SARNEY FARM SUPERFUND SITE
AMENIA, NEW YORK

2021 Annual Groundwater Data and Evaluation Report

Prepared for:

U.S. Environmental Protection Agency
Region II
New York, New York

Dated:

February 3, 2022

Prepared by:

MACTEC E&G, PC
1090 Elm Street, Suite 201
Rocky Hill, Connecticut

February 3, 2022

Mr. Kevin Willis
Remedial Project Manager
New York/Caribbean Superfund Branch
Emergency and Remedial Response Division
U.S. Environmental Protection Agency - Region II
290 Broadway, 20th Floor
New York, NY 10007-1866

RE: Sarney Farm Superfund Site
2021 Annual Groundwater Data and Evaluation Report

Dear Mr. Willis:

On behalf of Cytec Industries, Inc. and Pitney Bowes Inc., a copy of the 2021 Annual Groundwater Data and Evaluation Report for the Sarney Farm Superfund Site prepared by MACTEC Engineering & Geology, PC (MACTEC) is attached. The report discusses data collected during the 2021 sampling events completed on August 24th and December 1st, 2021. The 2021 sampling was performed in accordance with the additional response action required by USEPA's September 8, 2016 letter regarding the Sarney Farm Site on Benson Hill Road in Dover Plains, Amenia, New York. The attached report documents that the identified low level Volatile Organic Compounds (VOCs) in monitoring wells continue to exhibit decreasing concentrations and are attenuating due to ongoing natural processes.

Consistent with the USEPA approved Quality Assurance Project Plan (QAPP), VOCs in Site monitoring wells and private residential water supply wells have been analyzed by USEPA Method 8260. In addition, Monitored Natural Attenuation parameters have been analyzed for groundwater monitoring wells. Under separate cover, and consistent with prior monitoring events, individual homeowners have been provided the laboratory results of water samples collected from their wells and you have been copied on these transmittals.

As a result of more than two decades of groundwater monitoring since the completion of soil remediation in 1997, it is well understood that VOC concentrations are attenuating due to natural processes. Additionally, approximately 30 years of sampling of potable water supply wells near the site continues to demonstrate that no complete exposure pathways exist.

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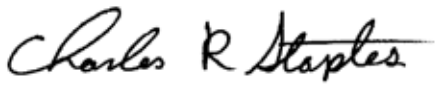
Mr. Kevin Willis
U.S. Environmental Protection Agency

If you should have any questions regarding this report, please do not hesitate to contact Charles Staples at 207-828-3571.

Sincerely,

MACTEC E&G, PC



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GLOSSARY OF ACRONYMS

ARCS	Assessment and Remediation of Contaminated Sediments
Amec	Amec E&E, PC
CERCLA	Comprehensive Environmental Response, Compensation, and Liability
COC	Constituents-of-Concern
1,2-DCA	1,2-Dichloroethane
DO	Dissolved Oxygen
DCHD	Dutchess County Health Department
FS	Feasibility Study
LTTD	Low-Temperature Thermal Desorption
MACTEC	MACTEC Engineering & Geology, PC
MCL	Maximum Contaminant Level
MIBK	4-methyl-2-pentanone
NPL	National Priorities List
NYSDEC	New York State Department of Environmental Conservation
Order	Unilateral Administrative Order
ORP	Oxidation/Reduction Potential
PCOR	Preliminary Close-Out Report
PRGE	Post-ROD Groundwater Evaluation
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RA	Remedial Action
RI	Remedial Investigation
ROD	Record of Decision
Site	Sarney Farm Superfund Site
TCE	Trichloroethylene
µg/L	Micrograms per Liter
µg/kg	Micrograms per Kilogram
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
VOCs	Volatile Organic Constituents

1.0 INTRODUCTION

On behalf of Cytec Industries, Inc. and Pitney Bowes, Inc., this 2021 Annual Groundwater Data and Evaluation Report has been prepared by MACTEC Engineering & Geology, PC (MACTEC). This report presents the data for the 2021 groundwater sampling event completed on August 24th and December 1, 2021 at the Sarney Farm Superfund Site (Site), located on Benson Hill Road in Dover Plains, Amenia, New York (Figure 1). As presented below, the findings of these analyses demonstrate that natural attenuation processes are degrading VOCs in groundwater at the Site.

This work has been completed pursuant to the requirements of U.S. Environmental Protection Agency (USEPA) Unilateral Administrative Order (Order), Index Number II Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) 96-0214 for the Sarney Farm Superfund Site (USEPA, 2003), and the additional response action required by USEPA's September 8, 2016 letter regarding the Sarney Farm Site on Benson Hill Road in Dover Plains, Amenia, New York.

For the 2021 sampling event, the applicable modifications to the sampling program requested by the USEPA in September 2016 are described below:

- Beginning in 2017, five annual sampling rounds that include the eight monitoring wells and the residential wells in the vicinity of the Site;
- The Groundwater Data and Evaluation Report for these sampling events is to be submitted to the USEPA within 45 days of receipt of final lab data (final lab data for 2021 was received December 20, 2021);
- Modification of the laboratory analytical methods so that the reporting limit is lower than the applicable standards;
- Addition of 1,4-dioxane analysis in the Site monitoring wells;
- Addition of natural attenuation parameters to the groundwater analytical suite during all five required sampling events, and
- Submit a modified Quality Assurance Project Plan (QAPP) that identifies proposed analytical methods and associated reporting limits (QAPP completed and USEPA approved, dated July 20, 2017).

The Sarney Farm groundwater monitoring is typically conducted annually in August. However, with the approval of the USEPA, this year (2021) only a portion of the sampling was completed in August, including the sampling of residential wells and the MW-10D series monitoring wells. The remaining monitoring wells, the MW-9D and MW-7D series wells, could not be accessed in August due to fallen

trees blocking the access road. These wells were sampled on December 1st, 2021 after a tree clearing company was able to remove fallen trees from the access road. Field work, laboratory analyses, and data validation discussed in this report were completed in accordance with the USEPA approved Quality Assurance Project Plan (QAPP, Amec E&E, PC [Amec], 2017).

1.1 SITE CHRONOLOGY

In the late 1960s, a 5-acre portion of the Site was permitted by the Dutchess County Health Department (DCHD) as a sanitary landfill. Non-permitted industrial waste disposal was reported to have occurred at the Site over a two-year period between 1968 and 1969. The disposal of industrial waste at the Site led to its inclusion on the NYSDEC Suspected Hazardous Waste Sites Inventory in 1980, and eventually on USEPA's National Priorities List (NPL) in June 1986. Remedial Investigation (RI) and Feasibility Study (FS) reports were completed on behalf of USEPA in the 1980s, the findings of which resulted in the issuance of a Record of Decision (ROD) for the Site in September 1990. The ROD detailed the selected remedy for the Site, which included the following:

Drum Removal and Soil Remediation

- Drum and container removal activities
- Excavation and on-Site treatment of impacted soil by low-temperature thermal desorption (LTTD).

Groundwater Remediation

- No Further Action that included a long-term program to monitor the distribution of contaminants in the bedrock aquifer underlying the Site.

Drum Removal

The drum removal phase of the remedy was completed between 1992 and 1995. The work began under the direction of TAMS Consultants (TAMS, an Assessment and Remediation of Contaminated Sediments [ARCS] contractor) on behalf of the USEPA. IT Corporation performed the remedial work under subcontract to TAMS. During 1993, U.S. Army Corps of Engineers (USACE) assumed the lead role on behalf of USEPA. IT Corporation was subcontracted by USACE to complete the work. Drum removal and disposal was completed by March 1995.

Soil Remediation

The remedial design for the soil remedy was completed by CDM Federal Programs Corp. (CDM) in August 1995 for the USACE. In May 1996, USEPA issued a Special Notice Letter to Pitney Bowes

requesting that Pitney Bowes perform the soil remediation work. Pitney Bowes retained MACTEC Engineering and Consulting, Inc. (formerly ESE New York, P.C.) to complete the Remedial Action (RA) for soil. MACTEC proposed minor modifications to the existing design specifications in November 1996, which were subsequently approved by USEPA and NYSDEC in January 1997. MACTEC retained Williams Environmental Services, Inc. to undertake the excavation and on-Site thermal treatment of soils. Soil remediation work plans were submitted to USEPA and NYSDEC in June 1997. Approvals were received August/September 1997, and mobilization to the Site began in September 1997. On-site thermal treatment of soil to remove VOCs including 2-butanone, trichloroethylene (TCE), 4-methyl-2-pentanone (MIBK), toluene, 1,2-dichloroethane (1,2-DCA), chloroform, and total xylenes was conducted from September through December 1997. Following a winter shut-down, Site restoration was completed between May and September 1998. Activities related to the treatment of impacted soil were completed by Pitney Bowes in accordance with the 1996 Administrative Order (USEPA, 1996) that was issued by USEPA and documented in the RA Report dated August 1998 (QST, 1998).

Based on the successful completion of the drum/debris removal efforts, the completion of on-site LTTD treatment of soil, and the findings of the Post-ROD Groundwater Evaluation (PRGE) Report (QST, 2001), USEPA issued a Preliminary Close-Out Report (PCOR) for the Site (USEPA, 2002). The PCOR included a complete discussion of remedial activities completed at the Site (including additional groundwater investigation) and concluded that all RAs at the Site have been completed in accordance with Close Out Procedures for National Priorities List Sites (OSWER Directive 9320.2-09 A-P).

Groundwater Remediation

During 1997, CDM installed two overburden monitoring wells, six piezometers, and one bedrock monitoring well downgradient of Area 4 in Area 6 (Figure 2). At that time, the monitoring network was comprised of 22 monitoring wells (12 overburden and 10 bedrock) and six piezometers. Two rounds of groundwater samples were collected during May and August of 1997. Nineteen wells/piezometers were sampled during the first round (seven overburden and ten bedrock monitoring wells, and two piezometers), and 12 monitoring wells/piezometers were sampled during the second round (five overburden and four bedrock monitoring wells, and three piezometers).

Additional groundwater investigation was required by USEPA and completed on behalf of Pitney Bowes and Cytec Industries by MACTEC between 1999 and 2000 (referred to as Phase 1 and Phase 2, respectively). Activities included sediment sampling, the installation of additional multi-level bedrock

monitoring wells and piezometers, groundwater pumping tests, and groundwater sampling, including nearby residential wells. Sampling locations are shown on Figure 2.

Upon review of groundwater data collected during the Phase 1 and Phase 2 investigations, USEPA required additional rounds of groundwater sampling in 2001 and 2002. The first 2001 sampling event was completed during June, and included monitoring wells MW-7D, MW-9D, MW-10D, MW-11D, MW-14D, MW-15D, EW-4D, and five nearby residential wells (Figure 2).

The sampling of residential wells initially commenced during the RI in 1985, and included sampling events in 1985, 1986, 1990, 1992, 1993, 1994, 1995, 1996, 1997, and 1998. The USEPA required that residential well sampling continue thereafter. The November 2001 PRGE states that the results from these residential well sampling events showed that no well had ever exhibited VOC concentrations at or above New York or Federal drinking water standards. Additionally, no subsequent potable water sampling events have identified exceedances of these drinking water standards.

The findings of these June 2001 investigations were presented to USEPA in the PRGE Report (QST, 2001) that was approved by USEPA and finalized on November 13, 2001. The PRGE Report concluded that constituents-of-concern (COCs), primarily 1,2-DCA, generally exhibited a steady decrease in concentration since routine sampling was initiated in the late 1990s. However certain COCs were still present in a small area of the Site at concentrations in excess of current USEPA Region II groundwater Maximum Contaminant Level (MCL) standards. The overall decrease in 1,2-DCA concentration in groundwater was attributed to the completion of drum removal and on-site LTTD treatment of impacted soil, and the attenuation of contaminants through natural physical and chemical degradation processes. In addition, ongoing sampling and analysis of groundwater collected from down gradient residential supply wells continued to confirm that Site-related constituents have not impacted, nor are they expected to impact, nearby private supply wells. A second 2001 sampling event was completed in December and included monitoring wells MW-7D, MW-9D, and MW-10D.

Revised Groundwater Monitoring Program

Between 1999 and 2002, groundwater sampling of selected Site monitoring wells had been conducted at approximately six-month intervals. Specifically, sampling events were performed in July and November 1999, May and November 2000, June and December 2001, and June 2002. The results of sampling events, up to and including the June 2001 sampling event, were included in the PRGE Report (QST, 2001). The results of the December 2001 sampling event were provided to USEPA as an

attachment to Monthly Progress Report Number 65 dated March 11, 2002. The findings of the June 2002 sampling event were included in a Groundwater Evaluation Report (MACTEC, 2002).

In addition to presenting the findings of the June 2002 sampling event, the November 2002 report included a recommendation that future groundwater sampling events at the Site be conducted on an annual basis. The rationale for reducing the sampling frequency was that a continued, steady decrease in groundwater concentrations had been observed during each subsequent sampling event between 1997 and 2002. USEPA approved this recommendation and required annual sampling for a period of five years beginning in 2003. Subsequent to this five-year sampling period (2003 to 2007), the USEPA has requested annual sampling continue, and groundwater sampling has been completed each summer from 2008 to 2020 (an additional 13 years) with reports describing the results of the sample analyses being submitted for each year. This report documents the 2021 groundwater sampling event.

As stated in the 2006 Groundwater Monitoring Report (MACTEC, 2006), the steady and predictable rate of decrease of contaminant concentrations in wells monitored over the previous nine years supports groundwater sampling of the current list of wells (MW-7D, MW-9D, MW-10D, and five residences) every two years to provide data at a frequency that will be suitable to demonstrate a continuation in the observed decreasing trend in concentrations. In response to the request for changing the sampling frequency to biennial, USEPA correspondence dated August 8, 2008 directed that annual sampling was required for four additional years.

Subsequent petitions to USEPA after 2011 to modify the groundwater program have not been accepted. The current USEPA specified groundwater monitoring program requires annual sampling, which is generally conducted in the third quarter of each year, of monitoring wells MW-7D (shallow and deep), MW-9D (zones 1 [deep], 2 [intermediate], and 3 [shallow]), MW-10D (zones 1 [deep], 2 [intermediate], and 3 [shallow]), and five private residential water supply wells herein described as 151 BHR, 154 BHR, 199 BHR, 224 BHR, and 225 BHR.

Note that MW-7D was repaired/replaced consistent with an USEPA approved workplan in 2012 due to damage that occurred subsequent to the 2011 groundwater sampling at this location.

Beginning in 2017, the USEPA requested the following modifications of the Sarney Farm sampling program:

- Beginning in 2017, five annual sampling rounds (i.e., 2017 to 2021) that include the eight on-Site monitoring wells and the five residential wells in the vicinity of the Site;
- The Groundwater Data and Evaluation Report for these sampling events is to be submitted to the USEPA within 45 days of receipt of final lab data (final lab data for 2021 was received December 20, 2021);
- Modification of the laboratory analytical methods so that the reporting limit is lower than the applicable standards;
- Sampling Cleaver Swamp surface water and sediment during only the 2017 sampling event;
- Addition of 1,4-dioxane for only the 2017 sampling event and addition of natural attenuation parameters to the groundwater analytical suite during all five required sampling events;
- Submit a modified QAPP that identifies proposed analytical methods and associated reporting limits (completed and USEPA approved, dated July 20, 2017).

2.0 GROUNDWATER SAMPLING

Groundwater sampling during the August and December 2021 sampling event included five residential wells near the Site and the multi-level bedrock monitoring wells located downgradient of Area 4 (paired/nested monitoring wells MW-7D and MW-9D) and west of Areas 1 and 2 (nested monitoring well MW-10D) as shown on Figure 2. The sampled residential wells are designated as follows:

- 151 BHR
- 154 BHR
- 199 BHR
- 224 BHR
- 225 BHR

Prior to sampling groundwater monitoring wells, water level measurements were collected from the multi-level wells included in this sampling event (MW-7D, MW-9D, and MW-10D). Groundwater samples were collected on August 24, 2021 from MW-10D and December 1, 2021 from MW-7D and MW-9D, in accordance with USEPA Groundwater Sampling Procedure for Low-Stress (Low-Flow) Purging and Sampling procedures.

The two discrete sampling zones at MW-7D, MW-7D-S (shallow) and MW-7D-D (deep) were purged and sampled using a conventional bladder pump equipped with dedicated HDPE discharge tubing. The purging process at MW-7D included low-flow pumping to minimize drawdown in the well, and monitoring of various groundwater parameters (e.g., pH, temperature, dissolved oxygen (DO), Oxidation/Reduction Potential (ORP), turbidity and conductivity) to confirm that the wells were hydraulically connected to the formation, and that valid groundwater samples would be collected. Once the parameters stabilized over three consecutive readings, the wells were considered sufficiently purged and samples were collected by directing the pump discharge into laboratory prepared sample containers.

Monitoring wells MW-9D and MW-10D are equipped with Solinst multi-level sampling devices that include dedicated, nitrogen-driven, stainless steel/Teflon bladder sampling pumps set at three discrete intervals. Both MW-9D and MW-10D include three discrete depth sampling ports/pump assemblies that are referred to as zones 1 (deep), 2 (medium) and 3 (shallow). Purging at these wells is required mainly to flush stagnant water from the dedicated sampling tubes since the design of the multi-level sampling system, which includes the use of permanent packers, precludes the presence of standing casing water. The 0.25-inch diameter sampling tubes contain approximately 0.003 gallons of water per foot. The saturated length of the sampling tubes ranges from approximately 142 feet (deep zone at MW-9D-1) to approximately 47 feet in shallow zone at the same well location. The volume of stagnant tubing water

in the longest sampling tube is therefore approximately 0.4 gallons. To adequately purge stagnant sampling tube water at MW-9D and MW-10D, the water was pumped between 30 minutes and 120 minutes at flow rates of approximately 0.026 to 0.034 gallons/minute, resulting in the removal of approximately 0.65 to 3 gallons of water or more per well/sample zone. Once the dedicated bladder pumps purged the standing water in the tubing and the purge parameters (e.g., pH, temperature, etc.) had stabilized, the samples were collected. Consistent with the QAPP, groundwater monitoring well samples were submitted to Eurofins TestAmerica Laboratories for analysis of VOCs by USEPA Method 8260 (low level) and for Monitored Natural Attenuation (MNA) parameters by various approved QAPP methods. In addition, per request of the NYSDEC and USEPA, samples were analyzed for 1,4-dioxine by USEPA Method 8260 Selective Ion Monitoring (SIM).

Residential water samples were collected from five locations identified as 151 BHR, 154 BHR, 199 BHR, 224 BHR, and 225 BHR. The residential water samples were collected from an outside spigot. Before the samples were collected, the water was allowed to run for approximately 15 minutes to clear the plumbing system of standing water. Residential samples were submitted for laboratory analysis for VOCs by USEPA Method 8260 (low level). Per request of the NYSDEC and USEPA in 2020, samples were also analyzed for 1,4-dioxine by USEPA Method 8260 SIM.

All of the groundwater samples were collected, stored, and delivered to the laboratory under standard chain-of-custody protocols. The samples were collected in laboratory-prepared sample containers and stored on ice in secure coolers until being hand-delivered to the laboratory for analysis. Quality assurance/quality control (QA/QC) samples (field duplicates/trip blanks/equipment-field blanks) were also collected and submitted for laboratory analyses. Backup documentation for laboratory deliverables is maintained at both the Eurofins TestAmerica archives and in the central project files at MACTEC offices. Analytical laboratory data reports are provided in Appendix A.

The VOC and 1,4-dioxine analytical data were validated by MACTEC chemists in accordance with USEPA data validation guidelines as presented in the QAPP. The data validation report is included in Appendix B.

3.0 SAMPLING RESULTS AND DATA INTERPRETATION

Sections 3.1 through 3.4 below discuss the findings of the laboratory analyses for the groundwater monitoring wells, residential potable water supply wells, and QA/QC samples.

3.1 QUALITY ASSURANCE/QUALITY CONTROL SAMPLES (QA/QC)

Two trip blanks, one associated with the monitoring well samples of August 24th and December 1st, 2021, and one associated with the residential well samples of August 24th, 2021 were collected for VOCs and 1,4-dioxane analysis. In addition, consistent with the QAPP, one equipment blank (EB01), one field blank (FB01), and one duplicate groundwater monitoring well sample (MW-7D-D DUP) were collected for VOC and 1,4-dioxane analysis during the 2021 sampling event. Analytes were not detected in the trip blanks. Low-level chloromethane, a common laboratory disinfectant, was reported in the FB01 collected during the December monitoring well sampling at a concentration below its regulatory criterion. The correlation between groundwater sample MW-7D-D and its duplicate was good.

3.2 RESIDENTIAL WELL SAMPLING RESULTS

During the 2021 sampling event, consistent with previous 31 sampling events completed in 1985, 1986, 1990, and 1992 to 2020, no VOCs were detected above regulatory criteria. Trace-level styrene (0.52 ug/L) was identified in the 225 BHR residential well; styrene was also detected in this well in 2017 and 2019, but is not a site related contaminant of concern (i.e., not historically detected in groundwater monitoring wells). Additionally, trace-level chloromethane (0.46 ug/L) below the reporting limit of 0.50 ug/L was detected in 224 BHR; however, this compound was also detected in the field blank and is likely a residual from laboratory cleaning. In all other residential wells, no VOCs were detected, and none have been detected above State or Federal guidelines during 31 sampling events since monitoring began in 1985. This includes 1,4-dioxane, which was not detected in any of the residential well samples above its reporting limit of 0.4 ug/L. A summary of the 2021 Residential Well Sampling Results is presented in Table 1.

3.3 GROUNDWATER MONITORING WELL SAMPLING RESULTS

Section 3.3.1 below presents the findings of the field measured parameters collected during low flow sampling at the groundwater monitoring wells, Section 3.3.2 discusses the findings for the VOC analyses at the monitoring wells, and Section 3.3.3 presents the findings of the MNA analytical results.

3.3.1 Groundwater Monitoring Well Field Measured Parameters

Field measured parameters were collected during low-flow sampling at the monitoring wells using a YSI SSC flow-through cell and a Hach turbidity meter calibrated according to manufactures specifications. Table 2 summarizes the final pre-sampling field measured parameters along with the MNA parameter analysis results.

3.3.2 Groundwater Monitoring Well VOC Sampling Results

The results of bedrock groundwater VOC analyses are summarized and provided in Table 3, Summary of Detected VOCs in Bedrock Wells. This table includes groundwater data since well installation/initial sampling (1997 for MW-7D; 1999 for MW-9 and MW-10D). The table is organized by well, with data presented in chronological order from the earliest to the latest sampling events. For convenience, columns for the current sampling event data are shaded in blue. Additionally, the concentration of any compound detected above its respective USEPA MCL is darkly shaded and shown in bold font.

During the 2021 sampling event, 1,2-DCA was detected at concentrations above the USEPA MCL (5 µg/L) in the shallow and deep zones of MW-7D, in the three zones (shallow, intermediate, deep) in MW-9D, and two zones (deep and intermediate) in monitoring well MW-10D. As discussed in Section 3.3.3 below, the Mann-Kendall evaluation demonstrates that concentrations of 1,2-DCA continue to attenuate in all sampled monitoring wells. Figures 3, 5, and 7 present a graphical depiction of the groundwater concentration data for 1,2-DCA from 2007 through the latest sampling event, and Figures 4, 6, and 8 present a graphical depiction of the groundwater concentration data for 1,2-DCA from the late 1990s through the latest sampling event.

The following summarizes the 1,2-DCA detections in 2018, 2019, 2020, and 2021:

Summary of Recent 1,2-DCA Analytical Results					
Well Depth Zone	**Monitoring Well**	**2018 1,2-DCA (µg/L)**	**2019 1,2-DCA (µg/L)**	**2020 1,2-DCA (µg/L)**	**2021 1,2-DCA (µg/L)**
Shallow	MW-7D-S	53	58	49	48
Deeper	MW-7D-D	35	36	35	30
Shallow	MW-9D-3	58	53	75	54
Intermediate	MW-9D-2	59	60	56	41
Deep	MW-9D-1	52	56	54	50
Shallow	MW-10D-3	0.89	0.81	ND	0.87
Intermediate	MW-10D-2	23	24	26	15
Deep	MW-10D-1	21	21	20	19
1,2-DCA = 1,2-Dichloroethane MW = Monitoring Well; ND=not detected				ug/L = micrograms per liter -S = shallow -D = deep	

Other than 1,2-DCA, the only other VOCs detected during the 2021 sampling event were:

VOCs Other Than 1,2-DCA Detected in 2021			
Parameter	**Maximum Concentration Detected in 2021 (µg/L)**	**Parameter**	**Maximum Concentration Detected in 2021 (µg/L)**
Benzene	3.3	1,1-Dichloroethane	0.29
Trichloroethene	3.7	cis-1,2-Dichloroethene	7.2
Tetrachloroethene	0.31	1,4-dioxane	10

Each of these VOCs were identified at concentrations lower than their respective USEPA MCLs, when available.

1,4-dioxane does not have a federal MCL; however, New York State recently established a standard for 1,4-dioxane of 1 µg/L. 1,4-dioxane was detected at a maximum concentration of 10 µg/L, with concentrations detected above 1 µg/L in MW-7D-S, MW-7D-D, MW-9D-1, MW-9D-2, MW-9D-3, and MW-10D-1. Concentrations of 1,4-dioxane were similar to those detected in 2017 and 2018, when last analyzed.

3.3.3 Monitored Natural Attenuation Parameter Analytical Results

As required by the USEPA, evaluation of MNA at the Site has been completed. Based on MNA evaluation activities conducted in 2011, select MNA parameters were incorporated into the 2017 to 2021 annual monitoring programs for additional analysis. MNA data collected included contaminant

concentrations, electron donors and acceptors, metabolic byproducts, and general water quality parameters. During the 2021 monitoring event, MNA parameters were evaluated using accepted laboratory test methods specified in the Site's QAPP by Eurofins TestAmerica Laboratories except for the following field parameters: dissolved oxygen (DO), Oxidation-Reduction Potential (i.e., ORP or Eh), pH, and temperature which were field measured. In general, this evaluation has identified decreasing 1,2-DCA concentrations and groundwater conditions conducive to natural attenuation as discussed below.

Decreases in contaminant concentrations are a primary line of evidence used to support MNA as an implemented remedial strategy. As presented in past annual groundwater monitoring reports prepared for the Site, concentrations of 1,2-DCA (the primary Site contaminant) have decreased by an order of magnitude since site characterization in 1997. However, in recent years, the rate of this observed decline has appeared to decrease based on graphical depictions of the data. Therefore, the Mann-Kendall Test, a common non-parametric statistical approach used in MNA evaluations, was employed to assess current plume stability and the level of confidence in 1,2-DCA concentration decreases. In the Mann-Kendall Test, contaminant data collected over time from a specific monitoring location are tabulated, compared, and used to calculate a test statistic referred to as the S-statistic (Wiedemeier et al., 2000). The magnitude of the S-statistic indicates the direction and statistical level of confidence in the trend. Positive S-statistics suggest an increasing trend while negative S-statistics suggest a decreasing trend. At all eight monitoring well locations, decreasing 1,2-DCA concentrations are noted. At seven of eight monitoring wells, the Mann-Kendall analysis indicates that 1,2-DCA concentrations are decreasing with at least 90% confidence, while monitoring well MW-10D3 having a lower negative S-statistic suggests decreasing 1,2-DCA concentrations, but with less than 90% confidence. The Mann-Kendall analysis is presented as Appendix C.

A primary electron donor is organic carbon indicated by groundwater Total Organic Carbon (TOC) concentrations. At the Site, TOC concentrations have been fairly similar over the last five years; however, they are lower than observed during initial rounds of sampling conducted in 1999 and 2000. Additionally, in several monitoring wells including MW7D-S, MW9-D3, MW9-D2, MW10-D2, methane concentrations were lower in the most recent sampling events than during initial rounds of sampling conducted in 1999 and 2000. In other wells, Methane concentrations are more variable, including MW7D-D, MW9-D1, MW10-D1. The continued detection of methane may be associated with the production of methane as a metabolic byproduct of methanogenesis, and combined with the general

low ORP suggests that reducing conditions are present, indicating conditions appropriate for contaminant natural attenuation.

The evaluation of MNA data collected in August and December of 2021 suggests that:

a) *1,2-DCA concentrations are attenuating in Site monitoring wells*.

At monitoring well MW-10D-3, 1,2-DCA was detected at a concentration slightly higher than the reporting limit. In 2021, decreasing 1,2-DCA concentrations are noted in all Site monitoring wells.

b) The level of confidence in the observed decreases in 1,2-DCA concentration is greatest at the deep sampling intervals of monitoring well MW-7D and MW-9D.

The Mann-Kendall evaluation indicates that 1,2-DCA concentrations are declining at all monitored wells/depth intervals and that the greatest confidence in these 1,2-DCA decreases is observed at monitoring wells MW7D-D, MW9D-2, and MW10D-1. It is possible that the isolation of depth may be promoting VOC attenuation in the deeper intervals due to relatively stronger reducing conditions.

c) *Geochemical data continue to suggest that conditions conducive to reductive dechlorination are present in most of the Site monitoring wells* (i.e., low oxygen concentrations, low Oxidation-Reduction Potential (Eh) readings, the presence of ferrous iron, and the presence of methane).

There is correlation between the Mann-Kendall S-Statistic in 1,2-DCA concentration decreases over time and the 2021 methane concentrations identified in the MNA analyses. Predominantly, as shown in the table below, the five highest methane concentration levels in 2021 are coincident with five highest levels of Mann-Kendall confidence (the most negative S-Statistic values) in 1,2-DCA natural attenuation. These methane concentrations are potentially indicative of methanogenisis being a driver in the attenuation of VOCs on-Site.

The MNA data suggests that the annual frequency of monitoring has been sufficient to evaluate trends but may be reduced further without significant impact to future evaluations.

Correlation Between 2021 Mann-Kendall Confidence and Methane Concentrations		
Monitoring Well	**2021 Mann-Kendall S-Statistic**	**2021 Methane Concentration (ug/L)**
MW-7D-D	-23	69
MW-10D-1	-24	60
MW-9D-1	-20	24
MW-9D-2	-26	13
MW–7D-S	-20	4.8
MW-9D-3	-14	<4.0
MW-10D-2	-16	2.1
MW-10D-3	-7	<1.0

1. This table is sorted from highest 2021 methane concentration to lowest.
2. The more negative the Mann-Kendall S-Statistic, the greater the confidence in decreasing 1,2-DCA concentrations over time.
3. Methane concentrations may be indicative of methanogenisis occurring.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The following section of this report summarizes the findings and conclusions of the 2021 groundwater sampling event and provides applicable recommendations.

CONCLUSIONS

1. In the 2021 sampling of the residential wells, only trace levels of chloromethane were identified in at 224 BHR and trace levels of styrene were identified at 225 BHR, both detected concentrations were below State or Federal numeric criteria. Neither compound is considered a site related contaminant of concern, and chloromethane is typically used for the cleaning of laboratory glassware. In the other residential wells, no VOCs were detected, and none have been detected above State or Federal guidelines during 31 sampling events since monitoring began in 1985.

2. The data from the off-site private wells and the on-Site groundwater monitoring wells continues to support the USEPA statement in the Third Five-Year Review (2016): "since there have been no historic detections in the residential wells, it is indicative that these wells are not in hydraulic connection with contaminated fractures in the bedrock." Therefore, there are no complete exposure pathways for the Site groundwater contamination."

3. Groundwater monitoring of select bedrock and residential wells has been conducted since 1999 with sampling and analysis of the nearby residential wells having been conducted since 1985. The data continue to suggest that reducing the groundwater monitoring frequency would remain adequate to continue to demonstrate the attenuation of VOCs at the Site.

   Data collected during the 2021 sampling event from the Site monitoring wells indicate that concentrations of 1,2-DCA remain above the USEPA MCL on the Site. The impacted area of the aquifer remains relatively small, with the concentrations of 1,2-DCA in groundwater relatively low and continuing to show generally decreasing trends since source removal activities and treatment of contaminated soils was completed in 1997.

   1,4-dioxane was detected in several monitoring wells at concentrations exceeding the recently established New York State standard of 1 µg/L (with a maximum detection of 10 µg/L). These wells include: MW-7D-S, MW-7D-D, MW-9D-1, MW-9D-2, MW-9D-3, and MW-10D-1.

4. Mann-Kendall statistical evaluation and graphical depictions of trends demonstrate that low level 1,2-DCA concentrations are continuing to attenuate due to ongoing natural processes, and methanogenisis may be a primary driver in VOC attenuation. Though the rate of VOC degradation may have slowed over time, VOCs at the Site continue to attenuate via natural processes.

   The area of impacted Site groundwater is remote and difficult to access. If the Site were to be re-developed, the DCHD would restrict the installation of potable water supply wells in this area. In the Third Five Year Review for the Site, the USEPA stated that "EPA believes that the DCDH requirement for installation of new wells currently provides adequate control to ensure that this localized portion of the aquifer is not utilized for drinking water. The DCDH requires that a plan (including the specific location) for drilling a well be submitted for review and approval prior to the well installation. DCDH reviews this drilling plan against the NYSDEC list of inactive

hazardous waste disposal sites to determine if there may be any groundwater quality concerns in the vicinity prior to issuing a permit for well installation."

Based on these factors, the absence of contaminants exceeding regulatory criteria in surface water and in potable water supply wells for over thirty years, MACTEC continues to conclude that the No Further Action remedy for groundwater selected by the USEPA in the ROD is protective and appropriate, and no further response actions are necessary.

RECOMMENDATION

MACTEC continues to recommend that the USEPA approve the requested modification of the Site groundwater monitoring plan for the on-Site monitoring wells from annual to biennial, with continued sampling and analysis of the near Site private monitoring wells annually.

5.0 REFERENCES

Amec E&E, PC, October 2019, Annual Groundwater Monitoring Report.

Amec E&E, PC, November 2018, Annual Groundwater Monitoring Report.

Amec E&E, PC, July 20, 2017, Quality Assurance Project Plan.

Amec Foster Wheeler, November 2017, Annual Groundwater Monitoring Report.

Amec Foster Wheeler, October 2016, Annual Groundwater Monitoring Report.

Amec Foster Wheeler, December 2015, Annual Groundwater Monitoring Report.

Amec Foster Wheeler, November 2014, Annual Groundwater Monitoring Report.

Amec Foster Wheeler, October 2013. Annual Groundwater Monitoring Report.

Amec Foster Wheeler, January 2012. Annual Groundwater Monitoring Report.

MACTEC, November 2020. Annual Groundwater Monitoring Report.

MACTEC, October 2010. Annual Groundwater Monitoring Report.
.

MACTEC, October 2009. Annual Groundwater Monitoring Report.

MACTEC, April 2008. Annual Groundwater Monitoring Report.

MACTEC (formerly ESE New York, P.C.), November 4, 2002. Groundwater Evaluation Report.

MACTEC (formerly ESE New York, P.C.), June 11, 2001. Sarney Farm Site, June 2001Groundwater sampling Program ESE No. 716472.0400, letter submitted to USEPA Region II.

QST New York, P.C., November 13, 2001. Post-ROD Groundwater Evaluation Report.

QST New York, P.C., August 1998. Remedial Action Report, draft submitted to USEPA Region II.

USEPA, February 13, 2008. RE: Follow up: Sarney Farm Superfund Site, email submitted to MACTEC.

USEPA, 2003. Unilateral Administrative Order, Index Number II CERCLA 96-0214 for the Sarney Farm Superfund Site.

USEPA, October 2002. Preliminary Close-Out Report for the Sarney Farm Superfund Site.

TABLES

TABLE 1
POTABLE WATER SAMPLE RESULTS

AUGUST 2021 GROUNDWATER SAMPLING
SARNEY FARM SUPERFUND SITE
AMENIA, NEW YORK

	Sample ID	151 BHR		224 BHR		199 BHR		154 BHR		225 BHR	
	Sample Delivery Group	460-220416-5		460-220416-2		460-220416-3		460-220416-4		460-220416-1	
	Sample Date	8/25/2021		8/24/2021		8/25/2021		8/25/2021		8/24/2024	
Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
1,1,1-Trichloroethane	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2-Trichloroethane	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethane	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethene	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichlorobenzene	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,4-Trichlorobenzene	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,4-Trimethylbenzene	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichlorobenzene	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloroethane	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3,5-Trimethylbenzene	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3-Dichlorobenzene	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,4-Dichlorobenzene	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
2-Butanone	µg/L	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
2-Hexanone	µg/L	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
4-Methyl-2-pentanone	µg/L	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Acetone	µg/L	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Benzene	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Carbon disulfide	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Carbon tetrachloride	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobenzene	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroethane	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroform	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloromethane	µg/L	0.5	U	0.46	J	0.5	U	0.5	U	0.5	U
Cis-1,2-Dichloroethene	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dichlorodifluoromethane	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Ethylbenzene	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methylene chloride	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Naphthalene	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Propylbenzene	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Styrene	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.52	
Tetrachloroethene	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Toluene	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
trans-1,2-Dichloroethene	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethene	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichlorofluoromethane	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Vinyl chloride	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Xylene, o	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Xylenes (m&p)	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Xylenes, Total	µg/L	1	U	1	U	1	U	1	U	1	U
1,4-dioxane	µg/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U

Notes:
U = Not detected above the presented Reporting Limit
J = Estimated Concentration
µg/L = micrograms per liter

Prepared by: RJO 11-11-21
Checked by: CRS 1-20-22

TABLE 2
SUMMARY OF 1,2-DCA CONCENTRATIONS, EVALUATED MNA PARAMETERS OVER TIME, AND FINAL FIELD MEASURED PARAMETERS
Sarney Farm Superfund Site - Amenia, New York

			Parameter Concentration by Location								
Parameter Name	**Units**	**Date**	MW7D-S 39-72 ft	MW7D-D 72-101 ft	MW7D-D (Duplicate) 72-101 ft	MW9-D3 38-55 ft	MW9-D2 55-102 ft	MW9-D1 102 -147 ft	MW10-D3 48-68 ft	MW10-D2 68-110 ft	MW10-D1 110-144 ft
1,2-DCA	µg/L	Nov-99	**390**	**600**	NA	**450**	**360**	**400**	**14**	**67**	**70**
		May-00	**250**	**490**	NA	**350**	**300**	**320**	**6**	**69**	**86**
		Jul-06	**8**	**190**	**190**	**130**	**160**	**100**	NA	**30**	**44**
		Aug-11	**130**	**48**	**50**	**110**	**73**	**89**	**0.9**	**43**	**36**
		Aug-17	**59**	**72**	**58**	**79**	**85**	**70**	**0.6**	**32**	**27**
		Aug-18	**53**	**35**	**36**	**58**	**59**	**52**	**0.89**	**23**	**21**
		Aug-19	**37**	**36**	**37**	**53**	**60**	**56**	**0.81**	**24**	**21**
		Oct-20	**49**	**35**	**36**	**75**	**56**	**54**	<0.5	**26**	**20**
		Aug-21	NS	NS	NS	NS	NS	NS	**0.87**	**15**	**19**
		Dec-21	**48**	**30**	**29**	**54**	**41**	**50**	NS	NS	NS
Ethane	µg/L	Nov-99	**8.3**	**7.3**	NA	<5.0	**8.0**	**35**	<5.0	<5.0	**6.4**
		May-00	NA	**6.4**	NA	NA	NA	**31**	NA	<4.0	NA
		Aug-11	<4	<4	<4	<4	<4	<4	<4	<4	<4
		Aug-17	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethene	µg/L	Nov-99	<6.0	<6.0	NA	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0
		May-00	NA	<3.0	NA	NA	NA	**3.3**	NA	<3.0	NA
		Aug-11	<3	<3	<3	<3	<3	<3	<3	<3	<3
		Aug-17	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC	mg/L	Nov-99	**17.3**	**16.1**	NA	**15**	**16.5**	**15.9**	**12.7**	**12.8**	**10.9**
		May-00	NA	**15.9**	NA	NA	NA	NA	NA	**12.4**	NA
		Aug-11	<1	<20.98	<1	<1	**0.41J**	**0.7J**	<1	<1	**0.47J**
		Aug-17	**1.2**	**1.1**	**1.2**	**1.1**	**1.1**	**1.4**	**0.86**	**0.84**	0.87
		Aug-18	<1	**0.66**	<1	<1	<1	**0.75**	<1	<1	<1
		Aug-19	**0.61J**	**0.71J**	**0.66J**	**0.57J**	**0.53J**	**0.73J**	**0.41J**	**0.39J**	<1
		Oct-20	**0.67 J**	<1	<1	**0.64 J**	**0.67 J**	**0.94 J**	**0.67 J**	<1	<1
		Aug-22	NS	NS	NS	NS	NS	NS	< 1	<1	<1
		Dec-22	**1.1**	**0.73 J**	**0.70 J**	**0.84 J**	**0.76 J**	**0.71 J**	NS	NS	NS
Dissolved Oxygen (Field Measured)	mg/L	Nov-99	**0.91**	**0.91**	NA	**0.3**	**0.37**	**0.36**	**2.54**	**0.34**	**0.33**
		May-00	NA	**0.35**	NA	NA	NA	**2.57**	NA	**2.04**	NA
		Aug-11	**0.69**	**0.25**	NA	**1.43**	**0.48**	**0.9**	**3.82**	**0.81**	**0.47**
		Aug-17	**0.61**	**0.94**	NA	**0.5**	**0.5**	**0.6**	**2.5**	**0.9**	**0.6**
		Aug-18	**0.47**	**1.1**	NA	**1.0**	**1.1**	**1.2**	**4.2**	**0.84**	**0.75**
		Aug-19	**1.0**	**1.2**	NA	**0.6**	**1.9**	**0.9**	**1.3 J**	**1.7 J**	**0.9 J**
		Oct-20	**1.8**	**0.9**	NA	**0.5**	**0.6**	**0.4**	**2.6**	**0.6**	**0.8**
		Aug-21	NS	NS	NS	NS	NS	NS	**0.9**	**0.9**	**0.8**
		Dec-21	**0.8**	**0.7**	NA	**0.7**	**0.9**	**0.8**	NS	NS	NS
Nitrogen as Nitrate-Nitrite	mg/L	Nov-99	<0.2	<0.2	NA	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		May-00	NA	<0.2	NA	NA	NA	<0.2	NA	<0.2	NA
		Aug-17	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
		Aug-18	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.17**	<0.05	<0.05
		Aug-19	**0.95**	**0.11**	**0.84**	**0.15**	**0.15**	**0.15**	**0.23**	**0.17**	**0.16**
		Oct-20	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	**0.38**	**0.19**	<0.1
		Aug/Dec-21	**0.20 J**	**0.21 J**	**0.027 J**	**0.035 J**	**0.76 J**	**0.16**	**0.13**	**0.11**	**0.23 J**
Nitrate as N	mg/L	Aug-11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.15**	<9.25	**0.062**
Nitrite as N	mg/L	Aug-11	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<11.27	<0.01
Manganese	µg/L	Nov-99	**235**	**98.2**	NA	**120**	**94.5**	**24.2**	**21.2**	**64.8**	**36.6**
		May-00	NA	**63**	NA	NA	NA	**13.8B**	NA	**61.9**	NA
Iron, Total	µg/L	Nov-99	**5.3B**	**609**	NA	**678**	**623**	**75.6B**	**7B**	**16B**	**352**
		May-00	NA	**672**	NA	NA	NA	**131**	NA	<10.7	NA
		Aug-11	**430**	**395**	**406**	**891**	**673**	**296**	**4240**	**187J**	**245J**
		Aug-17	**860**	**750**	**190**	**1000**	**700**	**460**	**3800**	**69**	**340**
		Aug-18	**640**	**290**	**290**	**1000**	**680**	**320**	**4200**	**110**	**370**
		Aug-19	**479**	**242**	**264**	**1340**	**719**	**302**	**56.7J**	**160**	**361**
		Oct-20	**486**	**287**	**249**	**1840**	**1020**	**846**	**854**	<150	**371**
		Aug-21	NS	NS	NS	NS	NS	NS	<150	< 150	**359**
		Dec-21	**499**	**414**	**385**	**1160**	**733**	**292**	NS	NS	NS
Iron, Ferrous (Dissolved)	mg/L	Aug-11	**2**	<1	NA	**1**	**4**	<1	<1	<1	**2**
		Aug-17	0	0	NA	**0.3**	**0.2**	0	0	0	**0.12**
		Aug-18	**0.47**	**0.3**	**0.28**	**0.95**	**0.66**	**0.27**	**0.069**	**0.083**	**0.36**
		Aug-19	**0.417**	**0.283**	**0.264**	**1.23**	**0.719**	**0.287**	**<.150**	**0.16**	**0.375**
		Oct-20	**0.521**	**0.265**	**0.299**	**1.32**	**0.695**	**0.257**	**0.253**	**<.150**	**0.339**
		Aug-21	NS	NS	NS	NS	NS	NS	**0.196 J**	<0.150	**0.319**
		Dec-21	**0.303**	**0.407**	**0.415**	**1.07**	**0.839**	**0.305**	NS	NS	NS
Sulfate	mg/L	Nov-99	**23**	**23**	NA	**25**	**26**	**17**	**20**	**23**	**19**
		May-00	NA	24	NA	NA	NA	**18**	NA	**24**	NA
		Aug-11	**33.8**	**28.3**	**28.4**	**35.2**	**29.8**	**20.3**	**22.1**	**224.1**	**22.9**
		Aug-17	**26.7**	**26.9**	**27.6**	**27.4**	**31.5**	**22.9**	**19.9**	**28**	**26.3**
		Aug-18	**28.1**	**27.1**	**27.2**	**28.3**	**30.8**	**22.9**	**21.9**	**31.5**	**28.5**
		Aug-19	**27**	**27**	**27**	**28**	**29**	**22**	**26**	**28**	**24**
		Oct-20	**29**	**24**	**24**	**56**	**31**	**21**	**18**	**26**	**25**
		Aug-21	NS	NS	NS	NS	NS	NS	**16**	**25**	**25**
		Dec-21	**31.8**	**26.1**	**26.2**	**29.3**	**29.1**	**22.1**	NS	NS	NS

Updated by: RJO 1-10-22
Checked by CRS:1-27-22

TABLE 2
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Sarney Farm Superfund Site - Amenia, New York

			Parameter Concentration by Location								
Parameter Name	**Units**	**Date**	MW7D-S 39-72 ft	MW7D-D 72-101 ft	MW7D-D (Duplicate) 72-101 ft	MW9-D3 38-55 ft	MW9-D2 55-102 ft	MW9-D1 102 -147 ft	MW10-D3 48-68 ft	MW10-D2 68-110 ft	MW10-D1 110-144 ft
Sulfide	mg/L	Nov-99	<0.1	<0.1	NA	<0.1	<0.1	<0.1	<0.1	<0.1	**0.28**
		May-00	NA	<0.1	NA	NA	NA	**0.4**	NA	<0.1	NA
		Aug-11	<1	<1	<1	<1	<1	**1**	<1	<1	**1**
		Aug-17	<1	<1	<1	<1	<1	<1	<1	<1	<1
		Aug-18	<1	<1	<1	<1	<1	**0.8 J**	<1	<1	<1
		Aug-19	<1	<1	<1	<1	<1	**0.73 J**	<1	<1	<1
		Oct-20	<1	<1	<1	<1	<1	<1	<1	<1	**0.89 J**
		Aug-21	NS	NS	NS	NS	NS	NS	**1.2**	< 1.0	< 1.0
		Dec-21	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NS	NS	NS
Alkalinity	mg/L	Nov-99	**334**	**343**	NA	**334**	**334**	**356**	**260**	**260**	**251**
		May-00	NA	**377**	NA	NA	NA	**291**	NA	**272**	NA
		Aug-11	**345**	**279**	**269**	**330**	**275**	**247**	**319**	**256**	**239**
		Aug-17	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	mg/L	Nov-99	**5.7**	**17.1**	NA	**6.6**	**8.6**	**5.7**	**5.7**	**4.8**	**3.8**
		May-00	NA	**9.6**	NA	NA	NA	<5.0	NA	<5.0	NA
		Aug-11	**3.1**	**3.4**	**3.4**	**2.8**	**3.9**	**4.1**	**1.8**	**113.1**	**4**
		Aug-17	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Dioxide	µg/L	Nov-99	<350	<350	NA	<350	<350	<350	<350	<350	<350
		May-00	NA	<350	NA	NA	NA	<350	NA	<350	NA
		Aug-11	**4800**	**3000**	**3200**	**6200**	**4000**	**4900**	**4600**	**3200**	**2000**
		Aug-17	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methane	µg/L	Nov-99	**110**	**88**	NA	**85**	**81**	**15**	<2	**8.6**	**21**
		May-00	NA	**90**	NA	NA	NA	**24**	NA	**7.2**	NA
		Aug-11	<2	<2	<2	<2	<2	**4.2**	<2	<2	**16**
		Aug-17	**5.1**	**8.2**	**22**	**1.3**	**4.4**	**14**	0.19 J	**0.61**	**19**
		Aug-18	**11**	**51**	**49**	**2**	**15**	**33**	<.58	**1.8**	**43**
		Aug-19	**13**	**84**	**85**	**2.6**	**13**	**63**	**15**	**3.1**	**61**
		Oct-20	**18**	**280**	**270**	**4.1**	**36 J**	**38**	**0.18**	**3.5 J**	**69**
		Aug-21	NS	NS	NS	NS	NS	NS	< 1.0	**2.1**	**60**
		Dec-21	**4.8**	**69**	**61**	< 4.0	**13**	**24**	NS	NS	NS
pH (Field Measured)	std. units	Nov-99	**7.4**	**7.3**	NA	**7.3**	**7.3**	**7.4**	**7.4**	**7.4**	**7.1**
		May-00	NA	**7.3**	NA	NA	NA	**7.5**	NA	**7.2**	NA
		Aug-11	**7.0**	**7.1**	NA	**7.1**	**7.4**	**7.0**	**7.0**	**6.9**	**7.2**
		Aug-17	**7.4**	**7.5**	NA	**7.4**	**7.6**	**7.7**	**7.1**	**7.5**	**7.6**
		Aug-18	**7.3**	**7.1**	NA	**5.7**	**5.7**	**5.7**	**7.4**	**7.4**	**7.3**
		Aug-19	**7.3**	**7.4**	NA	**7.3**	**7.1**	**7.0**	**7.6**	**7.4**	**7.4**
		Oct-20	**7.4**	**7.3**	NA	**7.2**	**7.2**	**7.1**	**6.8**	**7.2**	**7.4**
		Aug-22	NS	NS	NS	NS	NS	NS	**6.7**	**6.7**	**6.8**
		Dec-21	**7.3**	**7.4**	NA	**7.0**	**7.0**	**7.0**	NS	NS	NS
Eh* (Field Measured)	mV	Nov-99	**99.7**	**-52.2**	NA	**-91**	**-107**	**-127**	**-51**	**-111**	**-101**
		May-00	NA	**-128**	NA	NA	NA	**-184.9**	NA	**-52.9**	NA
		Aug-11	**71**	**78**	NA	**-87**	**-148**	**-89**	**46**	**67**	**-145**
		Aug-17	**-77**	**-54**	NA	**-160**	**-220**	**-210**	**80**	**-39**	**-120**
		Aug-18	**-9.4**	**36.8**	NA	**-134**	**-190**	**-200**	**34.4**	**-44.3**	**-89.3**
		Aug-19	**130**	**170**	NA	**-48**	**-41**	**-120**	**60**	**-24**	**-90**
		Oct-20	**-10**	**120**	NA	**-100**	**-100**	**-210**	**25**	**-60**	**-140**
		Aug-21	NS	NS	NS	NS	NS	NS	**-18**	**-41**	**-74.5**
		Dec-21	**31**	**18**	NA	**-15**	**-14**	**-10**	NS	NS	NS
Temp. (Field Measured)	°C	Nov-99	**5.7**	**7.4**	NA	**9.4**	**9.4**	**9.4**	**10**	**10**	**10**
		May-00	NA	**11**	NA	NA	NA	**10**	NA	**11**	NA
		Aug-11	**12**	**11**	NA	Anomolous	**13**	**14**	**13**	**13**	**13**
		Aug-17	**22**	**16**	NA	**15**	**13**	**15**	**12**	**12**	**13**
		Aug-18	**13**	**13**	NA	**14**	**14**	**15**	**10**	**11**	**11**
		Aug-19	**12**	**13**	NA	**15**	**13**	**14**	**13**	**15**	**19**
		Oct-20	**11**	**13**	NA	**12**	**12**	**12**	**11**	**12**	**14**
		Aug-21	NS	NS	NS	NS	NS	NS	**11**	**14**	**13**
		Dec-21	**10**	**10**	NA	**10**	**10**	**10**	NS	NS	NS

Notes:
* Eh is a measurement of Oxidation-Reduction Potential (ORP) using a hydrogen electrode.
1,2-DCA = 1,2-Dichloroethane
B = data qualifier indicating the analyte was present in the associated laboratory blank
J = data qualifier indicating the analyte concentration is estimated
NA = not analyzed; NS = not sampled

ºC = degrees Celsius
µg/L = micrograms per Liter
mg/L = milligrams per Liter
mV = millivolts
std. units = Standard Units

Updated by: RJO 1-10-22
Checked by CRS:1-27-22

TABLE 3
SUMMARY OF DETECTED
VOCS IN BEDROCK WELLS
1997 THROUGH 2021 SAMPLING EVENTS

2021 Annual Groundwater Monitoring Report
Sarney Farm Superfund Site, Amenia, New York

Well No. Date Sampled Sample/Zone Depth Analyte (ug/L)	EPA MCL (ug/L)	NYSDEC Class GA (ug/L)	MW-7D 05/28/97 50 ft.	MW-7D 08/06/97 50 ft.	MW-7DD 08/06/97 89 ft.	MW-7D-D 9/15/1999 72 - 101 ft.	MW-7D-D-DUP 9/15/1999 72 - 101 ft.	MW-7D-D 11/16/1999 72 - 101 ft.	MW-7D-D 5/25/2000 72 - 101 ft.	MW-7D-D 11/14/2000 72 - 101 ft.	MW-7D-D-DP 11/14/2000 72 - 101 ft.	MW-7D-D 6/19/2001 72 - 101 ft.	MW-7D-DUP 6/19/2001 72 - 101 ft.	MW-7D-D 12/12/2001 72 - 101 ft.	MW-7D-DUP 12/12/2001 72 - 101 ft.
Chloromethane		5			9										
Vinyl Chloride	2	2													
Chloroethane		5													
Methylene Chloride	5	5	25					0.5 J							
Acetone		50				3 J	5 J								4 J
Carbon Disulfide		60													
1,1-Dichloroethene	7	5													
1,1-Dichloroethane		5	46			4 J	4 J	4.1	3 J	3 J	2 J	3 J	3 J	2 J	2 J
Chloroform		7													
1,2-Dichloroethane	5	0.6	**6400**	**760**	**910**	**640 D**	**680 D**	**600 D**	**490**	**600**	**540**	**460**	**490**	**510**	**520**
2-Butanone		50													
1,1,1-Trichloroethane	200	5													
Carbon Tetrachloride	5	5													
1,2-Dichloropropane	5	1													
Trichloroethene	5	5	**16**			2 J	3 J	3.3	2 J	3 J	3 J	2 J	2 J	2 J	2 J
Benzene	5	1	**100**	**17**	**17**	**14**	**15**	**14**	**11**	**12**	**12**	**11**	**10**	**8 J**	**8 J**
4-Methyl-2-Pentanone		5													
2-Hexanone		50													
Tetrachloroethene	5	5													
Toluene	1000	5													
Chlorobenzene	100	5													
Ethylbenzene	700	5													
Styrene	100	5													
P & M Xylenes		5													
O Xylene		5													
Xylenes (total)	10000	5													
1,1,2-Trichloroethane	5	1													
Dichlorodifluoromethane		5													
Trichlorofluoromethane		5													
cis-1,2-Dichloroethene	70	5				31	33	47 JD	36	41	40	35	34	32	31
trans-1,2-Dichloroethene	100	5	**140**	16	27										
N-Propylbenzene		5													
1,3,5-Trimethylbenzene		5													
1,2,4-Trimethylbenzene		5													
1,3-Dichlorobenzene		3													
1,4-Dichlorobenzene	75	3													
1,2-Dichlorobenzene	600	3													
1,2,4-Trichlorobenzene	70	5													
Naphthalene		10													
1,2,3-Trichlorobenzene		5													
1,4-Dioxane		1	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:
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Well No. Date Sampled Sample/Zone Depth Analyte (ug/L)	EPA MCL (ug/L)	NYSDEC Class GA (ug/L)	MW-7D-D 6/20/2002 72 - 101 ft.		MW-7D-DUP 6/20/2002 72 - 101 ft.		MW-7D 7/24/2003 72 - 101 ft.		MW-7D-DUP 7/24/2003 72 - 101 ft.		MW-7D 7/13/2004 72 - 101 ft.		MW-7D-DUP 7/13/2004 72 - 101 ft.		MW-7D-D 8/10/2005 72 - 101 ft.		MW-7D-D-DP 8/10/2005 72 - 101 ft.		MW-7D-D 7/25/2006 72 - 101 ft.		MW-7D-D-DP 7/25/2006 72 - 101 ft.		MW-7D-D 7/18/2007 72 - 101 ft.		MW-7D-D 9/3/2008 72 - 101 ft.		MW-7D-D-DP 9/3/2008 72 - 101 ft.	
Chloromethane		5																										
Vinyl Chloride	2	2																										
Chloroethane		5																										
Methylene Chloride	5	5																										
Acetone		50																										
Carbon Disulfide		60																										
1,1-Dichloroethene	7	5																										
1,1-Dichloroethane		5	3	J	3	J	2	J	1	J	1	J	1	J	1	J	1	J	1	J	1	J	1.2	J	0.76	J	0.74	J
Chloroform		7																										
1,2-Dichloroethane	5	0.6	**380**		**360**		**250**		**250**		**290**	**J**	**280**	**J**	**290**		**270**		**190**		**190**		**130**		**150**		**160**	
2-Butanone		50																										
1,1,1-Trichloroethane	200	5																										
Carbon Tetrachloride	5	5																										
1,2-Dichloropropane	5	1																										
Trichloroethene	5	5	3	J	3	J	2	J	2	J	2	J	2	J	2	J	2	J	2	J	2	J	1.8	J	1.5	J	1.6	J
Benzene	5	1	**11**		**12**		5	J	5	J					**7**	**J**	**7**	**J**	5	J	5	J	3.7	J	4.8	J	**5.1**	**J**
4-Methyl-2-Pentanone		5																										
2-Hexanone		50																										
Tetrachloroethene	5	5																										
Toluene	1000	5																										
Chlorobenzene	100	5																										
Ethylbenzene	700	5																										
Styrene	100	5																										
P & M Xylenes		5																										
O Xylene		5																										
Xylenes (total)	10000	5																										
1,1,2-Trichloroethane	5	1																										
Dichlorodifluoromethane		5																										
Trichlorofluoromethane		5																										
cis-1,2-Dichloroethene	70	5	37		38		30		30		34	J	32	J	32		32		27		26		20		22		24	
trans-1,2-Dichloroethene	100	5											3	J														
N-Propylbenzene		5																										
1,3,5-Trimethylbenzene		5																										
1,2,4-Trimethylbenzene		5																										
1,3-Dichlorobenzene		3																										
1,4-Dichlorobenzene	75	3																										
1,2-Dichlorobenzene	600	3																										
1,2,4-Trichlorobenzene	70	5																										
Naphthalene		10																										
1,2,3-Trichlorobenzene		5																										
1,4-Dioxane		1	--		--		--		--		--		--		--		--		--		--		--		--		--	

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Well No. Date Sampled Sample/Zone Depth Analyte (ug/L)	EPA MCL (ug/L)	NYSDEC Class GA (ug/L)	MW-7D-D 8/18/2009 72-101 ft.	MW-7D-D-DP 8/18/2009 72-101 ft.	MW-7D-D 08/24/10 72-101 ft.	MW-7D-DUP 08/24/10 72-101 ft.	MW-7D-D 08/23/11 72-101 ft.	MW-7D-DUP 08/23/11 72-101 ft.	MW-7D-D 08/28/12 72-101 ft.	MW-7D-DUP 08/28/12 72-101 ft.	MW-7D-D 08/21/13 72-101 ft.	MW-7D-DUP 08/21/13 72-101 ft.	MW-7D-D 08/19/14 72-101 ft.	MW-7D-DUP 08/19/14 72-101 ft.	MW-7D-D 08/19/15 72-101 ft.
Chloromethane		5													
Vinyl Chloride	2	2													
Chloroethane		5	0.14 J												
Methylene Chloride	5	5													
Acetone		50													
Carbon Disulfide		60													
1,1-Dichloroethene	7	5													
1,1-Dichloroethane		5	0.71 J	0.71 J	0.6 J	0.61 J	0.47 J	0.48 J	0.54 J	0.59 J					
Chloroform		7													
1,2-Dichloroethane	5	0.6	**80**	**82**	**60**	**60**	**48**	**50**	**130 J**	**130 J**	**86**	**81**	**78**	**78**	**79 J**
2-Butanone		50													
1,1,1-Trichloroethane	200	5													
Carbon Tetrachloride	5	5													
1,2-Dichloropropane	5	1													
Trichloroethene	5	5	0.82 J	0.85 J	0.51 J	0.53 J				1.6 J					
Benzene	5	1			0.23 J	0.24 J			5.3	5.4					
4-Methyl-2-Pentanone		5													
2-Hexanone		50													
Tetrachloroethene	5	5	0.11 J												
Toluene	1000	5													
Chlorobenzene	100	5													
Ethylbenzene	700	5													
Styrene	100	5													
P & M Xylenes		5													
O Xylene		5													
Xylenes (total)	10000	5													
1,1,2-Trichloroethane	5	1													
Dichlorodifluoromethane		5													
Trichlorofluoromethane		5													
cis-1,2-Dichloroethene	70	5	6 J	5.8 J	3.6 J	3.6 J	2.9	2.8	10	11	9.5	9.2	6.5	6.3	5.5
trans-1,2-Dichloroethene	100	5	0.56 J	0.47 J											
N-Propylbenzene		5													
1,3,5-Trimethylbenzene		5													
1,2,4-Trimethylbenzene		5													
1,3-Dichlorobenzene		3													
1,4-Dichlorobenzene	75	3													
1,2-Dichlorobenzene	600	3													
1,2,4-Trichlorobenzene	70	5													
Naphthalene		10													
1,2,3-Trichlorobenzene		5													
1,4-Dioxane		1	--	--	--	--	--	--	--	--	--	--	--	--	--

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Chloromethane		5																										
Vinyl Chloride	2	2																										
Chloroethane		5																										
Methylene Chloride	5	5																										
Acetone		50																										
Carbon Disulfide		60																										
1,1-Dichloroethene	7	5																										
1,1-Dichloroethane		5							0.50		0.39		0.37	J	0.4	J	0.3	J	0.28	J								
Chloroform		7																										
1,2-Dichloroethane	5	0.6	**81**	**J**	**75**		**79**		**72**	**J**	**58**	**J**	**35**		**36**		**36**		**37**		**35**		**36**		**30**		**29**	
2-Butanone		50																										
1,1,1-Trichloroethane	200	5																										
Carbon Tetrachloride	5	5																										
1,2-Dichloropropane	5	1																										
Trichloroethene	5	5			1.2		1.2		1.3		0.94		0.60		0.61		0.44	J	0.43									
Benzene	5	1							0.94		0.63		0.48	J	0.47	J					0.33		0.36		0.35	J	0.37	J
4-Methyl-2-Pentanone		5																										
2-Hexanone		50																										
Tetrachloroethene	5	5																										
Toluene	1000	5																										
Chlorobenzene	100	5																										
Ethylbenzene	700	5																										
Styrene	100	5																										
P & M Xylenes		5																										
O Xylene		5																										
Xylenes (total)	10000	5																										
1,1,2-Trichloroethane	5	1																										
Dichlorodifluoromethane		5																										
Trichlorofluoromethane		5																										
cis-1,2-Dichloroethene	70	5	5.6		7.3		7.7		6.2		4.1		2.5		2.6		2.9		3.1		2		1.9		1.8		1.8	
trans-1,2-Dichloroethene	100	5																										
N-Propylbenzene		5																										
1,3,5-Trimethylbenzene		5																										
1,2,4-Trimethylbenzene		5																										
1,3-Dichlorobenzene		3																										
1,4-Dichlorobenzene	75	3																										
1,2-Dichlorobenzene	600	3																										
1,2,4-Trichlorobenzene	70	5																										
Naphthalene		10																										
1,2,3-Trichlorobenzene		5																										
1,4-Dioxane		1	--		--		--		2.4	J	4.2	J	5.8		5.6		--		--		--		--		6.8		6.6	

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Blank = Not detected.; -- = not analyzed

TABLE 3
SUMMARY OF DETECTED
VOCS IN BEDROCK WELLS
1997 THROUGH 2021 SAMPLING EVENTS

2021 Annual Groundwater Monitoring Report
Sarney Farm Superfund Site, Amenia, New York

Well No. Date Sampled Sample/Zone Depth Analyte (ug/L)	EPA MCL (ug/L)	NYSDEC Class GA (ug/L)	MW-7D-S 11/16/1999 39 - 72 ft.		MW-7D-S-DUP 11/16/1999 39 - 72 ft.		MW-7D-S 5/25/2000 39 - 72 ft.		MW-7D-S 11/14/2000 39 - 72 ft.		MW-7D-S 6/19/2001 39 - 72 ft.		MW-7D-S 12/12/2001 39 - 72 ft.		MW-7D-S 6/20/2002 39 - 72 ft.		MW-7D-S 7/24/2003 39 - 72 ft.		MW-7D-S 7/13/2004 39 - 72 ft.		MW-7D-S 8/10/2005 39 - 72 ft.		MW-7D-S 7/25/2006 39 - 72 ft.		MW-7D-S 7/17/2007 39 - 72 ft.		MW-7D-S/DP 7/17/2007 39 - 72 ft.	
Chloromethane		5																										
Vinyl Chloride	2	2																										
Chloroethane		5																										
Methylene Chloride	5	5																										
Acetone		50											3	J														
Carbon Disulfide		60																										
1,1-Dichloroethene	7	5																							0.12	J	0.1	J
1,1-Dichloroethane		5	3.6		3.6		6	J	5	J	4	J	3	J	5	J			2	J			0.5	J	2.2		2.2	
Chloroform		7																										
1,2-Dichloroethane	5	0.6	**390**	**D**	**410**	**D**	**250**		**280**		**190**		**340**		**170**		2	J	2	J	1	J	**8**	**J**	**110**		**120**	
2-Butanone		50																										
1,1,1-Trichloroethane	200	5																										
Carbon Tetrachloride	5	5																										
1,2-Dichloropropane	5	1																										
Trichloroethene	5	5	4.6		4		4	J	2	J	1	J	2	J	2	J			1	J			0.6	J	1.5	J	1.6	J
Benzene	5	1	**12**		**10**		**12**		**12**		**9**	**J D**	**8**	**J**	**9**	**J**									1.3	J	1.4	J
4-Methyl-2-Pentanone		5																										
2-Hexanone		50																										
Tetrachloroethene	5	5																										
Toluene	1000	5																										
Chlorobenzene	100	5																										
Ethylbenzene	700	5																										
Styrene	100	5																										
P & M Xylenes		5																										
O Xylene		5																										
Xylenes (total)	10000	5																										
1,1,2-Trichloroethane	5	1																										
Dichlorodifluoromethane		5																										
Trichlorofluoromethane		5																										
cis-1,2-Dichloroethene	70	5	45	JD	44	JD	31		16		9	J	19	J	13		3	J	11	J	4	J	7	J	9.5	J	9.5	J
trans-1,2-Dichloroethene	100	5																										
N-Propylbenzene		5																										
1,3,5-Trimethylbenzene		5																										
1,2,4-Trimethylbenzene		5																										
1,3-Dichlorobenzene		3																										
1,4-Dichlorobenzene	75	3																										
1,2-Dichlorobenzene	600	3																										
1,2,4-Trichlorobenzene	70	5																										
Naphthalene		10																										
1,2,3-Trichlorobenzene		5																										
1,4-Dioxane		1	--		--		--		--		--		--		--		--		--		--		--		--		--	

Notes:
1997 and Sept. 1999 data have NOT been validated.
Bold/Shaded = Exceedance of the applicable EPA MCL
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TABLE 3
SUMMARY OF DETECTED
VOCS IN BEDROCK WELLS
1997 THROUGH 2021 SAMPLING EVENTS

2021 Annual Groundwater Monitoring Report
Sarney Farm Superfund Site, Amenia, New York

Well No. Date Sampled Sample/Zone Depth Analyte (ug/L)	EPA MCL (ug/L)	NYSDEC Class GA (ug/L)	MW-7D-S 9/3/2008 39 - 72 ft.	MW-7D-S 8/18/2009 39 - 72 ft.	MW-7D-S 08/24/10 39 - 72 ft.	MW-7D-S 08/23/11 39 - 72 ft.	MW-7D-S 08/28/12 39 - 72 ft.	MW-7D-S 08/21/13 39 - 72 ft.	MW-7D-S 08/19/14 39 - 72 ft.	MW-7D-S 08/19/15 39 - 72 ft.	MW-7D-S 08/23/16 39 - 72 ft.	MW-7D-S 08/22/17 39 - 72 ft.	MW-7D-S 08/28/18 39 - 72 ft.	MW-7D-S 08/20/19 39 - 72 ft.	MW-7D-S 10/07/20 39 - 72 ft.	MW-7D-S 12/01/21 39 - 72 ft.
Chloromethane		5														
Vinyl Chloride	2	2														
Chloroethane		5		0.15 J												
Methylene Chloride	5	5														
Acetone		50														
Carbon Disulfide		60														
1,1-Dichloroethene	7	5	0.1 J	0.32 J	0.29 J											
1,1-Dichloroethane		5	1.4 J	2 J	1.7 J	0.5 J	0.55 J					0.42	0.57	0.28 J	0.3	
Chloroform		7														
1,2-Dichloroethane	5	0.6	**110**	**110**	**110**	**130**	**100**	**44**	**65**	**61**	**50**	**59**	**53**	**37**	**49**	**48**
2-Butanone		50														
1,1,1-Trichloroethane	200	5														
Carbon Tetrachloride	5	5														
1,2-Dichloropropane	5	1														
Trichloroethene	5	5	1.4 J	1.6 J	1.4 J	2.4	1.7		1.1 J	1.2 J		0.98	1.1	0.43 J	1.2	1.6
Benzene	5	1	2.2 J	2.6 J	0.28 J		3.4		1.4 J	1.1 J		0.91	0.97		0.66	0.92
4-Methyl-2-Pentanone		5														
2-Hexanone		50														
Tetrachloroethene	5	5														
Toluene	1000	5														
Chlorobenzene	100	5														
Ethylbenzene	700	5														
Styrene	100	5														
P & M Xylenes		5														
O Xylene		5														
Xylenes (total)	10000	5														
1,1,2-Trichloroethane	5	1														
Dichlorodifluoromethane		5														
Trichlorofluoromethane		5														
cis-1,2-Dichloroethene	70	5	12	8.3 J	7.7 J	20	7.6	2.3	6.4	5.3	4.5	5.2	4.9	3.1	6.2	7.2
trans-1,2-Dichloroethene	100	5		0.13 J												
N-Propylbenzene		5														
1,3,5-Trimethylbenzene		5														
1,2,4-Trimethylbenzene		5														
1,3-Dichlorobenzene		3														
1,4-Dichlorobenzene	75	3														
1,2-Dichlorobenzene	600	3														
1,2,4-Trichlorobenzene	70	5														
Naphthalene		10														
1,2,3-Trichlorobenzene		5														
1,4-Dioxane		1	--	--	--	--	--	--	--	--	--	2.6	3.4	--	--	1.6

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TABLE 3
SUMMARY OF DETECTED
VOCS IN BEDROCK WELLS
1997 THROUGH 2021 SAMPLING EVENTS

2021 Annual Groundwater Monitoring Report
Sarney Farm Superfund Site, Amenia, New York

Well No. Date Sampled Sample/Zone Depth Analyte (ug/L)	EPA MCL (ug/L)	NYSDEC Class GA (ug/L)	MW-9D-1 09/15/99 102 - 147 ft.	MW-9D-1 11/15/99 102 - 147 ft.	MW-9D-1 05/24/00 102 - 147 ft.	MW-9D-1 11/14/00 102 - 147 ft.	MW-9D-1 06/19/01 102 - 147 ft.	MW-9D-1 12/12/01 102 - 147 ft.	MW-9D-1 06/20/02 102 - 147 ft.	MW-9D-1 07/24/03 102 - 147 ft.	MW-9D-1 07/13/04 102 - 147 ft.	MW-9D-1 08/10/05 102 - 147 ft.	MW-9D-1 07/25/06 102 - 147 ft.	MW-9D-1 07/17/07 102 - 147 ft.	MW-9D-1 09/04/08 102 - 147 ft.
Chloromethane		5													
Vinyl Chloride	2	2													
Chloroethane		5													
Methylene Chloride	5	5	2 J	1.1 J											
Acetone		50	5 J					3 J							
Carbon Disulfide		60												7.1 J	
1,1-Dichloroethene	7	5													
1,1-Dichloroethane		5	4 J	3.3	2 J	2 J	1 J	1 J	2 J	1 J	0.9 J		0.5 J	0.59 J	0.47 J
Chloroform		7										2 J	1 J	0.78 J	
1,2-Dichloroethane	5	0.6	**510 D**	**400 D**	**320**	**290**	**240**	**200**	**160**	**200**	**150 J**	**93**	**100**	**110**	**110**
2-Butanone		50													
1,1,1-Trichloroethane	200	5													
Carbon Tetrachloride	5	5													
1,2-Dichloropropane	5	1													
Trichloroethene	5	5	3 J	2.8	1 J	1 J		1 J	2 J	2 J	2 J		0.5 J	0.86 J	0.69 J
Benzene	5	1	**17**	**15**	**10 J**	**9 J**	**8 J**	**7 J**	**7 J**	**7 J**		4 J	4 J	4.6 J	4.6 J
4-Methyl-2-Pentanone		5													
2-Hexanone		50													
Tetrachloroethene	5	5													
Toluene	1000	5													
Chlorobenzene	100	5													
Ethylbenzene	700	5													
Styrene	100	5													
P & M Xylenes		5													
O Xylene		5													
Xylenes (total)	10000	5													
1,1,2-Trichloroethane	5	1													
Dichlorodifluoromethane		5													
Trichlorofluoromethane		5													
cis-1,2-Dichloroethene	70	5		24	16	13	10	13	13	16	12 J	7 J	7 J	8.6 J	8.2 J
trans-1,2-Dichloroethene	100	5	23												
N-Propylbenzene		5													
1,3,5-Trimethylbenzene		5													
1,2,4-Trimethylbenzene		5													
1,3-Dichlorobenzene		3													
1,4-Dichlorobenzene	75	3													
1,2-Dichlorobenzene	600	3													
1,2,4-Trichlorobenzene	70	5													
Naphthalene		10													
1,2,3-Trichlorobenzene		5													
1,4-Dioxane		1	--	--	--	--	--	--	--	--	--	--	--	--	--

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TABLE 3
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VOCS IN BEDROCK WELLS
1997 THROUGH 2021 SAMPLING EVENTS

2021 Annual Groundwater Monitoring Report
Sarney Farm Superfund Site, Amenia, New York

Well No. Date Sampled Sample/Zone Depth Analyte (ug/L)	EPA MCL (ug/L)	NYSDEC Class GA (ug/L)	MW-9D-1 08/18/09 102 - 147 ft.		MW-9D-1 08/24/10 102 - 147 ft.		MW-9D-1 08/23/11 102 - 147 ft.		MW-9D-1 08/28/12 102 - 147 ft.		MW-9D-1 08/21/13 102 - 147 ft.		MW-9D-1 08/19/14 102 - 147 ft.		MW-9D-1 08/19/15 102 - 147 ft.		MW-9D-1 08/23/16 102 - 147 ft.		MW-9D-1 08/22/17 102 - 147 ft.		MW-9D-1 08/28/18 102 - 147 ft.		MW-9D-1 08/20/19 102 - 147 ft.		MW-9D-1 10/07/20 102 - 147 ft.		MW-9D-1 12/01/21 102 - 147 ft.	
Chloromethane		5																										
Vinyl Chloride	2	2																										
Chloroethane		5																										
Methylene Chloride	5	5																										
Acetone		50																										
Carbon Disulfide		60																										
1,1-Dichloroethene	7	5																										
1,1-Dichloroethane		5	0.52	J	0.49	J	0.42	J	0.42	J									0.43	J	0.35	J	0.34	J	0.27		0.29	J
Chloroform		7	0.23	J																								
1,2-Dichloroethane	5	0.6	**93**	**J**	**90**		**89**		**78**		**78**		**71**		**73**		**69**		**70**		**52**		**56**		**54**		**50**	
2-Butanone		50																										
1,1,1-Trichloroethane	200	5																										
Carbon Tetrachloride	5	5																										
1,2-Dichloropropane	5	1																										
Trichloroethene	5	5	0.83	J	0.83	J			0.68	J									0.60		0.48	J	0.43	J	0.42		0.42	
Benzene	5	1	3.6	J	3.6	J	4.3		3.8				3.1	J	3.4	J	3.2		3.5		3.3		3.3		3.3		3.3	
4-Methyl-2-Pentanone		5																										
2-Hexanone		50																										
Tetrachloroethene	5	5	0.11	J																								
Toluene	1000	5			0.13	J																						
Chlorobenzene	100	5																										
Ethylbenzene	700	5																										
Styrene	100	5																										
P & M Xylenes		5																										
O Xylene		5																										
Xylenes (total)	10000	5																										
1,1,2-Trichloroethane	5	1																										
Dichlorodifluoromethane		5																										
Trichlorofluoromethane		5																										
cis-1,2-Dichloroethene	70	5	7.1	J	6.6	J	5.6		6.4		5.9		4.8	J	4.9	J	5.7		5.3		4.5		5.1		4.7		4.7	
trans-1,2-Dichloroethene	100	5																										
N-Propylbenzene		5																										
1,3,5-Trimethylbenzene		5																										
1,2,4-Trimethylbenzene		5																										
1,3-Dichlorobenzene		3																										
1,4-Dichlorobenzene	75	3																										
1,2-Dichlorobenzene	600	3																										
1,2,4-Trichlorobenzene	70	5																										
Naphthalene		10																										
1,2,3-Trichlorobenzene		5																										
1,4-Dioxane		1	--		--		--		--		--		--		--		--		11		13		--		--		10	

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Prepared by / Date: RJO 1/5/22
Checked by / Date: ATH 01/18/22

TABLE 3
SUMMARY OF DETECTED
VOCS IN BEDROCK WELLS
1997 THROUGH 2021 SAMPLING EVENTS

2021 Annual Groundwater Monitoring Report
Sarney Farm Superfund Site, Amenia, New York

Well No. Date Sampled Sample/Zone Depth Analyte (ug/L)	EPA MCL (ug/L)	NYSDEC Class GA (ug/L)	MW-9D2 09/15/99 55 - 102 ft.	MW-9D2 11/15/99 55 - 102 ft.	MW-9D2 05/24/00 55 - 102 ft.	MW-9D2 11/14/00 55 - 102 ft.	MW-9D2 06/19/01 55 - 102 ft.	MW-9D2 12/12/01 55 - 102 ft.	MW-9D2 06/20/02 55 - 102 ft.	MW-9D2 07/24/03 55 - 102 ft.	MW-9D2 07/13/04 55 - 102 ft.	MW-9D2 08/10/05 55 - 102 ft.	MW-9D2 07/25/06 55 - 102 ft.	MW-9D2 07/17/07 55 - 102 ft.	MW-9D2 09/03/08 55 - 102 ft.
Chloromethane		5													
Vinyl Chloride	2	2													
Chloroethane		5													
Methylene Chloride	5	5													
Acetone		50	3 J					3 J							
Carbon Disulfide		60													
1,1-Dichloroethene	7	5													
1,1-Dichloroethane		5	5 J	5.3	3 J	3 J	3 J	2 J	2 J	2 J	1 J	1 J	0.8 J	0.68 J	0.67 J
Chloroform		7													
1,2-Dichloroethane	5	0.6	**610 D**	**360 D**	**300**	**310**	**300**	**280**	**260**	**200**	**160 J**	**140**	**160**	**140**	**130**
2-Butanone		50													
1,1,1-Trichloroethane	200	5		1.6											
Carbon Tetrachloride	5	5													
1,2-Dichloropropane	5	1													
Trichloroethene	5	5	5 J	**9.3**	2 J	**8 J**	**4 J**	**6 J**	**7 J**	3 J	3 J	**5 J**	2 J	2.1 J	2.2 J
Benzene	5	1	**12**	**11**	**7 J**	**7 J**	**8 J**	**6 J**	**6 J**	2 J			0.6 J	1 J	0.76 J
4-Methyl-2-Pentanone		5													
2-Hexanone		50													
Tetrachloroethene	5	5					0.5								
Toluene	1000	5													
Chlorobenzene	100	5													
Ethylbenzene	700	5													
Styrene	100	5													
P & M Xylenes		5													
O Xylene		5													
Xylenes (total)	10000	5													
1,1,2-Trichloroethane	5	1													
Dichlorodifluoromethane		5													
Trichlorofluoromethane		5													
cis-1,2-Dichloroethene	70	5	30	38 D	18	33	27	28	26	19	15 J	16	16	14	12
trans-1,2-Dichloroethene	100	5													
N-Propylbenzene		5													
1,3,5-Trimethylbenzene		5													
1,2,4-Trimethylbenzene		5													
1,3-Dichlorobenzene		3													
1,4-Dichlorobenzene	75	3													
1,2-Dichlorobenzene	600	3													
1,2,4-Trichlorobenzene	70	5													
Naphthalene		10													
1,2,3-Trichlorobenzene		5													
1,4-Dioxane		1	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:
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ug/L = Micrograms per Liter
ft. = foot
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1997 THROUGH 2021 SAMPLING EVENTS

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Sarney Farm Superfund Site, Amenia, New York

Well No. Date Sampled Sample/Zone Depth Analyte (ug/L)	EPA MCL (ug/L)	NYSDEC Class GA (ug/L)	MW-9D2 08/18/09 55 - 102 ft.	MW-9D2 08/24/10 55 - 102 ft.	MW-9D2 08/30/11 55 - 102 ft.	MW-9D2 8/28/2012 55 - 102 ft.	MW-9D2 8/21/2013 55 - 102 ft.	MW-9D2 8/19/2014 55 - 102 ft.	MW-9D2 8/19/2015 55 - 102 ft.	MW-9D2 8/23/2016 55 - 102 ft.	MW-9D2 8/22/2017 55 - 102 ft.	MW-9D2 8/28/2018 55 - 102 ft.	MW-9D2 8/20/2019 55 - 102 ft.	MW-9D2 10/07/20 55 - 102 ft.	MW-9D2 12/01/21 55 - 102 ft.
Chloromethane		5													
Vinyl Chloride	2	2													
Chloroethane		5													
Methylene Chloride	5	5												0.6	
Acetone		50													
Carbon Disulfide		60													
1,1-Dichloroethene	7	5													
1,1-Dichloroethane		5	0.59 J	0.59 J		0.6 J					0.41 J	0.36 J	0.32 J	0.37	
Chloroform		7													
1,2-Dichloroethane	5	0.6	**110**	**120**	**73**	**74**	**98**	**96**	**92**	**87**	**85**	**59**	**60**	**56**	**41**
2-Butanone		50													
1,1,1-Trichloroethane	200	5													
Carbon Tetrachloride	5	5													
1,2-Dichloropropane	5	1													
Trichloroethene	5	5	1.6 J	2 J		3.1			1.5 J	1.8	1.2	0.94	0.89	1.1	0.6
Benzene	5	1		1.3 J		2.2				1.3	0.87	0.78	0.98	1.2	0.76
4-Methyl-2-Pentanone		5													
2-Hexanone		50													
Tetrachloroethene	5	5	0.14 J	0.21 J											
Toluene	1000	5		0.11 J											
Chlorobenzene	100	5													
Ethylbenzene	700	5													
Styrene	100	5													
P & M Xylenes		5													
O Xylene		5													
Xylenes (total)	10000	5													
1,1,2-Trichloroethane	5	1													
Dichlorodifluoromethane		5													
Trichlorofluoromethane		5													
cis-1,2-Dichloroethene	70	5	10	11	9.2	5.3	7.3	6.9	6.0	8.4	6.9	6.1	6.0	6.6	5
trans-1,2-Dichloroethene	100	5													
N-Propylbenzene		5													
1,3,5-Trimethylbenzene		5													
1,2,4-Trimethylbenzene		5													
1,3-Dichlorobenzene		3													
1,4-Dichlorobenzene	75	3													
1,2-Dichlorobenzene	600	3													
1,2,4-Trichlorobenzene	70	5													
Naphthalene		10													
1,2,3-Trichlorobenzene		5													
1,4-Dioxane		1	--	--	--	--	--	--	--	--	7.2	10	--	--	9.9

Notes:
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ug/L = Micrograms per Liter
ft. = foot
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TABLE 3
SUMMARY OF DETECTED
VOCS IN BEDROCK WELLS
1997 THROUGH 2021 SAMPLING EVENTS

2021 Annual Groundwater Monitoring Report
Sarney Farm Superfund Site, Amenia, New York

Well No. Date Sampled Sample/Zone Depth Analyte (ug/L)	EPA MCL (ug/L)	NYSDEC Class GA (ug/L)	MW-9D3 09/15/99 38 - 55 ft.	MW-9D3 11/15/99 38 - 55 ft.	MW-9D3 05/24/00 38 - 55 ft.	MW-9D3 11/14/00 38 - 55 ft.	MW-9D3 06/19/01 38 - 55 ft.	MW-9D3 12/12/01 38 - 55 ft.	MW-9D3 06/20/02 38 - 55 ft.	MW-9D3 07/24/03 38 - 55 ft.	MW-9D3 07/13/04 38 - 55 ft.	MW-9D3 08/10/05 38 - 55 ft.	MW-9D3 07/25/06 38 - 55 ft.	MW-9D3 07/17/07 38 - 55 ft.	MW-9D3 09/03/08 38 - 55 ft.
Chloromethane		5													
Vinyl Chloride	2	2													
Chloroethane		5													
Methylene Chloride	5	5													
Acetone		50	4 J												
Carbon Disulfide		60													
1,1-Dichloroethene	7	5		4.5											
1,1-Dichloroethane		5	4 J		3 J	2 J	2 J	2 J	2 J	2 J	1 J		0.8 J	0.58 J	0.5 J
Chloroform		7													
1,2-Dichloroethane	5	0.6	**540 D**	**450 D**	**350**	**330**	**310**	**360**	**270**	**200**	**190 J**	**150**	**130**	**110**	**120**
2-Butanone		50													
1,1,1-Trichloroethane	200	5		1.5	1 J										
Carbon Tetrachloride	5	5													
1,2-Dichloropropane	5	1													
Trichloroethene	5	5	4 J	**9.1**	**8 J**	**7 J**	**8 J**	**7 J**	**8 J**	**6 J**	**5 J**	**5 J**	**5 J**	**4.5 J**	4 J
Benzene	5	1	**10**	**9.3**	**8 J**	**7 J**	**7 J**	**6 J**	**5 J**	2 J			0.6 J	0.24 J	
4-Methyl-2-Pentanone		5													
2-Hexanone		50													
Tetrachloroethene	5	5							0.9 J					0.36 J	
Toluene	1000	5													
Chlorobenzene	100	5													
Ethylbenzene	700	5													
Styrene	100	5													
P & M Xylenes		5													
O Xylene		5													
Xylenes (total)	10000	5													
1,1,2-Trichloroethane	5	1													
Dichlorodifluoromethane		5													
Trichlorofluoromethane		5													
cis-1,2-Dichloroethene	70	5	24	39 JD	37	33	32	32	27	21	18 J	15	13	9.7 J	9.4 J
trans-1,2-Dichloroethene	100	5													
N-Propylbenzene		5													
1,3,5-Trimethylbenzene		5													
1,2,4-Trimethylbenzene		5													
1,3-Dichlorobenzene		3													
1,4-Dichlorobenzene	75	3													
1,2-Dichlorobenzene	600	3													
1,2,4-Trichlorobenzene	70	5													
Naphthalene		10													
1,2,3-Trichlorobenzene		5													
1,4-Dioxane		1	--	--	--	--	--	--	--	--	--	--	--	--	--

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VOCS IN BEDROCK WELLS
1997 THROUGH 2021 SAMPLING EVENTS

2021 Annual Groundwater Monitoring Report
Sarney Farm Superfund Site, Amenia, New York

Well No. Date Sampled Sample/Zone Depth Analyte (ug/L)	EPA MCL (ug/L)	NYSDEC Class GA (ug/L)	MW-9D3 08/18/09 38 - 55 ft.	MW-9D3 08/24/10 38 - 55 ft.	MW-9D3 08/23/11 38 - 55 ft.	MW-9D3 08/28/12 38 - 55 ft.	MW-9D3 08/21/13 38 - 55 ft.	MW-9D3 08/19/14 38 - 55 ft.	MW-9D3 08/19/15 38 - 55 ft.	MW-9D3 08/23/16 38 - 55 ft.	MW-9D3 08/22/17 38 - 55 ft.	MW-9D3 08/28/18 38 - 55 ft.	MW-9D3 08/20/19 38 - 55 ft.	MW-9D3 10/07/20 38 - 55 ft.	MW-9D3 12/01/21 38 - 55 ft.
Chloromethane		5		0.44 J											
Vinyl Chloride	2	2													
Chloroethane		5													
Methylene Chloride	5	5													
Acetone		50													
Carbon Disulfide		60													
1,1-Dichloroethene	7	5		0.1 J											
1,1-Dichloroethane		5	0.46 J	0.46 J	0.4 J	0.55 J					0.32 J	0.27 J	0.26 J		
Chloroform		7													
1,2-Dichloroethane	5	0.6	**100**	**120**	**110**	**110**	**90**	**78**	**86**	**92**	**79**	**58**	**53**	**75**	**54**
2-Butanone		50													
1,1,1-Trichloroethane	200	5													
Carbon Tetrachloride	5	5													
1,2-Dichloropropane	5	1													
Trichloroethene	5	5	4.6 J	4.1 J	**5.3 J**	3.1		4	3.8 J	3.3	3.4	3.90	3.4	3.2	3.7
Benzene	5	1		0.19 J		2.6					0.56	0.88		0.61	0.81
4-Methyl-2-Pentanone		5													
2-Hexanone		50													
Tetrachloroethene	5	5	0.57 J	0.56 J							0.29 J	0.34 J			
Toluene	1000	5		0.1 J											
Chlorobenzene	100	5													
Ethylbenzene	700	5													
Styrene	100	5													
P & M Xylenes		5													
O Xylene		5													
Xylenes (total)	10000	5													
1,1,2-Trichloroethane	5	1													
Dichlorodifluoromethane		5													
Trichlorofluoromethane		5													
cis-1,2-Dichloroethene	70	5	8.6 J	8.1 J	6.8 J	5.7	6	5.6	5.2	6.7	5.7	5.6	5.1	5.7	5.1
trans-1,2-Dichloroethene	100	5													
N-Propylbenzene		5													
1,3,5-Trimethylbenzene		5													
1,2,4-Trimethylbenzene		5													
1,3-Dichlorobenzene		3													
1,4-Dichlorobenzene	75	3													
1,2-Dichlorobenzene	600	3													
1,2,4-Trichlorobenzene	70	5													
Naphthalene		10													
1,2,3-Trichlorobenzene		5													
1,4-Dioxane		1	--	--	--	--	--	--	--	--	1.1	1.2	--	--	1.1

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Prepared by / Date: RJO 1/5/22
Checked by / Date: ATH 01/18/22

TABLE 3
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VOCS IN BEDROCK WELLS
1997 THROUGH 2021 SAMPLING EVENTS

2021 Annual Groundwater Monitoring Report
Sarney Farm Superfund Site, Amenia, New York

Well No. Date Sampled Sample/Zone Depth Analyte (ug/L)	EPA MCL (ug/L)	NYSDEC Class GA (ug/L)	MW-10D1 09/15/99 110 - 144 ft.		MW-10D1 11/15/99 110 - 144 ft.		MW-10D1 05/24/00 110 - 144 ft.		MW-10D1 11/14/00 110 - 144 ft.		MW-10D1 06/19/01 110 - 144 ft.		MW-10D1 12/12/01 110 - 144 ft.		MW-10D1 06/19/02 110 - 144 ft.		MW-10D1 07/24/03 110 - 144 ft.		MW-10D1 07/13/04 110 - 144 ft.		MW-10D1 08/10/05 110 - 144 ft.		MW-10D1 07/25/06 110 - 144 ft.		MW-10D1 07/17/07 110 - 144 ft.		MW-10D1 09/04/08 110 - 144 ft.	
Chloromethane		5																										
Vinyl Chloride	2	2																										
Chloroethane		5																										
Methylene Chloride	5	5																										
Acetone		50	6	J																								
Carbon Disulfide		60																										
1,1-Dichloroethene	7	5																										
1,1-Dichloroethane		5																										
Chloroform		7	1	J	0.9	J																			0.36	J	0.34	J
1,2-Dichloroethane	5	0.6	**47**		**70**	**D**	**86**		**61**		**74**		**67**		**56**		**62**		**61**	**J**	**40**		**44**		**40**		**41**	
2-Butanone		50																										
1,1,1-Trichloroethane	200	5																										
Carbon Tetrachloride	5	5																										
1,2-Dichloropropane	5	1																										
Trichloroethene	5	5																										
Benzene	5	1																							0.15	J	0.14	J
4-Methyl-2-Pentanone		5																										
2-Hexanone		50																										
Tetrachloroethene	5	5																										
Toluene	1000	5																							0.43	J	0.35	J
Chlorobenzene	100	5																										
Ethylbenzene	700	5																										
Styrene	100	5																										
P & M Xylenes		5																										
O Xylene		5																										
Xylenes (total)	10000	5																										
1,1,2-Trichloroethane	5	1																										
Dichlorodifluoromethane		5																										
Trichlorofluoromethane		5																										
cis-1,2-Dichloroethene	70	5	1	J	2		1	J	1	J	1	J	2	J	2	J	2	J	2	J	1	J	1	J	1.3	J	1.3	J
trans-1,2-Dichloroethene	100	5																										
N-Propylbenzene		5																										
1,3,5-Trimethylbenzene		5																										
1,2,4-Trimethylbenzene		5																										
1,3-Dichlorobenzene		3																										
1,4-Dichlorobenzene	75	3																										
1,2-Dichlorobenzene	600	3																										
1,2,4-Trichlorobenzene	70	5																										
Naphthalene		10																										
1,2,3-Trichlorobenzene		5																										
1,4-Dioxane		1	--		--		--		--		--		--		--		--		--		--		--		--		--	

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1997 THROUGH 2021 SAMPLING EVENTS

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Sarney Farm Superfund Site, Amenia, New York

Well No. Date Sampled Sample/Zone Depth Analyte (ug/L)	EPA MCL (ug/L)	NYSDEC Class GA (ug/L)	MW-10D1 08/19/09 110 - 144 ft.	MW-10D-1 08/25/10 110 - 144 ft.	MW-10D-1 08/30/11 110 - 144 ft.	MW-10D-1 08/29/12 110 - 144 ft.	MW-10D-1 08/21/13 110 - 144 ft.	MW-10D-1 08/20/14 110 - 144 ft.	MW-10D-1 08/20/15 110 - 144 ft.	MW-10D-1 08/24/16 110 - 144 ft.	MW-10D-1 08/23/17 110 - 144 ft.	MW-10D-1 08/20/18 110 - 144 ft.	MW-10D-1 08/21/19 110 - 144 ft.	MW-10D-1 10/08/20 110 - 144 ft.	MW-10D-1 08/24/21 110 - 144 ft.
Chloromethane		5													
Vinyl Chloride	2	2													
Chloroethane		5													
Methylene Chloride	5	5													
Acetone		50										1.2 J			
Carbon Disulfide		60			0.41 J										
1,1-Dichloroethene	7	5													
1,1-Dichloroethane		5		0.14 J											
Chloroform		7			0.28 J										
1,2-Dichloroethane	5	0.6	**43**	**41**	**36**	**34**	**27**	**29**	**31**	**29**	**27**	**21**	**21**	**20**	**19**
2-Butanone		50													
1,1,1-Trichloroethane	200	5													
Carbon Tetrachloride	5	5													
1,2-Dichloropropane	5	1													
Trichloroethene	5	5													
Benzene	5	1		0.21 J	0.18 J						0.13 J	0.1 J			
4-Methyl-2-Pentanone		5													
2-Hexanone		50													
Tetrachloroethene	5	5													
Toluene	1000	5		0.37 J											
Chlorobenzene	100	5													
Ethylbenzene	700	5													
Styrene	100	5													
P & M Xylenes		5													
O Xylene		5													
Xylenes (total)	10000	5													
1,1,2-Trichloroethane	5	1													
Dichlorodifluoromethane		5													
Trichlorofluoromethane		5													
cis-1,2-Dichloroethene	70	5	1.5 J	1.4 J	1.6	1.2 J		0.98 J	0.95 J	1.3	1.1	1.2	1.1	0.98	1.1
trans-1,2-Dichloroethene	100	5													
N-Propylbenzene		5													
1,3,5-Trimethylbenzene		5													
1,2,4-Trimethylbenzene		5													
1,3-Dichlorobenzene		3													
1,4-Dichlorobenzene	75	3													
1,2-Dichlorobenzene	600	3													
1,2,4-Trichlorobenzene	70	5													
Naphthalene		10													
1,2,3-Trichlorobenzene		5													
1,4-Dioxane		1	--	--	--	--	--	--	--	--	1.3	1.2	--	--	1.1

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VOCS IN BEDROCK WELLS
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Well No. Date Sampled Sample/Zone Depth Analyte (ug/L)	EPA MCL (ug/L)	NYSDEC Class GA (ug/L)	MW-10D2 09/15/99 68 - 110 ft.	MW-10D2 11/15/99 68 - 110 ft.	MW-10D2 05/24/00 68 - 110 ft.	MW-10D2 11/14/00 68 - 110 ft.	MW-10D2 06/19/01 68 - 110 ft.	MW-10D2 12/12/01 68 - 110 ft.	MW-10D2 06/19/02 68 - 110 ft.	MW-10D2 07/24/03 68 - 110 ft.	MW-10D2 07/13/04 68 - 110 ft.	MW-10D2 08/10/05 68 - 110 ft.	MW-10D2 07/25/06 68 - 110 ft.	MW-10D2 07/17/07 68 - 110 ft.	MW-10D2 09/04/08 68 - 110 ft.
Chloromethane		5													
Vinyl Chloride	2	2						2 J							
Chloroethane		5													
Methylene Chloride	5	5													
Acetone		50	3 J												
Carbon Disulfide		60													
1,1-Dichloroethene	7	5													
1,1-Dichloroethane		5													
Chloroform		7													
1,2-Dichloroethane	5	0.6	**48**	**67 D**	**69**	**91**	**82**	**88**	**87**	**73**	**69 J**	**55**	**30**	**52**	**46**
2-Butanone		50													
1,1,1-Trichloroethane	200	5													
Carbon Tetrachloride	5	5													
1,2-Dichloropropane	5	1													
Trichloroethene	5	5													
Benzene	5	1													
4-Methyl-2-Pentanone		5													
2-Hexanone		50													
Tetrachloroethene	5	5													
Toluene	1000	5													
Chlorobenzene	100	5													
Ethylbenzene	700	5													
Styrene	100	5													
P & M Xylenes		5													
O Xylene		5													
Xylenes (total)	10000	5													
1,1,2-Trichloroethane	5	1													
Dichlorodifluoromethane		5													
Trichlorofluoromethane		5													
cis-1,2-Dichloroethene	70	5	1 J	2.3		1 J		3 J	3 J	2 J	1 J	1 J	0.8 J	0.91 J	0.31 J
trans-1,2-Dichloroethene	100	5													
N-Propylbenzene		5													
1,3,5-Trimethylbenzene		5													
1,2,4-Trimethylbenzene		5													
1,3-Dichlorobenzene		3													
1,4-Dichlorobenzene	75	3													
1,2-Dichlorobenzene	600	3													
1,2,4-Trichlorobenzene	70	5													
Naphthalene		10													
1,2,3-Trichlorobenzene		5													
1,4-Dioxane		1	--	--	--	--	--	--	--	--	--	--	--	--	--

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Well No. Date Sampled Sample/Zone Depth Analyte (ug/L)	EPA MCL (ug/L)	NYSDEC Class GA (ug/L)	MW-10D2 08/19/09 68 - 110 ft.		MW-10D-2 08/25/10 68 - 110 ft.		MW-10D-2 08/24/11 68 - 110 ft.		MW-10D-2 08/29/12 68 - 110 ft.		MW-10D-2 08/22/13 68 - 110 ft.		MW-10D-2 08/20/14 68 - 110 ft.		MW-10D-2 08/20/15 68 - 110 ft.		MW-10D-2 08/24/16 68 - 110 ft.		MW-10D-2 08/23/17 68 - 110 ft.		MW-10D-2 08/20/18 68 - 110 ft.		MW-10D-2 08/21/19 68 - 110 ft.		MW-10D-2 10/08/20 68 - 110 ft.		MW-10D-2 08/24/21 68 - 110 ft.	
Chloromethane		5																										
Vinyl Chloride	2	2																										
Chloroethane		5																										
Methylene Chloride	5	5																										
Acetone		50																										
Carbon Disulfide		60																										
1,1-Dichloroethene	7	5																										
1,1-Dichloroethane		5																										
Chloroform		7																										
1,2-Dichloroethane	5	0.6	**8.3**	**J**	**48**		**43**		**43**		**11**		**28**		**37**		**35**		**32**		**23**		**24**		**26**		**15**	
2-Butanone		50																										
1,1,1-Trichloroethane	200	5																										
Carbon Tetrachloride	5	5																										
1,2-Dichloropropane	5	1																										
Trichloroethene	5	5	0.3	J	0.24	J													0.33	J								
Benzene	5	1																			0.44	J						
4-Methyl-2-Pentanone		5																										
2-Hexanone		50																										
Tetrachloroethene	5	5																										
Toluene	1000	5			0.17	J																						
Chlorobenzene	100	5																										
Ethylbenzene	700	5																										
Styrene	100	5																										
P & M Xylenes		5																										
O Xylene		5																										
Xylenes (total)	10000	5																										
1,1,2-Trichloroethane	5	1																										
Dichlorodifluoromethane		5																										
Trichlorofluoromethane		5																										
cis-1,2-Dichloroethene	70	5	0.46	J	0.84	J			0.7	J	0.51	J	0.58	J					0.77		0.55		0.58		0.53		0.61	
trans-1,2-Dichloroethene	100	5																										
N-Propylbenzene		5																										
1,3,5-Trimethylbenzene		5																										
1,2,4-Trimethylbenzene		5																										
1,3-Dichlorobenzene		3																										
1,4-Dichlorobenzene	75	3																										
1,2-Dichlorobenzene	600	3																										
1,2,4-Trichlorobenzene	70	5																										
Naphthalene		10																										
1,2,3-Trichlorobenzene		5																										
1,4-Dioxane		1	--		--		--		--		--		--		--		--				0.33	J	--		--			

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2021 Annual Groundwater Monitoring Report
Sarney Farm Superfund Site, Amenia, New York

Well No. Date Sampled Sample/Zone Depth Analyte (ug/L)	EPA MCL (ug/L)	NYSDEC Class GA (ug/L)	MW-10D3 09/15/99 40 - 68 ft.	MW-10D3 11/15/99 40 - 68 ft.	MW-10D3 05/24/00 40 - 68 ft.	MW-10D3 11/14/00 40 - 68 ft.	MW-10D3 06/19/01 40 - 68 ft.	MW-10D3 12/12/01 40 - 68 ft.	MW-10D3 06/19/02 40 - 68 ft.	MW-10D3 07/24/03 40 - 68 ft.	MW-10D3 07/13/04 40 - 68 ft.	MW-10D3 08/10/05 40 - 68 ft.	MW-10D3 07/25/06 40 - 68 ft.	MW-10D3 07/17/07 40 - 68 ft.	MW-10D3 09/04/08 40 - 68 ft.
Chloromethane		5							3 J						
Vinyl Chloride	2	2													
Chloroethane		5													
Methylene Chloride	5	5													
Acetone		50	3 J												
Carbon Disulfide		60													
1,1-Dichloroethene	7	5													
1,1-Dichloroethane		5													
Chloroform		7													
1,2-Dichloroethane	5	0.6	3 J	**14**	**6 J**		**19**	**5** J	**3** J	**6 J**	**6 J**	**5** J		10 U	**1.1** J
2-Butanone		50													
1,1,1-Trichloroethane	200	5													
Carbon Tetrachloride	5	5													
1,2-Dichloropropane	5	1													
Trichloroethene	5	5	1 J			1 J								0.52 J	0.39 J
Benzene	5	1													
4-Methyl-2-Pentanone		5													
2-Hexanone		50													
Tetrachloroethene	5	5													
Toluene	1000	5													
Chlorobenzene	100	5													
Ethylbenzene	700	5													
Styrene	100	5													
P & M Xylenes		5													
O Xylene		5													
Xylenes (total)	10000	5													
1,1,2-Trichloroethane	5	1													
Dichlorodifluoromethane		5													
Trichlorofluoromethane		5													
cis-1,2-Dichloroethene	70	5		0.8 J											
trans-1,2-Dichloroethene	100	5													
N-Propylbenzene		5													
1,3,5-Trimethylbenzene		5													
1,2,4-Trimethylbenzene		5													
1,3-Dichlorobenzene		3													
1,4-Dichlorobenzene	75	3													
1,2-Dichlorobenzene	600	3													
1,2,4-Trichlorobenzene	70	5													
Naphthalene		10													
1,2,3-Trichlorobenzene		5													
1,4-Dioxane		1	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:
1997 and Sept. 1999 data have NOT been validated.
Bold/Shaded = Exceedance of the applicable EPA MCL
Most recent sampling events are blue shaded columns
MCL = Maximum Contaminant Level
ug/L = Micrograms per Liter
ft. = foot
USEPA = U.S Enviromental Proctection Agency
NYSDEC = New York State Department of Environmental Conservation

Data Qualifiers:
B = Analyte detected in blank.
D = Value obtained through secondary dilution.
E = Value exceeded instrument calibration range.
J = Indicates an estimated value.
Blank = Not detected.; -- = not analyzed

TABLE 3
SUMMARY OF DETECTED
VOCS IN BEDROCK WELLS
1997 THROUGH 2021 SAMPLING EVENTS

2021 Annual Groundwater Monitoring Report
Sarney Farm Superfund Site, Amenia, New York

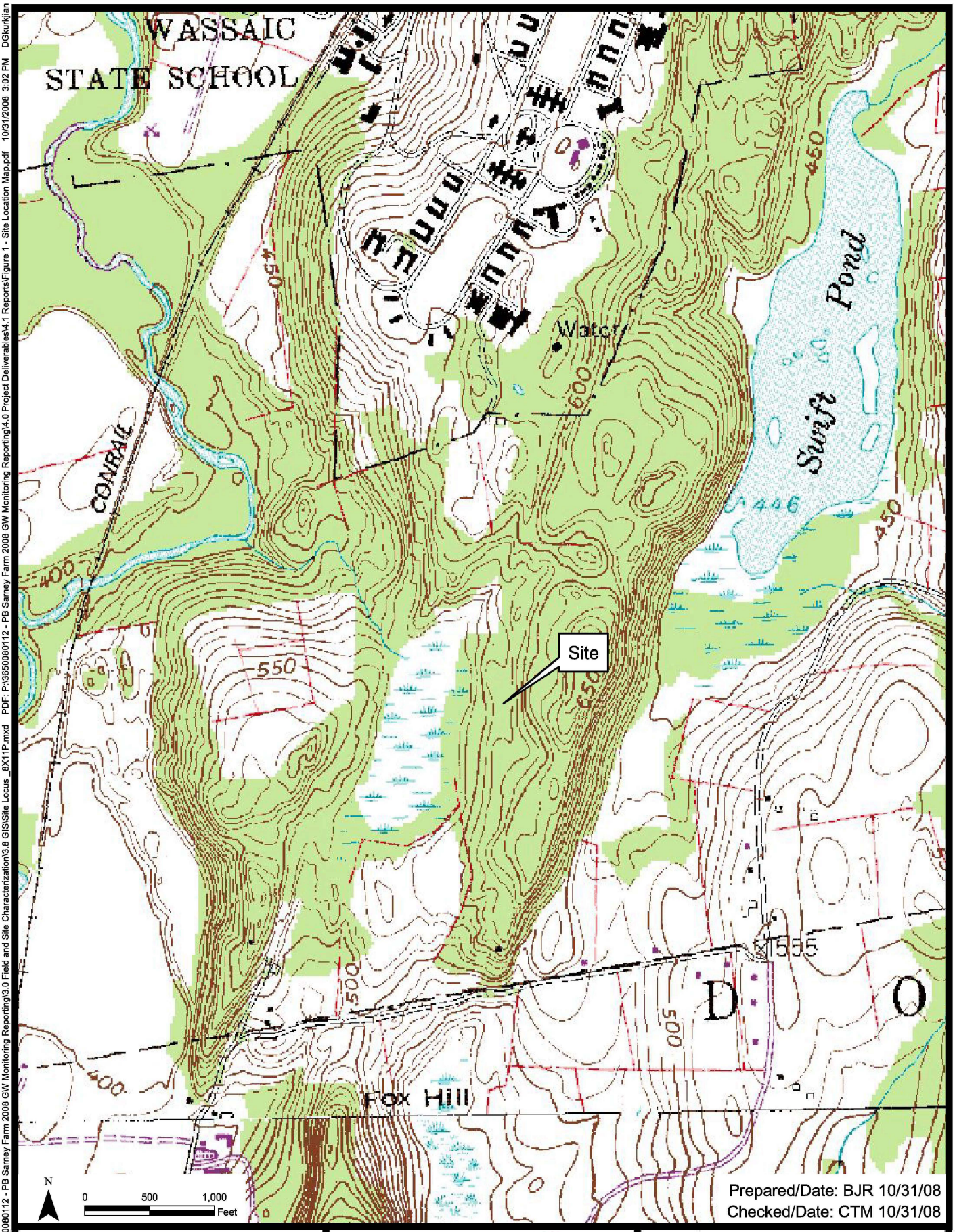
Well No. Date Sampled Sample/Zone Depth Analyte (ug/L)	EPA MCL (ug/L)	NYSDEC Class GA (ug/L)	MW-10D3 08/19/09 40 - 68 ft.		MW-10D3 08/24/10 40 - 68 ft.		MW-10D3 08/24/11 40 - 68 ft.		MW-10D3 08/29/12 40 - 68 ft.		MW-10D3 08/22/13 40 - 68 ft.		MW-10D3 08/20/14 40 - 68 ft.		MW-10D3 08/20/15 40 - 68 ft.		MW-10D3 08/24/16 40 - 68 ft. No Detections		MW-10D3 08/23/17 40 - 68 ft.		MW-10D3 08/20/18 40 - 68 ft.		MW-10D3 08/21/19 40 - 68 ft.		MW-10D3 10/08/20 40 - 68 ft.		MW-10D3 08/24/21 40 - 68 ft.	
Chloromethane		5																										
Vinyl Chloride	2	2																										
Chloroethane		5																										
Methylene Chloride	5	5																										
Acetone		50																			1.6	J						
Carbon Disulfide		60																										
1,1-Dichloroethene	7	5																										
1,1-Dichloroethane		5																										
Chloroform		7																										
1,2-Dichloroethane	5	0.6	**2.1**	J	0.16	J	0.9	J					0.75	J	0.58	J			0.6		0.89		0.81				0.87	
2-Butanone		50																										
1,1,1-Trichloroethane	200	5																										
Carbon Tetrachloride	5	5																										
1,2-Dichloropropane	5	1																										
Trichloroethene	5	5	0.36	J	0.5	J	0.28	J					0.34	J	0.63	J			0.71		0.68		0.44	J	0.35		0.66	
Benzene	5	1																										
4-Methyl-2-Pentanone		5																										
2-Hexanone		50																										
Tetrachloroethene	5	5																										
Toluene	1000	5			0.27	J																						
Chlorobenzene	100	5																										
Ethylbenzene	700	5																										
Styrene	100	5																										
P & M Xylenes		5																										
O Xylene		5																										
Xylenes (total)	10000	5																										
1,1,2-Trichloroethane	5	1																										
Dichlorodifluoromethane		5																										
Trichlorofluoromethane		5																										
cis-1,2-Dichloroethene	70	5	0.16	J	0.16	J																					0.28	J
trans-1,2-Dichloroethene	100	5																										
N-Propylbenzene		5																										
1,3,5-Trimethylbenzene		5																										
1,2,4-Trimethylbenzene		5																										
1,3-Dichlorobenzene		3																										
1,4-Dichlorobenzene	75	3																										
1,2-Dichlorobenzene	600	3																										
1,2,4-Trichlorobenzene	70	5																										
Naphthalene		10																										
1,2,3-Trichlorobenzene		5																										
1,4-Dioxane		1	--		--		--		--		--		--		--		--						--		--			

Notes:
1997 and Sept. 1999 data have NOT been validated.
Bold/Shaded = Exceedance of the applicable EPA MCL
Most recent sampling events are blue shaded columns
MCL = Maximum Contaminant Level
ug/L = Micrograms per Liter
ft. = foot
USEPA = U.S Enviromental Proctection Agency
NYSDEC = New York State Department of Environmental Conservation

Data Qualifiers:
B = Analyte detected in blank.
D = Value obtained through secondary dilution.
E = Value exceeded instrument calibration range.
J = Indicates an estimated value.
Blank = Not detected.; -- = not analyzed

Prepared by / Date: RJO 1/5/22
Checked by / Date: ATH 01/18/22

FIGURES



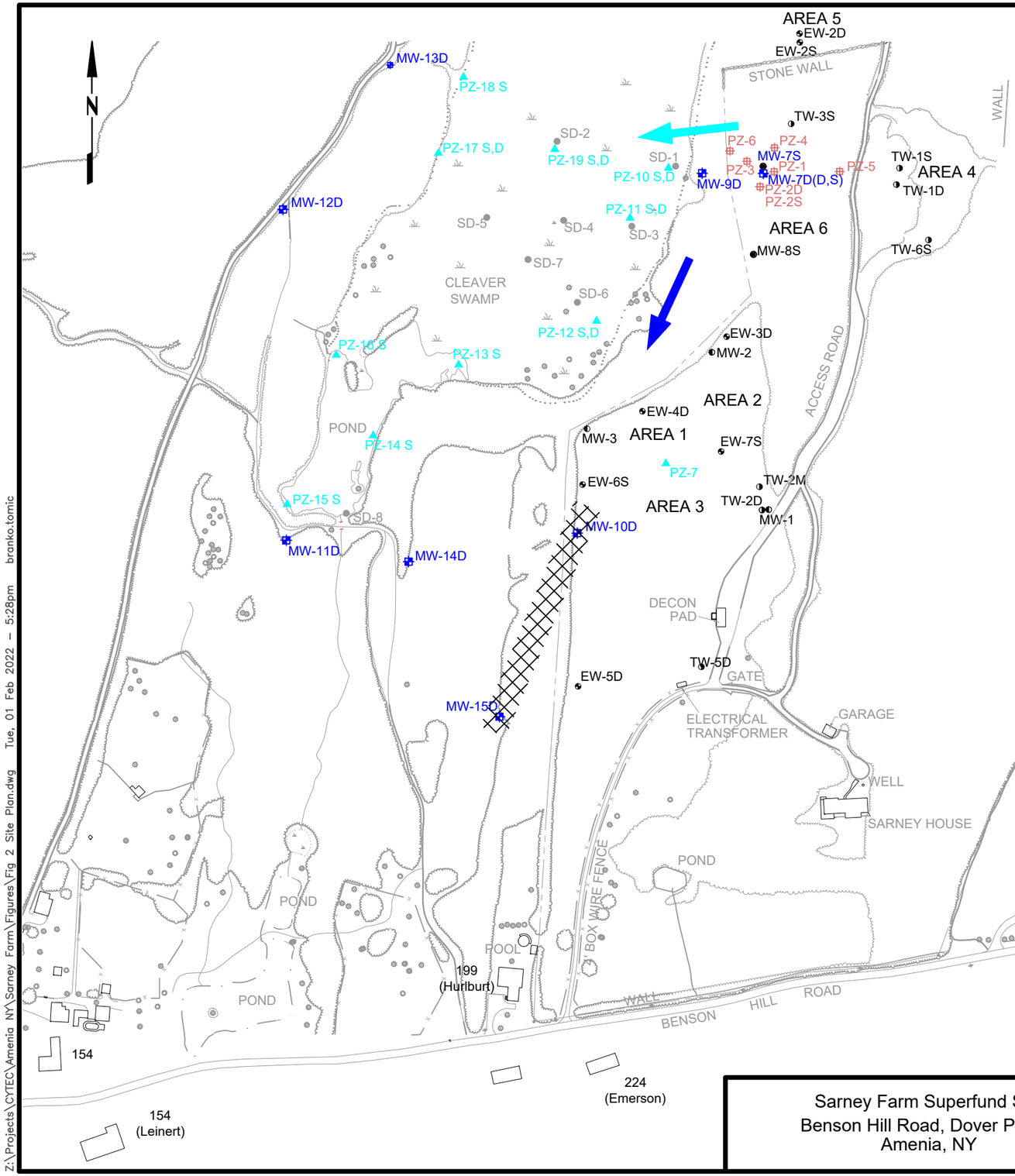
Prepared/Date: BJR 10/31/08
Checked/Date: CTM 10/31/08

Post-ROD Groundwater Evaluation
Sarney Farm Superfund Site
Amenia, New York

MACTEC

Figure 1
Site Location Map
Project 3617-20-7511

Document: P:\36500080112 - PB Sarney Farm 2008 GW Monitoring Reporting\3.0 Field and Site Characterization\3.8 GIS\Site Locus _8X11P.mxd PDF: P:\36500080112 - PB Sarney Farm 2008 GW Monitoring Reporting\4.0 Project Deliverables\4.1 Reports\Figure 1 - Site Location Map.pdf 10/31/2008 3:02 PM DGkurkjian



LEGEND:

- TW-1D — TAMS DEEP MONITORING WELL (1991)
- TW-1M — TAMS INTERMEDIATE DEPTH MONITORING WELL (1991)
- TW-1S — TAMS SHALLOW MONITORING WELL (1991)
- MW-3 — CDM MONITORING WELL (1984)
- EW-4D — EBASCO DEEP MONITORING WELL (1989)
- EW-6S — EBASCO SHALLOW MONITORING WELL (1989)
- MW-7S — CDM MONITORING WELL (1997)
- PZ-4 — CDM SHALLOW PIEZOMETER (1997)
- MW-11D — MACTEC MULTI-LEVEL BEDROCK WELL
- MW-7D — EXISTING BEDROCK WELL MODIFICATION
- PZ-16 — MACTEC SHALLOW PIEZOMETER
- SD-8 — MACTEC SEDIMENT SAMPLING LOCATION (1999)
- POSSIBLE BEDROCK FRACTURE ZONE BASED ON PHASE 2 GEOPHYSICAL SURVEY
- APPROXIMATE BEDROCK GROUNDWATER FLOW DIRECTION (NOVEMBER 2000)
- APPROXIMATE OVERBURDEN GROUNDWATER FLOW DIRECTION (NOVEMBER 2000)

0 125 250 500
SCALE IN FEET

Prepared/Date: BRT 02/02/22
Checked/Date: ATH 02/01/22

Sarney Farm Superfund Site
Benson Hill Road, Dover Plains,
Amenia, NY

E & E PC,
1090 Elm St., Suite 201
Rocky Hill, CT, 06067
(860) 529 - 7191

MACTEC

SITE PLAN

Project 3617-20-7511
Figure 2

Z:\Projects\CYTEC\Amenia NY\Sarney Farm\Figures\Fig 2 Site Plan.dwg Tue, 01 Feb 2022 - 5:28pm branko.tomic

Figure 3
1,2-DCA Concentrations in Groundwater, Aug 2012 to December 2021
MW-7 Series
Sarney Farm Superfund Site
Amenia, New York

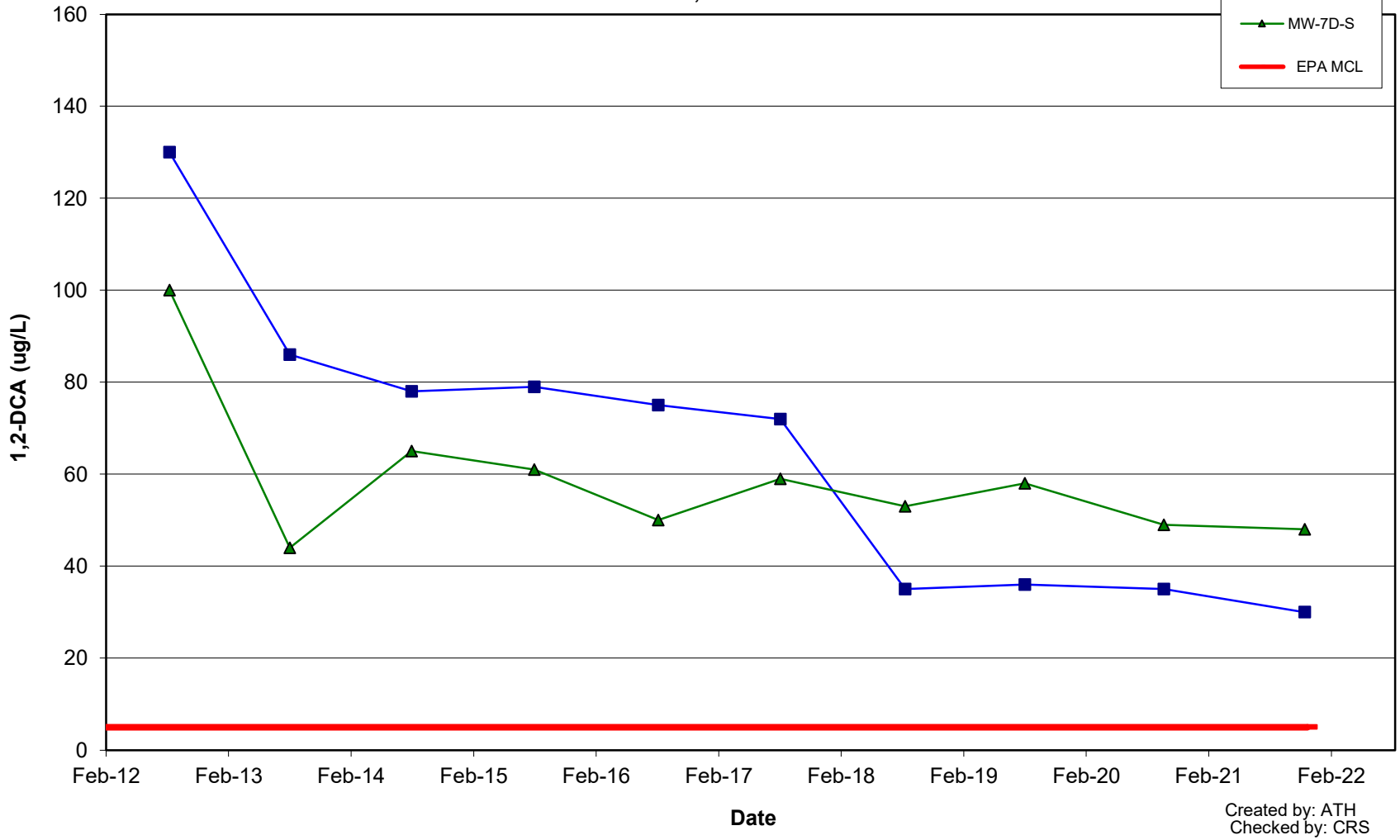


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Figure 4
1,2-DCA Concentrations in Groundwater
MW-7 Series
Sarney Farm Superfund Site
Amenia, New York

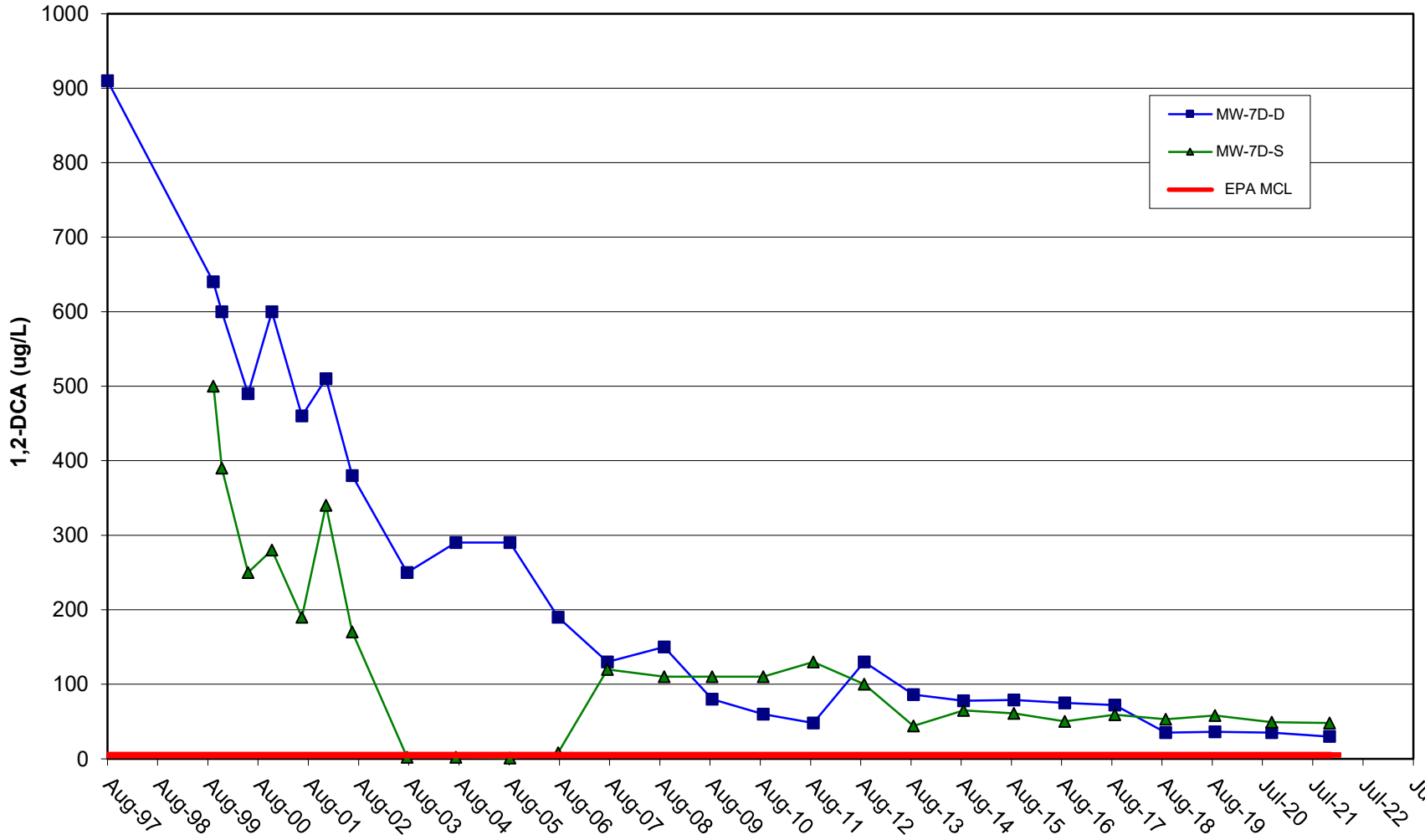

Figure 5
1,2-DCA Concentrations in Groundwater Aug 2012 to December 2021
MW-9 Series
Sarney Farm Superfund Site
Amenia, New York

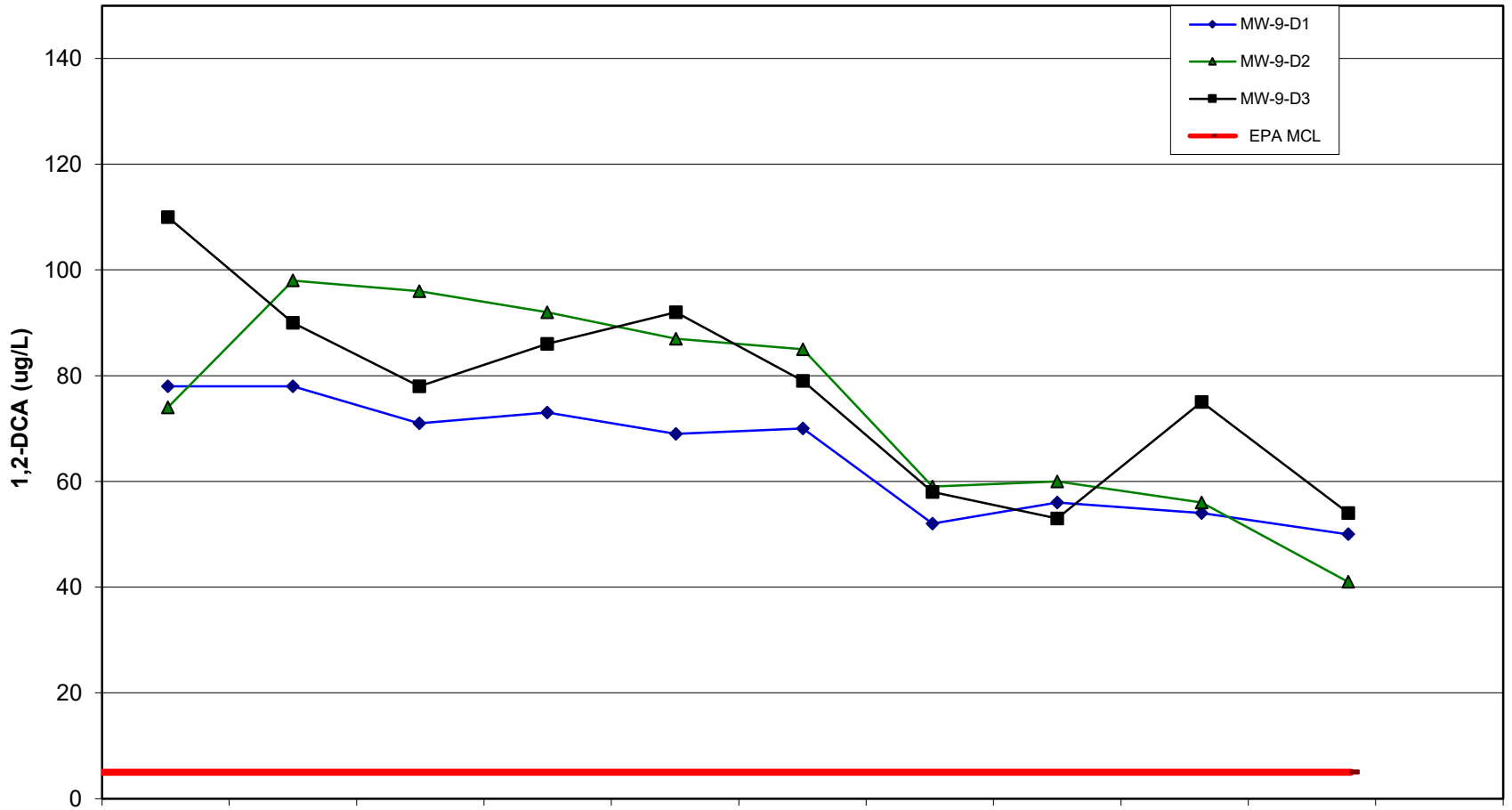

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Figure 6
1,2-DCA Concentrations in Groundwater
MW-9 Series
Sarney Farm Superfund Site
Amenia, New York

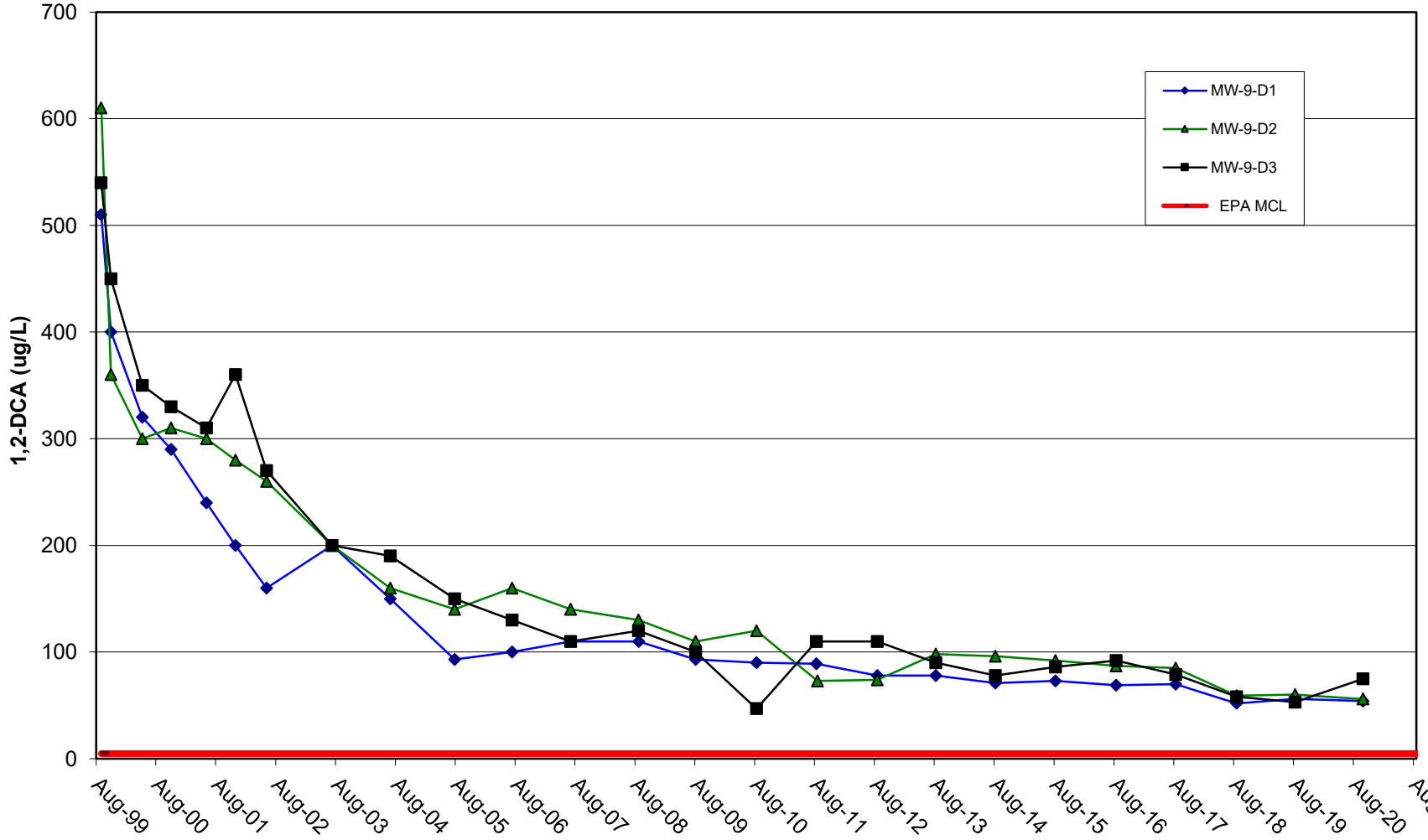
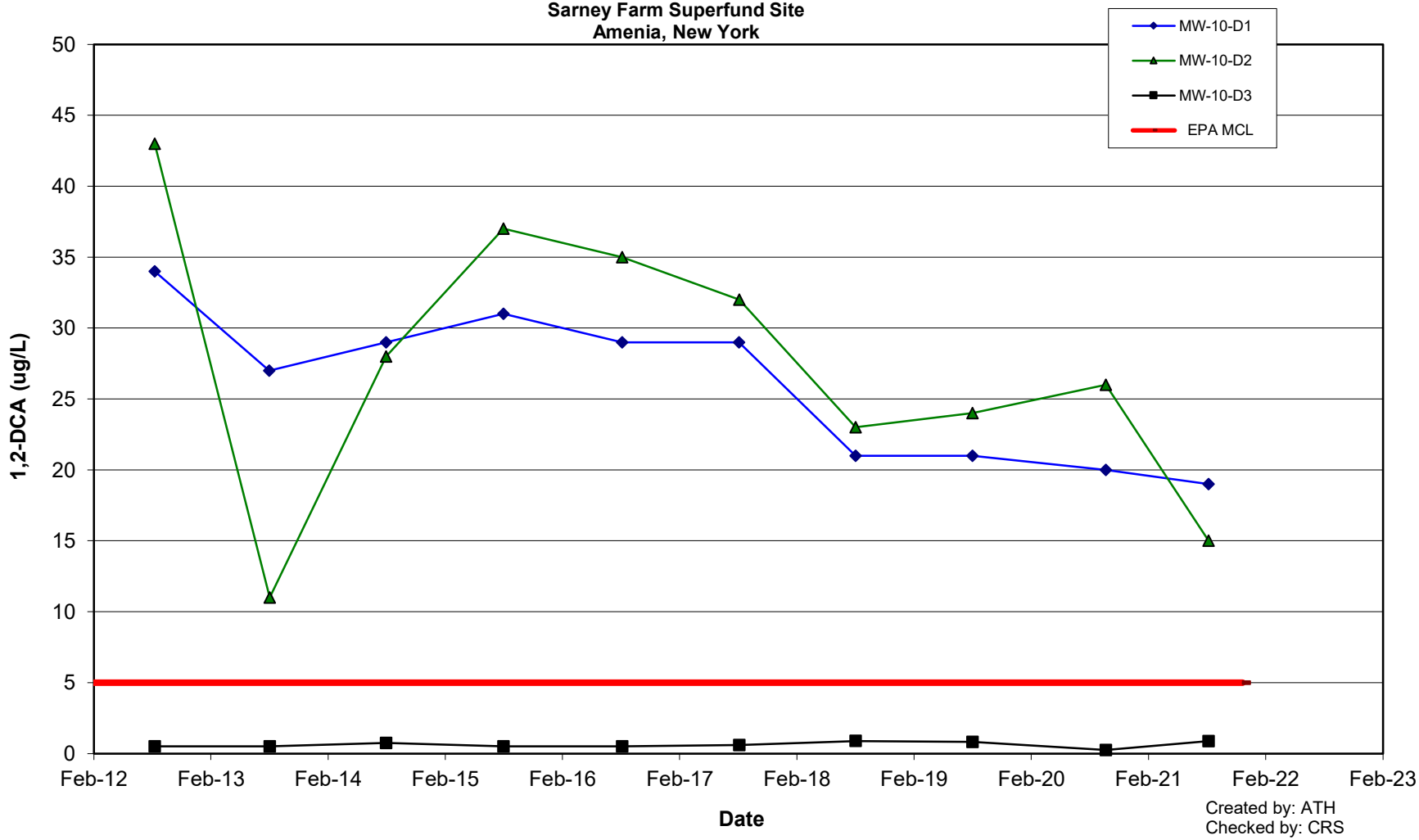
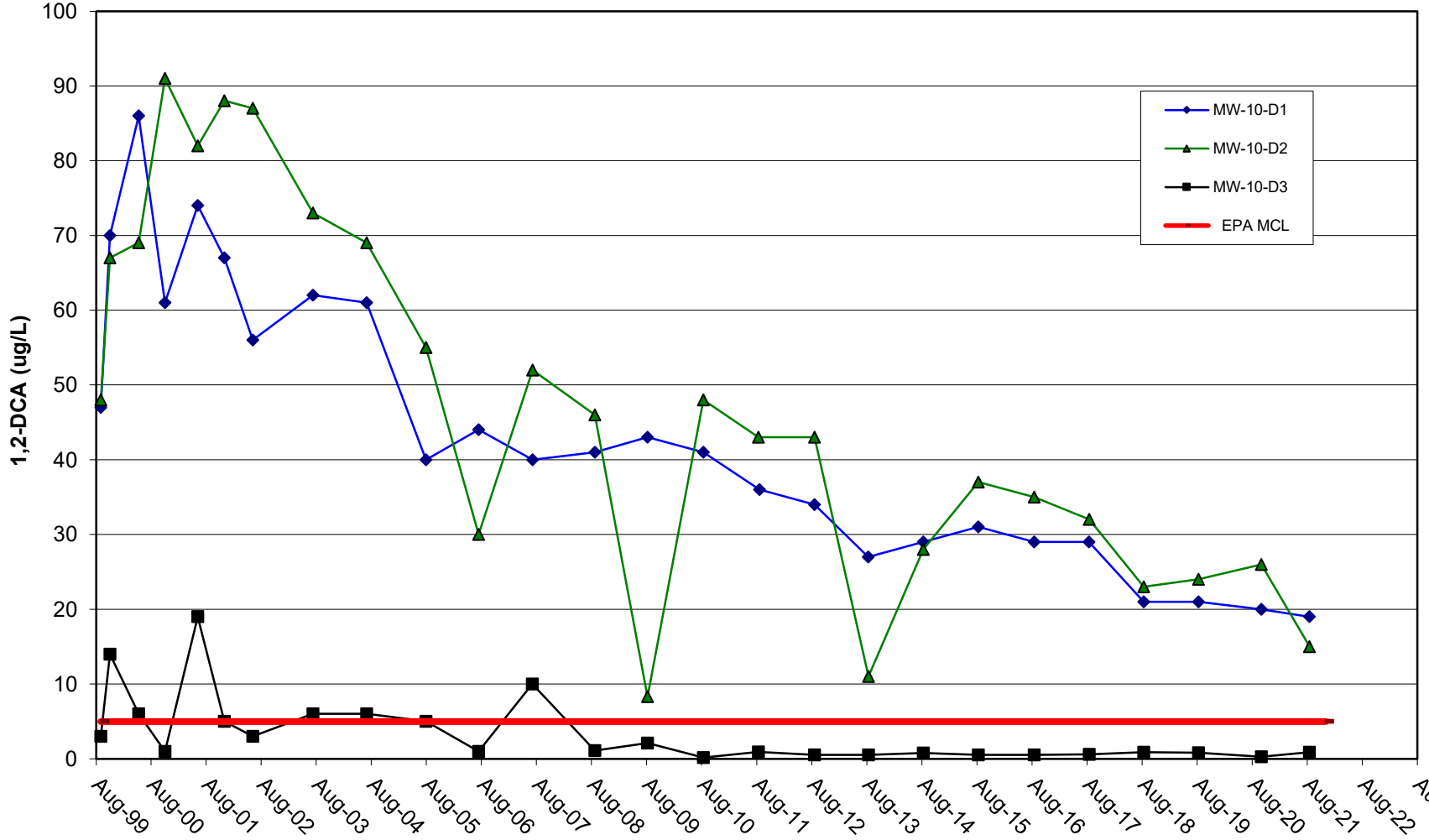


Figure 7
1,2-DCA Concentrations in Groundwater Aug 2012 to Aug 2021
MW-10 Series
Sarney Farm Superfund Site
Amenia, New York



Created by: ATH
Checked by: CRS

Figure 8
1,2-DCA Concentrations in Groundwater
MW-10 Series
Sarney Farm Superfund Site
Amenia, New York



APPENDIX A

2021 Laboratory Data Reports

(Provided on CD)

APPENDIX B

2021 Data Validation Report

DATA VALIDATION SUMMARY REPORT
AUGUST/DECEMBER 2021 GROUNDWATER SAMPLING
SARNEY FARM SUPERFUND SITE
AMENIA, NEW YORK

1.0 INTRODUCTION

Data validation was completed on the volatile organic compound (VOC) groundwater monitoring well and residential well samples collected in August and December 2021 at the Sarney Farm Superfund Site in Amenia, New York. Samples were analyzed by TestAmerica Laboratories, Inc., located in Edison, New Jersey (TAL-EDI) and Buffalo, New York (TAL-BUF). All parameters except dissolved gases were analyzed by TAL-EDI, and dissolved gases were analyzed by TAL-BUF. Results were reported in the following sample delivery groups (SDGs):

- 460-192981-1
- 460-241696-1
- 460-241697-1

Table 1 includes a list of samples included in this data evaluation. Samples were analyzed for the following analytical parameters using the methods listed in Table 1:

- Volatile Organic Compounds (VOCs) using Method 8260D
- 1,4-Dioxane using Method SW8260D-SIM
- Monitored Natural Attenuation (MNA) Parameters (see Table 1)

Data validation was completed based on procedures described in the project quality assurance plan *Modified UFP-QAPP Sarney Farm Superfund Site* (AMEC E&E, 2017) and general procedures described in the U. S. Environmental Protection Agency (USEPA) Region II data validation guidelines (USEPA, 2014). Stage 2A validation was completed for all parameters (USEPA, 2009). Professional judgment was used when evaluating data for the analytical methods used during this sampling event. Sample event information included in this data validation summary report is presented in the following Tables:

- Table 1 – Summary of Samples and Analytical Methods
- Table 2 – Summary of Analytical Results
- Table 3 – Summary of Qualification Actions

Laboratory deliverables included:

- Chain of custody records
- Sample receipt logs
- Sample results
- Associated quality control (QC) results

The data validation included the following evaluations. QAPP or laboratory limits, as applicable, were used as control limits for data evaluation.

- Case Narrative and Chain of Custody (COC) Review
- Data Package Completeness

- Holding Times
- Field and Laboratory Blanks
- Laboratory Control Samples (LCS)
- Matrix Spike/Matrix Spike Duplicates (MS/MSD)
- Field Duplicates
- Surrogate Spikes
- Internal Standard Response and Retention Times
- Electronic Data Qualification and Verification

Data qualification actions are applied when necessary based on general procedures in USEPA validation guidelines and the judgment of the project chemist. The following laboratory or data review qualifiers are used in the final data presentation:

J = concentration is estimated
U = target analyte is not detected at, or above, the reported detection limit

Results are interpreted to be usable as reported by the laboratory or as qualified in the following section and summarized on Table 3.

2.0 DATA VALIDATION QUALIFICATION ACTION SUMMARY

Based on a review of sampling records, chain of custody forms, and laboratory reports it was determined that field sample IDs were misidentified in several samples. Field sample IDs were corrected in the final database for this sampling event. Corrections are listed below:

SDG	Lab Sample ID	Field Sample Date	original Location	original Field Sample ID	Corrected Location	Corrected Field Sample ID
460-241696-1	460-241696-1	8/24/21 12:46	MW-10D-3	MW-10D-3	MW-10D-1	MW-10D-1
460-241696-1	460-241696-3	8/24/21 15:20	MW-10D-1	MW-10D-1	MW-10D-3	MW-10D-3
460-241697-1	460-241697-4	8/25/21 9:55	119 BHR	119 BHR	199 BHR	199 BHR

VOCs

460-192981-1

- The LCS 460-818054/4 percent recovery of dichlorodifluoromethane (63%) was below project limits (70-130%). Dichlorodifluoromethane was not detected in associated samples and reporting limits were qualified estimated (UJ). Qualified Results are listed in Table 3 with reason code LCSL.

- MS/MSD analyses were completed using sample MW-7D-D. The recoveries of dichlorodifluoromethane (62%/57%) were below project limits (70-130%). Dichlorodifluoromethane was not detected in samples MW-7D-D and the associated field duplicate and reporting limits were qualified estimated (UJ). Qualified results are listed in Table 3 with reason code MSL.

MNA Parameters

460-241696-1

- Results for total and dissolved iron in sample MW-10D-3 were qualified estimated (J/UJ) based on a detected concentration in the dissolved fraction with no detected concentration in the total fraction. Qualified results are in Table 3 with reason code TD.

Reference:

AMEC E&E, 2017. "Quality Assurance Project Plan Sarney Farm Superfund Site
Benson Hill Road Dover Plains, Dutchess County, New York;" AMEC E&E, October 2016, Revised February 2017, Revised July 2017.

U.S. Environmental Protection Agency (USEPA), 2009. "Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use"; Office of Solid Waste and Emergency Response; EPA-540-R-08-005; January 2009.

USEPA Region 2, 2014. "Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) SW-846 Method 8260B and 8260C"; SOP # HW-24, Revision 4, Hazardous Waste Support Branch; September 2014.

Reviewed by:

QA Chemist: Casey Cormier

January 4, 2022

Senior Review: Christian Ricardi, NRCC-EAC

January 25, 2022

TABLE 1 - SUMMARY OF SAMPLES AND ANALYTICAL METHODS
DATA VALIDATION SUMMARY REPORT
AUGUST/DECEMBER 2021 GROUNDWATER SAMPLING
SARNEY FARM SUPERFUND SITE
AMENIA, NEW YORK

						Fraction	N	N	T	D	N	N	N	N	T
						Method	SW8260D	SW8260D-SIM	SW6010D	SW6010D	E300.0	E353.2	RSK175	A4500F	SW9060
						Result Type	VOC	1,4-Dioxane	Iron	Iron	Sulfate	N02/NO3	Methane	Sulfide	TOC
SDG	Location	Field Sample ID	Field Sample Date	Media	Lab Sample ID	QC Code	Count	Count	Count	Count	Count	Count	Count	Count	Count
460-241696-1	MW-10D-1	MW-10D-1	8/24/2021	GW	460-241696-1	FS	38	1	1	1	1	1	1	1	1
460-241696-1	MW-10D-2	MW-10D-2	8/24/2021	GW	460-241696-2	FS	38	1	1	1	1	1	1	1	1
460-241696-1	MW-10D-3	MW-10D-3	8/24/2021	GW	460-241696-3	FS	38	1	1	1	1	1	1	1	1
460-241696-1	QC	TB01	8/25/2021	BW	460-241696-4	TB	38	1							
460-241697-1	151 BHR	151 BHR	8/25/2021	GW	460-241697-6	FS	38	1							
460-241697-1	154 BHR	154 BHR	8/25/2021	GW	460-241697-5	FS	38	1							
460-241697-1	199 BHR	199 BHR	8/25/2021	GW	460-241697-4	FS	38	1							
460-241697-1	224 BHR	224 BHR	8/24/2021	GW	460-241697-2	FS	38	1							
460-241697-1	225 BHR	225 BHR	8/24/2021	GW	460-241697-1	FS	38	1							
460-241697-1	QC	TB02	8/25/2021	BW	460-241697-3	TB	38	1							
480-192981-1	MW-7D-D	MW-7D-D	12/1/2021	GW	480-192981-2	FS	38	1	1	1	1	1	1	1	1
480-192981-1	MW-7D-D	MW-7D-D-DUP	12/1/2021	GW	480-192981-3	FD	38	1	1	1	1	1	1	1	1
480-192981-1	MW-7D-S	MW-7D-S	12/1/2021	GW	480-192981-1	FS	38	1	1	1	1	1	1	1	1
480-192981-1	MW-9D-1	MW-9D-1	12/1/2021	GW	480-192981-7	FS	38	1	1	1	1	1	1	1	1
480-192981-1	MW-9D-2	MW-9D-2	12/1/2021	GW	480-192981-8	FS	38	1	1	1	1	1	1	1	1
480-192981-1	MW-9D-3	MW-9D-3	12/1/2021	GW	480-192981-9	FS	38	1	1	1	1	1	1	1	1
480-192981-1	QC	EB-01	12/1/2021	BW	480-192981-5	EB	38	1							
480-192981-1	QC	FB-01	12/1/2021	GW	480-192981-6	FB	38	1							
480-192981-1	QC	Trip Blank	12/1/2021	BW	480-192981-4	TB	38	1							

Note:
BW = blank water
D = dissolved
EB = equipment blank
FD = field duplicate
FS = field sample
GW = groundwater
N = normal
T = total
TB = trip blank
Count = number of target analytes reported

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA VALIDATION SUMMARY REPORT
AUGUST/DECEMBER 2021 GROUNDWATER SAMPLING
SARNEY FARM SUPERFUND SITE
AMENIA, NEW YORK

				SDG	460-241696-1		460-241696-1		460-241696-1		460-241696-1	
				Location	MW-10D-1		MW-10D-2		MW-10D-3		QC	
				Sample Date	8/24/2021		8/24/2021		8/24/2021		8/25/2021	
				Sample ID	MW-10D-1		MW-10D-2		MW-10D-3		TB01	
				QC Code	FS		FS		FS		TB	
					Final	Final	Final	Final	Final	Final	Final	Final
Media	**Fraction**	**Method**	**Parameter**	**Unit**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	D	SW6010D	Iron	UG/L	319		150	U	196	J		
L	T	SW6010D	Iron	UG/L	359		150	U	150	UJ		
L	N	A4500F	Sulfide	MG/L	1	U	1	U	1.2			
L	N	E300.0	Sulfate	MG/L	25		25		16			
L	N	E353.2	Nitrate+Nitrite as N	MG/L	0.023	J	0.11		0.13			
L	N	RSK175	Methane	UG/L	1	U	2.1		60			
L	T	SW9060	Total Organic Carbon	MG/L	1	U	1	U	1	U		
L	N	SW8260D	1,1,1-Trichloroethane	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,1,2-Trichloroethane	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,1-Dichloroethane	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,1-Dichloroethene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,2,3-Trichlorobenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,2,4-Trichlorobenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,2,4-Trimethylbenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,2-Dichlorobenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,2-Dichloroethane	UG/L	19		15		0.87		0.5	U
L	N	SW8260D	1,2-Dichloropropane	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,3,5-Trimethylbenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,3-Dichlorobenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,4-Dichlorobenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	2-Butanone	UG/L	2.5	U	2.5	U	2.5	U	2.5	U
L	N	SW8260D	2-Hexanone	UG/L	2.5	U	2.5	U	2.5	U	2.5	U
L	N	SW8260D	4-Methyl-2-pentanone	UG/L	2.5	U	2.5	U	2.5	U	2.5	U
L	N	SW8260D	Acetone	UG/L	5	U	5	U	5	U	5	U
L	N	SW8260D	Benzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Carbon disulfide	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Carbon tetrachloride	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Chlorobenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Chloroethane	UG/L	0.5	U	0.5	U	0.5	U	0.5	U

Created by: WCG 1/4/2022
Checked by: CLC 1/4/2022

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA VALIDATION SUMMARY REPORT
AUGUST/DECEMBER 2021 GROUNDWATER SAMPLING
SARNEY FARM SUPERFUND SITE
AMENIA, NEW YORK

				SDG	460-241696-1		460-241696-1		460-241696-1		460-241696-1	
				Location	MW-10D-1		MW-10D-2		MW-10D-3		QC	
				Sample Date	8/24/2021		8/24/2021		8/24/2021		8/25/2021	
				Sample ID	MW-10D-1		MW-10D-2		MW-10D-3		TB01	
				QC Code	FS		FS		FS		TB	
					Final	Final	Final	Final	Final	Final	Final	Final
Media	**Fraction**	**Method**	**Parameter**	**Unit**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	N	SW8260D	Chloroform	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Chloromethane	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	cis-1,2-Dichloroethene	UG/L	1.1		0.61		0.28	J	0.5	U
L	N	SW8260D	Dichlorodifluoromethane	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Ethylbenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Methylene chloride	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Naphthalene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Propylbenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Styrene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Tetrachloroethene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Toluene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	trans-1,2-Dichloroethene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Trichloroethene	UG/L	0.5	U	0.5	U	0.66		0.5	U
L	N	SW8260D	Trichlorofluoromethane	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Vinyl chloride	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Xylenes, Total	UG/L	1	U	1	U	1	U	1	U
L	N	SW8260D-SIM	1,4-Dioxane	UG/L	1.1		0.4	U	0.4	U	0.4	U

Notes:

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FD = field duplicate
TB = trip blank
EB = equipment blank
MG/L = milligram per liter
UG/L = microgram per liter

U = not detected
J = estimated value
T = total
D = dissolved
N = normal

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TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA VALIDATION SUMMARY REPORT
AUGUST/DECEMBER 2021 GROUNDWATER SAMPLING
SARNEY FARM SUPERFUND SITE
AMENIA, NEW YORK

				SDG	460-241697-1		460-241697-1		460-241697-1		460-241697-1		460-241697-1		460-2
				Location	151 BHR		154 BHR		199 BHR		224 BHR		225 BHR		
				Sample Date	8/25/2021		8/25/2021		8/25/2021		8/24/2021		8/24/2021		8/2
				Sample ID	151 BHR		154 BHR		199 BHR		224 BHR		225 BHR		T
				QC Code	FS		FS		FS		FS		FS		
Media	Fraction	Method	Parameter	Unit	Final Result	Final Qualifier	Final Result	Final Qualifier	Final Result	Final Qualifier	Final Result	Final Qualifier	Final Result	Final Qualifier	Final Result
L	D	SW6010D	Iron	UG/L											
L	T	SW6010D	Iron	UG/L											
L	N	A4500F	Sulfide	MG/L											
L	N	E300.0	Sulfate	MG/L											
L	N	E353.2	Nitrate+Nitrite as N	MG/L											
L	N	RSK175	Methane	UG/L											
L	T	SW9060	Total Organic Carbon	MG/L											
L	N	SW8260D	1,1,1-Trichloroethane	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5
L	N	SW8260D	1,1,2-Trichloroethane	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5
L	N	SW8260D	1,1-Dichloroethane	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5
L	N	SW8260D	1,1-Dichloroethene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5
L	N	SW8260D	1,2,3-Trichlorobenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5
L	N	SW8260D	1,2,4-Trichlorobenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5
L	N	SW8260D	1,2,4-Trimethylbenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5
L	N	SW8260D	1,2-Dichlorobenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5
L	N	SW8260D	1,2-Dichloroethane	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5
L	N	SW8260D	1,2-Dichloropropane	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5
L	N	SW8260D	1,3,5-Trimethylbenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5
L	N	SW8260D	1,3-Dichlorobenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5
L	N	SW8260D	1,4-Dichlorobenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5
L	N	SW8260D	2-Butanone	UG/L	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5
L	N	SW8260D	2-Hexanone	UG/L	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5
L	N	SW8260D	4-Methyl-2-pentanone	UG/L	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5
L	N	SW8260D	Acetone	UG/L	5	U	5	U	5	U	5	U	5	U	5
L	N	SW8260D	Benzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5
L	N	SW8260D	Carbon disulfide	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5
L	N	SW8260D	Carbon tetrachloride	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5
L	N	SW8260D	Chlorobenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5
L	N	SW8260D	Chloroethane	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5

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Checked by: CLC 1/4/2022

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA VALIDATION SUMMARY REPORT
AUGUST/DECEMBER 2021 GROUNDWATER SAMPLING
SARNEY FARM SUPERFUND SITE
AMENIA, NEW YORK

				SDG	460-241697-1		460-241697-1		460-241697-1		460-241697-1		460-241697-1		460-2	
				Location	151 BHR		154 BHR		199 BHR		224 BHR		225 BHR			
				Sample Date	8/25/2021		8/25/2021		8/25/2021		8/24/2021		8/24/2021		8/2	
				Sample ID	151 BHR		154 BHR		199 BHR		224 BHR		225 BHR		T	
				QC Code	FS		FS		FS		FS		FS			
					Final	Final	Final	Final	Final	Final	Final	Final	Final	Final	Final	
Media	**Fraction**	**Method**	**Parameter**	**Unit**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	
L	N	SW8260D	Chloroform	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	
L	N	SW8260D	Chloromethane	UG/L	0.5	U	0.5	U	0.5	U	0.46	J	0.5	U	0.5	
L	N	SW8260D	cis-1,2-Dichloroethene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	
L	N	SW8260D	Dichlorodifluoromethane	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	
L	N	SW8260D	Ethylbenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	
L	N	SW8260D	Methylene chloride	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	
L	N	SW8260D	Naphthalene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	
L	N	SW8260D	Propylbenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	
L	N	SW8260D	Styrene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.52		0.5	
L	N	SW8260D	Tetrachloroethene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	
L	N	SW8260D	Toluene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	
L	N	SW8260D	trans-1,2-Dichloroethene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	
L	N	SW8260D	Trichloroethene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	
L	N	SW8260D	Trichlorofluoromethane	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	
L	N	SW8260D	Vinyl chloride	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	
L	N	SW8260D	Xylenes, Total	UG/L	1	U	1	U	1	U	1	U	1	U	1	
L	N	SW8260D-SIM	1,4-Dioxane	UG/L	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	

Notes:

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FD = field duplicate
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MG/L = milligram per liter
UG/L = microgram per liter

U = not detected
J = estimated value
T = total
D = dissolved
N = normal

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Checked by: CLC 1/4/2022

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA VALIDATION SUMMARY REPORT
AUGUST/DECEMBER 2021 GROUNDWATER SAMPLING
SARNEY FARM SUPERFUND SITE
AMENIA, NEW YORK

				SDG	41697-1
				Location	QC
				Sample Date	5/2021
				Sample ID	B02
				QC Code	TB
Media	**Fraction**	**Method**	**Parameter**	**Unit**	Final Qualifier
L	D	SW6010D	Iron	UG/L	
L	T	SW6010D	Iron	UG/L	
L	N	A4500F	Sulfide	MG/L	
L	N	E300.0	Sulfate	MG/L	
L	N	E353.2	Nitrate+Nitrite as N	MG/L	
L	N	RSK175	Methane	UG/L	
L	T	SW9060	Total Organic Carbon	MG/L	
L	N	SW8260D	1,1,1-Trichloroethane	UG/L	U
L	N	SW8260D	1,1,2-Trichloroethane	UG/L	U
L	N	SW8260D	1,1-Dichloroethane	UG/L	U
L	N	SW8260D	1,1-Dichloroethene	UG/L	U
L	N	SW8260D	1,2,3-Trichlorobenzene	UG/L	U
L	N	SW8260D	1,2,4-Trichlorobenzene	UG/L	U
L	N	SW8260D	1,2,4-Trimethylbenzene	UG/L	U
L	N	SW8260D	1,2-Dichlorobenzene	UG/L	U
L	N	SW8260D	1,2-Dichloroethane	UG/L	U
L	N	SW8260D	1,2-Dichloropropane	UG/L	U
L	N	SW8260D	1,3,5-Trimethylbenzene	UG/L	U
L	N	SW8260D	1,3-Dichlorobenzene	UG/L	U
L	N	SW8260D	1,4-Dichlorobenzene	UG/L	U
L	N	SW8260D	2-Butanone	UG/L	U
L	N	SW8260D	2-Hexanone	UG/L	U
L	N	SW8260D	4-Methyl-2-pentanone	UG/L	U
L	N	SW8260D	Acetone	UG/L	U
L	N	SW8260D	Benzene	UG/L	U
L	N	SW8260D	Carbon disulfide	UG/L	U
L	N	SW8260D	Carbon tetrachloride	UG/L	U
L	N	SW8260D	Chlorobenzene	UG/L	U
L	N	SW8260D	Chloroethane	UG/L	U

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Checked by: CLC 1/4/2022

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DATA VALIDATION SUMMARY REPORT
AUGUST/DECEMBER 2021 GROUNDWATER SAMPLING
SARNEY FARM SUPERFUND SITE
AMENIA, NEW YORK

				SDG	41697-1
				Location	QC
				Sample Date	5/2021
				Sample ID	B02
				QC Code	TB
Media	**Fraction**	**Method**	**Parameter**	**Unit**	Final Qualifier
L	N	SW8260D	Chloroform	UG/L	U
L	N	SW8260D	Chloromethane	UG/L	U
L	N	SW8260D	cis-1,2-Dichloroethene	UG/L	U
L	N	SW8260D	Dichlorodifluoromethane	UG/L	U
L	N	SW8260D	Ethylbenzene	UG/L	U
L	N	SW8260D	Methylene chloride	UG/L	U
L	N	SW8260D	Naphthalene	UG/L	U
L	N	SW8260D	Propylbenzene	UG/L	U
L	N	SW8260D	Styrene	UG/L	U
L	N	SW8260D	Tetrachloroethene	UG/L	U
L	N	SW8260D	Toluene	UG/L	U
L	N	SW8260D	trans-1,2-Dichloroethene	UG/L	U
L	N	SW8260D	Trichloroethene	UG/L	U
L	N	SW8260D	Trichlorofluoromethane	UG/L	U
L	N	SW8260D	Vinyl chloride	UG/L	U
L	N	SW8260D	Xylenes, Total	UG/L	U
L	N	SW8260D-SIM	1,4-Dioxane	UG/L	U

Notes:

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DATA VALIDATION SUMMARY REPORT
AUGUST/DECEMBER 2021 GROUNDWATER SAMPLING
SARNEY FARM SUPERFUND SITE
AMENIA, NEW YORK

				SDG	480-192981-1		480-192981-1		480-192981-1		480-192981-1		480-192981-1	
				Location	MW-7D-D		MW-7D-D		MW-7D-S		MW-9D-1		MW-9D-2	
				Sample Date	12/1/2021		12/1/2021		12/1/2021		12/1/2021		12/1/2021	
				Sample ID	MW-7D-D		MW-7D-D-DUP		MW-7D-S		MW-9D-1		MW-9D-2	
				QC Code	FS		FD		FS		FS		FS	
					Final	Final	Final	Final	Final	Final	Final	Final	Final	Final
Media	Fraction	Method	Parameter	Unit	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	D	SW6010D	Iron	UG/L	407		415		303		305		839	
L	T	SW6010D	Iron	UG/L	414		385		499		292		733	
L	N	A4500F	Sulfide	MG/L	1	U	1	U	1	U	1	U	1	U
L	N	E300.0	Sulfate	MG/L	26.1		26.2		31.8		22.1		29.1	
L	N	E353.2	Nitrate+Nitrite as N	MG/L	0.021	J	0.027	J	0.02	J	0.16		0.05	U
L	N	RSK175	Methane	UG/L	69		61		4.8		24		13	
L	T	SW9060	Total Organic Carbon	MG/L	0.73	J	0.7	J	1.1		0.71	J	0.76	J
L	N	SW8260D	1,1,1-Trichloroethane	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,1,2-Trichloroethane	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,1-Dichloroethane	UG/L	0.5	U	0.5	U	0.5	U	0.29	J	0.5	U
L	N	SW8260D	1,1-Dichloroethene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,2,3-Trichlorobenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,2,4-Trichlorobenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,2,4-Trimethylbenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,2-Dichlorobenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,2-Dichloroethane	UG/L	30		29		48		50		41	
L	N	SW8260D	1,2-Dichloropropane	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,3,5-Trimethylbenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,3-Dichlorobenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,4-Dichlorobenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	2-Butanone	UG/L	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
L	N	SW8260D	2-Hexanone	UG/L	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
L	N	SW8260D	4-Methyl-2-pentanone	UG/L	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
L	N	SW8260D	Acetone	UG/L	5	U	5	U	5	U	5	U	5	U
L	N	SW8260D	Benzene	UG/L	0.35	J	0.37	J	0.92		3.3		0.76	
L	N	SW8260D	Carbon disulfide	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Carbon tetrachloride	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Chlorobenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Chloroethane	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

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Checked by: CLC 1/4/2022

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DATA VALIDATION SUMMARY REPORT
AUGUST/DECEMBER 2021 GROUNDWATER SAMPLING
SARNEY FARM SUPERFUND SITE
AMENIA, NEW YORK

				SDG	480-192981-1		480-192981-1		480-192981-1		480-192981-1		480-192981-1	
				Location	MW-7D-D		MW-7D-D		MW-7D-S		MW-9D-1		MW-9D-2	
				Sample Date	12/1/2021		12/1/2021		12/1/2021		12/1/2021		12/1/2021	
				Sample ID	MW-7D-D		MW-7D-D-DUP		MW-7D-S		MW-9D-1		MW-9D-2	
				QC Code	FS		FD		FS		FS		FS	
					Final	Final	Final	Final	Final	Final	Final	Final	Final	Final
Media	**Fraction**	**Method**	**Parameter**	**Unit**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	N	SW8260D	Chloroform	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Chloromethane	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	cis-1,2-Dichloroethene	UG/L	1.8		1.8		7.2		4.7		5	
L	N	SW8260D	Dichlorodifluoromethane	UG/L	0.5	UJ	0.5	UJ	0.5	UJ	0.5	UJ	0.5	UJ
L	N	SW8260D	Ethylbenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Methylene chloride	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Naphthalene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Propylbenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Styrene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Tetrachloroethene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Toluene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	trans-1,2-Dichloroethene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Trichloroethene	UG/L	0.5	U	0.5	U	1.6		0.42	J	0.6	
L	N	SW8260D	Trichlorofluoromethane	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Vinyl chloride	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Xylenes, Total	UG/L	1	U	1	U	1	U	1	U	1	U
L	N	SW8260D-SIM	1,4-Dioxane	UG/L	6.8		6.6		1.6		10		9.9	

Notes:

FS = field sample
FD = field duplicate
TB = trip blank
EB = equipment blank
MG/L = milligram per liter
UG/L = microgram per liter

U = not detected
J = estimated value
T = total
D = dissolved
N = normal

Created by: WCG 1/4/2022
Checked by: CLC 1/4/2022

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA VALIDATION SUMMARY REPORT
AUGUST/DECEMBER 2021 GROUNDWATER SAMPLING
SARNEY FARM SUPERFUND SITE
AMENIA, NEW YORK

				SDG	480-192981-1		480-192981-1		480-192981-1		480-192981-1	
				Location	MW-9D-3		QC		QC		QC	
				Sample Date	12/1/2021		12/1/2021		12/1/2021		12/1/2021	
				Sample ID	MW-9D-3		Trip Blank		FB-01		EB-01	
				QC Code	FS		TB		FB		EB	
					Final	Final	Final	Final	Final	Final	Final	Final
Media	**Fraction**	**Method**	**Parameter**	**Unit**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	D	SW6010D	Iron	UG/L	1,070							
L	T	SW6010D	Iron	UG/L	1,160							
L	N	A4500F	Sulfide	MG/L	1	U						
L	N	E300.0	Sulfate	MG/L	29.3							
L	N	E353.2	Nitrate+Nitrite as N	MG/L	0.035	J						
L	N	RSK175	Methane	UG/L	4	U						
L	T	SW9060	Total Organic Carbon	MG/L	0.84	J						
L	N	SW8260D	1,1,1-Trichloroethane	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,1,2-Trichloroethane	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,1-Dichloroethane	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,1-Dichloroethene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,2,3-Trichlorobenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,2,4-Trichlorobenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,2,4-Trimethylbenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,2-Dichlorobenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,2-Dichloroethane	UG/L	54		0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,2-Dichloropropane	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,3,5-Trimethylbenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,3-Dichlorobenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	1,4-Dichlorobenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	2-Butanone	UG/L	2.5	U	2.5	U	2.5	U	2.5	U
L	N	SW8260D	2-Hexanone	UG/L	2.5	U	2.5	U	2.5	U	2.5	U
L	N	SW8260D	4-Methyl-2-pentanone	UG/L	2.5	U	2.5	U	2.5	U	2.5	U
L	N	SW8260D	Acetone	UG/L	5	U	5	U	5	U	5	U
L	N	SW8260D	Benzene	UG/L	0.81		0.5	U	0.5	U	0.5	U
L	N	SW8260D	Carbon disulfide	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Carbon tetrachloride	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Chlorobenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Chloroethane	UG/L	0.5	U	0.5	U	0.5	U	0.5	U

Created by: WCG 1/4/2022
Checked by: CLC 1/4/2022

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA VALIDATION SUMMARY REPORT
AUGUST/DECEMBER 2021 GROUNDWATER SAMPLING
SARNEY FARM SUPERFUND SITE
AMENIA, NEW YORK

				SDG	480-192981-1		480-192981-1		480-192981-1		480-192981-1	
				Location	MW-9D-3		QC		QC		QC	
				Sample Date	12/1/2021		12/1/2021		12/1/2021		12/1/2021	
				Sample ID	MW-9D-3		Trip Blank		FB-01		EB-01	
				QC Code	FS		TB		FB		EB	
					Final	Final	Final	Final	Final	Final	Final	Final
Media	**Fraction**	**Method**	**Parameter**	**Unit**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	N	SW8260D	Chloroform	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Chloromethane	UG/L	0.5	U	0.5	U	0.56		0.5	U
L	N	SW8260D	cis-1,2-Dichloroethene	UG/L	5.1		0.5	U	0.5	U	0.5	U
L	N	SW8260D	Dichlorodifluoromethane	UG/L	0.5	UJ	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Ethylbenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Methylene chloride	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Naphthalene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Propylbenzene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Styrene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Tetrachloroethene	UG/L	0.31	J	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Toluene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	trans-1,2-Dichloroethene	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Trichloroethene	UG/L	3.7		0.5	U	0.5	U	0.5	U
L	N	SW8260D	Trichlorofluoromethane	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Vinyl chloride	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
L	N	SW8260D	Xylenes, Total	UG/L	1	U	1	U	1	U	1	U
L	N	SW8260D-SIM	1,4-Dioxane	UG/L	1.1		0.4	U	0.4	U	0.4	U

Notes:

FS = field sample
FD = field duplicate
TB = trip blank
EB = equipment blank
MG/L = milligram per liter
UG/L = microgram per liter

U = not detected
J = estimated value
T = total
D = dissolved
N = normal

Created by: WCG 1/4/2022
Checked by: CLC 1/4/2022

TABLE 3 - SUMMARY OF QUALIFICATION ACTIONS
DATA VALIDATION SUMMARY REPORT
AUGUST/DECEMBER 2021 GROUNDWATER SAMPLING
SARNEY FARM SUPERFUND SITE
AMENIA, NEW YORK

SDG	Analysis Method	Lab Sample ID	Sample Date	Field Sample ID	Fraction	Parameter Name	Lab Result	Lab Qualifier	Final Result	Final Qualifier	Val Reason Code	Units
460-241696-1	SW6010D	460-241696-3	8/24/2021	MW-10D-3	T	Iron	150	U	150	UJ	TD	UG/L
460-241696-1	SW6010D	460-241696-3	8/24/2021	MW-10D-3	D	Iron	196		196	J	TD	UG/L
480-192981-1	SW8260D	480-192981-2	12/1/2021	MW-7D-D	N	Dichlorodifluoromethane	0.5	U	0.5	UJ	LCSL, MSL	UG/L
480-192981-1	SW8260D	480-192981-3	12/1/2021	MW-7D-D-DUP	N	Dichlorodifluoromethane	0.5	U	0.5	UJ	LCSL, MSL	UG/L
480-192981-1	SW8260D	480-192981-1	12/1/2021	MW-7D-S	N	Dichlorodifluoromethane	0.5	U	0.5	UJ	LCSL	UG/L
480-192981-1	SW8260D	480-192981-7	12/1/2021	MW-9D-1	N	Dichlorodifluoromethane	0.5	U	0.5	UJ	LCSL	UG/L
480-192981-1	SW8260D	480-192981-8	12/1/2021	MW-9D-2	N	Dichlorodifluoromethane	0.5	U	0.5	UJ	LCSL	UG/L
480-192981-1	SW8260D	480-192981-9	12/1/2021	MW-9D-3	N	Dichlorodifluoromethane	0.5	U	0.5	UJ	LCSL	UG/L

Notes
TD: Dissolved concentration exceeds total concentration
LCSL: Laboratory control sample recovery low
MSL: Matrix spike and/or duplicate recovery low
U = not detected
J = estimated value
T = total
D = dissolved
N = normal

Created by: WCG 1/4/2022
Checked by: CLC 1/4/2022

APPENDIX C

Mann-Kendall Test

TABLE 1
2021 MANN-KENDALL STATISTICAL EVALUATION PER WIEDEMEIER ET AL.

Well ID: MW7D-S

		1,2-DCA Concentration [ug/L] in Groundwater by Date									
		08/19/14	08/20/15	08/24/16	08/23/17	08/28/18	08/20/19	10/07/20	12/01/21		
	1,2 DCA (ug/L)	**65**	**61**	**50**	**59**	**53**	**58**	**49**	**48**	**Number of >0 Values**	**Number of <0 Values**
08/19/14	**65**		-4	-15	-6	-12	-7	-16	-17	**0**	**7**
08/20/15	**61**			-11	-2	-8	-3	-12	-13	**0**	**6**
08/24/16	**50**				9	3	8	-1	-2	**3**	**2**
08/23/17	**59**					-6	-1	-10	-11	**0**	**4**
08/28/18	**53**						5	-9	-5	**1**	**2**
08/20/19	**58**							-9	-10	**0**	**2**
10/07/20	**49**								-1	**0**	**1**
12/01/21	**48**								**sum**	**4**	**24**
Trend with at least 90% Confidence: Decreasing Concentrations										**S-statistic:**	**-20**

Well ID: MW7D-D

		1,2-DCA Concentration [ug/L] in Groundwater by Date									
		08/19/14	08/20/15	08/24/16	08/23/17	08/28/18	08/20/19	10/07/20	12/01/21		
	1,2 DCA (ug/L)	**78**	**79**	**75**	**72**	**35**	**36**	**35**	**30**	**Number of >0 Values**	**Number of <0 Values**
08/21/13	**78**		1	-3	-6	-43	-42	-43	-48	**1**	**6**
08/19/14	**79**			-4	-7	-44	-43	-44	-49	**0**	**6**
08/20/15	**75**				-3	-40	-39	-40	-45	**0**	**5**
08/24/16	**72**					-37	-36	-37	-42	**0**	**4**
08/23/17	**35**						1	0	-5	**1**	**1**
08/28/18	**36**							-1	-6	**0**	**2**
08/20/19	**35**								-5	**0**	**1**
12/01/21	**30**								**sum**	**2**	**25**
Trend with at least 90% Confidence: Decreasing Concentrations										**S-statistic:**	**-23**

Well ID: MW9D-3

		1,2-DCA Concentration [ug/L] in Groundwater by Date									
		08/19/14	08/20/15	08/24/16	08/23/17	08/28/18	08/20/19	10/07/20	12/01/21		
	1,2 DCA (ug/L)	**78**	**86**	**92**	**79**	**58**	**53**	**75**	**54**	**Number of >0 Values**	**Number of <0 Value**
08/19/14	**78**		8	14	1	-20	-25	-3	-24	**3**	**4**
08/20/15	**86**			6	-7	-28	-33	-11	-32	**1**	**5**
08/24/16	**92**				-13	-34	-39	-17	-38	**0**	**5**
08/23/17	**79**					-21	-26	-4	-25	**0**	**4**
08/28/18	**58**						-5	17	-4	**1**	**2**
08/20/19	**53**							22	1	**2**	**0**
10/07/20	**75**								-21	**0**	**1**
12/01/21	**54**								**sum**	**7**	**21**
Trend with at least 90% Confidence: Decreasing Concentrations										**S-statistic:**	**-14**

Well ID: MW9D-2

		1,2-DCA Concentration [ug/L] in Groundwater by Date									
		08/19/14	08/20/15	08/24/16	08/23/17	08/28/18	08/20/19	10/07/20	12/01/21		
	1,2 DCA (ug/L)	**96**	**92**	**87**	**85**	**59**	**60**	**56**	**41**	**Number of >0 Values**	**Number of <0 Value**
08/19/14	**96**		-4	-9	-11	-37	-36	-40	-55	**0**	**7**
08/20/15	**92**			-5	-7	-33	-32	-36	-51	**0**	**6**
08/24/16	**87**				-2	-28	-27	-31	-46	**0**	**5**
08/23/17	**85**					-26	-25	-29	-44	**0**	**4**
08/28/18	**59**						1	-3	-18	**1**	**2**
08/20/19	**60**							-4	-19	**0**	**2**
10/07/20	**56**								-15	**0**	**1**
12/01/21	**41**								**sum**	**1**	**27**
Trend with at least 90% Confidence: Decreasing Concentrations										**S-statistic:**	**-26**

TABLE 1
2021 MANN-KENDALL STATISTICAL EVALUATION PER WIEDEMEIER ET AL.

Well ID: MW9D-1

		1,2-DCA Concentration [ug/L] in Groundwater by Date									
		08/19/14	08/20/15	08/24/16	08/23/17	08/28/18	08/20/19	10/07/20	12/01/21		
	1,2 DCA (ug/L)	**71**	**73**	**69**	**70**	**52**	**56**	**54**	**50**	**Number of >0 Values**	**Number of <0 Value**
08/19/14	**71**		2	-2	-1	-19	-15	-17	-21	**1**	**6**
08/20/15	**73**			-4	-3	-21	-17	-19	-23	**0**	**6**
08/24/16	**69**				1	-17	-13	-15	-19	**1**	**4**
08/23/17	**70**					-18	-14	-16	-20	**0**	**4**
08/28/18	**52**						4	2	-2	**2**	**1**
08/20/19	**56**							-2	-6	**0**	**2**
10/07/20	**54**								-4	**0**	**1**
12/01/21	**50**								**sum**	**4**	**24**
Trend with at least 90% Confidence: Decreasing Concentrations										**S-statistic:**	**-20**

Well ID: MW10D-3

		1,2-DCA Concentration [ug/L] in Groundwater by Date									
		08/19/14	08/20/15	08/24/16	08/23/17	08/20/18	08/21/19	10/08/20	08/24/21		
	1,2 DCA (ug/L)	**0.75**	**1**	**1**	**0.6**	**0.89**	**0.81**	**0**	**0.87**	**Number of >0 Values**	**Number of <0 Value**
08/19/14	**0.75**		0.25	0.25	-0.15	0.14	0.06	-0.75	0.12	**5**	**2**
08/20/15	**1**			0	-0.4	-0.11	-0.19	-1	-0.13	**0**	**5**
08/24/16	**1**				-0.4	-0.11	-0.19	-1	-0.13	**0**	**5**
08/23/17	**0.6**					0.29	0.21	-0.6	0.27	**3**	**1**
08/20/18	**0.89**						-0.08	-0.89	-0.02	**0**	**3**
08/21/19	**0.81**							-0.81	0.06	**1**	**1**
10/08/20	**0**								0.87	**1**	**0**
08/24/21	**0.87**								**sum**	**10**	**17**
Trend with less than 90% Confidence: Decreasing Concentrations										**S-statistic:**	**-7**

Well ID: MW10D-2

		1,2-DCA Concentration [ug/L] in Groundwater by Date									
		08/19/14	08/20/15	08/24/16	08/23/17	08/20/18	08/21/19	10/08/20	08/24/21		
	1,2 DCA (ug/L)	**28**	**37**	**35**	**32**	**23**	**24**	**26**	**15**	**Number of >0 Values**	**Number of <0 Value**
08/19/14	**28**		9	7	4	-5	-4	-2	-13	**3**	**4**
08/20/15	**37**			-2	-5	-14	-13	-11	-22	**0**	**6**
08/24/16	**35**				-3	-12	-11	-9	-20	**0**	**5**
08/23/17	**32**					-9	-8	-6	-17	**0**	**4**
08/28/18	**23**						1	3	-8	**2**	**1**
08/20/19	**24**							2	-9	**1**	**1**
10/07/20	**26**								-11	**0**	**1**
08/24/21	**15**								**sum**	**6**	**22**
Trend with at least 90% Confidence: Decreasing Concentrations										**S-statistic:**	**-16**

Well ID: MW10D-1

		1,2-DCA Concentration [ug/L] in Groundwater by Date									
		08/19/14	08/20/15	08/24/16	08/23/17	08/20/18	08/21/19	10/08/20	08/24/21		
	1,2 DCA (ug/L)	**29**	**31**	**29**	**27**	**21**	**21**	**20**	**19**	**Number of >0 Values**	**Number of <0 Value**
08/19/14	**29**		2	0	-2	-8	-8	-9	-10	**1**	**5**
08/20/15	**31**			-2	-4	-10	-10	-11	-12	**0**	**6**
08/24/16	**29**				-2	-8	-8	-9	-10	**0**	**5**
08/23/17	**27**					-6	-6	-7	-8	**0**	**4**
08/20/18	**21**						0	-1	-2	**0**	**2**
08/21/19	**21**							-1	-2	**0**	**2**
10/08/20	**20**								-1	**0**	**1**
08/24/21	**19**								**sum**	**1**	**25**
Trend with at least 90% Confidence: Decreasing Concentrations										**S-statistic:**	**-24**

Notes:
- Application of Mann-Kendall Test is per Wiedemeier et al. (2000).
- For eight consecutive sampling events, an S-statistic greater than or equal ±12 indicates a trend with at least 90% confidence. For an S-statistic of less than ±12, the trend is not statistically significant.
- S-statistic>0 = Increasing Trend; S-statistic<0 = Decreasing Trend

ug/L = micrograms per liter

Event Data Comparison Key:

	No concentration change between sampling events
	Decrease in concentration between sampling events
	Increase in concentration between sampling events