Final

2017 Annual Monitoring Report

Wausau Water Supply NPL Site
Wausau, Wisconsin

GHD | 1801 Old Highway 8 Northwest Suite 114 St. Paul Minnesota 55112 USA

003978| Report No 39 | February 23, 2018

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1. Introduction

GHD Services Inc. (GHD) has prepared this 2017 Annual Monitoring Report for the Wausau Water Supply NPL Site (Site) in Wausau, Wisconsin, on behalf of the Wausau Group of Responsible Parties (Group). This report presents the results of annual groundwater monitoring conducted at the Site in October of 2017.

1.1 History

The Group initiated remedial action at the Site in the early 1990s in accordance with the September 29, 1990, Record of Decision (ROD) and the Consent Decree (CD) entered with the court on January 24, 1991. The final remedial action at the Site consisted of two soil vapor extraction (SVE) systems to address the source areas and groundwater extraction and treatment, utilizing existing municipal production wells (CW3 and CW6) and a remediation well (EW1). The Site location is shown on Figure 1.1 and a Site plan is presented on Figure 1.2.

Source area remediation was accomplished by the installation of SVE systems at Marathon Electric[1] (West Bank) and Wausau Chemical Corporation (East Bank) in January 1994. The SVE system at Marathon Electric operated until April 1996 when the West Bank source remediation was approved as complete. The East Bank SVE system was modified in 1996 and continued to operate through January 2001. The East Bank source remediation was approved as complete in 2007.

The groundwater remediation system consists of two municipal water supply wells (CW3 and CW6) and one extraction well installed at Marathon Electric (EW1). Air strippers, located at the Wausau water treatment plant, treat water from the municipal supply wells. Water from EW1 was treated by air stripping (over riprap on the riverbank) before being discharged to the Wisconsin River.

The pumping rates for the three extraction wells were originally defined in the CD. The Groundwater Flow Model report (CRA, May 1993), established a range of pumping rates that would maintain capture of the groundwater plume. Subsequently, in an August 4, 1995 letter, the United States Environmental Protection Agency (EPA) approved a pumping configuration range for the three extraction wells. Those pumping rates were:

CW3: 65 hours per week at 1,200 gallons per minute (gpm) to 100 hours per week at 1,100 gpm

CW6: 85 hours to 100 hours per week at 1,400 gpm

EW1: 800 to 900 gpm continuously

EW1 stopped operating in July 2012 due to pump failure. Since EW1 has essentially completed its performance goal, the Group proposed a pilot study to confirm that the groundwater containment network of pumping wells will continue to be effective without the need for pumping EW1. The EW1 Shutdown Pilot Study Work Plan proposal was submitted to the EPA on September 3, 2013. The Pilot Study was conducted from the 4th quarter of 2013 through the 4th quarter of 2014 and the results were reported to the EPA in March 2015. Although the EPA have not yet provided a final

[1] Marathon Electric was acquired by Regal Beloit Corporation and is now doing business at the Wausau plant under the Regal name.

approval of the EW1 shut-down, potential effects of the shut-down have continued to be evaluated through the annual groundwater monitoring conducted in the fall of 2015, 2016, and 2017.

From 1985 through 1996, as an interim remedial measure, additional groundwater remediation was provided by a groundwater extraction system operated by Wausau Chemical Corporation (WCC). The extraction system at WCC consisted of a series of shallow wells at the south end of WCC property. Groundwater from this system was treated by air stripping. This remediation was conducted in addition to the requirements of the ROD or the CD and operation ceased in 1996.

From 1993 through 2000 groundwater monitoring was conducted according to the Monitoring Program Plan (CRA, 1994). The Monitoring Program Plan consisted of a complex system of monthly, quarterly, semiannual, and annual monitoring. In June 2000, the Groundwater Monitoring Plan replaced the Monitoring Program Plan as the approved groundwater monitoring program. The Groundwater Monitoring Plan consists of annual sampling of monitoring wells and quarterly sampling of EW1 (when operating).

The Groundwater Monitoring Plan requires an annual report on the activities occurring the previous calendar year. This report fulfills the requirement for 2017.

1.2 Monitoring Background

Groundwater monitoring at this Site is a combination of hydraulic and water quality monitoring designed to verify that the groundwater extraction wells are containing the contaminant plume and that groundwater quality is improving as a result of past source remedial actions and ongoing volatile organic compound (VOC) removal from the aquifer.

Groundwater remediation at the Wausau Site has been ongoing for over 20 years. Aquifer remediation progress is a slow process but contaminant concentrations have been reduced significantly at the Site. The aquifer has been monitored annually and the data show a downward trend of VOC concentrations in groundwater. Because of the time necessary to achieve groundwater remediation, containment of contaminated groundwater is the primary measurable and achievable short-term objective.

For the purpose of evaluation, groundwater monitoring at Wausau has been divided into two areas, the East Bank and the West Bank of the Wisconsin River, corresponding to the two original source areas. The river forms a natural hydraulic division of the Site. During 2017, two groundwater extraction wells were operated to remove VOC contaminated groundwater. One extraction well is on the West Bank, (CW6) and one is on the East Bank (CW3) (see Figure 1.2).

1.3 Site Geology

The Site is underlain by glacial outwash and alluvial sediments that have filled in the pre- glacial stream valley in which the Wisconsin River now flows. This alluvial aquifer ranges from 0 to 160 feet thick and has an irregular base and lateral boundaries. Relatively impermeable bedrock underlies the aquifer and forms its lateral boundaries within the pre- glacial valley. Six production wells in the Site area provide drinking water for the City of Wausau. These wells are screened in the glacial outwash and alluvial sand and gravel deposits that underlie and are adjacent to the Wisconsin River.

1.4 Groundwater Cleanup Standards

The Groundwater Monitoring Plan was developed to monitor compliance with cleanup standards for the groundwater at the Site. The groundwater cleanup standards for the Site are the EPA maximum drinking water contaminant levels (MCLs). The MCLs for the primary VOC contaminants of concern at the Site are:

Trichloroethylene (TCE)	5 µg/L
Tetrachloroethylene (PCE)	5 µg/L
cis-1,2-Dichloroethene (c12DCE)	70 µg/L
Vinyl chloride	2 µg/L

With the exception of vinyl chloride, these standards are the same as the Wisconsin Department of Natural Resources (WDNR) Enforcement Standards (ES). The Wisconsin ES for vinyl chloride is 0.2 µg/L (WDNR Chapter NR 140).

2. 2017 Annual Monitoring

The 2017 annual groundwater monitoring event was conducted on October 2nd and 3rd. Monitoring was conducted in accordance with the Groundwater Monitoring Plan (GMP) with the revisions to the analyte list and monitored locations approved be EPA in the years since the GMP was first approved in 1994. Table 2.1 presents the VOC analyte list and the monitored locations for the 2017 sampling event. These locations were proposed in the 2016 Annual Monitoring Report (GHD, 2017). City well CW3 could not be sampled because it was undergoing rehabilitation in October 2017.

2.1 Additional Monitoring

At the request of the EPA, additional groundwater samples were collected to further assess potential effects related to the shutdown of EW1 and for the evaluation of potential vapor intrusion. These wells were C3S, C7S, and R1D.

2.2 Water Level Monitoring

Table 2.2 presents the groundwater elevation data measured on October 2 and 3, 2017. Water table contours based on these measurements are presented on Figure 2.1. Field staff measured water levels on the East Bank on October 2 and on the West Bank on October 3 while CW6, the West Bank remediation well was operating. CW3, the East Bank remediation well, was not operating during monitoring activities because it was undergoing rehabilitation during the month of October. As explained in Section 1.1, EW1 was not operating during the 2017 monitoring event. Water levels in the City production wells were measured with the assistance of City staff.

When pumping, the East Bank groundwater flow patterns are controlled by the operation of CW3. In October 2017, groundwater contours indicate a south-southwest flow direction, generally toward the Wisconsin River.

West Bank contours depict a large cone of influence created by CW6 CW9, and CW10. Under natural conditions, West Bank groundwater would flow generally eastward and discharge to the Wisconsin River. Under pumping conditions however, groundwater flows toward the City supply wells.

2.3 Groundwater Sampling

Groundwater samples were analyzed for the Site specific VOC list (see Table 2.1) by EPA Method 8260. A summary of the groundwater sampling event, including field parameter measurements, is presented in Table 2.3.

Groundwater sampling was conducted according to the Quality Assurance Project Plan, (CRA, February 1994) as amended by a June 11, 1999, letter to the EPA. TestAmerica Laboratories, Inc., of Chicago, Illinois, analyzed all samples. Laboratory results will be submitted electronically in the Region V Electronic Data Deliverable (EDD) format for inclusion in the Region V EPA database. Copies of the laboratory report and data quality validation memoranda for the 2017 data are presented in Appendix A.

2.4 Extraction Well EW1 Sampling

EW1 did not operate during 2017; thus, influent and post-treatment effluent samples were not collected. However, a sample was collected from EW1 during the annual monitoring event. No VOCs were detected in the EW1 sample.

3. Operation and Maintenance

Operation and maintenance activities reported in this section cover the City production wells, groundwater monitoring wells, and the annual inspection of the paved surfaces near the East Bank source area.

3.1 Monitoring Well Inspection

All Site monitoring wells were inspected during the October 2017 monitoring round. An inspection form was used to document the following well conditions:

- Obscured by brush or other?
- Well ID visible?
- Protective cover and casing condition
- Well cap condition
- Lock condition
- Concrete seal condition
- Locking cover impeded by well riser?
- Ground condition (subsidence)

- Flush mount surface condition
- Flush mount bolt condition

Table 3.1 presents the results of the inspection. The inspection indicated that all wells were in good to satisfactory condition.

3.2 City Production Wells

Both CW3 and CW6 operated as required in 2017. CW3 was shut down for the month of October for rehabilitation. Table 3.2 presents 2017 pumping data for the six City wells. While only CW3 and CW6 are part of the remediation system, data for all City wells are presented, consistent with previous reports. The table shows, by month, the number of hours each well was operated, the number of gallons pumped from each well, and the average pumping rate while the pump was operating.

Recommended pumping rates for CW3 and CW6 were established in an August 4, 1995 letter from EPA. In accordance with the letter, pumping of CW3 was to be maintained between 65 hours per week at 1,200 gallons per minute (gpm) to 100 hours per week at 1,100 gpm. Pumping of CW6 was set at 85 hours per week at 1,400 gpm. CW3 and CW6 generally operate on alternate weekly schedules where CW6 operates on the weekdays and CW3 operates more on the weekends.

During 2017, not counting October, CW3 operated for an average of 67.1 hours per week with an average pumping rate of 1,233 gpm, exceeding the requirements of 65 hours per week at 1,200 gpm.

CW6 pumped an average of 100.4 hours per week with an average pumping rate of 1,300 gpm. Although well rehabilitation was conducted in late 2015, CW6 is no longer capable of pumping at a rate of 1,400 gpm. However, the pumping duration of CW6 was increased to an average of 100 hours per week, which is considerably greater than the requirement of 85 hours per week, thus offsetting the decreased pumping rate. The recommended pumping rate and duration would result in a total annual pumping volume of 371,000,000 gallons and the actual gallons pumped during 2017 was approximately 371,000,000 gallons. Thus the pumping requirement for CW6 was essentially met during 2017.

3.3 East Bank Source Area Pavement Inspection

The EPA and WDNR approved final closure of the East Bank source remediation SVE system in September 2007. As described in the Pavement Cover and Building Maintenance Plan, a requirement of the closure was an annual inspection of the paved areas surrounding the Wausau Chemical property. The purpose of the inspection is to monitor the integrity of the paved areas of the property and make recommendations to minimize rainwater infiltration and prevent direct human contact with soils. In August 2009 the entire pavement area was repaved with new asphalt and the street adjacent to the west side of the property, North River Drive, was repaved by the City of Wausau. Also, an approximately 2,800 square foot addition, with concrete floor and roof, was added to the south end of the building in 2009-2010. Inspections conducted during 2017 found the

pavement to be in good condition. A copy of the pavement inspection report is presented in Appendix B.

4. Evaluation of Groundwater Monitoring Data

The objectives of the annual groundwater monitoring program are to monitor the long-term improvement of groundwater quality and containment of the contaminant plume. Table 4.1 presents the laboratory results for monitoring well samples collected in October 2017. VOC concentration maps for the principle Site contaminants (TCE, c12DCE, PCE and vinyl chloride) are presented on Figures 4.1 through 4.4.

The 2017 data indicate that the VOC concentrations were stable or decreasing at most well locations. Of the 26 wells sampled, 20 wells exhibited lower or stable concentrations compared to 2016.

4.1 West Bank

The primary chlorinated VOC found in the West Bank groundwater is TCE, which was detected at 12 of the 16 West Bank monitoring wells, plus City well CW6.

TCE degradation product, c12DCE, was detected at six locations, however none of the West Bank concentrations exceeded the c12DCE cleanup standard. Vinyl chloride was not detected in West Bank well samples. Monitoring wells with TCE concentrations greater than the MCL of 5 µg/L included R2D, W52, W53A , W54, W55, C2S, and C7S. With the exception of R2D and W55, all of these wells are on Marathon Electric property (see Figure 4.1). The TCE concentration at CW6 (3.0 µg/L) was below the MCL.

North of EW1 the West Bank plume is in the deeper portion of the aquifer. Two wells in the north portion of the West Bank plume exceeded the MCL for TCE. W52 had a TCE concentration of 14 µg/L and the TCE concentration at R2D was 15 µg/L. R2D is a deep aquifer well approximately 150 feet north of Marathon property. Recent decreasing TCE concentrations at that location indicate that the plume remnant that was in a stagnation zone between EW1 and CW6 continues to migrate north to CW6 since EW1 stopped pumping. This is supported by the increasing TCE concentrations at W55, which is between R2D and CW6.

The historical data for R2D, R3D, and R4D are presented below. Although total chlorinated VOCs are shown here, TCE comprises 90 to 100 percent of the total concentrations listed. The remaining portion would be c12DCE. This table illustrates the southerly migration of higher concentrations from the R2D area to R3D as groundwater moved toward EW1 during the 1990s and 2000s. When EW1 stopped pumping in 2012, TCE concentrations increased at R2D as the aquifer flow direction changed back to the north toward CW6. The shut- down of EW1 eliminated the groundwater flow divide between CW6 and EW1, which should result in a more effective reduction of VOC concentrations in the R2D/R3D area.

West Bank Total Chlorinated VOCs (µg/L)			
Year	R4D	R3D	R2D
1996	540	2.0	1600
1997	65	5.0	720
1998	55	580	320
1999	33	1200	110
2000	58	1800	45
2001	13	1500	17
2002	36	1200	15
2003	38	980	10
2004	51	899	11
2005	56.5	400	7.5
2006	42	490	8.2
2007	1.3	280	9.9
2008	13	180	6.5
2009	22.9	92	7.3
2010	25.7	195.7	6.2
2011	27.6	203.1	11
2012	4.9	20.7	6.4
2013	16.6	4.8	20
March 2014	NA	73.7	18.2
May 2014	7.89	4.7	19.1
August 2014	NA	2.9	33.2
Nov 2014	1.8	2.6	47.2
2015	3.27	1.8	33.6
2016	5.97	2.0	22.9
2017	2.24	2.2	16.7

Monitoring wells south of EW1 are in, or adjacent to, the old landfill, which is the principal West Bank source area. VOC contaminants are more prevalent in the shallower portion of the aquifer near the source area. Monitoring wells south of EW1 that exceeded the MCL for TCE included W53A, W54, C2S, and C7S.

TCE concentrations at W54 increased during 2013 and 2014, but decreased significantly from 2015 through 2017 (see the trend graph in Appendix C). The short term increase in concentration at W54 was probably related to changes in the groundwater flow patterns after EW1 stopped operating; however, concentrations over the last three years have trended downward to less than 10 µg/L.

The overall areal extent of the West Bank contaminant plume has not changed significantly since EW1 was shutdown. TCE and c12DCE were essentially the only VOCs detected downgradient from the source area on the West Bank. Figures 4.1 and 4.2 present TCE and c12DCE concentrations, respectively. The contour lines on the figures show the approximate areas of concentrations exceeding the MCL. Charts showing historical total chlorinated VOC concentrations for select West Bank wells are presented in Appendix C.

4.2 East Bank

East Bank VOC data are presented in Table 4.1. While PCE was the original contaminant on the East Bank, the presence of TCE, c12DCE, and vinyl chloride, at concentrations that exceed the

PCE concentration in many wells, indicates an active natural biodegradation process. For example, at WC5A, E24AR, and WW6 the c12DCE concentration was higher than the PCE and TCE concentrations combined.

PCE or one of its daughter products was detected at 6 of the 9 East Bank monitoring wells. Four monitoring wells (WC3B, WC5A, E22A, and E24AR) had concentrations that exceeded the MCL of at least one VOC. In addition, vinyl chloride concentrations at E37A and WW6 were below the MCL, but exceeded the Wisconsin ES of 0.2 µg/L. East Bank contaminant concentrations increased at wells near the source, but decreased in downgradient wells (see Figures 4.3 and 4.4). Total chlorinated VOC concentrations from 2010 through 2017 for key East Bank wells are shown below:

East Bank Total Chlorinated VOCs (µg/L)								
Well	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
WC3B	1.24	2.26	3.47	0.26	6.31	2.86	0.55	13.4
WC5A	9.86	4.6	1.3	7.3	14.93	12.04	26.1	118.2
E24AR	20	1.4	3.86	22	222.5	136.8	152.1	78.05
E22A	5.03	3.2	25.41	104.9	12.5	8.03	123	21.85
E37A	7.0	140.19	68.06	4.67	3.73	1.61	1.75	3.4
WW6	46.34	17.6	45.48	45.8	51.9	67.6	8.03	8.54
CW3	4.36	4.03	3.58	2.62	3.03	3.15	3.0	NA

Charts showing historical total chlorinated VOC concentrations for select East Bank wells are presented in Appendix C. Individual VOC concentrations for the shallow wells are presented for PCE, TCE, c12DCE, and vinyl chloride on Figures 4.1 through 4.4.

4.3 EW1

EW1 did not operate during 2017, hence, influent and post- treatment effluent samples were not collected. A grab sample was collected from EW1 during the October 2017 monitoring event and no VOCs were detected.

4.4 Hydraulic Capture

Hydraulic capture of the Site contaminant plumes is demonstrated by the water table contours illustrated on Figure 2.1. CW3 was temporarily shut down for maintenance during the monitoring event, thus, water table contours indicate that groundwater flow at the Site was toward the West Wellfield (CW6, CW9, and CW10). At nested well locations, the water table elevations for shallow and deep wells were similar, indicating horizontal flow and hydraulic containment of the shallow and deeper portions of the aquifer.

4.5 Additional Monitoring

At the request of the EPA, additional monitoring was conducted to further assess potential effects related to the shutdown of EW1 and for the evaluation of potential vapor intrusion. These wells were C3S, C7S, and R1D. Laboratory results for these wells are included in Table 4.1. No VOCs were

detected at R1D and TCE was detected at C7S with a concentration of 10 µg/L. These results are consistent with previous results for these wells.

C3S is located within the former landfill source area and is not a part of the long-term monitoring program. However, samples were collected from C3S in 2015 and 2017 at the request of the EPA. Elevated concentrations of carbon tetrachloride (CT) and chloroform were detected at C3S on both occasions. In 2017, the CT concentration was 150 µg/L and the chloroform concentration was 66 µg/L. Both concentrations exceeded their respective MCL and/or Wisconsin Enforcement Standard (ES). Detection of these chemicals appears to be confined to the old landfill area and they are not detected downgradient from the landfill. Thus, the mass of the source is likely small and does not create a plume that persists away from the source.

5. Site Groundwater Monitoring Plan

The current Site groundwater monitoring plan includes an annual monitoring event that is usually conducted in October. In the 2016 Annual Monitoring Report (AMR), we proposed a reduced groundwater sampling list for the East Bank. Therefore, in 2017, nine East Bank monitoring wells were sampled and water levels were measured at 16 East Bank wells. On the West Bank, the same number of wells were sampled as before (14) and water levels were measured at 23 monitoring wells and the City supply wells. Three additional wells were sampled at the request of EPA. All groundwater samples were analyzed for the Site specific VOC list by EPA Method 8260. Table 2.1 summarizes the current monitoring plan. During the annual monitoring event, all wells are inspected to document their condition, including: total depth, casing and grout, well ID, well cap, lock, concrete seal, and ground subsidence.

When EW1 was operating, monitoring was conducted quarterly and pre- treatment and post- treatment water samples were collected and analyzed for Site specific VOCs.

5.1 Proposed Groundwater Monitoring Plan Modifications

No additional monitoring plan modifications are proposed for 2018. Table 2.1 presents a summary of the current monitoring plan.

5.2 Proposed Abandonment of Monitoring Wells

As presented in the 2016 AMR, several wells were identified for potential sealing and abandonment. These wells and the justifications for their removal are listed below

East Bank Monitoring Wells No Longer Necessary	
Well No.	**Justification**
E22	not sampled because it is clustered with E22A and it is not needed for groundwater elevation data
IWD	island well that is no longer monitored for chemical or water level data
E26	neither E26 nor E26A are sampled and only E26A is useful for groundwater elevation data

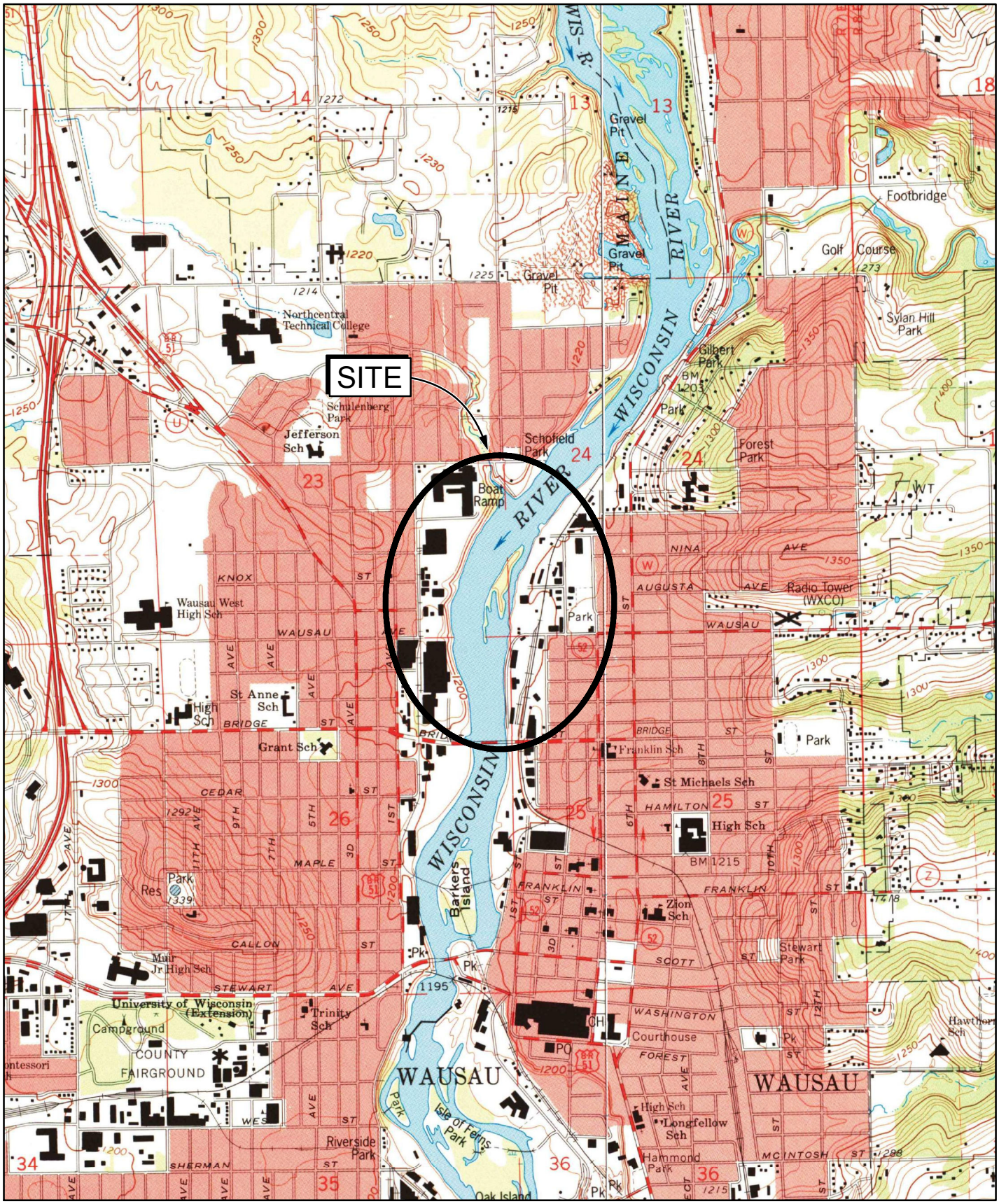
East Bank Monitoring Wells No Longer Necessary	
Well No.	**Justification**
WC3	not sampled because it is clustered with WC3B and it is not needed for groundwater elevation data
WC4	the deeper well of the WC4/WC4A cluster; neither well is sampled for VOC analysis and only WC4A is needed for elevation data
WC5	not sampled because it is clustered with WC5A and it is not needed for groundwater elevation data

West Bank Monitoring Wells to be Removed from Water Level Monitoring List	
Well No.	**Justification**
C4D	The deeper well of a cluster with C4S. These wells monitor the aquifer upgradient from the West Bank source. C4S is sampled for VOC analysis, thus C4D is not needed for chemical or water level data.
MW4B	The shallower well of a cluster that is near CW6. Neither well in the cluster is sampled for VOC analysis and only MW4A is needed for groundwater elevation data.
R2S	The shallower well of the R2S/R2D cluster that is approximately midway between the source and CW6. R2S was sampled for VOC analysis in 2015 and VOCs were not detected. R2S is not on the regular sampling list and is not needed for water level data. R2D would continue to be sampled for VOC analysis and monitored for groundwater elevation.
R3S	The shallow well in a cluster with R3D and W50. R3S is a dry well that does not provide chemical or elevation data.
W50	A mid- aquifer well clustered with R3D and R3S. Typically, it is not used for VOC sampling and it is not needed for elevation data. No VOCs were detected in the 2015 sample from W50.
W52A	The shallow well clustered with W52. W52A was sampled in 2016 and no VOCs were detected. It is not on the regular sampling list and is not needed for elevation data.
W53	A deep well in the source area clustered with W53A. It is not used for VOC sampling and it is not needed for elevation data
W55A	The shallow well is clustered with W55, near CW6. W55A was sampled in 2015 and no VOCs were detected. It is not on the regular sampling list and is not needed for elevation data.
WSWS	Adjacent to the Wisconsin River and the shallow well clustered with WSWD, WSWS was sampled in 2016 and no VOCs were detected. It is not on the regular sampling list and is not needed for elevation data.

Since the monitoring wells listed above are no longer needed to monitor aquifer conditions, they should be properly sealed and abandoned. Upon approval of this proposal, a work plan for the abandonment of these wells will be submitted to EPA and WDNR for approval.

Upon approval of the permanent shutdown of EW1, the well and its associated treatment and discharge structures should also be sealed and properly dismantled.

If the Wausau Energy Site is approved for closure, FVD5 should be abandoned because it is not needed for the Wausau Water Supply Site monitoring.



Source: USGS 7.5 Minute Quads - Wausau East; Wausau West

0 1,000 2,000 ft

N

GHD

WAUSAU WATER SUPPLY NPL SITE
WAUSAU, WISCONSIN
2017 ANNUAL MONITORING REPORT

003978-00

Jan 26, 2018

SITE LOCATION

FIGURE 1.1

GIS File: I:\GIS\Projects\6-chars\00----\0039--\003978\003978-REPORTS\003978-00(039)\003978-00(039)GIS-SP001.mxd

LEGEND

- MONITORING WELL
- EXTRACTION WELL
- CITY PRODUCTION WELL
- INDUSTRIAL WELL

E CAMPUS DR
STONE ST
PLUM DR
MORTENSON DR
W BOS CREEK DR
E BOS CREEK DR
E BOS CREEK DR
LUCILLE ST
N 1ST AV
CHERRY ST
LENARD ST
BURNS ST
CLAYTON ST
EAST CHERRY ST
BOS CREEK
E RANDOLPH ST
ELDRED ST
STROWBRIDGE ST
N 2ND AV
N 1ST AV
CHERRY ST
KNOX ST
UNION AV
WAUSAU AV
NORTON ST
QUAW ST
N 3RD AV
BRIDGE ST
BUGBEE AV
GEMINI PL
MARTEN ST
BECHER DR
MCCARTHY BLVD
BRISBANE CT
TIERNEY RD
W CROCKER ST
BURER AV
PEARSON ST
GEMINI PL
BECHER DR
BURNS ST
BROKEN ARROW RD
WISCONSIN RIVER
RIVER DR
E UNION AV
E WAUSAU AV
MOBILE AV
PARK AV
LINCOLN AV
HUMBOLDT AV
CHICAGO AV
BRIDGE ST
E BRIDGE ST
DEVOE ST
N 2ND ST
N 3RD ST
N 5TH ST
N 6TH ST
GOWEN ST
CENTER ST
N 7TH ST
N 10TH ST
BIRCH ST
ORCHARD ST
PARCHER ST
GILBERT ST
BROWN ST
WINTON ST
NINA AV
TURNER ST
AUGUSTA AV
OZIKI ST

CW11
GM4D
CW9OBS R
CW10
CW9
CW7
GM2S
MW4B
MW4A
W57
MW7
CW6
MW3A
W56
W55
W55A
MW1A
R2D
R2S
R1D
W50
R3S
R3D
W52A
W52
MARATHON ELECTRIC MFG.
C2S
R4D
EW1
C7S
W54
W53A
W53
WSWS
WSWD
C3S
C6S
C4S
C4D
OLD LANDFILL LIMITS
IWD
E21
WILSON HURD TEST WELL
WW4
CW3
GM6D
WW6
WAUSAU CHEMICAL COMPANY
E26A
E26
E22A
E22
E37A
FVD5
E28A
WC5
WC5A
WC4
WC4A
WC3B
WC3
E24AR
MW10A
MW10B
WC7A
WATER TREATMENT PLANT

Source: Marathon County

0 500 ft

N

GHD

WAUSAU WATER SUPPLY NPL SITE
WAUSAU, WISCONSIN
2017 ANNUAL MONITORING REPORT

SITE PLAN

003978-00
Jan 26, 2018

FIGURE 1.2

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LEGEND

- MONITORING WELL
- EXTRACTION WELL
- CITY PRODUCTION WELL
- INDUSTRIAL WELL
- 1187.19 GROUNDWATER ELEVATION
- GROUNDWATER CONTOUR
- APPROXIMATE EXTENT OF CONTAMINANT PLUME IN GROUNDWATER

1187
1186
1185
1184
1183

CW11 1193.00
GM4D 1185.49
CW10 1174.00
CW9 1169.00
CW9OBS R 1184.83
CW7 NM
GM2S 1186.50
MW4B NM
MW4A 1184.13
W57 1184.81
MW7 1182.65
CW6 1160.00
MW3A 1185.86
W56 1186.21
W55 1185.42
W55A NM
MW1A 1186.30
BOS CREEK
R2D 1186.82
R2S NM
R1D 1187.75
W50 NM
R3S NM
R3D 1187.12
W52A NM
W52 1187.35
WISCONSIN RIVER
ELEVATION ~1188.2
MARATHON ELECTRIC MFG.
C2S 1187.61
R4D 1187.57
EW1 1187.62
C7S 1187.69
W54 1187.69
W53A NM
W53 1187.55
WSWS NM
WSWD 1187.66
C3S 1187.37
C6S 1187.98
C4D NM
C4S 1187.76
OLD LANDFILL LIMITS
IWD NM
E21 1187.53
WILSON HURD TEST WELL 1187.48
WW4 1187.25
CW3 NM
GM6D 1187.21
WW6 1186.89
WAUSAU CHEMICAL COMPANY
E26 NM
E22A 1187.24
E37A 1187.14
E22 NM
E26A 1187.25
FVD5 1187.10
E28A 1187.15
WC5 NM
WC5A 1187.17
WC4 NM
WC4A 1187.18
WC3B 1187.23
WC3 NM
E24AR 1186.99
WATER TREATMENT PLANT
MW10A NM
MW10B 1186.84
WC7A 1186.92

Source: Marathon County

0 500 ft

N

GHD

WAUSAU WATER SUPPLY NPL SITE
WAUSAU, WISCONSIN
2017 ANNUAL MONITORING REPORT

003978-00
Jan 26, 2018

GROUNDWATER CONTOURS - OCTOBER 2017

FIGURE 2.1

GIS File: I:\GIS\Projects\6-chars\00----\0039--\003978\003978-REPORTS\003978-00(039)\003978-00(039)GIS-SP003.mxd

LEGEND

- MONITORING WELL
- EXTRACTION WELL
- CITY PRODUCTION WELL
- INDUSTRIAL WELL
- APPROXIMATE AREA EXCEEDING ENFORCEMENT STANDARD (5 µg/L)
- SITE BOUNDARY

MW4B MW4A GM2S W57 MW7 CW6 3.0 MW3A W56 <0.16 W55 7.3 (7.3) W55A MW1A <0.16 R2D 15 R2S R1D <0.16 (<0.16) W50 R3S R3D 2.2 W52A W52 14 C2S 5.8 R4D 1.5 EW1 <0.16 C7S 10 W54 6.6 W53A 74 W53 WSWS WSWD 1.5 C3S 3.1 C6S C4D C4S 3.7 IWD E21 <0.16 WW4 <0.16 CW3 GM6D WW6 0.36J E22A 0.85 E26 E26A E22 E37A <0.16 FVD5 E28A WC5 WC5A 2.0 (2.1) WC4 WC4A WC3B 0.40J WC3 E24AR 4.6 MW10A MW10B <0.16 WC7A

MARATHON ELECTRIC A
MARATHON ELECTRIC B
OLD LANDFILL LIMITS
WILSON HURD TEST WELL
WISCONSIN RIVER
WAUSAU CHEMICAL

MORTENSON DR, E BOS CREEK DR, BUREK AV, PEARSON ST, W CROCKER ST, BECHER DR, GEMINI PL, BURNS ST, BROKEN ARROW RD, CLAYTON ST, EAST CHERRY ST, BOS CREEK, E RANDOLPH ST, ELDRED ST, STROWBRIDGE ST, N 2ND AV, N 1ST AV, CHERRY ST, KNOX ST, UNION AV, WAUSAU AV, NORTON ST, QUAW ST, BRIDGE ST, N RIVER DR, N 5TH ST, BROWN ST, WINTON ST, N 6TH ST, NINA AV, N 3RD ST, TURNER ST, GOWEN ST, AUGUSTA, DEVOE ST, E UNION AV, GILBERT ST, PARCHER ST, MOBILE AV, PARK AV, LINCOLN AV, N 2ND ST, HUMBOLDT AV, CHICAGO AV, E BRIDGE ST

Source: Marathon County

0 200 400 ft

WAUSAU WATER SUPPLY NPL SITE
WAUSAU, WISCONSIN
2017 ANNUAL MONITORING REPORT

TRICHLOROETHENE CONCENTRATIONS OCTOBER 2017

003978-00
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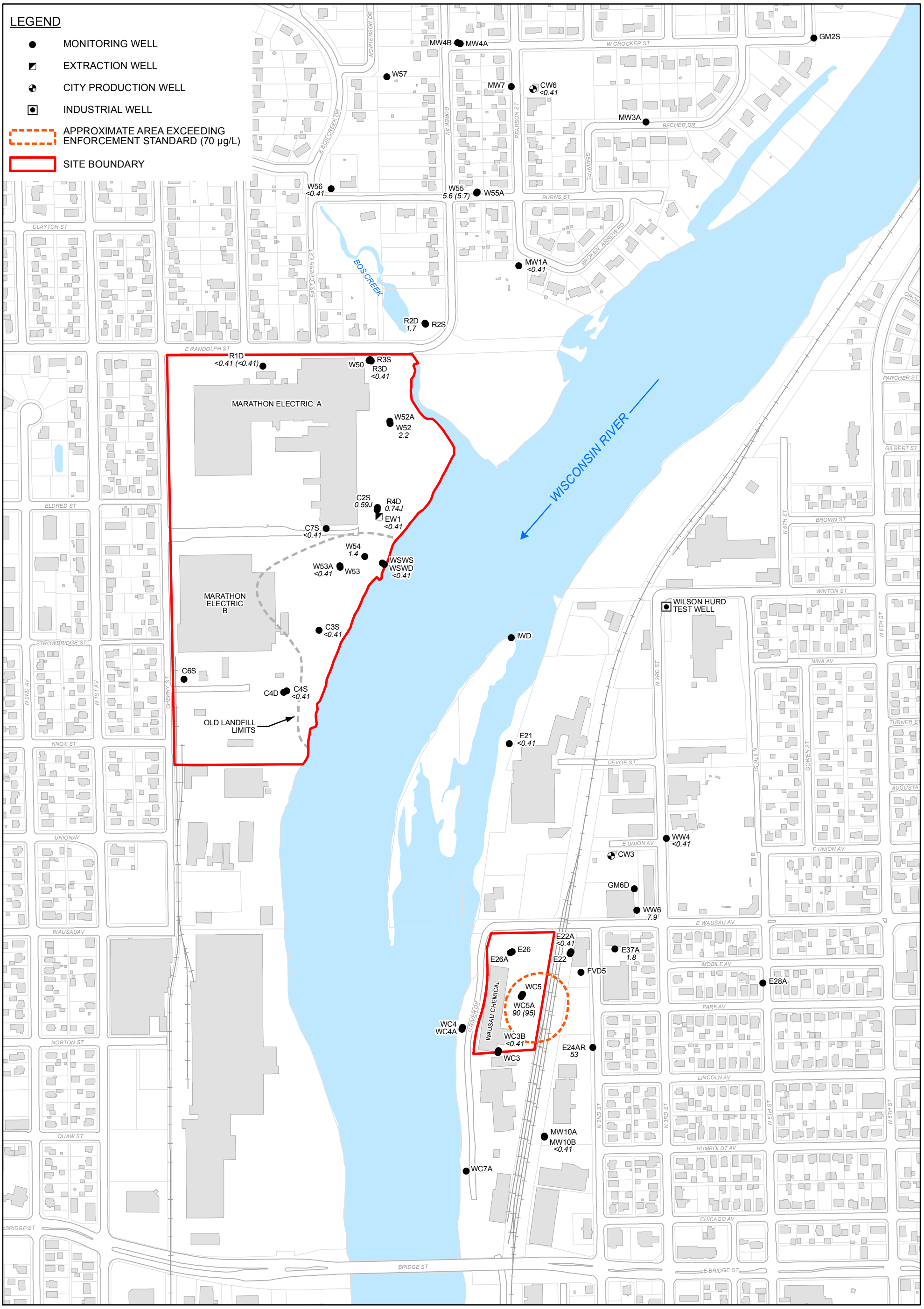
FIGURE 4.1

GIS File: I:\GIS\Projects\6-chars\00----\0039--\003978\003978-REPORTS\003978-00(039)\003978-00(039)GIS-SP004.mxd



Source: Marathon County

0 200 400 ft

WAUSAU WATER SUPPLY NPL SITE
WAUSAU, WISCONSIN
2017 ANNUAL MONITORING REPORT

CIS-1,2-DICHLOROETHENE CONCENTRATIONS OCTOBER 2017

003978-00

Jan 29, 2018

FIGURE 4.2

GIS File: I:\GIS\Projects\6-chars\00----\0039--\003978\003978-REPORTS\003978-00(039)\003978-00(039)GIS-SP005.mxd

LEGEND

- MONITORING WELL
- EXTRACTION WELL
- CITY PRODUCTION WELL
- INDUSTRIAL WELL
- APPROXIMATE AREA EXCEEDING ENFORCEMENT STANDARD (5 µg/L)
- SITE BOUNDARY

MW4B MW4A GM2S W57 MW7 CW6 <0.37 MW3A W56 <0.37 W55 <0.37 (<0.37) W55A MW1A <0.37 R2D <0.37 R2S R1D <0.37 (<0.37) W50 R3S R3D <0.37 W52A W52 <0.37 C2S <0.37 R4D <0.37 EW1 <0.37 C7S <0.37 W54 <0.37 W53A <0.37 W53 WSWS WSWD <0.37 C3S 0.53J C6S C4D C4S <0.37 IWD E21 <0.37 WW4 <0.37 CW3 GM6D WW6 <0.37 E22A 21 E26 E26A E22 E37A <0.37 FVD5 E28A WC5 WC5A 6.7 (7.6) WC4 WC4A WC3B 13 WC3 E24AR 12 MW10A MW10B <0.37 WC7A WILSON HURD TEST WELL

MARATHON ELECTRIC A

MARATHON ELECTRIC B

OLD LANDFILL LIMITS

WAUSAU CHEMICAL

BOS CREEK

WISCONSIN RIVER

E BOS CREEK DR MORTENSON DR W CROCKER ST BUREK AV PEARSON ST GEMINI PL BECHER DR BURNS ST BROKEN ARROW RD CLAYTON ST EAST CHERRY ST E RANDOLPH ST ELDRED ST STROWBRIDGE ST N 2ND AV N 1ST AV CHERRY ST KNOX ST UNION AV WAUSAU AV NORTON ST QUAW ST BRIDGE ST N RIVER DR DEVOE ST E WAUSAU AV MOBILE AV PARK AV LINCOLN AV HUMBOLDT AV CHICAGO AV E BRIDGE ST BRIDGE ST N 3RD ST N 2ND ST N 5TH ST N 6TH ST WINTON ST NINA AV E UNION AV GOWEN ST BROWN ST GILBERT ST PARCHER ST TURNER ST AUGUSTA

Source: Marathon County

0 200 400 ft

WAUSAU WATER SUPPLY NPL SITE
WAUSAU, WISCONSIN
2017 ANNUAL MONITORING REPORT

TETRACHLOROETHENE CONCENTRATIONS OCTOBER 2017

003978-00
Jan 29, 2018

FIGURE 4.3

GIS File: I:\GIS\Projects\6-chars\00----\0039--\003978\003978-REPORTS\003978-00(039)\003978-00(039)GIS-SP006.mxd

LEGEND

- MONITORING WELL
- EXTRACTION WELL
- CITY PRODUCTION WELL
- INDUSTRIAL WELL
- APPROXIMATE AREA EXCEEDING ENFORCEMENT STANDARD (0.2 µg/L)
- SITE BOUNDARY

MW4B MW4A GM2S W57 MW7 CW6 <0.20 MW3A W56 <0.20 W55 <0.20 (<0.20) W55A MW1A <0.20 R2D <0.20 R2S R1D <0.20 (<0.20) W50 R3S R3D <0.20 W52A W52 <0.20 C2S <0.20 R4D <0.20 EW1 <0.20 C7S <0.20 W54 <0.20 W53A <0.20 W53 WSWS WSWD <0.20 C3S <0.20 C6S C4D C4S <0.20 IWD E21 <0.20 WW4 <0.20 CW3 GM6D WW6 0.28J E22A <0.20 E26 E26A E22 E37A 1.6 FVD5 E28A WC5 WC5A 16 (17) WC4 WC4A WC3B <0.20 WC3 E24AR 7.9 MW10A MW10B <0.20 WC7A

WILSON HURD TEST WELL

MARATHON ELECTRIC A

MARATHON ELECTRIC B

OLD LANDFILL LIMITS

WAUSAU CHEMICAL

BOS CREEK

WISCONSIN RIVER

E BOS CREEK DR MORTENSON DR W CROCKER ST BUREK AV PEARSON ST GEMINI PL BECHER DR BURNS ST BROKEN ARROW RD CLAYTON ST EAST CHERRY ST E RANDOLPH ST ELDRED ST STROWBRIDGE ST N 2ND AV N 1ST AV CHERRY ST KNOX ST UNION AV WAUSAU AV NORTON ST QUAW ST BRIDGE ST N RIVER DR DEVOE ST E UNION AV N 5TH ST N 3RD ST GOWEN ST N 6TH ST WINTON ST NINA AV TURNER ST AUGUSTA ORCHARD PARCHER ST GILBERT ST BROWN ST MOBILE AV PARK AV LINCOLN AV N 2ND ST HUMBOLDT AV CHICAGO AV E BRIDGE ST

Source: Marathon County

0 200 400 ft

GHD

WAUSAU WATER SUPPLY NPL SITE
WAUSAU, WISCONSIN
2017 ANNUAL MONITORING REPORT

VINYL CHLORIDE CONCENTRATIONS OCTOBER 2017

003978-00
Jan 29, 2018

FIGURE 4.4

GIS File: I:\GIS\Projects\6-chars\00----\0039--\003978\003978-REPORTS\003978-00(039)\003978-00(039)GIS-SP007.mxd

Table 2.1

2017 Groundwater Monitoring Plan
Wausau Water Supply NPL Site
Wausau, Wisconsin

Monitoring Event	VOC Sample Locations		Laboratory Analysis	Groundwater Elevations	
	East Bank	West Bank		East Bank	West Bank
Annual - October	CW3, E24AR, MW10B, WW4, E22A, WC3B, WW6, WC5A, E21, E37A	EW1, CW6, W53A, W54, R4D, C2S, R3D, C4S, W52, W56, R2D, WSWD, W55, MW1A	VOC (8260)	C3S, C4S, C6S, C7S, GM2S, GM4D, MW1A, MW3A, MW4A, MW7, R1D, R2D, R3D, R4D, W52, W53A, W54, W55, W56, W57, WSWD, CW9-OBS, City Wells CW6, CW9, CW10, CW11	E21, E22A, E24AR, E26A, E28A, E37A, FVD5, GM6D, W.HURD, MW10B, WC3B, WC4A, WC5A, WC7, WW4, WW6, C2S, City Well CW3,

Site Specific VOC List

Acetone
Benzene
Carbon tetrachloride
Chloroform
1,1-Dichloroethene
cis-1,2-Dichloroethene
Ethylbenzene
Methylene chloride
Tetrachloroethene
Toluene
1,1,2-Trichloroethane
Trichloroethene
Vinyl chloride
Xylenes

Table 2.2

Groundwater Elevations - October 2017
Wausau Water Supply NPL Site
Wausau, Wisconsin

	Reference Elevation	Water Level (ft BTOC)	Water Table Elevation (ft AMSL)
East Bank		**10/2/2017**	**10/2/2017**
CW3*	1202.15	na	na
E21	1197.51	9.98	1187.53
E22A	1195.88	8.64	1187.24
E24AR	1209.33	22.34	1186.99
E26A	1199.13	11.88	1187.25
E28A	1211.60	24.45	1187.15
E37A	1197.84	10.70	1187.14
FVD5	1198.89	11.79	1187.10
GM6D	1198.57	11.36	1187.21
W. HURD	1200.23	12.75	1187.48
MW10B	1210.37	23.53	1186.84
WC3B	1196.11	8.88	1187.23
WC4A	1196.57	9.39	1187.18
WC5A	1196.66	9.49	1187.17
WC7A	1196.77	9.85	1186.92
WW4	1200.34	13.09	1187.25
WW6	1200.53	13.64	1186.89
West Bank		**10/3/2017**	**10/3/2017**
EW1	1218.04	30.42	1187.62
CW6*	1220.33	60	1160
CW7	1224.14	NA	NA
CW9	1226.16	57	1169
CW9 OBS R	1224.51	39.68	1184.83
CW10	1218.49	44	1174
CW11	1216.51	24	1193
C2S	1219.05	31.44	1187.61
C3S	1220.58	33.21	1187.37

Table 2.2

Groundwater Elevations - October 2017
Wausau Water Supply NPL Site
Wausau, Wisconsin

	Reference Elevation	Water Level (ft BTOC)	Water Table Elevation (ft AMSL)
West Bank cont'd.			
C4S	1216.70	28.94	1187.76
C6S	1221.58	33.60	1187.98
C7S	1220.87	33.18	1187.69
GM2S	1211.78	25.28	1186.50
GM4D	1216.35	30.86	1185.49
MW1A	1215.69	29.39	1186.30
MW3A	1220.87	35.01	1185.86
MW4A	1215.48	31.35	1184.13
MW7	1218.53	35.88	1182.65
R1D	1222.24	34.49	1187.75
R2D	1209.42	22.60	1186.82
R3D	1215.42	28.30	1187.12
R4D	1218.90	31.33	1187.57
W52	1219.16	31.81	1187.35
W53	1216.67	29.12	1187.55
W54	1216.08	28.39	1187.69
W55	1217.04	31.62	1185.42
W56	1200.01	13.80	1186.21
W57	1201.76	16.95	1184.81
WSWD	1193.02	5.36	1187.66

Notes:

ft BTOC	- Feet below top of casing
ft AMSL	- Feet above mean sea level
*	- Well was pumping
NA	- Not Applicable

Table 2.3

Groundwater Sampling Summary - October 2017
Wausau Water Supply NPL Site
Wausau, Wisconsin

Well	Date	pH	Conductivity (uS)	Temperature (ºC)	Water Clarity	Gallons Removed	Sample ID Number	QA/QC
East Bank								
E21	10/2/2017	8.07	153	8.2	Clear	60	W-171002-RA-05	
E22A	10/2/2017	6.93	301	10.1	Clear	6	W-171002-RA-08	
E24AR	10/3/2017	6.41	802	8.1	Clear	6	W-171003-RA-31	
E37A	10/3/2017	6.89	305	9.6	Clear	6	W-171003-RA-14	
MW-10B	10/2/2017	6.81	224	7.3	Clear	9	W-171002-RA-09	
WC3B	10/2/2017	6.65	216	11.5	Clear	6	W-171002-RA-03	
							W-171002-RA-04	Field Blank
WC5A	10/2/2017	6.58	226	10.2	Clear	6	W-171002-RA-01	
							W-171002-RA-02	Field Duplicate
WW4	10/2/2017	6.77	460	8.0	Clear	6 (pumped dry)	W-171002-RA-07	
WW6	10/2/2017	6.95	204	7.3	Clear	12	W-171002-RA-06	
West Bank								
C2S	10/3/2017	6.36	1552	10.3	Clear	6	W-171003-RA-17	
C3S	10/2/2017	7.00	688	8.0	Clear	6	W-171002-RA-11	
C4S	10/2/2017	6.70	922	7.9	Clear	3	W-171002-RA-10	
C7S	10/3/2017	5.72	1480	9.2	Clear	8	W-171003-RA-30	
CW6	10/3/2017	7.06	242	8.2	Clear	Grab	W-171003-RA-15	

Table 2.3

Groundwater Sampling Summary - October 2017
Wausau Water Supply NPL Site
Wausau, Wisconsin

Well	Date	pH	Conductivity (uS)	Temperature (ºC)	Water Clarity	Gallons Removed	Sample ID Number	QA/QC
West Bank Cont.								
EW1	10/3/2017	NA	NA	NA	Clear	Grab	W-171003-RA-18	
MW-1A	10/3/2017	7.70	140	10.3	Clear	6	W-171003-RA-20	
R1D	10/3/2017	6.64	399	7.0	Clear	60	W-171003-RA-26	
							W-171003-RA-27	Field Duplicate
R2D	10/3/2017	7.08	165	7.2	Clear	60	W-171003-RA-23	
							W-171003-RA-24	
R3D	10/3/2017	6.81	447	7.4	Clear	60	W-171003-RA-29	
R4D	10/3/2017	6.77	573	10.0	Clear	6	W-171003-RA-16	
W52	10/3/2017	9.19	364	10.6	Clear	6	W-171003-RA-19	
W53A	10/2/2017	6.99	1574	8.5	Clear	6	W-171002-RA-12	
W54	10/2/2017	7.00	561	8.9	Clear	6	W-171002-RA-13	
W55	10/3/2017	7.87	158	7.9	Clear	8	W-171003-RA-21	
							W-171003-RA-22	Field Duplicate
W56	10/3/2017	6.96	305	8.1	Clear	6	W-171003-RA-25	MS/MSD
WSWD	10/3/2017	7.00	158	8.5	Clear	3	W-171003-RA-28	MS/MSD

Notes:

NA - pH, conductivity, and temperature not measured

Table 3.1

2017 Monitoring Well Inspection
Wausau Water Supply NPL Site
Wausau, Wisconsin

	CW3	E21	E22	E22A	E24AR
Difficult to find? Brush need cutting?	City pump house	No/No	No/No	No/No	No/No
Clearly labeled on outside? ID tag visible?	NA	Yes	No	Yes	No
Protop and Casing Condition	NA	Good	Good	Good	Good
Surface seal visible? Concrete Condition? (Soil/sod covered?)	NA	No, sod covered	Yes, concrete in good condition	Yes, concrete in good condition	Yes, concrete in good condition
Well Cap Condition (inner/outer)	NA	Good	Good	Good	Good
Does well riser inhibit the protop from being closed and locked?	NA	No	No	No	No
Lock Condition	NA	Good	Good	Good	Fair
Ground subsidence?	NA	None	None	None	None
Flush Mount? Potential for ponded water?	NA	Above grade	Flush - No	Flush - No	Flush - No
Flush Mount in impervious surface? (surface type)	NA	NA	Soil	Soil	Concrete pad in turf
Flush Mount water tight?	NA	NA	Yes	Yes	Yes
Notes					

2017 Monitoring Well Inspection
Wausau Water Supply NPL Site
Wausau, Wisconsin

	E26	E26A	E28A	E37A	FVD5
Difficult to find? Brush need cutting?	No/No	No/No	No/No	No/No	No/No
Clearly labeled on outside? ID tag visible?	Yes	Yes	No	Yes	Yes
Protop and Casing Condition	Good	Fair	Fair	Good	Good
Surface seal visible? Concrete Condition? (Soil/sod covered?)	No, sod covered	No, sod covered	Yes, concrete surface - good	Yes, concrete good	No, protop in gravel.
Well Cap Condition (inner/outer)	Good	Good	Good	Good	Good
Does well riser inhibit the protop from being closed and locked?	No	No	No	No	No
Lock Condition	Good	Fair	Fair	Fair	Good
Ground subsidence?	Soil - good	Soil - good	No subsidence	No subsidence	None. New gravel.
Flush Mount? Potential for ponded water?	Above grade	Above grade	Flush - No	Flush - No	Above grade
Flush Mount in impervious surface? (surface type)	NA	NA	Concrete sidewalk	Concrete	NA
Flush Mount water tight?	NA	NA	Yes	Yes	NA
Notes					

Table 3.1

2017 Monitoring Well Inspection
Wausau Water Supply NPL Site
Wausau, Wisconsin

	GM6D	W. HURD	IWD	MW10A	MW10B
Difficult to find? Brush need cutting?	No/No	No/No	NA	No/No	No/No
Clearly labeled on outside? ID tag visible?	Yes	Yes	NA	Yes	Yes
Protop and Casing Condition	Good	Good	NA	Fair -rust	Good
Surface seal visible? Concrete Condition? (Soil/sod covered?)	Yes, concrete surface seal in asphalt	No, sod	NA	No, covered with vegetation	No, covered with vegetation
Well Cap Condition (inner/outer)	Good	Good	NA	Fair, rust	Fair, difficult to remove
Does well riser inhibit the protop from being closed and locked?	No	No	NA	No	No
Lock Condition	Good	Fair	NA	Good	Fair
Ground subsidence?	None	None	NA	None	None
Flush Mount? Potential for ponded water?	Flush - No	Above grade, no	NA	Above grade	Above grade
Flush Mount in impervious surface? (surface type)	New concrete vault in asphalt	NA	NA	NA	NA
Flush Mount water tight?	Yes	NA	NA	NA	NA
Notes					

Table 3.1

2017 Monitoring Well Inspection
Wausau Water Supply NPL Site
Wausau, Wisconsin

	WC3	WC3B	WC4	WC4A	WC5
Difficult to find? Brush need cutting?	No/No	No/No	No/No	No/No	No/No
Clearly labeled on outside? ID tag visible?	No	No	Yes	Yes	Yes
Protop and Casing Condition	Good	Good	Good	Good	Good
Surface seal visible? Concrete Condition? (Soil/sod covered?)	No, sod	Yes, concrete good	No, sod	No, sod	No, gravel and soil
Well Cap Condition (inner/outer)	Good	Good	Good	Good	Good
Does well riser inhibit the protop from being closed and locked?	No	No	No	No	No
Lock Condition	Good	Good	Good	Good	Good
Ground subsidence?	None	None	None	None	None
Flush Mount? Potential for ponded water?	Above grade	Flush - No	Above grade	Above grade	Above grade
Flush Mount in impervious surface? (surface type)	-	Yes - Concrete	NA	NA	NA
Flush Mount water tight?	-	Yes	NA	NA	NA
Notes					

Table 3.1

2017 Monitoring Well Inspection
Wausau Water Supply NPL Site
Wausau, Wisconsin

	WC5A	WC7	WW4	WW6	EW1
Difficult to find? Brush need cutting?	No/No	No/No	No/No	No/No	Pump house
Clearly labeled on outside? ID tag visible?	Yes	No, painted over	No	Yes	No
Protop and Casing Condition	Good	Good	Good	Good	Good
Surface seal visible? Concrete Condition? (Soil/sod covered?)	No, gravel and soil	No, soil and grass	New concrete pad	Yes, asphalt - good condition	NA
Well Cap Condition (inner/outer)	Good	Good	Good	Good	NA
Does well riser inhibit the protop from being closed and locked?	No	No	No	No	NA
Lock Condition	Good	Good	Good	Good	NA
Ground subsidence?	None	None	None	None	None
Flush Mount? Potential for ponded water?	Above grade	Above grade	Flush - No	Above grade	NA
Flush Mount in impervious surface? (surface type)	NA	NA	New concrete pad in sod	NA	NA
Flush Mount water tight?	NA	NA	No	NA	NA
Notes					

2017 Monitoring Well Inspection
Wausau Water Supply NPL Site
Wausau, Wisconsin

	CW6	CW9 OBS R	C2S	C3S	C4S
Difficult to find? Brush need cutting?	City pump house	No/No	No/No	No/No	No/No
Clearly labeled on outside? ID tag visible?	Yes	USGS label	Yes	Yes	Yes
Protop and Casing Condition	NA	Good	Fair	Fair	Fair
Surface seal visible? Concrete Condition? (Soil/sod covered?)	NA	No, sod	No, tall grass	No, sod	No, sod
Well Cap Condition (inner/outer)	NA	Good	Fair	Fair	Fair
Does well riser inhibit the protop from being closed and locked?	NA	Yes	No	No	No
Lock Condition	NA	Good	Fair	Fair	Fair
Ground subsidence?	NA	None	None	None	None
Flush Mount? Potential for ponded water?	NA	Above grade	Above grade	Above grade	Above grade
Flush Mount in impervious surface? (surface type)	NA	NA	NA	NA	NA
Flush Mount water tight?	NA	NA	NA	NA	NA
Notes					

2017 Monitoring Well Inspection
Wausau Water Supply NPL Site
Wausau, Wisconsin

	C4D	C6S	C7S	GM2S	GM4D
Difficult to find? Brush need cutting?	No/No	No/No	No/No	No/No	No/No
Clearly labeled on outside? ID tag visible?	Yes	Yes	Yes	Yes	Yes
Protop and Casing Condition	Fair	Fair	Fair	Good	Good
Surface seal visible? Concrete Condition? (Soil/sod covered?)	Yes, concrete - good	No, sod	Yes, concrete - good	New concrete pad	No, sod and leaf litter
Well Cap Condition (inner/outer)	Fair	Fair	Fair	Good	Fair
Does well riser inhibit the protop from being closed and locked?	No	No	No	No	No
Lock Condition	Fair	Good	Fair	Good	Good
Ground subsidence?	None	None	None	None	None
Flush Mount? Potential for ponded water?	Above grade	Above grade	Above grade	New vault installed	Above grade
Flush Mount in impervious surface? (surface type)	NA	NA	NA	Concrete pad in sod	NA
Flush Mount water tight?	NA	NA	NA	Yes	NA
Notes					

Table 3.1

2017 Monitoring Well Inspection
Wausau Water Supply NPL Site
Wausau, Wisconsin

	MW1A	MW3A	MW4A	MW4B	MW7
Difficult to find? Brush need cutting?	No/No	No/No	No/No	No/No	No/No
Clearly labeled on outside? ID tag visible?	No	Yes	Yes	Yes	Yes
Protop and Casing Condition	Good	Good	Good	Good	Good
Surface seal visible? Concrete Condition? (Soil/sod covered?)	No, gravel	Yes, concrete - good	Yes, concrete - good	Yes, concrete - good	Yes, concrete - good
Well Cap Condition (inner/outer)	Good	Good	Good	Good	Good
Does well riser inhibit the protop from being closed and locked?	No	No	No	No	No
Lock Condition	Good	Good	Good	Good	Good
Ground subsidence?	None	None	None	None	None
Flush Mount? Potential for ponded water?	Above grade	Flush - No	Flush - No	Flush - No	Flush - No
Flush Mount in impervious surface? (surface type)	NA	Soil, grass	Soil, grass	Soil, grass	Grass boulevard
Flush Mount water tight?	NA	Yes	Yes	Yes	Yes
Notes					

Table 3.1

2017 Monitoring Well Inspection
Wausau Water Supply NPL Site
Wausau, Wisconsin

	R1D	R2S	R2D	R3S	R3D
Difficult to find? Brush need cutting?	No/No	No/No	No/No	No/No	No/No
Clearly labeled on outside? ID tag visible?	Yes	Yes	Yes	Yes	Yes
Protop and Casing Condition	Good	Good	Good	Good	Good
Surface seal visible? Concrete Condition? (Soil/sod covered?)	No, sod	No, leaf litter	No, leaf litter	No, sod	No, sod
Well Cap Condition (inner/outer)	Fair, rust	Good	Good	Fair	Fair
Does well riser inhibit the protop from being closed and locked?	No	No	No	No	No
Lock Condition	Good	Good	Good	Good	Good
Ground subsidence?	None	None	None	None	None
Flush Mount? Potential for ponded water?	Above grade	Above grade	Above grade	Above grade	Above grade
Flush Mount in impervious surface? (surface type)	NA	NA	NA	NA	NA
Flush Mount water tight?	NA	NA	NA	NA	NA
Notes					

2017 Monitoring Well Inspection
Wausau Water Supply NPL Site
Wausau, Wisconsin

	R4D	W50	W52	W52A	W53
Difficult to find? Brush need cutting?	No/No	No/No	No/No	No/No	No/No
Clearly labeled on outside? ID tag visible?	Yes	Yes	Yes	Yes	No
Protop and Casing Condition	Fair	Fair	Fair	Fair	Fair
Surface seal visible? Concrete Condition? (Soil/sod covered?)	No, sod and leaf litter	No, sod	No, soil	No, soil and grass	New concrete pad
Well Cap Condition (inner/outer)	Fair	Fair	Fair	Fair	Good
Does well riser inhibit the protop from being closed and locked?	No	No	No	No	No
Lock Condition	Fair	Fair	Fair	Fair	Good
Ground subsidence?	None	None	None	None	None
Flush Mount? Potential for ponded water?	Above grade	Above grade	Above grade	Above grade	Flush - No
Flush Mount in impervious surface? (surface type)	NA	NA	NA	NA	Yes, new vault
Flush Mount water tight?	NA	NA	NA	NA	Yes, new vault
Notes					

2017 Monitoring Well Inspection
Wausau Water Supply NPL Site
Wausau, Wisconsin

	W53A	W54	W55	W55A	W56
Difficult to find? Brush need cutting?	No/No	No/No	No/No	No/No	No/No
Clearly labeled on outside? ID tag visible?	No	Yes	No	No	Yes
Protop and Casing Condition	Good	Good	Fair	Fair	Good
Surface seal visible? Concrete Condition? (Soil/sod covered?)	Yes, concrete - fair	Yes, concrete -good	No - sod	No - sod	No - sod and leaf litter
Well Cap Condition (inner/outer)	Good	Good	Good	Poor, bolt stuck	Good
Does well riser inhibit the protop from being closed and locked?	No	No	No	No	No
Lock Condition	Good	Good	Good	NA	Good
Ground subsidence?	None	None	None	None	None
Flush Mount? Potential for ponded water?	Flush - No	Flush - No	Flush - No	Flush - No	Above grade
Flush Mount in impervious surface? (surface type)	Concrete	Concrete	Soil, grass	Soil, grass	NA
Flush Mount water tight?	Yes	Yes	Yes	Yes	NA
Notes					

2017 Monitoring Well Inspection
Wausau Water Supply NPL Site
Wausau, Wisconsin

	W57	WSWS	WSWD
Difficult to find? Brush need cutting?	No/No	No/No	No/No
Clearly labeled on outside? ID tag visible?	No	Yes	Yes
Protop and Casing Condition	Fair	Good	Good
Surface seal visible? Concrete Condition? (Soil/sod covered?)	No, sod	No - sod and leaf litter	No - sod and leaf litter
Well Cap Condition (inner/outer)	Fair	Good	Good
Does well riser inhibit the protop from being closed and locked?	No	No	No
Lock Condition	Good	Fair	Fair
Ground subsidence?	None	None	None
Flush Mount? Potential for ponded water?	Flush - No	Above grade	Above grade
Flush Mount in impervious surface? (surface type)	Soil, grass	NA	NA
Flush Mount water tight?	Yes	NA	NA
Notes			

Table 3.2

2017 City Well Pumping Summary
Wausau Water Supply NPL Site
Wausau, Wisconsin

		Well #3	Well #6	Well #7	Well #9	Well #10	Well #11
	Hours	290.1	450.1	190	181.7	120.5	110.1
January	Gallons	22.911	32.576	16.264	8.785	24.101	19.241
	gpm	1316	1206	1427	806	3333	2913
	Hours	289.8	380.4	177.3	172	107.6	104.6
February	Gallons	22.618	27.343	15.09	8.282	21.062	18.282
	gpm	1301	1198	1418	803	3262	2913
	Hours	310.8	430.4	168.8	129.8	97.2	127.2
March	Gallons	23.936	31.517	16.386	6.272	19.596	22.253
	gpm	1284	1220	1618	805	3360	2916
	Hours	347.8	370.9	160.8	150.6	93.8	103.4
April	Gallons	22.99	28.357	14.835	7.28	17.021	17.812
	gpm	1102	1274	1538	806	3024	2871
	Hours	292.5	449.9	157.4	149.7	146.2	150.5
May	Gallons	18.962	33.942	13.877	7.277	25.609	26.252
	gpm	1080	1257	1469	810	2919	2907
	Hours	305.9	412.3	197.2	195.2	151.4	152.4
June	Gallons	21.317	32.421	17.628	9.412	27.233	26.599
	gpm	1161	1311	1490	804	2998	2909
	Hours	362.1	395.3	0	285.1	151.4	281.2
July	Gallons	25.666	31.864	0	13.12	27.418	48.59
	gpm	1181	1343	0	767	3018	2880
	Hours	293.1	455	3.1	234.9	161.9	269
August	Gallons	21.65	36.623	0.298	11.324	29.19	47.159
	gpm	1231	1342	1602	803	3005	2922
	Hours	232.5	476.1	77.3	286.5	188.6	155.3
September	Gallons	17.424	38.016	6.876	13.6	34.25	26.714
	gpm	1249	1331	1483	791	3027	2867
	Hours	0	487	0	273.8	187.1	215.8
October	Gallons	0	40.004	0	13.031	35.129	37.694
	gpm	0	1369	0	793	3129	2911
	Hours	160.5	483.4	114.2	104	65.5	269.2
November	Gallons	13.443	41.544	12.766	5.084	13.013	31.648
	gpm	1396	1432	1863	815	3311	1959
	Hours	309.5	431.7	186.3	115.5	82.5	51.2
December	Gallons	25.421	33.004	21.712	5.563	16.378	8.942
	gpm	1369	1274	1942	803	3309	2911
Average hrs/week:		61.4	100.4	27.5	43.8	29.9	38.3
Average gpm:		1233	1300	1579	797	3111	2774

Notes:

Hours - Total hours pumped per month
Gallons - Millions of gallons pumped per month
gpm - Gallons per minute

Table 4.1

Laboratory Results Summary
October 2017 Groundwater Sampling Event
Wausau Water Supply NPL Site
Wausau, Wisconsin

Location ID:			C3S	C7S	R1D	R1D	C2S	C4S
Sample Name:			W-171002-RA-11	W-171003-RA-30	W-171003-RA-26	W-171003-RA-27	W-171003-RA-17	W-171002-RA-10
Sample Date:			10/02/2017	10/03/2017	10/03/2017	10/03/2017	10/03/2017	10/02/2017
						Duplicate		
			West Bank	West Bank	West Bank	West Bank	West Bank	West Bank
Parameters		**Unit**						
Volatile Organic Compounds	**EPA MCL**							
1,1,2-Trichloroethane	5	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	7	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acetone	--	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	5	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Carbon tetrachloride	5	µg/L	150	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	6	µg/L	66	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
cis-1,2-Dichloroethene	70	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	0.59 J	1.0 U
Ethylbenzene	700	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methylene chloride	5	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Tetrachloroethene	5	µg/L	0.53 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	1,000	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	5	µg/L	3.1	10	0.50 U	0.50 U	5.8	3.7
Vinyl chloride	2	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Xylenes (total)	10,000	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Laboratory Results Summary
October 2017 Groundwater Sampling Event
Wausau Water Supply NPL Site
Wausau, Wisconsin

Location ID:			MW1A	WSWD	R2D	R3D	R4D	W52
Sample Name:			W-171003-RA-20	W-171003-RA-28	W-171003-RA-23	W-171003-RA-29	W-171003-RA-16	W-171003-RA-19
Sample Date:			10/03/2017	10/03/2017	10/03/2017	10/03/2017	10/03/2017	10/03/2017
			West Bank	West Bank	West Bank	West Bank	West Bank	West Bank
Parameters		**Unit**						
Volatile Organic Compounds	**EPA MCL**							
1,1,2-Trichloroethane	5	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	7	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acetone	--	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	5	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Carbon tetrachloride	5	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	6	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
cis-1,2-Dichloroethene	70	µg/L	1.0 U	1.0 U	1.7	1.0 U	0.74 J	2.2
Ethylbenzene	700	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methylene chloride	5	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Tetrachloroethene	5	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	1,000	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	5	µg/L	0.50 U	1.5	15	2.2	1.5	14
Vinyl chloride	2	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Xylenes (total)	10,000	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Table 4.1

Laboratory Results Summary
October 2017 Groundwater Sampling Event
Wausau Water Supply NPL Site
Wausau, Wisconsin

Location ID:			W53A	W54	W55	W55	W56	CW6
Sample Name:			W-171002-RA-12	W-171002-RA-13	W-171003-RA-21	W-171003-RA-22	W-171003-RA-25	W-171003-RA-15
Sample Date:			10/02/2017	10/02/2017	10/03/2017	10/03/2017	10/03/2017	10/03/2017
						Duplicate		
			West Bank	West Bank	West Bank	West Bank	West Bank	West Bank
Parameters		**Unit**						
Volatile Organic Compounds	**EPA MCL**							
1,1,2-Trichloroethane	5	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	7	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acetone	--	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	5	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Carbon tetrachloride	5	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	6	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
cis-1,2-Dichloroethene	70	µg/L	1.0 U	1.4	5.6	5.7	1.0 U	1.0 U
Ethylbenzene	700	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methylene chloride	5	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Tetrachloroethene	5	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	1,000	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	5	µg/L	74	6.6	7.3	7.3	0.50 U	3.0
Vinyl chloride	2	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Xylenes (total)	10,000	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Laboratory Results Summary
October 2017 Groundwater Sampling Event
Wausau Water Supply NPL Site
Wausau, Wisconsin

Location ID:			EW1	E21	E22A	E24AR	E37A	MW10B
Sample Name:			W-171003-RA-18	W-171002-RA-05	W-171002-RA-08	W-171003-RA-31	W-171003-RA-14	W-171002-RA-09
Sample Date:			10/03/2017	10/02/2017	10/02/2017	10/03/2017	10/03/2017	10/02/2017
			West Bank	East Bank	East Bank	East Bank	East Bank	East Bank
Parameters		**Unit**						
Volatile Organic Compounds	**EPA MCL**							
1,1,2-Trichloroethane	5	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	7	µg/L	1.0 U	1.0 U	1.0 U	0.55 J	1.0 U	1.0 U
Acetone	--	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	5	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Carbon tetrachloride	5	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	6	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
cis-1,2-Dichloroethene	70	µg/L	1.0 U	1.0 U	1.0 U	53	1.8	1.0 U
Ethylbenzene	700	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methylene chloride	5	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Tetrachloroethene	5	µg/L	1.0 U	1.0 U	21	12	1.0 U	1.0 U
Toluene	1,000	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	5	µg/L	0.50 U	0.50 U	0.85	4.6	0.50 U	0.50 U
Vinyl chloride	2	µg/L	0.50 U	0.50 U	0.50 U	7.9	1.6	0.50 U
Xylenes (total)	10,000	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Table 4.1

Laboratory Results Summary
October 2017 Groundwater Sampling Event
Wausau Water Supply NPL Site
Wausau, Wisconsin

Location ID:			WC3B	WC5A	WC5A	WW4	WW6
Sample Name:			W-171002-RA-03	W-171002-RA-01	W-171002-RA-02	W-171002-RA-07	W-171002-RA-06
Sample Date:			10/02/2017	10/02/2017	10/02/2017 Duplicate	10/02/2017	10/02/2017
Parameters		**Unit**	East Bank	East Bank	East Bank	East Bank	East Bank
Volatile Organic Compounds	**EPA MCL**						
1,1,2-Trichloroethane	5	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	7	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acetone	--	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	5	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Carbon tetrachloride	5	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	6	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
cis-1,2-Dichloroethene	70	µg/L	1.0 U	90	95	1.0 U	7.9
Ethylbenzene	700	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methylene chloride	5	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Tetrachloroethene	5	µg/L	13	6.7	7.6	1.0 U	1.0 U
Toluene	1,000	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	5	µg/L	0.40 J	2	2.1	0.50 U	0.36 J
Vinyl chloride	2	µg/L	0.50 U	16	17	0.50 U	0.28 J
Xylenes (total)	10,000	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Notes:

U - Not detected at the associated reporting limit
J - Estimated value below the reporting limit, but above the method detection limit
The method detection limit for vinyl chloride is 0.20 ug/L
Shaded cells indicate concentration exceeds the EPA Maximum Contaminant Level for drinking water

Appendix A
October 2 3, 2017 Laboratory Report and Data Quality Validation Memorandum

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-135122-1
Client Project/Site: Wausau Superfund Site - 003978

For:
GHD Services Inc.
1801 Old Highway 8 NW
Suite 114
St. Paul, Minnesota 55112

Attn: Mr. Grant Anderson

Authorized for release by:
10/17/2017 2:44:18 PM

Richard Wright, Senior Project Manager
(708)534-5200
richard.wright@testamericainc.com

Table of Contents

Case Narrative

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Job ID: 500-135122-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-135122-1

Comments
No additional comments.

Receipt
The samples were received on 10/5/2017 9:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.4° C.

GC/MS VOA
Method(s) 8260B: The MSD (matrix spike duplicate) in batch 405437 was analyzed 25 minutes outside the method specified 12 hour tune time. W-171003-RA-28 (500-135122-28), W-171003-RA-28 (500-135122-28[MS]) and W-171003-RA-28 (500-135122-28[MSD])

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171002-RA-01 — Lab Sample ID: 500-135122-1

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	90		1.0	0.41	ug/L	1		8260B	Total/NA
Tetrachloroethene	6.7		1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	2.0		0.50	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	16		0.50	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: W-171002-RA-02 — Lab Sample ID: 500-135122-2

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	95		1.0	0.41	ug/L	1		8260B	Total/NA
Tetrachloroethene	7.6		1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	2.1		0.50	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	17		0.50	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: W-171002-RA-03 — Lab Sample ID: 500-135122-3

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Tetrachloroethene	13		1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	0.40	J	0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: W-171002-RA-04 — Lab Sample ID: 500-135122-4

No Detections.

Client Sample ID: W-171002-RA-05 — Lab Sample ID: 500-135122-5

No Detections.

Client Sample ID: W-171002-RA-06 — Lab Sample ID: 500-135122-6

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	7.9		1.0	0.41	ug/L	1		8260B	Total/NA
Trichloroethene	0.36	J	0.50	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	0.28	J	0.50	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: W-171002-RA-07 — Lab Sample ID: 500-135122-7

No Detections.

Client Sample ID: W-171002-RA-08 — Lab Sample ID: 500-135122-8

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Tetrachloroethene	21		1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	0.85		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: W-171002-RA-09 — Lab Sample ID: 500-135122-9

No Detections.

Client Sample ID: W-171002-RA-10 — Lab Sample ID: 500-135122-10

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171002-RA-10 (Continued) — Lab Sample ID: 500-135122-10

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	3.7		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: W-171002-RA-11 — Lab Sample ID: 500-135122-11

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Carbon tetrachloride	150		1.0	0.38	ug/L	1		8260B	Total/NA
Chloroform	66		2.0	0.37	ug/L	1		8260B	Total/NA
Tetrachloroethene	0.53	J	1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	3.1		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: W-171002-RA-12 — Lab Sample ID: 500-135122-12

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	74		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: W-171002-RA-13 — Lab Sample ID: 500-135122-13

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.4		1.0	0.41	ug/L	1		8260B	Total/NA
Trichloroethene	6.6		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: W-171003-RA-14 — Lab Sample ID: 500-135122-14

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.8		1.0	0.41	ug/L	1		8260B	Total/NA
Vinyl chloride	1.6		0.50	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: W-171003-RA-15 — Lab Sample ID: 500-135122-15

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	3.0		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: W-171003-RA-16 — Lab Sample ID: 500-135122-16

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.74	J	1.0	0.41	ug/L	1		8260B	Total/NA
Trichloroethene	1.5		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: W-171003-RA-17 — Lab Sample ID: 500-135122-17

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.59	J	1.0	0.41	ug/L	1		8260B	Total/NA
Trichloroethene	5.8		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: W-171003-RA-18 — Lab Sample ID: 500-135122-18

No Detections.

Client Sample ID: W-171003-RA-19 — Lab Sample ID: 500-135122-19

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171003-RA-19 (Continued) — Lab Sample ID: 500-135122-19

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	2.2		1.0	0.41	ug/L	1		8260B	Total/NA
Trichloroethene	14		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: W-171003-RA-20 — Lab Sample ID: 500-135122-20

No Detections.

Client Sample ID: W-171003-RA-21 — Lab Sample ID: 500-135122-21

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	5.6		1.0	0.41	ug/L	1		8260B	Total/NA
Trichloroethene	7.3		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: W-171003-RA-22 — Lab Sample ID: 500-135122-22

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	5.7		1.0	0.41	ug/L	1		8260B	Total/NA
Trichloroethene	7.3		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: W-171003-RA-23 — Lab Sample ID: 500-135122-23

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.7		1.0	0.41	ug/L	1		8260B	Total/NA
Trichloroethene	15		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: W-171003-RA-24 — Lab Sample ID: 500-135122-24

No Detections.

Client Sample ID: W-171003-RA-25 — Lab Sample ID: 500-135122-25

No Detections.

Client Sample ID: W-171003-RA-26 — Lab Sample ID: 500-135122-26

No Detections.

Client Sample ID: W-171003-RA-27 — Lab Sample ID: 500-135122-27

No Detections.

Client Sample ID: W-171003-RA-28 — Lab Sample ID: 500-135122-28

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	1.5		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: W-171003-RA-29 — Lab Sample ID: 500-135122-29

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	2.2		0.50	0.16	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171003-RA-30 — Lab Sample ID: 500-135122-30

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	10		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: W-171003-RA-31 — Lab Sample ID: 500-135122-31

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	53		1.0	0.41	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	0.55	J	1.0	0.39	ug/L	1		8260B	Total/NA
Tetrachloroethene	12		1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	4.6		0.50	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	7.9		0.50	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 500-135122-32

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-135122-1	W-171002-RA-01	Water	10/02/17 14:35	10/05/17 09:45
500-135122-2	W-171002-RA-02	Water	10/02/17 14:35	10/05/17 09:45
500-135122-3	W-171002-RA-03	Water	10/02/17 14:40	10/05/17 09:45
500-135122-4	W-171002-RA-04	Water	10/02/17 14:40	10/05/17 09:45
500-135122-5	W-171002-RA-05	Water	10/02/17 14:35	10/05/17 09:45
500-135122-6	W-171002-RA-06	Water	10/02/17 15:43	10/05/17 09:45
500-135122-7	W-171002-RA-07	Water	10/02/17 16:00	10/05/17 09:45
500-135122-8	W-171002-RA-08	Water	10/02/17 14:20	10/05/17 09:45
500-135122-9	W-171002-RA-09	Water	10/02/17 16:50	10/05/17 09:45
500-135122-10	W-171002-RA-10	Water	10/02/17 17:10	10/05/17 09:45
500-135122-11	W-171002-RA-11	Water	10/02/17 17:21	10/05/17 09:45
500-135122-12	W-171002-RA-12	Water	10/02/17 17:47	10/05/17 09:45
500-135122-13	W-171002-RA-13	Water	10/02/17 18:09	10/05/17 09:45
500-135122-14	W-171003-RA-14	Water	10/03/17 08:20	10/05/17 09:45
500-135122-15	W-171003-RA-15	Water	10/03/17 08:45	10/05/17 09:45
500-135122-16	W-171003-RA-16	Water	10/03/17 09:10	10/05/17 09:45
500-135122-17	W-171003-RA-17	Water	10/03/17 09:35	10/05/17 09:45
500-135122-18	W-171003-RA-18	Water	10/03/17 09:40	10/05/17 09:45
500-135122-19	W-171003-RA-19	Water	10/03/17 10:00	10/05/17 09:45
500-135122-20	W-171003-RA-20	Water	10/03/17 10:35	10/05/17 09:45
500-135122-21	W-171003-RA-21	Water	10/03/17 11:00	10/05/17 09:45
500-135122-22	W-171003-RA-22	Water	10/03/17 11:00	10/05/17 09:45
500-135122-23	W-171003-RA-23	Water	10/03/17 11:40	10/05/17 09:45
500-135122-24	W-171003-RA-24	Water	10/03/17 11:40	10/05/17 09:45
500-135122-25	W-171003-RA-25	Water	10/03/17 12:00	10/05/17 09:45
500-135122-26	W-171003-RA-26	Water	10/03/17 12:15	10/05/17 09:45
500-135122-27	W-171003-RA-27	Water	10/03/17 12:15	10/05/17 09:45
500-135122-28	W-171003-RA-28	Water	10/03/17 13:20	10/05/17 09:45
500-135122-29	W-171003-RA-29	Water	10/03/17 13:55	10/05/17 09:45
500-135122-30	W-171003-RA-30	Water	10/03/17 14:26	10/05/17 09:45
500-135122-31	W-171003-RA-31	Water	10/03/17 14:54	10/05/17 09:45
500-135122-32	Trip Blank	Water	10/02/17 00:00	10/05/17 09:45

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171002-RA-01
Date Collected: 10/02/17 14:35
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/12/17 13:17	1
Benzene	<0.15		0.50	0.15	ug/L			10/12/17 13:17	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/12/17 13:17	1
Chloroform	<0.37		2.0	0.37	ug/L			10/12/17 13:17	1
cis-1,2-Dichloroethene	**90**		1.0	0.41	ug/L			10/12/17 13:17	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/12/17 13:17	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/12/17 13:17	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/12/17 13:17	1
Tetrachloroethene	**6.7**		1.0	0.37	ug/L			10/12/17 13:17	1
Toluene	<0.15		0.50	0.15	ug/L			10/12/17 13:17	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/12/17 13:17	1
Trichloroethene	**2.0**		0.50	0.16	ug/L			10/12/17 13:17	1
Vinyl chloride	**16**		0.50	0.20	ug/L			10/12/17 13:17	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/12/17 13:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*72 - 124*		*10/12/17 13:17*	*1*
Dibromofluoromethane	*104*		*75 - 120*		*10/12/17 13:17*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 126*		*10/12/17 13:17*	*1*
Toluene-d8 (Surr)	*91*		*75 - 120*		*10/12/17 13:17*	*1*

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171002-RA-02
Date Collected: 10/02/17 14:35
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/12/17 13:47	1
Benzene	<0.15		0.50	0.15	ug/L			10/12/17 13:47	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/12/17 13:47	1
Chloroform	<0.37		2.0	0.37	ug/L			10/12/17 13:47	1
cis-1,2-Dichloroethene	**95**		1.0	0.41	ug/L			10/12/17 13:47	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/12/17 13:47	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/12/17 13:47	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/12/17 13:47	1
Tetrachloroethene	**7.6**		1.0	0.37	ug/L			10/12/17 13:47	1
Toluene	<0.15		0.50	0.15	ug/L			10/12/17 13:47	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/12/17 13:47	1
Trichloroethene	**2.1**		0.50	0.16	ug/L			10/12/17 13:47	1
Vinyl chloride	**17**		0.50	0.20	ug/L			10/12/17 13:47	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/12/17 13:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*72 - 124*		*10/12/17 13:47*	*1*
Dibromofluoromethane	*102*		*75 - 120*		*10/12/17 13:47*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 126*		*10/12/17 13:47*	*1*
Toluene-d8 (Surr)	*90*		*75 - 120*		*10/12/17 13:47*	*1*

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171002-RA-03
Date Collected: 10/02/17 14:40
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-3
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/12/17 14:16	1
Benzene	<0.15		0.50	0.15	ug/L			10/12/17 14:16	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/12/17 14:16	1
Chloroform	<0.37		2.0	0.37	ug/L			10/12/17 14:16	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			10/12/17 14:16	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/12/17 14:16	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/12/17 14:16	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/12/17 14:16	1
Tetrachloroethene	**13**		1.0	0.37	ug/L			10/12/17 14:16	1
Toluene	<0.15		0.50	0.15	ug/L			10/12/17 14:16	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/12/17 14:16	1
Trichloroethene	**0.40**	**J**	0.50	0.16	ug/L			10/12/17 14:16	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			10/12/17 14:16	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/12/17 14:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*72 - 124*		*10/12/17 14:16*	*1*
Dibromofluoromethane	*107*		*75 - 120*		*10/12/17 14:16*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 126*		*10/12/17 14:16*	*1*
Toluene-d8 (Surr)	*90*		*75 - 120*		*10/12/17 14:16*	*1*

Client Sample ID: W-171002-RA-04
Date Collected: 10/02/17 14:40
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-4
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/12/17 14:46	1
Benzene	<0.15		0.50	0.15	ug/L			10/12/17 14:46	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/12/17 14:46	1
Chloroform	<0.37		2.0	0.37	ug/L			10/12/17 14:46	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			10/12/17 14:46	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/12/17 14:46	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/12/17 14:46	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/12/17 14:46	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/12/17 14:46	1
Toluene	<0.15		0.50	0.15	ug/L			10/12/17 14:46	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/12/17 14:46	1
Trichloroethene	<0.16		0.50	0.16	ug/L			10/12/17 14:46	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			10/12/17 14:46	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/12/17 14:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*72 - 124*		*10/12/17 14:46*	*1*
Dibromofluoromethane	*105*		*75 - 120*		*10/12/17 14:46*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 126*		*10/12/17 14:46*	*1*
Toluene-d8 (Surr)	*89*		*75 - 120*		*10/12/17 14:46*	*1*

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171002-RA-05
Date Collected: 10/02/17 14:35
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-5
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/12/17 15:16	1
Benzene	<0.15		0.50	0.15	ug/L			10/12/17 15:16	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/12/17 15:16	1
Chloroform	<0.37		2.0	0.37	ug/L			10/12/17 15:16	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			10/12/17 15:16	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/12/17 15:16	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/12/17 15:16	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/12/17 15:16	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/12/17 15:16	1
Toluene	<0.15		0.50	0.15	ug/L			10/12/17 15:16	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/12/17 15:16	1
Trichloroethene	<0.16		0.50	0.16	ug/L			10/12/17 15:16	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			10/12/17 15:16	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/12/17 15:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*72 - 124*		*10/12/17 15:16*	*1*
Dibromofluoromethane	*107*		*75 - 120*		*10/12/17 15:16*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 126*		*10/12/17 15:16*	*1*
Toluene-d8 (Surr)	*91*		*75 - 120*		*10/12/17 15:16*	*1*

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171002-RA-06
Date Collected: 10/02/17 15:43
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-6
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/12/17 15:45	1
Benzene	<0.15		0.50	0.15	ug/L			10/12/17 15:45	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/12/17 15:45	1
Chloroform	<0.37		2.0	0.37	ug/L			10/12/17 15:45	1
cis-1,2-Dichloroethene	**7.9**		1.0	0.41	ug/L			10/12/17 15:45	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/12/17 15:45	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/12/17 15:45	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/12/17 15:45	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/12/17 15:45	1
Toluene	<0.15		0.50	0.15	ug/L			10/12/17 15:45	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/12/17 15:45	1
Trichloroethene	**0.36**	**J**	0.50	0.16	ug/L			10/12/17 15:45	1
Vinyl chloride	**0.28**	**J**	0.50	0.20	ug/L			10/12/17 15:45	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/12/17 15:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*72 - 124*		*10/12/17 15:45*	*1*
Dibromofluoromethane	*106*		*75 - 120*		*10/12/17 15:45*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 126*		*10/12/17 15:45*	*1*
Toluene-d8 (Surr)	*90*		*75 - 120*		*10/12/17 15:45*	*1*

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171002-RA-07
Date Collected: 10/02/17 16:00
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-7
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/12/17 16:15	1
Benzene	<0.15		0.50	0.15	ug/L			10/12/17 16:15	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/12/17 16:15	1
Chloroform	<0.37		2.0	0.37	ug/L			10/12/17 16:15	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			10/12/17 16:15	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/12/17 16:15	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/12/17 16:15	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/12/17 16:15	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/12/17 16:15	1
Toluene	<0.15		0.50	0.15	ug/L			10/12/17 16:15	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/12/17 16:15	1
Trichloroethene	<0.16		0.50	0.16	ug/L			10/12/17 16:15	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			10/12/17 16:15	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/12/17 16:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*72 - 124*		*10/12/17 16:15*	*1*
Dibromofluoromethane	*106*		*75 - 120*		*10/12/17 16:15*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 126*		*10/12/17 16:15*	*1*
Toluene-d8 (Surr)	*90*		*75 - 120*		*10/12/17 16:15*	*1*

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171002-RA-08
Date Collected: 10/02/17 14:20
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-8
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/12/17 16:44	1
Benzene	<0.15		0.50	0.15	ug/L			10/12/17 16:44	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/12/17 16:44	1
Chloroform	<0.37		2.0	0.37	ug/L			10/12/17 16:44	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			10/12/17 16:44	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/12/17 16:44	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/12/17 16:44	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/12/17 16:44	1
Tetrachloroethene	**21**		1.0	0.37	ug/L			10/12/17 16:44	1
Toluene	<0.15		0.50	0.15	ug/L			10/12/17 16:44	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/12/17 16:44	1
Trichloroethene	**0.85**		0.50	0.16	ug/L			10/12/17 16:44	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			10/12/17 16:44	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/12/17 16:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*72 - 124*		*10/12/17 16:44*	*1*
Dibromofluoromethane	*105*		*75 - 120*		*10/12/17 16:44*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 126*		*10/12/17 16:44*	*1*
Toluene-d8 (Surr)	*90*		*75 - 120*		*10/12/17 16:44*	*1*

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171002-RA-09
Date Collected: 10/02/17 16:50
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-9
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/12/17 17:14	1
Benzene	<0.15		0.50	0.15	ug/L			10/12/17 17:14	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/12/17 17:14	1
Chloroform	<0.37		2.0	0.37	ug/L			10/12/17 17:14	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			10/12/17 17:14	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/12/17 17:14	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/12/17 17:14	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/12/17 17:14	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/12/17 17:14	1
Toluene	<0.15		0.50	0.15	ug/L			10/12/17 17:14	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/12/17 17:14	1
Trichloroethene	<0.16		0.50	0.16	ug/L			10/12/17 17:14	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			10/12/17 17:14	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/12/17 17:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*72 - 124*		*10/12/17 17:14*	*1*
Dibromofluoromethane	*107*		*75 - 120*		*10/12/17 17:14*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 126*		*10/12/17 17:14*	*1*
Toluene-d8 (Surr)	*90*		*75 - 120*		*10/12/17 17:14*	*1*

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171002-RA-10
Date Collected: 10/02/17 17:10
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-10
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/12/17 17:44	1
Benzene	<0.15		0.50	0.15	ug/L			10/12/17 17:44	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/12/17 17:44	1
Chloroform	<0.37		2.0	0.37	ug/L			10/12/17 17:44	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			10/12/17 17:44	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/12/17 17:44	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/12/17 17:44	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/12/17 17:44	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/12/17 17:44	1
Toluene	<0.15		0.50	0.15	ug/L			10/12/17 17:44	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/12/17 17:44	1
Trichloroethene	**3.7**		0.50	0.16	ug/L			10/12/17 17:44	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			10/12/17 17:44	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/12/17 17:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*72 - 124*		*10/12/17 17:44*	*1*
Dibromofluoromethane	*107*		*75 - 120*		*10/12/17 17:44*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 126*		*10/12/17 17:44*	*1*
Toluene-d8 (Surr)	*89*		*75 - 120*		*10/12/17 17:44*	*1*

Client Sample ID: W-171002-RA-11
Date Collected: 10/02/17 17:21
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-11
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/12/17 18:13	1
Benzene	<0.15		0.50	0.15	ug/L			10/12/17 18:13	1
Carbon tetrachloride	**150**		1.0	0.38	ug/L			10/12/17 18:13	1
Chloroform	**66**		2.0	0.37	ug/L			10/12/17 18:13	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			10/12/17 18:13	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/12/17 18:13	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/12/17 18:13	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/12/17 18:13	1
Tetrachloroethene	**0.53**	**J**	1.0	0.37	ug/L			10/12/17 18:13	1
Toluene	<0.15		0.50	0.15	ug/L			10/12/17 18:13	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/12/17 18:13	1
Trichloroethene	**3.1**		0.50	0.16	ug/L			10/12/17 18:13	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			10/12/17 18:13	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/12/17 18:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*72 - 124*		*10/12/17 18:13*	*1*
Dibromofluoromethane	*106*		*75 - 120*		*10/12/17 18:13*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 126*		*10/12/17 18:13*	*1*
Toluene-d8 (Surr)	*89*		*75 - 120*		*10/12/17 18:13*	*1*

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171002-RA-12
Date Collected: 10/02/17 17:47
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-12
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/12/17 19:12	1
Benzene	<0.15		0.50	0.15	ug/L			10/12/17 19:12	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/12/17 19:12	1
Chloroform	<0.37		2.0	0.37	ug/L			10/12/17 19:12	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			10/12/17 19:12	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/12/17 19:12	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/12/17 19:12	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/12/17 19:12	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/12/17 19:12	1
Toluene	<0.15		0.50	0.15	ug/L			10/12/17 19:12	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/12/17 19:12	1
Trichloroethene	**74**		0.50	0.16	ug/L			10/12/17 19:12	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			10/12/17 19:12	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/12/17 19:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*72 - 124*		*10/12/17 19:12*	*1*
Dibromofluoromethane	*106*		*75 - 120*		*10/12/17 19:12*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 126*		*10/12/17 19:12*	*1*
Toluene-d8 (Surr)	*90*		*75 - 120*		*10/12/17 19:12*	*1*

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171002-RA-13
Date Collected: 10/02/17 18:09
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-13
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/12/17 19:42	1
Benzene	<0.15		0.50	0.15	ug/L			10/12/17 19:42	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/12/17 19:42	1
Chloroform	<0.37		2.0	0.37	ug/L			10/12/17 19:42	1
cis-1,2-Dichloroethene	**1.4**		1.0	0.41	ug/L			10/12/17 19:42	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/12/17 19:42	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/12/17 19:42	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/12/17 19:42	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/12/17 19:42	1
Toluene	<0.15		0.50	0.15	ug/L			10/12/17 19:42	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/12/17 19:42	1
Trichloroethene	**6.6**		0.50	0.16	ug/L			10/12/17 19:42	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			10/12/17 19:42	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/12/17 19:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*72 - 124*		*10/12/17 19:42*	*1*
Dibromofluoromethane	*109*		*75 - 120*		*10/12/17 19:42*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 126*		*10/12/17 19:42*	*1*
Toluene-d8 (Surr)	*90*		*75 - 120*		*10/12/17 19:42*	*1*

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171003-RA-14
Date Collected: 10/03/17 08:20
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-14
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/12/17 20:11	1
Benzene	<0.15		0.50	0.15	ug/L			10/12/17 20:11	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/12/17 20:11	1
Chloroform	<0.37		2.0	0.37	ug/L			10/12/17 20:11	1
cis-1,2-Dichloroethene	**1.8**		1.0	0.41	ug/L			10/12/17 20:11	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/12/17 20:11	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/12/17 20:11	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/12/17 20:11	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/12/17 20:11	1
Toluene	<0.15		0.50	0.15	ug/L			10/12/17 20:11	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/12/17 20:11	1
Trichloroethene	<0.16		0.50	0.16	ug/L			10/12/17 20:11	1
Vinyl chloride	**1.6**		0.50	0.20	ug/L			10/12/17 20:11	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/12/17 20:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*72 - 124*		*10/12/17 20:11*	*1*
Dibromofluoromethane	*108*		*75 - 120*		*10/12/17 20:11*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 126*		*10/12/17 20:11*	*1*
Toluene-d8 (Surr)	*90*		*75 - 120*		*10/12/17 20:11*	*1*

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171003-RA-15
Date Collected: 10/03/17 08:45
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-15
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/12/17 20:41	1
Benzene	<0.15		0.50	0.15	ug/L			10/12/17 20:41	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/12/17 20:41	1
Chloroform	<0.37		2.0	0.37	ug/L			10/12/17 20:41	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			10/12/17 20:41	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/12/17 20:41	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/12/17 20:41	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/12/17 20:41	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/12/17 20:41	1
Toluene	<0.15		0.50	0.15	ug/L			10/12/17 20:41	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/12/17 20:41	1
Trichloroethene	**3.0**		0.50	0.16	ug/L			10/12/17 20:41	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			10/12/17 20:41	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/12/17 20:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*72 - 124*		*10/12/17 20:41*	*1*
Dibromofluoromethane	*109*		*75 - 120*		*10/12/17 20:41*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 126*		*10/12/17 20:41*	*1*
Toluene-d8 (Surr)	*89*		*75 - 120*		*10/12/17 20:41*	*1*

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171003-RA-16
Date Collected: 10/03/17 09:10
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-16
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/12/17 21:11	1
Benzene	<0.15		0.50	0.15	ug/L			10/12/17 21:11	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/12/17 21:11	1
Chloroform	<0.37		2.0	0.37	ug/L			10/12/17 21:11	1
cis-1,2-Dichloroethene	**0.74**	**J**	1.0	0.41	ug/L			10/12/17 21:11	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/12/17 21:11	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/12/17 21:11	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/12/17 21:11	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/12/17 21:11	1
Toluene	<0.15		0.50	0.15	ug/L			10/12/17 21:11	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/12/17 21:11	1
Trichloroethene	**1.5**		0.50	0.16	ug/L			10/12/17 21:11	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			10/12/17 21:11	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/12/17 21:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*72 - 124*		*10/12/17 21:11*	*1*
Dibromofluoromethane	*109*		*75 - 120*		*10/12/17 21:11*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 126*		*10/12/17 21:11*	*1*
Toluene-d8 (Surr)	*90*		*75 - 120*		*10/12/17 21:11*	*1*

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171003-RA-17
Date Collected: 10/03/17 09:35
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-17
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/13/17 19:41	1
Benzene	<0.15		0.50	0.15	ug/L			10/13/17 19:41	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/13/17 19:41	1
Chloroform	<0.37		2.0	0.37	ug/L			10/13/17 19:41	1
cis-1,2-Dichloroethene	**0.59**	**J**	1.0	0.41	ug/L			10/13/17 19:41	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/13/17 19:41	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/13/17 19:41	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/13/17 19:41	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/13/17 19:41	1
Toluene	<0.15		0.50	0.15	ug/L			10/13/17 19:41	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/13/17 19:41	1
Trichloroethene	**5.8**		0.50	0.16	ug/L			10/13/17 19:41	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			10/13/17 19:41	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/13/17 19:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*72 - 124*		*10/13/17 19:41*	*1*
Dibromofluoromethane	*109*		*75 - 120*		*10/13/17 19:41*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 126*		*10/13/17 19:41*	*1*
Toluene-d8 (Surr)	*90*		*75 - 120*		*10/13/17 19:41*	*1*

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171003-RA-18
Date Collected: 10/03/17 09:40
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-18
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/13/17 20:11	1
Benzene	<0.15		0.50	0.15	ug/L			10/13/17 20:11	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/13/17 20:11	1
Chloroform	<0.37		2.0	0.37	ug/L			10/13/17 20:11	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			10/13/17 20:11	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/13/17 20:11	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/13/17 20:11	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/13/17 20:11	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/13/17 20:11	1
Toluene	<0.15		0.50	0.15	ug/L			10/13/17 20:11	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/13/17 20:11	1
Trichloroethene	<0.16		0.50	0.16	ug/L			10/13/17 20:11	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			10/13/17 20:11	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/13/17 20:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*72 - 124*		*10/13/17 20:11*	*1*
Dibromofluoromethane	*109*		*75 - 120*		*10/13/17 20:11*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 126*		*10/13/17 20:11*	*1*
Toluene-d8 (Surr)	*90*		*75 - 120*		*10/13/17 20:11*	*1*

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171003-RA-19
Date Collected: 10/03/17 10:00
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-19
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/16/17 10:57	1
Benzene	<0.15		0.50	0.15	ug/L			10/16/17 10:57	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/16/17 10:57	1
Chloroform	<0.37		2.0	0.37	ug/L			10/16/17 10:57	1
cis-1,2-Dichloroethene	**2.2**		1.0	0.41	ug/L			10/16/17 10:57	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/16/17 10:57	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/16/17 10:57	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/16/17 10:57	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/16/17 10:57	1
Toluene	<0.15		0.50	0.15	ug/L			10/16/17 10:57	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/16/17 10:57	1
Trichloroethene	**14**		0.50	0.16	ug/L			10/16/17 10:57	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			10/16/17 10:57	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/16/17 10:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*72 - 124*		*10/16/17 10:57*	*1*
Dibromofluoromethane	*105*		*75 - 120*		*10/16/17 10:57*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 126*		*10/16/17 10:57*	*1*
Toluene-d8 (Surr)	*92*		*75 - 120*		*10/16/17 10:57*	*1*

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171003-RA-20
Date Collected: 10/03/17 10:35
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-20
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/16/17 11:27	1
Benzene	<0.15		0.50	0.15	ug/L			10/16/17 11:27	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/16/17 11:27	1
Chloroform	<0.37		2.0	0.37	ug/L			10/16/17 11:27	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			10/16/17 11:27	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/16/17 11:27	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/16/17 11:27	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/16/17 11:27	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/16/17 11:27	1
Toluene	<0.15		0.50	0.15	ug/L			10/16/17 11:27	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/16/17 11:27	1
Trichloroethene	<0.16		0.50	0.16	ug/L			10/16/17 11:27	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			10/16/17 11:27	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/16/17 11:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*72 - 124*		*10/16/17 11:27*	*1*
Dibromofluoromethane	*105*		*75 - 120*		*10/16/17 11:27*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 126*		*10/16/17 11:27*	*1*
Toluene-d8 (Surr)	*91*		*75 - 120*		*10/16/17 11:27*	*1*

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171003-RA-21
Date Collected: 10/03/17 11:00
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-21
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/16/17 11:56	1
Benzene	<0.15		0.50	0.15	ug/L			10/16/17 11:56	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/16/17 11:56	1
Chloroform	<0.37		2.0	0.37	ug/L			10/16/17 11:56	1
cis-1,2-Dichloroethene	**5.6**		1.0	0.41	ug/L			10/16/17 11:56	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/16/17 11:56	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/16/17 11:56	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/16/17 11:56	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/16/17 11:56	1
Toluene	<0.15		0.50	0.15	ug/L			10/16/17 11:56	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/16/17 11:56	1
Trichloroethene	**7.3**		0.50	0.16	ug/L			10/16/17 11:56	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			10/16/17 11:56	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/16/17 11:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*72 - 124*		*10/16/17 11:56*	*1*
Dibromofluoromethane	*108*		*75 - 120*		*10/16/17 11:56*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*75 - 126*		*10/16/17 11:56*	*1*
Toluene-d8 (Surr)	*91*		*75 - 120*		*10/16/17 11:56*	*1*

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171003-RA-22
Date Collected: 10/03/17 11:00
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-22
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/16/17 12:26	1
Benzene	<0.15		0.50	0.15	ug/L			10/16/17 12:26	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/16/17 12:26	1
Chloroform	<0.37		2.0	0.37	ug/L			10/16/17 12:26	1
cis-1,2-Dichloroethene	**5.7**		1.0	0.41	ug/L			10/16/17 12:26	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/16/17 12:26	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/16/17 12:26	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/16/17 12:26	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/16/17 12:26	1
Toluene	<0.15		0.50	0.15	ug/L			10/16/17 12:26	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/16/17 12:26	1
Trichloroethene	**7.3**		0.50	0.16	ug/L			10/16/17 12:26	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			10/16/17 12:26	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/16/17 12:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*72 - 124*		*10/16/17 12:26*	*1*
Dibromofluoromethane	*107*		*75 - 120*		*10/16/17 12:26*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 126*		*10/16/17 12:26*	*1*
Toluene-d8 (Surr)	*91*		*75 - 120*		*10/16/17 12:26*	*1*

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171003-RA-23
Date Collected: 10/03/17 11:40
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-23
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/16/17 12:56	1
Benzene	<0.15		0.50	0.15	ug/L			10/16/17 12:56	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/16/17 12:56	1
Chloroform	<0.37		2.0	0.37	ug/L			10/16/17 12:56	1
cis-1,2-Dichloroethene	**1.7**		1.0	0.41	ug/L			10/16/17 12:56	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/16/17 12:56	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/16/17 12:56	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/16/17 12:56	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/16/17 12:56	1
Toluene	<0.15		0.50	0.15	ug/L			10/16/17 12:56	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/16/17 12:56	1
Trichloroethene	**15**		0.50	0.16	ug/L			10/16/17 12:56	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			10/16/17 12:56	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/16/17 12:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*72 - 124*		*10/16/17 12:56*	*1*
Dibromofluoromethane	*108*		*75 - 120*		*10/16/17 12:56*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*75 - 126*		*10/16/17 12:56*	*1*
Toluene-d8 (Surr)	*91*		*75 - 120*		*10/16/17 12:56*	*1*

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171003-RA-24
Date Collected: 10/03/17 11:40
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-24
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/16/17 13:25	1
Benzene	<0.15		0.50	0.15	ug/L			10/16/17 13:25	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/16/17 13:25	1
Chloroform	<0.37		2.0	0.37	ug/L			10/16/17 13:25	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			10/16/17 13:25	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/16/17 13:25	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/16/17 13:25	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/16/17 13:25	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/16/17 13:25	1
Toluene	<0.15		0.50	0.15	ug/L			10/16/17 13:25	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/16/17 13:25	1
Trichloroethene	<0.16		0.50	0.16	ug/L			10/16/17 13:25	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			10/16/17 13:25	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/16/17 13:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*72 - 124*		*10/16/17 13:25*	*1*
Dibromofluoromethane	*107*		*75 - 120*		*10/16/17 13:25*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 126*		*10/16/17 13:25*	*1*
Toluene-d8 (Surr)	*90*		*75 - 120*		*10/16/17 13:25*	*1*

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171003-RA-25
Date Collected: 10/03/17 12:00
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-25
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/16/17 13:55	1
Benzene	<0.15		0.50	0.15	ug/L			10/16/17 13:55	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/16/17 13:55	1
Chloroform	<0.37		2.0	0.37	ug/L			10/16/17 13:55	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			10/16/17 13:55	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/16/17 13:55	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/16/17 13:55	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/16/17 13:55	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/16/17 13:55	1
Toluene	<0.15		0.50	0.15	ug/L			10/16/17 13:55	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/16/17 13:55	1
Trichloroethene	<0.16		0.50	0.16	ug/L			10/16/17 13:55	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			10/16/17 13:55	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/16/17 13:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*72 - 124*		*10/16/17 13:55*	*1*
Dibromofluoromethane	*108*		*75 - 120*		*10/16/17 13:55*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 126*		*10/16/17 13:55*	*1*
Toluene-d8 (Surr)	*90*		*75 - 120*		*10/16/17 13:55*	*1*

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171003-RA-26
Date Collected: 10/03/17 12:15
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-26
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/16/17 14:24	1
Benzene	<0.15		0.50	0.15	ug/L			10/16/17 14:24	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/16/17 14:24	1
Chloroform	<0.37		2.0	0.37	ug/L			10/16/17 14:24	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			10/16/17 14:24	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/16/17 14:24	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/16/17 14:24	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/16/17 14:24	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/16/17 14:24	1
Toluene	<0.15		0.50	0.15	ug/L			10/16/17 14:24	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/16/17 14:24	1
Trichloroethene	<0.16		0.50	0.16	ug/L			10/16/17 14:24	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			10/16/17 14:24	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/16/17 14:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*72 - 124*		*10/16/17 14:24*	*1*
Dibromofluoromethane	*107*		*75 - 120*		*10/16/17 14:24*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 126*		*10/16/17 14:24*	*1*
Toluene-d8 (Surr)	*92*		*75 - 120*		*10/16/17 14:24*	*1*

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171003-RA-27
Date Collected: 10/03/17 12:15
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-27
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/16/17 14:54	1
Benzene	<0.15		0.50	0.15	ug/L			10/16/17 14:54	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/16/17 14:54	1
Chloroform	<0.37		2.0	0.37	ug/L			10/16/17 14:54	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			10/16/17 14:54	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/16/17 14:54	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/16/17 14:54	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/16/17 14:54	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/16/17 14:54	1
Toluene	<0.15		0.50	0.15	ug/L			10/16/17 14:54	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/16/17 14:54	1
Trichloroethene	<0.16		0.50	0.16	ug/L			10/16/17 14:54	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			10/16/17 14:54	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/16/17 14:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*72 - 124*		*10/16/17 14:54*	*1*
Dibromofluoromethane	*107*		*75 - 120*		*10/16/17 14:54*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 126*		*10/16/17 14:54*	*1*
Toluene-d8 (Surr)	*91*		*75 - 120*		*10/16/17 14:54*	*1*

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171003-RA-28
Date Collected: 10/03/17 13:20
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-28
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/16/17 15:23	1
Benzene	<0.15		0.50	0.15	ug/L			10/16/17 15:23	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/16/17 15:23	1
Chloroform	<0.37		2.0	0.37	ug/L			10/16/17 15:23	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			10/16/17 15:23	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/16/17 15:23	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/16/17 15:23	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/16/17 15:23	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/16/17 15:23	1
Toluene	<0.15		0.50	0.15	ug/L			10/16/17 15:23	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/16/17 15:23	1
Trichloroethene	**1.5**		0.50	0.16	ug/L			10/16/17 15:23	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			10/16/17 15:23	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/16/17 15:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*72 - 124*		*10/16/17 15:23*	*1*
Dibromofluoromethane	*107*		*75 - 120*		*10/16/17 15:23*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*75 - 126*		*10/16/17 15:23*	*1*
Toluene-d8 (Surr)	*92*		*75 - 120*		*10/16/17 15:23*	*1*

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171003-RA-29
Date Collected: 10/03/17 13:55
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-29
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/16/17 15:53	1
Benzene	<0.15		0.50	0.15	ug/L			10/16/17 15:53	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/16/17 15:53	1
Chloroform	<0.37		2.0	0.37	ug/L			10/16/17 15:53	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			10/16/17 15:53	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/16/17 15:53	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/16/17 15:53	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/16/17 15:53	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/16/17 15:53	1
Toluene	<0.15		0.50	0.15	ug/L			10/16/17 15:53	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/16/17 15:53	1
Trichloroethene	**2.2**		0.50	0.16	ug/L			10/16/17 15:53	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			10/16/17 15:53	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/16/17 15:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*72 - 124*		*10/16/17 15:53*	*1*
Dibromofluoromethane	*109*		*75 - 120*		*10/16/17 15:53*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*75 - 126*		*10/16/17 15:53*	*1*
Toluene-d8 (Surr)	*90*		*75 - 120*		*10/16/17 15:53*	*1*

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171003-RA-30
Date Collected: 10/03/17 14:26
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-30
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/16/17 17:22	1
Benzene	<0.15		0.50	0.15	ug/L			10/16/17 17:22	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/16/17 17:22	1
Chloroform	<0.37		2.0	0.37	ug/L			10/16/17 17:22	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			10/16/17 17:22	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/16/17 17:22	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/16/17 17:22	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/16/17 17:22	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/16/17 17:22	1
Toluene	<0.15		0.50	0.15	ug/L			10/16/17 17:22	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/16/17 17:22	1
Trichloroethene	**10**		0.50	0.16	ug/L			10/16/17 17:22	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			10/16/17 17:22	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/16/17 17:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*72 - 124*		*10/16/17 17:22*	*1*
Dibromofluoromethane	*107*		*75 - 120*		*10/16/17 17:22*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*75 - 126*		*10/16/17 17:22*	*1*
Toluene-d8 (Surr)	*90*		*75 - 120*		*10/16/17 17:22*	*1*

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171003-RA-31
Date Collected: 10/03/17 14:54
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-31
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/16/17 17:51	1
Benzene	<0.15		0.50	0.15	ug/L			10/16/17 17:51	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/16/17 17:51	1
Chloroform	<0.37		2.0	0.37	ug/L			10/16/17 17:51	1
cis-1,2-Dichloroethene	**53**		1.0	0.41	ug/L			10/16/17 17:51	1
1,1-Dichloroethene	**0.55**	**J**	1.0	0.39	ug/L			10/16/17 17:51	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/16/17 17:51	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/16/17 17:51	1
Tetrachloroethene	**12**		1.0	0.37	ug/L			10/16/17 17:51	1
Toluene	<0.15		0.50	0.15	ug/L			10/16/17 17:51	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/16/17 17:51	1
Trichloroethene	**4.6**		0.50	0.16	ug/L			10/16/17 17:51	1
Vinyl chloride	**7.9**		0.50	0.20	ug/L			10/16/17 17:51	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/16/17 17:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*72 - 124*		*10/16/17 17:51*	*1*
Dibromofluoromethane	*106*		*75 - 120*		*10/16/17 17:51*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*75 - 126*		*10/16/17 17:51*	*1*
Toluene-d8 (Surr)	*91*		*75 - 120*		*10/16/17 17:51*	*1*

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: Trip Blank
Date Collected: 10/02/17 00:00
Date Received: 10/05/17 09:45

Lab Sample ID: 500-135122-32
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/13/17 13:16	1
Benzene	<0.15		0.50	0.15	ug/L			10/13/17 13:16	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/13/17 13:16	1
Chloroform	<0.37		2.0	0.37	ug/L			10/13/17 13:16	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			10/13/17 13:16	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/13/17 13:16	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/13/17 13:16	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/13/17 13:16	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/13/17 13:16	1
Toluene	<0.15		0.50	0.15	ug/L			10/13/17 13:16	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/13/17 13:16	1
Trichloroethene	<0.16		0.50	0.16	ug/L			10/13/17 13:16	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			10/13/17 13:16	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/13/17 13:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*72 - 124*		*10/13/17 13:16*	*1*
Dibromofluoromethane	*107*		*75 - 120*		*10/13/17 13:16*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 126*		*10/13/17 13:16*	*1*
Toluene-d8 (Surr)	*90*		*75 - 120*		*10/13/17 13:16*	*1*

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Reported value was between the limit of detection and the limit of quantitation.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

GC/MS VOA

Analysis Batch: 405038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-135122-1	W-171002-RA-01	Total/NA	Water	8260B	
500-135122-2	W-171002-RA-02	Total/NA	Water	8260B	
500-135122-3	W-171002-RA-03	Total/NA	Water	8260B	
500-135122-4	W-171002-RA-04	Total/NA	Water	8260B	
500-135122-5	W-171002-RA-05	Total/NA	Water	8260B	
500-135122-6	W-171002-RA-06	Total/NA	Water	8260B	
500-135122-7	W-171002-RA-07	Total/NA	Water	8260B	
500-135122-8	W-171002-RA-08	Total/NA	Water	8260B	
500-135122-9	W-171002-RA-09	Total/NA	Water	8260B	
500-135122-10	W-171002-RA-10	Total/NA	Water	8260B	
500-135122-11	W-171002-RA-11	Total/NA	Water	8260B	
500-135122-12	W-171002-RA-12	Total/NA	Water	8260B	
500-135122-13	W-171002-RA-13	Total/NA	Water	8260B	
500-135122-14	W-171003-RA-14	Total/NA	Water	8260B	
500-135122-15	W-171003-RA-15	Total/NA	Water	8260B	
500-135122-16	W-171003-RA-16	Total/NA	Water	8260B	
MB 500-405038/6	Method Blank	Total/NA	Water	8260B	
LCS 500-405038/4	Lab Control Sample	Total/NA	Water	8260B	
500-135122-16 MS	W-171003-RA-16	Total/NA	Water	8260B	
500-135122-16 MSD	W-171003-RA-16	Total/NA	Water	8260B	

Analysis Batch: 405191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-135122-17	W-171003-RA-17	Total/NA	Water	8260B	
500-135122-18	W-171003-RA-18	Total/NA	Water	8260B	
500-135122-32	Trip Blank	Total/NA	Water	8260B	
MB 500-405191/9	Method Blank	Total/NA	Water	8260B	
LCS 500-405191/7	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 405437

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-135122-19	W-171003-RA-19	Total/NA	Water	8260B	
500-135122-20	W-171003-RA-20	Total/NA	Water	8260B	
500-135122-21	W-171003-RA-21	Total/NA	Water	8260B	
500-135122-22	W-171003-RA-22	Total/NA	Water	8260B	
500-135122-23	W-171003-RA-23	Total/NA	Water	8260B	
500-135122-24	W-171003-RA-24	Total/NA	Water	8260B	
500-135122-25	W-171003-RA-25	Total/NA	Water	8260B	
500-135122-26	W-171003-RA-26	Total/NA	Water	8260B	
500-135122-27	W-171003-RA-27	Total/NA	Water	8260B	
500-135122-28	W-171003-RA-28	Total/NA	Water	8260B	
500-135122-29	W-171003-RA-29	Total/NA	Water	8260B	
500-135122-30	W-171003-RA-30	Total/NA	Water	8260B	
500-135122-31	W-171003-RA-31	Total/NA	Water	8260B	
MB 500-405437/6	Method Blank	Total/NA	Water	8260B	
LCS 500-405437/4	Lab Control Sample	Total/NA	Water	8260B	
500-135122-25 MS	W-171003-RA-25	Total/NA	Water	8260B	
500-135122-25 MSD	W-171003-RA-25	Total/NA	Water	8260B	
500-135122-28 MS	W-171003-RA-28	Total/NA	Water	8260B	
500-135122-28 MSD	W-171003-RA-28	Total/NA	Water	8260B	

Surrogate Summary

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	12DCE	TOL
Lab Sample ID	Client Sample ID	(72-124)	(75-120)	(75-126)	(75-120)
500-135122-1	W-171002-RA-01	90	104	97	91
500-135122-2	W-171002-RA-02	91	102	97	90
500-135122-3	W-171002-RA-03	89	107	97	90
500-135122-4	W-171002-RA-04	88	105	97	89
500-135122-5	W-171002-RA-05	90	107	97	91
500-135122-6	W-171002-RA-06	90	106	98	90
500-135122-7	W-171002-RA-07	93	106	99	90
500-135122-8	W-171002-RA-08	90	105	98	90
500-135122-9	W-171002-RA-09	90	107	98	90
500-135122-10	W-171002-RA-10	91	107	98	89
500-135122-11	W-171002-RA-11	88	106	99	89
500-135122-12	W-171002-RA-12	91	106	100	90
500-135122-13	W-171002-RA-13	90	109	100	90
500-135122-14	W-171003-RA-14	90	108	100	90
500-135122-15	W-171003-RA-15	93	109	100	89
500-135122-16	W-171003-RA-16	89	109	102	90
500-135122-16 MS	W-171003-RA-16	90	99	93	92
500-135122-16 MSD	W-171003-RA-16	92	101	92	92
500-135122-17	W-171003-RA-17	89	109	100	90
500-135122-18	W-171003-RA-18	91	109	99	90
500-135122-19	W-171003-RA-19	90	105	94	92
500-135122-20	W-171003-RA-20	88	105	94	91
500-135122-21	W-171003-RA-21	89	108	96	91
500-135122-22	W-171003-RA-22	92	107	97	91
500-135122-23	W-171003-RA-23	90	108	96	91
500-135122-24	W-171003-RA-24	91	107	94	90
500-135122-25	W-171003-RA-25	89	108	97	90
500-135122-25 MS	W-171003-RA-25	89	102	92	93
500-135122-25 MSD	W-171003-RA-25	89	102	93	93
500-135122-26	W-171003-RA-26	91	107	97	92
500-135122-27	W-171003-RA-27	92	107	98	91
500-135122-28	W-171003-RA-28	90	107	95	92
500-135122-28 MS	W-171003-RA-28	91	100	91	93
500-135122-28 MSD	W-171003-RA-28	92	104	91	93
500-135122-29	W-171003-RA-29	91	109	96	90
500-135122-30	W-171003-RA-30	91	107	95	90
500-135122-31	W-171003-RA-31	91	106	96	91
500-135122-32	Trip Blank	92	107	97	90
LCS 500-405038/4	Lab Control Sample	90	99	92	92
LCS 500-405191/7	Lab Control Sample	89	100	92	93
LCS 500-405437/4	Lab Control Sample	90	100	88	95
MB 500-405038/6	Method Blank	89	105	96	91
MB 500-405191/9	Method Blank	90	107	95	92
MB 500-405437/6	Method Blank	91	103	91	93

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
12DCE = 1,2-Dichloroethane-d4 (Surr)

Surrogate Summary

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

TOL = Toluene-d8 (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-405038/6
Matrix: Water
Analysis Batch: 405038

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/12/17 12:47	1
Benzene	<0.15		0.50	0.15	ug/L			10/12/17 12:47	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/12/17 12:47	1
Chloroform	<0.37		2.0	0.37	ug/L			10/12/17 12:47	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			10/12/17 12:47	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/12/17 12:47	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/12/17 12:47	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/12/17 12:47	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/12/17 12:47	1
Toluene	<0.15		0.50	0.15	ug/L			10/12/17 12:47	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/12/17 12:47	1
Trichloroethene	<0.16		0.50	0.16	ug/L			10/12/17 12:47	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			10/12/17 12:47	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/12/17 12:47	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*72 - 124*		*10/12/17 12:47*	*1*
Dibromofluoromethane	*105*		*75 - 120*		*10/12/17 12:47*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*75 - 126*		*10/12/17 12:47*	*1*
Toluene-d8 (Surr)	*91*		*75 - 120*		*10/12/17 12:47*	*1*

Lab Sample ID: LCS 500-405038/4
Matrix: Water
Analysis Batch: 405038

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	35.6		ug/L		71	40 - 143
Benzene	50.0	45.4		ug/L		91	70 - 120
Carbon tetrachloride	50.0	48.6		ug/L		97	65 - 122
Chloroform	50.0	45.6		ug/L		91	70 - 120
cis-1,2-Dichloroethene	50.0	47.1		ug/L		94	70 - 125
1,1-Dichloroethene	50.0	48.3		ug/L		97	67 - 122
Ethylbenzene	50.0	45.8		ug/L		92	70 - 120
Methylene Chloride	50.0	43.9		ug/L		88	69 - 125
Tetrachloroethene	50.0	48.4		ug/L		97	70 - 128
Toluene	50.0	44.2		ug/L		88	70 - 125
1,1,2-Trichloroethane	50.0	48.4		ug/L		97	70 - 122
Trichloroethene	50.0	51.9		ug/L		104	70 - 125
Vinyl chloride	50.0	57.3		ug/L		115	64 - 126
Xylenes, Total	100	88.7		ug/L		89	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*90*		*72 - 124*
Dibromofluoromethane	*99*		*75 - 120*
1,2-Dichloroethane-d4 (Surr)	*92*		*75 - 126*
Toluene-d8 (Surr)	*92*		*75 - 120*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-135122-16 MS
Matrix: Water
Analysis Batch: 405038

Client Sample ID: W-171003-RA-16
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	<1.7		50.0	33.6		ug/L		67	40 - 143
Benzene	<0.15		50.0	46.1		ug/L		92	70 - 120
Carbon tetrachloride	<0.38		50.0	50.0		ug/L		100	65 - 122
Chloroform	<0.37		50.0	47.2		ug/L		94	70 - 120
cis-1,2-Dichloroethene	0.74	J	50.0	49.2		ug/L		97	70 - 125
1,1-Dichloroethene	<0.39		50.0	47.8		ug/L		96	67 - 122
Ethylbenzene	<0.18		50.0	47.4		ug/L		95	70 - 120
Methylene Chloride	<1.6		50.0	44.7		ug/L		89	69 - 125
Tetrachloroethene	<0.37		50.0	49.5		ug/L		99	70 - 128
Toluene	<0.15		50.0	45.1		ug/L		90	70 - 125
1,1,2-Trichloroethane	<0.35		50.0	50.2		ug/L		100	70 - 122
Trichloroethene	1.5		50.0	52.5		ug/L		102	70 - 125
Vinyl chloride	<0.20		50.0	52.8		ug/L		106	64 - 126
Xylenes, Total	<0.22		100	89.9		ug/L		90	70 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*90*		*72 - 124*
Dibromofluoromethane	*99*		*75 - 120*
1,2-Dichloroethane-d4 (Surr)	*93*		*75 - 126*
Toluene-d8 (Surr)	*92*		*75 - 120*

Lab Sample ID: 500-135122-16 MSD
Matrix: Water
Analysis Batch: 405038

Client Sample ID: W-171003-RA-16
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	<1.7		50.0	38.2		ug/L		76	40 - 143	13	20
Benzene	<0.15		50.0	49.8		ug/L		100	70 - 120	8	20
Carbon tetrachloride	<0.38		50.0	53.7		ug/L		107	65 - 122	7	20
Chloroform	<0.37		50.0	51.0		ug/L		102	70 - 120	8	20
cis-1,2-Dichloroethene	0.74	J	50.0	52.8		ug/L		104	70 - 125	7	20
1,1-Dichloroethene	<0.39		50.0	52.1		ug/L		104	67 - 122	9	20
Ethylbenzene	<0.18		50.0	50.1		ug/L		100	70 - 120	6	20
Methylene Chloride	<1.6		50.0	47.3		ug/L		95	69 - 125	6	20
Tetrachloroethene	<0.37		50.0	52.7		ug/L		105	70 - 128	6	20
Toluene	<0.15		50.0	48.0		ug/L		96	70 - 125	6	20
1,1,2-Trichloroethane	<0.35		50.0	52.7		ug/L		105	70 - 122	5	20
Trichloroethene	1.5		50.0	56.5		ug/L		110	70 - 125	7	20
Vinyl chloride	<0.20		50.0	56.2		ug/L		112	64 - 126	6	20
Xylenes, Total	<0.22		100	95.9		ug/L		96	70 - 125	6	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*92*		*72 - 124*
Dibromofluoromethane	*101*		*75 - 120*
1,2-Dichloroethane-d4 (Surr)	*92*		*75 - 126*
Toluene-d8 (Surr)	*92*		*75 - 120*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-405191/9
Matrix: Water
Analysis Batch: 405191

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/13/17 12:17	1
Benzene	<0.15		0.50	0.15	ug/L			10/13/17 12:17	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/13/17 12:17	1
Chloroform	<0.37		2.0	0.37	ug/L			10/13/17 12:17	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			10/13/17 12:17	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/13/17 12:17	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/13/17 12:17	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/13/17 12:17	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/13/17 12:17	1
Toluene	<0.15		0.50	0.15	ug/L			10/13/17 12:17	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/13/17 12:17	1
Trichloroethene	<0.16		0.50	0.16	ug/L			10/13/17 12:17	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			10/13/17 12:17	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/13/17 12:17	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*72 - 124*		*10/13/17 12:17*	*1*
Dibromofluoromethane	*107*		*75 - 120*		*10/13/17 12:17*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*75 - 126*		*10/13/17 12:17*	*1*
Toluene-d8 (Surr)	*92*		*75 - 120*		*10/13/17 12:17*	*1*

Lab Sample ID: LCS 500-405191/7
Matrix: Water
Analysis Batch: 405191

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	38.6		ug/L		77	40 - 143
Benzene	50.0	46.7		ug/L		93	70 - 120
Carbon tetrachloride	50.0	50.5		ug/L		101	65 - 122
Chloroform	50.0	47.3		ug/L		95	70 - 120
cis-1,2-Dichloroethene	50.0	49.6		ug/L		99	70 - 125
1,1-Dichloroethene	50.0	50.0		ug/L		100	67 - 122
Ethylbenzene	50.0	48.0		ug/L		96	70 - 120
Methylene Chloride	50.0	44.9		ug/L		90	69 - 125
Tetrachloroethene	50.0	49.2		ug/L		98	70 - 128
Toluene	50.0	45.1		ug/L		90	70 - 125
1,1,2-Trichloroethane	50.0	48.8		ug/L		98	70 - 122
Trichloroethene	50.0	52.6		ug/L		105	70 - 125
Vinyl chloride	50.0	58.3		ug/L		117	64 - 126
Xylenes, Total	100	90.8		ug/L		91	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*89*		*72 - 124*
Dibromofluoromethane	*100*		*75 - 120*
1,2-Dichloroethane-d4 (Surr)	*92*		*75 - 126*
Toluene-d8 (Surr)	*93*		*75 - 120*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-405437/6
Matrix: Water
Analysis Batch: 405437

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1.7		5.0	1.7	ug/L			10/16/17 10:28	1
Benzene	<0.15		0.50	0.15	ug/L			10/16/17 10:28	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			10/16/17 10:28	1
Chloroform	<0.37		2.0	0.37	ug/L			10/16/17 10:28	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			10/16/17 10:28	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			10/16/17 10:28	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			10/16/17 10:28	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			10/16/17 10:28	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/16/17 10:28	1
Toluene	<0.15		0.50	0.15	ug/L			10/16/17 10:28	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/16/17 10:28	1
Trichloroethene	<0.16		0.50	0.16	ug/L			10/16/17 10:28	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			10/16/17 10:28	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			10/16/17 10:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*72 - 124*		*10/16/17 10:28*	*1*
Dibromofluoromethane	*103*		*75 - 120*		*10/16/17 10:28*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*75 - 126*		*10/16/17 10:28*	*1*
Toluene-d8 (Surr)	*93*		*75 - 120*		*10/16/17 10:28*	*1*

Lab Sample ID: LCS 500-405437/4
Matrix: Water
Analysis Batch: 405437

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	33.3		ug/L		67	40 - 143
Benzene	50.0	47.2		ug/L		94	70 - 120
Carbon tetrachloride	50.0	51.1		ug/L		102	65 - 122
Chloroform	50.0	47.8		ug/L		96	70 - 120
cis-1,2-Dichloroethene	50.0	49.9		ug/L		100	70 - 125
1,1-Dichloroethene	50.0	50.3		ug/L		101	67 - 122
Ethylbenzene	50.0	49.8		ug/L		100	70 - 120
Methylene Chloride	50.0	46.9		ug/L		94	69 - 125
Tetrachloroethene	50.0	51.6		ug/L		103	70 - 128
Toluene	50.0	47.0		ug/L		94	70 - 125
1,1,2-Trichloroethane	50.0	49.8		ug/L		100	70 - 122
Trichloroethene	50.0	54.2		ug/L		108	70 - 125
Vinyl chloride	50.0	50.2		ug/L		100	64 - 126
Xylenes, Total	100	93.6		ug/L		94	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*90*		*72 - 124*
Dibromofluoromethane	*100*		*75 - 120*
1,2-Dichloroethane-d4 (Surr)	*88*		*75 - 126*
Toluene-d8 (Surr)	*95*		*75 - 120*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-135122-25 MS
Matrix: Water
Analysis Batch: 405437

Client Sample ID: W-171003-RA-25
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	<1.7		50.0	34.8		ug/L		70	40 - 143
Benzene	<0.15		50.0	46.1		ug/L		92	70 - 120
Carbon tetrachloride	<0.38		50.0	49.7		ug/L		99	65 - 122
Chloroform	<0.37		50.0	46.4		ug/L		93	70 - 120
cis-1,2-Dichloroethene	<0.41		50.0	47.9		ug/L		96	70 - 125
1,1-Dichloroethene	<0.39		50.0	47.0		ug/L		94	67 - 122
Ethylbenzene	<0.18		50.0	46.6		ug/L		93	70 - 120
Methylene Chloride	<1.6		50.0	45.3		ug/L		91	69 - 125
Tetrachloroethene	<0.37		50.0	48.4		ug/L		97	70 - 128
Toluene	<0.15		50.0	44.3		ug/L		89	70 - 125
1,1,2-Trichloroethane	<0.35		50.0	50.4		ug/L		101	70 - 122
Trichloroethene	<0.16		50.0	51.9		ug/L		104	70 - 125
Vinyl chloride	<0.20		50.0	50.3		ug/L		101	64 - 126
Xylenes, Total	<0.22		100	88.5		ug/L		89	70 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*89*		*72 - 124*
Dibromofluoromethane	*102*		*75 - 120*
1,2-Dichloroethane-d4 (Surr)	*92*		*75 - 126*
Toluene-d8 (Surr)	*93*		*75 - 120*

Lab Sample ID: 500-135122-25 MSD
Matrix: Water
Analysis Batch: 405437

Client Sample ID: W-171003-RA-25
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	<1.7		50.0	34.5		ug/L		69	40 - 143	1	20
Benzene	<0.15		50.0	45.5		ug/L		91	70 - 120	1	20
Carbon tetrachloride	<0.38		50.0	49.2		ug/L		98	65 - 122	1	20
Chloroform	<0.37		50.0	46.3		ug/L		93	70 - 120	0	20
cis-1,2-Dichloroethene	<0.41		50.0	48.3		ug/L		97	70 - 125	1	20
1,1-Dichloroethene	<0.39		50.0	46.5		ug/L		93	67 - 122	1	20
Ethylbenzene	<0.18		50.0	46.4		ug/L		93	70 - 120	0	20
Methylene Chloride	<1.6		50.0	44.6		ug/L		89	69 - 125	2	20
Tetrachloroethene	<0.37		50.0	48.0		ug/L		96	70 - 128	1	20
Toluene	<0.15		50.0	43.8		ug/L		88	70 - 125	1	20
1,1,2-Trichloroethane	<0.35		50.0	50.9		ug/L		102	70 - 122	1	20
Trichloroethene	<0.16		50.0	52.0		ug/L		104	70 - 125	0	20
Vinyl chloride	<0.20		50.0	49.5		ug/L		99	64 - 126	2	20
Xylenes, Total	<0.22		100	88.1		ug/L		88	70 - 125	0	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*89*		*72 - 124*
Dibromofluoromethane	*102*		*75 - 120*
1,2-Dichloroethane-d4 (Surr)	*93*		*75 - 126*
Toluene-d8 (Surr)	*93*		*75 - 120*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-135122-28 MS
Matrix: Water
Analysis Batch: 405437

Client Sample ID: W-171003-RA-28
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	<1.7		50.0	34.3		ug/L		69	40 - 143
Benzene	<0.15		50.0	49.1		ug/L		98	70 - 120
Carbon tetrachloride	<0.38		50.0	53.0		ug/L		106	65 - 122
Chloroform	<0.37		50.0	49.0		ug/L		98	70 - 120
cis-1,2-Dichloroethene	<0.41		50.0	52.2		ug/L		104	70 - 125
1,1-Dichloroethene	<0.39		50.0	50.0		ug/L		100	67 - 122
Ethylbenzene	<0.18		50.0	49.9		ug/L		100	70 - 120
Methylene Chloride	<1.6		50.0	48.2		ug/L		96	69 - 125
Tetrachloroethene	<0.37		50.0	51.9		ug/L		104	70 - 128
Toluene	<0.15		50.0	47.6		ug/L		95	70 - 125
1,1,2-Trichloroethane	<0.35		50.0	52.6		ug/L		105	70 - 122
Trichloroethene	1.5		50.0	57.3		ug/L		112	70 - 125
Vinyl chloride	<0.20		50.0	49.0		ug/L		98	64 - 126
Xylenes, Total	<0.22		100	94.7		ug/L		95	70 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*91*		*72 - 124*
Dibromofluoromethane	*100*		*75 - 120*
1,2-Dichloroethane-d4 (Surr)	*91*		*75 - 126*
Toluene-d8 (Surr)	*93*		*75 - 120*

Lab Sample ID: 500-135122-28 MSD
Matrix: Water
Analysis Batch: 405437

Client Sample ID: W-171003-RA-28
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	<1.7		50.0	36.4		ug/L		73	40 - 143	6	20
Benzene	<0.15		50.0	49.5		ug/L		99	70 - 120	1	20
Carbon tetrachloride	<0.38		50.0	53.8		ug/L		108	65 - 122	2	20
Chloroform	<0.37		50.0	49.6		ug/L		99	70 - 120	1	20
cis-1,2-Dichloroethene	<0.41		50.0	52.2		ug/L		104	70 - 125	0	20
1,1-Dichloroethene	<0.39		50.0	51.3		ug/L		103	67 - 122	3	20
Ethylbenzene	<0.18		50.0	50.3		ug/L		101	70 - 120	1	20
Methylene Chloride	<1.6		50.0	48.1		ug/L		96	69 - 125	0	20
Tetrachloroethene	<0.37		50.0	51.4		ug/L		103	70 - 128	1	20
Toluene	<0.15		50.0	47.1		ug/L		94	70 - 125	1	20
1,1,2-Trichloroethane	<0.35		50.0	52.5		ug/L		105	70 - 122	0	20
Trichloroethene	1.5		50.0	56.6		ug/L		110	70 - 125	1	20
Vinyl chloride	<0.20		50.0	48.0		ug/L		96	64 - 126	2	20
Xylenes, Total	<0.22		100	94.1		ug/L		94	70 - 125	1	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*92*		*72 - 124*
Dibromofluoromethane	*104*		*75 - 120*
1,2-Dichloroethane-d4 (Surr)	*91*		*75 - 126*
Toluene-d8 (Surr)	*93*		*75 - 120*

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171002-RA-01
Lab Sample ID: 500-135122-1
Date Collected: 10/02/17 14:35
Matrix: Water
Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405038	10/12/17 13:17	PMF	TAL CHI

Client Sample ID: W-171002-RA-02
Lab Sample ID: 500-135122-2
Date Collected: 10/02/17 14:35
Matrix: Water
Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405038	10/12/17 13:47	PMF	TAL CHI

Client Sample ID: W-171002-RA-03
Lab Sample ID: 500-135122-3
Date Collected: 10/02/17 14:40
Matrix: Water
Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405038	10/12/17 14:16	PMF	TAL CHI

Client Sample ID: W-171002-RA-04
Lab Sample ID: 500-135122-4
Date Collected: 10/02/17 14:40
Matrix: Water
Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405038	10/12/17 14:46	PMF	TAL CHI

Client Sample ID: W-171002-RA-05
Lab Sample ID: 500-135122-5
Date Collected: 10/02/17 14:35
Matrix: Water
Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405038	10/12/17 15:16	PMF	TAL CHI

Client Sample ID: W-171002-RA-06
Lab Sample ID: 500-135122-6
Date Collected: 10/02/17 15:43
Matrix: Water
Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405038	10/12/17 15:45	PMF	TAL CHI

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171002-RA-07
Lab Sample ID: 500-135122-7
Date Collected: 10/02/17 16:00
Matrix: Water
Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405038	10/12/17 16:15	PMF	TAL CHI

Client Sample ID: W-171002-RA-08
Lab Sample ID: 500-135122-8
Date Collected: 10/02/17 14:20
Matrix: Water
Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405038	10/12/17 16:44	PMF	TAL CHI

Client Sample ID: W-171002-RA-09
Lab Sample ID: 500-135122-9
Date Collected: 10/02/17 16:50
Matrix: Water
Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405038	10/12/17 17:14	PMF	TAL CHI

Client Sample ID: W-171002-RA-10
Lab Sample ID: 500-135122-10
Date Collected: 10/02/17 17:10
Matrix: Water
Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405038	10/12/17 17:44	PMF	TAL CHI

Client Sample ID: W-171002-RA-11
Lab Sample ID: 500-135122-11
Date Collected: 10/02/17 17:21
Matrix: Water
Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405038	10/12/17 18:13	PMF	TAL CHI

Client Sample ID: W-171002-RA-12
Lab Sample ID: 500-135122-12
Date Collected: 10/02/17 17:47
Matrix: Water
Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405038	10/12/17 19:12	PMF	TAL CHI

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171002-RA-13
Lab Sample ID: 500-135122-13
Date Collected: 10/02/17 18:09
Matrix: Water
Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405038	10/12/17 19:42	PMF	TAL CHI

Client Sample ID: W-171003-RA-14
Lab Sample ID: 500-135122-14
Date Collected: 10/03/17 08:20
Matrix: Water
Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405038	10/12/17 20:11	PMF	TAL CHI

Client Sample ID: W-171003-RA-15
Lab Sample ID: 500-135122-15
Date Collected: 10/03/17 08:45
Matrix: Water
Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405038	10/12/17 20:41	PMF	TAL CHI

Client Sample ID: W-171003-RA-16
Lab Sample ID: 500-135122-16
Date Collected: 10/03/17 09:10
Matrix: Water
Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405038	10/12/17 21:11	PMF	TAL CHI

Client Sample ID: W-171003-RA-17
Lab Sample ID: 500-135122-17
Date Collected: 10/03/17 09:35
Matrix: Water
Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405191	10/13/17 19:41	PMF	TAL CHI

Client Sample ID: W-171003-RA-18
Lab Sample ID: 500-135122-18
Date Collected: 10/03/17 09:40
Matrix: Water
Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405191	10/13/17 20:11	PMF	TAL CHI

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171003-RA-19
Lab Sample ID: 500-135122-19
Date Collected: 10/03/17 10:00
Matrix: Water
Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405437	10/16/17 10:57	PMF	TAL CHI

Client Sample ID: W-171003-RA-20
Lab Sample ID: 500-135122-20
Date Collected: 10/03/17 10:35
Matrix: Water
Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405437	10/16/17 11:27	PMF	TAL CHI

Client Sample ID: W-171003-RA-21
Lab Sample ID: 500-135122-21
Date Collected: 10/03/17 11:00
Matrix: Water
Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405437	10/16/17 11:56	PMF	TAL CHI

Client Sample ID: W-171003-RA-22
Lab Sample ID: 500-135122-22
Date Collected: 10/03/17 11:00
Matrix: Water
Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405437	10/16/17 12:26	PMF	TAL CHI

Client Sample ID: W-171003-RA-23
Lab Sample ID: 500-135122-23
Date Collected: 10/03/17 11:40
Matrix: Water
Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405437	10/16/17 12:56	PMF	TAL CHI

Client Sample ID: W-171003-RA-24
Lab Sample ID: 500-135122-24
Date Collected: 10/03/17 11:40
Matrix: Water
Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405437	10/16/17 13:25	PMF	TAL CHI

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171003-RA-25
Lab Sample ID: 500-135122-25
Date Collected: 10/03/17 12:00
Matrix: Water
Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405437	10/16/17 13:55	PMF	TAL CHI

Client Sample ID: W-171003-RA-26
Lab Sample ID: 500-135122-26
Date Collected: 10/03/17 12:15
Matrix: Water
Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405437	10/16/17 14:24	PMF	TAL CHI

Client Sample ID: W-171003-RA-27
Lab Sample ID: 500-135122-27
Date Collected: 10/03/17 12:15
Matrix: Water
Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405437	10/16/17 14:54	PMF	TAL CHI

Client Sample ID: W-171003-RA-28
Lab Sample ID: 500-135122-28
Date Collected: 10/03/17 13:20
Matrix: Water
Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405437	10/16/17 15:23	PMF	TAL CHI

Client Sample ID: W-171003-RA-29
Lab Sample ID: 500-135122-29
Date Collected: 10/03/17 13:55
Matrix: Water
Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405437	10/16/17 15:53	PMF	TAL CHI

Client Sample ID: W-171003-RA-30
Lab Sample ID: 500-135122-30
Date Collected: 10/03/17 14:26
Matrix: Water
Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405437	10/16/17 17:22	PMF	TAL CHI

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Client Sample ID: W-171003-RA-31

Lab Sample ID: 500-135122-31

Date Collected: 10/03/17 14:54

Matrix: Water

Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405437	10/16/17 17:51	PMF	TAL CHI

Client Sample ID: Trip Blank

Lab Sample ID: 500-135122-32

Date Collected: 10/02/17 00:00

Matrix: Water

Date Received: 10/05/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	405191	10/13/17 13:16	PMF	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: Wausau Superfund Site - 003978

TestAmerica Job ID: 500-135122-1

Laboratory: TestAmerica Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	999580010	08-31-18

CHAIN OF CUSTODY RECORD

COC NO.: SP- 02495

PAGE 1 OF 3

CONESTOGA-ROVERS & ASSOCIATES
1801 Old Highway 8 Northwest, Suite 114
St. Paul, Minnesota 55112 United States
Phone: (651) 639-0913 Fax: (651) 639-0923

500-135122

(See Reverse Side for Instructions)

Project No/ Phase/Task Code: 3978	**Laboratory Name:** Test America	**Lab Location:** Chicago	**SSOW ID:**
Project Name: Wausau	**Lab Contact:** Dick Wright	**Lab Quote No:**	**Cooler No:**
Project Location: Wausau	500-135122 COC		**Carrier:**
Chemistry Contact: G. Anderson			**Airbill No:**
Sampler(s): RAamot K Jenkin			**Date Shipped:**

Item	Sample Identification (Containers for each sample may be combined on one line)	Date (mm/dd//yy)	Time (hh:mm)	Matrix Code (see back of COC)	Grab (G) or Comp (C)	Container Quantity & Preservation: Unpreserved	HCl	HNO_3	H_2SO_4	NaOH	Methanol/Water (Soil VOC)	EnCores 3x5-g, 1x25-g	Other:	Total Containers/Sample	Analysis Requested: VOC - Site List	MS/MSD Request	Comments/ Special Instructions:
1	W-171002-RA-01	10/2/17	1435	W	G		3							3	X		
2	-02		1435				3							3	X		
3	03		1440				3							3	X		
4	04		1440				3							3	X		
5	05		1435				3							3	X		
6	06		1543				3							3	X		
7	07		1600				3							3	X		
8	08		1420				3							3	X		
9	09		1650				3							3	X		
10	10		1710				3							3	X		
11	11		1721				3							3	X		
12	12		1747				3							3	X		
13	W-171002-RA-13		1809				3							3	X		
14	W-171003-RA-14	10/3/17	820				3							3	X		
15	W-171003-RA-15	10/3/17	845				3							3	X		

TAT Required in business days (use separate COCs for different TATs):
☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 1 Week ☐ 2 Week ☐ Other:

Total Number of Containers: 45

All Samples in Cooler must be on COC

Notes/ Special Requirements: 5:47 ~~4:48~~ SS 10/5/17

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
1.	GAD	10/4/17	16:00	1.	TA-CHI	10/5/17	0945
2.				2.			
3.				3.			

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT – ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE – Fully Executed Copy (CRA) YELLOW – Receiving Laboratory Copy PINK – Shipper GOLDENROD – Sampling Crew

CRA Form: COC-10/2011-1

10/17/2017

CHAIN OF CUSTODY RECORD

CONESTOGA-ROVERS & ASSOCIATES
1801 Old Highway 8 Northwest, Suite 114
St. Paul, Minnesota 55112 United States
Phone: (651) 639-0913 Fax: (651) 639-0923

COC NO.: SP-02496
PAGE 2 OF 3
(See Reverse Side for Instructions)

500-135122

Project No/ Phase/Task Code: 3978	**Laboratory Name:** Test America	**Lab Location:** Chicago	**SSOW ID:**
Project Name: Wausau	**Lab Contact:** Dick Wright	**Lab Quote No:**	**Cooler No:**
Project Location: Wausau			**Carrier:**
Chemistry Contact: G Anderson			**Airbill No:**
Sampler(s): RAgmot K Jenkin			**Date Shipped:**

Item	Sample Identification (Containers for each sample may be combined on one line)	Date (mm/dd/yy)	Time (hh:mm)	Matrix Code (see back of COC)	Grab (G) or Comp (C)	Unpreserved	Hydrochloric Acid (HCl)	Nitric Acid (HNO_3)	Sulfuric Acid (H_2SO_4)	Sodium Hydroxide (NaOH)	Methanol/Water (Soil VOC)	EnCores 3x5-g, 1x25-g	Other:	Total Containers/Sample	VOCs - SiteList	MS/MSD Request
1	W-171003-RA-16	10/3/17	~~845~~ 910	W	G		3							3	X	
2	17		935				3							3	X	
3	18		940				3							3	X	
4	19		1000				3							3	X	
5	20		1035				3							3	X	
6	21		1100				3							3	X	
7	22		1100				3							3	X	
8	23		1140				3							3	X	
9	24		1140				3							3	X	
10	25		1200				9							9	X	X
11	26		1215				3							3	X	
12	27		1215				3							3	X	
13	28		1320				9							9	X	X
14	29		1355				3							3	X	
15	W-171003-RA-30		1426	↓	↓		3							3	X	

TAT Required in business days (use separate COCs for different TATs):
☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 1 Week ☐ 2 Week ☐ Other:

Total Number of Containers: 57

All Samples in Cooler must be on COC

Notes/ Special Requirements:
54 ~~24~~ 18 SS 10/5/17

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
1.	GHD	10/4/17	16:00	1. Shawn Scott	TA-CHI	10/5/17	0945
2.				2.			
3.				3.			

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT – ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE – Fully Executed Copy (CRA) YELLOW – Receiving Laboratory Copy PINK – Shipper GOLDENROD – Sampling Crew

CRA Form: COC-10A (20110804)

CHAIN OF CUSTODY RECORD

COC NO.: SP- 02453
PAGE 3 OF 3
(See Reverse Side for Instructions)

CONESTOGA-ROVERS & ASSOCIATES
1801 Old Highway 8 Northwest, Suite 114
St. Paul, Minnesota 55112 United States
Phone: (651) 639-0913 Fax: (651) 639-0923

500-135122

Project No/ Phase/Task Code: 3978	**Laboratory Name:** TestAmerica	**Lab Location:** Chicago	**SSOW ID:**
Project Name: Wausau	**Lab Contact:** Dick Wright	**Lab Quote No:**	**Cooler No:**
Project Location: Wausau			**Carrier:**
Chemistry Contact: G. Andersen			**Airbill No:**
Sampler(s): RAmat K Serkin			**Date Shipped:**

Item	SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)	DATE (mm/dd/yy)	TIME (hh:mm)	SAMPLE TYPE: Matrix Code (see back of COC)	SAMPLE TYPE: Grab (G) or Comp (C)	CONTAINER QUANTITY & PRESERVATION: Unpreserved	Hydrochloric Acid (HCl)	Nitric Acid (HNO_3)	Sulfuric Acid (H_2SO_4)	Sodium Hydroxide (NaOH)	Methanol/Water (Soil VOC)	EnCores 3x5-g, 1x25-g	Other:	Total Containers/Sample	ANALYSIS REQUESTED (See Back of COC for Definitions): VOCs - Site List	MS/MSD Request	COMMENTS/ SPECIAL INSTRUCTIONS:
31	W-17003-RA-31	10/3/17	1454	W	G		3							3	X		
2																	
32	trip blank						1							1	X		
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	

TAT Required in business days (use separate COCs for different TATs):
☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 1 Week ☐ 2 Week ☐ Other:

Total Number of Containers: 4
All Samples in Cooler must be on COC

Notes/ Special Requirements:

RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
1.	GHD	10/4/17	16:00	1.	TA-CHI	10/5/17	0945
2.				2.			
3.				3.			

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT – ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE – Fully Executed Copy (CRA) YELLOW – Receiving Laboratory PINK – Shipper GOLDENROD – Sampling Crew

CRA Form: COC-1 10/17/2017

ORIGIN ID:GPZA (651) 639-0913
ST. PAUL FRONT DESK
GHD SERVICES INC.
1801 OLD HIGHWAY 8 NW
SUITE 114
SAINT PAUL, MN 55112
UNITED STATES US

SHIP DATE: 04OCT17
ACTWGT: 40.00 LB
CAD: 9292115/INET3920
DIMS: 26x14x14 IN

BILL SENDER

TO SAMPLE RECEIVING
TEST AMERICA - CHICAGO
2417 BOND STREET

UNIVERSITY PARK IL 60484

500-135122 Waybill

549J3/A899/104C

(708) 534-5200 REF: 003978-38 R.AAMOT
INV.
PO. DEPT:

FedEx Express

J072417091301uv

THU - 05 OCT 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7704 1945 8620

NA JOTA

60484
IL-US ORD

48 qt.

/templates/components/dotcom_label_contents/FoldInstr/en/Folding_instructions.html loading...
/templates/components/dotcom_label_contents/WarningsOriginalLabel/en/Folding_warning.html loading...
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 500-135122-1

Login Number: 135122
List Number: 1
Creator: Scott, Sherri L

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	5.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Appendix B
Wausau Chemical Pavement Inspection Report

Appendix B - Table 1

Pavement Barrier Inspection Log
Wausau Chemical Corporation

Inspection Date	Inspector	Condition of Cap	Recommendations	Have Recommendations From Previous Inspection Been Implemented?
8/29/2011	Rob Flashinski	Pavement was completely replaced in 2009. Three cracks starting to form, but have not penatrated.	No action required.	Yes
7/2/2012	Rob Flashinski	Overall condition is very good. Recent work by the gas company has been patched thoroughly. All existing cracks have been filled.	None	None Existed
5/21/2013	Rob Flashinski	No change in appearance.	None	Yes
11/6/2013	Rob Flashinski	Overall condition is still good. Some hairline type cracks starting to form on the ends of previously filled cracks and near gas company asphalt work.	Nothing at this point. The hariline cracks will likely need attention in the spring.	Yes
11/7/2014	Rob Flashinski	Overall condition is still good. Some hairline type cracks still exist on the ends of previously filled cracks and asphalt work by gas meter is starting to show again, but no cracks have formed.	Nothing at this point. Expect that some tar caulking will be needed in the spring.	Yes

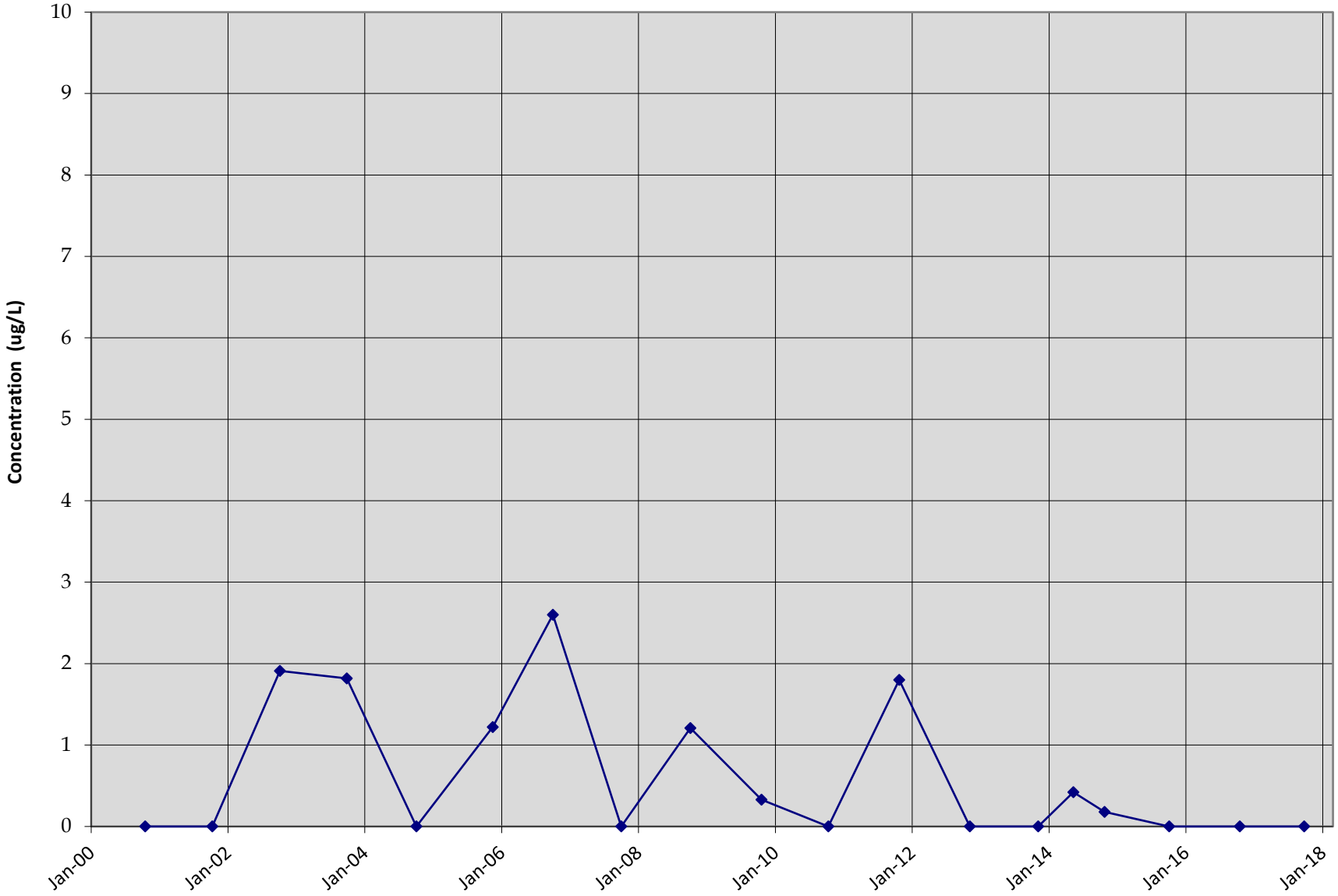
Appendix B - Table 1

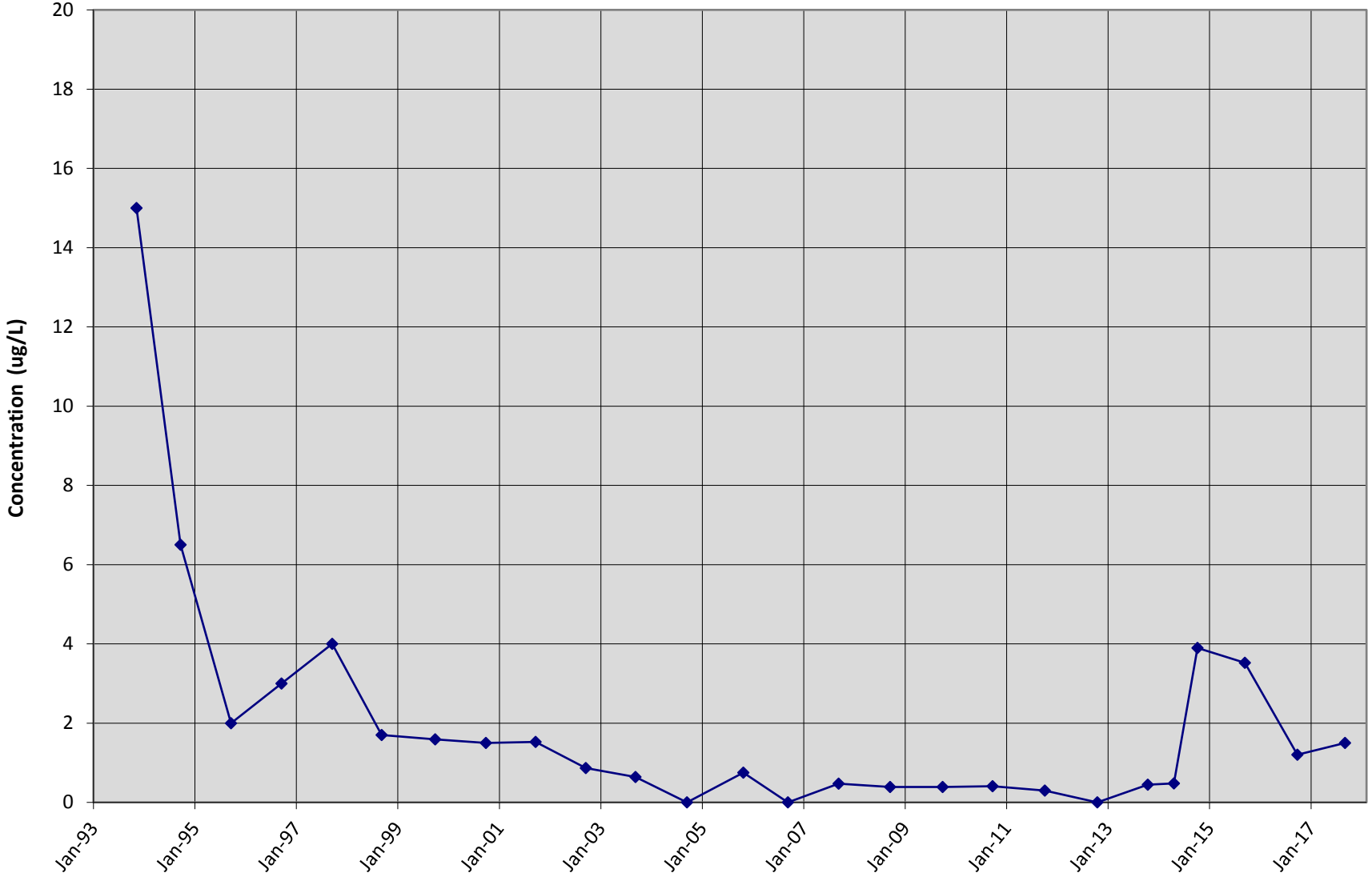
Pavement Barrier Inspection Log
Wausau Chemical Corporation

Inspection Date	Inspector	Condition of Cap	Recommendations	Have Recommendations From Previous Inspection Been Implemented?
10/16/2015	Rob Flashinski	Overall condition is still good. Exsiting Cracks were sealed by Advanced Seal Coatings.	Nothing at this point.	Yes
9/14/2016	Rob Flashinski	Overall condition is still good. Prior repair work is still in good conditioin also	Nothing at this point.	Yes
8/14/2017	Rob Flashinski	Overall condition is still good. Some signs of asphalt aging.	Nothing	Yes

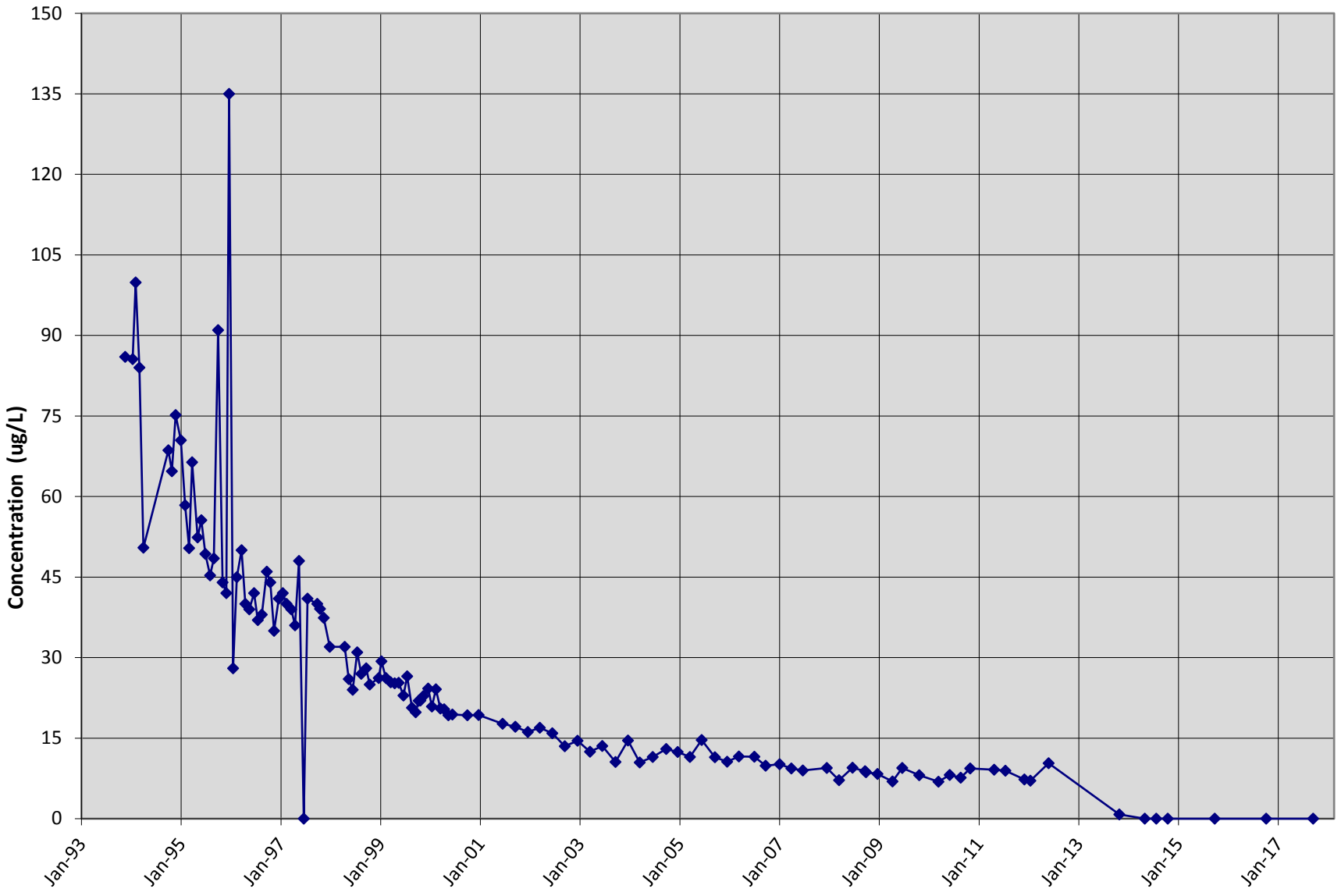
Appendix C
Total Chlorinated VOC Concentration Charts

MW1A TCVOC

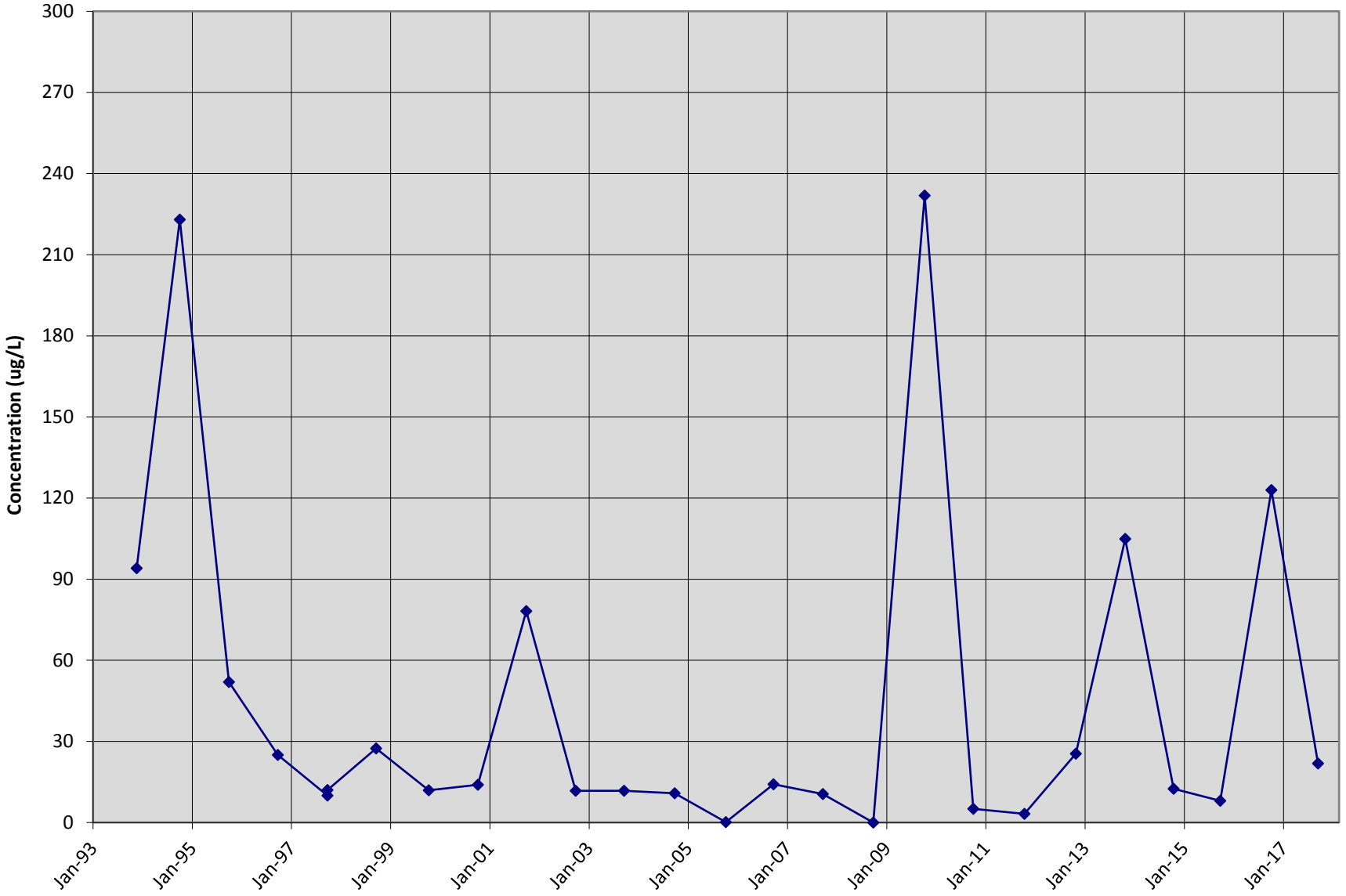

Concentration (ug/L)
10
9
8
7
6
5
4
3
2
1
0
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Jan-12
Jan-14
Jan-16
Jan-18

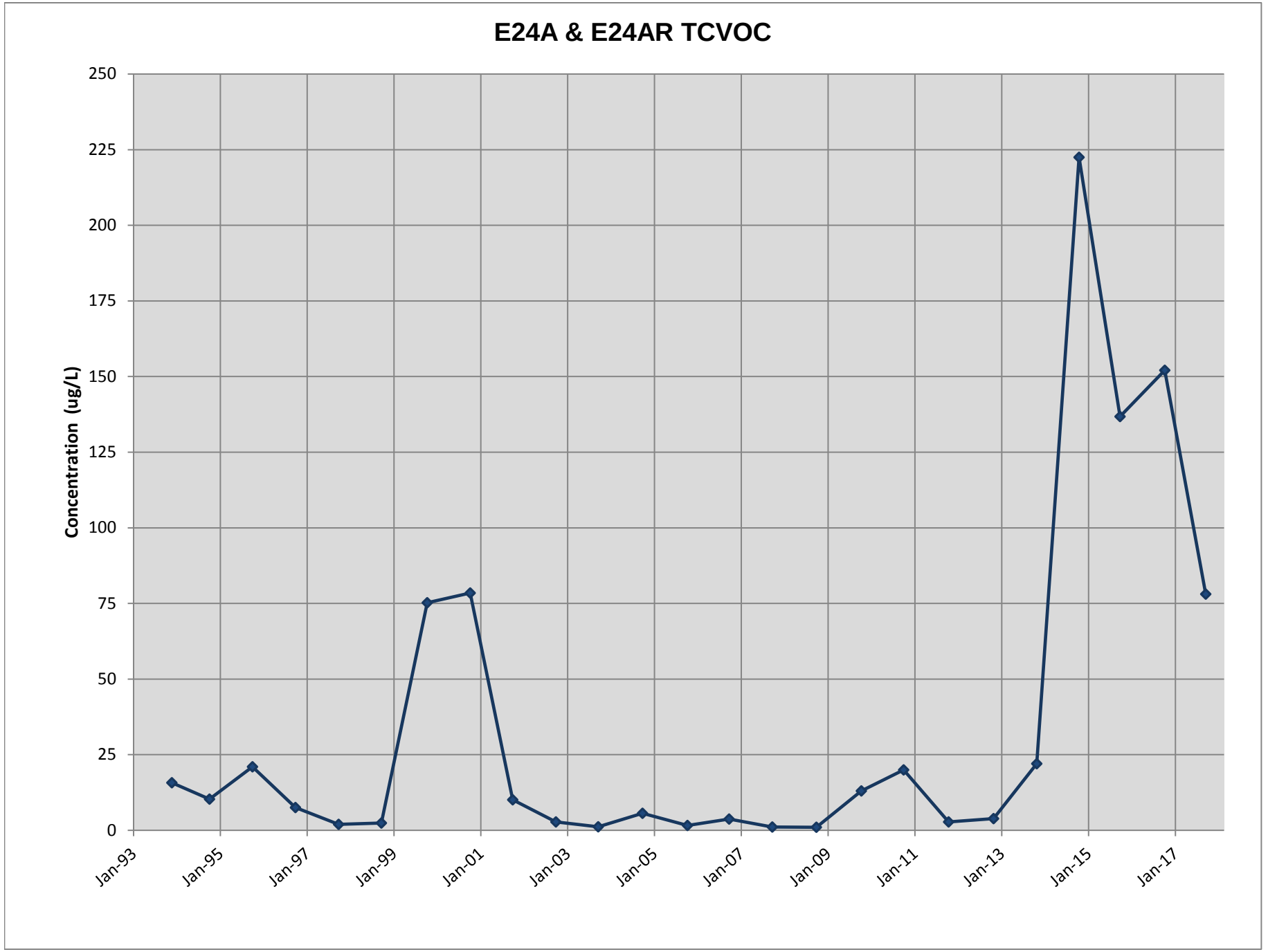

WSWD TCVOC
Concentration (ug/L)
20
18
16
14
12
10
8
6
4
2
0
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13
Jan-15
Jan-17

EW1 TCVOC

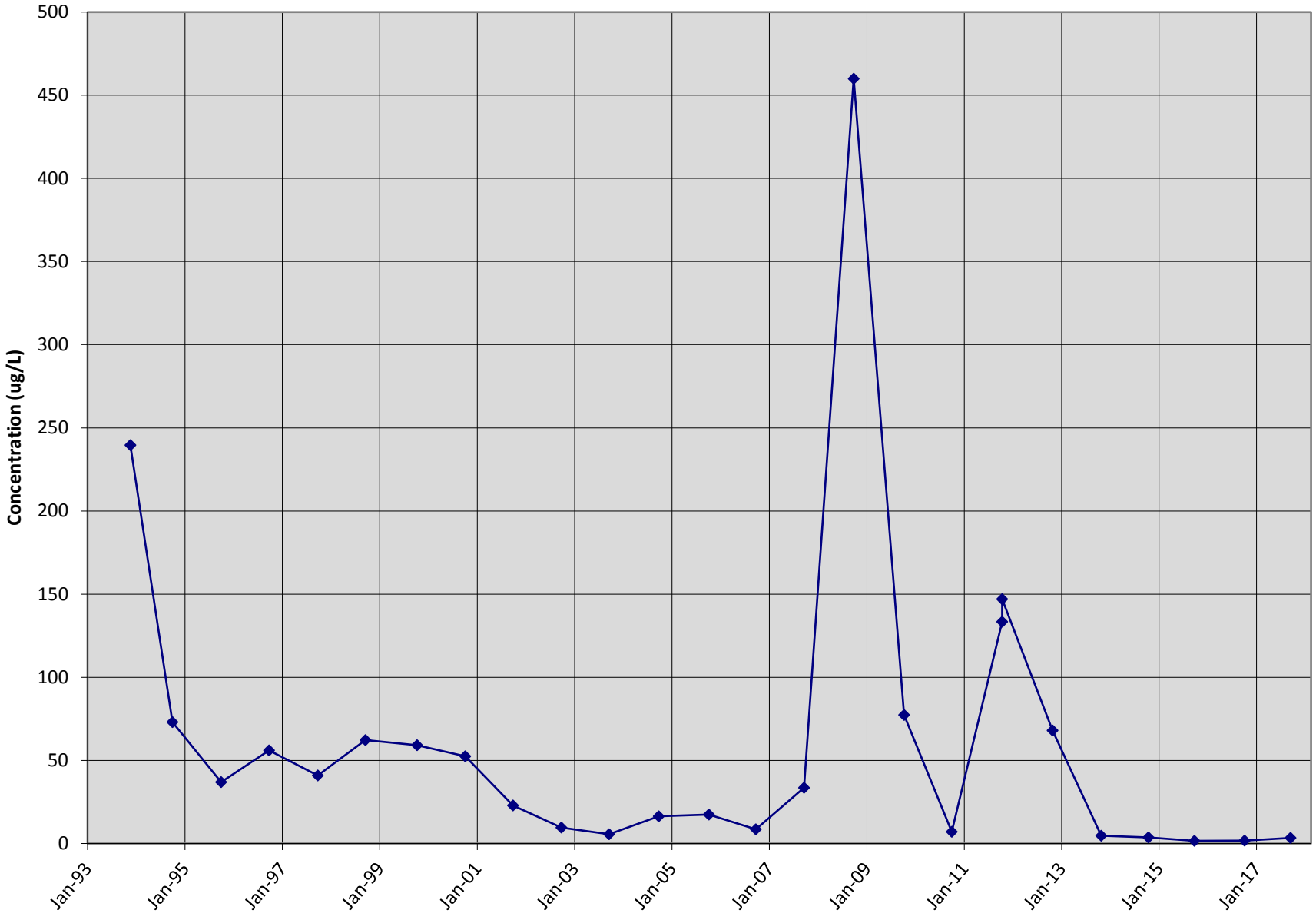

Concentration (ug/L)
150
135
120
105
90
75
60
45
30
15
0
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13
Jan-15
Jan-17

E22A TCVOC

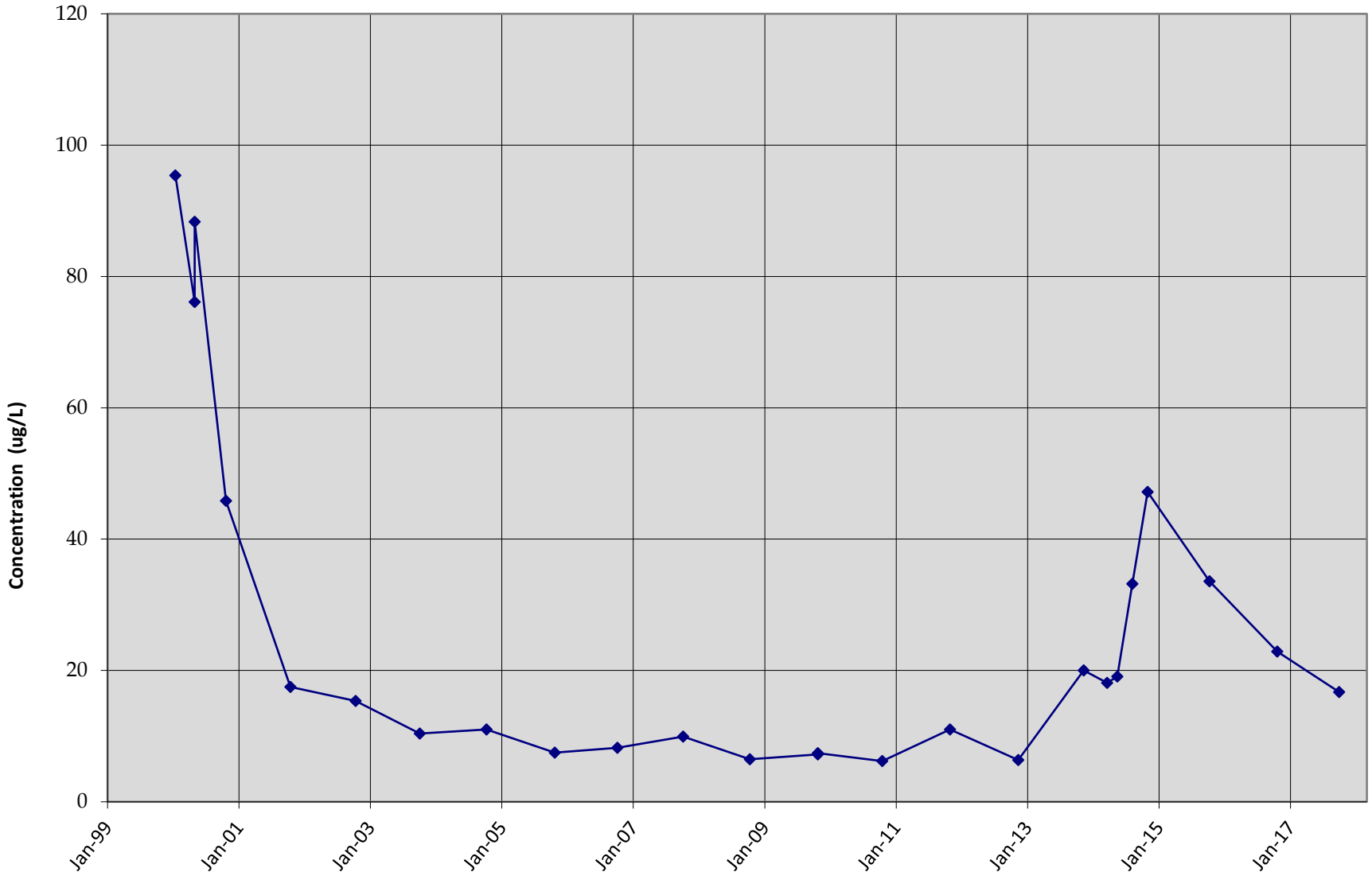

Concentration (ug/L)
300
270
240
210
180
150
120
90
60
30
0
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13
Jan-15
Jan-17


E24A & E24AR TCVOC
Concentration (ug/L)
250
225
200
175
150
125
100
75
50
25
0
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13
Jan-15
Jan-17

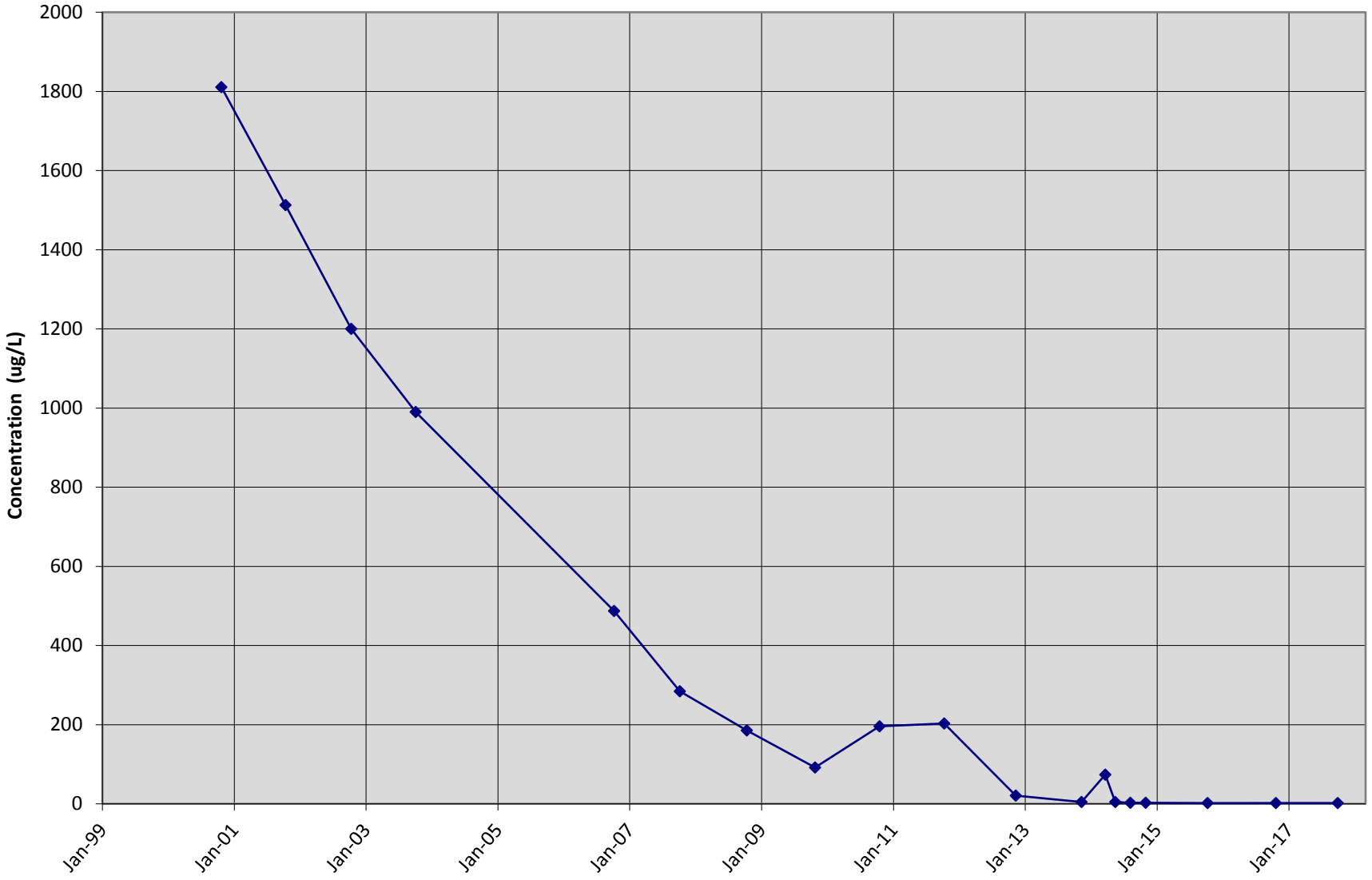
E37A TCVOC


Concentration (ug/L)
500
450
400
350
300
250
200
150
100
50
0
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13
Jan-15
Jan-17

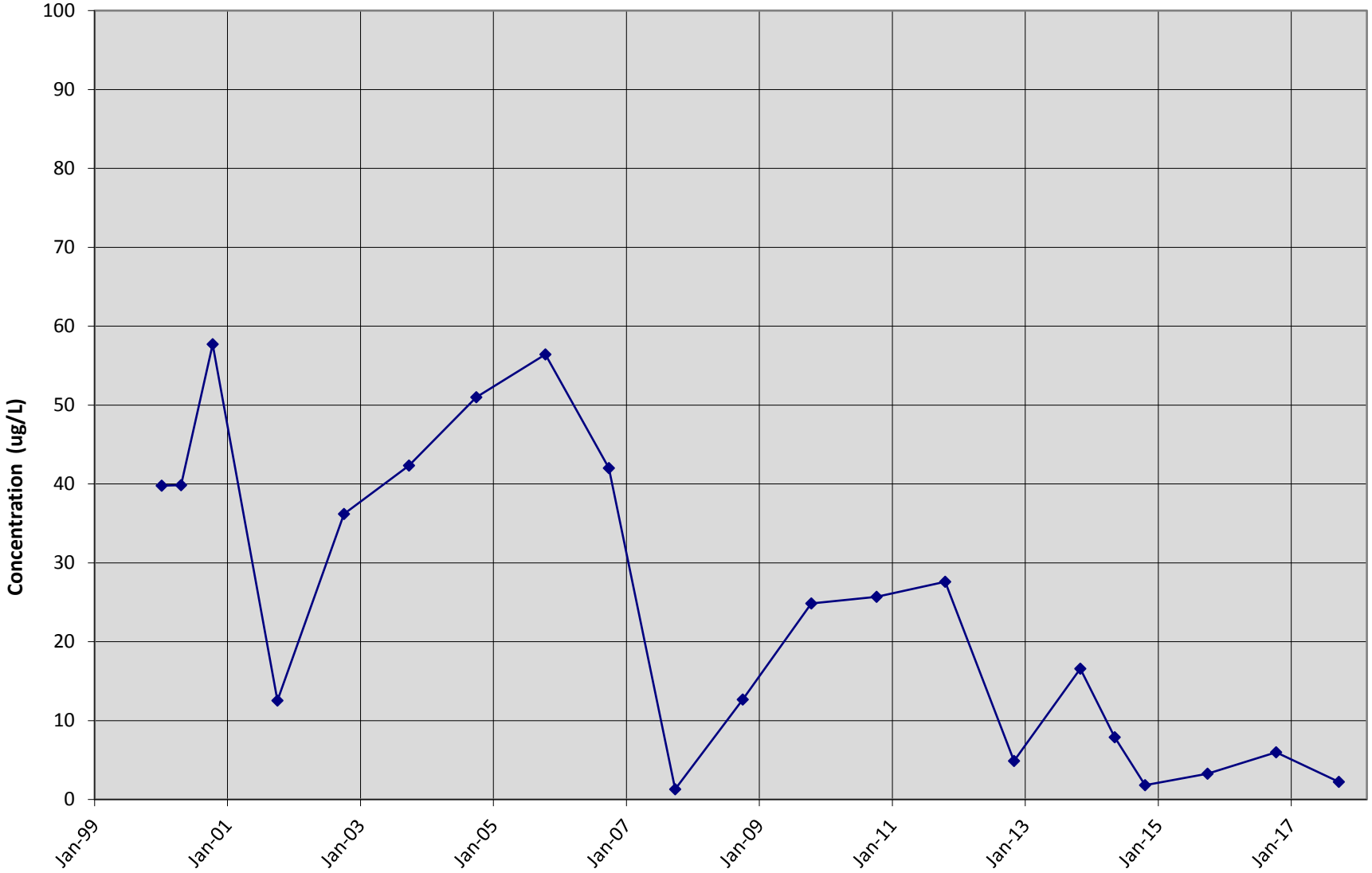
R2D TCVOC


120
100
80
60
40
20
0
Concentration (ug/L)
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13
Jan-15
Jan-17

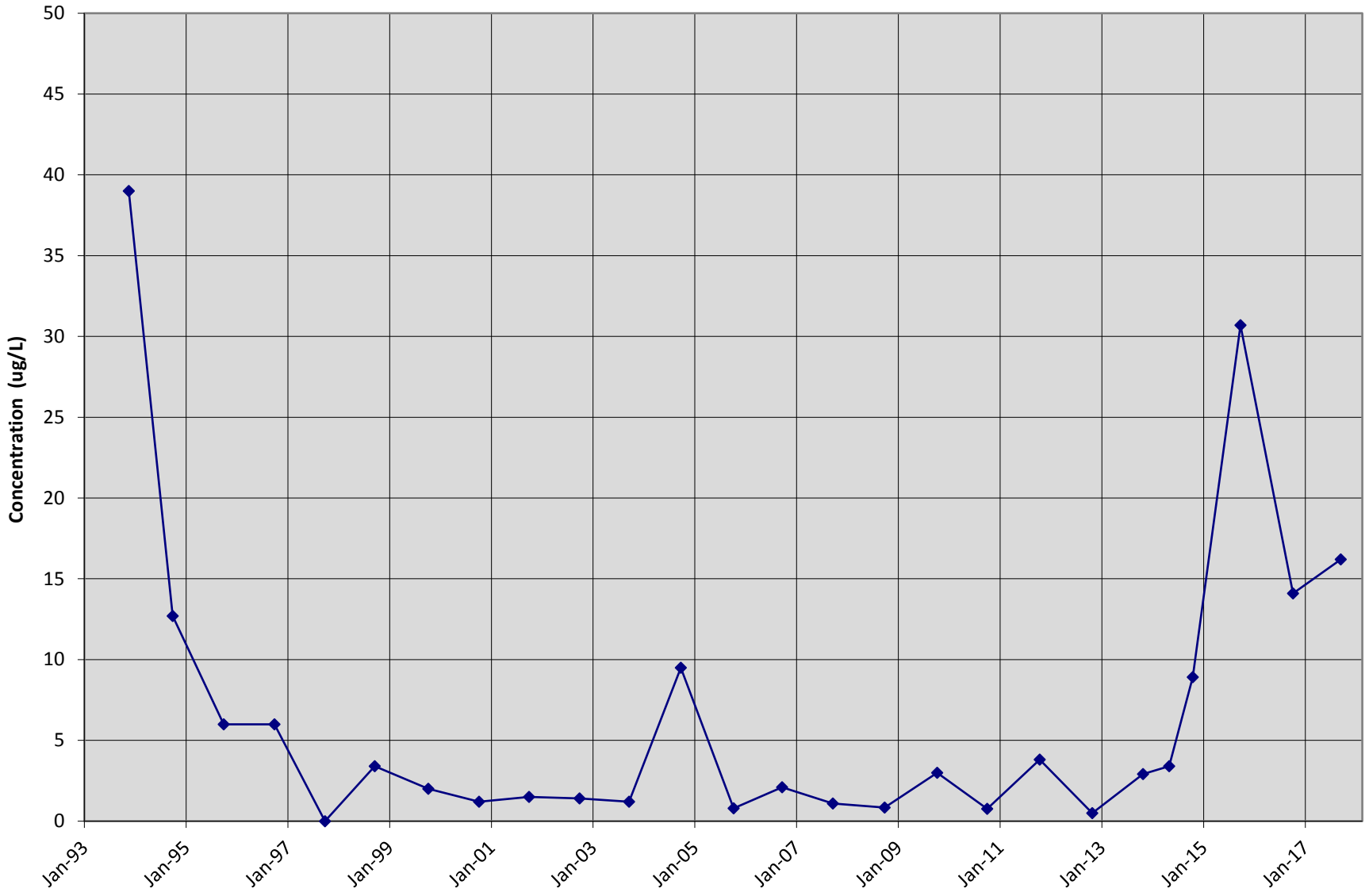
R3D TCVOC


Concentration (ug/L)
2000
1800
1600
1400
1200
1000
800
600
400
200
0
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13
Jan-15
Jan-17

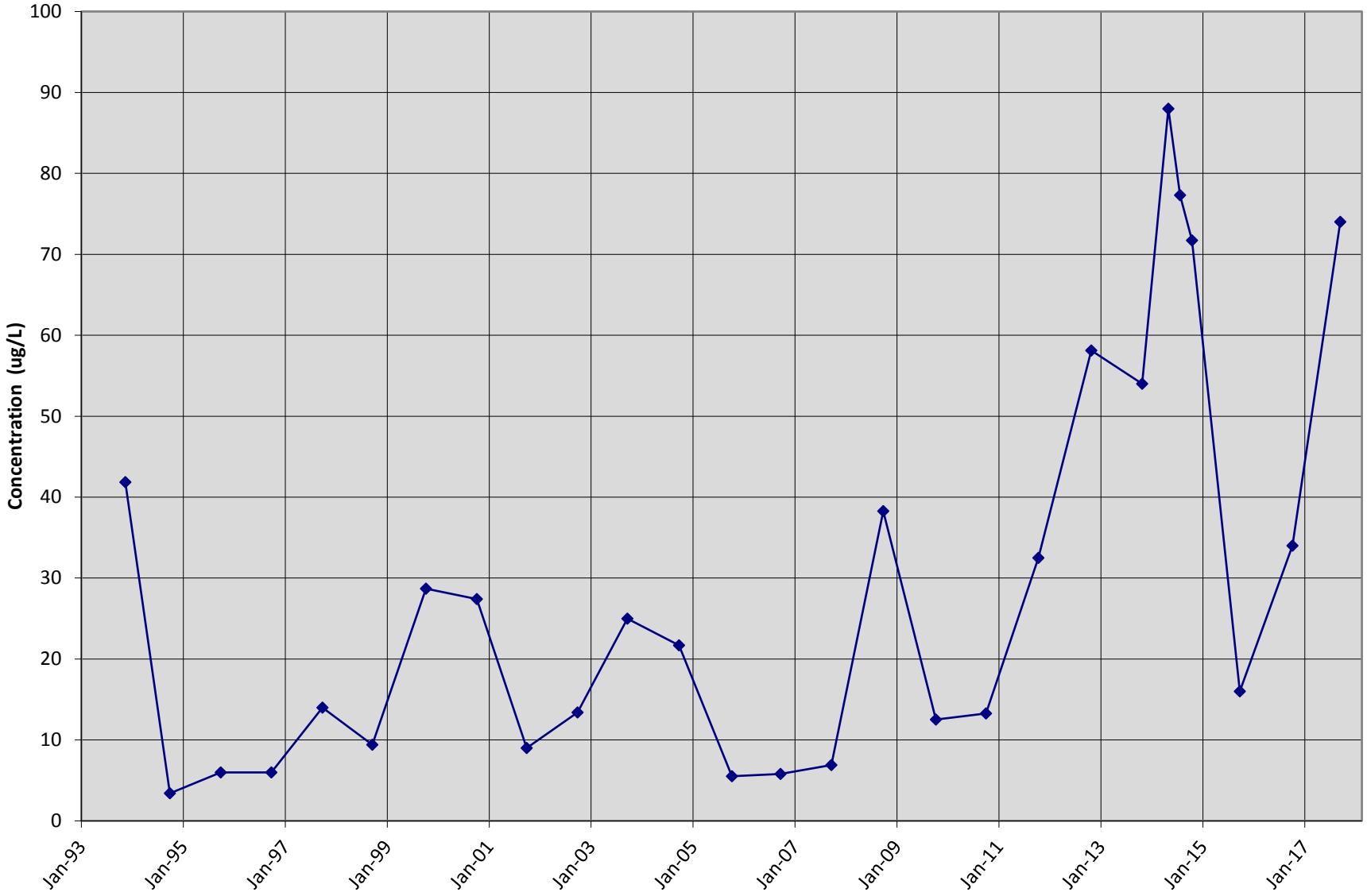
R4D TCVOC


Concentration (ug/L)
100
90
80
70
60
50
40
30
20
10
0
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13
Jan-15
Jan-17

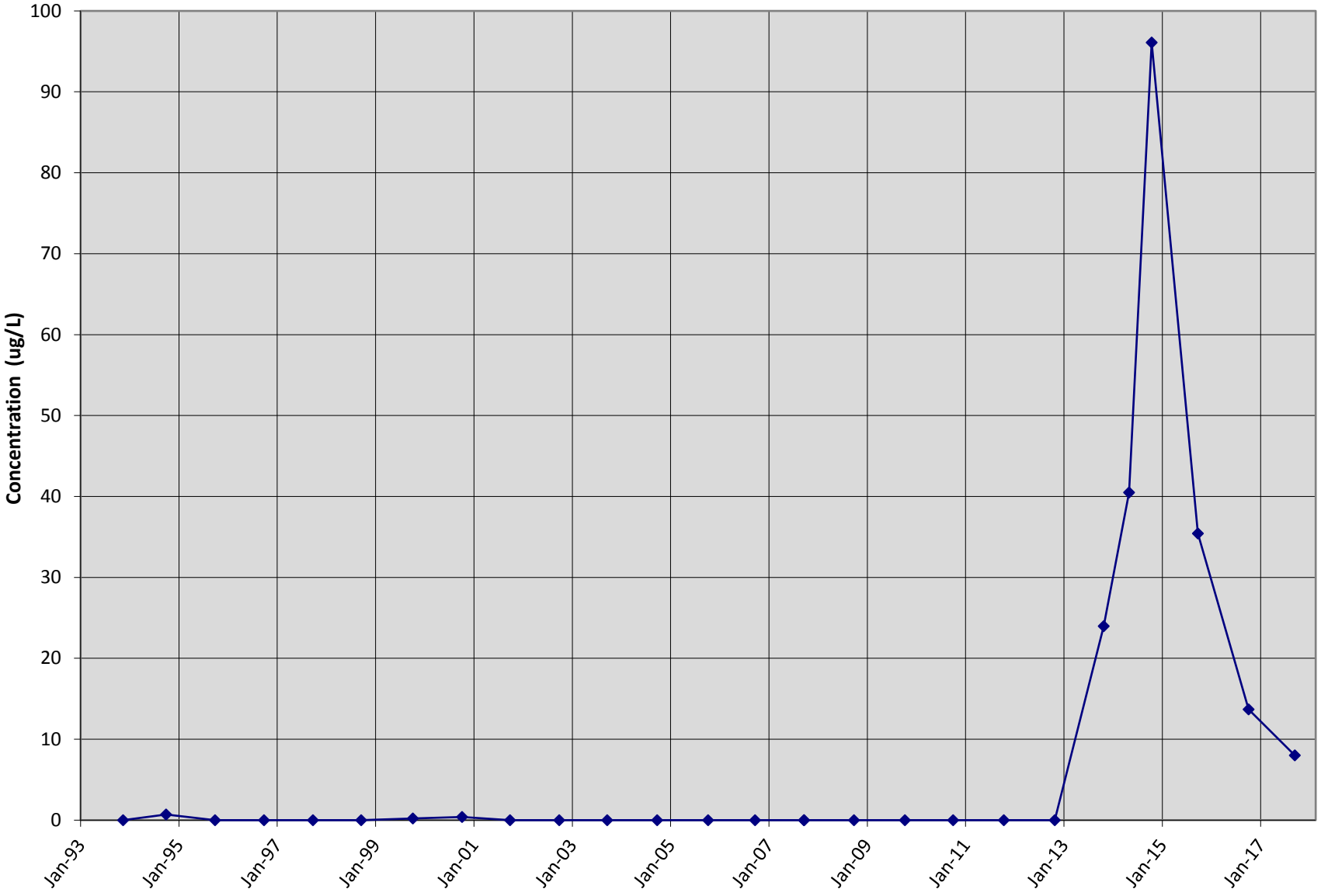
W52 TCVOC


Concentration (ug/L)
50
45
40
35
30
25
20
15
10
5
0
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13
Jan-15
Jan-17

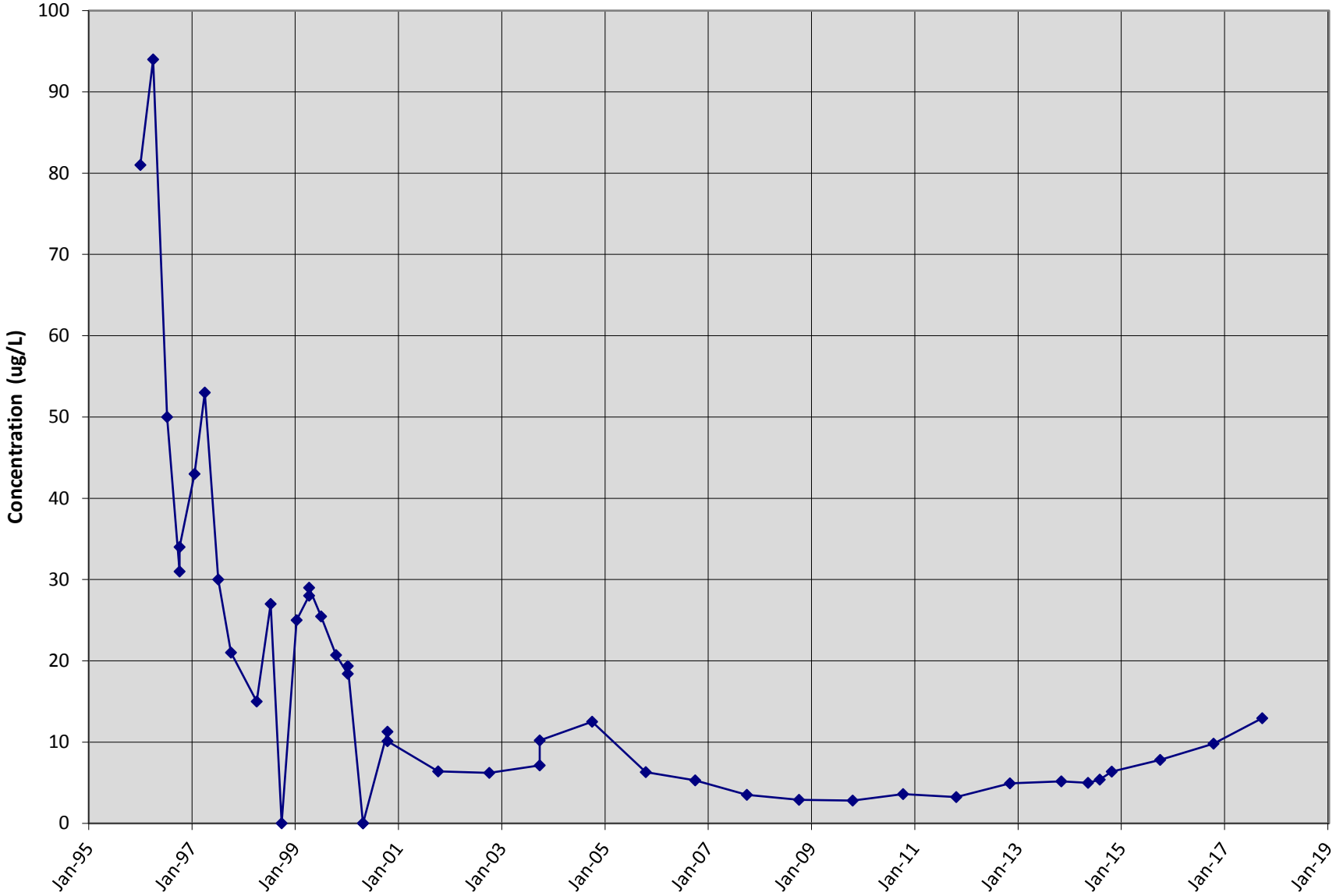
W53A TCVOC


Concentration (ug/L)
100
90
80
70
60
50
40
30
20
10
0
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13
Jan-15
Jan-17

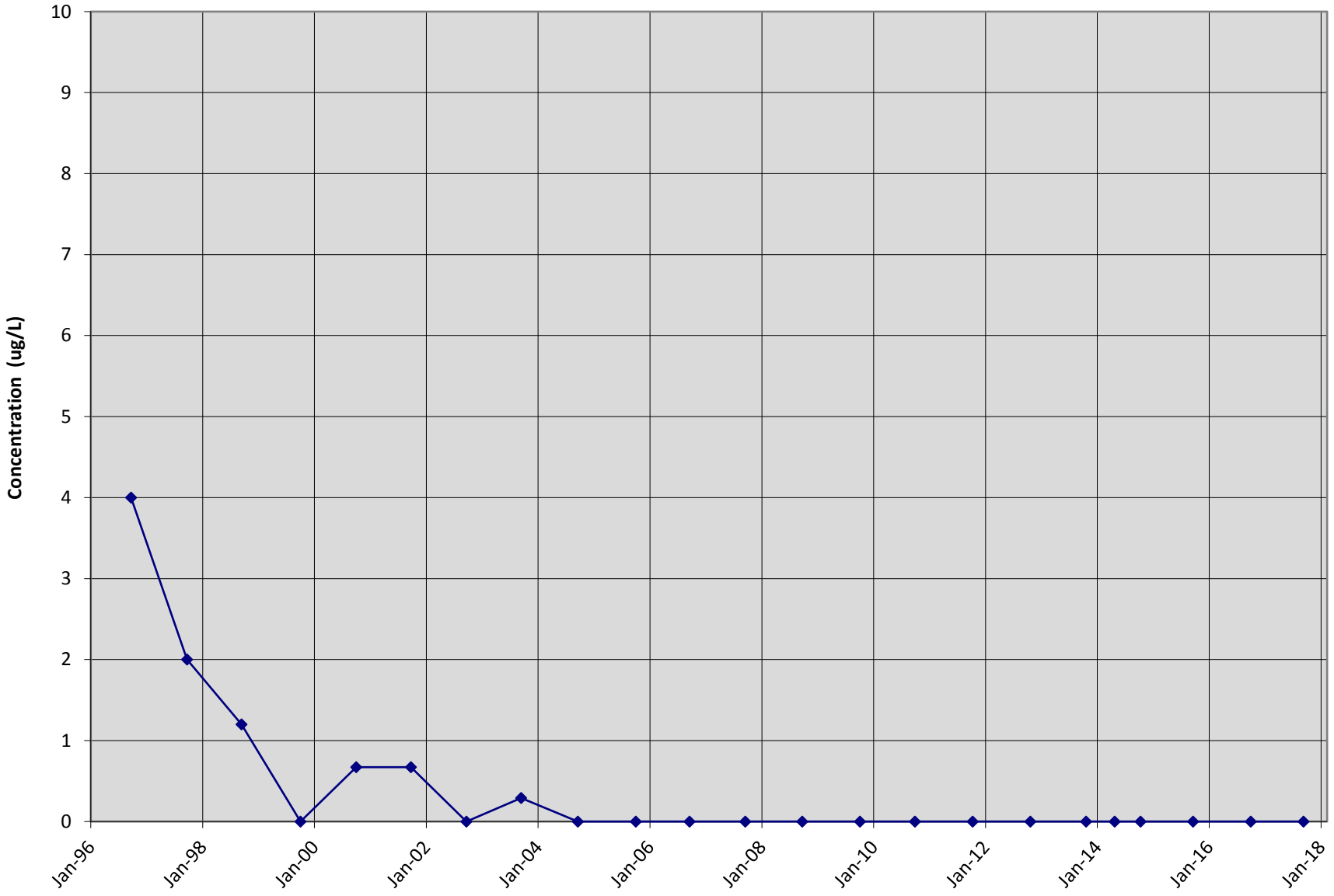
W54 TCVOC


Concentration (ug/L)
100
90
80
70
60
50
40
30
20
10
0
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13
Jan-15
Jan-17

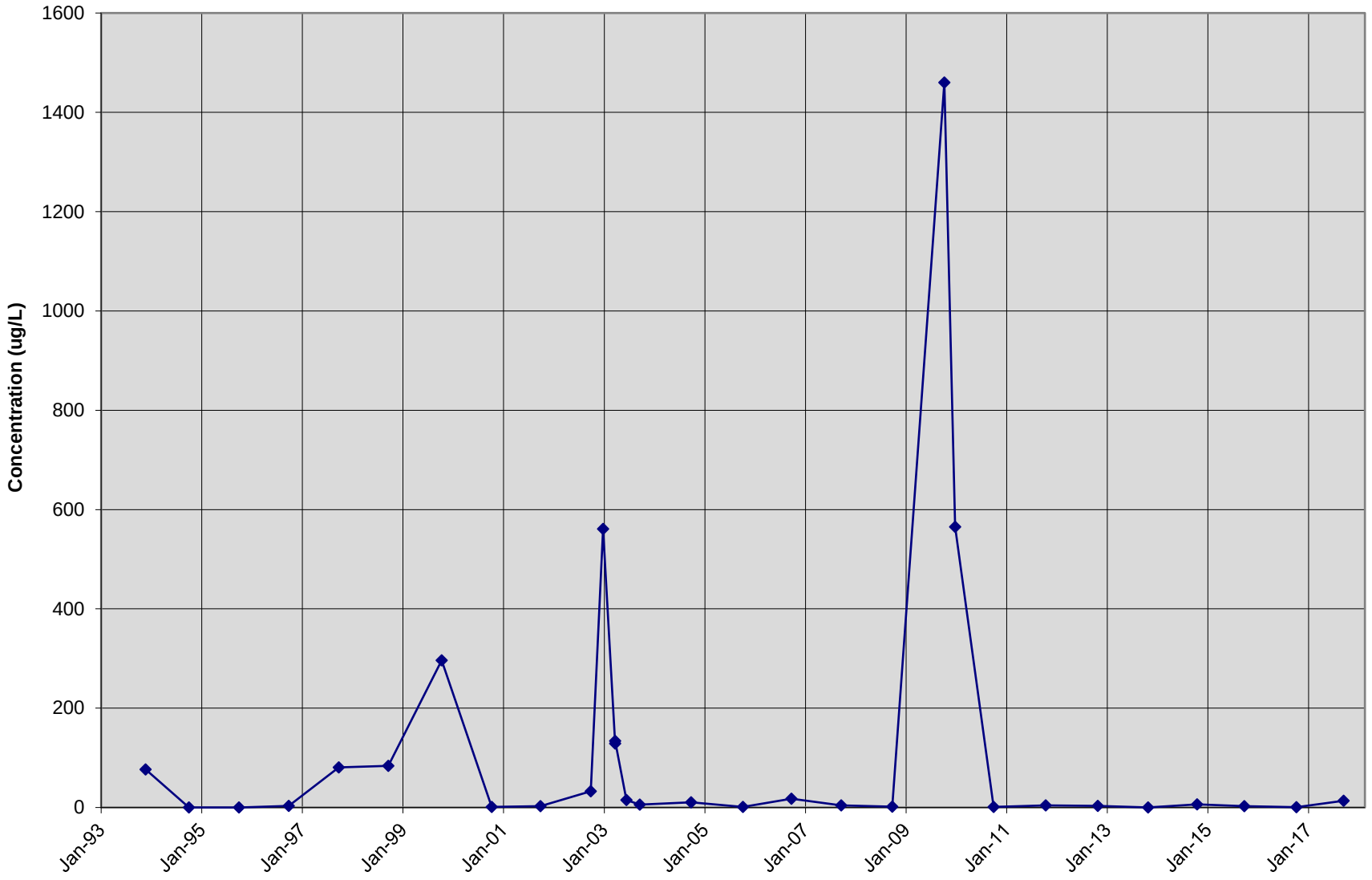
W55 TCVOC


Concentration (ug/L)
100
90
80
70
60
50
40
30
20
10
0
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13
Jan-15
Jan-17
Jan-19

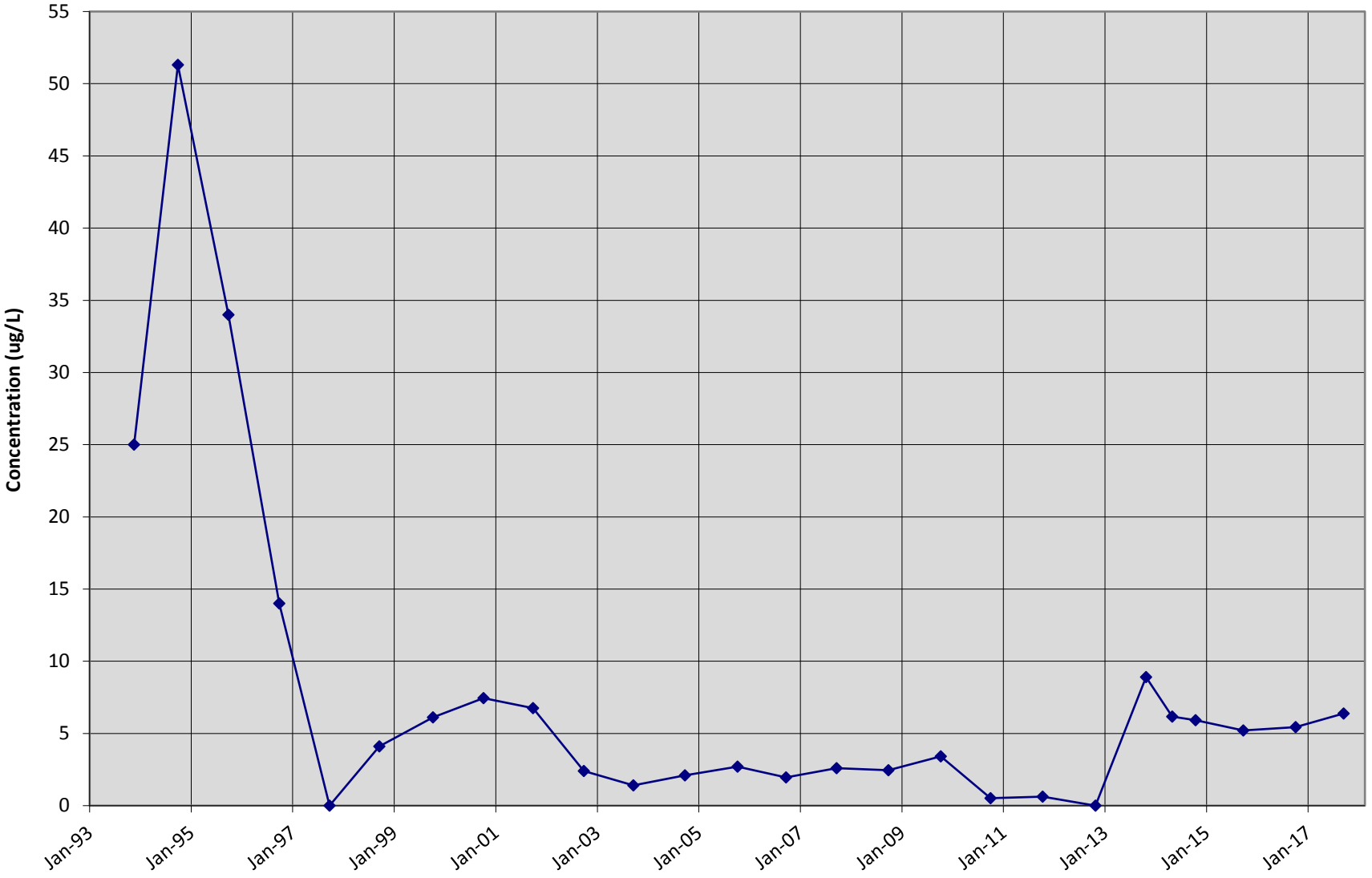
W56 TCVOC


Concentration (ug/L)
10
9
8
7
6
5
4
3
2
1
0
Jan-96
Jan-98
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Jan-12
Jan-14
Jan-16
Jan-18

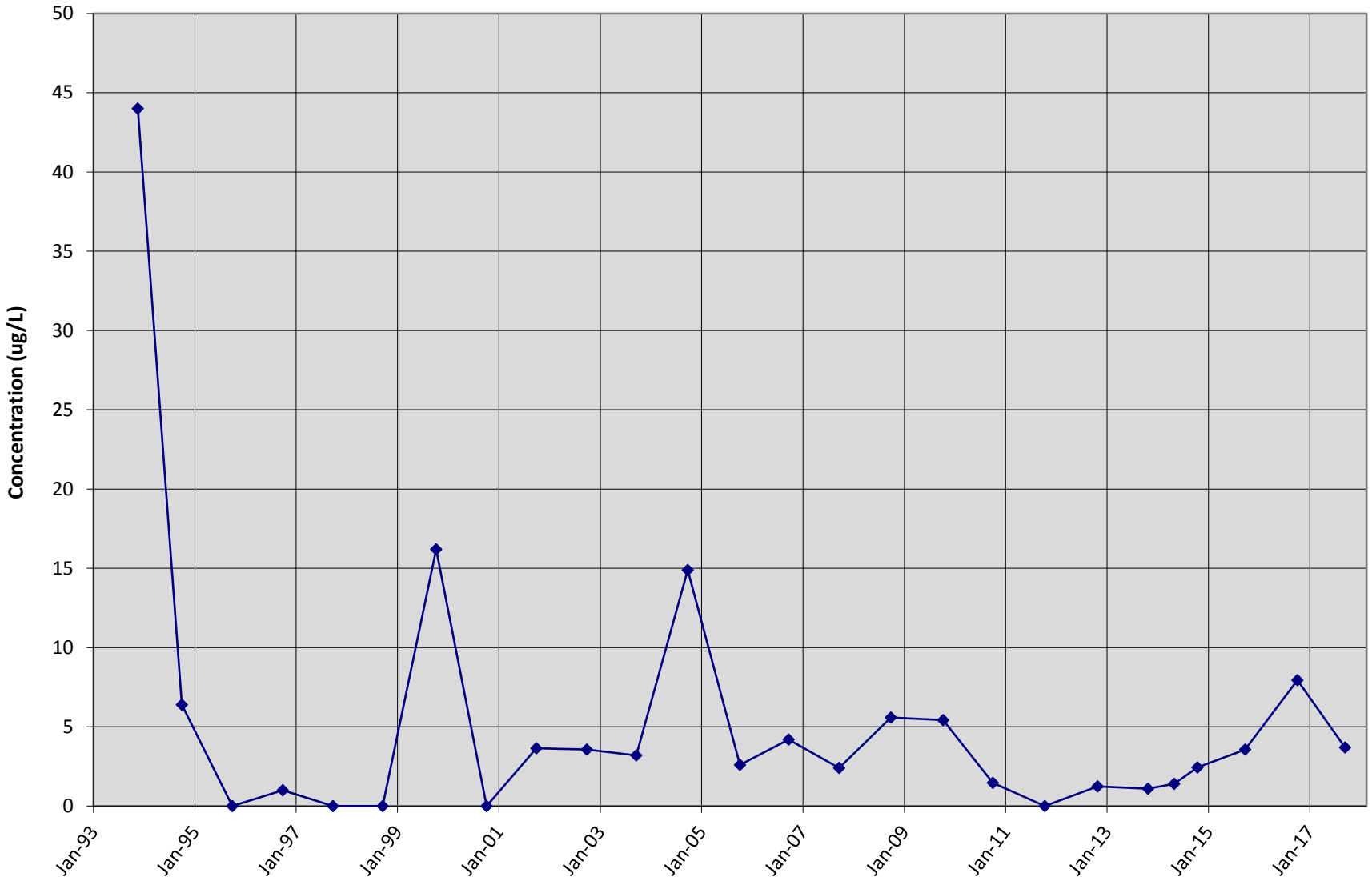
WC3B TVOC


Concentration (ug/L)
1600
1400
1200
1000
800
600
400
200
0
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13
Jan-15
Jan-17

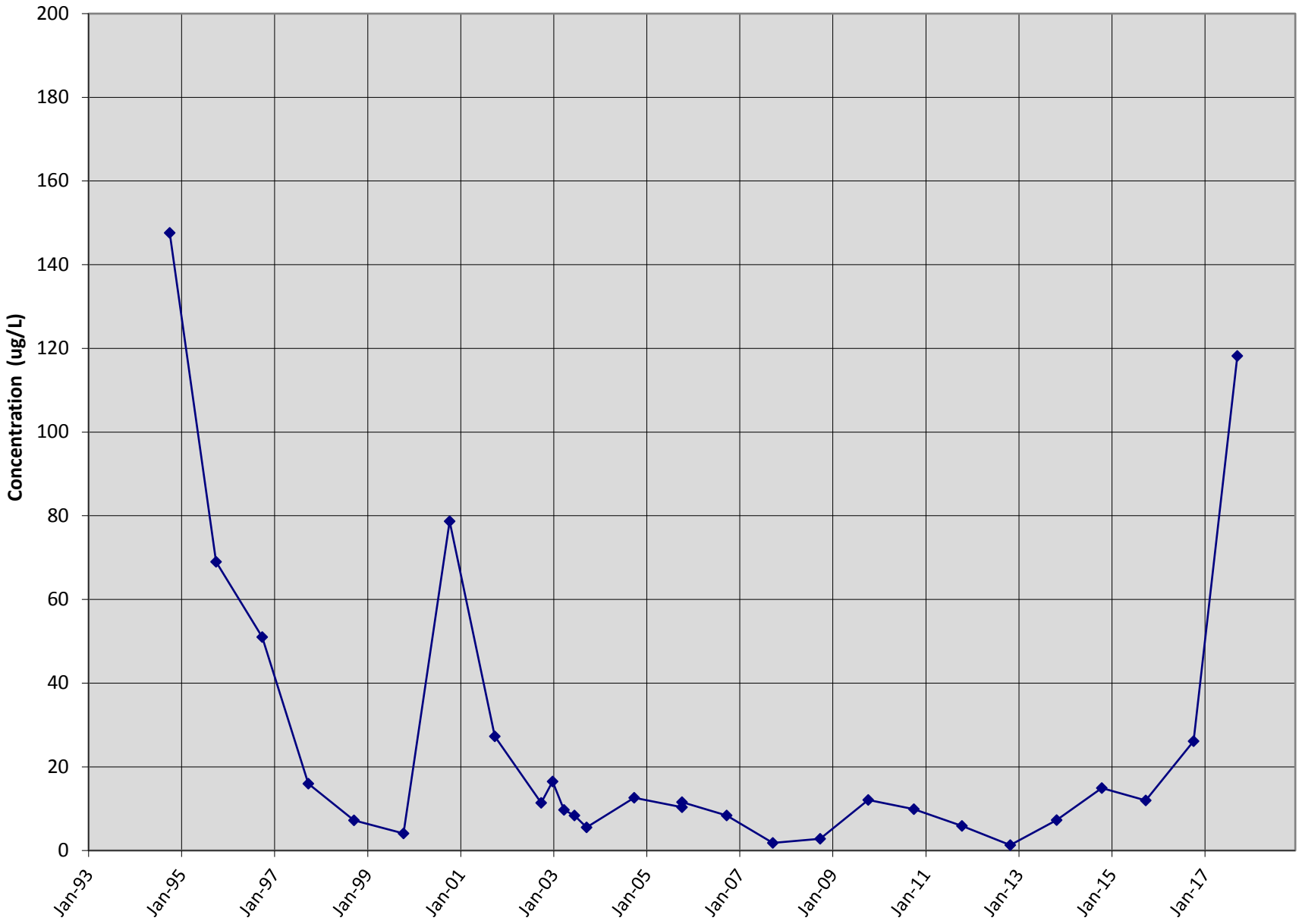
C2S TCVOC


Concentration (ug/L)
55
50
45
40
35
30
25
20
15
10
5
0
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13
Jan-15
Jan-17

C4S TCVOC


Concentration (ug/L)
50
45
40
35
30
25
20
15
10
5
0
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13
Jan-15
Jan-17

WC5A TCVOC


Concentration (ug/L)
200
180
160
140
120
100
80
60
40
20
0
Jan-93
Jan-95
Jan-97
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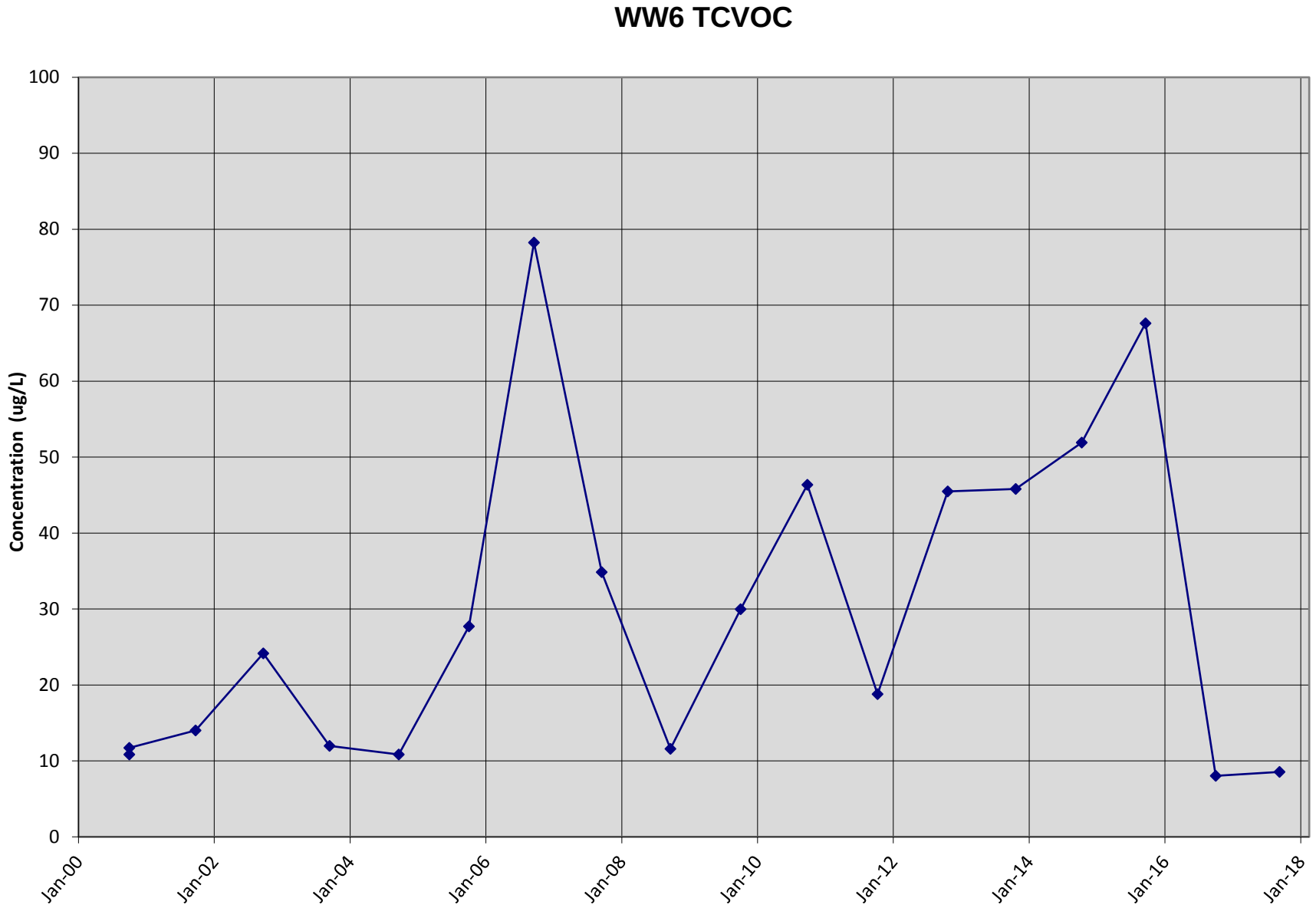
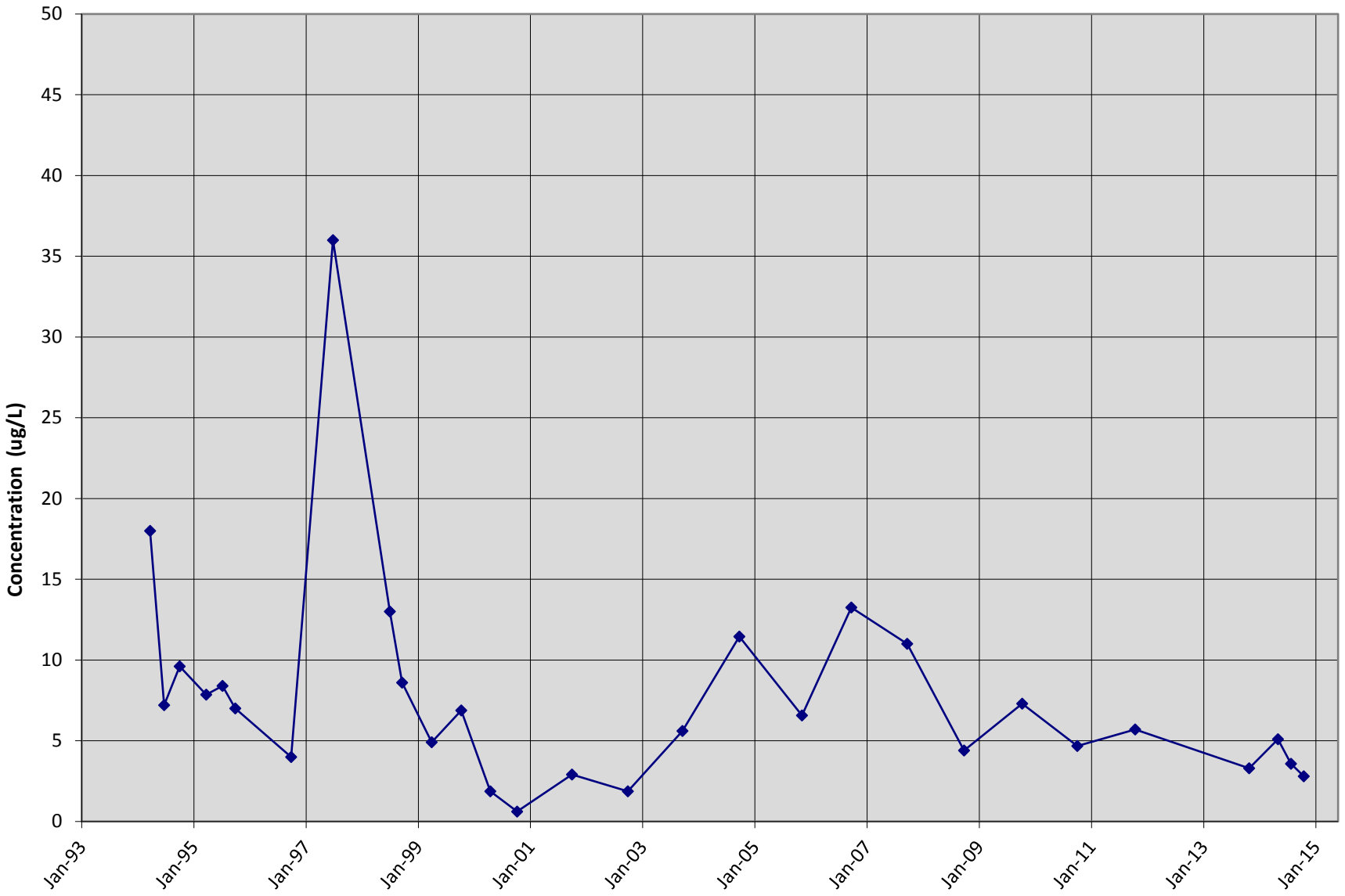
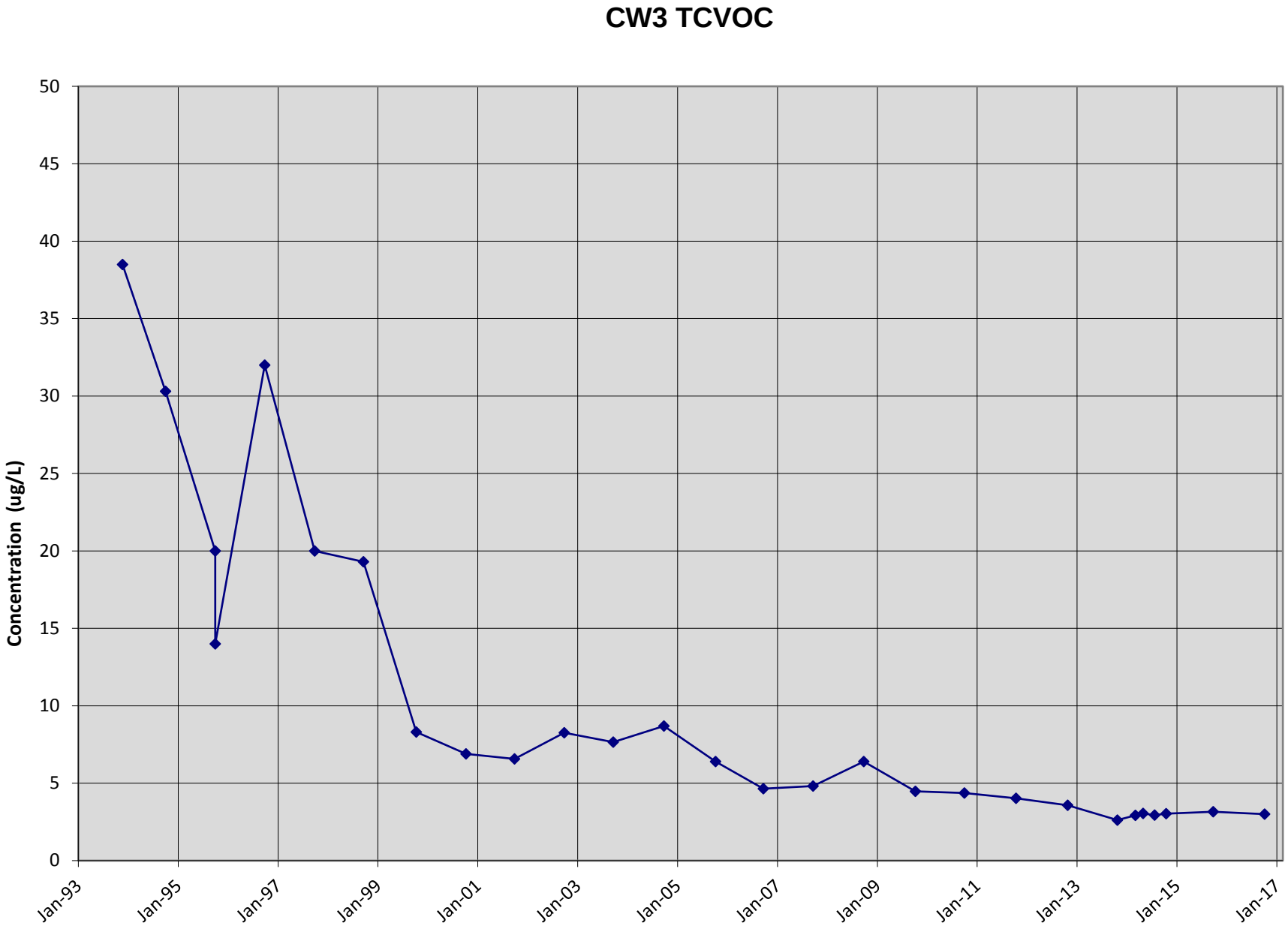
Jan-07
Jan-09
Jan-11
Jan-13
Jan-15
Jan-17

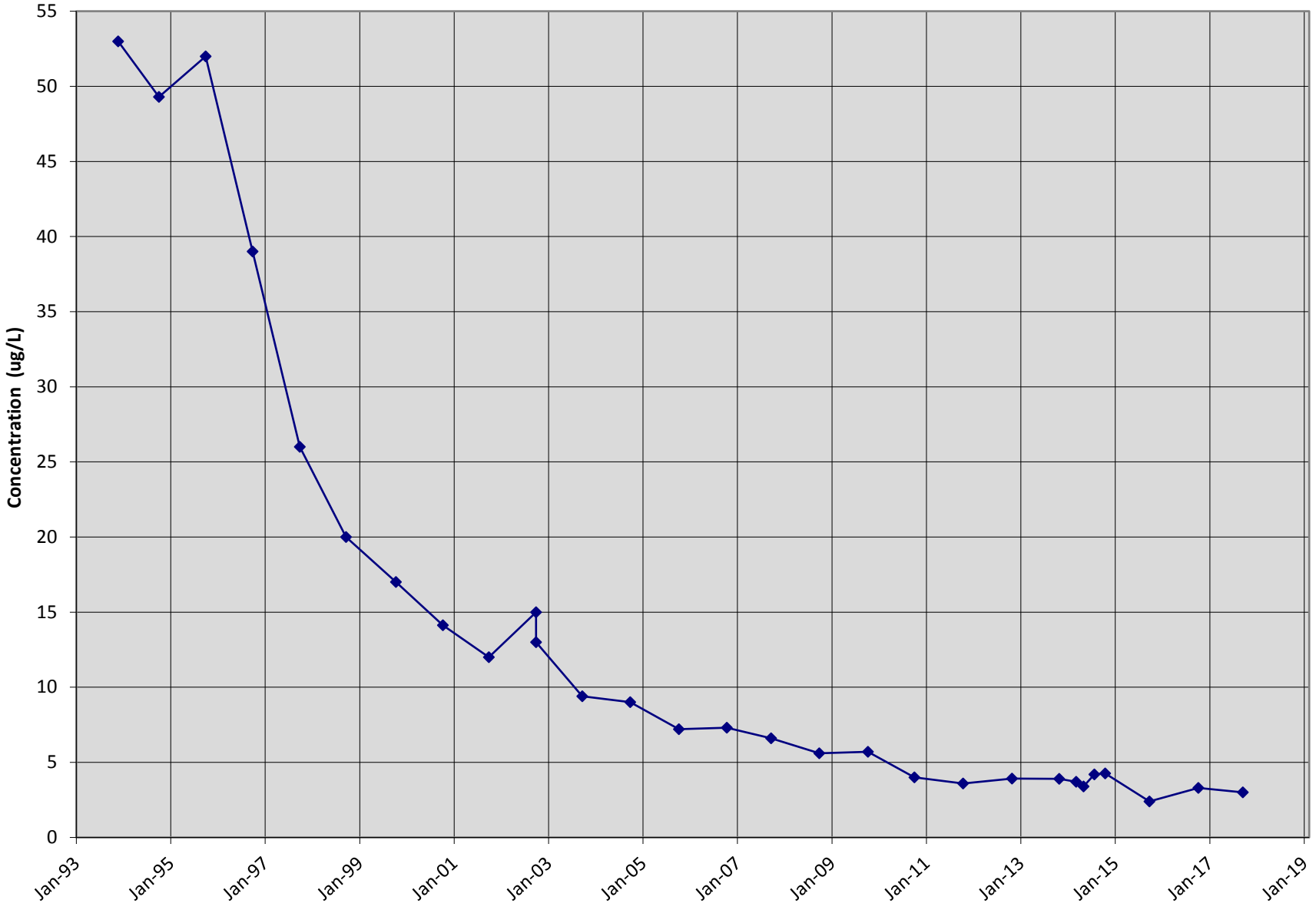

WW6 TCVOC
Concentration (ug/L)
100
90
80
70
60
50
40
30
20
10
0
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Jan-12
Jan-14
Jan-16
Jan-18

IWD TCVOC


Concentration (ug/L)
50
45
40
35
30
25
20
15
10
5
0
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13
Jan-15


CW3 TCVOC
Concentration (ug/L)
50
45
40
35
30
25
20
15
10
5
0
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13
Jan-15
Jan-17

CW6 TCVOC


Concentration (ug/L)
55
50
45
40
35
30
25
20
15
10
5
0
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13
Jan-15
Jan-17
Jan-19

www.ghd.com