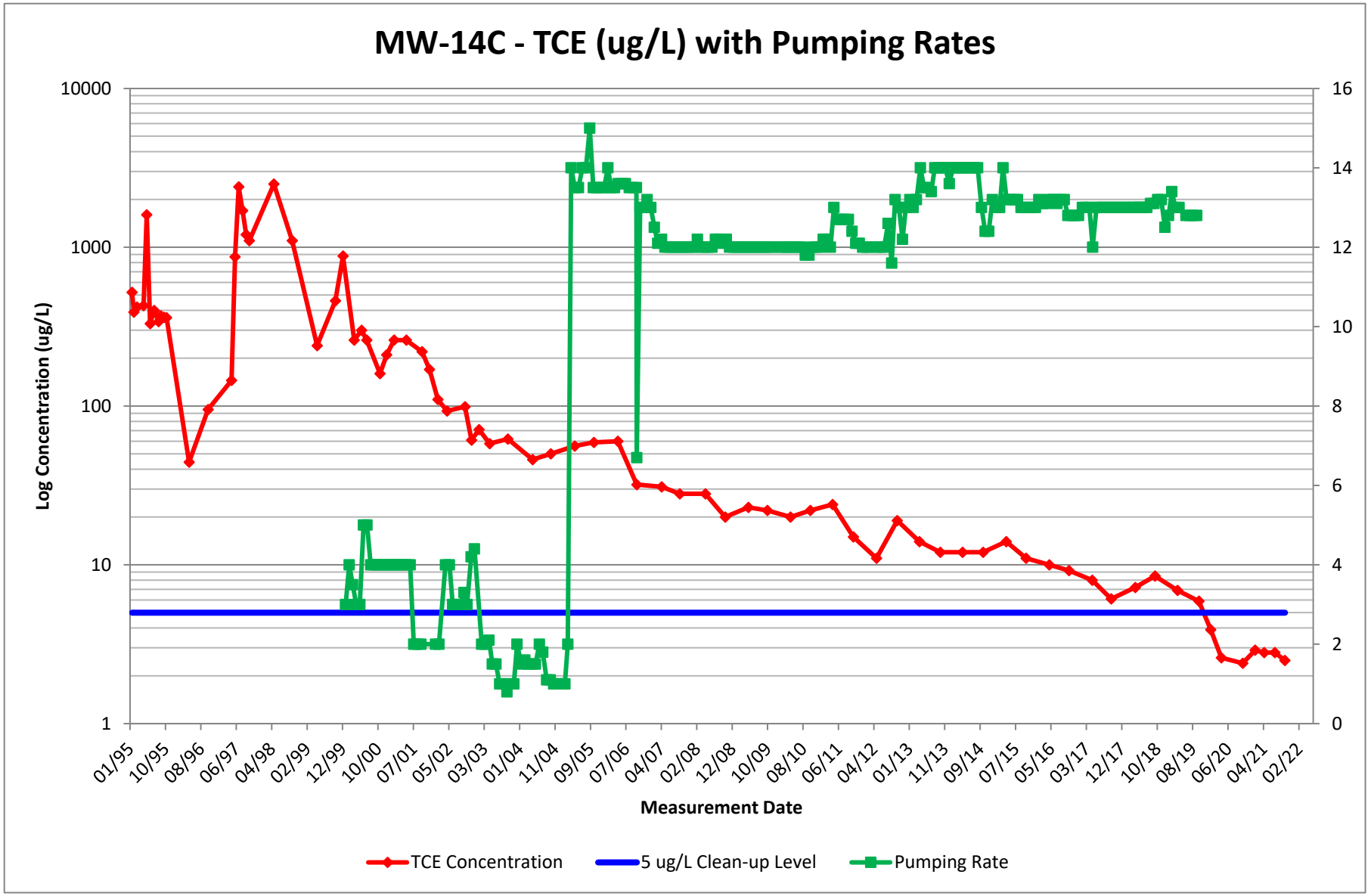

MW-9C - TCE (ug/L)
Log Concentration (ug/L)
10000
1000
100
10
1
0.1
01/95
08/95
03/96
11/96
06/97
01/98
09/98
04/99
12/99
07/00
03/01
10/01
05/02
01/03
08/03
04/04
11/04
06/05
02/06
09/06
05/07
12/07
07/08
03/09
10/09
06/10
01/11
08/11
04/12
11/12
07/13
02/14
09/14
05/15
12/15
08/16
03/17
10/17
06/18
01/19
09/19
04/20
11/20
07/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

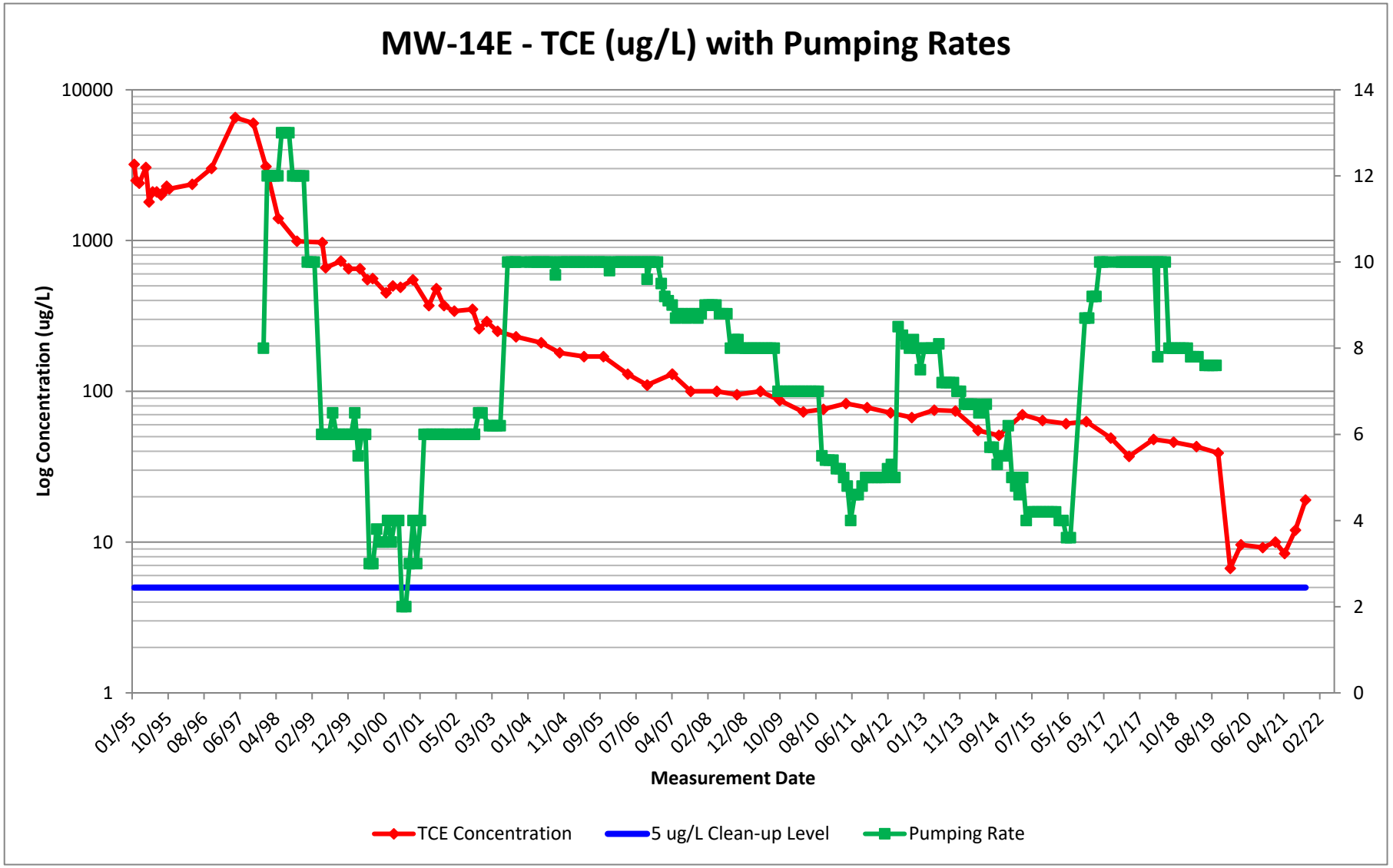

MW-10B - TCE (ug/L) with Pumping Rates
Log Concentration (ug/L)
10000
1000
100
10
1
14
12
10
8
6
4
2
0
01/95
10/95
08/96
06/97
04/98
02/99
12/99
10/00
07/01
05/02
03/03
01/04
11/04
09/05
07/06
04/07
02/08
12/08
10/09
08/10
06/11
04/12
01/13
11/13
09/14
07/15
05/16
03/17
12/17
10/18
08/19
06/20
04/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level
Pumping Rate

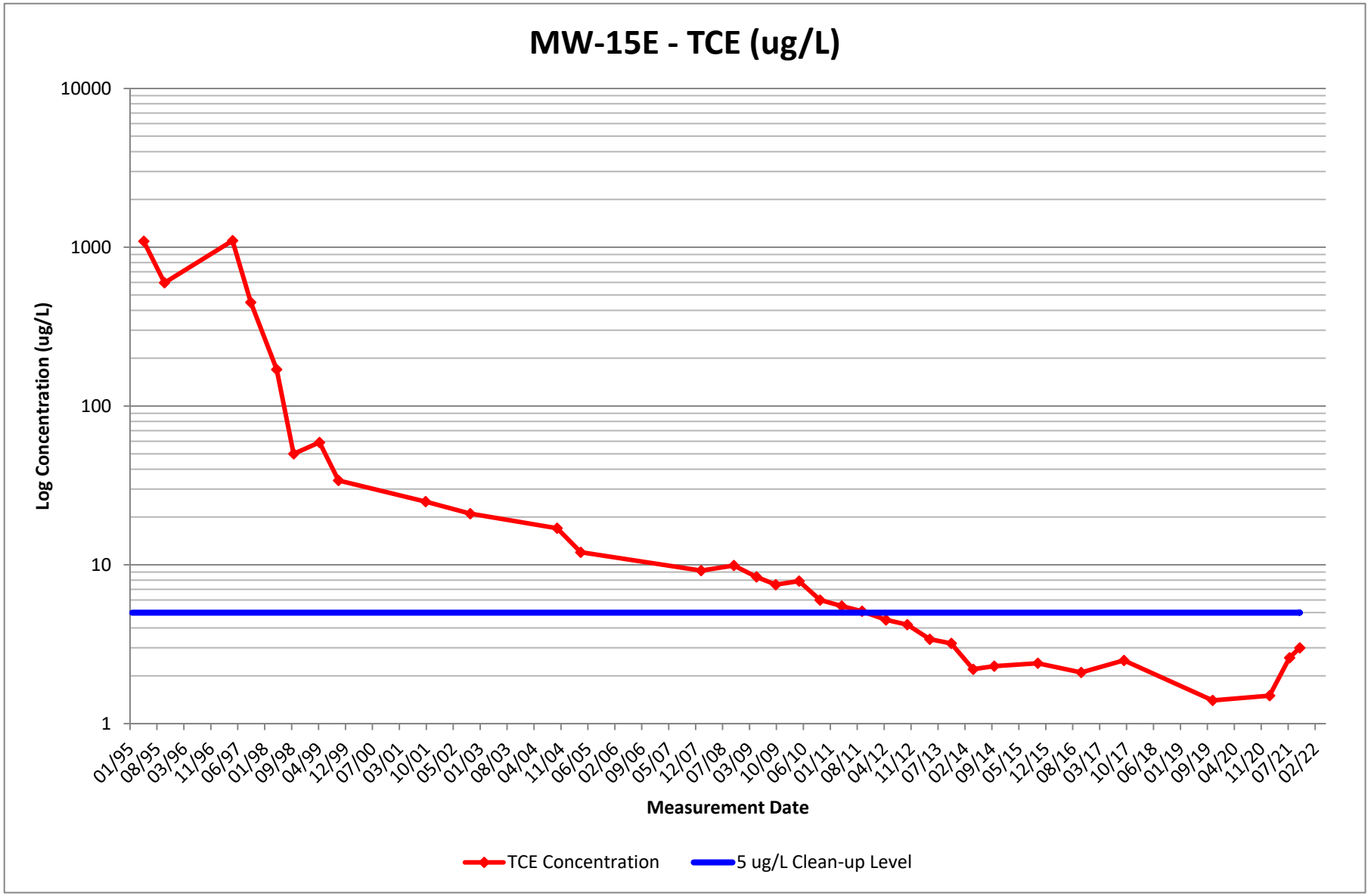

MW-10C - TCE (ug/L) with Pumping Rates
Log Concentration (ug/L)
10000
1000
100
10
1
14
12
10
8
6
4
2
0
01/95
10/95
08/96
06/97
04/98
02/99
12/99
10/00
07/01
05/02
03/03
01/04
11/04
09/05
07/06
04/07
02/08
12/08
10/09
08/10
06/11
04/12
01/13
11/13
09/14
07/15
05/16
03/17
12/17
10/18
08/19
06/20
04/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level
Pumping Rate

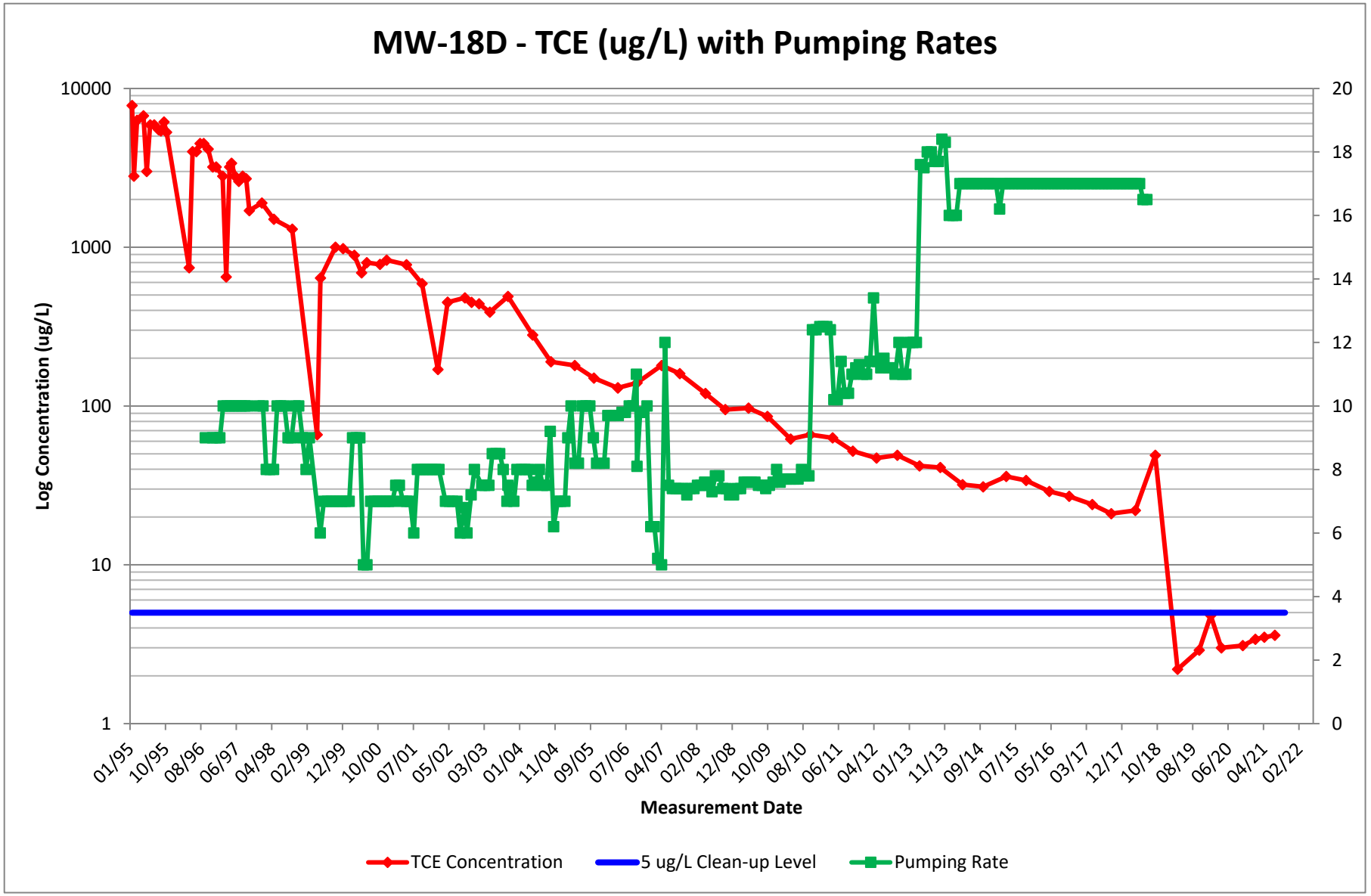

MW-12C - TCE (ug/L)
Log Concentration (ug/L)
10000
1000
100
10
1
0.1
01/95
08/95
03/96
11/96
06/97
01/98
09/98
04/99
12/99
07/00
03/01
10/01
05/02
01/03
08/03
04/04
11/04
06/05
02/06
09/06
05/07
12/07
07/08
03/09
10/09
06/10
01/11
08/11
04/12
11/12
07/13
02/14
09/14
05/15
12/15
08/16
03/17
10/17
06/18
01/19
09/19
04/20
11/20
07/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

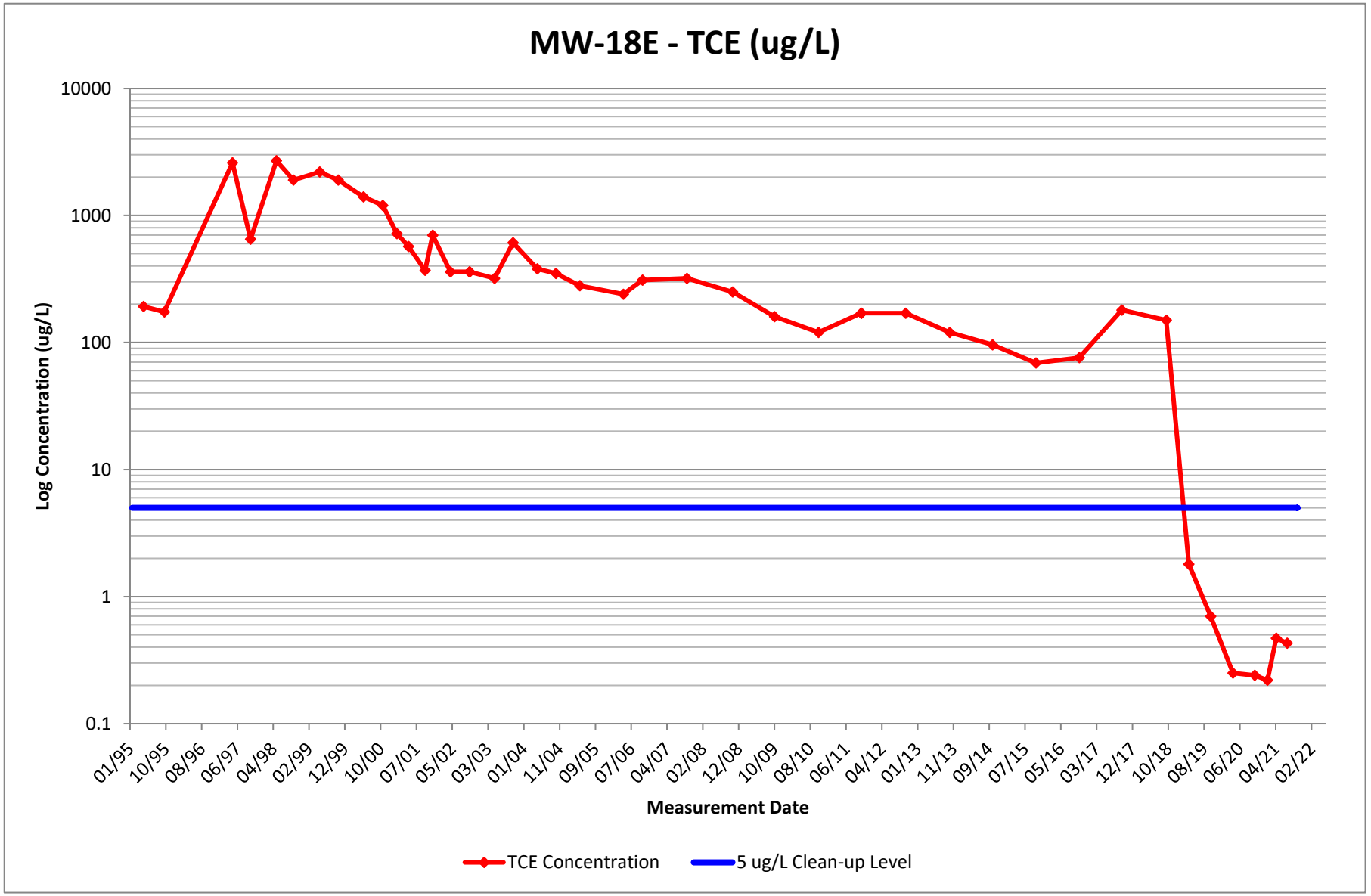

MW-13C - TCE (ug/L)
100
10
1
Log Concentration (ug/L)
01/95
08/95
03/96
11/96
06/97
01/98
09/98
04/99
12/99
07/00
03/01
10/01
05/02
01/03
08/03
04/04
11/04
06/05
02/06
09/06
05/07
12/07
07/08
03/09
10/09
06/10
01/11
08/11
04/12
11/12
07/13
02/14
09/14
05/15
12/15
08/16
03/17
10/17
06/18
01/19
09/19
04/20
11/20
07/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

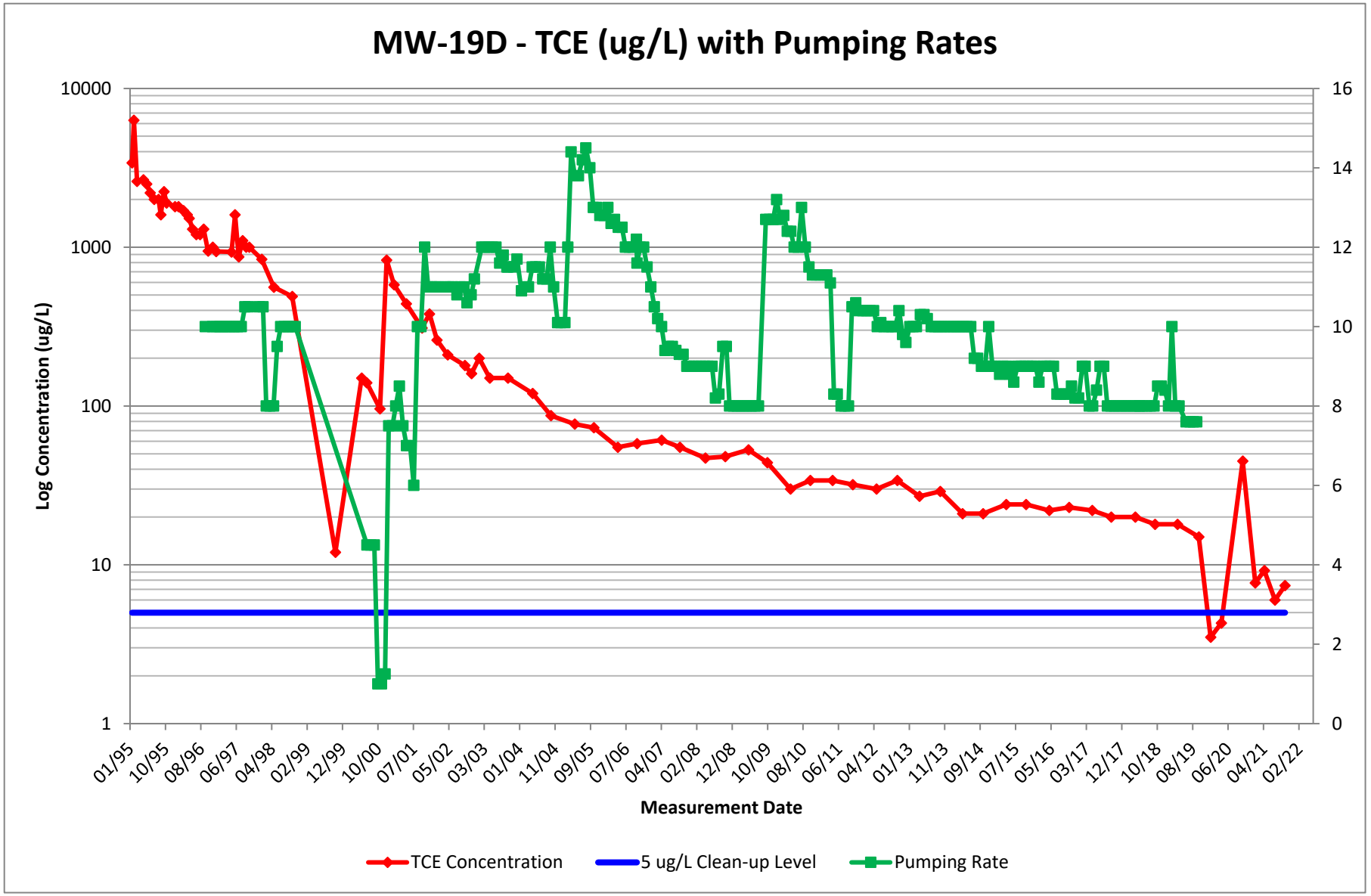

MW-14C - TCE (ug/L) with Pumping Rates
Log Concentration (ug/L)
10000
1000
100
10
1
16
14
12
10
8
6
4
2
0
01/95
10/95
08/96
06/97
04/98
02/99
12/99
10/00
07/01
05/02
03/03
01/04
11/04
09/05
07/06
04/07
02/08
12/08
10/09
08/10
06/11
04/12
01/13
11/13
09/14
07/15
05/16
03/17
12/17
10/18
08/19
06/20
04/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level
Pumping Rate

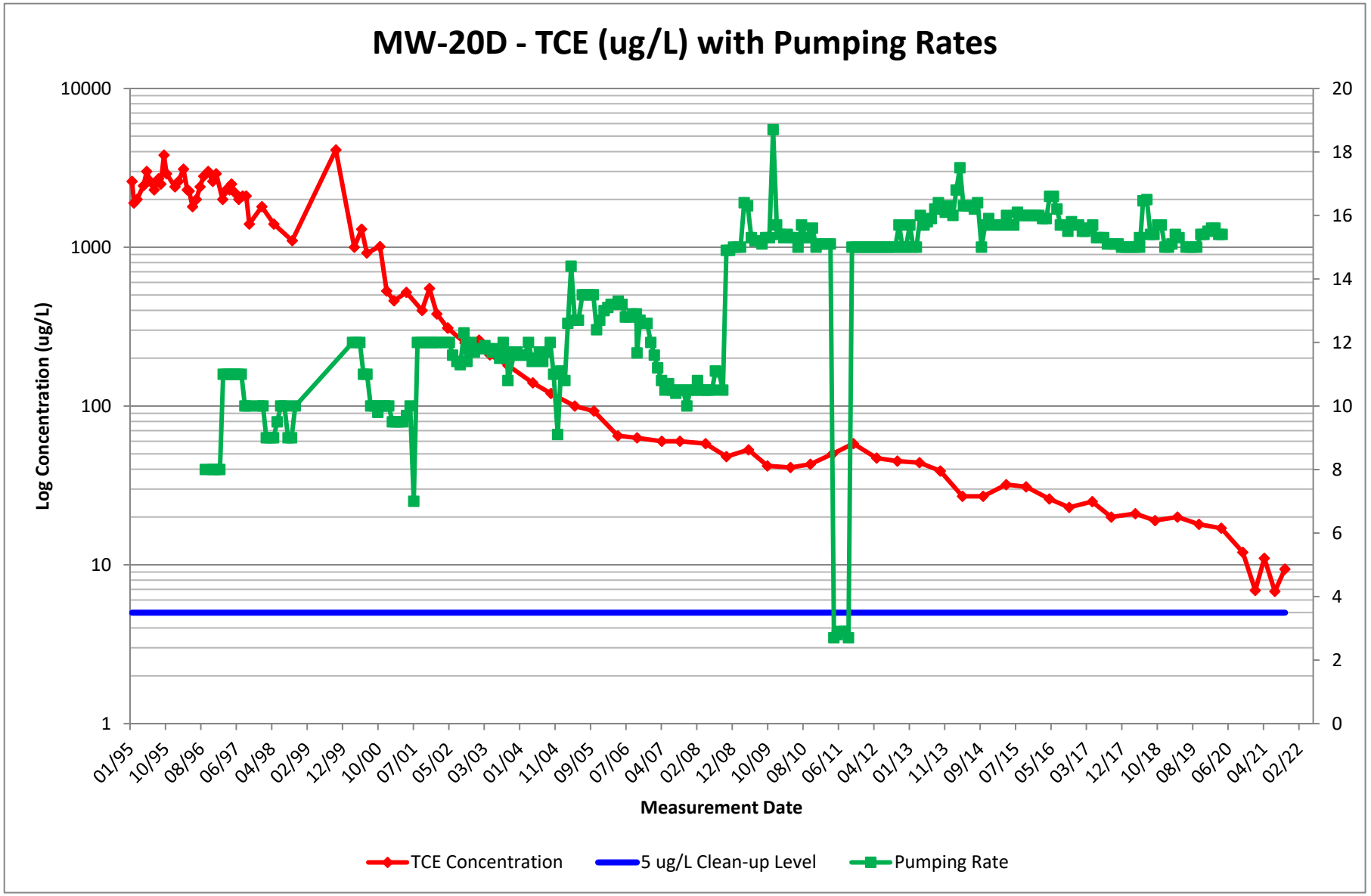

MW-14E - TCE (ug/L) with Pumping Rates
Log Concentration (ug/L)
10000
1000
100
10
1
14
12
10
8
6
4
2
0
01/95
10/95
08/96
06/97
04/98
02/99
12/99
10/00
07/01
05/02
03/03
01/04
11/04
09/05
07/06
04/07
02/08
12/08
10/09
08/10
06/11
04/12
01/13
11/13
09/14
07/15
05/16
03/17
12/17
10/18
08/19
06/20
04/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level
Pumping Rate

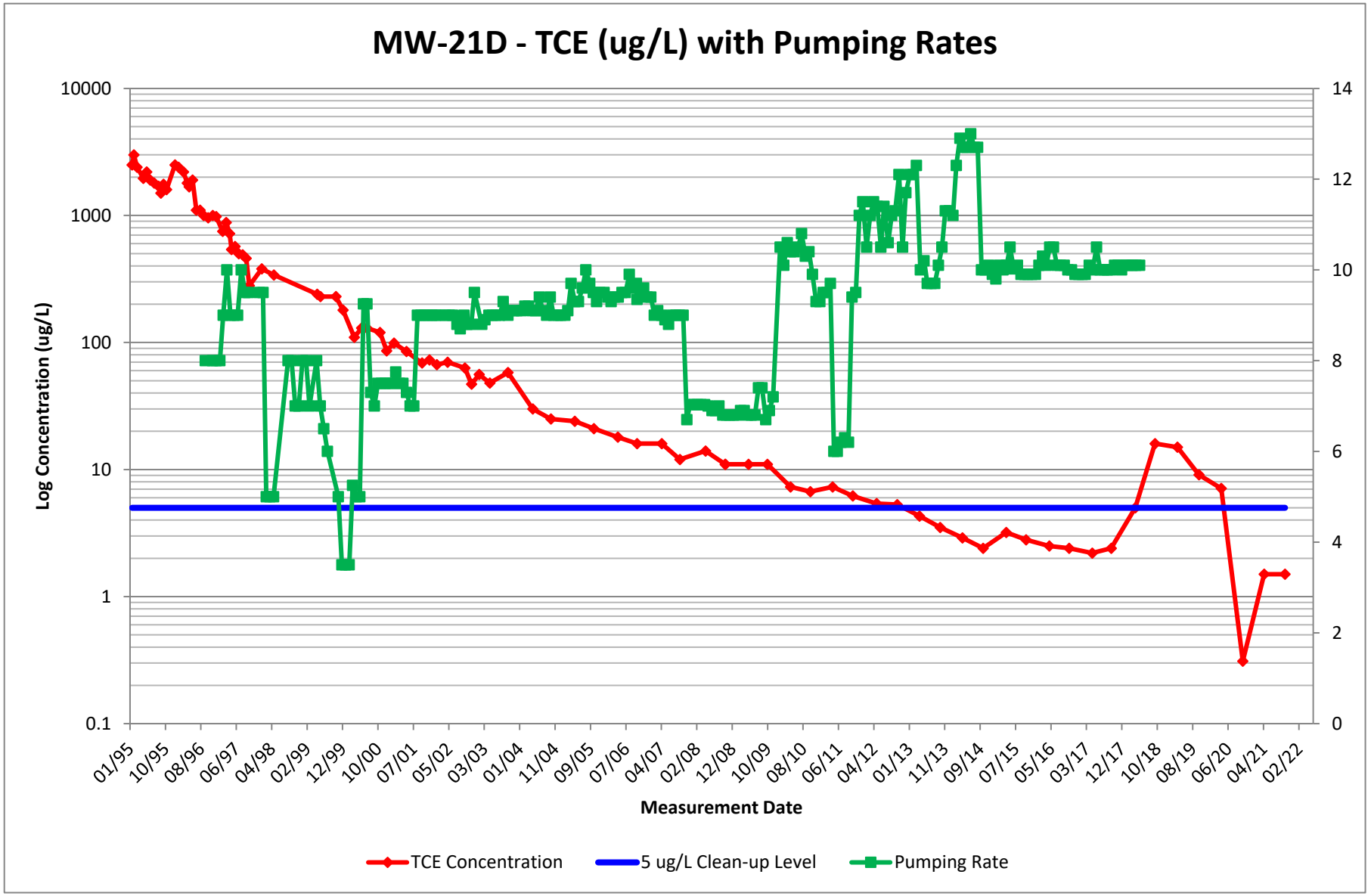

MW-15E - TCE (ug/L)
Log Concentration (ug/L)
10000
1000
100
10
1
01/95
08/95
03/96
11/96
06/97
01/98
09/98
04/99
12/99
07/00
03/01
10/01
05/02
01/03
08/03
04/04
11/04
06/05
02/06
09/06
05/07
12/07
07/08
03/09
10/09
06/10
01/11
08/11
04/12
11/12
07/13
02/14
09/14
05/15
12/15
08/16
03/17
10/17
06/18
01/19
09/19
04/20
11/20
07/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

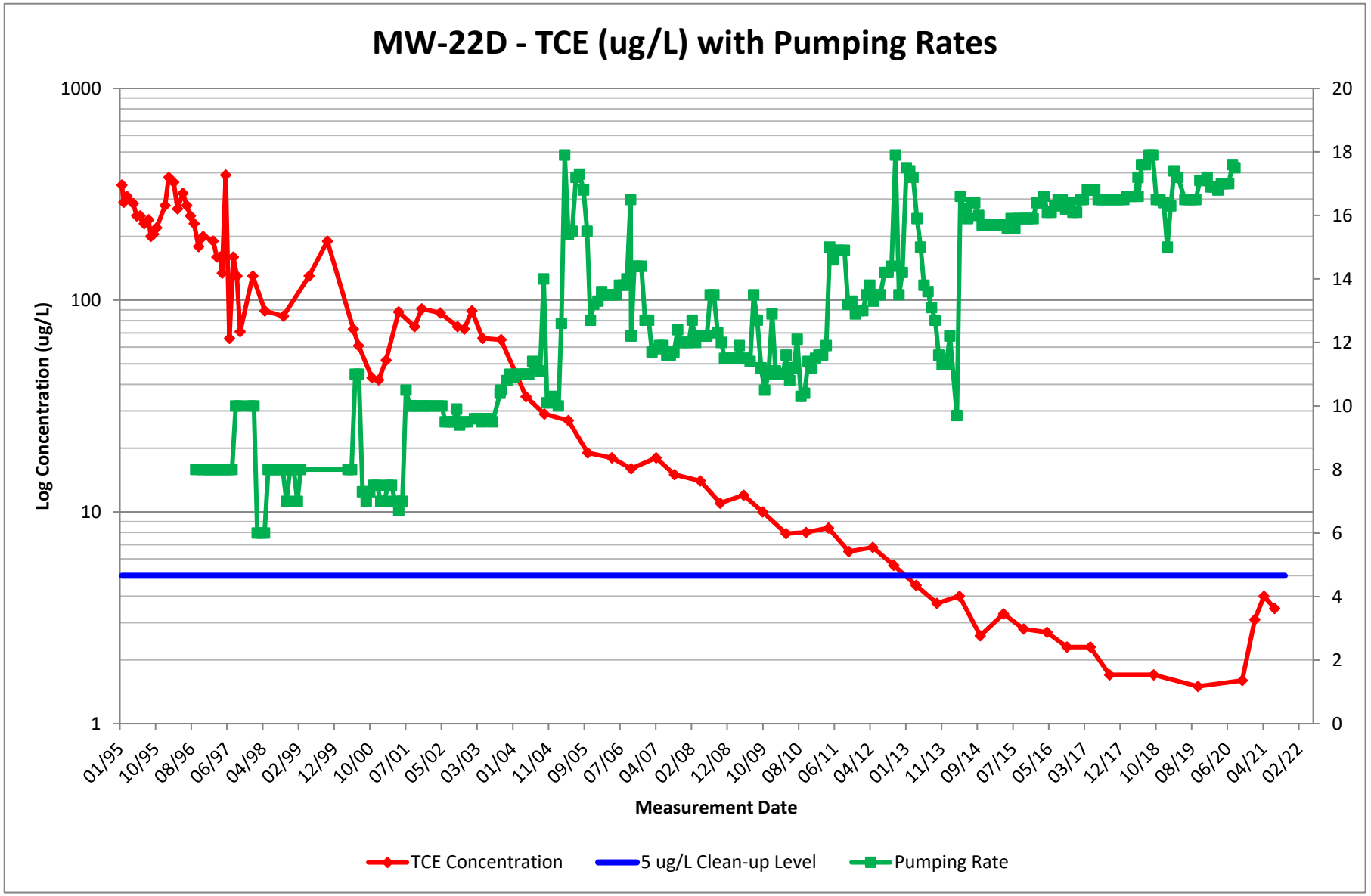

MW-18D - TCE (ug/L) with Pumping Rates
Log Concentration (ug/L)
10000
1000
100
10
1
20
18
16
14
12
10
8
6
4
2
0
01/95
10/95
08/96
06/97
04/98
02/99
12/99
10/00
07/01
05/02
03/03
01/04
11/04
09/05
07/06
04/07
02/08
12/08
10/09
08/10
06/11
04/12
01/13
11/13
09/14
07/15
05/16
03/17
12/17
10/18
08/19
06/20
04/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level
Pumping Rate

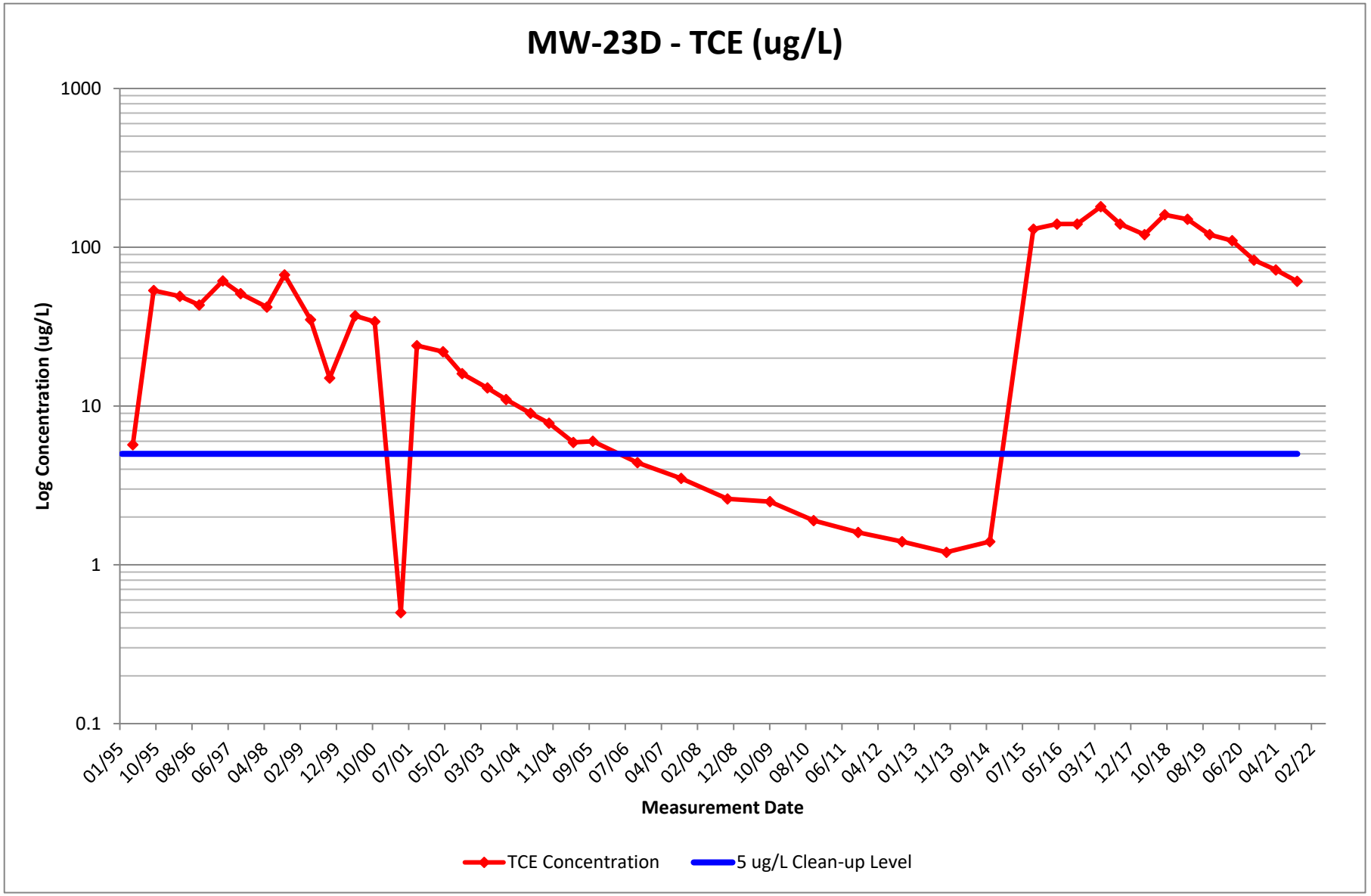

MW-18E - TCE (ug/L)
Log Concentration (ug/L)
10000
1000
100
10
1
0.1
01/95
10/95
08/96
06/97
04/98
02/99
12/99
10/00
07/01
05/02
03/03
01/04
11/04
09/05
07/06
04/07
02/08
12/08
10/09
08/10
06/11
04/12
01/13
11/13
09/14
07/15
05/16
03/17
12/17
10/18
08/19
06/20
04/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

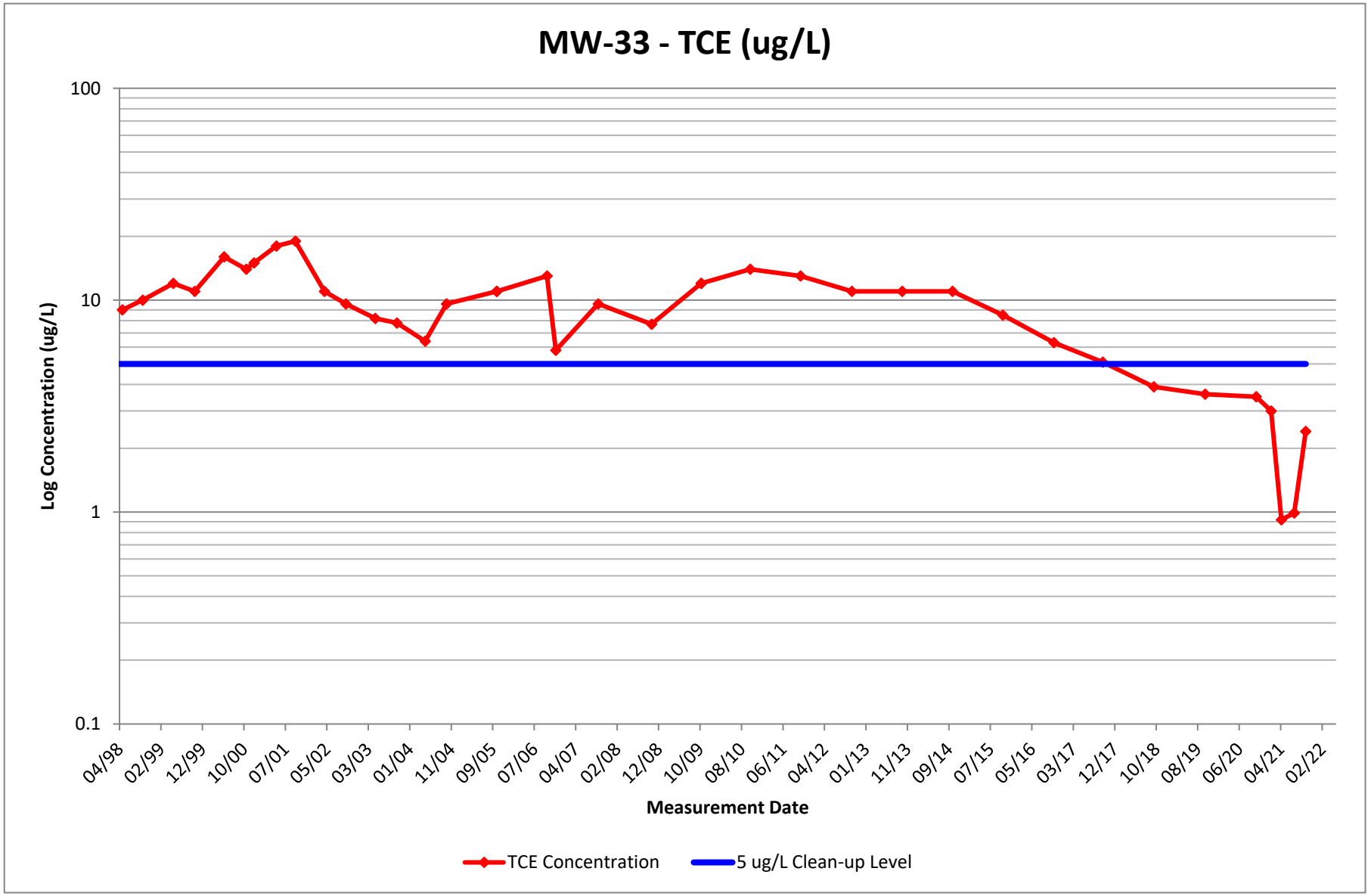

MW-19D - TCE (ug/L) with Pumping Rates
Log Concentration (ug/L)
10000
1000
100
10
1
16
14
12
10
8
6
4
2
0
01/95
10/95
08/96
06/97
04/98
02/99
12/99
10/00
07/01
05/02
03/03
01/04
11/04
09/05
07/06
04/07
02/08
12/08
10/09
08/10
06/11
04/12
01/13
11/13
09/14
07/15
05/16
03/17
12/17
10/18
08/19
06/20
04/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level
Pumping Rate

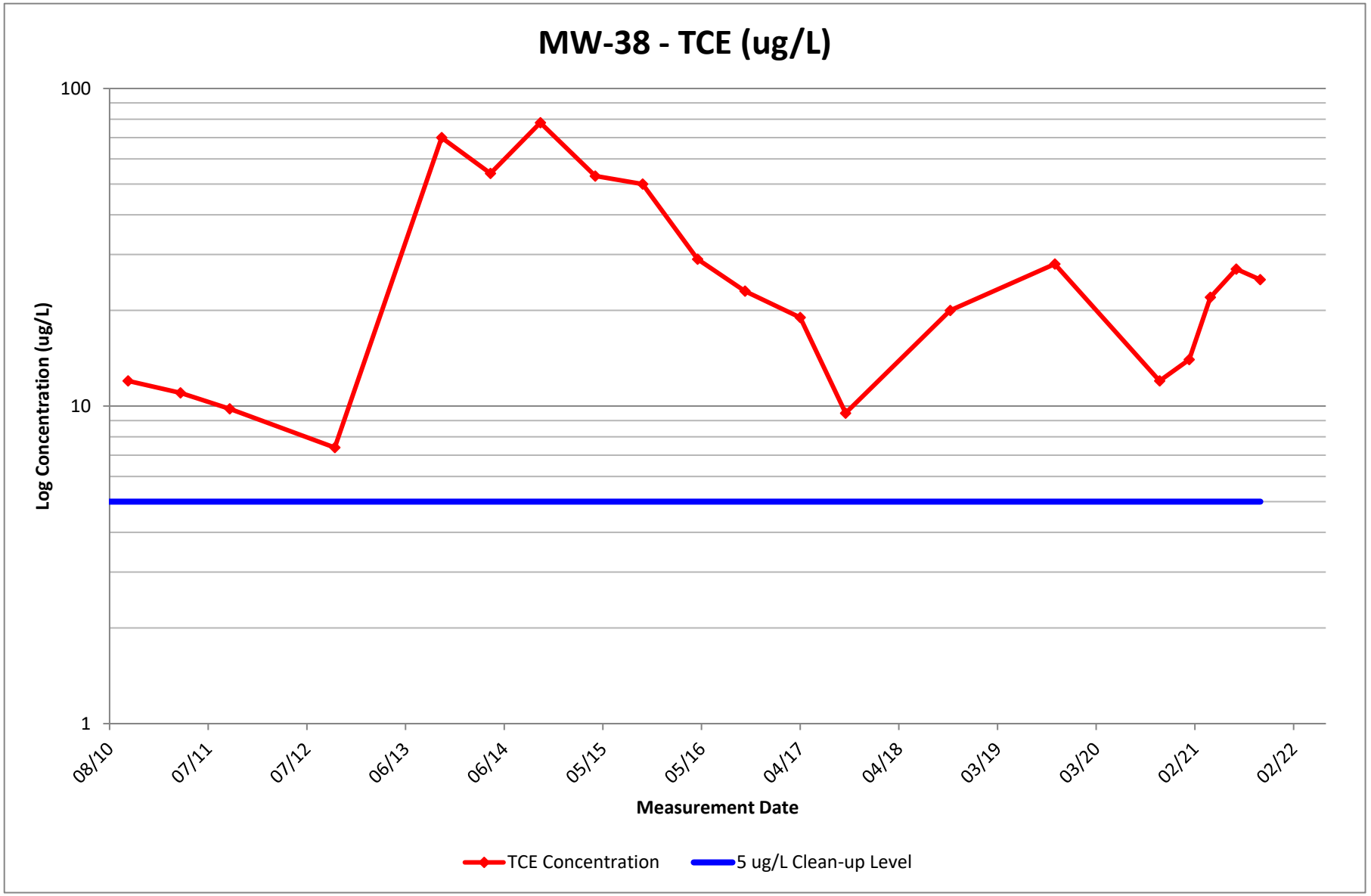

MW-20D - TCE (ug/L) with Pumping Rates
Log Concentration (ug/L)
10000
1000
100
10
1
20
18
16
14
12
10
8
6
4
2
0
01/95
10/95
08/96
06/97
04/98
02/99
12/99
10/00
07/01
05/02
03/03
01/04
11/04
09/05
07/06
04/07
02/08
12/08
10/09
08/10
06/11
04/12
01/13
11/13
09/14
07/15
05/16
03/17
12/17
10/18
08/19
06/20
04/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level
Pumping Rate

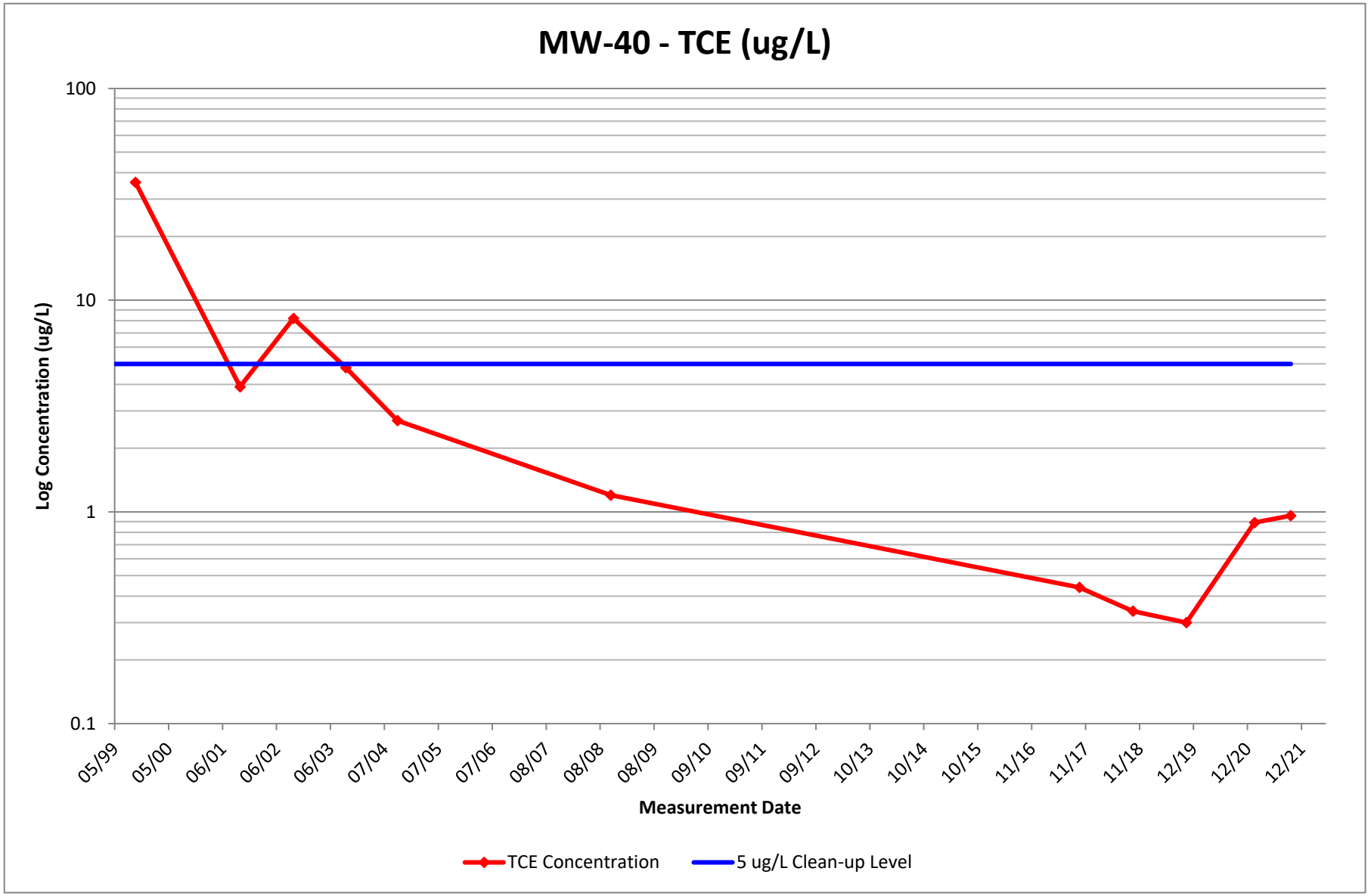

MW-21D - TCE (ug/L) with Pumping Rates
Log Concentration (ug/L)
10000
1000
100
10
1
0.1
14
12
10
8
6
4
2
0
01/95
10/95
08/96
06/97
04/98
02/99
12/99
10/00
07/01
05/02
03/03
01/04
11/04
09/05
07/06
04/07
02/08
12/08
10/09
08/10
06/11
04/12
01/13
11/13
09/14
07/15
05/16
03/17
12/17
10/18
08/19
06/20
04/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level
Pumping Rate

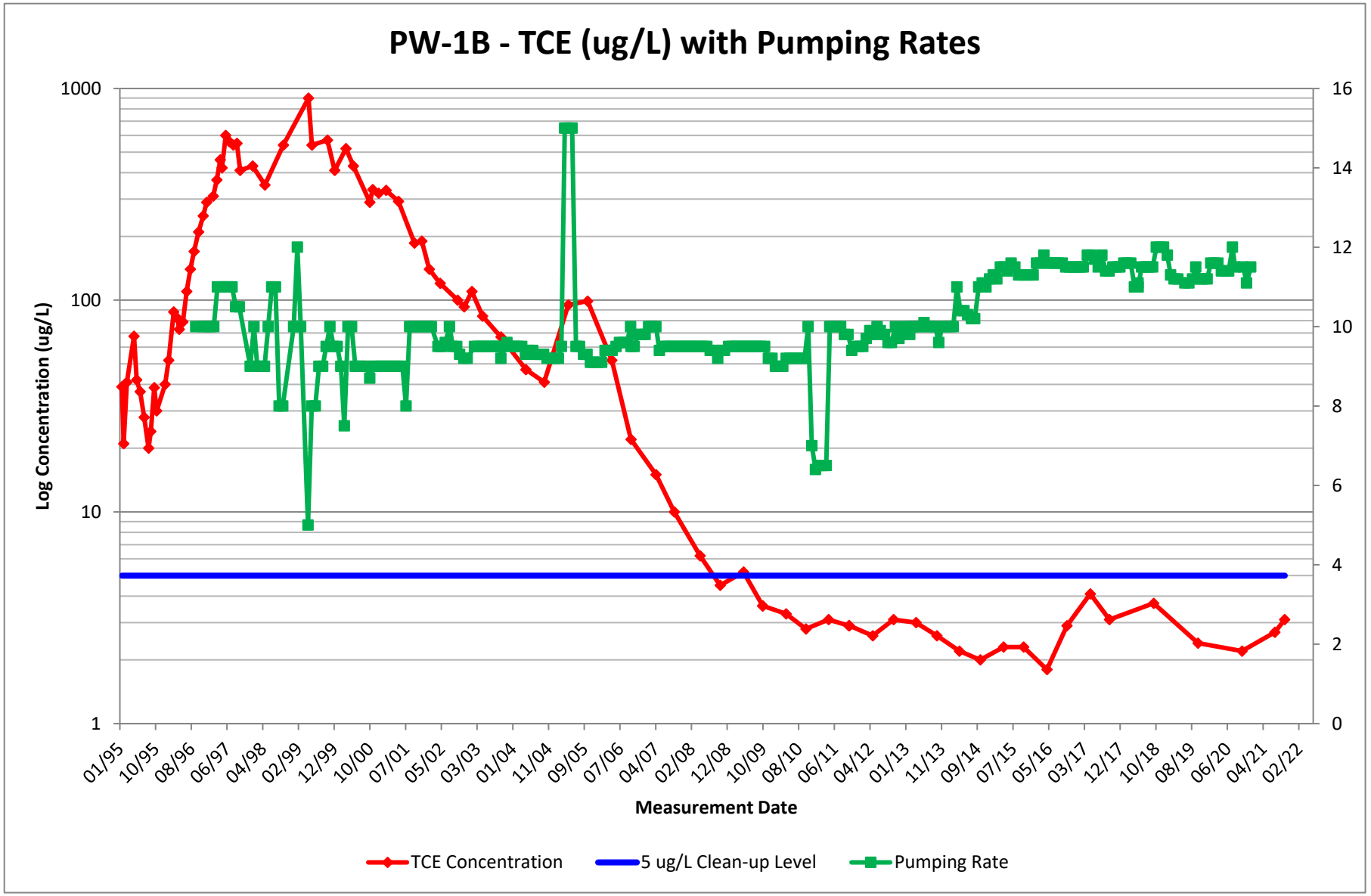

MW-22D - TCE (ug/L) with Pumping Rates
Log Concentration (ug/L)
1000
100
10
1
20
18
16
14
12
10
8
6
4
2
0
01/95
10/95
08/96
06/97
04/98
02/99
12/99
10/00
07/01
05/02
03/03
01/04
11/04
09/05
07/06
04/07
02/08
12/08
10/09
08/10
06/11
04/12
01/13
11/13
09/14
07/15
05/16
03/17
12/17
10/18
08/19
06/20
04/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level
Pumping Rate

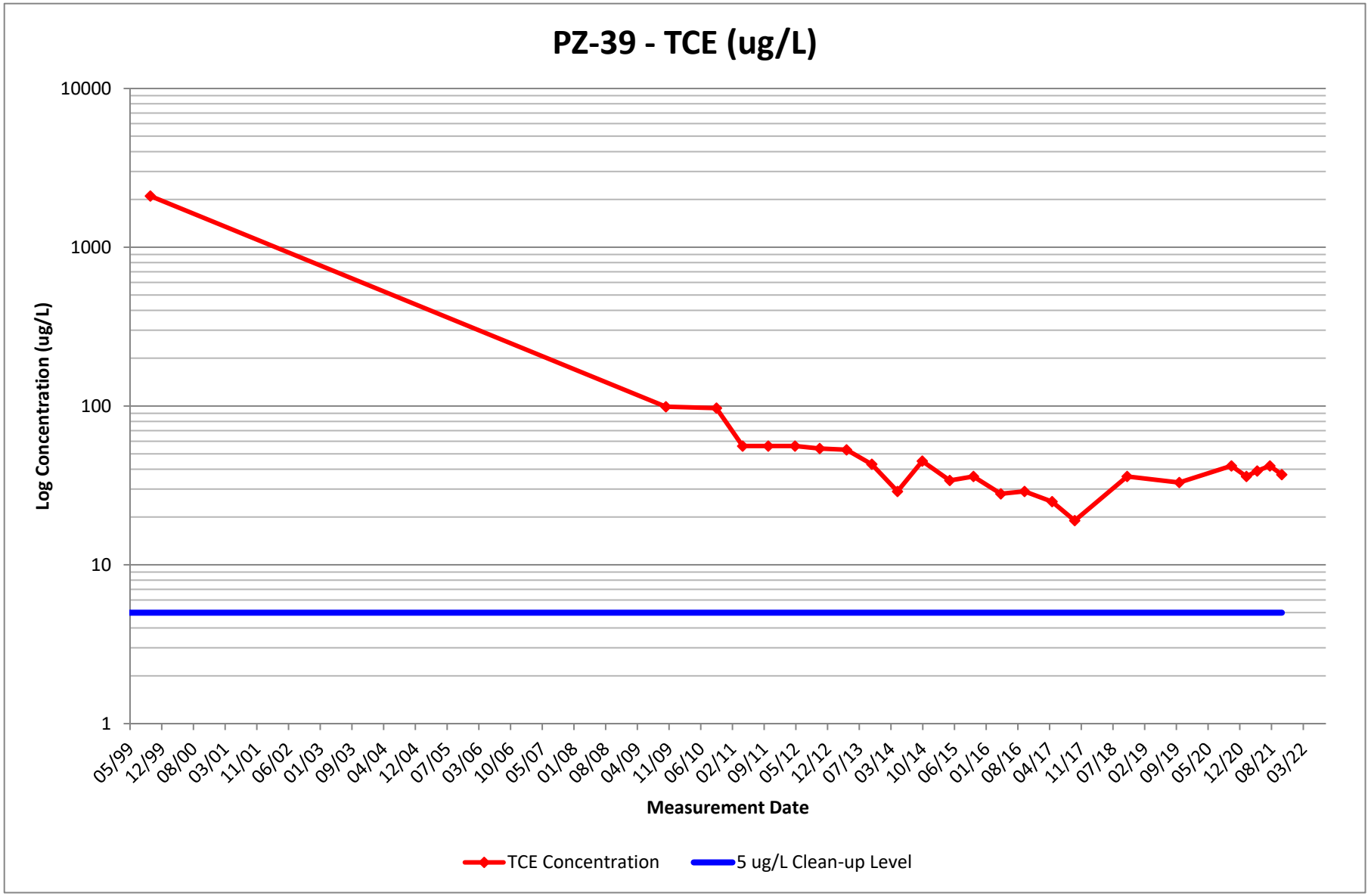

MW-23D - TCE (ug/L)
Log Concentration (ug/L)
1000
100
10
1
0.1
01/95
10/95
08/96
06/97
04/98
02/99
12/99
10/00
07/01
05/02
03/03
01/04
11/04
09/05
07/06
04/07
02/08
12/08
10/09
08/10
06/11
04/12
01/13
11/13
09/14
07/15
05/16
03/17
12/17
10/18
08/19
06/20
04/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level


MW-33 - TCE (ug/L)
Log Concentration (ug/L)
100
10
1
0.1
04/98
02/99
12/99
10/00
07/01
05/02
03/03
01/04
11/04
09/05
07/06
04/07
02/08
12/08
10/09
08/10
06/11
04/12
01/13
11/13
09/14
07/15
05/16
03/17
12/17
10/18
08/19
06/20
04/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level


MW-38 - TCE (ug/L)
100
10
1
Log Concentration (ug/L)
08/10
07/11
07/12
06/13
06/14
05/15
05/16
04/17
04/18
03/19
03/20
02/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level


MW-40 - TCE (ug/L)
100
10
1
0.1
Log Concentration (ug/L)
05/99
05/00
06/01
06/02
06/03
07/04
07/05
07/06
08/07
08/08
08/09
09/10
09/11
09/12
10/13
10/14
10/15
11/16
11/17
11/18
12/19
12/20
12/21
Measurement Date
TCE Concentration
5 ug/L Clean-up Level


PW-1B - TCE (ug/L) with Pumping Rates
Log Concentration (ug/L)
1000
100
10
1
16
14
12
10
8
6
4
2
0
01/95
10/95
08/96
06/97
04/98
02/99
12/99
10/00
07/01
05/02
03/03
01/04
11/04
09/05
07/06
04/07
02/08
12/08
10/09
08/10
06/11
04/12
01/13
11/13
09/14
07/15
05/16
03/17
12/17
10/18
08/19
06/20
04/21
02/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level
Pumping Rate


PZ-39 - TCE (ug/L)
Log Concentration (ug/L)
10000
1000
100
10
1
05/99
12/99
08/00
03/01
11/01
06/02
01/03
09/03
04/04
12/04
07/05
03/06
10/06
05/07
01/08
08/08
04/09
11/09
06/10
02/11
09/11
05/12
12/12
07/13
03/14
10/14
06/15
01/16
08/16
04/17
11/17
07/18
02/19
09/19
05/20
12/20
08/21
03/22
Measurement Date
TCE Concentration
5 ug/L Clean-up Level

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Appendix G

Data for Closure Monitoring

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Appendix G-1

Wells Excluded from Closure Monitoring

Appendix G-1. Wells Excluded from the Closure Monitoring Program

Well Name	Justification	Well ID	Justification
RAMW-2C	COC never detected above CUL	IWS-1	Remediation Well
AMW-5A	COC never detected above CUL	IWS-1PZ	Remediation Well
AMW-6A*	COC never detected above CUL	IWS-2	Remediation Well
AMW-7A*	COC never detected above CUL	IWS-2PZ	Remediation Well
AMW-9A	COC never detected above CUL	IWS-3	Remediation Well
AMW-10A*	COC never detected above CUL	IWS-3PZ	Remediation Well
AMW-11A*	COC never detected above CUL	IWS-4	Remediation Well
AMW-14	Abandoned	IWS-4PZ	Remediation Well
AMW-15	Abandoned	IWS-5	Remediation Well
AMW-16	Impacted by Northern Plume	IWS-5PZ	Remediation Well
AMW-17	Impacted by Northern Plume	IWS-6	Remediation Well
AMW-18	Impacted by Northern Plume	IWS-6PZ	Remediation Well
AMW-19B	COC never detected above CUL	IWS-7	Remediation Well
AMW-20	COC never detected above CUL	IWS-7PZ	Remediation Well
AMW-21	COC never detected above CUL	IWS-8	Remediation Well
AMW-22	Abandoned	IWS-8PZ	Remediation Well
AMW-23	Impacted by Northern Plume	IWS-9	Remediation Well
AMW-25	COC never detected above CUL	IWS-9PZ	Remediation Well
AMW-43	COC never detected above CUL	LAVALLEY	Never in monitoring program
AMW-44	COC never detected above CUL	LV	Never in monitoring program
AMW-45	COC never detected above CUL	MILLER	Never in monitoring program
AMW-50	COC never detected above CUL	MW-1	Never in monitoring program (Clark County well)
AMW-51	COC never detected above CUL	MW-2	Never in monitoring program (Clark County well)
AMW-52C	COC never detected above CUL	MW-3	Never in monitoring program (Clark County well)
AMW-53B	COC never detected above CUL	MW-4	Never in monitoring program (Clark County well)
AMW-53C	COC never detected above CUL	MW-5	Never in monitoring program (Clark County well)
AMW-54C	COC never detected above CUL	MW-5A	Abandoned
AMW-55C	COC never detected above CUL	MW-5B	Abandoned
AMW-56C	COC never detected above CUL	MW-11A	Abandoned
AMW-57	COC never detected above CUL	MW-11B	Abandoned
AMW-62	COC never detected above CUL	MW-17E	COC never detected above CUL
AMW-63	COC never detected above CUL	MW-21D	Impacted by Northern Plume
AMW-64	Impacted by Northern Plume	MW-23D	Impacted by Northern Plume
COLF	Never in monitoring program	MW-24D	Abandoned
COLUMBIA VET	Never in monitoring program	MW-28	Abandoned
CPU-1D	Abandoned	MW-29	Abandoned
CPU-1S	Abandoned	MW-30	COC never detected above CUL
CPU-2	COC never detected above CUL	MW-31	Abandoned
CPU-3D	COC never detected above CUL	MW-32	Abandoned
CPU-3S	COC never detected above CUL	MW-34	COC never detected above CUL
CPU-4D	Water levels only, never sampled	MW-35	Abandoned
CPU-4S	Water levels only, COC never detected above CUL	MW-36	Abandoned
CPU-10	COC never detected above CUL	MW-37	Abandoned
CPU-15	COC never detected above CUL	MW-38	Impacted by Northern Plume
CPU-16	Abandoned	MW-39	Never in monitoring program; pilot study well
CROCKFORD	Never in monitoring program	MW-46	COC never detected above CUL
EC-1	COC never detected above CUL	MW-47	COC never detected above CUL
FERGUSON	Never in monitoring program	PERMALUME	Never in monitoring program/abandoned
FITZGERALD	Never in monitoring program	PZ-1	Water levels only, COC never detected above CUL
GARRISON	Never in monitoring program	PZ-2	Water levels only, COC never detected above CUL
GRIMM	Never in monitoring program	PZ-40	Water levels only, COC never detected above CUL
GWSW-1	Production well, COC never detected above CUL	SW-1	Abandoned
GWSW-2	Production well, COC never detected above CUL	WELCH	Never in monitoring program
HASTAY	Never in monitoring program	WILLIAMS	Never in monitoring program
HORN	Never in monitoring program	WOODAEGE	Never in monitoring program
		ZENT	Never in monitoring program

Notes:
COC = Contaminant of Concern identified for the Site.
CUL = Cleanup level identified in the Site Record of Decision.
* = Well sampled as part of the Messer infiltration gallery monitoring.

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Appendix G-2

Remediation Monitoring Analysis

Appendix G-2.1 - Remediation Monitoring Analysis
CHLORODIBROMOMETHANE (Last 4 Samples)

Well Name	Well Type	Total Number of Datapoints	Date of First of the Most Recent Four Samples	Most Recent Sample Date	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Number of Conc. < Cleanup Goal (1 ug/L)	Remediation Monitoring Phase is Completed? [a]
Closure Monitoring Program Wells									
Upgradient Wells									
AMW-8A	M	38	10/2016	10/2021	U	U	U	4	YES
TCE Source Wells									
AMW-1A	M	65	02/2021	10/2021	U	U	U	4	YES
AMW-1B	M	32	05/2009	10/2021	U	U	U	4	YES
AMW-1C	M	25	01/2008	10/2021	U	U	U	4	YES
AMW-2A	M	68	02/2021	10/2021	U	U	U	4	YES
AMW-2B	M	37	10/2013	10/2021	U	U	U	4	YES
AMW-3A	M	48	10/2017	07/2021	U	U	U	4	YES
AMW-4A	M	19	10/2020	10/2021	U	U	U	4	YES
AMW-12A	M	68	02/2021	10/2021	U	U	U	4	YES
AMW-13A	M	46	10/2014	10/2021	U	U	U	4	YES
AMW-19A	M	45	10/2015	10/2021	U	U	U	4	YES
AMW-26	M	31	10/2014	10/2021	U	U	U	4	YES
AMW-52A	M	30	10/2014	10/2021	U	0.29	U	4	YES
AMW-53A	M	53	02/2021	10/2021	U	U	U	4	YES
AMW-54A	M	30	10/2013	10/2017	U	U	U	4	YES
AMW-55A	M	23	10/2012	10/2015	U	U	U	4	YES
AMW-56A	M	29	10/2013	10/2017	U	U	U	4	YES
MW-1A	M	66	02/2021	10/2021	U	U	U	4	YES
MW-1B	M	28	10/2009	10/2021	U	U	U	4	YES
MW-1C	M	22	10/2008	10/2021	U	U	U	4	YES
Proximal Wells									
AMW-58	M	11	10/2010	10/2021	U	U	U	4	YES
MW-2A	M	29	10/2016	10/2021	U	0.32	U	4	YES
MW-2B	M	20	10/2020	10/2021	U	U	U	4	YES
MW-2C	M	11	10/2009	10/2021	U	U	U	4	YES
MW-3A	M	18	05/2004	10/2008	U	U	U	4	YES
MW-3B	M	17	10/2014	10/2021	U	U	U	4	YES
MW-3C	M	12	10/2018	10/2021	U	U	U	4	YES
MW-4A	M	23	10/2018	10/2021	U	U	U	4	YES
MW-4B	M	17	10/2012	10/2021	U	U	U	4	YES
MW-4BSHED	M	17	10/2009	10/2021	U	U	U	4	YES
MW-4C	M	12	10/2017	10/2021	U	U	U	4	YES
MW-6A	M	9	10/2018	10/2021	U	U	U	4	YES
MW-6B	E	53	10/2018	10/2021	U	U	U	4	YES
MW-6C	M	15	10/2018	10/2021	U	U	U	4	YES
MW-6D	M	13	10/2018	10/2021	U	U	U	4	YES
MW-7B	M	11	10/2017	10/2020	U	0.22	U	4	YES
MW-7C	M	8	10/2004	10/2021	U	U	U	4	YES
MW-8B	M	17	10/2014	10/2021	U	0.19	U	4	YES

Appendix G-2.1 - Remediation Monitoring Analysis
CHLORODIBROMOMETHANE (Last 4 Samples)

Well Name	Well Type	Total Number of Datapoints	Date of First of the Most Recent Four Samples	Most Recent Sample Date	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Number of Conc. < Cleanup Goal (1 ug/L)	Remediation Monitoring Phase is Completed? [a]
MW-9B	M	19	10/2014	10/2021	U	U	U	4	YES
MW-9C	M	15	10/2019	10/2021	U	U	U	4	YES
MW-10B	E	57	10/2020	10/2021	U	U	U	4	YES
MW-10C	E	56	10/2019	10/2021	U	U	U	4	YES
MW-12C	M	30	10/2017	10/2021	U	U	U	4	YES
MW-13C	M	34	10/2019	10/2021	U	U	U	4	YES
PW-1B	E	64	10/2019	10/2021	U	U	U	4	YES
Intermediate Wells									
AMW-59	E/O	22	02/2021	10/2021	U	U	U	4	YES
AMW-60	M	9	10/2018	10/2021	U	U	U	4	YES
CPU-14	M	41	10/2020	10/2021	U	U	U	4	YES
MW-14C*	E/M	67	02/2021	10/2021	U	U	U	4	YES
MW-14E*	E/M	69	02/2021	10/2021	U	U	U	4	YES
MW-15E	M	33	10/2019	10/2021	U	U	U	4	YES
MW-18D*	E/M	66	10/2020	07/2021	U	U	U	4	YES
MW-18E	E/O	42	10/2020	07/2021	U	U	U	4	YES
MW-19D	E/M	66	02/2021	10/2021	U	U	U	4	YES
MW-20D	E	66	02/2021	10/2021	U	U	U	4	YES
MW-38	M	20	02/2021	10/2021	U	U	U	4	YES
MW-40	M	11	10/2018	10/2021	U	U	U	4	YES
PZ-39	PZ	24	02/2021	10/2021	U	U	U	4	YES
Church of God Wells									
AMW-27	M	53	04/2016	07/2021	U	U	U	4	YES
AMW-61	M	18	10/2018	10/2021	U	U	U	4	YES
CPU-12	M	36	10/2016	02/2021	U	U	U	4	YES
CPU-13	E/O	52	04/2013	10/2014	U	U	U	4	YES
MW-21D	E/O	66	04/2020	10/2021	U	U	U	4	YES
MW-22D	E	60	10/2020	07/2021	U	U	U	4	YES
MW-25D	E/O	52	10/2012	10/2014	U	U	U	4	YES
MW-26D	E/O	51	10/2012	10/2014	U	U	U	4	YES
MW-27D	E/M	43	10/2011	10/2014	U	U	U	4	YES
MW-49	E/O	30	10/2012	10/2014	U	U	U	4	YES
Toe Wells									
AMW-42	M	38	10/2009	10/2014	U	U	U	4	YES
MW-31	M	25	10/2008	10/2012	U	U	U	4	YES
MW-35	M	42	10/2015	04/2017	U	U	U	4	YES
MW-41	M	44	10/2010	10/2017	U	U	U	4	YES
MW-48	M	30	10/2006	10/2009	U	U	U	4	YES
Troutdale Wells									
AMW-24	M/D	31	10/2018	10/2021	U	U	U	4	YES
MW-33	M/D	34	02/2021	10/2021	U	U	U	4	YES
BENNETT	M	29	10/2019	07/2021	U	U	U	4	YES

Appendix G-2.1 - Remediation Monitoring Analysis
CHLORODIBROMOMETHANE (Last 4 Samples)

Well Name	Well Type	Total Number of Datapoints	Date of First of the Most Recent Four Samples	Most Recent Sample Date	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Number of Conc. < Cleanup Goal (1 ug/L)	Remediation Monitoring Phase is Completed? [a]

NOTES:

[a] The "Remediation Monitoring Phase is Completed" determinations are per EPA Guidance (EPA 2013) based on the most recent four sample data points for each COC. The remediation monitoring phase is completed when the last four sample concentrations are lower than the cleanup level.

* The pumps in wells MW-14C and MW14E were turned off and removed on 10/16/2019; and the pump in well MW-19D was turned off and removed 10/14/2019.

COC = Contaminant of Concern.
E = Extraction well.
E/M = Extraction well with pump pulled; now sampled as a monitoring well.
E/O = Extraction well with pump turned off; pump is turned on for sampling.
EPA = U.S. Environmental Protection Agency.
M = Monitoring well.
M/D = Monitoring well with dedicated pump installed.
U = Analyte not detected above the specified reporting limit.
µg/L = Micrograms per liter.

Appendix G-2.2 - Remediation Monitoring Analysis
1,1-DICHLOROETHENE (Last 4 Samples)

Well Name	Well Type	Total Number of Datapoints	Date of First of the Most Recent Four Samples	Most Recent Sample Date	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Number of Conc. < Cleanup Goal (1 ug/L)	Remediation Monitoring Phase is Completed ? [a]
Closure Monitoring Program Wells									
Upgradient Wells									
AMW-8A	M	39	10/2016	10/2021	U	U	U	4	YES
TCE Source Wells									
AMW-1A	M	66	02/2021	10/2021	U	0.43	U	4	YES
AMW-1B	M	32	05/2009	10/2021	U	U	U	4	YES
AMW-1C	M	25	01/2008	10/2021	U	U	U	4	YES
AMW-2A	M	69	02/2021	10/2021	U	0.13	U	4	YES
AMW-2B	M	37	10/2013	10/2021	U	U	U	4	YES
AMW-3A	M	49	10/2017	07/2021	U	U	U	4	YES
AMW-4A	M	19	10/2020	10/2021	U	U	U	4	YES
AMW-12A	M	68	02/2021	10/2021	U	U	U	4	YES
AMW-13A	M	47	10/2014	10/2021	U	U	U	4	YES
AMW-19A	M	45	10/2015	10/2021	U	U	U	4	YES
AMW-26	M	31	10/2014	10/2021	U	0.2	U	4	YES
AMW-52A	M	30	10/2014	10/2021	U	U	U	4	YES
AMW-53A	M	53	02/2021	10/2021	U	0.26	U	4	YES
AMW-54A	M	30	10/2013	10/2017	U	U	U	4	YES
AMW-55A	M	23	10/2012	10/2015	U	U	U	4	YES
AMW-56A	M	29	10/2013	10/2017	U	0.037	0.037	4	YES
MW-1A	M	67	02/2021	10/2021	U	U	U	4	YES
MW-1B	M	29	10/2009	10/2021	U	U	U	4	YES
MW-1C	M	22	10/2008	10/2021	U	U	U	4	YES
Proximal Wells									
AMW-58	M	11	10/2010	10/2021	U	U	U	4	YES
MW-2A	M	30	10/2016	10/2021	U	U	U	4	YES
MW-2B	M	21	10/2020	10/2021	U	U	U	4	YES
MW-2C	M	11	10/2009	10/2021	U	U	U	4	YES
MW-3A	M	19	05/2004	10/2008	U	U	U	4	YES
MW-3B	M	17	10/2014	10/2021	U	U	U	4	YES
MW-3C	M	12	10/2018	10/2021	U	U	U	4	YES
MW-4A	M	24	10/2018	10/2021	U	U	U	4	YES
MW-4B	M	17	10/2012	10/2021	U	U	U	4	YES
MW-4BSHED	M	17	10/2009	10/2021	U	U	U	4	YES
MW-4C	M	12	10/2017	10/2021	U	U	U	4	YES
MW-6A	M	9	10/2018	10/2021	U	U	U	4	YES
MW-6B	E	54	10/2018	10/2021	U	0.3	0.3	4	YES
MW-6C	M	15	10/2018	10/2021	U	U	U	4	YES
MW-6D	M	13	10/2018	10/2021	U	0.32	U	4	YES
MW-7B	M	11	10/2017	10/2020	U	0.1	U	4	YES
MW-7C	M	8	10/2004	10/2021	U	U	U	4	YES

Appendix G-2.2 - Remediation Monitoring Analysis
1,1-DICHLOROETHENE (Last 4 Samples)

Well Name	Well Type	Total Number of Datapoints	Date of First of the Most Recent Four Samples	Most Recent Sample Date	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Number of Conc. < Cleanup Goal (1 ug/L)	Remediation Monitoring Phase is Completed ? [a]
MW-8B	M	17	10/2014	10/2021	U	0.079	U	4	YES
MW-9B	M	19	10/2014	10/2021	U	0.066	U	4	YES
MW-9C	M	15	10/2019	10/2021	U	U	U	4	YES
MW-10B	E	58	10/2020	10/2021	U	0.08	U	4	YES
MW-10C	E	57	10/2019	10/2021	U	U	U	4	YES
MW-12C	M	31	10/2017	10/2021	U	U	U	4	YES
MW-13C	M	35	10/2019	10/2021	U	U	U	4	YES
PW-1B	E	65	10/2019	10/2021	U	U	U	4	YES
Intermediate Wells									
AMW-59	E/O	22	02/2021	10/2021	0.27	2.4	0.27	1	NO
AMW-60	M	9	10/2018	10/2021	1.5	3.8	3.8	None	NO
CPU-14	M	42	10/2020	10/2021	U	0.11	U	4	YES
MW-14C*	E/M	68	02/2021	10/2021	U	U	U	4	YES
MW-14E*	E/M	70	02/2021	10/2021	U	0.16	U	4	YES
MW-15E	M	33	10/2019	10/2021	U	U	U	4	YES
MW-18D	E/M	66	10/2020	07/2021	U	0.13	0.13	4	YES
MW-18E	E/O	43	10/2020	07/2021	U	0.08	U	4	YES
MW-19D*	E/M	66	02/2021	10/2021	U	0.29	U	4	YES
MW-20D	E	66	02/2021	10/2021	U	0.16	0.16	4	YES
MW-38	M	20	02/2021	10/2021	U	0.11	0.08	4	YES
MW-40	M	11	10/2018	10/2021	U	U	U	4	YES
PZ-39	PZ	24	02/2021	10/2021	1.5	2.1	1.7	None	NO
Church of God Wells									
AMW-27	M	54	04/2016	07/2021	U	0.11	U	4	YES
AMW-61	M	18	10/2018	10/2021	0.14	0.23	0.14	4	YES
CPU-12	M	37	10/2016	02/2021	U	0.029	U	4	YES
CPU-13	E/O	53	04/2013	10/2014	U	U	U	4	YES
MW-21D	E/O	67	04/2020	10/2021	U	0.47	U	4	YES
MW-22D	E	61	10/2020	07/2021	U	0.1	U	4	YES
MW-25D	E/O	53	10/2012	10/2014	0.15	0.33	0.15	4	YES
MW-26D	E/O	52	10/2012	10/2014	U	U	U	4	YES
MW-27D	E/M	44	10/2011	10/2014	U	U	U	4	YES
MW-49	E/O	30	10/2012	10/2014	U	0.08	U	4	YES
Toe Wells									
AMW-42	M	39	10/2009	10/2014	U	U	U	4	YES
MW-31	M	26	10/2008	10/2012	U	U	U	4	YES
MW-35	M	43	10/2015	04/2017	U	0.09	0.09	4	YES
MW-41	M	45	10/2010	10/2017	U	U	U	4	YES
MW-48	M	31	10/2006	10/2009	U	U	U	4	YES
Troutdale Wells									
AMW-24	M/D	32	10/2018	10/2021	0.48	0.77	0.48	4	YES
MW-33	M/D	35	02/2021	10/2021	U	0.3	0.3	4	YES
BENNETT	0	29	10/2019	07/2021	U	0.28	0.28	4	YES

Appendix G-2.2 - Remediation Monitoring Analysis
1,1-DICHLOROETHENE (Last 4 Samples)

Well Name	Well Type	Total Number of Datapoints	Date of First of the Most Recent Four Samples	Most Recent Sample Date	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Number of Conc. < Cleanup Goal (1 ug/L)	Remediation Monitoring Phase is Completed ? [a]

NOTES:

[a] The "Remediation Monitoring Phase is Completed" determinations are per EPA Guidance (EPA 2013) based on the most recent four sample data points for each COC. The remediation monitoring phase is completed when the last four sample concentrations are lower than the cleanup level.

* The pumps in wells MW-14C and MW14E were turned off and removed on 10/16/2019; and the pump in well MW-19D was turned off and removed 10/14/2019.

COC = Contaminant of Concern.
E = Extraction well.
E/O = Extraction well with pump turned off; pump is turned on for sampling.
E/M = Extraction well with pump pulled; now sampled as a monitoring well.
EPA = U.S. Environmental Protection Agency.
M = Monitoring well.
M/D = Monitoring well with dedicated pump installed.
U = Analyte not detected above the specified reporting limit.
µg/L = Micrograms per liter.

Appendix G-2.3 - Remediation Monitoring Analysis
1,2-DICHLOROETHANE (Last 4 Samples)

Well Name	Well Type	Total Number of Datapoints	Date of First of the Most Recent Four Samples	Most Recent Sample Date	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Number of Conc. < Cleanup Goal (5 ug/L)	Remediation Monitoring Phase is Completed ? [a]
Closure Monitoring Program Wells									
Upgradient Wells									
AMW-8A	M	39	10/2016	10/2021	U	U	U	4	YES
TCE Source Wells									
AMW-1A	M	66	02/2021	10/2021	U	U	U	4	YES
AMW-1B	M	32	05/2009	10/2021	U	U	U	4	YES
AMW-1C	M	25	01/2008	10/2021	U	U	U	4	YES
AMW-2A	M	69	02/2021	10/2021	U	U	U	4	YES
AMW-2B	M	37	10/2013	10/2021	U	U	U	4	YES
AMW-3A	M	49	10/2017	07/2021	U	U	U	4	YES
AMW-4A	M	19	10/2020	10/2021	U	U	U	4	YES
AMW-12A	M	68	02/2021	10/2021	U	U	U	4	YES
AMW-13A	M	47	10/2014	10/2021	U	U	U	4	YES
AMW-19A	M	45	10/2015	10/2021	U	U	U	4	YES
AMW-26	M	31	10/2014	10/2021	U	U	U	4	YES
AMW-52A	M	30	10/2014	10/2021	U	U	U	4	YES
AMW-53A	M	53	02/2021	10/2021	U	U	U	4	YES
AMW-54A	M	30	10/2013	10/2017	U	U	U	4	YES
AMW-55A	M	23	10/2012	10/2015	U	U	U	4	YES
AMW-56A	M	29	10/2013	10/2017	U	U	U	4	YES
MW-1A	M	67	02/2021	10/2021	U	U	U	4	YES
MW-1B	M	29	10/2009	10/2021	U	U	U	4	YES
MW-1C	M	22	10/2008	10/2021	U	U	U	4	YES
Proximal Wells									
AMW-58	M	11	10/2010	10/2021	U	U	U	4	YES
MW-2A	M	30	10/2016	10/2021	U	U	U	4	YES
MW-2B	M	21	10/2020	10/2021	U	U	U	4	YES
MW-2C	M	11	10/2009	10/2021	U	U	U	4	YES
MW-3A	M	19	05/2004	10/2008	U	U	U	4	YES
MW-3B	M	17	10/2014	10/2021	U	U	U	4	YES
MW-3C	M	12	10/2018	10/2021	U	U	U	4	YES
MW-4A	M	24	10/2018	10/2021	U	U	U	4	YES
MW-4B	M	17	10/2012	10/2021	U	U	U	4	YES
MW-4BSHED	M	17	10/2009	10/2021	U	U	U	4	YES
MW-4C	M	12	10/2017	10/2021	U	U	U	4	YES
MW-6A	M	9	10/2018	10/2021	U	U	U	4	YES
MW-6B	E	54	10/2018	10/2021	U	U	U	4	YES
MW-6C	M	15	10/2018	10/2021	U	U	U	4	YES
MW-6D	M	13	10/2018	10/2021	U	U	U	4	YES
MW-7B	M	11	10/2017	10/2020	U	U	U	4	YES
MW-7C	M	8	10/2004	10/2021	U	U	U	4	YES
MW-8B	M	17	10/2014	10/2021	U	U	U	4	YES

Appendix G-2.3 - Remediation Monitoring Analysis
1,2-DICHLOROETHANE (Last 4 Samples)

Well Name	Well Type	Total Number of Datapoints	Date of First of the Most Recent Four Samples	Most Recent Sample Date	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Number of Conc. < Cleanup Goal (5 ug/L)	Remediation Monitoring Phase is Completed ? [a]
MW-9B	M	19	10/2014	10/2021	U	U	U	4	YES
MW-9C	M	15	10/2019	10/2021	U	U	U	4	YES
MW-10B	E	58	10/2020	10/2021	U	U	U	4	YES
MW-10C	E	57	10/2019	10/2021	U	U	U	4	YES
MW-12C	M	31	10/2017	10/2021	U	U	U	4	YES
MW-13C	M	35	10/2019	10/2021	U	U	U	4	YES
PW-1B	E	65	10/2019	10/2021	U	U	U	4	YES
Intermediate Wells									
AMW-59	E/O	22	02/2021	10/2021	U	U	U	4	YES
AMW-60	M	9	10/2018	10/2021	U	0.14	U	4	YES
CPU-14	M	42	10/2020	10/2021	U	U	U	4	YES
MW-14C	E/M	68	02/2021	10/2021	U	U	U	4	YES
MW-14E*	E/M	70	02/2021	10/2021	U	U	U	4	YES
MW-15E*	M	33	10/2019	10/2021	U	U	U	4	YES
MW-18D	E/M	66	10/2020	07/2021	U	U	U	4	YES
MW-18E	E/O	43	10/2020	07/2021	U	U	U	4	YES
MW-19D*	E/M	66	02/2021	10/2021	U	U	U	4	YES
MW-20D	E	66	02/2021	10/2021	U	U	U	4	YES
MW-38	M	20	02/2021	10/2021	U	U	U	4	YES
MW-40	M	11	10/2018	10/2021	U	U	U	4	YES
PZ-39	PZ	24	02/2021	10/2021	U	U	U	4	YES
Church of God Wells									
AMW-27	M	54	04/2016	07/2021	U	U	U	4	YES
AMW-61	M	18	10/2018	10/2021	U	0.08	U	4	YES
CPU-12	M	37	10/2016	02/2021	U	U	U	4	YES
CPU-13	E/O	53	04/2013	10/2014	U	U	U	4	YES
MW-21D	E/O	67	04/2020	10/2021	U	U	U	4	YES
MW-22D	E	61	10/2020	07/2021	U	U	U	4	YES
MW-25D	E/O	53	10/2012	10/2014	U	U	U	4	YES
MW-26D	E/O	52	10/2012	10/2014	U	U	U	4	YES
MW-27D	E/M	44	10/2011	10/2014	U	0.09	U	4	YES
MW-49	E/O	30	10/2012	10/2014	U	U	U	4	YES
Toe Wells									
AMW-42	M	39	10/2009	10/2014	U	U	U	4	YES
MW-31	M	26	10/2008	10/2012	U	U	U	4	YES
MW-35	M	43	10/2015	04/2017	U	0.08	U	4	YES
MW-41	M	45	10/2010	10/2017	U	U	U	4	YES
MW-48	M	31	10/2006	10/2009	U	U	U	4	YES
Troutdale Wells									
AMW-24	M/D	32	10/2018	10/2021	U	U	U	4	YES
MW-33	M/D	35	02/2021	10/2021	U	U	U	4	YES
BENNETT	M	29	10/2019	07/2021	U	U	U	4	YES

Appendix G-2.3 - Remediation Monitoring Analysis
1,2-DICHLOROETHANE (Last 4 Samples)

Well Name	Well Type	Total Number of Datapoints	Date of First of the Most Recent Four Samples	Most Recent Sample Date	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Number of Conc. < Cleanup Goal (5 ug/L)	Remediation Monitoring Phase is Completed ? [a]

NOTES:

[a] The "Remediation Monitoring Phase is Completed" determinations are per EPA Guidance (EPA 2013) based on the most recent four sample data points for each COC. The remediation monitoring phase is completed when the last four sample concentrations are lower than the cleanup level.

* The pumps in wells MW-14C and MW14E were turned off and removed on 10/16/2019; and the pump in well MW-19D was turned off and removed 10/14/2019.

COC = Contaminant of Concern.
E = Extraction well.
E/O = Extraction well with pump turned off; pump is turned on for sampling.
E/M = Extraction well with pump pulled; now sampled as a monitoring well.
EPA = U.S. Environmental Protection Agency.
M = Monitoring well.
M/D = Monitoring well with dedicated pump installed.
U = Analyte not detected above the specified reporting limit.
µg/L = Micrograms per liter.

Appendix G-2.4 - Remediation Monitoring Analysis
1,1,1-TRICHLOROETHANE (Last 4 Samples)

Well Name	Well Type	Total Number of Datapoints	Date of First of the Most Recent Four Samples	Most Recent Sample Date	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Number of Conc. < Cleanup Goal (200 ug/L)	Remediation Monitoring Phase is Completed ? [a]
Closure Monitoring Program Wells									
Upgradient Wells									
AMW-8A	M	39	10/2016	10/2021	U	U	U	4	YES
TCE Source Wells									
AMW-1A	M	66	02/2021	10/2021	0.65	2.5	2.5	4	YES
AMW-1B	M	32	05/2009	10/2021	U	U	U	4	YES
AMW-1C	M	25	01/2008	10/2021	U	U	U	4	YES
AMW-2A	M	69	02/2021	10/2021	U	2.3	2.3	4	YES
AMW-2B	M	37	10/2013	10/2021	U	U	U	4	YES
AMW-3A	M	49	10/2017	07/2021	U	U	U	4	YES
AMW-4A	M	19	10/2020	10/2021	U	U	U	4	YES
AMW-12A	M	68	02/2021	10/2021	0.24	0.63	0.28	4	YES
AMW-13A	M	47	10/2014	10/2021	U	0.11	U	4	YES
AMW-19A	M	45	10/2015	10/2021	U	0.16	0.15	4	YES
AMW-26	M	31	10/2014	10/2021	0.13	1.3	0.74	4	YES
AMW-52A	M	30	10/2014	10/2021	U	U	U	4	YES
AMW-53A	M	53	02/2021	10/2021	0.81	4	0.88	4	YES
AMW-54A	M	30	10/2013	10/2017	U	0.19	0.19	4	YES
AMW-55A	M	23	10/2012	10/2015	U	U	U	4	YES
AMW-56A	M	29	10/2013	10/2017	U	0.23	0.23	4	YES
MW-1A	M	67	02/2021	10/2021	U	U	U	4	YES
MW-1B	M	29	10/2009	10/2021	U	U	U	4	YES
MW-1C	M	22	10/2008	10/2021	U	U	U	4	YES
Proximal Wells									
AMW-58	M	11	10/2010	10/2021	U	U	U	4	YES
MW-2A	M	30	10/2016	10/2021	U	U	U	4	YES
MW-2B	M	21	10/2020	10/2021	U	U	U	4	YES
MW-2C	M	11	10/2009	10/2021	U	U	U	4	YES
MW-3A	M	19	05/2004	10/2008	U	U	U	4	YES
MW-3B	M	17	10/2014	10/2021	U	U	U	4	YES
MW-3C	M	12	10/2018	10/2021	U	U	U	4	YES
MW-4A	M	24	10/2018	10/2021	U	0.15	U	4	YES
MW-4B	M	17	10/2012	10/2021	U	0.11	0.11	4	YES
MW-4BSHED	M	17	10/2009	10/2021	U	0.039	U	4	YES
MW-4C	M	12	10/2017	10/2021	U	U	U	4	YES
MW-6A	M	9	10/2018	10/2021	U	U	U	4	YES
MW-6B	E	54	10/2018	10/2021	0.13	1.8	1.8	4	YES
MW-6C	M	15	10/2018	10/2021	U	U	U	4	YES
MW-6D	M	13	10/2018	10/2021	U	U	U	4	YES
MW-7B	M	11	10/2017	10/2020	U	0.27	0.19	4	YES
MW-7C	M	8	10/2004	10/2021	U	U	U	4	YES

Appendix G-2.4 - Remediation Monitoring Analysis
1,1,1-TRICHLOROETHANE (Last 4 Samples)

Well Name	Well Type	Total Number of Datapoints	Date of First of the Most Recent Four Samples	Most Recent Sample Date	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Number of Conc. < Cleanup Goal (200 ug/L)	Remediation Monitoring Phase is Completed ? [a]
MW-8B	M	17	10/2014	10/2021	U	0.3	0.1	4	YES
MW-9B	M	19	10/2014	10/2021	0.14	0.29	0.14	4	YES
MW-9C	M	15	10/2019	10/2021	U	0.14	U	4	YES
MW-10B	E	58	10/2020	10/2021	U	0.12	0.12	4	YES
MW-10C	E	57	10/2019	10/2021	U	0.12	U	4	YES
MW-12C	M	31	10/2017	10/2021	U	U	U	4	YES
MW-13C	M	35	10/2019	10/2021	U	0.1	U	4	YES
PW-1B	E	65	10/2019	10/2021	U	0.11	0.11	4	YES
Intermediate Wells									
AMW-59	E/O	22	02/2021	10/2021	U	U	U	4	YES
AMW-60	M	9	10/2018	10/2021	U	U	U	4	YES
CPU-14	M	42	10/2020	10/2021	U	0.14	U	4	YES
MW-14C*	E/M	68	02/2021	10/2021	U	0.11	U	4	YES
MW-14E*	E/M	70	02/2021	10/2021	0.08	0.18	0.16	4	YES
MW-15E	M	33	10/2019	10/2021	U	U	U	4	YES
MW-18D	E/M	66	10/2020	07/2021	U	U	U	4	YES
MW-18E	E/O	43	10/2020	07/2021	U	U	U	4	YES
MW-19D*	E/M	66	02/2021	10/2021	U	U	U	4	YES
MW-20D	E	66	02/2021	10/2021	U	0.16	0.1	4	YES
MW-38	M	20	02/2021	10/2021	0.08	0.09	0.09	4	YES
MW-40	M	11	10/2018	10/2021	U	U	U	4	YES
PZ-39	PZ	24	02/2021	10/2021	0.51	0.65	0.65	4	YES
Church of God Wells									
AMW-27	M	54	04/2016	07/2021	U	0.16	U	4	YES
AMW-61	M	18	10/2018	10/2021	U	0.12	0.08	4	YES
CPU-12	M	37	10/2016	02/2021	U	0.12	U	4	YES
CPU-13	E/O	53	04/2013	10/2014	U	U	U	4	YES
MW-21D	E/O	67	04/2020	10/2021	U	0.21	U	4	YES
MW-22D	E	61	10/2020	07/2021	U	U	U	4	YES
MW-25D	E/O	53	10/2012	10/2014	0.11	0.17	0.11	4	YES
MW-26D	E/O	52	10/2012	10/2014	U	U	U	4	YES
MW-27D	E/M	44	10/2011	10/2014	U	0.1	U	4	YES
MW-49	E/O	30	10/2012	10/2014	U	0.09	U	4	YES
Toe Wells									
AMW-42	M	39	10/2009	10/2014	U	0.14	U	4	YES
MW-31	M	26	10/2008	10/2012	U	0.26	U	4	YES
MW-35	M	43	10/2015	04/2017	U	0.12	0.12	4	YES
MW-41	M	45	10/2010	10/2017	U	U	U	4	YES
MW-48	M	31	10/2006	10/2009	U	U	U	4	YES
Troutdale Wells									
AMW-24	M/D	32	10/2018	10/2021	U	0.11	U	4	YES
MW-33	M/D	35	02/2021	10/2021	U	U	U	4	YES
BENNETT	M	29	10/2019	07/2021	U	U	U	4	YES

Appendix G-2.4 - Remediation Monitoring Analysis
1,1,1-TRICHLOROETHANE (Last 4 Samples)

Well Name	Well Type	Total Number of Datapoints	Date of First of the Most Recent Four Samples	Most Recent Sample Date	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Number of Conc. < Cleanup Goal (200 ug/L)	Remediation Monitoring Phase is Completed ? [a]

NOTES:

[a] The "Remediation Monitoring Phase is Completed" determinations are per EPA Guidance (EPA 2013) based on the most recent four sample data points for each COC. The remediation monitoring phase is completed when the last four sample concentrations are lower than the cleanup level.

* The pumps in wells MW-14C and MW14E were turned off and removed on 10/16/2019; and the pump in well MW-19D was turned off and removed 10/14/2019.

COC = Contaminant of Concern.
E = Extraction well.
E/M = Extraction well with pump pulled; now sampled as a monitoring well.
E/O = Extraction well with pump turned off; pump is turned on for sampling.
EPA = U.S. Environmental Protection Agency.
M = Monitoring well.
M/D = Monitoring well with dedicated pump installed.
U = Analyte not detected above the specified reporting limit.
µg/L = Micrograms per liter.

Appendix G-2.5 - Remediation Monitoring Analysis
CARBON TETRACHLORIDE (Last 4 Samples)

Well Name	Well Type	Total Number of Datapoints	Date of First of the Most Recent Four Samples	Most Recent Sample Date	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Number of Conc. < Cleanup Goal (1 ug/L)	Remediation Monitoring Phase is Completed ? [a]
Closure Monitoring Program Wells									
Upgradient Wells									
AMW-8A	M	39	10/2016	10/2021	U	U	U	4	YES
TCE Source Wells									
AMW-1A	M	66	02/2021	10/2021	U	U	U	4	YES
AMW-1B	M	32	05/2009	10/2021	U	U	U	4	YES
AMW-1C	M	25	01/2008	10/2021	U	U	U	4	YES
AMW-2A	M	69	02/2021	10/2021	U	U	U	4	YES
AMW-2B	M	37	10/2013	10/2021	U	U	U	4	YES
AMW-3A	M	49	10/2017	07/2021	U	U	U	4	YES
AMW-4A	M	19	10/2020	10/2021	U	U	U	4	YES
AMW-12A	M	68	02/2021	10/2021	U	U	U	4	YES
AMW-13A	M	47	10/2014	10/2021	U	U	U	4	YES
AMW-19A	M	45	10/2015	10/2021	U	U	U	4	YES
AMW-26	M	31	10/2014	10/2021	U	U	U	4	YES
AMW-52A	M	30	10/2014	10/2021	U	U	U	4	YES
AMW-53A	M	53	02/2021	10/2021	U	U	U	4	YES
AMW-54A	M	30	10/2013	10/2017	U	U	U	4	YES
AMW-55A	M	23	10/2012	10/2015	U	U	U	4	YES
AMW-56A	M	29	10/2013	10/2017	U	U	U	4	YES
MW-1A	M	67	02/2021	10/2021	U	U	U	4	YES
MW-1B	M	29	10/2009	10/2021	U	U	U	4	YES
MW-1C	M	22	10/2008	10/2021	U	U	U	4	YES
Proximal Wells									
AMW-58	M	11	10/2010	10/2021	U	U	U	4	YES
MW-2A	M	30	10/2016	10/2021	U	U	U	4	YES
MW-2B	M	21	10/2020	10/2021	U	U	U	4	YES
MW-2C	M	11	10/2009	10/2021	U	U	U	4	YES
MW-3A	M	19	05/2004	10/2008	U	U	U	4	YES
MW-3B	M	17	10/2014	10/2021	U	U	U	4	YES
MW-3C	M	12	10/2018	10/2021	U	U	U	4	YES
MW-4A	M	24	10/2018	10/2021	U	U	U	4	YES
MW-4B	M	17	10/2012	10/2021	U	U	U	4	YES
MW-4BSHED	M	17	10/2009	10/2021	U	U	U	4	YES
MW-4C	M	12	10/2017	10/2021	U	U	U	4	YES
MW-6A	M	9	10/2018	10/2021	U	U	U	4	YES
MW-6B	E	54	10/2018	10/2021	U	U	U	4	YES
MW-6C	M	15	10/2018	10/2021	U	U	U	4	YES
MW-6D	M	13	10/2018	10/2021	U	U	U	4	YES
MW-7B	M	11	10/2017	10/2020	U	U	U	4	YES
MW-7C	M	8	10/2004	10/2021	U	U	U	4	YES
MW-8B	M	17	10/2014	10/2021	U	U	U	4	YES

Appendix G-2.5 - Remediation Monitoring Analysis
CARBON TETRACHLORIDE (Last 4 Samples)

Well Name	Well Type	Total Number of Datapoints	Date of First of the Most Recent Four Samples	Most Recent Sample Date	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Number of Conc. < Cleanup Goal (1 ug/L)	Remediation Monitoring Phase is Completed ? [a]
MW-9B	M	19	10/2014	10/2021	U	U	U	4	YES
MW-9C	M	15	10/2019	10/2021	U	U	U	4	YES
MW-10B	E	58	10/2020	10/2021	U	U	U	4	YES
MW-10C	E	57	10/2019	10/2021	U	U	U	4	YES
MW-12C	M	31	10/2017	10/2021	U	U	U	4	YES
MW-13C	M	35	10/2019	10/2021	U	U	U	4	YES
PW-1B	E	65	10/2019	10/2021	U	U	U	4	YES
Intermediate Wells									
AMW-59	E/O	22	02/2021	10/2021	U	U	U	4	YES
AMW-60	M	9	10/2018	10/2021	U	U	U	4	YES
CPU-14	M	42	10/2020	10/2021	U	U	U	4	YES
MW-14C*	E/M	68	02/2021	10/2021	U	U	U	4	YES
MW-14E*	E/M	70	02/2021	10/2021	U	U	U	4	YES
MW-15E	M	33	10/2019	10/2021	U	U	U	4	YES
MW-18D	E/M	66	10/2020	07/2021	U	U	U	4	YES
MW-18E	E/O	43	10/2020	07/2021	U	U	U	4	YES
MW-19D*	E/M	66	02/2021	10/2021	U	U	U	4	YES
MW-20D	E	66	02/2021	10/2021	U	U	U	4	YES
MW-38	M	20	02/2021	10/2021	U	U	U	4	YES
MW-40	M	11	10/2018	10/2021	U	U	U	4	YES
PZ-39	PZ	24	02/2021	10/2021	U	U	U	4	YES
Church of God Wells									
AMW-27	M	54	04/2016	07/2021	U	U	U	4	YES
AMW-61	M	18	10/2018	10/2021	U	U	U	4	YES
CPU-12	M	37	10/2016	02/2021	U	U	U	4	YES
CPU-13	E/O	53	04/2013	10/2014	U	U	U	4	YES
MW-21D	E/O	67	04/2020	10/2021	U	U	U	4	YES
MW-22D	E	61	10/2020	07/2021	U	U	U	4	YES
MW-25D	E/O	53	10/2012	10/2014	U	U	U	4	YES
MW-26D	E/O	52	10/2012	10/2014	U	U	U	4	YES
MW-27D	E/M	44	10/2011	10/2014	U	U	U	4	YES
MW-49	E/O	30	10/2012	10/2014	U	U	U	4	YES
Toe Wells									
AMW-42	M	39	10/2009	10/2014	U	U	U	4	YES
MW-31	M	26	10/2008	10/2012	U	U	U	4	YES
MW-35	M	43	10/2015	04/2017	U	U	U	4	YES
MW-41	M	45	10/2010	10/2017	U	U	U	4	YES
MW-48	M	31	10/2006	10/2009	U	U	U	4	YES
Troutdale Wells									
AMW-24	M/D	32	10/2018	10/2021	U	U	U	4	YES
MW-33	M/D	35	02/2021	10/2021	U	U	U	4	YES
BENNETT	M	29	10/2019	07/2021	U	U	U	4	YES

Appendix G-2.5 - Remediation Monitoring Analysis
CARBON TETRACHLORIDE (Last 4 Samples)

Well Name	Well Type	Total Number of Datapoints	Date of First of the Most Recent Four Samples	Most Recent Sample Date	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Number of Conc. < Cleanup Goal (1 ug/L)	Remediation Monitoring Phase is Completed ? [a]

NOTES:

[a] The "Remediation Monitoring Phase is Completed" determinations are per EPA Guidance (EPA 2013) based on the most recent four sample data points for each COC. The remediation monitoring phase is completed when the last four sample concentrations are lower than the cleanup level.

* The pumps in wells MW-14C and MW14E were turned off and removed on 10/16/2019; and the pump in well MW-19D was turned off and removed 10/14/2019.

COC = Contaminant of Concern.
E = Extraction well.
E/M = Extraction well with pump pulled; now sampled as a monitoring well.
E/O = Extraction well with pump turned off; pump is turned on for sampling.
EPA = U.S. Environmental Protection Agency.
M = Monitoring well.
M/D = Monitoring well with dedicated pump installed.
U = Analyte not detected above the specified reporting limit.
µg/L = Micrograms per liter.

Appendix G-2.6 - Remediation Monitoring Analysis
BROMODICHLOROMETHANE (Last 4 Samples)

Well Name	Well Type	Total Number of Datapoints	Date of First of the Most Recent Four Samples	Most Recent Sample Date	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Number of Conc. < Cleanup Goal (1 ug/L)	Remediation Monitoring Phase is Completed ? [a]
Closure Monitoring Program Wells									
Upgradient Wells									
AMW-8A	M	38	10/2016	10/2021	U	U	U	4	YES
TCE Source Wells									
AMW-1A	M	65	02/2021	10/2021	U	U	U	4	YES
AMW-1B	M	32	05/2009	10/2021	U	U	U	4	YES
AMW-1C	M	25	01/2008	10/2021	U	0.25	U	4	YES
AMW-2A	M	68	02/2021	10/2021	U	U	U	4	YES
AMW-2B	M	37	10/2013	10/2021	U	U	U	4	YES
AMW-3A	M	48	10/2017	07/2021	U	0.18	U	4	YES
AMW-4A	M	19	10/2020	10/2021	U	U	U	4	YES
AMW-12A	M	68	02/2021	10/2021	U	U	U	4	YES
AMW-13A	M	46	10/2014	10/2021	U	0.28	U	4	YES
AMW-19A	M	45	10/2015	10/2021	U	0.12	0.1	4	YES
AMW-26	M	31	10/2014	10/2021	U	0.16	U	4	YES
AMW-52A	M	30	10/2014	10/2021	U	0.71	U	4	YES
AMW-53A	M	53	02/2021	10/2021	U	U	U	4	YES
AMW-54A	M	30	10/2013	10/2017	U	U	U	4	YES
AMW-55A	M	23	10/2012	10/2015	U	U	U	4	YES
AMW-56A	M	29	10/2013	10/2017	U	0.24	0.24	4	YES
MW-1A	M	66	02/2021	10/2021	U	U	U	4	YES
MW-1B	M	28	10/2009	10/2021	U	U	U	4	YES
MW-1C	M	22	10/2008	10/2021	U	U	U	4	YES
Proximal Wells									
AMW-58	M	11	10/2010	10/2021	U	U	U	4	YES
MW-2A	M	29	10/2016	10/2021	U	0.65	U	4	YES
MW-2B	M	20	10/2020	10/2021	U	U	U	4	YES
MW-2C	M	11	10/2009	10/2021	U	U	U	4	YES
MW-3A	M	18	05/2004	10/2008	U	U	U	4	YES
MW-3B	M	17	10/2014	10/2021	U	U	U	4	YES
MW-3C	M	12	10/2018	10/2021	U	U	U	4	YES
MW-4A	M	23	10/2018	10/2021	U	U	U	4	YES
MW-4B	M	17	10/2012	10/2021	U	0.1	0.1	4	YES
MW-4BSHED	M	17	10/2009	10/2021	U	0.048	U	4	YES
MW-4C	M	12	10/2017	10/2021	U	U	U	4	YES
MW-6A	M	9	10/2018	10/2021	U	U	U	4	YES
MW-6B	E	53	10/2018	10/2021	U	0.13	0.1	4	YES
MW-6C	M	15	10/2018	10/2021	U	U	U	4	YES
MW-6D	M	13	10/2018	10/2021	U	U	U	4	YES
MW-7B	M	11	10/2017	10/2020	U	0.46	U	4	YES
MW-7C	M	8	10/2004	10/2021	U	U	U	4	YES
MW-8B	M	17	10/2014	10/2021	U	0.56	U	4	YES

Appendix G-2.6 - Remediation Monitoring Analysis
BROMODICHLOROMETHANE (Last 4 Samples)

Well Name	Well Type	Total Number of Datapoints	Date of First of the Most Recent Four Samples	Most Recent Sample Date	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Number of Conc. < Cleanup Goal (1 ug/L)	Remediation Monitoring Phase is Completed ? [a]
MW-9B	M	19	10/2014	10/2021	U	0.1	U	4	YES
MW-9C	M	15	10/2019	10/2021	U	U	U	4	YES
MW-10B	E	57	10/2020	10/2021	U	U	U	4	YES
MW-10C	E	56	10/2019	10/2021	U	0.14	U	4	YES
MW-12C	M	30	10/2017	10/2021	U	U	U	4	YES
MW-13C	M	34	10/2019	10/2021	U	0.32	U	4	YES
PW-1B	E	64	10/2019	10/2021	U	U	U	4	YES
Intermediate Wells									
AMW-59	E/O	22	02/2021	10/2021	U	U	U	4	YES
AMW-60	M	9	10/2018	10/2021	U	U	U	4	YES
CPU-14	M	41	10/2020	10/2021	U	U	U	4	YES
MW-14C*	E/M	67	02/2021	10/2021	U	0.31	U	4	YES
MW-14E*	E/M	69	02/2021	10/2021	U	U	U	4	YES
MW-15E	M	33	10/2019	10/2021	U	U	U	4	YES
MW-18D*	E/M	66	10/2020	07/2021	U	0.12	U	4	YES
MW-18E	E/O	42	10/2020	07/2021	U	U	U	4	YES
MW-19D	E/M	66	02/2021	10/2021	U	U	U	4	YES
MW-20D	E	66	02/2021	10/2021	U	0.2	U	4	YES
MW-38	M	20	02/2021	10/2021	U	U	U	4	YES
MW-40	M	11	10/2018	10/2021	U	0.54	0.54	4	YES
PZ-39	PZ	24	02/2021	10/2021	U	U	U	4	YES
Church of God Wells									
AMW-27	M	53	04/2016	07/2021	U	U	U	4	YES
AMW-61	M	18	10/2018	10/2021	U	U	U	4	YES
CPU-12	M	36	10/2016	02/2021	U	0.03	U	4	YES
CPU-13	E/O	52	04/2013	10/2014	U	0.1	U	4	YES
MW-21D	E/O	66	04/2020	10/2021	U	U	U	4	YES
MW-22D	E	60	10/2020	07/2021	U	U	U	4	YES
MW-25D	E/O	52	10/2012	10/2014	U	U	U	4	YES
MW-26D	E/O	51	10/2012	10/2014	U	U	U	4	YES
MW-27D	E/M	43	10/2011	10/2014	U	U	U	4	YES
MW-49	E/O	30	10/2012	10/2014	U	U	U	4	YES
Toe Wells									
AMW-42	M	38	10/2009	10/2014	U	U	U	4	YES
MW-31	M	25	10/2008	10/2012	U	U	U	4	YES
MW-35	M	42	10/2015	04/2017	U	U	U	4	YES
MW-41	M	44	10/2010	10/2017	U	U	U	4	YES
MW-48	M	30	10/2006	10/2009	U	U	U	4	YES
Troutdale Wells									
AMW-24	M/D	31	10/2018	10/2021	U	U	U	4	YES
MW-33	M/D	34	02/2021	10/2021	U	U	U	4	YES
BENNETT	M	29	10/2019	07/2021	U	U	U	4	YES

Appendix G-2.6 - Remediation Monitoring Analysis
BROMODICHLOROMETHANE (Last 4 Samples)

Well Name	Well Type	Total Number of Datapoints	Date of First of the Most Recent Four Samples	Most Recent Sample Date	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Number of Conc. < Cleanup Goal (1 ug/L)	Remediation Monitoring Phase is Completed ? [a]

NOTES:

[a] The "Remediation Monitoring Phase is Completed" determinations are per EPA Guidance (EPA 2013) based on the most recent four sample data points for each COC. The remediation monitoring phase is completed when the last four sample concentrations are lower than the cleanup level.

* The pumps in wells MW-14C and MW14E were turned off and removed on 10/16/2019; and the pump in well MW-19D was turned off and removed 10/14/2019.

COC = Contaminant of Concern.
E = Extraction well.
E/M = Extraction well with pump pulled; now sampled as a monitoring well.
E/O = Extraction well with pump turned off; pump is turned on for sampling.
EPA = U.S. Environmental Protection Agency.
M = Monitoring well.
M/D = Monitoring well with dedicated pump installed.
U = Analyte not detected above the specified reporting limit.
µg/L = Micrograms per liter.

Appendix G-2.7 - Remediation Monitoring Analysis
TETRACHLOROETHENE (Last 4 Samples)

Well Name	Well Type	Total Number of Datapoints	Date of First of the Most Recent Four Samples	Most Recent Sample Date	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Number of Conc. < Cleanup Goal (5 ug/L)	Remediation Monitoring Phase is Completed ? [a]
Closure Monitoring Program Wells									
Upgradient Wells									
AMW-8A	M	39	10/2016	10/2021	U	0.025	U	4	YES
TCE Source Wells									
AMW-1A	M	66	02/2021	10/2021	0.2	0.82	0.38	4	YES
AMW-1B	M	32	05/2009	10/2021	U	U	U	4	YES
AMW-1C	M	25	01/2008	10/2021	U	U	U	4	YES
AMW-2A	M	69	02/2021	10/2021	0.86	1.1	1.1	4	YES
AMW-2B	M	37	10/2013	10/2021	U	U	U	4	YES
AMW-3A	M	49	10/2017	07/2021	0.3	0.51	0.49	4	YES
AMW-4A	M	19	10/2020	10/2021	U	U	U	4	YES
AMW-12A	M	68	02/2021	10/2021	0.34	0.47	0.34	4	YES
AMW-13A	M	47	10/2014	10/2021	U	0.11	U	4	YES
AMW-19A	M	45	10/2015	10/2021	0.29	0.33	0.29	4	YES
AMW-26	M	31	10/2014	10/2021	0.1	0.42	0.38	4	YES
AMW-52A	M	30	10/2014	10/2021	U	0.12	U	4	YES
AMW-53A	M	53	02/2021	10/2021	0.43	1.3	0.88	4	YES
AMW-54A	M	30	10/2013	10/2017	0.14	0.4	0.16	4	YES
AMW-55A	M	23	10/2012	10/2015	0.21	0.34	0.34	4	YES
AMW-56A	M	29	10/2013	10/2017	0.43	0.61	0.43	4	YES
MW-1A	M	67	02/2021	10/2021	U	U	U	4	YES
MW-1B	M	29	10/2009	10/2021	U	U	U	4	YES
MW-1C	M	22	10/2008	10/2021	U	U	U	4	YES
Proximal Wells									
AMW-58	M	11	10/2010	10/2021	U	U	U	4	YES
MW-2A	M	30	10/2016	10/2021	0.35	1.1	0.35	4	YES
MW-2B	M	21	10/2020	10/2021	0.29	0.41	0.29	4	YES
MW-2C	M	11	10/2009	10/2021	U	0.29	U	4	YES
MW-3A	M	19	05/2004	10/2008	0.21	0.4	0.21	4	YES
MW-3B	M	17	10/2014	10/2021	0.45	0.67	0.45	4	YES
MW-3C	M	12	10/2018	10/2021	U	0.39	0.39	4	YES
MW-4A	M	24	10/2018	10/2021	0.44	0.6	0.6	4	YES
MW-4B	M	17	10/2012	10/2021	0.49	0.64	0.49	4	YES
MW-4BSHED	M	17	10/2009	10/2021	0.51	1.4	0.56	4	YES
MW-4C	M	12	10/2017	10/2021	0.33	0.36	0.36	4	YES
MW-6A	M	9	10/2018	10/2021	U	U	U	4	YES
MW-6B	E	60	10/2018	10/2021	0.35	0.46	0.46	4	YES
MW-6C	M	15	10/2018	10/2021	U	0.11	U	4	YES
MW-6D	M	13	10/2018	10/2021	U	U	U	4	YES
MW-7B	M	11	10/2017	10/2020	0.39	0.63	0.63	4	YES
MW-7C	M	8	10/2004	10/2021	U	0.28	U	4	YES
MW-8B	M	17	10/2014	10/2021	0.43	0.81	0.43	4	YES

Appendix G-2.7 - Remediation Monitoring Analysis
TETRACHLOROETHENE (Last 4 Samples)

Well Name	Well Type	Total Number of Datapoints	Date of First of the Most Recent Four Samples	Most Recent Sample Date	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Number of Conc. < Cleanup Goal (5 ug/L)	Remediation Monitoring Phase is Completed ? [a]
MW-9B	M	19	10/2014	10/2021	0.53	1.2	0.53	4	YES
MW-9C	M	15	10/2019	10/2021	0.16	0.6	0.16	4	YES
MW-10B	E	64	10/2020	10/2021	0.25	0.71	0.25	4	YES
MW-10C	E	63	10/2019	10/2021	0.38	0.49	0.38	4	YES
MW-12C	M	31	10/2017	10/2021	0.25	0.33	0.25	4	YES
MW-13C	M	35	10/2019	10/2021	0.63	0.91	0.63	4	YES
PW-1B	E	89	10/2019	10/2021	0.29	0.58	0.52	4	YES
Intermediate Wells									
AMW-59	E/O	22	02/2021	10/2021	U	U	U	4	YES
AMW-60	M	9	10/2018	10/2021	U	U	U	4	YES
CPU-14	M	42	10/2020	10/2021	U	0.1	U	4	YES
MW-14C*	E/M	79	02/2021	10/2021	0.58	0.71	0.58	4	YES
MW-14E*	E/M	77	02/2021	10/2021	2.4	3.3	3.3	4	YES
MW-15E	M	33	10/2019	10/2021	0.26	0.35	0.29	4	YES
MW-18D	E/M	87	10/2020	07/2021	0.48	0.61	0.56	4	YES
MW-18E	E/O	43	10/2020	07/2021	U	U	U	4	YES
MW-19D*	E/M	87	02/2021	10/2021	1	1.3	1.1	4	YES
MW-20D	E	90	02/2021	10/2021	0.6	1.2	1.2	4	YES
MW-38	M	20	02/2021	10/2021	0.51	0.9	0.84	4	YES
MW-40	M	11	10/2018	10/2021	U	U	U	4	YES
PZ-39	PZ	24	02/2021	10/2021	0.62	0.91	0.91	4	YES
Church of God Wells									
AMW-27	M	54	04/2016	07/2021	0.39	1.1	0.39	4	YES
AMW-61	M	18	10/2018	10/2021	1.9	2.2	2	4	YES
CPU-12	M	37	10/2016	02/2021	U	U	U	4	YES
CPU-13	E/O	59	04/2013	10/2014	0.68	0.87	0.87	4	YES
MW-21D	E/O	91	04/2020	10/2021	U	U	U	4	YES
MW-22D	E	84	10/2020	07/2021	1.3	1.9	1.9	4	YES
MW-25D	E/O	77	10/2012	10/2014	U	U	U	4	YES
MW-26D	E/O	76	10/2012	10/2014	0.2	0.86	0.2	4	YES
MW-27D	E/M	50	10/2011	10/2014	U	U	U	4	YES
MW-49	E/O	35	10/2012	10/2014	0.27	0.49	0.49	4	YES
Toe Wells									
AMW-42	M	52	10/2009	10/2014	U	U	U	4	YES
MW-31	M	40	10/2008	10/2012	U	0.19	0.12	4	YES
MW-35	M	70	10/2015	04/2017	0.41	0.51	0.41	4	YES
MW-41	M	58	10/2010	10/2017	U	U	U	4	YES
MW-48	M	38	10/2006	10/2009	U	U	U	4	YES
Troutdale Wells									
AMW-24	M/D	33	10/2018	10/2021	U	0.1	U	4	YES
MW-33	M/D	36	02/2021	10/2021	U	U	U	4	YES
BENNETT	M	29	10/2019	07/2021	U	U	U	4	YES

Appendix G-2.7 - Remediation Monitoring Analysis
TETRACHLOROETHENE (Last 4 Samples)

Well Name	Well Type	Total Number of Datapoints	Date of First of the Most Recent Four Samples	Most Recent Sample Date	Min. Conc. (ug/L)	Max. Conc. (ug/L)	Most Recent Conc. (ug/L)	Number of Conc. < Cleanup Goal (5 ug/L)	Remediation Monitoring Phase is Completed ? [a]

NOTES:

[a] The "Remediation Monitoring Phase is Completed" determinations are per EPA Guidance (EPA 2013) based on the most recent four sample data points for each COC. The remediation monitoring phase is completed when the last four sample concentrations are lower than the cleanup level.

* The pumps in wells MW-14C and MW14E were turned off and removed on 10/16/2019; and the pump in well MW-19D was turned off and removed 10/14/2019.

COC = Contaminant of Concern.
E = Extraction well.
E/M = Extraction well with pump pulled; now sampled as a monitoring well.
E/O = Extraction well with pump turned off; pump is turned on for sampling.
EPA = U.S. Environmental Protection Agency.
M = Monitoring well.
M/D = Monitoring well with dedicated pump installed.
U = Analyte not detected above the specified reporting limit.
µg/L = Micrograms per liter.

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Appendix H

Northern Plume Monitoring Summary

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APPENDIX H
NORTHERN PLUME MONITORING SUMMARY

1. INTRODUCTION

This summary presents the analytical results from the latest round of sampling of monitoring wells in the area of the Northern Plume. This plume is north of the Boomsnub/Airco Superfund Site (Site) Operable Unit (OU)-3 trichloroethene (TCE) and chromium plumes, which are referred to collectively as the OU-3 plume. Previous sampling results for wells in the Northern Plume area were reported in *Appendix H of Annual Status Reports for the Boomsnub/Airco Superfund Site* [1]. Northern Plume monitoring well locations are shown on Figure H-1.

Monitoring data indicate that the OU-3 TCE and chromium plumes had shown significant decreases in concentration and size since 1995[1]. In 2007 and 2008, however, routine monitoring data showed an unexpected increase in the TCE concentration in groundwater samples from well AMW-18, located north of the boundary of the OU-3 plume.

In May 2008, a direct push drilling and sampling investigation was performed to evaluate the depth and concentration of TCE in groundwater in the vicinity of well AMW-18, and to evaluate possible source areas for the TCE detected in this well. The source of the TCE groundwater contamination in this area was not identified; however, based on the data, it was concluded that the source was not from the same source as the OU-3 plume[2]. The Work Plan[3] for this investigation noted that an offsite source of TCE originating from the Permalume property immediately east and upgradient of the Messer gas plant property impacted monitoring well AMW-8A, which is located at the eastern boundary of the Messer Property and is approximately 700 feet northeast of the Boomsnub/Airco Site TCE Source Area. AMW-8A and the Permalume property are located upgradient of Northern Plume well AMW-18, and the results of the AMW-18 Area Investigation support a finding of the Permalume property as the source of the Northern Plume.

Well AMW-17 is located approximately 400 feet downgradient of well AMW-18. TCE concentrations in this well had been below the Site-specific cleanup level of 5 micrograms per liter (µg/L) since 1999. However, in Fall 2010, TCE in groundwater from this well increased to a concentration exceeding the cleanup level, indicating the apparent arrival of the Northern Plume at the AMW-17 location.

The U.S. Environmental Protection Agency (EPA) and Messer LLC (Messer), formerly Linde LLC (Linde) performed a joint investigation of the Northern Plume area in May 2011 to get a better understanding of the source, extent, and concentrations of volatile organic compounds (VOCs) in this plume. Results were provided in a separate report[4]. The report concluded that the Northern Plume contamination is not the result of actions by Messer or its predecessors.

[1] 2020 *Annual Status Report for the Boomsnub/Airco Superfund Site,* Revision 0. March 2021.
[2] *AMW-18 Area Investigation Report, Boomsnub/Airco Superfund Site*. Revision 0. August 2008.
[3] *Work Plan, AMW-18 Area Investigation, Boomsnub/Airco Superfund Site,* Revision 0. April 2008.
[4] *Northern Plume Investigation Report, Hazel Dell, Washington*. Revision 1. December 2011.

Therefore, EPA is leading efforts to characterize and remediate the Northern Plume.

A new monitoring well (AMW-64) was installed in February 2012, at the request of the EPA, to monitor the Northern Plume northwest of well AMW-17. Analytical results for groundwater samples collected from this well shortly after installation indicated TCE concentrations above the Site cleanup level.

Well MW-38 is located approximately 400 feet west-southwest (generally downgradient) of well AMW-17. Well MW-38 was installed as part of a groundwater treatment pilot study in 1998; this well has not been sampled historically as part of the OU-3 monitoring. However, beginning in October 2010, EPA requested that Messer sample well MW-38 as part of the Northern Plume investigation/monitoring. TCE concentrations detected in groundwater samples from well MW-38 during October 2010 through October 2012 were above the Site-specific cleanup level, but on a decreasing trend (based on four groundwater samples). However, in October 2013, the TCE concentration increased approximately one order of magnitude, indicating the apparent arrival of the Northern Plume at well MW-38.

Well AMW-16 is located approximately 600 feet west-northwest (downgradient) of well AMW-17. Well AMW-16 is located near the northern edge of the historic OU-3 TCE plume. TCE concentrations in groundwater from this well had been on a decreasing trend since the well was first sampled in 1995. TCE concentrations had been below the Site-specific cleanup level since 2005. However, in Spring 2014, TCE in groundwater from this well increased to a concentration exceeding the cleanup level, indicating the apparent arrival of the Northern Plume at the AMW-16 location.

Well MW-23D is located approximately 500 feet west-northwest (downgradient) of well AMW-16. Well MW-23D is located near the northern edge of the historic OU-3 TCE plume. TCE concentrations in groundwater from this well had been on a decreasing trend since the late 1990s. TCE concentrations had been below the Site-specific cleanup level since 2006. However, during the Fall 2015 sampling event, TCE in groundwater from this well increased to a concentration exceeding the cleanup level, indicating the apparent arrival of the Northern Plume at the MW-23D location. AMW-23 is the next well downgradient from MW-23D, located approximately 1,300 feet northwest of MW-23D. Concentrations of TCE in this well were below the cleanup level for TCE until October 2018, when the measured concentration was 8 µg/L. The TCE concentration in this well was below the cleanup level again in 2019 and 2020.

Well MW-21D is located approximately 200 feet south of well MW-23D. TCE concentrations in groundwater from this were on a decreasing trend from 1995 to 2017, with concentrations dropping below the 5 µg/L MCL in 2013. In 2018, concentrations began rising above the MCL, indicating the arrival of the Northern Plume at the MW-21D location.

The Northern Plume continues to be monitored along with the OU-3 plume to evaluate potential impacts to the Site and treatment system. Wells AMW-16, AMW-17, AMW-18, AMW-64, MW-21D, MW-23D, and MW-38 are currently being sampled using passive diffusion bag samplers.

Well construction details, along with water level measurements during the Fall 2021 sampling event, are summarized in Table H-1. Water levels measured during Fall 2021 were approximately 1½ to 2½ feet lower than those measured during Fall 2020.

2. ANALYTICAL RESULTS

A summary of the VOCs detected in Fall (October) 2021 Northern Plume area monitoring well groundwater samples is provided in Table H-2. Five of the six Northern Plume impacted monitoring wells (AMW-16, AMW-17, AMW-18, AMW-64, and MW-23D) and two wells potentially impacted by the Northern Plume (MW-38 and MW-21D) were sampled during the 2021 reporting period. TCE concentrations exceeded the Site-specific cleanup level of 5 µg/L in groundwater samples from all five of the Northern Plume impacted monitoring wells (AMW-16, AMW-17, AMW-18, AMW-64, and MW-23D) in 2021.

MW-38 and MW-21D both experienced rising TCE values between 2017 and 2019, and then decreasing TCE values between 2019 and 2020. Given their location at the edge of the Northern Plume, it was determined that incursion of the Northern Plume into these wells was the logical and most-probable cause of the observed trends, and after discussion with the EPA these wells were moved into the Northern Plume monitoring program in October 2020. Well MW-38 was positively affected by upgradient injection of an in-situ treatment intended to address the Boomsnub OU-3 plume, for a limited time in 2020 and early 2021. TCE concentrations have since rebounded in this plume overlap area. In-situ treatments and MW-38 are discussed in greater detail in Section 3.3.5 of the 2021 Annual Status Report. TCE concentrations in well MW-21D remained below the cleanup level in 2021. Reduction of TCE below the MCL at MW-21D is potentially due to the cessation of active pumping in MW-22D, which may have been "pulling" the Northern Plume towards MW-21D.

Historical VOC analytical results for Northern Plume wells and wells potentially impacted by the Northern Plume are summarized in Tables H-3 (AMW-16), H-4 (AMW-17), H-5 (AMW-18), H-6 (AMW-23), H-7 (AMW-64), H-8 (MW-21D), H-9 (MW-23D), and H-10 (MW-38). The Fall 2021 TCE results for the seven wells sampled are also indicated on Figure H-1. No quality assurance/quality control issues were noted which would impact the analytical results.

2.1 Well AMW-16

TCE was detected at a concentration of 23 µg/L in the groundwater sample collected from well AMW-16 in Fall 2020. A similar concentration (22 µg/L) was reported in Spring 2021 and then a slight increase to a concentration of 27 µg/L during the Fall 2021 sampling event (Table H-3). 1,1,1-Trichloroethane (TCA) and 1,1-dichloroethene (DCE) were the other VOCs detected, but at concentrations below the cleanup levels.

2.2 Well AMW-17

TCE was detected at a concentration of 42 µg/L in the groundwater sample collected from well AMW-17 in Fall 2021 (Table H-4). This is a decrease from the concentrations detected in Spring 2021 (46 µg/L) and Fall 2020 (55 µg/L). Tetrachloroethane (PCE) and 1,1,1-TCA were the other VOCs detected, but at concentrations below the cleanup level.

2.3 Well AMW-18

TCE concentrations in groundwater collected from well AMW-18 dropped below the cleanup level (5 µg/L) in Fall 2018 (Table H-5), for the first time since it exceeded the cleanup level in Fall 2006. TCE concentrations were above the cleanup level in Fall 2019 (18 µg/L) and remained above the cleanup level during Spring 2021 (17 µg/L) and Fall 2021 (16 µg/L). No other VOCs were detected in Fall 2021.

2.4 Well AMW-23

Concentrations in well AMW-23 exceeded the cleanup level for TCE for the first time in October 2018 at 8 µg/L, potentially indicating the arrival of the Northern Plume. Well AMW-23 had TCE concentrations below the cleanup level and near or below the detection limit in Spring and Fall 2019 and in Fall 2020. AMW-23 was not sampled in 2021.

2.5 Well AMW-64

TCE was detected at a concentration of 13 µg/L in the groundwater sample collected from well AMW-64 in Spring 2018, significantly increased to a concentration of 71 µg/L in Fall 2018, then significantly decreased to 9.9 µg/L in Fall 2019 and 7.1 µg/L in Fall 2020 (Table H-7). The reported concentration in Fall 2021 was similar, at 9.3 µg/L. Historically, concentrations in this well have steadily decreased. Cis-1,2-DCE and 1,1,1-TCA were the other VOCs detected, but at concentrations below the cleanup levels.

2.6 Well MW-21D

TCE was detected at a concentration of 16 µg/L in the groundwater sample collected from well MW-21D in in October 2018, potentially indicating influence of the Northern Plume in this well. TCE concentrations remained above the cleanup level in 2019 (15 µg/L and 9.1 µg/L) and Spring 2020 (7.1 µg/L) but decreased to 0.031 J µg/L in the groundwater sample collected in Fall 2020 and remained below the cleanup level in Spring and Fall 2021 at 1.5 µg/L (Table H-8). No other VOCs were detected in Fall 2021.

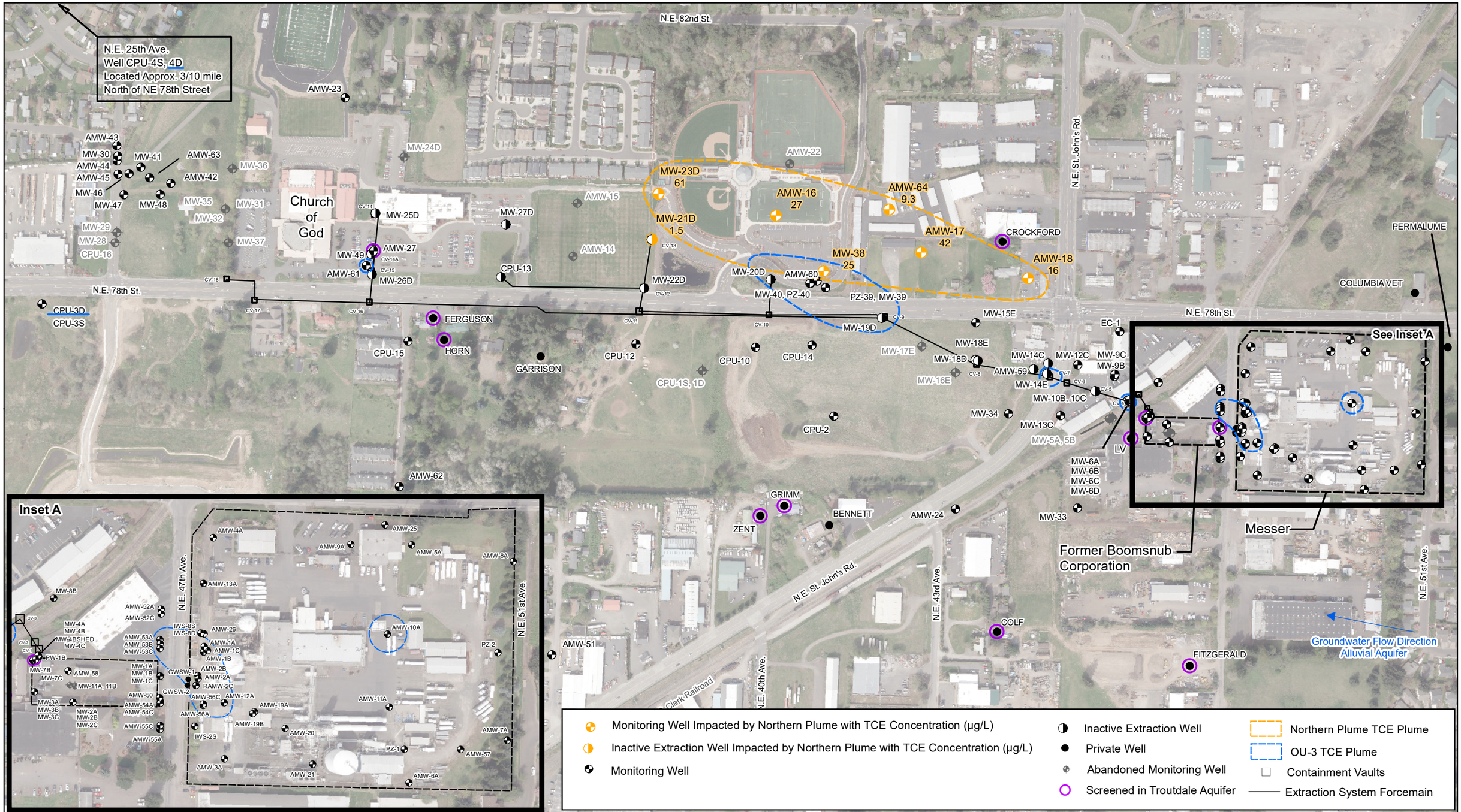
2.7 Well MW-23D

TCE was detected at a concentration of 61 µg/L in the groundwater sample collected from well MW-23D in Fall 2021 (Table H-9). This is a decrease from the concentration detected in Fall 2020 (83 µg/L). 1,1-DCE, 1,1,1-TCA, and cis-1,2-DCE were the other VOC detected, but at concentrations below the cleanup levels.

2.8 Well MW-38

TCE was detected at a concentration of 25 µg/L in the groundwater sample collected from well MW-38 in Fall 2021 (Table H-10). This is an increase from the concentration detected in Fall 2020 (12 µg/L). In 2021, concentrations of TCE were above the cleanup level in each of the

quarterly sampling events. 1,1-DCE, PCE, 1,1,1-TCA, and CFC-11 were the other VOC detected, but at concentrations below the cleanup levels.



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File Name: Fig_H1_10.7

FIGURE H-1
NORTHERN PLUME MONITORING WELL LOCATIONS AND TRICHLOROETHENE

Table H-1. Summary of Water Level Gauging Data and Groundwater Surface Elevations – Fall 2020

Well ID	Well Type	Total Depth (ft btoc)	Screened Interval (ft btoc)	Screen Length (ft)	PDB Sampler Interval (ft btoc)	TOC Elevation (ft MSL)	Depth to Water (ft btoc)	Groundwater Surface Elevation (ft MSL)
AMW-16	M	92.13	81.13 – 91.13	10	81.13 – 91.13	266.11	19.79	246.32
AMW-17	M/D	90.55	81 – 91	10	79.55 – 89.38	260.42	12.03	248.22
AMW-18	M	103.65	92.65 – 102.65	10	92.65 -102.65	278.80	29.32	249.48
AMW-23	M	85	75 – 85	10	79 – 81.06	278.26	39.60	238.66
AMW-64	M	98.7	88.4 – 98.4	10	92.9 – 94.9	266.13	18.51	247.62
MW-23D	M	88.06	71.86 – 86.86	15	71.86 – 86.86	265.33	21.09	244.24
MW-21D	M	75.4	64.4 – 74.4	10	64.4 – 74.40	265.98	20.54	245.44
MW-38	M	81.92	76.92 – 81.92	5	78 – 80	263.92	16.68	247.24

NOTES:

btoc	=	Below top of casing
ft	=	Feet
E	=	Extraction Well
M	=	Monitoring well
M/D	=	Monitoring well with dedicated pump
MSL	=	Mean sea level
NA	=	Not applicable
PDB	=	Passive diffusion bag
TOC	=	Top of casing

Wells that are shaded are potentially impacted by the Northern Plume.
Groundwater surface elevation is determined by subtracting the depth to water from the top-of-casing elevation.

Table H-2. Volatile Organic Compounds Detected in Groundwater Samples (in µg/L) Fall 2021

Well ID	Date Sampled	TCE	PCE	1,1,1-TCA	1,1-DCE	Cis-1,2-DCE	CFC-11
AMW-16	Fall 2021	**27**	0.5 U	0.25 J	0.21 J	0.5 U	0.5 U
AMW-17	Fall 2021	**42**	0.23 J	0.08 J	0.5 U	0.5 U	0.5 U
AMW-18	Fall 2021	**16**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
AMW-64	Fall 2021	**9.3**	0.5 U	0.10 J	0.5 U	0.07 J	0.5 U
MW-21D	Fall 2021	2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-23D	Fall 2021	**61**	0.5 U	0.44 J	0.80	0.27 J	0.5 U
MW-38	Fall 2021	**25**	0.84	0.09 J	0.08 J	0.5 U	0.17 J
Cleanup Level		5	5	200	1	70	2400

NOTES:
Only detected compounds are shown.
Results shown in **blue bold** exceed the Boomsnub/Airco Site-specific cleanup level.
CFC-11 = Trichlorofluoromethane
cis-1,2-DCE = cis-1,2-Dichloroethene
1,1-DCE = 1,1-Dichloroethene
J = The result is an estimated concentration that is less than the method reporting limit but greater than or equal to the method detection limit.
PCE = Tetrachloroethene
1,1,1-TCA = 1,1,1-Trichloroethane
TCE = Trichloroethene
U = The analyte was not detected above the specified reporting limit.
µg/L = Micrograms per liter

Table H-3. Historical VOC Concentrations in Well AMW-16 Groundwater Samples (in µg/L)

Date Sampled	TCE	PCE	1,1,1-TCA	1,1-DCE	Cis-1,2-DCE	CFC-11
Apr-95	**87**	1 U	7.7	**16.6**	23.4	365 J
Oct-95	**68.7**	1 U	7.2	**16.8**	29.5	345 J
May-96	**73.8**	1 U	5.8	**12.2**	24.5	243
Oct-96	**65.2**	1 U	5	**8.8**	29.5	70.7
May-97	**50.4**	1 U	3.1	**4.8**	29.2	88.6 J
Oct-97	**52**	0.4 U	2	0.4 U	--	50
May-98	**47**	0.6 U	2 U	**2**	15	20
Sep-98	**37**	0.6 UJ	2 U	**3**	14	14
May-00	**31**	0.5 U	3.5	**1.8**	4.5	15
Oct-00	**23**	0.5 U	2.3	**1.4**	2.9	6.4
Oct-01	**13**	0.5 U	2.4	0.99	0.84	1.3
Oct-02	**9**	0.5 U	1.2	0.97	0.56	0.58
Oct-03	**7**	0.5 U	0.69	0.91	0.59	0.53
Oct-04	**5.1**	0.5 U	0.63	0.64	0.5	0.29 J
Oct-05	5	0.5 U	0.38 J	0.49 J	0.52	0.33 J
Oct-06	3.6	0.5 U	0.17 J	0.38 J	0.36 J	0.26 J
Oct-07	2.7	0.5 U	0.12 J	0.26 J	0.31 J	0.5 U
Oct-08	2.7	0.5 U	0.1 J	0.22 J	0.27 J	0.12 J
Oct-09	2.2	0.5 U	0.09 J	0.25 J	0.23 J	0.23 J
Oct-10	1.7	0.5 U	0.5 U	0.5 U	0.19 J	0.5 U
Oct-11	1.6	0.5 U	0.13 J	0.14 J	0.12 J	0.5 U
Apr-12	0.17 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Oct-12	1.8	0.5 U	2.2	0.66	0.23 J	0.5 U
Apr-13	2	0.5 U	2.8	**1.4**	0.16 J	0.5 U
Oct-13	4.4	0.5 U	1.9	**2**	0.15 J	0.5 U
Apr-14	**27**	0.5 U	1.1	**1.2**	0.11 J	0.5 U
Oct-14	**72**	0.5 U	1.1	**1.3**	0.15 J	0.5 U
Apr-15	**94**	0.5 U	0.53	0.85	0.11 J	0.5 U
Oct-15	**80**	0.5 U	0.34 J	0.65	0.12 J	0.5 U
Apr-16	**71**	0.5 U	0.20 J	0.47 J	0.1 J	0.5 U
Oct-16	**67**	0.5 U	0.19 J	0.48 J	0.08 J	0.5 U
Apr-17	**53**	0.5 U	0.16 J	0.43 J	0.09 J	0.5 U
Oct-17	**41**	0.083 J	0.15 J	0.36 J	0.5 U	0.5 U
Apr-18	**45**	0.5 U	0.12 J	0.35 J	0.07 J	0.5 U
Oct-18	**13**	0.5 U	0.5 U	0.5 U	0.17 J	0.5 U
Apr-19	**39**	0.5 U	0.23 J	0.35 J	0.12 J	0.5 U
Oct-19	**36**	0.5 U	0.19 J	0.35 J	0.09 J	0.5 U
Oct-20	**23**	0.5 U	0.29 J	0.22 J	0.5 U	0.5 U

Table H-3. Historical VOC Concentrations in Well AMW-16 Groundwater Samples (in µg/L)

Date Sampled	TCE	PCE	1,1,1-TCA	1,1-DCE	Cis-1,2-DCE	CFC-11
Apr-21	**22**	0.11 J	0.21 J	0.20 J	0.10 J	0.5 U
Oct-21	**27**	0.5 U	0.25 J	0.21 J	0.5 U	0.5 U
Cleanup Level	5	5	200	1	70	2,400

NOTES:

Only detected compounds are included in this table.

Results shown in **blue bold** exceed the Boomsnub/Airco Site-specific cleanup level.

Concentrations presented are the highest of the sample and duplicate results, where applicable.

-- = Not available

CFC-11 = Trichlorofluoromethane

cis-1,2-DCE = cis-1,2-Dichloroethene

1,1-DCE = 1,1-Dichloroethene

J = The result is an estimated concentration that is less than the method reporting limit but greater than or equal to the method detection limit.

PCE = Tetrachloroethene

1,1,1-TCA = 1,1,1-Trichloroethane

TCE = Trichloroethene

U = The analyte was not detected above the specified reporting limit.

UJ = The analyte was not detected, but the associated limit of quantitation is estimated.

µg/L = Micrograms per liter

VOC = Volatile organic compound

Table H-4. Historical VOC Concentrations in Well AMW-17 Groundwater Samples (in µg/L)

Date Sampled	TCE	PCE	1,1,1-TCA	1,1-DCE	Cis-1,2-DCE	CFC-11
Apr-95	**66.9**	1 U	5.8	**1.6 J**	21	10.6
Oct-95	**42.5**	1 U	36.1	**5.4**	12.7	19.2 J
May-96	**39.6**	1 U	52.6	**9.7**	9.2	10.1
Oct-96	**20.5**	1 U	169	**25.9**	3.5	19.7
May-97	**17.3**	1 U	89.6	**23.8**	2.1	23.3
Oct. 97	**12**	0.4 U	67	**9**	--	14
May-98	**7**	0.6 U	48	**9**	0.7 U	9
Sep-98	**8**	0.6 U	52	**9**	0.7 U	6
May-99	**5**	0.6 UJ	12 J	**8.0 J**	0.7 UJ	5 J
Oct-99	3.4	0.5 U	3	**1.2**	0.5 U	0.5
Oct-01	2.7	0.5 U	4.2	**1.8**	0.39 J	0.52
Oct-02	2.3	0.5 U	2.2	0.74	0.22 J	0.35 J
Oct-03	2.2	0.5 U	1.1	0.45 J	0.12 J	0.25 J
Oct-04	1.8	0.5 U	0.9	0.32 J	0.5 U	0.19 J
Oct-05	1.9	0.5 U	0.85	0.29 J	0.5 U	0.5 U
Oct-06	1.5	0.5 U	0.69	0.23 J	0.5 U	0.5 U
Oct-07	1.5	0.5 U	1.1	0.5 U	0.5 U	0.5 U
Oct-08	1.2	0.09 J	0.2 J	0.5 U	0.5 U	0.5 U
Jan-09	1.1	0.09 J	0.17 J	0.5 U	0.5 U	0.5 U
May-09	1.3	0.08 J	0.31 J	0.13 J	0.5 U	0.5 U
Oct-09	1.2	0.07 J	0.8	0.22 J	0.5 U	0.5 U
Apr-10	1.1	0.09 J	1	0.33 J	0.5 U	0.5 U
Oct-10	**28**	0.21 J	2.6	**1.4**	0.5 U	0.5 U
Apr-11	**29**	0.27 J	1.3	0.89	0.5 U	0.5 U
Oct-11	**140**	0.68	2.3	1	0.5 U	0.5 U
Mar-12	**160**	0.81	1.5	0.82	0.5 U	0.5 U
Apr-12	**160**	0.85	1.3	0.76	0.5 U	0.5 U
Jul-12	**210**	1	2.3	**1.1**	0.5 U	0.5 U
Oct-12	**210**	0.90	2.5	**1.2**	0.5 U	0.5 U
Jan-13	**220**	0.87	1.8	**1.1**	0.5 U	0.5 U
Apr-13	**240**	0.83	2	1	0.5 U	0.5 U
Jul-13	**230**	0.82	2	0.94	0.5 U	0.5 U
Oct-13	**180**	0.59	1.4	0.69	0.5 U	0.5 U
Jan-14	**180**	0.54	0.97	0.55	0.5 U	0.5 U
Apr-14	**130**	0.46 J	0.82	0.34 J	0.5 U	0.5 U
Jul-14	**150**	0.67	1.1	0.54	0.5 U	0.5 U
Oct-14	**120**	0.57	0.86	0.41 J	0.5 U	0.5 U
Apr-15	**120**	0.49 J	0.75	0.33 J	0.5 U	0.5 U

Table H-4. Historical VOC Concentrations in Well AMW-17 Groundwater Samples (in µg/L)

Date Sampled	TCE	PCE	1,1,1-TCA	1,1-DCE	Cis-1,2-DCE	CFC-11
Oct-15	**110**	0.40 J	0.57	0.29 J	0.5 U	0.5 U
Apr-16 upper[a]	**63**	0.34 J	0.35 J	0.17 J	0.5 U	0.5 U
Apr-16 lower[a]	**64**	0.35 J	0.34 J	0.17 J	0.5 U	0.5 U
Oct-16 upper[a]	**74**	0.35 J	0.28 J	0.15 J	0.5 U	0.5 U
Oct-16 lower[a]	**96**	0.44 J	0.34 J	0.27 J	0.5 U	0.5 U
Apr-17	**70**	0.38 J	0.39 J	0.12 J	0.5 U	0.5 U
Oct-17	**79**	0.37 J	0.25 J	0.12 J	0.5 U	0.5 U
Apr-18	**65**	0.3 J	0.22 J	0.1 J	0.5 U	0.5 U
Oct-18	**23**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Apr-19	**66**	0.32 J	0.29 J	0.11 J	0.5 U	0.5 U
Oct-19	**48**	0.18 J	0.19 J	0.5 U	0.5 U	0.5 U
Oct-20	**55**	0.25 J	0.11 J	0.5 U	0.5 U	0.5 U
Apr-21	**46**	0.22 J	0.09 J	0.5 U	0.5 U	0.5 U
Oct-21	**42**	0.23 J	0.08 J	0.5 U	0.5 U	0.5 U
Cleanup Level	5	5	200	1	70	2,400

NOTES:

Results shown in **blue bold** exceed the Boomsnub/Airco Site-specific cleanup level.

Only detected compounds are included in this table.

Concentrations presented are the highest of the sample and duplicate results, where applicable.

[a] = Two samplers were deployed in April and October 2016 - one near the top of the screened interval (upper) and one near the bottom (lower).

-- = Not available

CFC-11 = Trichlorofluoromethane

cis-1,2-DCE = cis-1,2-Dichloroethene

1,1-DCE = 1,1-Dichloroethene

J = The result is an estimated concentration that is less than the method reporting limit but greater than or equal to the method detection limit.

PCE = Tetrachloroethene

1,1,1-TCA = 1,1,1-Trichloroethane

TCE = Trichloroethene

U = The analyte was not detected above the specified reporting limit.

UJ = The analyte was not detected, but the associated limit of quantitation is estimated.

µg/L = Micrograms per liter

VOC = Volatile organic compound

Table H-5. Historical VOC Concentrations in Well AMW-18 Groundwater Samples (in µg/L)

Date Sampled	TCE	PCE	1,1,1-TCA	1,1-DCE	Cis-1,2-DCE	CFC-11
Apr-95	0.73 J	1 U	2.9	0.87 J	1 U	1 UJ
Oct-95	0.3 J	1 U	1	0.53 J	1 U	1 U
May-96	1 U	1 U	0.52 J	1 U	1 U	1 U
Oct-96	0.31 J	1 U	0.48 J	1 U	1 U	1 U
May-97	0.43 J	1 U	0.44 J	1 U	1 U	1 UJ
Oct. 97	0.3 U	0.4 U	0.4 U	0.4 U	--	0.5 U
May-98	0.5 U	0.6 U	2 U	1 U	0.7 U	2 U
Oct-01	1.1	0.15 J	0.19 J	0.12 J	0.5 U	0.5 U
Oct-02	1.1	0.26 J	0.25 J	0.5 U	0.5 U	0.5 U
Oct-03	0.95	0.29 J	0.17 J	0.5 U	0.5 U	0.5 U
Oct-04	0.64	0.28 J	0.17 J	0.5 U	0.5 U	0.5 U
Oct-05	0.62	0.24 J	0.78	0.13 J	0.5 U	0.5 U
Oct-06	**5.1**	0.43 J	2.4	0.78	0.5 U	0.5 U
Oct-07	**330**	1.6	6.5	**2.7**	0.5 U	0.5 U
Dec-07	**410**	2.1	7.5	**2.9**	0.5 U	0.5 U
Jan-08 upper [a]	**430**	1.9	6.9	**2.6**	1 U	1.0 U
Jan-08 lower [a]	**460**	1.9	6.9	**2.7**	1 U	1 U
May-08	**460**	2.3	6	**2.4**	0.5 U	0.5 U
Jul-08	**410**	1.4	4.8	**1.7**	1 U	1 U
Oct-08 [b]	**390**	1.4	4.5	**1.4**	1 U	1 U
Jan-09	**300**	1.5	3.2	**1.3**	0.5 U	0.5 U
May-09	**320**	1.4	2.6	**1.1**	0.5 U	0.5 U
Oct-09	**210**	0.75	1.8	0.75	0.5 U	0.5 U
Apr-10	**200**	0.66	2.1	0.61	0.5 U	0.5 U
Oct-10	**130**	0.47 J	0.85	0.35 J	0.5 U	0.5 U
Apr-11	**75**	0.31 J	0.71	0.18 J	0.5 U	0.5 U
Oct-11	**68**	0.29 J	0.56	0.18 J	0.5 U	0.22 J
Mar-12	**52**	0.2 J	0.37 J	0.09 J	0.5 U	1
Apr-12	**52**	0.19 J	0.29 J	0.09 J	0.5 U	0.53
Jul-12	**53**	0.22 J	0.3 J	0.5 U	0.5 U	0.6
Oct-12	**39**	0.15 J	0.16 J	0.5 U	0.5 U	0.43 J
Jan-13	**48**	0.17 J	0.1 J	0.5 U	0.5 U	0.4 J
Apr-13	**44**	0.15 J	0.08 J	0.5 U	0.5 U	0.26 J
Jul-13	**36**	0.2 J	0.11 J	0.5 U	0.5 U	0.19 J
Oct-13	**34**	0.15 J	0.11 J	0.5 U	0.5 U	0.15 J
Jan-14	**36**	0.11 J	0.09 J	0.5 U	0.5 U	0.5 U
Apr-14	**27**	0.5 U	0.08 J	0.5 U	0.5 U	0.5 U
Jul-14	**30**	0.18 J	0.16 J	0.5 U	0.5 U	0.5 U
Oct-14	**34**	0.12 J	0.16 J	0.5 U	0.5 U	0.5 U

Table H-5. Historical VOC Concentrations in Well AMW-18 Groundwater Samples (in µg/L)

Date Sampled	TCE	PCE	1,1,1-TCA	1,1-DCE	Cis-1,2-DCE	CFC-11
Apr-15	**34**	0.11 J	0.18 J	0.5 U	0.5 U	0.5 U
Oct-15	**42**	0.11 J	0.17 J	0.5 U	0.5 U	0.5 U
Apr-16	**40**	0.14 J	0.1 J	0.5 U	0.5 U	0.5 U
Oct-16	**40**	0.1 J	0.09 J	0.5 U	0.5 U	0.5 U
Apr-17	**43**	0.14 J	0.13 J	0.5 U	0.5 U	0.5 U
Oct-17	**28**	0.13 J	0.081 J	0.5 U	0.5 U	0.062 J
Apr-18	**28**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Oct-18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Apr-19	**20**	0.11 J	0.5 U	0.5 U	0.5 U	0.5 U
Oct-19	**18**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Oct-20	**16**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Apr-21	**17**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Oct-21	**16**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cleanup Level	5	5	200	1	70	2,400

NOTES:

Results shown in **blue bold** exceed the Boomsnub/Airco Site-specific cleanup level.

Only detected compounds are included in this table.

Concentrations presented are the highest of the sample and duplicate results.

[a] = Two samplers were deployed in January 2008 - one near the top of the screened interval (upper) and one near the bottom (lower).

-- = Not available

CFC-11 = Trichlorofluoromethane

cis-1,2-DCE = cis-1,2-Dichloroethene

1,1-DCE = 1,1-Dichloroethene

J = The result is an estimated concentration that is less than the method reporting limit but greater than or equal to the method detection limit.

PCE = Tetrachloroethene

1,1,1-TCA = 1,1,1-Trichloroethane

TCE = Trichloroethene

U = The analyte was not detected above the specified reporting limit.

UJ = The analyte was not detected, but the associated limit of quantitation is estimated.

µg/L = Micrograms per liter

VOC = Volatile organic compound

Table H-6. Historical VOC Concentrations in Well AMW-23 Groundwater Samples (in µg/L)

Date Sampled	TCE	PCE	1,1,1-TCA	1,1-DCE	Cis-1,2-DCE	CFC-11
Oct. 97	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U
May-98	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Sep-98	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
May-99	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Oct-99	0.5 U	0.5 U	0.3 J	0.5 U	0.5 U	0.5 U
Oct-00	0.5 U	0.5 U	0.5 J	0.5 U	0.5 U	0.5 U
Oct-01	0.5 U	0.5 U	0.74	0.5 U	0.5 U	0.5 U
Oct-02	0.5 U	0.5 U	0.78	0.5 U	0.5 U	0.5 U
Oct-03	0.5 U	0.5 U	0.57	0.5 U	0.5 U	0.5 U
Oct-16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Oct-17	0.1 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Oct-18	**8**	0.85	0.5 U	0.5 U	0.8 J	0.13 J
Apr-19	0.15 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Oct-19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Oct-20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Oct-21	Not Sampled					
Cleanup Level	5	5	200	1	70	2,400

NOTES:

Results shown in **blue bold** exceed the Boomsnub/Airco Site-specific cleanup level.

Only detected compounds are included in this table.

Concentrations presented are the highest of the sample and duplicate results.

-- = Not available

CFC-11 = Trichlorofluoromethane

cis-1,2-DCE = cis-1,2-Dichloroethene

1,1-DCE = 1,1-Dichloroethene

J = The result is an estimated concentration that is less than the method reporting limit but greater than or equal to the method detection limit.

PCE = Tetrachloroethene

1,1,1-TCA = 1,1,1-Trichloroethane

TCE = Trichloroethene

U = The analyte was not detected above the specified reporting limit.

UJ = The analyte was not detected, but the associated limit of quantitation is estimated.

µg/L = Micrograms per liter

VOC = Volatile organic compound

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Table H-7. Historical VOC Concentrations in Well AMW-64 Groundwater Samples (in µg/L)

Date Sampled	TCE	PCE	1,1,1-TCA	1,1-DCE	Cis-1,2-DCE	CFC-11
Mar-12	**190**	0.27 J	3.5	**2.7**	0.11 J	0.5 U
Apr-12	**160**	0.31 J	1.7	**2.5**	0.43 J	0.5 U
Jul-12	**170**	0.4 J	2.4	**2.7**	0.68	0.5 U
Oct-12	**110**	0.27 J	1.2	**1.5**	1	0.5 U
Jan-13	**110**	0.24 J	0.79	**1.7**	1.2	0.5 U
Apr-13	**94**	0.23 J	0.57	**1.4**	1.4	0.5 U
Jul-13	**84**	0.26 J	0.33 J	**1.1**	1.5 *	0.5 U
Oct-13	**75**	0.29 J	0.24 J	1	1.5	0.5 U
Jan-14	Not Sampled (well inaccessible)					
Apr-14	**61**	0.18 J	0.1 J	0.59	1.6 *	0.5 U
Jul-14	**67**	0.26 J	0.16 J	0.65	1.8 *	0.5 U
Oct-14	**55**	0.2 J	0.16 J	0.46 J	1.6 *	0.5 U
Apr-15	**53**	0.21 J	0.12 J	0.35 J	1.3 *	0.5 U
Oct-15	**45**	0.21 J	0.09 J	0.2 J	1.2 *	0.5 U
Apr-16	**28**	0.18 J	0.5 U	0.11 J	0.65	0.5 U
Oct-16	**24**	0.18 J	0.5 U	0.09 J	0.61	0.5 U
Apr-17	**22**	0.17 J	0.13 J	0.5 U	0.39 J	0.5 U
Oct-17	**15**	0.15 J	0.5 U	0.034 J	0.35 J	0.5 U
Apr-18	**13**	0.5 U	0.11 J	0.5 U	0.22 J	0.5 U
Oct-18	**71**	0.24 J	0.16 J	0.17 J	0.5 U	0.23 J
Apr-19	**11**	0.11 J	0.14 J	0.5 U	0.07 J	0.5 U
Oct-19	**9.9**	0.1 U	0.11 J	0.5 U	0.09 J	0.5 U
Oct-20	**7.1**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Apr-21	**8.4**	0.5 U	0.10 J	0.5 U	0.07 J	0.12 J
Oct-21	**9.3**	0.5 U	0.10 J	0.5 U	0.07 J	0.5 U
Cleanup Level	5	5	200	1	70	2,400

NOTES:

Results shown in **blue bold** exceed the Boomsnub/Airco Site-specific cleanup level.

Concentrations presented are the highest of the sample and duplicate results, where applicable.

* Trans-1,2-dichloroethene was also detected during the following events: July 2013 at 0.28 J µg/L, April 2014 at 0.30 J µg/L, July 2014 at 0.32 J µg/L, October 2014 at 0.21 J µg/L, April 2015 at 0.15 J µg/L, and October 2015 at 0.080 J µg/L.

CFC-11 = Trichlorofluoromethane

cis-1,2-DCE = cis-1,2-Dichloroethene

1,1-DCE = 1,1-Dichloroethene

J = The result is an estimated concentration that is less than the method reporting limit but greater than or equal to the method detection limit.

PCE = Tetrachloroethene

1,1,1-TCA = 1,1,1-Trichloroethane

TCE = Trichloroethene

U = The analyte was not detected above the specified reporting limit.

µg/L = Micrograms per liter

VOC = Volatile organic compound

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Table H-8. Historical VOC Concentrations in Well MW-21D Groundwater Samples (in µg/L)

Date Sampled	TCE	PCE	1,1,1-TCA	1,1-DCE	Cis-1,2-DCE	CFC-11
Jan-95	2,500 J	200 U	200 U	46 J	--	--
Feb-95	3,000 J	33 J	38 J	78	--	--
Mar-95	2,400	28	40	50	--	--
Apr-95	1,960	35.5	46.3	57.7 J	2.9	6.1
May-95	2,200 J	31	--	--	--	--
Jun-95	1,900	27	--	--	--	--
Jul-95	1,800	24	--	--	--	--
Aug-95	1,700	14	--	--	--	--
Sep-95	1,500	22	--	--	--	--
Oct-95	1,760	24.8	34.6	52.7	2.8	18.8 J
Nov-95	1,600	21	--	--	--	--
Jan-96	2,500	23	--	--	--	--
Feb-96	2,400	33	--	--	--	--
Mar-96	2,200	24	--	--	--	--
Apr-96	1,800	17	--	--	--	--
May-96	1,680	26.3	25.8	50.7	3.1	24.3 J
Jun-96	1,900	18	--	--	--	--
Jul-96	1,100	13	--	--	--	--
Aug-96	1,100	12	--	--	--	--
Sep-96	1,000	11	--	--	--	--
Oct-96	958	13.8	15.6	19	10 U	90.4
Dec-96	1,000	12	--	--	--	--
Dec-96	980	14	--	--	--	--
Feb-97	750	10	--	--	--	--
Mar-97	880	15	--	--	--	--
Apr-97	720	12	--	--	--	--
May-97	540	2.9 J	20 U	1.7 J	20 U	127
Jun-97	570	8	--	--	--	--
Jul-97	500	10	--	--	--	--
Aug-97	490	9	--	--	--	--
Sep-97	460	8	--	--	--	--
Oct-97	280	4	8	13	1	91
Jan-98	380	6	--	--	--	--
May-98	340	2	6	21	0.7 U	150
Oct-98	320 J	3	10	21	0.7 U	120
May-99	240 D	0.6 UJ	14	46	0.7 U	180
Jun-99	220	2.7	13	18	1.5	68
Oct-99	230	1.8	43	18	1.7	88

Table H-8. Historical VOC Concentrations in Well MW-21D Groundwater Samples (in µg/L)

Dec-99	**180**	1.6	20 J	**17**	1.3	74
Mar-00	**110**	1.2	18	**12**	1.2	39
May-00	**130 D**	ND	23 D	**19 D**	ND	75 D
Jun-00	**130**	1.8	16 J	**16 J**	1.4	70
Oct-00	**120**	1.8	15	**13**	1.9	53
Dec-00	**86**	1.2	13	**10**	1.6	53
Feb-01	**99**	1.2	13	**13**	2.2	65
May-01	**85**	1.3	15	**12**	2.3	64
Oct-01	**69**	1.2	11	**9**	2.1	39
Dec-01	**73**	0 U	10	**7.9**	1.9	45
Feb-02	**90**	**9.69**	9.5	**6.59**	1.6	51
May-02	**70 D**	1.1	14	**8.4**	2.2	41
Oct-02	**75**	1	15	**8.9**	2.3	39
Oct-02	**63 D**	1	14	**8.2**	2.1	34
Dec-02	**47**	0.85	12	**7**	1.8	24
Feb-03	**56 D**	0.82	17	**11**	2	37 J
May-03	**48**	0.87	15	**12**	1.8	27
Oct-03	**58**	0.65	14	**7.9**	1.4	24
May-04	**30**	0.6	8.2	**6.2**	1.5	12
Oct-04	**25**	0.48 J	5.9	**4.6**	1.2	8.5
Apr-05	**24**	0.42 J	5.1	**4.6**	1.3	8.2
Oct-05	**21**	0.33 J	3.7	**3.4**	1	6.4
Apr-06	**18**	0.32 J	2.6	**3**	0.87	5.4
Oct-06	**16**	0.34 J	2.2	**2.7**	0.77	3.9
Oct-06	**15**	0.33 J	2	**2.6**	0.75	3.8
May-07	**16 J**	0.28 J	2.1	**2.7**	0.79	4.9 J
Oct-07	**12**	0.23 J	1.5	**2.2**	0.58	3.2
May-08	**14**	0.21 J	1.4	**2.2**	0.69	3.3
Oct-08	**11**	0.22 J	0.8	**2.1**	0.55	2.7
Oct-08	**11**	0.23 J	0.82	**2.2**	0.56	2.8
May-09	**11**	0.18 J	0.86	**2.1**	0.63	2.5
Oct-09	**11**	0.21 J	0.59 J	**2.1 J**	0.58	2.3 J
Oct-09	**9.9**	0.18 J	0.53 J	**1.7 J**	0.49 J	1.9 J
Apr-10	**7.3**	0.15 J	0.31 J	**1.3**	0.39 J	1.1
Oct-10	**7**	0.16 J	0.29 J	1	0.41 J	0.9
Apr-11	**7.3**	0.19 J	0.21 J	**1.3**	0.49 J	0.74
Oct-11	**6.2**	0.13 J	0.25 J	**1.1**	0.48 J	0.59
Apr-12	**5.4**	0.15 J	0.16 J	0.99	0.48 J	0.44 J
Oct-12	**5.2**	0.13 J	0.20 J	1	0.61	0.32 J
Oct-12	**5.3**	0.13 J	0.18 J	1	0.61	0.32 J
Apr-13	4.3	0.10 J	0.12 J	0.85	0.44 J	0.25 J
Oct-13	3.5	0.13 J	0.13 J	0.71	0.32 J	0.18 J
Apr-14	2.9	0.5 U	0.5 U	0.5	0.29 J	0.14 J

Table H-8. Historical VOC Concentrations in Well MW-21D Groundwater Samples (in µg/L)

Oct-14	2.4	0.11 J	0.08 J	0.43 J	0.29 J	0.5 U
Apr-15	3.2	0.10 J	0.090 J	0.51	0.33 J	0.5 U
Oct-15	2.8	0.5 U	0.5 U	0.44 J	0.26 J	0.5 U
Apr-16	2.5	0.5 U	0.090 J	0.45 J	0.27 J	0.5 U
Oct-16	2.4	0.5 U	0.10 J	0.36 J	0.25 J	0.5 U
Apr-17	2.2	0.11 J	0.18 J	0.41 J	0.25 J	0.5 U
Oct-17	2.4	0.11 J	0.17 J	0.42 J	0.24 J	0.075 J
Apr-18	5	0.5 U	0.10 J	0.44 J	0.21 J	0.5 U
Oct-18	**16**	0.50 U	0.45 J	0.95	0.39 J	0.14 J
Apr-19	**15**	0.12 J	0.48 J	0.71	0.29 J	0.17 J
Oct-19	**9.1**	0.50 U	0.19 J	0.41 J	0.22 J	0.12 J
Apr-20	**7.1**	0.50 U	0.21 J	0.47 J	0.23 J	0.12 J
Oct-20	.031 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Apr-21	1.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Oct-21	1.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cleanup Level	5	5	200	1	70	2,400

NOTES:
Results shown in **blue bold** exceed the Boomsnub/Airco Site-specific cleanup level.
Only detected compounds are included in this table.
Concentrations presented are the highest of the sample and duplicate results, where applicable.
[a] = Two samplers were deployed in April and October 2016 - one near the top of the screened interval (upper) and one near the bottom
-- = Not available
CFC-11 = Trichlorofluoromethane
cis-1,2-DCE = cis-1,2-Dichloroethene
1,1-DCE = 1,1-Dichloroethene
J = The result is an estimated concentration that is less than the method reporting limit but greater than or equal to the method
PCE = Tetrachloroethene
1,1,1-TCA = 1,1,1-Trichloroethane
TCE = Trichloroethene
U = The analyte was not detected above the specified reporting limit.
UJ - The analyte was not detected, but the associated limit of quantitation is estimated.
µg/L = Micrograms per liter
VOC = Volatile organic compound

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Table H-9. Historical VOC Concentrations in Well MW-23D Groundwater Samples (in µg/L)

Date Sampled	TCE	PCE	1,1,1-TCA	1,1-DCE	Cis-1,2-DCE	CFC-11
Apr-95	**5.7**	1 U	37.6	**56.8**	6.4	1.5 J
Oct-95	**53.4**	1 U	24.8	**55.1**	12.8	3.4
May-96	**49.1**	1 U	24.6	**52.6**	8.4	25.9 J
Oct-96	**43.3**	1 U	20	**32.6**	10	95.5
May-97	**61.3 J**	1 U	14.4	**36.4**	10.7	224 J
Oct-97	**51**	0.4 U	14	**30**	--	89
May-98	**42**	0.6 U	10	**28**	23	35
Oct-98	**67**	3 J	3	1 U	3	3
May-99	**35 J**	0.6 UJ	6 J	**45 J**	27 J	16 J
Oct-99	**15**	0.5 U	4.7	**8.4**	5.3	5.4
May-00	**37**	0.5 U	2.5	**8.1**	29	2.1
Oct-00	**34**	0.5 U	1.2	**4.4**	14	1.1
May-01	0.5 U	0.5 U	0.71	0.5 U	0.5 U	0.5 U
Oct-01	**24**	0.5 U	0.88	**3.5**	5	0.96
May-02	**22**	0.5 U	1.2	**4.4**	4.3	1.5
Oct-02	**16**	0.5 U	1.4	**2.8**	1.7	0.64
May-03	**13**	0.5 U	2.4	**2.7**	1.2	0.49 J
Oct-03	**11**	0.5 U	2.3	**3.2**	0.9	0.47 J
May-04	**9**	0.5 U	1.6	**2.5**	0.6	0.33 J
Oct-04	**7.8**	0.5 U	1.1	**2.4**	0.5	0.25 J
Apr-05	**5.9**	0.5 U	0.74	**2**	0.57	0.21 J
Oct-05	**6**	0.5 U	0.66	**2**	0.62	0.2 J
Oct-06	4.4	0.5 U	0.36 J	**1.6**	0.58	0.5 U
Oct-07	3.5	0.5 U	0.3 J	**1.1**	0.58	0.14 J
Oct-08	2.6	0.5 U	0.43 J	**1.4**	0.46 J	0.2 J
Oct-09	2.5	0.5 U	0.19 J	0.77	0.29 J	0.15 J
Oct-10	1.9	0.5 U	0.13 J	0.49 J	0.24 J	0.5 U
Oct-11	1.6	0.5 U	0.14 J	0.5	0.18 J	0.13 J
Oct-12	1.4	0.5 U	0.27 J	0.54	0.27 J	0.29 J
Oct-13	1.2	0.5 U	0.42 J	0.66	0.16 J	0.25 J
Oct-14	1.4	0.5 U	2.4	**2.7**	0.16 J	0.24 J
Oct-15	**130**	0.5 U	2.7	**2.7**	0.12 J	0.14 J
Apr-16 upper[a]	**140**	0.5 U	2.1	**2.3**	0.08 J	0.12 J
Apr-16 lower[a]	**62**	0.5 U	2.5	**2.3**	0.10 J	0.21 J
Oct-16 upper[a]	**140**	0.5 U	2.5	**2.9**	0.08 J	0.13 J
Oct-16 lower[a]	**84**	0.5 U	3.6	**3.3**	0.12 J	0.22 J
Apr-17	**180**	0.5 U	3.3	**3.1**	0.14 J	0.17 J
Oct-17	**140**	0.078 J	1.9	**1.8**	0.14 J	0.1 J

Table H-9. Historical VOC Concentrations in Well MW-23D Groundwater Samples (in µg/L)

Apr-18	**120**	0.5 U	1	**1.4**	0.5 U	0.5 U
Date Sampled	**TCE**	**PCE**	**1,1,1-TCA**	**1,1-DCE**	**Cis-1,2-DCE**	**CFC-11**
Oct-18	**160**	0.5 U	2.1	**2.2**	0.07 J	0.5 U
Apr-19	**150 E**	0.14 J	1.5	**1.5**	0.22 J	0.12 J
Oct-19	**130**	0.5 U	1.1	**1.5**	0.08 J	0.5 U
Oct-20	**83**	0.5 U	0.61	0.91	0.5 U	0.5 U
Apr-21	**72**	0.5 U	0.40 J	0.8	0.25 J	0.5 U
Oct-21	**61**	0.5 U	.44 J	0.8	0.27 J	0.5 U
Cleanup Level	5	5	200	1	70	2,400

NOTES:

Results shown in **blue bold** exceed the Boomsnub/Airco Site-specific cleanup level.

Only detected compounds are included in this table.

Concentrations presented are the highest of the sample and duplicate results, where applicable.

[a] = Two samplers were deployed in April and October 2016 - one near the top of the screened interval (upper) and one near the bottom (lower).

-- = Not available

CFC-11 = Trichlorofluoromethane

cis-1,2-DCE = cis-1,2-Dichloroethene

1,1-DCE = 1,1-Dichloroethene

J = The result is an estimated concentration that is less than the method reporting limit but greater than or equal to the method detection limit.

PCE = Tetrachloroethene

1,1,1-TCA = 1,1,1-Trichloroethane

TCE = Trichloroethene

U = The analyte was not detected above the specified reporting limit.

UJ - The analyte was not detected, but the associated limit of quantitation is estimated.

µg/L = Micrograms per liter

VOC = Volatile organic compound

Table H-10. Historical VOC Concentrations in Well MW-38 Groundwater Samples (in µg/L)

Date Sampled	TCE	PCE	1,1,1-TCA	1,1-DCE	Cis-1,2-DCE	CFC-11
Oct-10	**12**	0.77	0.33 J	0.68	0.21 J	0.47 J
Apr-11	**11**	1.0	0.21 J	0.23 J	0.19 J	0.19 J
Oct-11	**9.8**	1.1	0.28 J	0.20 J	0.14 J	0.26 J
Oct-12	**7.4**	1.7	0.69	0.33 J	0.24 J	0.22 J
Oct-13	**70 D**	2.0	1.8	**1.2**	0.12 J	0.32 J
Apr-14	**54**	1.4	0.68	0.47 J	0.080 J	0.25 J
Oct-14	**78**	1.9	0.64	0.43 J	0.09 J	0.19 J
Apr-15	**53**	1.3	0.40 J	0.30 J	0.070 J	0.20 J
Oct-15	**50**	1.3	0.40 J	0.22 J	0.50 U	0.15 J
Apr-16	**29**	1.0	0.26 J	0.19 J	0.50 U	0.50 U
Oct-16	**23**	0.85	0.25 J	0.15 J	0.50 U	0.50 U
Apr-17	**19**	0.75	0.33 J	0.16 J	0.50 U	0.50 U
Oct-17	**9.5**	0.78	0.24 J	0.13 J	0.50 U	0.50 U
Oct-18	**20**	0.6	0.19 J	0.09 J	0.50 U	0.50 U
Oct-19	**28**	0.65	0.12 J	0.08 J	0.50 U	0.50 U
Apr-19	**150 E**	0.14 J	1.5	**1.5**	0.22 J	0.12 J
Oct-20	**12**	0.57	0.5 U	0.32 J	0.5 U	0.2 J
Feb-21	**14**	0.51	0.09 J	0.11 J	0.5 U	0.19 J
Apr-21	**22**	0.73	0.08 J	0.5 U	0.5 U	0.12 J
Jul-21	**27**	0.9	0.08 J	0.5 U	0.5 U	0.15 J
Oct-21	**25**	0.84	0.09 J	0.08 J	0.5 U	0.17 J
Cleanup Level	5	5	200	1	70	2,400

NOTES:
Results shown in **blue bold** exceed the Boomsnub/Airco Site-specific cleanup level.
Only detected compounds are included in this table.
Concentrations presented are the highest of the sample and duplicate results, where applicable.
[a] = Two samplers were deployed in April and October 2016 - one near the top of the screened interval (upper) and one near the bottom
-- = Not available
CFC-11 = Trichlorofluoromethane
cis-1,2-DCE = cis-1,2-Dichloroethene
1,1-DCE = 1,1-Dichloroethene
detection limit.
PCE = Tetrachloroethene
1,1,1-TCA = 1,1,1-Trichloroethane
TCE = Trichloroethene
U = The analyte was not detected above the specified reporting limit.
UJ - The analyte was not detected, but the associated limit of quantitation is estimated.
µg/L = Micrograms per liter
VOC = Volatile organic compound

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