NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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June 1, 2022

Sent via e-mail, no hard copy to follow

Thomas Donohue
Pfizer Inc.
100 Route 206 North
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thomas.donohue@pfizer.com

Re: 2021 Annual Groundwater Monitoring Program Report, dated July 2021

Dear Thomas Donohue,

The New York State Department of Environmental Conservation (Department or DEC), in coordination with the New York State Department of Health (NYSDOH) as combined agencies, has completed its review of the 2021 Annual Groundwater Monitoring Program Report (AGWR). This report was submitted by Woodard & Curran Engineering and Geological Services P.A. P.C. (Woodard & Curran) on behalf of Wyeth Pharmaceuticals LLC (Wyeth), which is a part of Pfizer Inc. The combined agency findings are as follows:

Section 1 Introduction states *"The July 2020 GWMP Evaluation Report provided an optimized and updated GWMP for the Site based on current conditions which was adopted starting with the 2020 groundwater monitoring event. As part of that optimization, the report also recommended annual reviews of groundwater data to evaluate changes to Site conditions to continue to improve the monitoring program."*

Please note, Wyeth should not remove groundwater monitoring wells from any event without prior written concurrence from the Department. Based on the combined agencies' review of the report, as well as discussion held during the March 24, 2022 Teams meeting (March 24 meeting) regarding the site groundwater, Wyeth must retain monitoring wells MW-18 and MW-18S which are located in proximity to the Rouses Point Elementary School.

Additionally, Wyeth must include a new sentinel well on Academy Street between MW-32S and MW-37.

Section 1.3 Hydrogeology states *"The shallow till hydrostratigraphic unit represents the primary mechanism for potential exposure off-Site through vapor intrusion and/or potential groundwater-surface water interaction. The hydraulic conductivity of the shallow till unit is low, and contaminant migration is not significant in*

this unit. The deep till is the primary unit through which regional groundwater flow occurs. This unit is considered important for evaluation of potential contaminant migration, but it does not represent a significant exposure risk due to its depth."

Wyeth must continue monitoring the designated sentinel wells to confirm that there is no pathway of volatilization and groundwater-surface interactions taking place.

Section 2. 2021 Groundwater Monitoring Program Data Evaluation states
"The sampling program included wells specified in the July 2020 GWMP Evaluation Report and on-site monitoring wells associated with ongoing investigation activities at Buildings 18 and 27…"

As noted above, the 2021 sampling program did not include sampling of MW-18 and MW-18S, these wells must be retained in the GWM program and Wyeth must resume sampling these wells at the next event. Past data suggests that the contaminant plume is not currently impacting these wells as they are cross-gradient, but they are in close proximity to MW-39 and MW-21, both of which are contaminated with Carbon Tetrachloride. MW-39 is a similar distance south of the site suggesting that the plume is not missing MW-18 and MW-18S by a wide margin. It is stated that an objective of the groundwater monitoring program is evaluation of the threat of vapor intrusion. Due to the sensitive nature of receptors at the school, The Department requires that MW-18 and MW-18S continue to be monitored and serve as sentinel wells to confirm that, at a minimum, this contaminant plume does not migrate towards and/or impact the school in the future.

Section 3.4 Recommendations for Ongoing Monitoring Based on Data Evaluation

After the explanation provided by Woodard & Curran on the Mann-Kendall and MAROS analysis contained in the report and further discussion during the March 24 meeting, most monitoring wells that are non-detect after 10 sequential sampling events would be considered as candidates to drop from future sampling events.

The Department has determined that breakdown products are continuing to form, therefore Wyeth must retain the following on-site monitoring wells within the GWMP as they are within boundaries of each correspondent plume area:

MW-30	Trichloroethene, 1,2-Dichloroethane, Cis-1,2-Dichloroethene
MW-34S	1,2-Dichloroethane
MW-5S	1,2-Dichloroethane, Cis-1,2-Dichloroethene
MW-8S	Trichloroethene, Cis-1,2-Dichloroethene
MW-38S	Carbon tetrachloride

The status of MW-30S in the shallow till is unclear. It shows as sampled with detectable data in the 2021 AGWR in Figures 3.1, 3.3 and 3.4. MW-30S is marked as ND for trichloroethene in section 4.5 On-Site Trend Analysis Summary in the 2020 Groundwater Monitoring Program Evaluation Report.

Additionally, the 2021 AGWR report addresses a general decrease of contaminants over time. Although at a gradual rate, Appendix A: Trend Plots for Selected Monitoring Wells suggests an overall decrease of the main contaminants except for MW-21, in which Carbon tetrachloride shows a nondecreasing trend in the period 2017 – 2021 despite the July 2016 ISCO event.

The Department recommends that Wyeth continue to address breakdown products in plots and diagrams every time there is representative exceedance in reference to their parent-product and standards (MW-33, MW-23, MW-19). Wyeth should indicate spreading within a plume of its parent-product.

Section 3.4.1 Annual Groundwater Monitoring Program lists the inclusion of 34 monitoring wells in the annual reports based on your analysis, *"Based upon a review of the 2021 groundwater data and the current site understanding, it is recommended that the ongoing groundwater monitoring program include the same 34 wells as recommended in the 2020 GWMP Evaluation Report."*

To confirm common understanding of the wells that Wyeth would like to remove from sampling event requirements, Wyeth must provide a list containing these monitoring wells that shows ten (10) sequential non detection data results for all contaminants. In the likelihood that a sample could not be taken during a particular sampling event it would not count in the sequential non detection data and additional event results must be provided. This ensures that there are ten sequential non-detect events.

The monitoring wells that are marked as decommissioned are: On-site MW-2, MW-3S, MW-4; and Off-site: MW-21-S, MW-37S. The following table provides the explanation associated with these decommissioned wells:

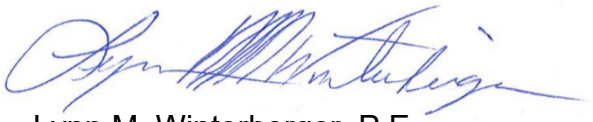
MW-2	Decommissioned due to construction of structure.
MW-3S	Decommissioned due to ISCO.
MW-4	Decommissioned and replaced with MW-12
MW-21S	+
MW-37S	+

+ To expedite our review, the Department requests that Wyeth please provide the explanation(s) associated with the decommissioning of MW-21S and MW-37S.

In other conversations with Wyeth and Woodard & Curran, DEC and NYSDOH have discussed that the annual sampling event for the GWMP should be done on a rolling fifth quarter and should be spaced to occur around the same time in the following quarter. For example, if annual sampling is done in mid-March (first quarter) of the year, the next year's annual sampling event should be done as close as possible to mid-June (second quarter) of the year. This allows the combined agencies to note seasonal fluctuation and if they affect the analytical results over time.

If you have any questions concern this letter, please contact Cecia Bicknell of my staff at 518-402-9474 or cecia.bicknell@dec.ny.gov.

Sincerely,



Lynn M. Winterberger, P.E.
Chief, RCRA Permitting Section

Enclosure

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ANNUAL GROUNDWATER MONITORING PROGRAM REPORT

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Wyeth Pharmaceuticals LLC
July 2021

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1. INTRODUCTION

On behalf of Wyeth Pharmaceuticals LLC (Wyeth, which is part of Pfizer Inc.), Woodard & Curran Engineering and Geological Services P.A. P.C. (Woodard & Curran) prepared this Annual Groundwater Monitoring Program (GWMP) Report in accordance with the GWMP contained in the July 2020 Groundwater Monitoring Program Evaluation Report (July 2020 GWMP Evaluation Report) previously submitted to the New York State Department of Environmental Conservation (NYSDEC) on July 24, 2020. This Annual GWMP Report presents and evaluates annual groundwater monitoring data collected from the former Wyeth facility located at 100 Academy Street in Rouses Point, New York (the "Site"). A Site Location Map is included as **Figure 1** and a Site Plan, depicting former Site features, is included as **Figure 2**.

The July 2020 GWMP Evaluation Report served as an addendum to the 2013 Draft Corrective Measures Study (CMS) Report that was submitted to NYSDEC on March 29, 2013. The draft CMS was submitted in accordance with the NYSDEC 6 NYCRR Part 373 Hazardous Waste Management Permit (Module II-Corrective Action Requirements). Finalization of the CMS Report is pending the public notice process for the Statement of Basis (final remedy selection) to be initiated by NYSDEC. The July 2020 GWMP Evaluation Report provided an optimized and updated GWMP for the Site based on current conditions which was adopted starting with the 2020 groundwater monitoring event. As part of that optimization, the report also recommended annual reviews of groundwater data to evaluate changes to Site conditions to continue to improve the monitoring program.

The objective of this report is to document the status of volatile organic compound (VOC) concentrations in groundwater at the Site (refer to **Table 1**) and make recommendations for the 2022 GWMP. Specifically, this report reviews the 2021 GWMP data, evaluates trends of primary Site VOC concentrations, and recommends updates for the 2022 GWMP as appropriate.

1.1 Groundwater Compliance Objectives

The 2013 Draft CMS Report presented an overall Site management strategy that included a component of natural attenuation with associated groundwater monitoring. The objectives of the GWMP at the Site are divided between on-Site and off-Site areas, as follows:

- On-Site Groundwater Monitoring Objectives: To monitor the progress of natural attenuation of VOC concentrations in groundwater. In the on-Site area, Monitored Natural Attenuation (MNA) is performed to further reduce residual concentrations of VOCs in groundwater, prevent human exposure to impacted soil and groundwater, and to prevent further degradation of groundwater.
- Off-Site Groundwater Monitoring Objectives: To monitor the progress of natural attenuation of VOC concentrations in groundwater. In the off-Site area, MNA is performed to reduce VOC concentrations in groundwater to levels protective of surface water in Lake Champlain/Richelieu River and to reduce migration of VOCs from groundwater to soil vapor to eliminate the threat of soil vapor intrusion to indoor air.

The 2013 Draft CMS Report instituted a continuation of the MNA program already in use at the Site which included semi-annual sampling of 63 monitoring wells for VOCs only during Q2 and 30 monitoring wells sampled for VOCs and water quality parameters (MNA parameters) in Q4. Changes to the original 2013 plan have been made periodically in conjunction with ongoing IRMs and other Site activities. Those changes have been documented/summarized in reports submitted to NYSDEC. The July 2020 GWMP Evaluation Report served as an addendum to the Draft 2013 CMS by updating the frequency of monitoring to once annually, abbreviating the monitoring well list from 63 to 34 wells based on redundancies and/or overall monitoring objectives, and discontinuing annual monitoring of MNA parameters based on trend analysis. These modifications created a groundwater monitoring program that is more focused on current site conditions and activities.

1.2 Geology

The general site geology provided below is an overview but is discussed in greater detail in the Sampling and Analysis Report (W&C, 2007); Supplemental Sampling and Analysis report (W&C, 2010); and Corrective Measures Study (CMS) Report (W&C,2013).

Rouses Point is situated in the northern Champlain valley. Generally, the valley exhibits little relief and is located on glacial lake and marine sediments overlying Ordovician sedimentary bedrock. The topographic high point on-site occurs along the railroad tracks on the western Site boundary at an elevation of approximately 140 feet above mean sea level (msl). The Site is generally flat, with a gentle drop in elevation to the east and southeast to a low point of roughly 118 feet above msl in the southeast corner of the Site.

The surficial geology at the Site consists primarily of glacial till. Till commonly consists of poorly sorted, generally non-stratified mixtures of grain-sizes ranging from clay to boulders. Descriptions of the site geology are based on Site observations from soil boring and test pit excavations. The generalized lithology for the shallow, unconsolidated overburden underlying the Site includes two primary hydrostratigraphic units as follows:

- Shallow till unit – consisting of a brown to gray, medium dense to dense, fine to coarse sand with little silt and varying amounts of clay, gravel, cobbles, and boulders.
- Deep till unit - consists of a dense to very dense sand and silt with lower amounts of clay and a higher percentage of cobbles and boulders.

1.3 Hydrogeology

The general Site hydrogeology provided below is an overview. Greater detail is provided in the Draft Corrective Measures Study (CMS) Report (W&C, 2013) and Groundwater Model Report (W&C, 2013), included as Appendix A of the 2013 Draft CMS Report.

The shallow till hydrostratigraphic unit represents the primary mechanism for potential exposure off-Site through vapor intrusion and/or potential groundwater-surface water interaction. The hydraulic conductivity of the shallow till unit is low, and contaminant migration is not significant in this unit. The deep till is the primary unit through which regional groundwater flow occurs. This unit is considered important for evaluation of potential contaminant migration, but it does not represent a significant exposure risk due to its depth. Groundwater flow in this unit is generally from west to east toward Lake Champlain/Richelieu River.

Recharge to the groundwater flow system is likely to originate primarily in unpaved portions of the area upgradient of the facility and in some of the drainage swales and areas open to infiltration on and around the facility. Demolition of the site buildings in 2019-2020 and disconnection of site drainage features could affect the local water table and infiltration rates. It is not yet completely understood if these changes will alter infiltration regimes or the resulting flow of groundwater at the site.

Based on the observations made during drilling of the bedrock, the bedrock at the Site is competent.

1.4 Groundwater Constituents of Concern (COCs)

Constituents of concern (COCs) in groundwater are associated with historical Site uses. Impacts are primarily present in two areas. Carbon tetrachloride has been identified off-Site in the vicinity of the intersection of Maple Street and Academy Street immediately southeast of the Site. The source and release mechanism for this area is not known, however, it is suspected to be associated with former sewer systems and/or preferential pathways along utility corridors. Trichloroethene and associated daughter products, including 1,2-dichloroethane and cis-1,2-dichloroethene have been

identified on-Site primarily in the vicinity of the footprint of former Buildings 18 and 27. The release mechanism is believed to be associated with a historical process piping and subsequent shallow migration under Buildings 18 and 27.

As discussed in the evaluation provided in Section 2 of this report, additional COCs were also detected in groundwater at the Site. These additional constituents are generally present at lower concentrations and are not as widespread. Overall remediation decisions at the Site have generally been based on the primary COCs and release areas discussed above.

1.5 Regulatory Criteria used for this Evaluation

As proposed in the 2013 Draft CMS Report, on-Site groundwater will be evaluated based on the NYSDEC provided default numerical groundwater standards and guidance values given in "Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations." As stated in the 2013 CMS an environmental easement limiting groundwater at the Site to non-potable use is anticipated as part of the Corrective Measures Implementation (CMI) plan for on-Site groundwater.

The proposed cleanup standards for off-Site groundwater prior to discharge to the receiving water body (i.e., Lake Champlain/Richelieu River) are the NYSDEC "Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations".

Strict adherence to the NYSDEC Analytical Services Protocol Contract Required Quantification Limits (ASP CRQL) has been observed to ensure that reporting limits and laboratory analyses meet the target project objectives.

The above proposed criteria are used for evaluation purposes in this document. It should be noted that the draft CMS has not been approved by New York Department of Environmental Conservation (DEC). Final criteria applicable to groundwater at the Site may change in the future.

2. 2021 GROUNDWATER MONITORING PROGRAM DATA EVALUATION

Low-flow groundwater sampling was performed between April 19 and 22, 2021 in accordance with the project Quality Assurance Project Plan (QAPP) dated September 2006. The sampling program included wells specified in the July 2020 GWMP Evaluation Report and on-Site monitoring wells associated with ongoing investigation activities at Buildings 18 and 27 including MW-40, MW-40s, MW-41, MW-41s, MW-42, and MW-43. Monitoring wells MW-17s, MW-39s, and MW-39 were unable to be sampled during the 2021 groundwater monitoring event due to a low water table.

Concentrations of VOCs above the detection limit in samples collected during the April 2021 sampling event are tabulated in **Table 1**. Concentrations of VOCs above proposed criteria in samples collected since 2020 under the current sampling program are summarized in **Table 2**. Historical (2006-2019) groundwater VOC concentration results are documented in the 2020 GWMP Report included as Appendix A of the 2020 Annual Status Report. Monitoring well locations are provided on **Figure 2**.

In order to visualize the degree and extent of impacts in groundwater, deep till aquifer plumes are depicted on **Figures 3.1 through 3.4**. These figures show isopleths for select groundwater COCs generated using 2021 groundwater data. In generating isopleth figures, detection limits were treated as zero values or concentrations at half of the detection limit depending on individual well's historical detections, nearest neighboring well concentrations, and/or relative importance to the groundwater monitoring objectives.

As indicated above, isopleths are only shown for the deep till hydrostratigraphic unit. Isopleths for shallow till concentrations are not provided because they are generally discontinuous in wells across the Site and also tend to exhibit lower concentrations than deep till concentrations outside the footprint of former Buildings 18 and 27. The shallow till unit represents a potential exposure pathway for volatilization, but it is not a significant vector for transport of groundwater impacts due to its limited horizontal transmissivity. For evaluation purposes, the concentration values for shallow till monitoring points are included on **Figures 3.1 through 3.4** adjacent to each well on the figures.

VOCs detected in groundwater above applicable criteria during the 2021 groundwater monitoring event are listed below:

Constituent of Concern	NYSDEC Groundwater Standard/Guidance Criteria	Number of Detections Above Applicable Criteria	2021 Highest Concentration in Groundwater
1,2-Dichloroethane	0.6 ug/L	13	740 ug/L
Benzene	1 ug/L	1	1.1 ug/L
Carbon tetrachloride	5 ug/L	4	2400 ug/L
Chloroform	7 ug/L	3	410 ug/L
cis-1,2-Dichloroethene	5 ug/L	13	9600 ug/L
trans-1,2-Dichloroethene	5 ug/L	2	9.5 ug/L
Trichloroethene	5 ug/L	7	37,000 ug/L
Vinyl chloride	2 ug/L	2	15 ug/L

Statistical trend analysis was performed for select wells using the GSI Mann-Kendall Toolkit. The results from the statistical evaluation are presented in tables for each constituent in the sections below. Trend graphs are also presented for select wells in **Appendix A**.

2.1 1,2-Dichloroethane (1,2-DCA)

Concentrations of 1,2-DCA were above the NYSDEC GW criteria in thirteen wells sampled during the 2021 GWMP. A summary of statistical trend analysis for select wells located in key portions of the Site is presented below:

Well ID	2021 1,2-DCA Concentration	Mann-Kendall Trend
On-Site wells		
MW-5	79 ug/L	Decreasing
MW-6	7.8 ug/L	Decreasing
MW-33s	<1 ug/L	Decreasing
MW-33	550 ug/L	Increasing
MW-34	10 ug/L	No Trend
Off-Site wells		
MW-31	9 ug/L	No Trend
MW-32	0.93 ug/L	Probably Decreasing

Concentrations of 1,2-DCA from the 2021 sampling event in the deep till unit are depicted on **Figure 3.1**. The highest concentrations are located within or directly downgradient of the former Building 18 and 27 footprints. MW-40 and MW-33 contain the highest concentrations with decreasing concentrations downgradient to the south and east.

On-Site monitoring well MW-33 was the only monitoring point above criteria in 2021 that showed an increasing trend in 1,2-DCA over its sample history. Other monitoring wells above criteria showed no trend, probably decreasing trend, or a decreasing trend. Trend analysis has not yet been performed on new wells installed in the Building 18 and 27 area since a minimum of four samples is required for trend analysis.

2.2 Benzene

The concentration of benzene was above the NYSDEC GW criteria in one well sampled during the 2021 GWMP. A summary of statistical trend analysis is presented below:

Well ID	2021 Benzene Concentration	Mann-Kendall Trend
On-Site wells		
MW-33	1.1 ug/L	No Trend

The concentration of benzene in the 2021 duplicate sample collected from MW-33 was detected at 1.1 ug/L. Trend analysis of historical benzene concentrations in MW-33 show no trend in concentration. The highest recorded concentration of benzene detected in MW-33 was 2 ug/l in July of 2015. Benzene was also detected in monitoring well MW-40 (3.1 ug/L) as a part of the 2019 source area delineation activities. Benzene is not considered a major Site COC however it will continue to be monitored as a part of the full list of VOCs in the GWMP.

2.3 Carbon Tetrachloride

Concentrations of carbon tetrachloride were above the NYSDEC GW criteria in four wells sampled during the 2021 GWMP. A summary of statistical trend analysis is presented below:

Well ID	2021 Carbon Tetrachloride Concentration	Mann-Kendall Trend
On-Site wells		
MW-9	28 ug/L	No Trend
	Post Remediation (August 2016-2021)	No Trend
Off-Site wells		
MW-19s	7.1 ug/L	Probably Decreasing
	Post Remediation (August 2016-2021)	Decreasing
MW-21	2,400 ug/L	Decreasing
	Post Remediation (August 2016-2021)	Stable
MW-37	260 ug/L	Stable
	Post Remediation (August 2016-2020)	Stable

Concentrations of carbon tetrachloride from the 2021 sampling event in the deep till aquifer are presented on **Figure 3.2**. The highest concentrations are found off-site in MW-21 at the intersection of Maple and Academy streets with decreasing concentrations downgradient to the northeast and east.

Off-Site groundwater from MW-21 decreased from 2,900 ug/L in 2020 to 2,400 ug/L in 2021. Trend analysis utilizing data from 2010-2021 shows a decreasing trend of carbon tetrachloride concentrations over that time. However, trend analysis of concentration data from MW-21 following the latest remediation in July 2016 shows a stable trend in concentration over that time.

Off-Site groundwater from MW-37 showed an increase in carbon tetrachloride concentration from 58 ug/L in 2019 to 300 ug/L in 2020. Trend analysis of data from 2010-2021 shows that concentrations of carbon tetrachloride have been stable over that period. Additional analysis including only data from post-remediation in July 2016 also revealed a stable trend in concentrations.

Groundwater from MW-9 increased in concentration from 5.6 ug/L in 2020 to 28 ug/L in 2021. Trend analysis of data from 2007-2021 shows no trend in concentrations of carbon tetrachloride over that period; isolating only the post-remediation data from 2016-2021 also revealed no trend in concentrations.

High concentrations of TCE and cis-1,2-DCE in groundwater from monitoring wells MW-40 and MW-40s caused high corresponding detection limits for other constituents. The detection limits of carbon tetrachloride were 500 ug/L and 20 ug/L respectively for these samples and do not allow for precise comparison to the GW criterion of 5 ug/L. However, a lack of historical detections in surrounding and downgradient wells indicates that these non-detect values do not represent a significant data gap.

2.4 Chloroform

Concentrations of chloroform were above the NYSDEC GW criteria in three wells sampled during the 2021 GWMP. A summary of statistical trend analysis for select wells located in key portions of the Site is presented below:

Well ID	2021 Chloroform Concentration	Mann-Kendall Trend
Off-Site wells		
MW-19s	6.7 ug/L	Decreasing
MW-21	410 ug/L	Decreasing
MW-37	73 ug/L	Decreasing

The highest concentrations of chloroform from the 2021 sampling event are in the deep till aquifer off-site in MW-21 at the intersection of Maple Street and Academy Street with diminishing concentrations downgradient to the north and east. Compliance monitoring wells exceeding applicable criteria for chloroform in 2021 show a historically decreasing pattern of concentrations.

2.5 Cis-1,2-Dichloroethene (cis-1,2-DCE)

Concentrations of cis-1,2-DCE were above the NYSDEC GW criteria in thirteen wells sampled during the 2021 GWMP. A summary of statistical trend analysis for select wells located in key portions of the Site is presented below:

Well ID	2021 cis-1,2-DCE Concentration	Mann-Kendall Trend
On-site wells		
MW-5	150 ug/L	Decreasing
MW-6	9.4 ug/L	Decreasing
MW-8	94 ug/L	Stable
MW-31	16 ug/L	No Trend
MW-33s	<1.0 ug/L	Decreasing
MW-33	180 ug/L	Decreasing
Off-Site wells		
MW-19s	5.3 ug/L	Decreasing
MW-19	7.9 ug/L	No Trend
MW-23s	48 ug/L	No Trend

Concentrations of cis-1,2-DCE from the 2021 monitoring event in the deep till unit are depicted on **Figure 3.3.** The highest concentrations are found on-Site in the TCE area located in the former Buildings 18 and 27 footprints with decreasing concentrations downgradient to the south and east.

Off-Site wells MW-23s, MW-19, and MW-19s have shown slight decreases in cis-1,2-DCA concentrations from 2020 to 2021, with concentrations MW-19 and 19s continuing to exceed the 5 ug/l criteria threshold for the second time during the 2021 sampling event. However, trend analysis of cis-1,2-DCE concentration data from these wells showed a decrease or no trend over time.

2.6 Trans-1,2-Dichloroethene (trans-1,2-DCE)

Concentrations of trans-1,2-Dichoroethene were above the NYSDEC GW criteria in monitoring wells MW-5 and MW-33 during the 2021 GWMP. A summary of statistical trend analysis for the select well located in a key portion of the Site is presented below:

Well ID	2021 trans-1,2- DCE Concentration	Mann-Kendall Trend
Off-Site wells		
MW-5	7.3 ug/L	Decreasing

Trend analysis of historical trans-1,2-DCE concentrations in MW-5 (located off-Site) indicates that concentrations show a decreasing trend over time.

2.7 Trichloroethene (TCE)

Concentrations of TCE were above the NYSDEC GW criteria in seven wells sampled during the 2021 GWMP. A summary of statistical trend analysis for select wells located in key portions of the Site is presented below:

Well ID	2021 TCE Concentration	Mann-Kendall Trend
On-site wells		
MW-8	27 ug/L	Stable
MW-27	12 ug/L	Stable
MW-33s	1.7 ug/L	Stable
Off-site wells		
MW-19s	7.1 ug/L	Decreasing
MW-21	12 ug/L (duplicate)	Decreasing
MW-23s	0.82 ug/L	No Trend
MW-37	53 ug/L	No Trend

Concentrations of TCE from the 2021 sampling event in the deep till aquifer are displayed on **Figure 3.4.** The highest concentrations of TCE occurred on-Site in the TCE area located in the former Buildings 18 and 27 footprints with decreasing concentrations downgradient to the south and east.

Individual on-Site wells showed comparable or slightly lower TCE concentrations compared with 2020 results, with the exception of MW-40s. MW-40s, screened in the shallow till directly under building 27, decreased from a concentration of 45,000 ug/L during the preliminary sampling event in 2019 to 4,700 ug/L in 2020, and subsequently dropped to 710 ug/L in 2021. This represents an order of magnitude decrease in TCE concentration in samples collected from this well for two years. Monitoring of this well should continue to document further trends.

Off-Site groundwater in MW-37 decreased in concentration from 100 ug/L in 2020 to 53 ug/L in 2021 and remains below its highest pre-remediation TCE concentration of 140 ug/L in 2013. Trend analysis indicates no trend to the TCE concentrations from groundwater in MW-37.

Off-Site groundwater from MW-19s and MW-21 decreased in TCE concentration from 8.8 ug/L in 2020 to 7.1 ug/L in 2021 and 19 ug/L in 2020 to 12 ug/L in 2021, respectively. Trend analysis indicates decreasing trends of TCE concentrations over the sample history for both wells.

2.8 Vinyl Chloride

Concentrations of vinyl chloride were above the NYSDEC GW criteria in two monitoring wells sampled during the 2021 GWMP. A summary of statistical trend analysis for select wells located in key portions of the Site is presented below:

Well ID	2021 Vinyl chloride Concentrations	Mann-Kendall Trend
On-site wells		
MW-5	9.7 ug/L	Increasing
MW-33	15 ug/L	Stable
Off-site wells		
MW-23	1.9 ug/L	Increasing
MW-31	1.1 ug/L	Increasing

On-Site wells MW-5 and MW-33 showed the highest concentrations of vinyl chloride during the 2021 monitoring. Trend analysis of data from 2006-2021 indicate that concentrations in these wells are stable or increasing over that time. These wells are located directly down gradient of the TCE area located in the former Buildings 18 and 27 footprints and concentrations of vinyl chloride are likely the result of the reductive dechlorination of TCE in the subsurface.

Off-Site well MW-23 has shown a long history of non-detect values followed by three detections in the past four monitoring events from 2018-2021. Although these slight detections are close to the criteria of 2 ug/L, they indicate an overall increasing trend in concentration, and are a likely result of reductive dechlorination of TCE.

3. CONCLUSIONS

The Site has transitioned from a large manufacturing facility to a mostly open lot with three original buildings remaining. Decommissioning of the facility occurred in two primary demolition events, first with the demolition of the Chemical Development (ChemD) facility in 2015 on the west side of the property and then most of the Main plant buildings in 2019 on the east side of the property. Buildings in the ChemD portion of the facility were demolished and most of the building foundations were removed, leaving the area open to infiltration since 2015. Former building foundations from the Main Plant portion of the facility remain mostly intact and do not readily allow for infiltration. However, it is still important to evaluate if recharge to the shallow and deep till units has been altered following decommissioning of the Main Plant buildings from factors such as water no longer being managed through the roof drainage system. Continued annual monitoring is being used to evaluate whether potential changes to recharge from precipitation events affects groundwater migration and/or the distribution of VOC concentrations in groundwater.

3.1 TCE and Daughter Products

TCE has been a Site COC since drafting of the 2013 CMS Report, however thorough investigation and delineation of the Buildings 18 and 27 source area was not possible until after the demolition of the Main Plant allowed for additional subsurface investigations. As a part of these additional investigations, MW-40 and -40s were added as monitoring points within this recently identified plume area. Since its addition to the monitoring network, MW-40 has contained the highest concentrations of TCE. As groundwater moves downgradient from the MW-40 in the deep till aquifer, TCE concentrations decrease.

The deep till plume figures and groundwater statistics generated from historical data indicate that concentrations of TCE, cis 1,2-DCE, and trans-1,2-DCE show no trend, are stable, or decreasing for on and off-Site groundwater monitoring points sampled in 2021. Vinyl chloride displays stable or increasing concentrations in the deep till directly downgradient of the TCE area and along Pearl Street in MW-23. These concentrations are comparatively low relative to on-Site conditions, only found in the deeper aquifer, and are likely the result of the reductive dechlorination of TCE and 1,2-DCE.

The TCE-impacted area in the vicinity of Buildings 18 and 27 continues to be evaluated for remediation. It is anticipated that any soil, saturated soil, and groundwater remediation strategies targeting this source area will have positive and extending effects on any TCE and breakdown product concentrations in groundwater downgradient to the south and east.

3.2 1,2-Dichloroethane (1,2-DCA)

The highest concentrations of 1,2-DCA in groundwater are on-Site in the deeper till aquifer specifically in the Building 18/27 TCE area at MW-40 (740 ug/L) and down gradient at MW-33 (550 ug/L), with concentrations above the NYSDEC GW criteria of (5 ug/L) extending to the east and south before dissipating.

The deep till plume figures and groundwater statistics generated from historical data indicate that concentrations of 1,2-DCA show, no trend, probably decreasing, or decreasing in on and off-site groundwater monitoring points sampled in 2020 apart from MW-33. MW-33 displays an overall increasing trend and continued sampling of MW-33 in 2021 is planned to monitor this trend.

1,2-DCA has many uses in manufacturing, and it is assumed that a historical surface release of 1,2-DCA occurred in the general area of building 18 and 27 in a similar manner to TCE. Any remedy selected for remediation in this area with respect to TCE in soil, saturated soil, and groundwater should also address the overlapping 1,2-DCA impacts.

3.3 Carbon Tetrachloride and Daughter Products

The highest concentrations of carbon tetrachloride and chloroform were identified in off-Site deep till monitoring wells at the intersection of Maple and Academy streets.

The groundwater statistics generated from historical data indicate that concentrations of carbon tetrachloride show no trend, are decreasing, or stable in monitoring points that exceed criteria during the 2021 sampling event. Trend analysis of carbon tetrachloride concentrations show that the plume has generally decreased in magnitude and extent and has not migrated farther downgradient. Trends in VOC concentrations were evaluated for historical data and for a subset of data collected only after the most recent remediation in this area in 2016. Post remediation data indicate that carbon tetrachloride concentrations in both MW-21 and MW-37 have been stable since the last ISCO injection event conducted in July of 2016. Refer to the trend plots contained in **Appendix A** and the summary of statistical trend analyses presented in Section 2 for a summary of concentration trends at the Site.

Chloroform is recognized as a Site COC that is present in Site groundwater and is attributed to breakdown of carbon tetrachloride in the subsurface. This is further evidenced by the co-location of the highest chloroform and carbon tetrachloride concentrations within off-Site deep till monitoring wells MW-21 and MW-37. The groundwater statistics generated from historical data indicate that concentrations of chloroform are decreasing in monitoring points that were above criteria during the 2021 sampling event. While these concentrations do exceed the applicable criteria, their lateral extent and location in the deep till aquifer do not pose a risk to soil vapor or groundwater/surface water interactions.

3.4 Recommendations for Ongoing Monitoring Based on Data Evaluation

3.4.1 Annual Groundwater Monitoring Program

Based upon a review of the 2021 groundwater data and the current site understanding, it is recommended that the ongoing groundwater monitoring program include the same 34 wells as recommended in the 2020 GWMP Evaluation Report:

- On-Site Monitoring Wells:
  - 7 deep wells: MW-5, MW-6, MW-8, MW-9, MW-27, MW-33, MW-34.
  - 7 shallow wells: MW-9S, MW-27S, MW-29S, MW-30S, MW-33S, MW-35S, MW-36S,
- Off-Site Monitoring Wells:
  - 12 deep wells: MW-15, MW-16, MW-17, MW-19, MW-21, MW-22, MW-23, MW-31, MW-32, MW-37, MW 38, MW-39.
  - 8 shallow wells: MW-16S, MW-17S, MW-19S, MW-22S, MW-23S, MW-31S, MW-32S, MW-39S.

To maintain consistency with the established schedule for monitoring at the Site, the annual monitoring event will be performed during Q2 or Q3 of each calendar year. Wells will continue to be sampled for VOCs by EPA Method 8260C. Groundwater sample collection will continue to be performed consistent with the groundwater sampling procedure described in the project Quality Assurance Project Plan (QAPP).

3.4.2 Additional Wells for Evaluation of TCE Impacts

In addition to the annual Groundwater Monitoring Program described above, monitoring of wells in the vicinity of former Buildings 18 and 27 will continue in the short term to evaluate remedial alternatives and to provide higher resolution baseline plume characterization. It is recommended that the GWMP continue to include sampling of six additional on-site monitoring wells, as follows:

- On-Site wells associated with evaluation of Buildings 18 and 27:
  - Four deep wells: MW-40, MW-41, MW-42, MW-43.
  - Two shallow wells: MW-40s, MW-41s.

Longer-term monitoring of these wells will be evaluated in the future following further evaluation and implementation of a remedial strategy for this area of the Site.

4. REFERENCES

U.S. Environmental Protection Agency. 2005. Roadmap to Long-Term Monitoring Optimization. EPA 542-R-05-003.

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Woodard & Curran, "*Draft* Corrective Measures Study Report", Wyeth Pharmaceuticals, Rouses Point, New York, March 2013.

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TABLES

Table 1
2021 Groundwater Analytical Results
Wyeth Pharmaceuticals LLC
Rouses Point, NY

			Groundwater Monitoring Program Wells														
Well	NYSDEC Groundwater Standard/Guidance	NYSDEC 2005 ASP CRQL	MW-5	MW-6	MW-8	MW-9	MW-9S	MW-15*	MW-16	MW-16S	MW-17	MW-19	MW-19S	MW-21	MW-101 (MW-21)	MW-101_DL (MW-21)	MW-22
Sample Date			4/19/21	4/20/21	4/20/21	4/20/21	4/20/21	4/19/21	4/20/21	4/20/21	4/20/21	4/22/21	4/22/21	4/22/21	4/22/21	4/22/21	4/21/21
Constituent															Duplicate	Duplicate	
Volatiles by 8260C (ug/l)																	
1,1,2-Trichloroethane	1	5	< 2.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 50	< 1.0	< 50	< 1.0
1,1-Dichloroethene	5	5	**1.3J**	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 50	< 1.0	< 50	< 1.0
1,2-Dichloroethane	0.6	5	**79**	**7.8**	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 50	**0.33J**	< 50	< 1.0
1,4-Dioxane	--	2	< 80	< 40	< 80	< 40	< 40	< 40	< 40	< 40	< 40	< 80	**24J**	< 2000	< 40	< 2000	< 40
Acetone	50	50	< 20	< 10	< 20	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 10	< 500	< 10	< 500	< 10
Benzene	1	1	< 2.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 50	< 1.0	< 50	< 1.0
Carbon tetrachloride	5	5	< 2.0	< 1.0	< 2.0	**28**	**0.27J**	< 1.0	< 1.0	**0.43J**	< 1.0	< 2.0	**7.1**	**2400**	**2100E**	**2100**	**1.6**
Chloroethane	5	5	< 2.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 50	< 1.0	< 50	< 1.0
Chloroform	7	5	< 2.0	< 1.0	< 2.0	**9**	**0.77J**	< 1.0	< 1.0	< 1.0	< 1.0	**1.0J**	**6.7**	**410**	**400E**	**380**	**0.89J**
cis-1,2-Dichloroethene	5	5	**150**	**9.4**	**94**	< 1.0	< 1.0	< 1.0	**2.9**	< 1.0	< 1.0	**7.9**	**5.3**	< 50	< 1.0	< 50	**3.3**
Methyl tert-butyl ether	10	5	**0.53J**	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 50	< 1.0	< 50	< 1.0
Tetrachloroethene	5	5	< 2.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	**0.76J**	< 50	**3.2**	< 50	< 1.0
trans-1,2-Dichloroethene	5	5	**7.3**	< 1.0	**2.8**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 50	< 1.0	< 50	< 1.0
Trichloroethene	5	5	< 2.0	< 1.0	**27**	**1.1**	< 1.0	< 1.0	**0.99J**	< 1.0	< 1.0	**1.4J**	**7.1**	< 50	**12**	< 50	**1.5**
Trichlorofluoromethane	5	5	< 2.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 50	< 1.0	< 50	< 1.0
Vinyl chloride	2	5	**9.7**	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 50	< 1.0	< 50	< 1.0
Tentatively Identified Compound (TICs) (ug/l)																	
Ethyl ether	--	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethane, 1-chloro-1-fluoro-	--	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silanol, trimethyl-	--	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Unknown TICs	--	--	**6.9 TJ**	ND	ND	ND	ND	ND	ND	ND	ND	**ND**	**8.7 TJ**	ND	**0.7 TJ**	ND	ND

Table 1
2021 Groundwater Analytical Results
Wyeth Pharmaceuticals LLC
Rouses Point, NY

			Groundwater Monitoring Program Wells														
Well	NYSDEC Groundwater Standard/Guidance	NYSDEC 2005 ASP CRQL	MW-22S	MW-23	MW-23S	MW-27	MW-27S	MW-29S	MW-30S	MW-31	MW-31S	MW-32	MW-32S	MW-33	MW-102 (MW-33)	MW-102_DL (MW-33)	MW-33S
Sample Date			4/21/21	4/19/21	4/19/21	4/20/21	4/20/21	4/20/21	4/21/21	4/19/21	4/19/21	4/22/21	4/22/21	4/21/21	4/21/21	4/21/21	4/21/21
Constituent															Duplicate	Duplicate	
Volatiles by 8260C (ug/l)																	
1,1,2-Trichloroethane	1	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	< 10	< 1.0
1,1-Dichloroethene	5	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.50J**	< 1.0	< 1.0	< 1.0	< 1.0	< 10	**1.5**	< 10	< 1.0
1,2-Dichloroethane	0.6	5	< 1.0	< 1.0	< 1.0	**3.7**	< 1.0	< 1.0	< 1.0	**9**	< 1.0	**0.93J**	< 1.0	**550**	**480E**	**510**	< 1.0
1,4-Dioxane	--	2	< 40	< 40	< 40	< 40	< 40	< 40	< 40	< 40	< 40	< 40	< 40	< 400	< 40	< 400	< 40
Acetone	50	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 100	< 10	< 100	< 10
Benzene	1	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	**1.1**	< 10	< 1.0
Carbon tetrachloride	5	5	< 1.0	< 1.0	**0.72J**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	< 10	< 1.0
Chloroethane	5	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	**0.44J**	< 10	< 1.0
Chloroform	7	5	< 1.0	< 1.0	**0.98J**	**0.62J**	< 1.0	< 1.0	**0.57J**	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	< 10	< 1.0
cis-1,2-Dichloroethene	5	5	< 1.0	**9.2**	**48**	**1.7**	< 1.0	< 1.0	< 1.0	**16**	< 1.0	< 1.0	< 1.0	**180**	**130E**	**150**	< 1.0
Methyl tert-butyl ether	10	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	**0.41J**	< 10	< 1.0
Tetrachloroethene	5	5	< 1.0	< 1.0	**0.36J**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	< 10	< 1.0
trans-1,2-Dichloroethene	5	5	< 1.0	< 1.0	**1.3**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**9.5J**	**7.5**	< 10	< 1.0
Trichloroethene	5	5	< 1.0	**0.82J**	**9.8**	**12**	< 1.0	< 1.0	< 1.0	**0.46J**	< 1.0	< 1.0	< 1.0	< 10	**1.9**	< 10	**1.7**
Trichlorofluoromethane	5	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**3.3**	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	< 10	< 1.0
Vinyl chloride	2	5	< 1.0	**1.9**	< 1.0	**1.2**	< 1.0	< 1.0	< 1.0	**1.1**	< 1.0	< 1.0	< 1.0	**15**	**12**	**14**	< 1.0
Tentatively Identified Compound (TICs) (ug/l)																	
Ethyl ether	--	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**11 TJN**	ND	ND
Ethane, 1-chloro-1-fluoro-	--	--	ND	ND	ND	ND	ND	ND	**3.0 TJN**	ND	ND	ND	ND	ND	ND	ND	ND
Silanol, trimethyl-	--	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Unknown TICs	--	--	ND	ND	ND	**3.4 TJ**	ND	ND	**29 TJ**	ND	ND	ND	ND	ND	ND	ND	ND

Table 1
2021 Groundwater Analytical Results
Wyeth Pharmaceuticals LLC
Rouses Point, NY

			Groundwater Monitoring Program Wells						TCE Area Wells						
Well	**NYSDEC Groundwater Standard/Guidance**	**NYSDEC 2005 ASP CRQL**	**MW-34**	**MW-35S**	**MW-36S**	**MW-37**	**MW-37_DL**	**MW-38**	**MW-40**	**MW-40S**	**MW-41**	**MW-41_DL**	**MW-41S**	**MW-42**	**MW-43**
Sample Date			**4/21/21**	**4/21/21**	**4/20/21**	**4/22/21**	**4/22/21**	**4/21/21**	**4/22/21**	**4/22/21**	**4/22/21**	**4/22/21**	**4/22/21**	**4/21/21**	**4/21/21**
Constituent															
Volatiles by 8260C (ug/l)															
1,1,2-Trichloroethane	1	5	< 1.0	**0.95J**	< 1.0	< 1.0	< 5.0	< 1.0	< 500	< 20	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	5	5	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	**160J**	< 20	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	0.6	5	**10**	< 1.0	< 1.0	**0.24J**	< 5.0	< 1.0	**740**	**12J**	**290E**	**270**	**47**	**4.2**	**3.5**
1,4-Dioxane	--	2	< 40	< 40	< 40	< 40	< 200	< 40	< 20000	< 800	< 40	< 200	< 40	< 40	< 40
Acetone	50	50	< 10	< 10	< 10	< 10	< 50	< 10	< 5000	< 200	< 10	< 50	**5.2J**	< 10	< 10
Benzene	1	1	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 500	< 20	**0.58J**	< 5.0	< 1.0	< 1.0	< 1.0
Carbon tetrachloride	5	5	< 1.0	< 1.0	< 1.0	**260E**	**220**	< 1.0	< 500	< 20	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0
Chloroethane	5	5	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 500	< 20	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0
Chloroform	7	5	< 1.0	< 1.0	< 1.0	**73**	**70**	< 1.0	< 500	< 20	< 1.0	< 5.0	< 1.0	< 1.0	**1.0**
cis-1,2-Dichloroethene	5	5	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	**9600**	**63**	**6.8**	**6.2**	**1.3**	**5.2**	< 1.0
Methyl tert-butyl ether	10	5	**0.95J**	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 500	< 20	**1.1**	**0.96J**	< 1.0	< 1.0	**0.38J**
Tetrachloroethene	5	5	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 500	< 20	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	5	5	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 500	< 20	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	5	< 1.0	**0.76J**	< 1.0	**53**	**48**	< 1.0	**37000**	**710**	**1.2**	< 5.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	5	5	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 500	< 20	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0
Vinyl chloride	2	5	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 500	< 20	**2**	< 5.0	< 1.0	< 1.0	< 1.0
Tentatively Identified Compound (TICs) (ug/l)															
Ethyl ether	--	--	ND	ND	ND	ND	ND	ND	ND	ND	**13 TJN**	**15 TJN**	**3.4 TJN**	ND	ND
Ethane, 1-chloro-1-fluoro-	--	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silanol, trimethyl-	--	--	**8.3 TJN**	ND	ND	ND	ND	ND	ND	ND	**7.0 TJN**	ND	ND	ND	ND
Total Unknown TICs	--	--	**5.9 TJ**	ND	**2.5 TJ**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5.4 TJ**

Table 1
2021 Groundwater Analytical Results
Wyeth Pharmaceuticals LLC
Rouses Point, NY

Notes:

* -= Sample was initially incorrectly identified by the lab as 'MW-1S'. The sample is correctly identified as MW-15
DL = Sample was diluted due to high concentration of target analyte(s).
"MW-XX" = Deeper monitoring well screened in the lower glacial till.
"MW-XXS" = Shallow monitoring well screened in the upper glacial till.
Volatile Organic Compound (VOC) analysis via EPA Methods 8260C.
All groundwater analyses conducted via NYSDEC 2005 Analytical Services Protocol.
Bold value indicates detection of constituent above the laboratory reporting limit.
[ ] = Concentration is above applicable NYSDEC Groundwater Quality Standard or guidance value (6 NYCRR Part 703) for water class GA.
ND = No Tentatively Identified Compounds detected at or above the laboratory reporting limit.
NA = Not analyzed.
-- = Not established.
Results are reported in micrograms per liter (µg/l) or parts per billion (ppb).
CRQL = Contract Required Quantitation Level from Exhibit C-Part I (Superfund-CLP Organics) and Part II (Superfund-CLP Inorganics) of Analytical Services Protocol (ASP), July 2005.
Only constituents reported in at least one well are shown in the above table. See laboratory analytical data sheets for complete analyte lists.
Samples were qualified by the laboratory, data validation, and/or EPA CLP National Functional Guidelines for Organic Data Review.

Organic Data Qualifiers

J = Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). Concentrations within this range are estimated. Indicates estimated value for TICs
E = Compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
T= Result is a tentatively identified compound (TIC) and an estimated value.
N = Indicates presumptive evidence of a compound. This flag is used only for TICs, where the identification is based on the mass spectral library search.
UJ = Indicates an estimated non-detect value due to an exceedance of quality control limits in the continuing calibration verification (CCV).

Table 2
2020-2021 Groundwater Analytical Results
Wyeth Pharmaceuticals LLC
Rouses Point, NY

Well	Sample Date	1,2-Dichloroethane	Benzene	Carbon tetrachloride	Chloroform	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Trichloroethene	Vinyl chloride
NYSDEC Groundwater Standard/Guidance		0.6	1	5	7	5	5	5	2
NYSDEC 2005 ASP CRQL		5	1	5	5	5	5	5	5
MW 5	10/12/20	130	< 4.0	< 4.0	< 4.0	220	10	< 4.0	17
MW-5	4/19/21	79	< 2.0	< 2.0	< 2.0	150	7.3	< 2.0	9.7
MW 6	10/12/20	10	< 1.0	< 1.0	< 1.0	13	< 1.0	< 1.0	< 1.0
MW-6	4/20/21	7.8	< 1.0	< 1.0	< 1.0	9.4	< 1.0	< 1.0	< 1.0
MW 8	10/13/20	< 2.0	< 2.0	< 2.0	0.69J	130	3.2	27	< 2.0
MW-8	4/20/21	< 2.0	< 2.0	< 2.0	< 2.0	94	2.8	27	< 2.0
MW 9	10/13/20	< 1.0	< 1.0	5.6	0.39J	< 1.0	< 1.0	0.71J	< 1.0
MW-9	4/20/21	< 1.0	< 1.0	28	9	< 1.0	< 1.0	1.1	< 1.0
MW 9S	10/13/20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW-9S	4/20/21	< 1.0	< 1.0	0.27J	0.77J	< 1.0	< 1.0	< 1.0	< 1.0
MW 15	10/12/20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW-15*	4/19/21	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW 16	10/13/20	0.78J	< 1.0	< 1.0	0.35J	2.1	< 1.0	0.86J	< 1.0
MW-16	4/20/21	< 1.0	< 1.0	< 1.0	< 1.0	2.9	< 1.0	0.99J	< 1.0
MW 16S	10/13/20	< 1.0	< 1.0	< 1.0	0.44J	< 1.0	< 1.0	< 1.0	< 1.0
MW-16S	4/20/21	< 1.0	< 1.0	0.43J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW 17	10/15/20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW-17	4/20/21	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW 19	10/14/20	< 1.0	< 1.0	< 1.0	< 1.0	15	< 1.0	1.4	1.1
MW-19	4/22/21	< 2.0	< 2.0	< 2.0	1.0J	7.9	< 2.0	1.4J	< 2.0
MW 19S	10/14/20	0.26J	< 1.0	7.1	6.9	6.9	< 1.0	8.8	< 1.0
MW-19S	4/22/21	< 1.0	< 1.0	7.1	6.7	5.3	< 1.0	7.1	< 1.0
MW 21	10/15/20	< 40	< 40	2900 J	590	< 40	< 40	19J	< 40
MW 101(MW-21)[1]	10/15/20	< 1.0	< 1.0	2000E J	430E	1.1	< 1.0	13	< 1.0
MW 101_DL (MW-21)[1]	10/15/20	< 50	< 50	2100 J	460	< 50	< 50	< 50	< 50
MW-21	4/22/21	< 50	< 50	2400	410	< 50	< 50	< 50	< 50
MW-101[1]	4/22/21	0.33J	< 1.0	2100E	400E	< 1.0	< 1.0	12	< 1.0
MW-101_DL[1]	4/22/21	< 50	< 50	2100	380	< 50	< 50	< 50	< 50
MW 22	10/13/20	< 1.0	< 1.0	2.1	1.1	4.5	< 1.0	2.1	< 1.0
MW-22	4/21/21	< 1.0	< 1.0	1.6	0.89J	3.3	< 1.0	1.5	< 1.0
MW 22S	10/13/20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW-22S	4/21/21	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW 23	10/13/20	< 1.0	< 1.0	< 1.0	< 1.0	1.6	< 1.0	< 1.0	2.5
MW-23	4/19/21	< 1.0	< 1.0	< 1.0	< 1.0	9.2	< 1.0	0.82J	1.9
MW 23S	10/13/20	< 1.0	< 1.0	0.93J	1.3	61	1.4	13	< 1.0
MW-23S	4/19/21	< 1.0	< 1.0	0.72J	0.98J	48	1.3	9.8	< 1.0
MW 27	10/12/20	2.4	< 1.0	0.40J	1.5	1.2	< 1.0	6.1	< 1.0
MW-27	4/20/21	3.7	< 1.0	< 1.0	0.62J	1.7	< 1.0	12	1.2
MW 27S	10/12/20	< 1.0	< 1.0	0.74J	0.56J	< 1.0	< 1.0	< 1.0	< 1.0
MW-27S	4/20/21	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW 29S	10/12/20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW-29S	4/20/21	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW 30S	10/12/20	< 1.0	< 1.0	< 1.0	0.45J	< 1.0	< 1.0	< 1.0	< 1.0
MW-30S	4/21/21	< 1.0	< 1.0	< 1.0	0.57J	< 1.0	< 1.0	< 1.0	< 1.0
MW 31	10/14/20	13	< 1.0	< 1.0	< 1.0	24	1	0.86J	2.8
MW-31	4/19/21	9	< 1.0	< 1.0	< 1.0	16	< 1.0	0.46J	1.1
MW 31S	10/14/20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW-31S	4/19/21	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW 32	10/14/20	1.3	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW-32	4/22/21	0.93J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW 32S	10/14/20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW-32S	4/22/21	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW 33	10/12/20	760	< 10	< 10	< 10	97	< 10	< 10	14
MW 102(MW-33)[1]	10/12/20	810E	1.4	< 1.0	< 1.0	100	6.5	1.7	16
MW 102_DL (MW-33)[1]	10/12/20	730 J	< 20	< 20	< 20	100	< 20	< 20	< 20
MW-33	4/21/21	550	< 10	< 10	< 10	180	9.5J	< 10	15
MW-102[1]	4/21/21	480E	1.1	< 1.0	< 1.0	130E	7.5	1.9	12
MW-102_DL[1]	4/21/21	510	< 10	< 10	< 10	150	< 10	< 10	14

Table 2
2020-2021 Groundwater Analytical Results
Wyeth Pharmaceuticals LLC
Rouses Point, NY

Well	Sample Date	1,2-Dichloroethane	Benzene	Carbon tetrachloride	Chloroform	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Trichloroethene	Vinyl chloride
NYSDEC Groundwater Standard/Guidance		0.6	1	5	7	5	5	5	2
NYSDEC 2005 ASP CRQL		5	1	5	5	5	5	5	5
MW 33S	10/12/20	**5.4**	< 1.0	< 1.0	< 1.0	**8.6**	< 1.0	**40**	< 1.0
MW-33S	4/21/21	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**1.7**	< 1.0
MW 34	10/12/20	**11**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.49J**	< 1.0
MW-34	4/21/21	**10**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW 35S	10/13/20	**2.1**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**1.8**	< 1.0
MW-35S	4/21/21	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**0.76J**	< 1.0
MW 36S	10/13/20	< 1.0	< 1.0	< 1.0	**0.70J**	< 1.0	< 1.0	< 1.0	< 1.0
MW-36S	4/20/21	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW 37	10/14/20	**0.44J**	< 1.0	**350E**	**120E**	< 1.0	< 1.0	**100E**	< 1.0
MW 37_DL	10/14/20	< 8.0	< 8.0	**300**	**110**	< 8.0	< 8.0	**92**	< 8.0
MW-37	4/22/21	**0.24J**	< 1.0	**260E**	**73**	< 1.0	< 1.0	**53**	< 1.0
MW-37_DL	4/22/21	< 5.0	< 5.0	**220**	**70**	< 5.0	< 5.0	**48**	< 5.0
MW 38	10/13/20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW-38	4/21/21	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MW 40	10/15/20	**690J**	< 1000	< 1000	< 1000	**9000**	< 1000	**24000**	< 1000
MW-40	4/22/21	**740**	< 500	< 500	< 500	**9600**	< 500	**37000**	< 500
MW 40S	10/15/20	**63J**	< 130	< 130	< 130	**300**	< 130	**4700**	< 130
MW-40S	4/22/21	**12J**	< 20	< 20	< 20	**63**	< 20	**710**	< 20
MW 41	10/15/20	**41**	< 1.0	< 1.0	**0.50J**	**1**	< 1.0	< 1.0	< 1.0
MW-41	4/22/21	**290E**	**0.58J**	< 1.0	< 1.0	**6.8**	< 1.0	**1.2**	**2**
MW-41_DL	4/22/21	**270**	< 5.0	< 5.0	< 5.0	**6.2**	< 5.0	< 5.0	< 5.0
MW 41S	10/14/20	**1.3J**	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
MW-41S	4/22/21	**47**	< 1.0	< 1.0	< 1.0	**1.3**	< 1.0	< 1.0	< 1.0
MW 42	10/14/20	< 2.0 UJ	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
MW-42	4/21/21	**4.2**	< 1.0	< 1.0	< 1.0	**5.2**	< 1.0	< 1.0	< 1.0
MW 43	10/15/20	**3.9**	< 1.0	< 1.0	**2.4**	< 1.0	< 1.0	< 1.0	< 1.0
MW-43	4/21/21	**3.5**	< 1.0	< 1.0	**1.0**	< 1.0	< 1.0	< 1.0	< 1.0

Notes:

(1) = Duplicate sample.

* -= Sample was initially incorrectly identified by the lab as 'MW-1S'. The sample is correctly identified as MW-15

DL - Sample was diluted due to high concentration of target analyte(s).

"MW-XX" = Deeper monitoring well screened in the lower glacial till.

"MW-XXS" = Shallow monitoring well screened in the upper glacial till.

Volatile Organic Compound (VOC) analysis via EPA Methods 8260C.

All groundwater analyses conducted via NYSDEC 2005 Analytical Services Protocol.

Bold value indicates detection of constituent above the laboratory reporting limit.

Concentration is above applicable NYSDEC Groundwater Quality Standard or guidance value (6 NYCRR Part 703) for water class GA.

ND = No Tentatively Identified Compounds detected at or above the laboratory reporting limit.

NA = Not analyzed.

-- = Not established.

Results are reported in micrograms per liter (µg/l) or parts per billion (ppb).

CRQL = Contract Required Quantitation Level from Exhibit C-Part I (Superfund-CLP Organics) and Part II (Superfund-CLP Inorganics) of Analytical Services Protocol (ASP), July 2005.

Only constituents reported in at least one well are shown in the above table. See laboratory analytical data sheets for complete analyte lists.

Samples were qualified by the laboratory, data validation, and/or EPA CLP National Functional Guidelines for Organic Data Review.

Organic Data Qualifiers

J = Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). Concentrations within this range are estimate. Indicates estimated value for TICs

E = Compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.

T= Result is a tentatively identified compound (TIC) and an estimated value.

N = Indicates presumptive evidence of a compound. This flag is used only for TICs, where the identification is based on the mass spectral library search.

UJ = Indicates an estimated non-detect value due to an exceedance of quality control limits in the continuing calibration verification (CCV).

FIGURES

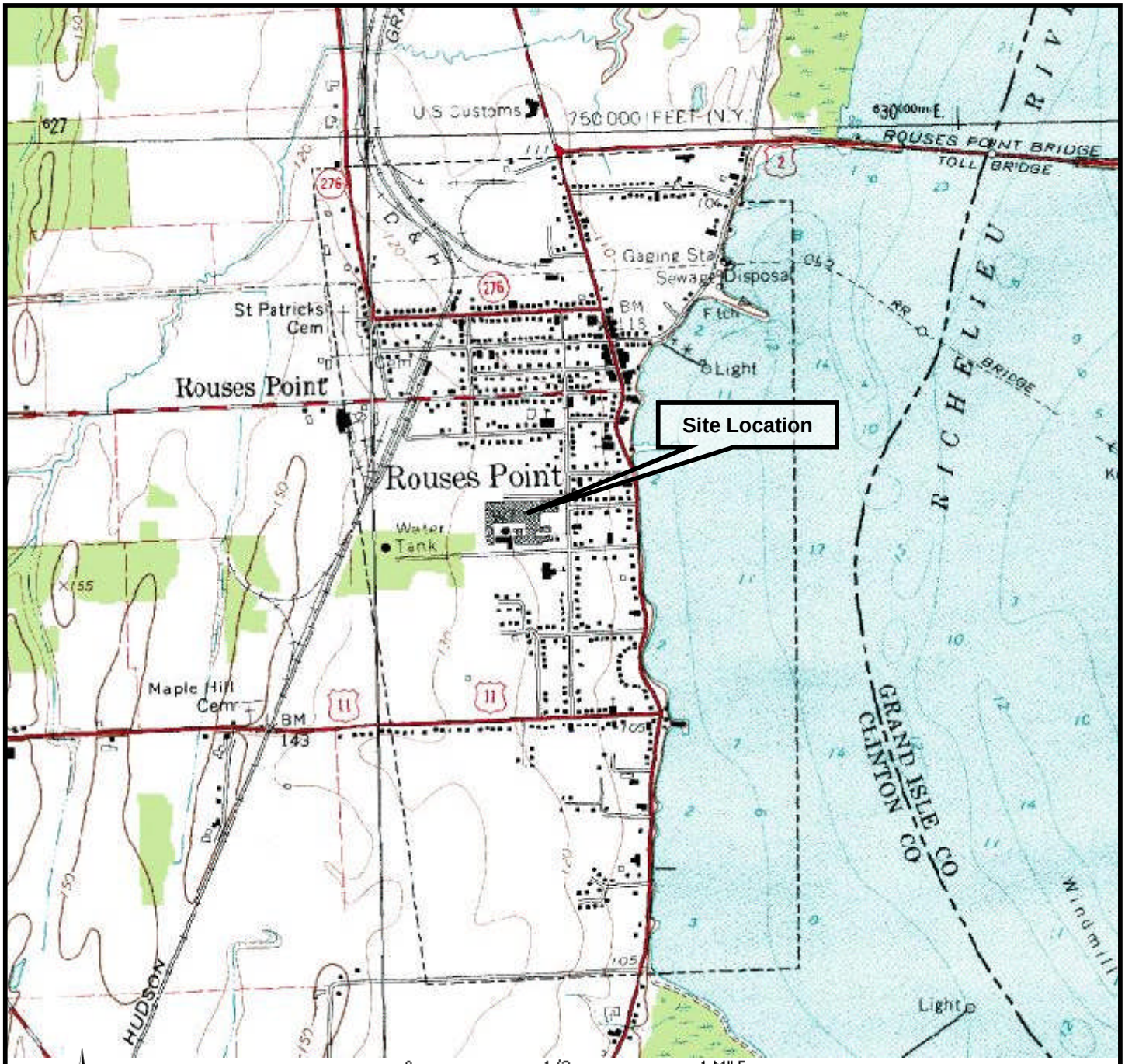

Figure 1 SITE LOCATION

Wyeth Pharmaceuticals LLC

Rouses Point, NY

WOODARD &CURRAN

COMMITMENT & INTEGRITY DRIVE RESULTS

N

Clinton Street

Clinton Street

APPROXIMATE CHEMICAL DEVELOPMENT PLANT PROPERTY BOUNDARY

MW-11

MW-12

MW-4 (DECOMMISSIONED)

MW-13

MW-2 (DECOMMISSIONED)

MW-7

MW-35S MW-35

MW-10

MW-23S MW-23 Pearl Street MW-16S MW-16

MW-8S MW-8

MW-29 MW-29S

MW-24 MW-24S

MW-25 MW-25S

MW-26 MW-26S

MW-3 MW-3S (DECOMMISSIONED)

MW-30S MW-30

MW-40S MW-40

MW-43

MW-34S MW-34

MW-41S MW-41

MW-33S MW-33

MW-42

MW-5 MW-5S

MW-32 MW-32S

MW-31 MW-31S

MW-14

MW-1 MW-1S

MW-27 MW-27S

MW-28 MW-28S

MW-15

MW-6

MW-20S MW-20

MW-9S MW-9

MW-37S (DECOMMISSIONED) MW-37

MW-21S (DECOMMISSIONED) MW-21

MW-17S MW-17 Academy Street

MW-38S MW-38

MW-22S MW-22

MW-19 MW-19S

MW-36 MW-36S

MW-39 MW-39S

MW-18S MW-18

White Avenue

Maple Street

Lake Street

ACADEMY STREET

EMPLOYEE PARKING

ACADEMY STREET EXTENSION

RECEIVING

BUILDING 25

BUILDING 21

BUILDING 37

BUILDING 35

BUILDING 19

BUILDING 13

BUILDING 9

BUILDING 11

BUILDING 15

SHIPPING

BUILDING 10

BUILDING 8

BUILDING 3A2

BUILDING 4A

BUILDING 32

BUILDING 18

BUILDING 14

BUILDING 6

BUILDING 38

BUILDING 7

BUILDING 3AI

BUILDING 20

BUILDING 12

BUILDING 5

BUILDING 2

BUILDING 1A

BUILDING 22

BUILDING 34

BUILDING 23

BUILDING 16

BUILDING 43

BUILDING 26

BUILDING 31

CONSTRUCTION TRAILERS

existing building

concrete slab

TANK FARM

WATER TANK

LEGEND

APPROXIMATE SITE BOUNDARIES

MONITORING WELL (LOWER TILL)

MONITORING WELL (UPPER TILL)

0 100 200

SCALE IN FEET

Woodard & Curran Engineering PA PC
709 Westchester Avenue, Suite L2
White Plains, New York 10604
800.807.4080 | www.woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS

REV	DESCRIPTION	DATE

DESIGNED BY:
DRAWN BY:
CHECKED BY:

SITE PLAN AND MONITORING WELL NETWORK

WYETH PHARMACEUTICALS LLC
ROUSES POINT, NEW YORK

GROUNDWATER SAMPLING PROGRAM

JOB NO.: 209610
DATE: July 2021
SCALE: AS NOTED
SHEET: OF

FIGURE 2

Clinton Street
APPROXIMATE CHEMICAL DEVELOPMENT PLANT PROPERTY BOUNDARY
White Avenue
Pearl Street
Maple Street
Lake Street
Academy Street
ACADEMY STREET
ACADEMY STREET EXTENSION
ROUSES POINT ELEMENTARY SCHOOL
MW-40 740
MW-40S 63J
MW-41 290E
MW-41S 1.3J
MW-43 3.5
MW-42 4.2
MW-33 550
MW-33S 5.4
MW-5 79
MW-6 7.8
MW-34 10
MW-31 13
MW-31S <1.0
MW-32 0.93J
MW-32S <1.0
MW-27 3.7
MW-27S <1.0
MW-29S <1.0
MW-30S <1.0
MW-15 <1.0
MW-35S 2.1
MW-23 <1.0
MW-23S <1.0
MW-8 <2.0
MW-16 0.78J
MW-16S <1.0
MW-19 <1.0
MW-19S 0.26J
MW-22 <1.0
MW-22S <1.0
MW-38 <1.0
MW-36S <1.0
MW-9 <1.0
MW-9S <1.0
MW-21 <40
MW-37 0.44J
MW-17 <1.0
MW-17S NS
MW-39 NS
MW-39S NS
LEGEND
APPROXIMATE SITE BOUNDARIES
CONCENTRATION ISOPLETH
INFERRED CONCENTRATION ISOPLETH
MONITORING WELL (LOWER TILL)
MONITORING WELL (UPPER TILL)
MONITORING WELL (LOWER TILL), NOT SAMPLED
MONITORING WELL (UPPER TILL), NOT SAMPLED
MW-5 130 CONCENTRATIONS ARE SHOWN IN ug/l
MW-32 <1 < INDICATES NOT DETECTED AT REPORTING LIMIT
MW-39 NS NOT SAMPLED
500
0.6
SCALE IN FEET

22x34 SHEET 1:2

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COMMITMENT & INTEGRITY DRIVE RESULTS

WOODARD & CURRAN

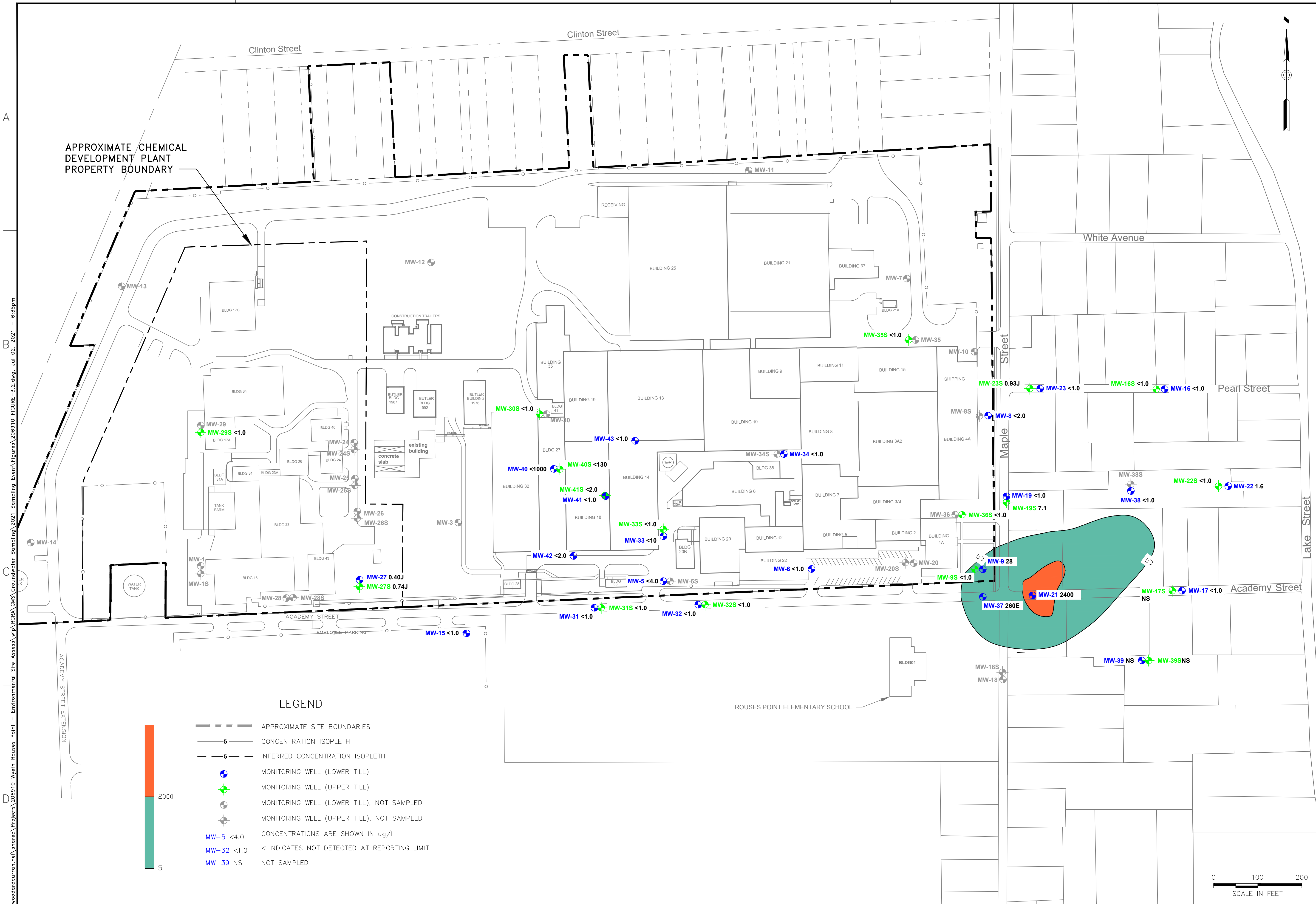
2021 DEEP TILL AQUIFER 1,2-DICHLOROETHANE CONCENTRATION ISOPLETHS

WYETH PHARMACEUTICALS LLC
ROUSES POINT, NEW YORK

GROUNDWATER SAMPLING PROGRAM

JOB NO.: 209610
DATE: JULY 2021
SCALE: AS NOTED
SHEET: 2 OF 6

FIGURE 3.1



22x34 SHEET 1:2

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COMMITMENT & INTEGRITY DRIVE RESULTS

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2021 DEEP TILL AQUIFER CARBON TETRACHLORIDE CONCENTRATION ISOPLETHS

WYETH PHARMACEUTICALS LLC
ROUSES POINT, NEW YORK

GROUNDWATER SAMPLING PROGRAM

JOB NO.: 209610
DATE: JULY 2021
SCALE: AS NOTED
SHEET: 3 OF 6

FIGURE 3.2

22x34 SHEET
1:2

Clinton Street
APPROXIMATE CHEMICAL DEVELOPMENT PLANT PROPERTY BOUNDARY
White Avenue
Pearl Street
Maple Street
Lake Street
Academy Street
ACADEMY STREET
ACADEMY STREET EXTENSION
EMPLOYEE PARKING
ROUSES POINT ELEMENTARY SCHOOL
RECEIVING
BUILDING 25
BUILDING 21
BUILDING 37
BUILDING 19
BUILDING 13
BUILDING 9
BUILDING 11
BUILDING 15
BUILDING 10
BUILDING 8
BUILDING 3A2
BUILDING 4A
BUILDING 14
BUILDING 18
BUILDING 6
BUILDING 7
BUILDING 3A1
BUILDING 2
BUILDING 5
BUILDING 1A
SHIPPING
CONSTRUCTION TRAILERS
WATER TANK
TANK FARM
existing building
concrete slab
MW-11
MW-12
MW-13
MW-14
MW-7
MW-35S <1.0
MW-35
MW-10
MW-30S <1.0
MW-30
MW-29
MW-29S <1.0
MW-24
MW-24S
MW-25
MW-25S
MW-26
MW-26S
MW-3
MW-1
MW-1S
MW-27 1.2
MW-27S <1.0
MW-28
MW-28S
MW-40 9600
MW-40S 300
MW-41S <2.0
MW-41 6.8
MW-43 <1.0
MW-34S
MW-34 <1.0
MW-33S <1.0
MW-33 180
MW-42 <2.0
MW-5 150
MW-5S
MW-6 9.4
MW-31S <1.0
MW-31 16
MW-32 <1.0
MW-32S <1.0
MW-15 <1.0
MW-23S 48
MW-23 9.2
MW-8S
MW-8 94
MW-19 7.9
MW-19S 5.3
MW-36
MW-36S <1.0
MW-20S
MW-20
MW-9 <1.0
MW-9S <1.0
MW-37 <1.0
MW-21 <40
MW-16S <1.0
MW-16 2.1
MW-38S
MW-38 <1.0
MW-22S <1.0
MW-22 4.5
MW-17S
MW-17 <1.0
MW-39 NS
MW-39S
MW-18S
MW-18
2000
5
LEGEND
APPROXIMATE SITE BOUNDARIES
CONCENTRATION ISOPLETH
INFERRED CONCENTRATION ISOPLETH
MONITORING WELL (LOWER TILL)
MONITORING WELL (UPPER TILL)
MONITORING WELL (LOWER TILL), NOT SAMPLED
MONITORING WELL (UPPER TILL), NOT SAMPLED
MW-5 220 CONCENTRATIONS ARE SHOWN IN ug/l
MW-32 <1 < INDICATES NOT DETECTED AT REPORTING LIMIT
MW-39 NS NOT SAMPLED
0 100 200
SCALE IN FEET

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White Plains, New York 10604
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COMMITMENT & INTEGRITY DRIVE RESULTS

REV	DESCRIPTION	DATE

DESIGNED BY: CJ
DRAWN BY: JAR
CHECKED BY: GSR
206910 FIGURE-3.3.dwg

2021 DEEP TILL AQUIFER CIS-1,2-DICHLOROETHENE CONCENTRATION ISOPLETHS

WYETH PHARMACEUTICALS LLC
ROUSES POINT, NEW YORK

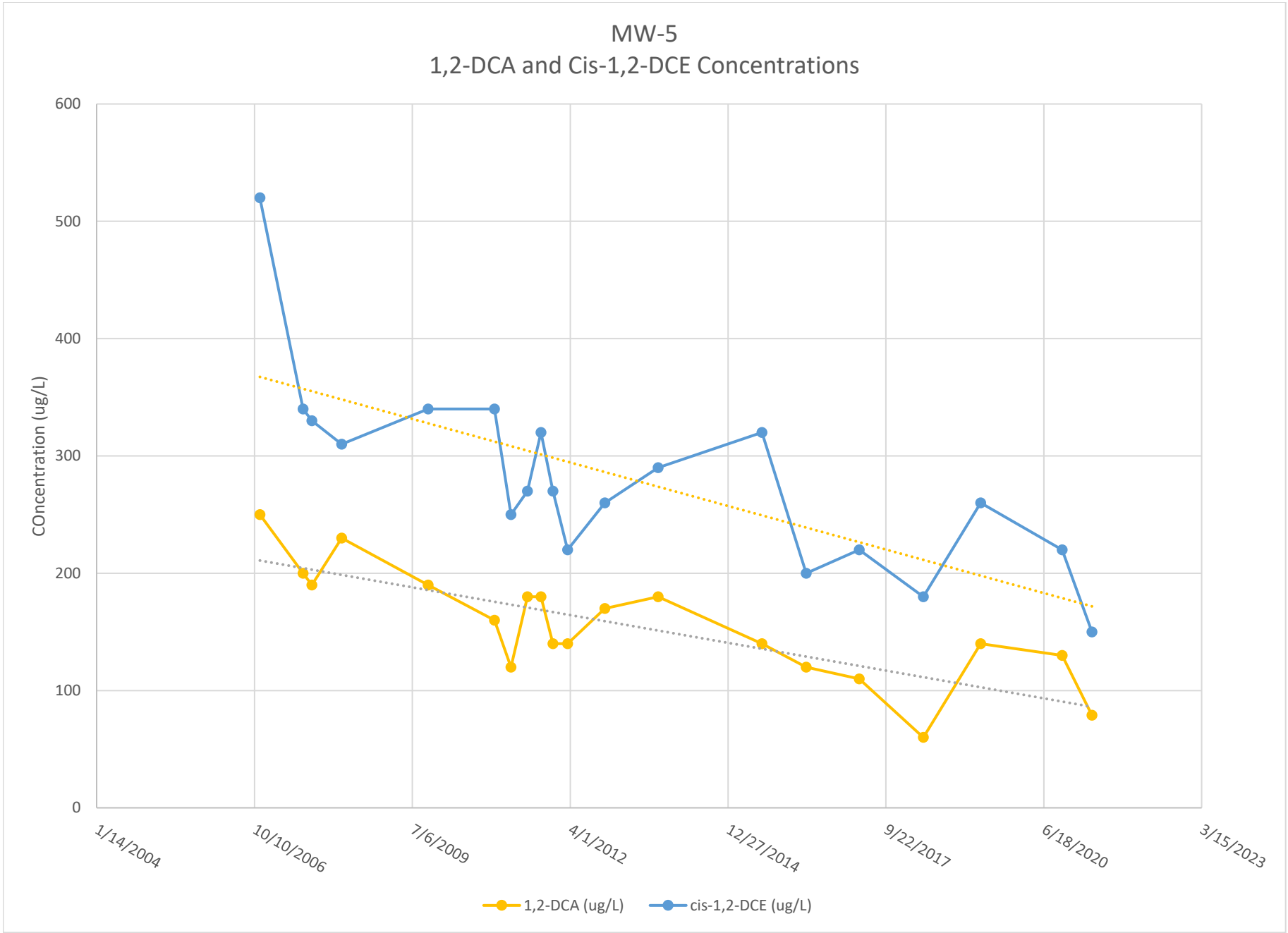
GROUNDWATER SAMPLING PROGRAM

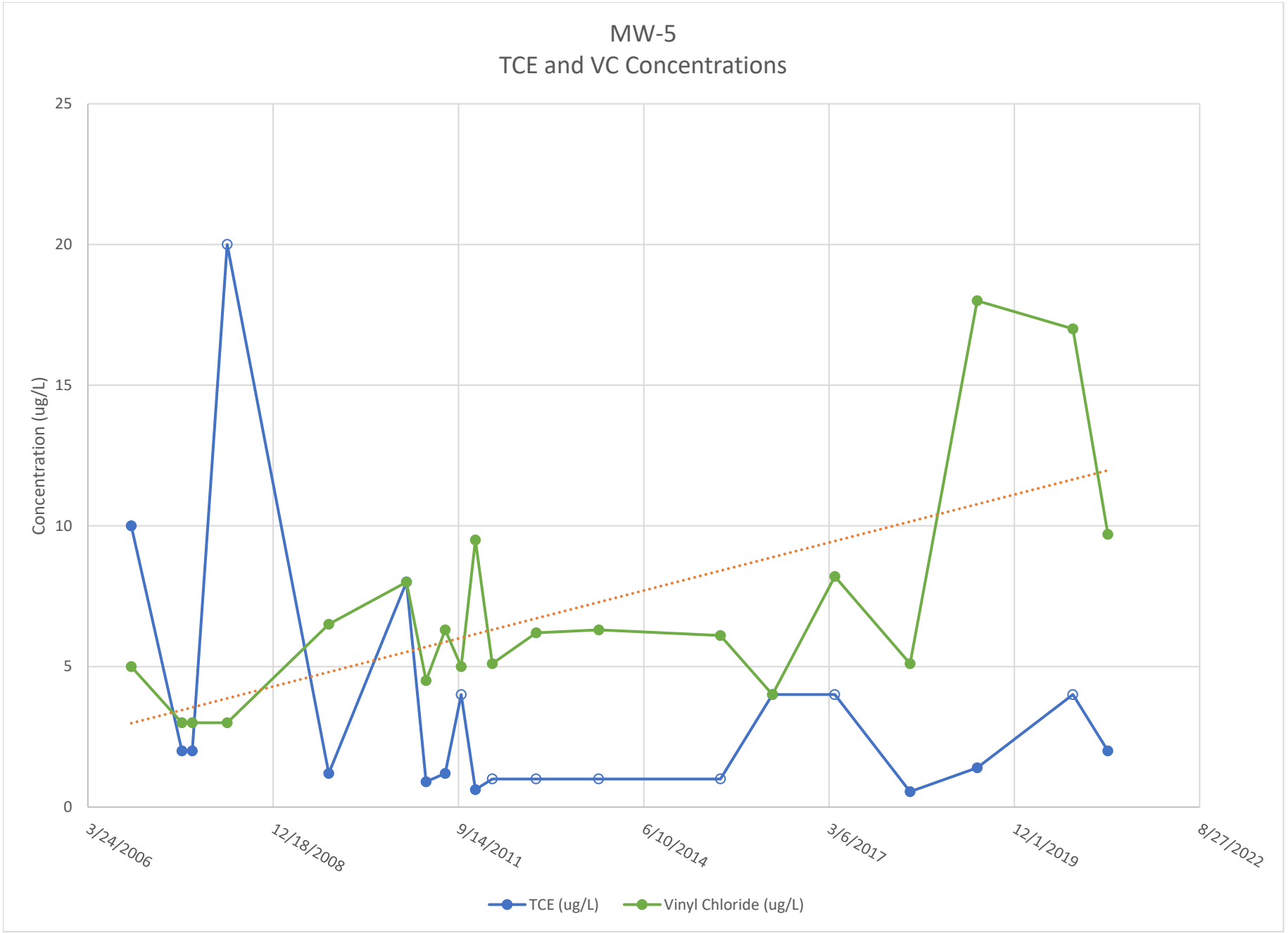
JOB NO.: 209610	
DATE: JULY 2021	
SCALE: AS NOTED	
SHEET:	4 OF 6

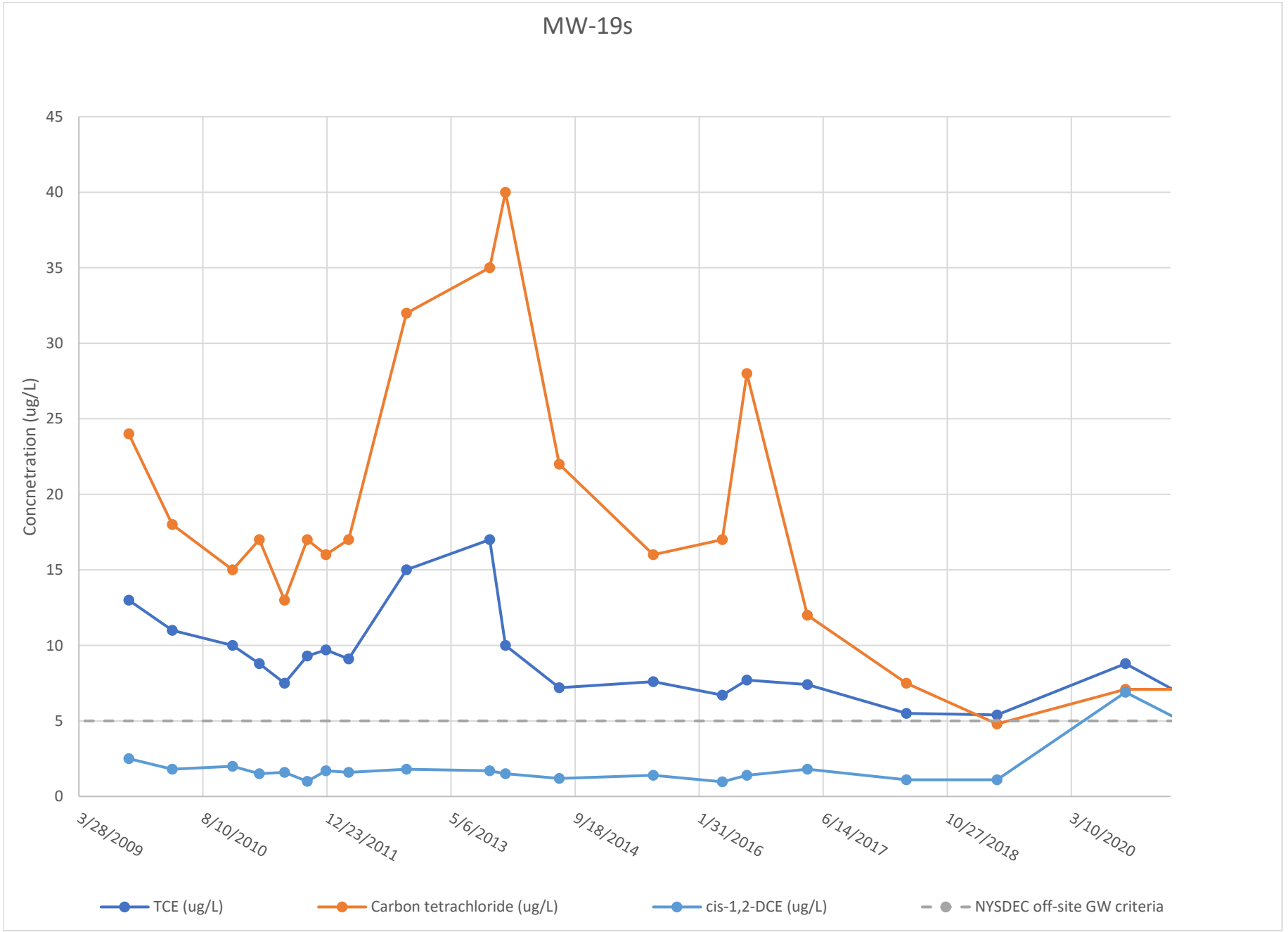
FIGURE 3.3

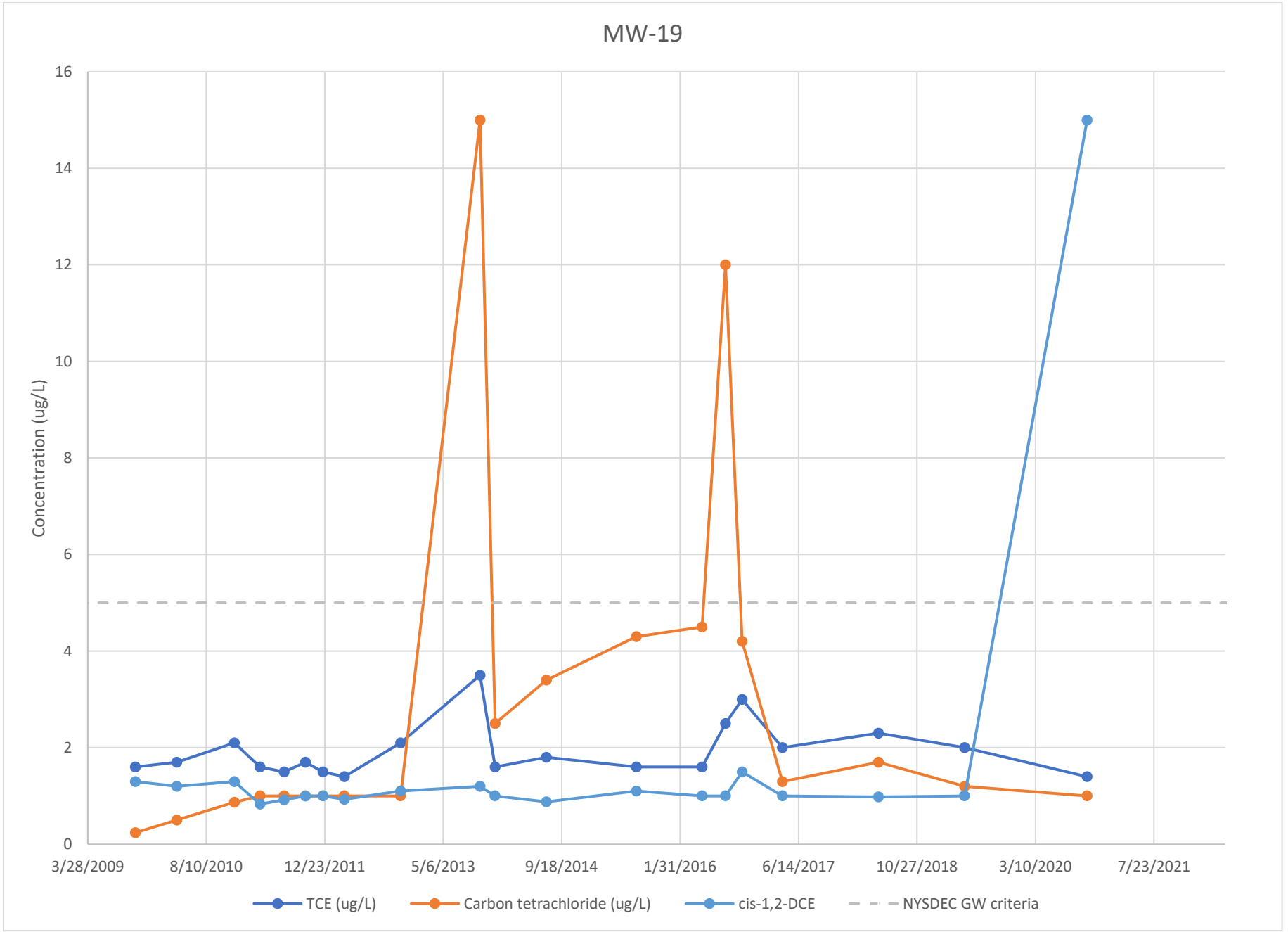
Clinton Street
White Avenue
Pearl Street
Maple Street
Lake Street
Academy Street
ACADEMY STREET
ACADEMY STREET EXTENSION
EMPLOYEE PARKING
APPROXIMATE CHEMICAL DEVELOPMENT PLANT PROPERTY BOUNDARY
ROUSES POINT ELEMENTARY SCHOOL
MW-40 37000
MW-40S 4700
MW-41 1.2
MW-41S <2.0
MW-43 <1.0
MW-42 <2.0
MW-30S <1.0
MW-29S <1.0
MW-27 12
MW-27S <1.0
MW-28S
MW-24S
MW-25S
MW-26S
MW-1S
MW-33S 1.7
MW-33 <10
MW-34S
MW-34 0.49J
MW-35S 1.8
MW-35
MW-23S 9.8
MW-23 0.82J
MW-16S <1.0
MW-16 0.86J
MW-8S
MW-8 27
MW-19 1.4J
MW-19S 8.8
MW-38S
MW-38 <1.0
MW-22S <1.0
MW-22 2.1
MW-36S <1.0
MW-9 1.1
MW-9S <1.0
MW-20S
MW-6 <1.0
MW-5 <4.0
MW-5S
MW-31 0.86J
MW-31S <1.0
MW-32 <1.0
MW-32S <1.0
MW-15 <1.0
MW-21 <50
MW-37 53
MW-17 <1.0
MW-17S NS
MW-39 NS
MW-39S NS
MW-18S
LEGEND
APPROXIMATE SITE BOUNDARIES
CONCENTRATION ISOPLETH
INFERRED CONCENTRATION ISOPLETH
MONITORING WELL (LOWER TILL)
MONITORING WELL (UPPER TILL)
MONITORING WELL (LOWER TILL), NOT SAMPLED
MONITORING WELL (UPPER TILL), NOT SAMPLED
MW-5 <4.0 CONCENTRATIONS ARE SHOWN IN ug/l
MW-32 <1.0 < INDICATES NOT DETECTED AT REPORTING LIMIT
MW-39 NS NOT SAMPLED
5000
5
SCALE IN FEET
0 100 200
Woodard & Curran Engineering PA PC
709 Westchester Avenue, Suite L2
White Plains, New York 10604
800.807.4080 | www.woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS
WOODARD & CURRAN
2021 DEEP TILL AQUIFER TRICHLOROETHENE CONCENTRATION ISOPLETHS
WYETH PHARMACEUTICALS LLC ROUSES POINT, NEW YORK
GROUNDWATER SAMPLING PROGRAM
JOB NO.: 209610
DATE: JULY 2021
SCALE: AS NOTED
SHEET: 5 OF 6
FIGURE 3.4

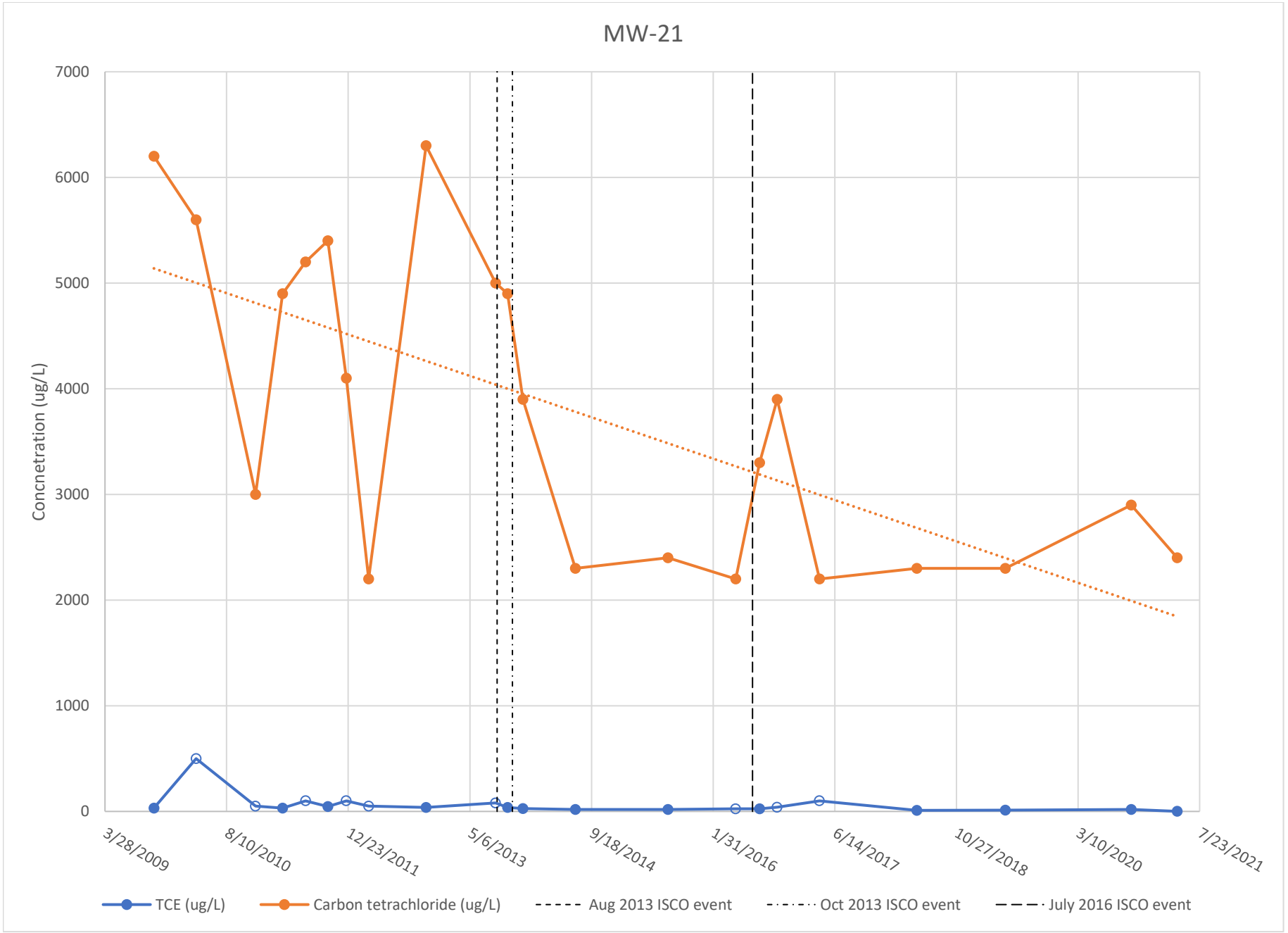
APPENDIX A: TREND PLOTS FOR SELECT MONITORING WELLS

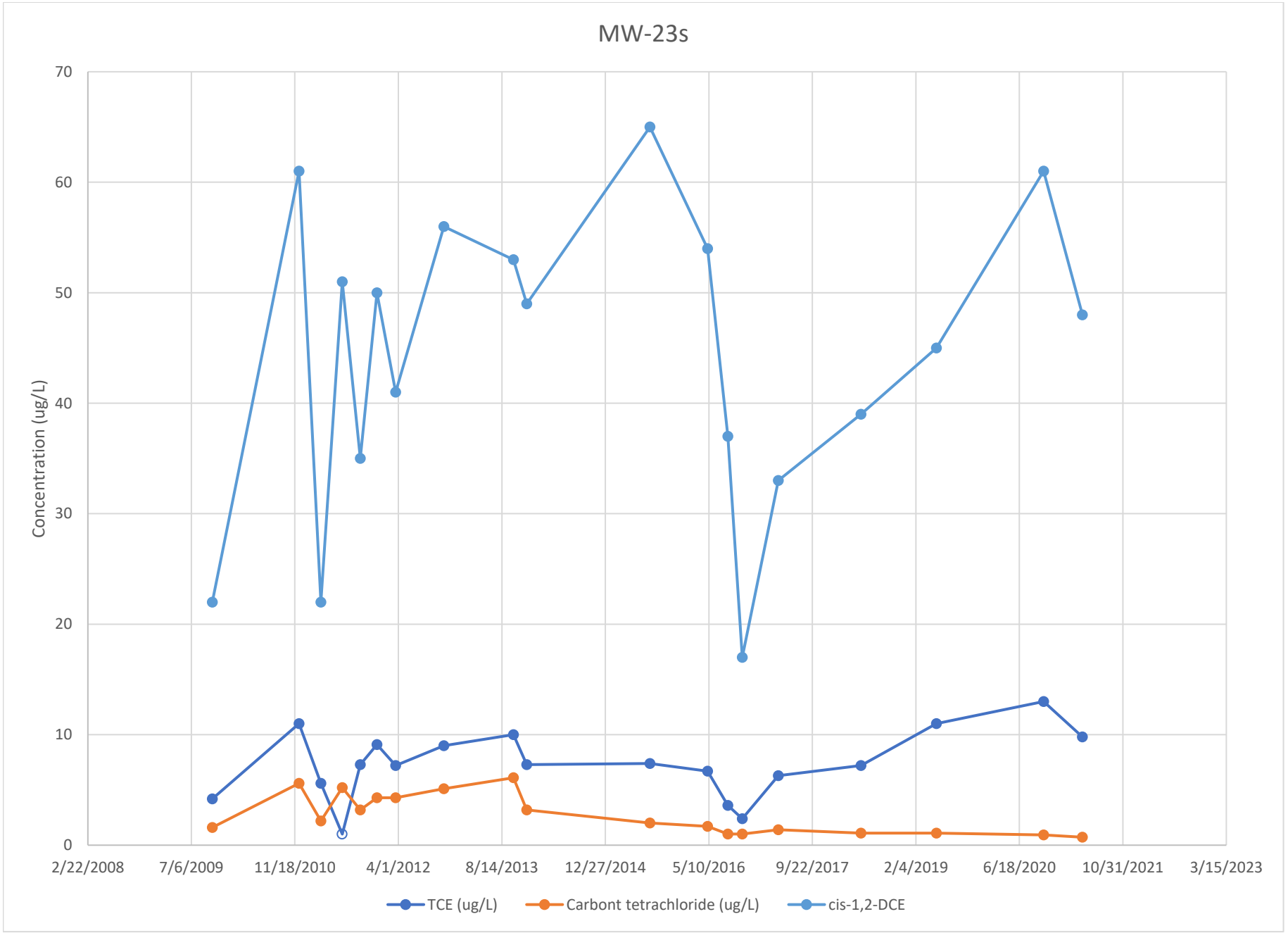

MW-5
1,2-DCA and Cis-1,2-DCE Concentrations
COncentration (ug/L)
600
500
400
300
200
100
0
1/14/2004
10/10/2006
7/6/2009
4/1/2012
12/27/2014
9/22/2017
6/18/2020
3/15/2023
1,2-DCA (ug/L)
cis-1,2-DCE (ug/L)

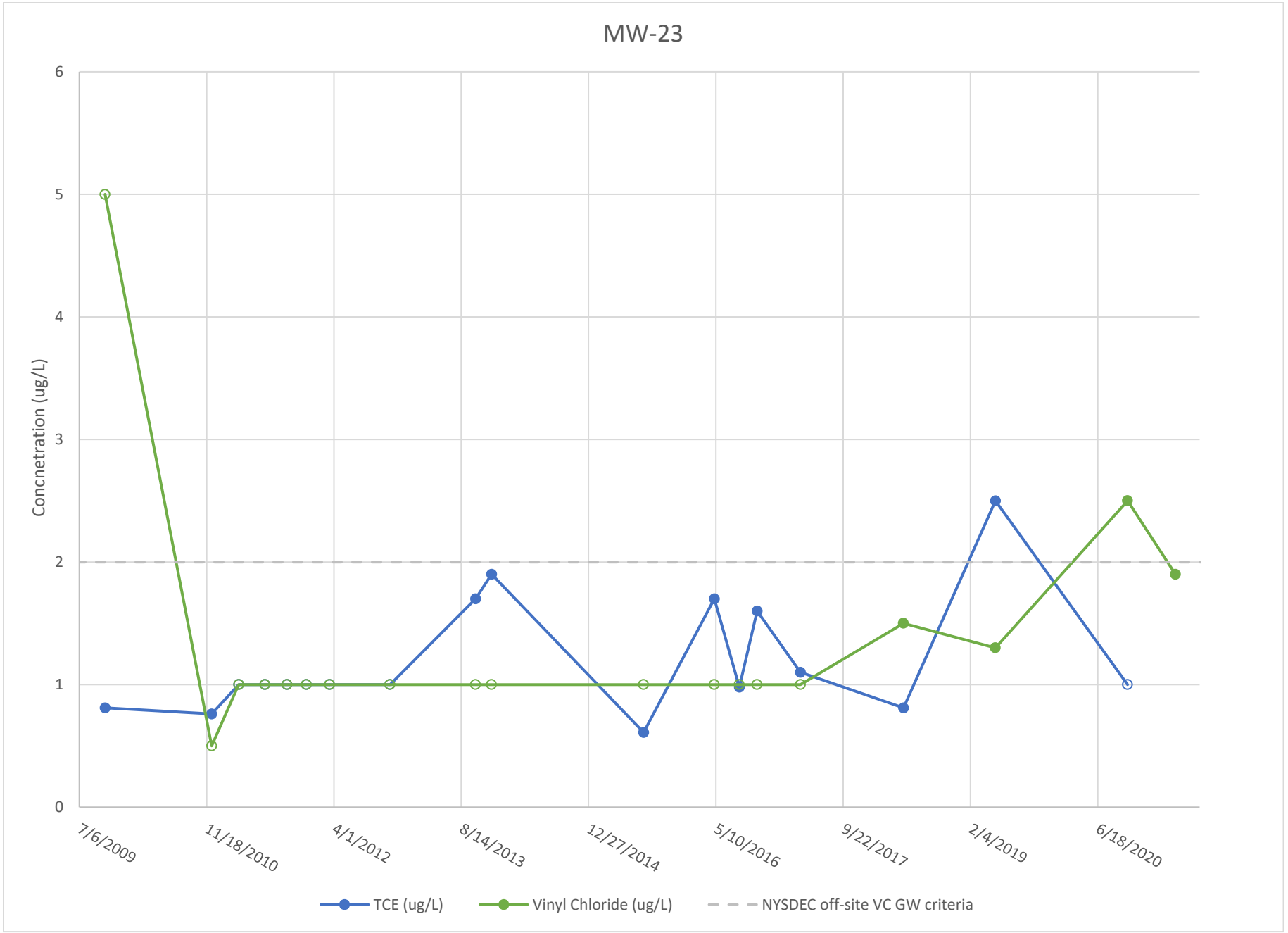

MW-5
TCE and VC Concentrations
Concentration (ug/L)
25
20
15
10
5
0
3/24/2006
12/18/2008
9/14/2011
6/10/2014
3/6/2017
12/1/2019
8/27/2022
TCE (ug/L)
Vinyl Chloride (ug/L)

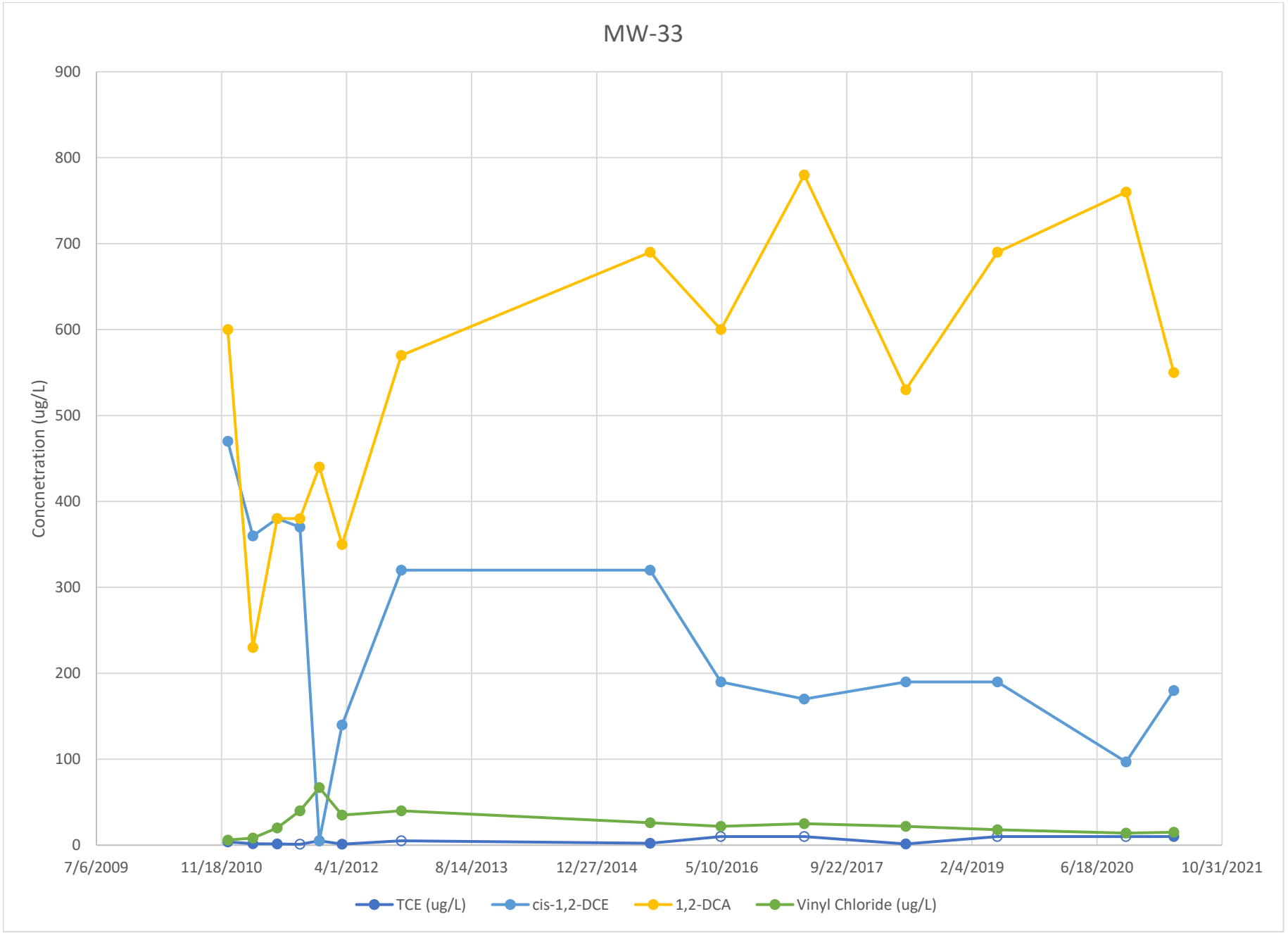

MW-19s
Concnetration (ug/L)
45
40
35
30
25
20
15
10
5
0
3/28/2009
8/10/2010
12/23/2011
5/6/2013
9/18/2014
1/31/2016
6/14/2017
10/27/2018
3/10/2020
TCE (ug/L)
Carbon tetrachloride (ug/L)
cis-1,2-DCE (ug/L)
NYSDEC off-site GW criteria

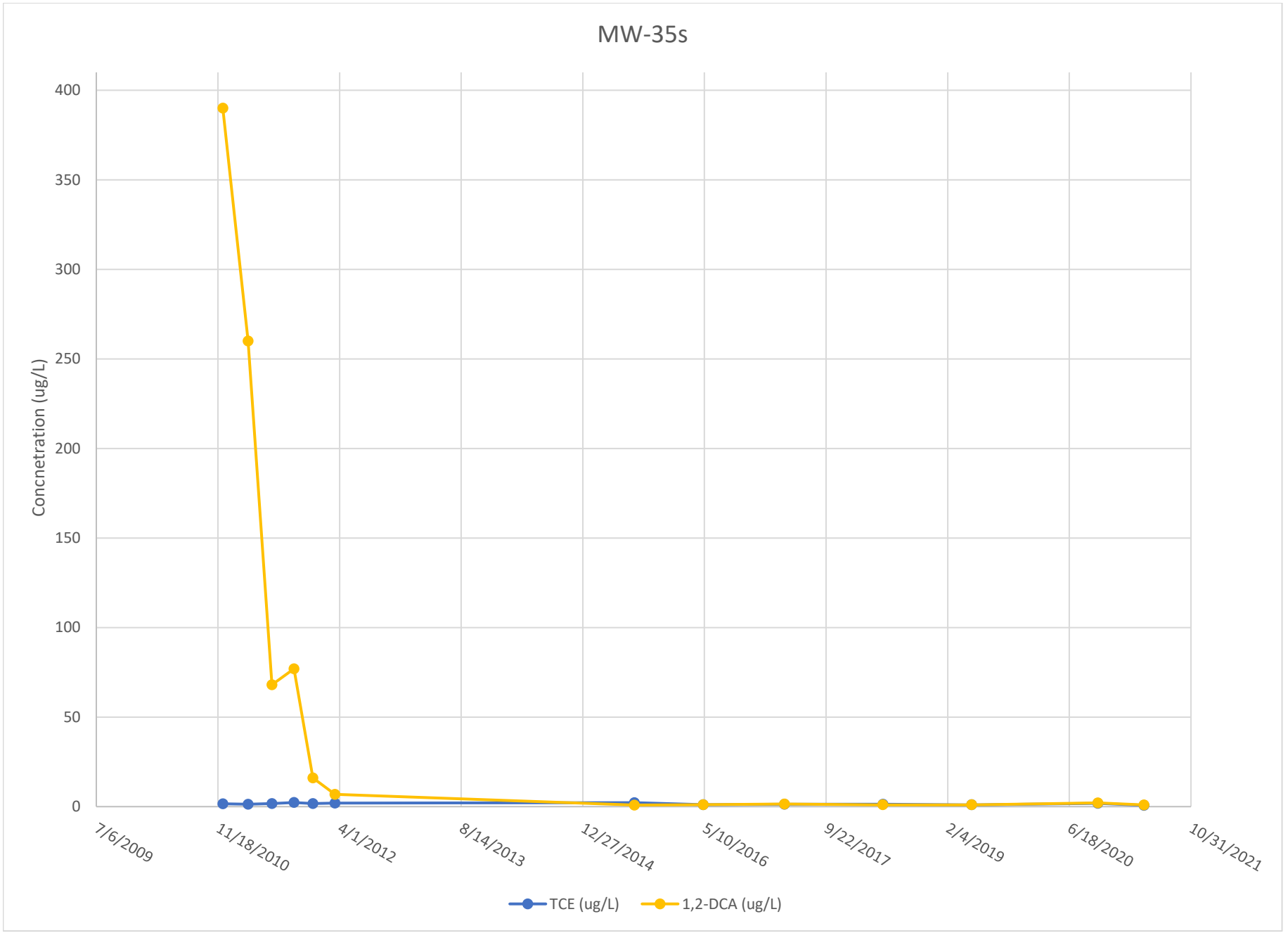

MW-19
16
14
12
10
8
6
4
2
0
Concentration (ug/L)
3/28/2009
8/10/2010
12/23/2011
5/6/2013
9/18/2014
1/31/2016
6/14/2017
10/27/2018
3/10/2020
7/23/2021
TCE (ug/L)
Carbon tetrachloride (ug/L)
cis-1,2-DCE
NYSDEC GW criteria

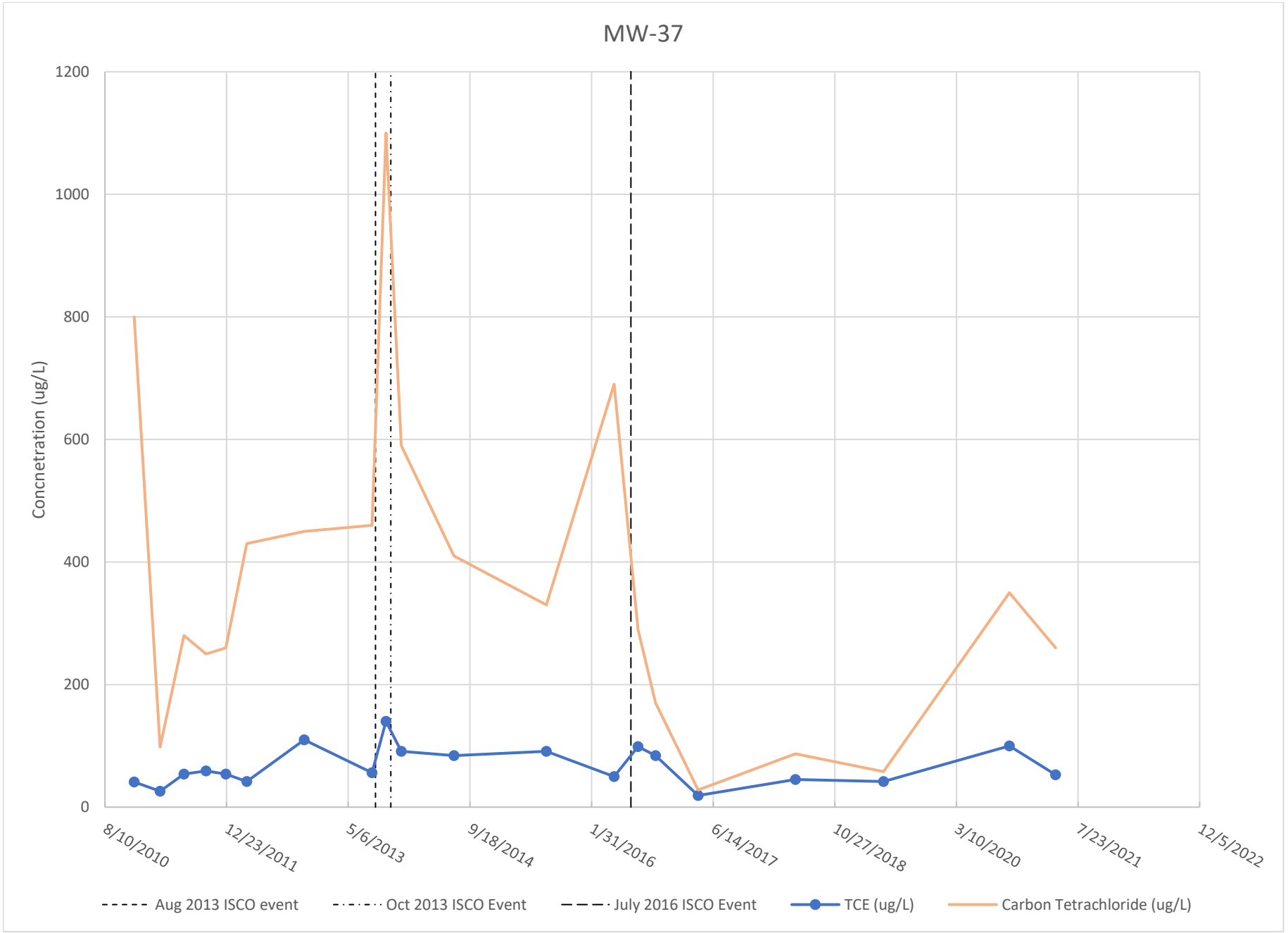

MW-21
Concnetration (ug/L)
7000
6000
5000
4000
3000
2000
1000
0
3/28/2009
8/10/2010
12/23/2011
5/6/2013
9/18/2014
1/31/2016
6/14/2017
10/27/2018
3/10/2020
7/23/2021
TCE (ug/L)
Carbon tetrachloride (ug/L)
Aug 2013 ISCO event
Oct 2013 ISCO event
July 2016 ISCO event


MW-23s
Concentration (ug/L)
70
60
50
40
30
20
10
0
2/22/2008
7/6/2009
11/18/2010
4/1/2012
8/14/2013
12/27/2014
5/10/2016
9/22/2017
2/4/2019
6/18/2020
10/31/2021
3/15/2023
TCE (ug/L)
Carbont tetrachloride (ug/L)
cis-1,2-DCE


MW-23
Concnetration (ug/L)
6
5
4
3
2
1
0
7/6/2009
11/18/2010
4/1/2012
8/14/2013
12/27/2014
5/10/2016
9/22/2017
2/4/2019
6/18/2020
TCE (ug/L)
Vinyl Chloride (ug/L)
NYSDEC off-site VC GW criteria


MW-33
Concnetration (ug/L)
900
800
700
600
500
400
300
200
100
0
7/6/2009
11/18/2010
4/1/2012
8/14/2013
12/27/2014
5/10/2016
9/22/2017
2/4/2019
6/18/2020
10/31/2021
TCE (ug/L)
cis-1,2-DCE
1,2-DCA
Vinyl Chloride (ug/L)


MW-35s
Concnetration (ug/L)
400
350
300
250
200
150
100
50
0
7/6/2009
11/18/2010
4/1/2012
8/14/2013
12/27/2014
5/10/2016
9/22/2017
2/4/2019
6/18/2020
10/31/2021
TCE (ug/L)
1,2-DCA (ug/L)


MW-37
Concnetration (ug/L)
1200
1000
800
600
400
200
0
8/10/2010
12/23/2011
5/6/2013
9/18/2014
1/31/2016
6/14/2017
10/27/2018
3/10/2020
7/23/2021
12/5/2022
Aug 2013 ISCO event
Oct 2013 ISCO Event
July 2016 ISCO Event
TCE (ug/L)
Carbon Tetrachloride (ug/L)