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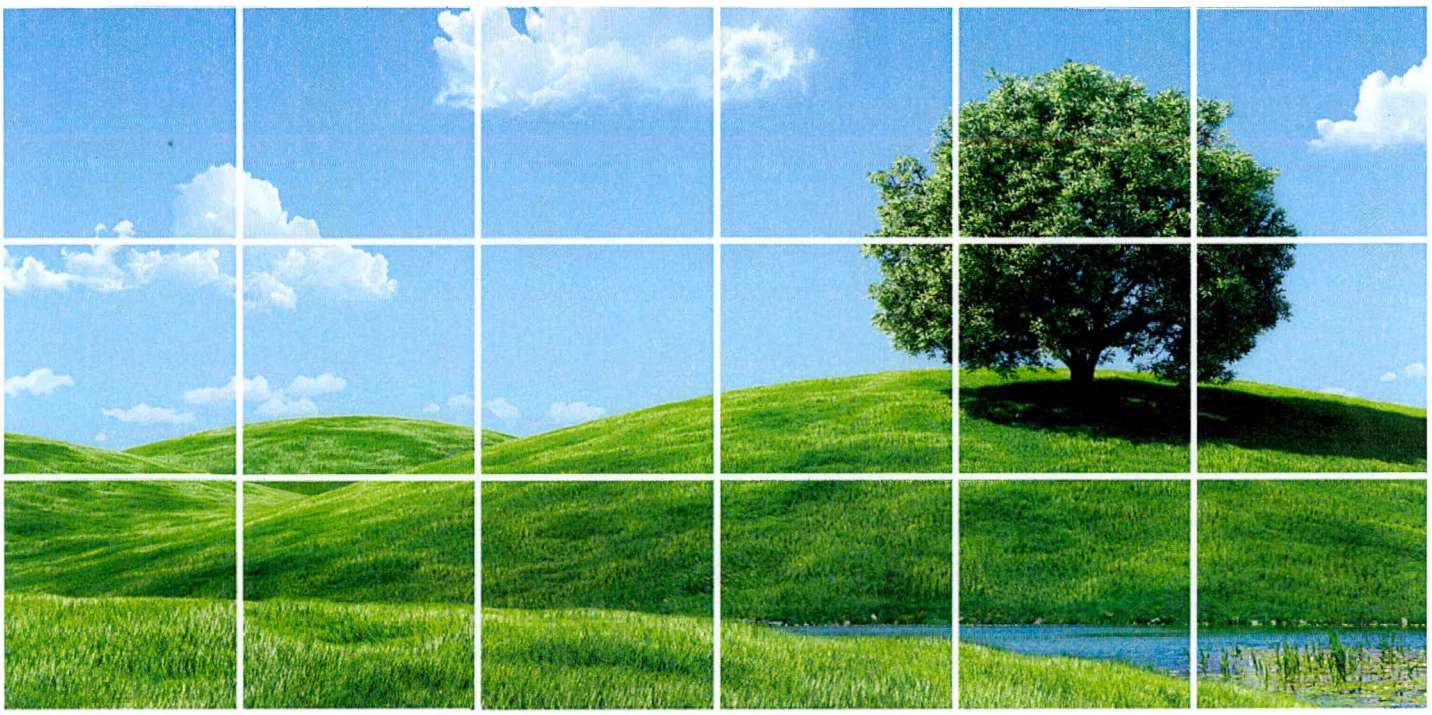

EW1 SHUTDOWN PILOT STUDY WORK PLAN

WAUSAU WATER SUPPLY NPL SITE
WAUSAU, WISCONSIN

Prepared for: City of Wausau

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1.0 INTRODUCTION

This proposed Pilot Study for the Wausau Water Supply NPL Site is designed to confirm that the groundwater containment network of pumping wells will continue to be effective without the need for pumping at EW1. The Site location and a Site Plan are presented on Figures 1.1 and 1.2.

1.1 EW1 HISTORY

EW1 was installed in 1990 to remove a hot spot of contamination and the hot spot has been removed. By 2006, the reduction of volatile organic compounds (VOCs) at EW1 had flat lined (see the EW1 chart in Appendix A), but operation of the well continued because VOC concentrations at certain monitoring wells still exceeded the cleanup standards.

EW1 operated nearly continuously from 1990 through 2010. Over the last few years, the pumping performance of EW1 has declined due to iron bacteria fouling of the pump and well screen, and normal wear of the pumping components. As such, maintenance costs have escalated significantly. Since 2006, approximately $126,000 has been spent to keep EW1 operating. Maintenance conducted includes: well screen rehab and pump cleaning in 2007, 2011, and 2012, update of pump motor controls in 2008, pump replacement in 2011, and repair of the new pump in 2012. Table 1.1 summarizes the maintenance history and costs since 2006.

As described below in Section 2.0, EW1 has essentially accomplished its performance goal, which was to prevent the migration of high concentrations of volatile organic compounds (VOC) in the source area groundwater to the West Well Field (USEPA, Record of Decision, December 1988). Given that the current groundwater VOC concentrations near the former source area are much lower, and that EW1 lies within the capture area of other extraction wells, continued operation of EW1 is not critical relative to the protection of potential receptors.

In order to provide assurance that the current shut-down of EW1 is not creating potential exposure risks to human health or the environment, background information regarding the Site geology/hydrogeology, current contaminant plume conditions, and contaminant plume capture zones is presented in Section 2.0. The proposed Pilot Study Work Plan is presented in Section 3.0.

2.0 CURRENT POTENTIAL EXPOSURE RISK EVALUATION

Risks related to Site VOCs in groundwater are not occurring and will not occur due to controls that are already in place. There are no completed risk pathways at the Site. The primary evidence to support this conclusion includes:

1. Laboratory analyses of samples from the City water supply have not detected any VOCs.
2. City ordinances control potential private well installations and require the abandonment of existing wells.
3. VOC concentrations in the groundwater have been reduced by orders of magnitude and the remaining low concentrations are captured by the City's water treatment system.

These items are described in more detail below. Additional essential information regarding the background of the West Side Well Field and the status of the west side contaminant plume is summarized as follows.

2.1 SITE BACKGROUND

The groundwater on the west side of the Wisconsin River was found to be contaminated by trichloroethene (TCE) and associated daughter products in 1982. Municipal water supply wells CW6, CW7, CW9, CW10, and CW11 are west of the river and, collectively, are known as the West Well Field. The west side groundwater contamination was addressed as a separate operable unit (OU1), which was limited to the TCE plume impacting the West Well Field, specifically CW6. The Record of Decision (ROD) for OU1 was signed in December 1988 and was subsequently incorporated into the final Consent Decree for the east and west side groundwater contaminant plumes, which was entered in to US District Court in January 1991.

2.2 GROUNDWATER MONITORING

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 VOC removal from the aquifer.

Water table elevations and VOC concentrations are monitored annually to track VOC trends and to confirm containment of contaminated groundwater. Groundwater monitoring at the Site has been divided into two areas, the East Bank and the West Bank of the Wisconsin River, corresponding to the two original source areas. Water levels are monitored at 25 wells on the East Bank and at 38 wells on the West Bank. Samples for VOC analysis are collected from 13 wells on the East Bank, including municipal well CW3, and from 14 wells on the West Bank, including EW1 and CW6.

2.3 GROUNDWATER CLEANUP STANDARDS

The groundwater cleanup standards for the Site are the United States Environmental Protection Agency (USEPA) maximum drinking water contaminant levels (MCLs). The MCLs for the primary VOC contaminants of concern at the Site are:

- Trichloroethylene (TCE) 5 µg/L (1.8 in ROD) NR140 per OU1+2 RODs need ESD?
- Tetrachloroethylene (PCE) 5 µg/L
- cis-1,2-Dichloroethylene (DCE) 70 µg/L
- Vinyl chloride 0.2 2 µg/L

2.4 WEST BANK CONTAMINATION AND REMEDIATION HISTORY

Prior to the installation of EW1 in late 1990, the west side contaminant plume was contained solely by CW6. The source of the west side plume was determined to be the former municipal landfill near the Marathon Electric facility and potentially from operations related to Marathon Electric. These source areas are 1500 to 1700 feet south of CW6. In 1987, groundwater concentrations of TCE and its daughter products near the former landfill were over 2,000 µg/L, and concentrations near CW6 were over 4,000 µg/L. The extent of the plume, based on 1987 laboratory data, is shown on the attached Figure 2.1 (from Warzyn, 1989). The West Bank municipal supply wells, EW1, and Site monitoring well locations are shown on the Site Plan, Figure 1.2.

EW1 was installed to remove contaminants from the south end of the plume and to create a hydraulic flow barrier between the source area and CW-6. As stated in the OU1 ROD, the primary site response objectives were to protect the City drinking water from exposure to TCE and to protect the West Well Field from future increased levels of TCE

migrating from the southern source areas. CW6 was still critical to the remedy and was necessary to contain and remove contaminants on the north end of the plume.

Under the City's current pumping scenario, supply wells CW6, CW10, and CW11, which are all part of the West Well Field, are utilized on weekdays and CW3, CW7, and CW9 are used to supply water over the weekends. CW3 is the only supply well on the east side of the river. Groundwater extracted by CW6 is pumped via force main to the City's Water Treatment plant on the east side of the river. The water from CW6 is treated by an air stripper prior to blending with the water from CW10 and CW11. The blended water is then aerated further and treated for iron and manganese in a clarifier for four hours prior to distribution to the water supply system. Groundwater pumped by CW3 is also treated by the air stripper prior to blending with the water from CW7 and CW9.

2.5 SUMMARY OF SITE GEOLOGY AND HYDROGEOLOGY

Unconsolidated deposits underlying the Site consist of glacial outwash and alluvial sediments that have filled in the preglacial stream valley that the Wisconsin River now follows. These sediments are characterized by mostly coarse grained sand and gravel that comprise the main drinking water aquifer for the City. Estimates for the hydraulic conductivity of the aquifer range from 50 ft/day to 300 ft/day, with the higher values representing the areas along the central portion of the valley where coarser sediments are more prevalent.

Under natural (non-pumping) conditions, groundwater on both sides of the river would flow toward, and discharge to, the river. However, under pumping conditions the flow directions within the aquifer are controlled by the six municipal water supply wells, which pumped a total of 71,200,000 gallons in 2012. The majority (82%) of the groundwater production is from the West Well Field, which consists of five water supply wells (CW6, CW7, CW9, CW10, and CW11). Approximately 18% of the production occurs at CW3, which is on the east side of the river. The river level adjacent to the Site is controlled by a dam and the level is maintained at approximately 1188 feet. Water table elevations for shallow monitoring wells adjacent to river typically range from 1185 to 1187 feet, indicating that the river is recharging the aquifer in the area of the Site and the West Well Field.

Thus, the natural groundwater flow and discharge to the river has been reversed due to pumping by the municipal wells. Prior to the operation of EW1, hydraulic gradients created by City wells CW3 and CW4, on the East Bank of the river, induced recharge

from the river to the aquifer and also captured groundwater in the deeper portion of the aquifer from the West Bank side of the river. CW4 has since been removed, thus the hydraulic influence of the East Bank wells has diminished significantly.

When EW1 was operational there were three principal groundwater capture zones - EW1, West Well Field, and CW3. These capture zones are illustrated on Figure 2.2, which also shows that the West Bank and East Bank contaminant plumes were completely contained within these capture zones. Under the current pumping scenario, with EW1 shut off, impacted groundwater on both the East and West Banks continues to be contained within the capture zones of CW3 and the West Well Field. The approximate capture zones under the current pumping scenario are illustrated on Figure 2.3. This Figure also shows groundwater flow directions and the limits of the contaminant plume based on 2012 data.

Groundwater data illustrated on Figures 2.2 and 2.3 indicate that the contaminant plume on the West Bank is contained, and will be removed, by CW6. A portion may be captured and removed by CW3, but there is no portion of the plume that could escape capture and subsequent treatment. Thus, given the controls already in place (no private well receptors, treatment of CW6 and CW3 groundwater), there is no significant exposure risk when EW1 is not operating.

2.6 STATUS OF WEST SIDE PLUME REMEDIATION

Since 1990, EW1 and CW6 have removed the majority of the TCE plume on the west side of the river. Figure 2.1 (from Warzyn, 1989) presents total chlorinated ethene (perchloroethylene, trichloroethene, cis-1,2-dichloroethene)concentrations in the fall of 1987. As shown on the figure, the total ethene concentration at W55, which is approximately 500 feet south of CW6, was 4,320 µg/L and the total ethene concentration at W53, which is south of EW1 and adjacent to the former landfill, was 2,280 µg/L. Recent data for W55 indicate that the total ethene concentration has not exceeded 5 µg/L since 2006. A graph showing W55 total ethene concentrations from 1993 through 2012 is presented in Appendix A. W53 was removed from the sampling plan in 2000 because VOCs were rarely detected at that location and total ethene concentrations did not exceed 5 µg/L after 1995.

Total ethene influent concentrations at EW1 and CW6 have also decreased significantly since EW1 was installed. Concentrations reported for CW6 between 1982 and 1988 ranged from 70 to 260 µg/L (Warzyn, 1989). Recent data indicate that the CW6 total

ethene concentration has been less than 10 µg/L since 2002 and has been less than the cleanup standard of 5 µg/L for the last three years (see the CW6 graph in Appendix A). EW1 total ethene concentrations in the early 1990s were typically greater than 100 µg/L. As shown on the EW1 graph in Appendix A, concentrations have ranged between 6.9 and 10.3 µg/L since July 2006.

Other total VOC concentration graphs for west side monitoring wells show even greater reductions in VOC concentrations. Concentrations at R2D have decreased from a high of 3,636 µg/L in 1993, to 6.38 µg/L in 2012. R4D concentrations have declined from 1,318 µg/L in 1995, to 4.89 µg/L in 2012. Concentrations at R3D have been reduced from 1,811 µg/L in 2000, to 20.6 µg/L in 2012. Figure 2.3 shows the extent of the West Bank plume based on the November 2012 groundwater monitoring results. Currently, the West Bank plume is comprised almost entirely of TCE.

2.6.1 VOC PLUME REMNANTS

As described in previous Annual Monitoring Reports, historically there has been a remnant of higher TCE concentrations in the area of monitoring wells R2D and R3D. Prior to the installation of EW1, this remnant of higher concentrations was in the area of R2D, migrating north toward CW6. When EW1 began pumping, the flow gradient was reversed and over the past 20 years the remnant has been slowly drawn to the south toward EW1. The capture zone flow divide between CW6 and EW1 is near the R2D/R3D area. As such, groundwater in this area is in a stagnation zone. Also, as pumping rates and pumping schedules vary at EW1 and CW6, the capture divide will move back and forth, causing the plume remnant to occasionally switch flow direction, having the effect of minimal movement in one direction or the other. From 1997 through 2000, the TCE concentrations at monitoring well R3D increased as the remnant moved south from R2D. R3D concentrations then began decreasing as the remnant continued south to EW1. As the pumping rate at EW1 declined during 2010 and 2011, the TCE concentrations at R3D increased as a portion of the higher concentration remnant may have been recaptured by the pumping influence of the West Well Field and migrated north toward CW6. The 2012 data, however, indicate continued decline of VOC concentrations at R3D.

Monitoring well IWD is on an island in the Wisconsin River approximately mid-way between EW1 and CW3. IWD monitors the deep portion of the aquifer beneath the river. As described in Section 2.5, prior to the installation of EW1, the capture zone of the East Bank municipal wells extended beneath the river to the west and captured a

portion of the West Bank contaminant plume. The TCE detected at IWD is a remnant of the West Bank contamination. After EW1 was installed, a groundwater divide was created in the area of IWD, causing a stagnation zone. Thus, the groundwater beneath the river moves very slowly, or often changes direction, toward the West Bank or East Bank, depending on the pumping rates and schedules of EW1 and CW3. The end result is that the TCE plume beneath the river has generally remained in place since EW1 began pumping. IWD was last sampled in November 2011 and exhibited a TCE concentration of 5.7 µg/L. A graph showing IWD TCVOC concentrations from 1994 through 2011 is presented in Appendix A. If EW1 remains shut down, the stagnation zone beneath the river will cease to exist and the plume beneath the river will be captured and removed by CW3.

2.6.2 CHANGES IN GROUNDWATER FLOW AND PLUME AREA AFTER EW1 SHUT DOWN

When annual monitoring was conducted in November of 2012, EW1 had been shut down for approximately four months. Comparison of 2011 groundwater contours versus 2012 contours indicates that the capture zone for the West Well Field had expanded to the south and the CW3 capture zone expanded to the west, as expected. The extent of the West Bank VOC plume did not change significantly from 2011 to 2012. VOC concentrations at R4D and R3D were significantly lower in 2012. However, the concentrations were consistent with long term trends at both wells, which have been trending downward for the last 8 to 10 years.

2.6.3 GROUNDWATER FLOW VELOCITIES AND VOC PLUME MIGRATION

Groundwater flow velocities and travel time estimates were calculated to predict approximate arrival times for plume remnant migration from current locations to other well locations that are along the presumed path of migration, assuming flow toward CW6 or CW3. The results of these calculations are presented in Table 2.1. In order to assess potential capture of the plume in the EW1 source area, by CW3, the travel time from EW1 to IWD was estimated using a range of aquifer properties characteristic of that area. The resulting travel time from EW1 to IWD, a distance of 760 feet, ranged from 2.6 to 5.8 years. Although the aquifer permeability is very high in this area, the calculated travel times are still prolonged due to the fact that the horizontal hydraulic gradient is very shallow across that section. Potential capture of the higher

concentration plume remnant near R3D, by CW6, was estimated by calculating the travel time from R3D to W55 (a distance of 810 feet). This resulted in a range of 1.4 to 3.1 years.

2.7 FORMER LANDFILL REMEDIATION

Additional remediation of the former municipal landfill source area was conducted during the 1990s through the installation and operation of a soil vapor extraction (SVE) system. The west side SVE system operated for approximately two years and, based on vapor discharge sample results, removed approximately 300 pounds of VOCs from the landfill source. USEPA approved the closure of the west side SVE remediation system in 1996.

2.8 CITY TREATMENT PLANT SAMPLE RESULTS

The City Treatment Plant collects samples of the City water supply on a quarterly basis. The samples are collected at two exit points where the treated water leaves the plant. The lab reports for the four sets of samples collected in 2012 are presented in Appendix B. The only VOCs detected during 2012 were chloroform and bromodichloromethane. Neither of these compounds are associated with the Site groundwater contamination and both are common drinking water disinfection byproducts.

As stated above, CW6 contains and captures potential impacted groundwater at the south end of the West Well Field. Any potential plume migration from the EW1 area would also be captured by CW6 and subsequently treated by the Water Treatment Plant.

Prior to the installation of EW1, a portion of the contaminant plume was drawn beneath the river to supply wells CW3 and CW4 on the east side of the river. CW4 has since been abandoned, thus reducing the potential for plume migration to the east. However, there is still potential for a small portion of the west side plume to be captured by CW3. All groundwater pumped by CW3 is also treated by the air stripper prior to blending with the other wells and additional treatment in the clarifier.

2.9 INSTITUTIONAL CONTROLS

The City of Wausau Municipal Code contains a Wellhead Protection ordinance in Chapter 23.54 and also a Private Water Well ordinance in Chapter 19.30. The Private Water Well ordinance gives the City the authority to deny applications for groundwater wells, to regulate installation of wells, and to require abandonment of existing groundwater wells. The Wellhead Protection ordinance prevents certain activities within a delineated area that could potentially increase the risk of groundwater contamination. The boundaries of the Wellhead Protection Area (WHPA) in the area of the Site and West Well Field are depicted on Figure 2.4. Copies of the current ordinances, including a map of the entire WHPA, are provided in Appendix C and these institutional controls (IC) are summarized in Table 2.2.

Additional evaluation of ICs at the Site will be conducted during the Pilot Study, as described in Section 4.1.2 below.

A private water well survey was conducted in the area outlined on Figure 2.4. City of Wausau personnel searched their private well database in May of 2013 and did not locate any wells within the area. CRA searched the Wisconsin Water Well Database (January 2012, Gen Ver 4.0) and no wells were located within the area.

2.10 CURRENT EXPOSURE RISK SUMMARY

Through a combination of more than 20 years of groundwater remediation, source area remediation, institutional controls, and continued hydraulic control and treatment of the remaining plume by CW6 and CW3, the shut down EW1 has not created additional exposure risk to human health or the environment. To summarize:

1. The potential for higher VOC concentrations to migrate from west side source areas to the West Well Field has been eliminated by more than 20 years of EW1 operation and SVE remediation of the former municipal landfill.
2. City Treatment Plant sample results do not indicate potential impact from contaminated groundwater. The west side plume is captured by CW6, which creates a hydraulic barrier to protect the other West Well Field supply wells.
3. Institutional controls maintained by the City of Wausau restrict the installation of private wells and can require abandonment of existing wells. Although well surveys indicate that there are no private wells near the Site.

3.0 PROPOSED PILOT STUDY WORK PLAN

The proposed Pilot Study is designed to provide data to detect or confirm aquifer conditions in six principal areas:

1. **Plume Containment**: Water level data collected in November 2012, when EW1 was not pumping, indicate that the entire VOC plume is contained by the pumping of the City water supply wells in the West Well Field and at CW3 on the East Bank. The pilot study will confirm that the capture zones created by the City wells are consistently maintained by monitoring water levels and City well pumping rates.
2. **No Receptors**: No private wells have been identified in the area of groundwater contamination and there are City ordinances that do not allow the installation of wells within the City limits. During the pilot study program CRA will evaluate the existing institutional controls.
3. **Safe Water Supply**: The municipal wells have treatment by air stripping and will continue to provide a safe water supply. The City and CRA will continue monitoring municipal well pumping data and chemical data through the pilot study.
4. **Remediation of R3D Area Stagnation**: Figure 2.2 shows the stagnation area around R3D, which was near the flow divide between EW1 and CW6. Over the remediation history, aquifer flushing of VOCs in the R3D area has been slower than other areas because this area was in a stagnation zone between EW1 and CW6. Under the pilot test, we will evaluate the benefit of improved flushing of VOCs to CW6 by monitoring VOC concentrations at R2D, R3D, W55, MW1A, and CW6. In addition, water levels will provide information on the shift of the flow divide to its new location as shown on Figure 2.3.
5. **Continued Remediation of EW1 Area**: As shown on Figures 2.2 and 2.3, the area south of EW1 will likely be captured by municipal well CW3. Confirmation of capture by CW3 will be conducted by measuring water levels at all monitoring wells in that area. VOC concentrations will also be monitored at W54, C2S, R4D, WSWD, E21, and IWD.
6. **Continued Remediation of East Bank Plume**: No change to the East Bank Plume is expected and groundwater will continue to be captured by CW3. We will confirm the stability of the East Bank plume by monitoring groundwater elevations and VOC concentrations.

Success of the pilot study will be defined by a demonstration that there are no receptors, there is a safe drinking water supply, the VOC plumes are contained, and the VOC plumes are stable or decreasing in concentration. The pilot study is proposed to be conducted for one year and would include five quarterly monitoring events as described below.

3.1 PILOT STUDY SCOPE OF WORK

The Pilot Study scope of work primarily consists of increased monitoring of Site monitoring wells and City supply wells. Water levels will be measured more frequently and samples for VOC analysis will be collected more often and from some additional wells. An evaluation of institutional controls will also be conducted. The proposed work plan follows.

3.1.1 GROUNDWATER MONITORING PLAN

Based on the estimated VOC plume travel times, as presented in Section 2.6.3, and overall low VOC concentrations, it is not expected that significant changes would be detected within the plume in a two or three year time frame. However, VOC monitoring may indicate reduced concentrations in wells where concentrations are currently higher, such as the R3D area. Therefore, the groundwater monitoring plan will focus on groundwater elevation and pumping rate monitoring to ensure that there are no significant changes to the groundwater flow system. Additional VOC monitoring will also be conducted to monitor potential changes in the plume configuration and to more closely monitor potential changes in municipal well VOC concentrations.

3.1.1.1 ANNUAL GROUNDWATER MONITORING EVENT

The annual monitoring program, conducted in November, will continue as before. The annual monitoring event includes:

1. Measure groundwater elevations at all Site monitoring wells and City supply wells (approximately 63 wells total)
2. Collect samples for VOC analysis from 13 East Bank wells (including CW3) and 14 West Bank wells (including EW1 and CW6).

In addition to the standard scope of the annual monitoring event, samples will also be collected from the West Well Field influent (combined discharge from wells other than CW6) to the City Treatment Building to confirm that the plume is only affecting CW6. Also, monitoring well E21, which is a deep well next to the river on the East Bank, will be added to the annual monitoring event to detect potential plume migration beneath the river to CW3.

3.1.1.2 ADDITIONAL QUARTERLY MONITORING EVENTS

Additional groundwater monitoring will be conducted on a quarterly schedule (February, May, and August) to measure groundwater elevations at all Site monitoring wells and to collect samples for VOC analysis. The quarterly monitoring events will include the following:

1. Each quarter collect samples for VOC analysis from City wells CW3, CW6, and the West Well Field influent (combined pumping from wells other than CW6).
2. On the February and August quarterly events, collect samples for VOC analysis from monitoring wells R3D, R2D, and W55 to detect potential plume migration northward to CW6. Also collect samples from IWD and E21 to monitor potential plume migration from the West Bank to CW3.
3. On the May quarterly event, collect samples for VOC analysis from all West Bank monitoring wells that are currently sampled during the annual monitoring event (12 monitoring wells, EW1, and CW6). Also collect samples from IWD, E21, and CW3 on the East Bank.
4. Monitor the groundwater pumping rates of all City wells on a quarterly basis (data will be provided by the City of Wausau water treatment plant). These data will be reviewed to ensure that there are no significant changes to the City's established pumping schedule.
5. Obtain and review the City water supply quarterly VOC analytical results. These samples are collected by the City from the two exit points of the Water Treatment Building. These data will be provided by the City Water Treatment Plant.

Table 3.1 presents a summary of the current annual monitoring plan and the proposed monitoring plan for the Pilot Study.

3.1.2 REPORTING

Monitoring results will be reported quarterly. The reports will include all field and lab data, figures, charts, and tables, data analysis, and, recommendations for revisions to the monitoring plan, if deemed necessary. A final report will be prepared after five monitoring events have been completed.

3.1.3 SCHEDULE

The monitoring plan will be implemented for one year from the date of USEPA written approval and will include five monitoring events. Quarterly reports will be submitted in January, April, July, and October. After five monitoring events a final report will be prepared to summarize the results and provide recommendations.

4.0 INSTITUTIONAL CONTROLS EVALUATION

Additional evaluation and documentation of institutional controls will be conducted in accordance with the guidance provided by USEPA in their Memorandum to File dated July 24, 2013. The following specific topics will be evaluated:

1. Description of the areas where groundwater exceeds the performance standards (areas which will not allow Unlimited Use/Unrestricted Exposure).
2. Description of existing ICs and IC objectives that ensure protection of human health and the environment.
3. Explanation and documentation of private water well surveys conducted in the area and planned follow-up actions, if any.
4. Demonstrate that governmental controls are currently in effect by providing a current dated and official copy of existing governmental controls (ordinance, statutes etc.) that implement the IC objectives for the restricted areas. Identify any sunset provisions in the governmental control.
5. Evaluate whether existing governmental controls cover the entire area that needs to be restricted, including information used to depict the restricted area covered by the control (is the restricted area and control based on reliable and up to date information, data and maps?)
6. Provide Map and GIS information of restricted areas including area where groundwater exceeds performance standards and area remediated to Site cleanup standards based on current and up to date monitoring data.
7. Provide Map and GIS information of the of areas regulated by governmental controls; and
8. Provide maps and GIS that overlay the information of 6. and 7. above.

All maps and GIS information will conform to the following requirements:

- Identify site boundaries, streets, property ownership and assessor's parcel numbers or other plat or survey information.
- Identify the accuracy of the GIS coordinates (i.e. within 0.01 feet).
- Format the GIS coordinates into an ESRI polygon-shape file. The shape file shall be projected into the UTM, NAD 83 projection system.
- Identify the UTM zone.

- Provide an attribute name in the shape file for each polygon submitted. For example: "city limits boundary", "residential use prohibited", "groundwater use prohibited"

The Objectives, Restrictions and Performance Standards of the Institutional Controls will be assessed. This will include a discussion of whether all IC objectives/performance standards/restrictions described are clearly stated in the control.

The following assessment will be conducted to document and evaluate the monitoring and compliance with Institutional Controls.

1. How, when, and by whom is compliance with the institutional controls monitored?
2. Are the results of the IC monitoring routinely and promptly shared with EPA and the State of Wisconsin?
3. Are measures in place to ensure that modifications to the restrictions require EPA and the State approval?
4. Do EPA and/or the State have a Memorandum of Understanding with the governmental entity?
5. Is the property being used in a manner consistent with the restrictions.
6. Provide a summary of the results of Site inspections and interviews with owners, lessees and other holders of property interests (are owners, lessees and other holders of property interests aware of and complying with the restrictions?)
7. Where can information be obtained about the governmental control (ordinance, code)? How do affected parties such as homeowners, contractors and resource users obtain information about the governmental control?
8. Are affected parties and resource users aware of and understand the IC restrictions?
9. Have there been breaches of IC use restrictions. If so, how were they addressed by the governmental agency?

A discussion of the effectiveness of groundwater ICs will be provided in accordance with the following:

1. Assess whether the controls are effective in the short term in maintaining the objectives/restrictions/performance standards in Table 2.2.

2. Assess whether the control will be effective in the long term in maintaining the objectives/restrictions/performances standards in Table 2.2.
3. Discuss whether existing ICs are preventing exposure.
4. Discuss whether land and/or resource use has changed since execution of the ROD. Is current or expected land use consistent with the City or County Master Plan? Does the property owner have any plans to sell or transfer the property? Are there any new developments, either constructed or planned, in the area? Are there any new construction permits pending? If so, what are the plans regarding property's ICs?
5. Discuss how the current land and resource uses relate to exposure assumptions and risk calculations.
6. Discuss whether there are any unintended consequences resulting from the use of a particular restriction.

Based on the results of the IC evaluations proposed above, recommendations may be made if there are any identified deficiencies in the current communication, implementation, or compliance with the ICs.

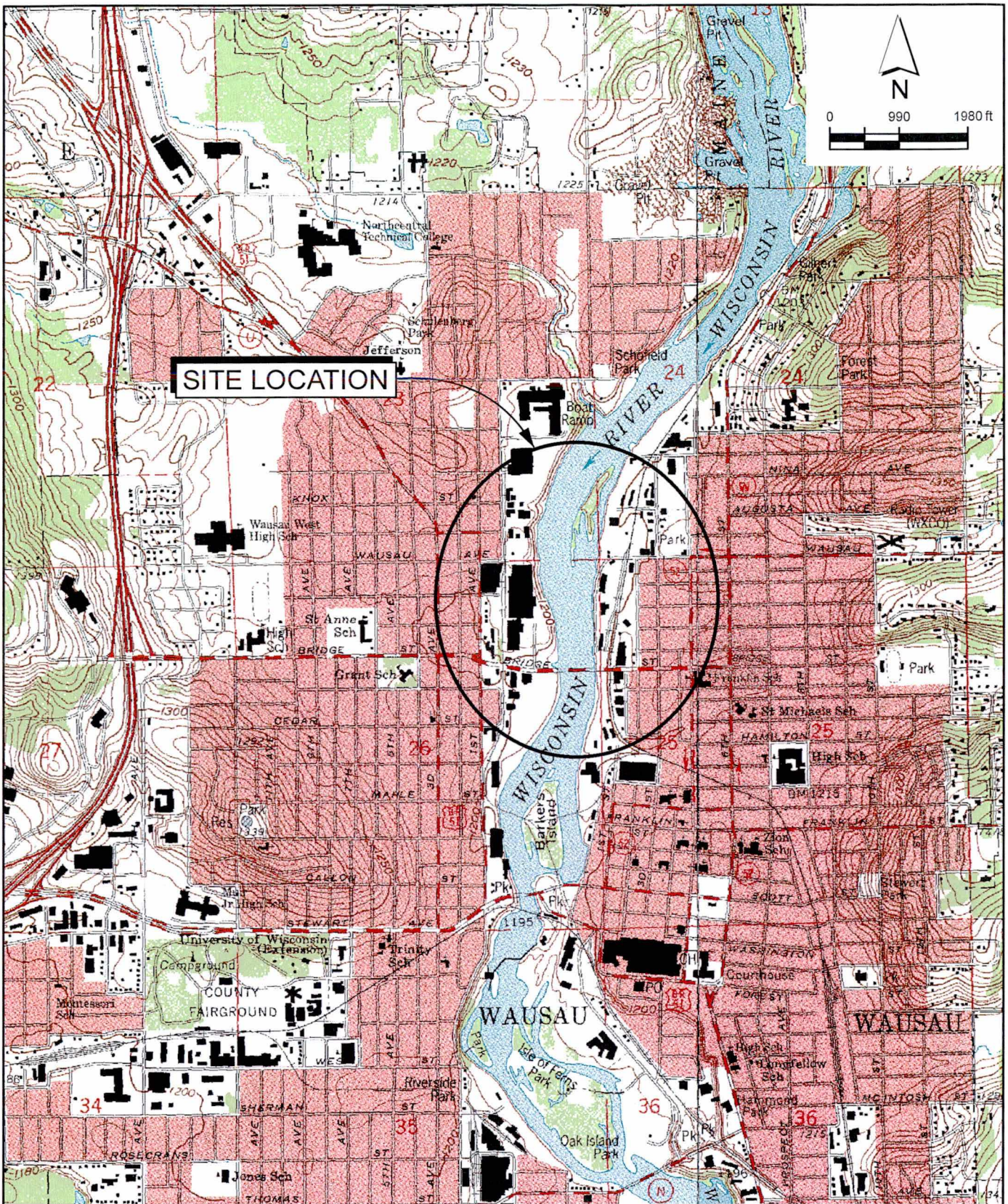
Potential modifications to the IC monitoring requirements and the Operation and Maintenance Plan may be proposed to ensure that ICs are maintained and complied with in the short term and in the long term. A modified monitoring plan would include a schedule and an annual certification to EPA that ICs are in place and remain effective. A communication plan will be prepared and the Wisconsin one-call system will be reviewed for possible use in the area.

The results of the IC evaluation will be provided with Pilot Study final report.

REFERENCES

USEPA, December 1988. Record of Decision: Wausau Ground Water Contamination, EPA ID: WID980993521, OU1, Wausau, WI, 12/23/1988.

Warzyn, July 1989. Remedial Investigation, Wausau Water Supply NPL Site, a.k.a. Wausau Groundwater Contamination NPL Site, Wausau, Wisconsin, Volume 1.



SOURCE: USGS 7.5 MINUTE QUADS - WAUSAU EAST; WAUSAU WEST

figure 1.1

SITE LOCATION

WAUSAU WATER SUPPLY NPL LOCATION

Wausau, Wisconsin

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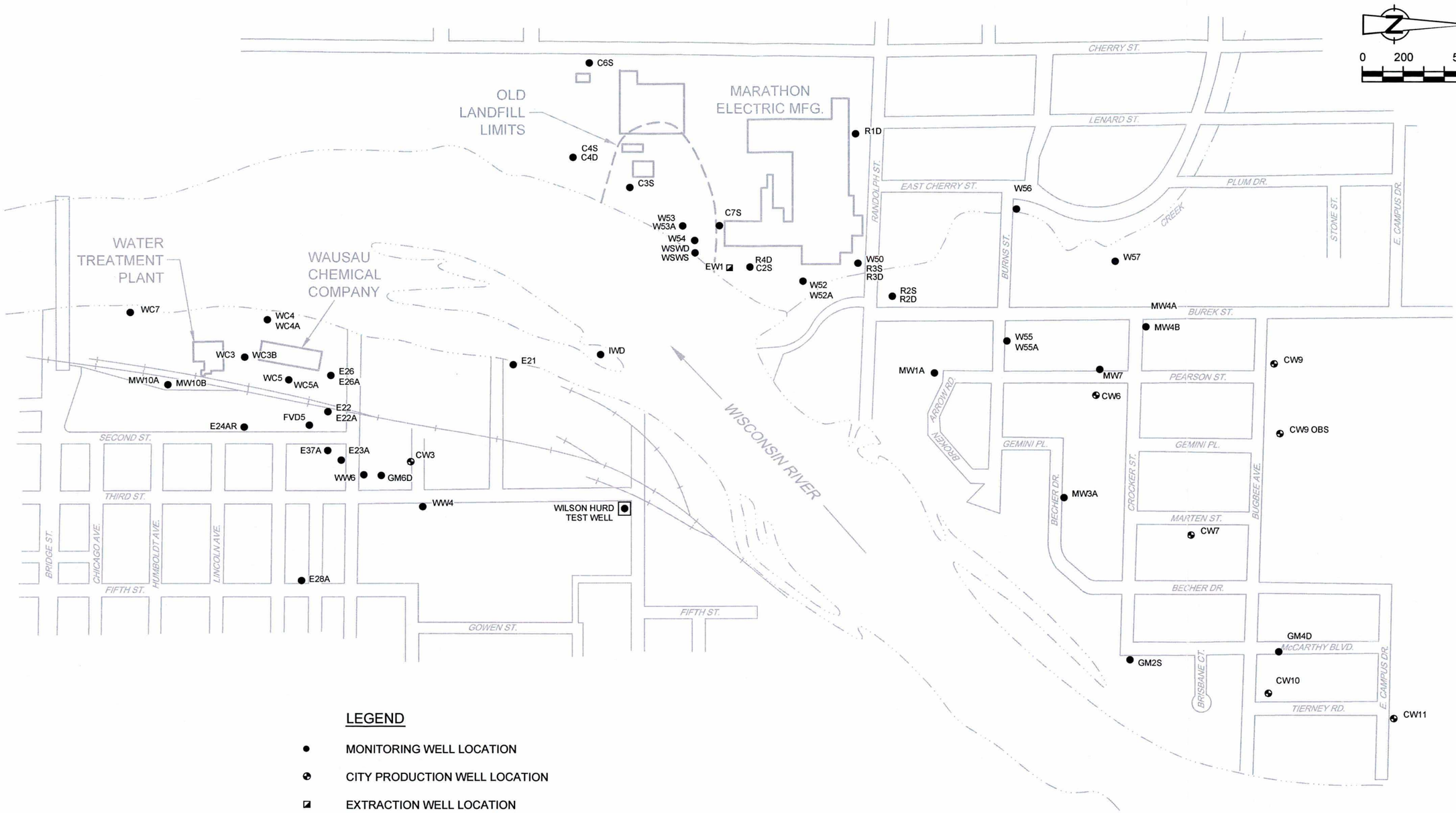


LEGEND

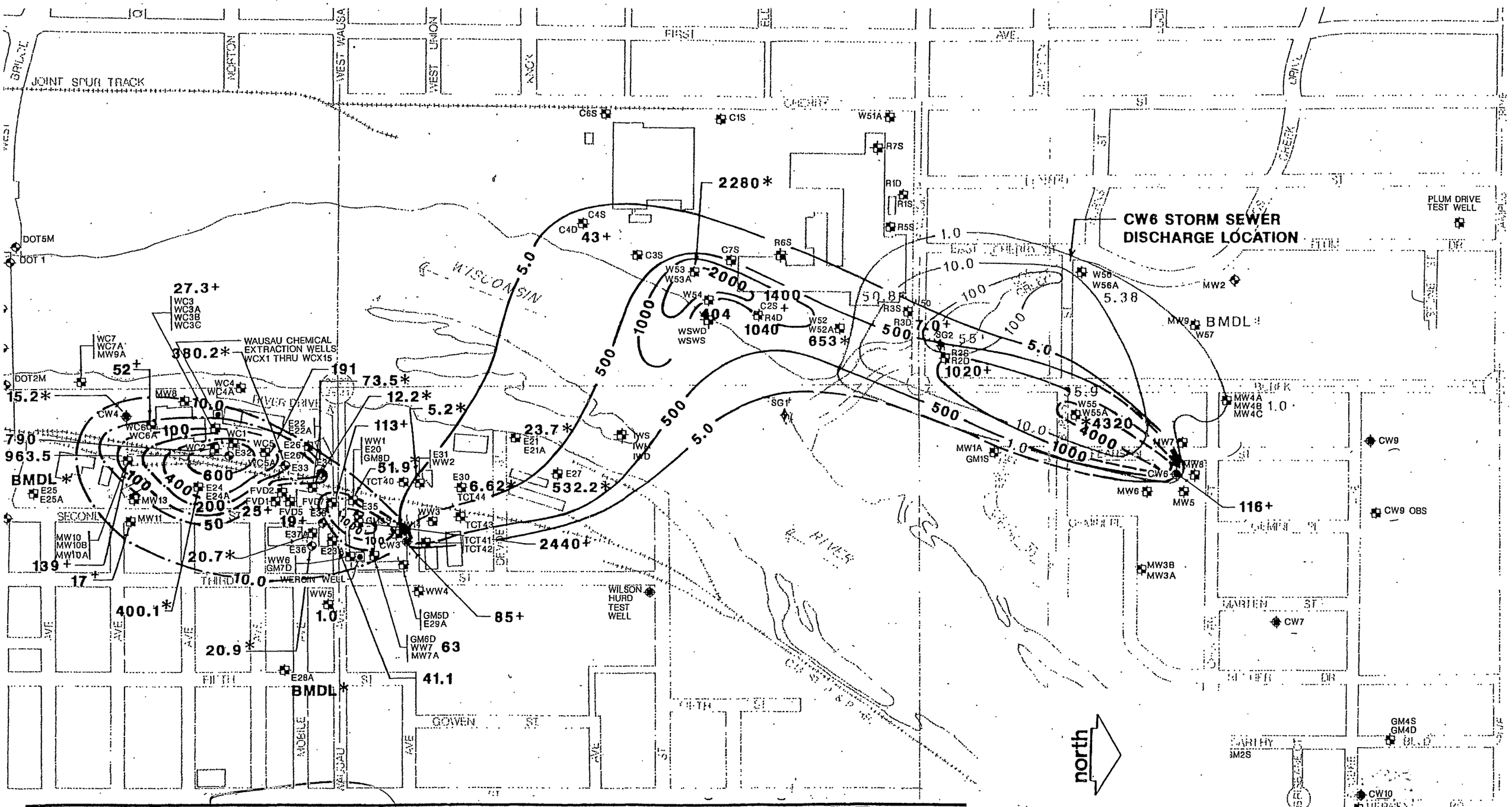
- MONITORING WELL LOCATION
- CITY PRODUCTION WELL LOCATION
- EXTRACTION WELL LOCATION
- INDUSTRIAL WELL LOCATION

figure 1.2

SITE PLAN
WAUSAU WATER SUPPLY NPL SITE
Wausau, Wisconsin

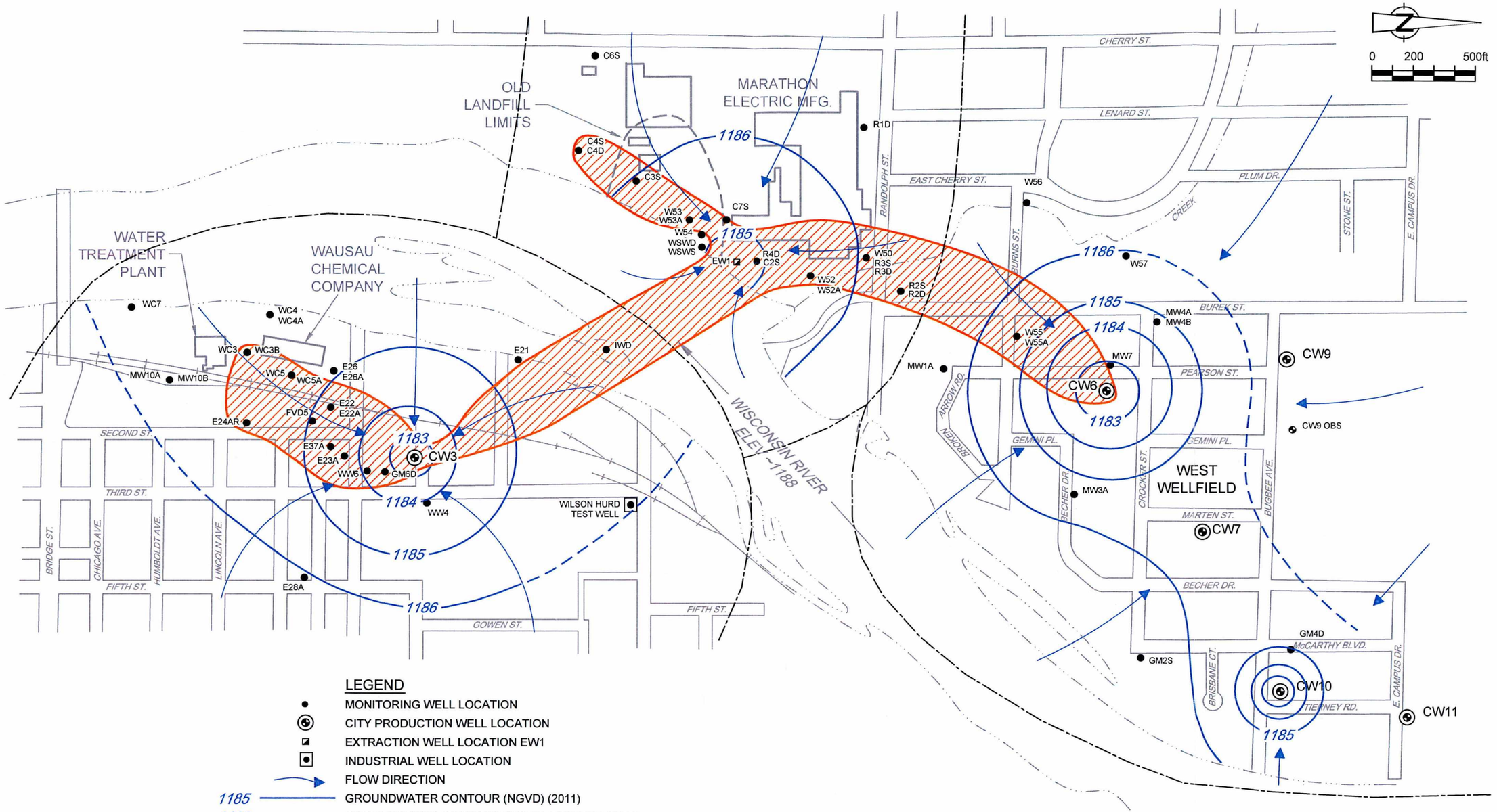
SOURCE: RMT INC. FIGURE 1, 5/14/87.

03978-10(032)GN-WA001 AUG 16/2013



WARZYN Project Number 13076 B66	JULY 24, 1989	TOTAL CHLORINATED ETHENE DISTRIBUTION IN AQUIFER (FALL 1987) REMEDIAL INVESTIGATION WAUSAU WATER SUPPLY NPL SITE WAUSAU, WISCONSIN	WARZYN ENGINEERING INC Madison • Milwaukee Minneapolis • Chicago Detroit Designed By Drawn By JC Checked By CSR Approved By R. Hosfeld Date 7/24/89 Reference

FIGURE 2.1



LEGEND

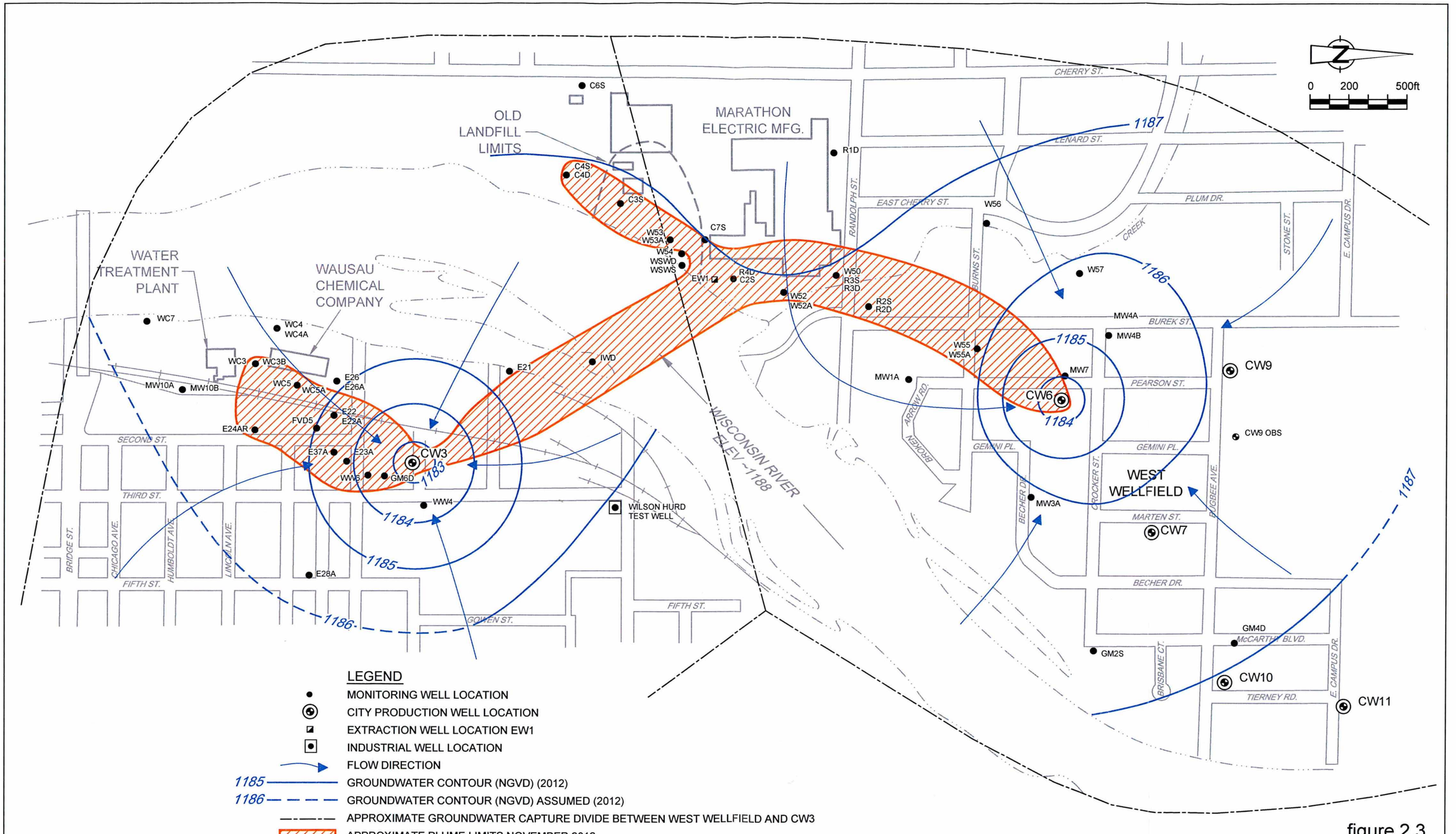
- MONITORING WELL LOCATION
- CITY PRODUCTION WELL LOCATION
- EXTRACTION WELL LOCATION EW1
- INDUSTRIAL WELL LOCATION
- FLOW DIRECTION
- 1185 GROUNDWATER CONTOUR (NGVD) (2011)
- 1186 GROUNDWATER CONTOUR (NGVD) ASSUMED (2011)
- APPROXIMATE GROUNDWATER CAPTURE DIVIDE WHEN EW1 IS PUMPING
- APPROXIMATE PLUME LIMITS NOVEMBER 2012

NOTE: CAPTURE ZONES AND FLOW ARROWS ARE BASED ON 2011 GROUNDWATER ELEVATIONS WHEN EW1 WAS PUMPING.

SOURCE: RMT INC. FIGURE 1, 5/14/87.

figure 2.2

APPROXIMATE CAPTURE ZONES
EW1, CW3, AND WEST WELL FIELD
WAUSAU WATER SUPPLY NPL SITE
Wausau, Wisconsin



LEGEND

- MONITORING WELL LOCATION
- CITY PRODUCTION WELL LOCATION
- EXTRACTION WELL LOCATION EW1
- INDUSTRIAL WELL LOCATION
- FLOW DIRECTION
- 1185 GROUNDWATER CONTOUR (NGVD) (2012)
- 1186 GROUNDWATER CONTOUR (NGVD) ASSUMED (2012)
- APPROXIMATE GROUNDWATER CAPTURE DIVIDE BETWEEN WEST WELLFIELD AND CW3
- APPROXIMATE PLUME LIMITS NOVEMBER 2012

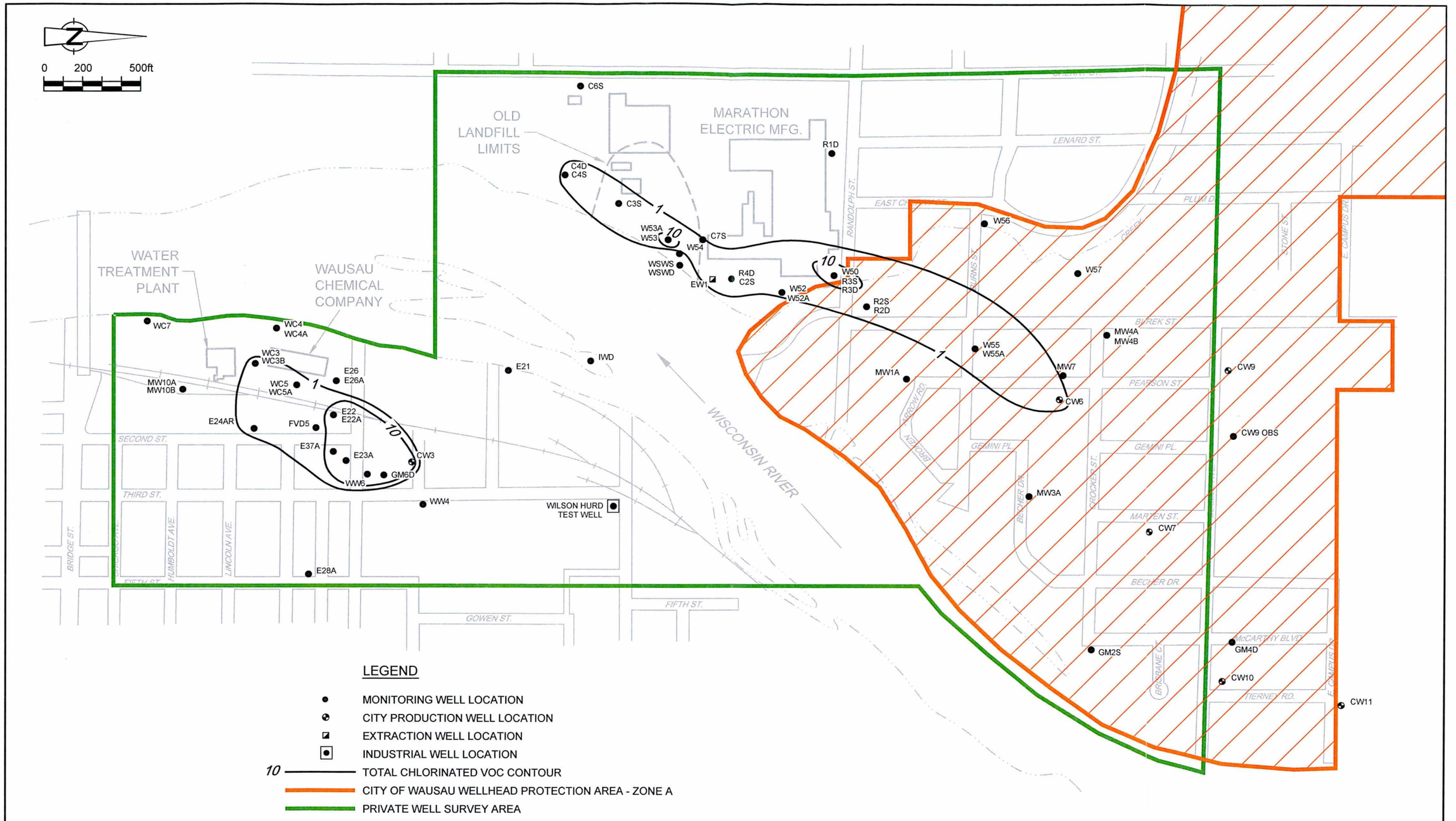
NOTE: CAPTURE ZONES AND FLOW ARROWS ARE BASED ON 2012 GROUNDWATER ELEVATIONS WHEN EW1 WAS NOT PUMPING.

SOURCE: RMT INC. FIGURE 1, 5/14/87.

figure 2.3

APPROXIMATE CAPTURE ZONES
CW3 AND WEST WELL FIELD
WAUSAU WATER SUPPLY NPL SITE
Wausau, Wisconsin

03978-10(032)GN-WA003 AUG 23/2013



LEGEND

- MONITORING WELL LOCATION
- CITY PRODUCTION WELL LOCATION
- EXTRACTION WELL LOCATION
- INDUSTRIAL WELL LOCATION
- 10 TOTAL CHLORINATED VOC CONTOUR
- CITY OF WAUSAU WELLHEAD PROTECTION AREA - ZONE A
- PRIVATE WELL SURVEY AREA

SOURCE: RMT INC. FIGURE 1, 5/14/87.

figure 2.4

WELLHEAD PROTECTION AREA AND PRIVATE WELL SURVEY AREA
WAUSAU WATER SUPPLY NPL SITE
Wausau, Wisconsin

03978-10(032)GN-WA004 AUG 20/2013

TABLE 1.1

EW1 DOWNTIME FOR MAINTENANCE AND REPAIRS 2007 - 2013
WAUSAU WATER SUPPLY NPL SITE
WAUSAU, WISCONSIN

Dates	*Maintenance Performed*	*Approximate Cost*
January 25, 2007 through February 19, 2007	Well screen and pump cleaning/rehabilitation	$28,000
February 26, 2008 through February 28, 2008	Update pump motor controls	$22,000
December 28, 2010 through January 26, 2011	Pump failure/replacement, well screen rehab	$35,000
March 16, 2011 through April 28, 2011	Additional well screen cleaning/rehab	$11,000
July 16, 2012 to current	Pump failure/repair; well screen rehab	$30,000**
	TOTAL	$126,000

Note:

** - final cost to be determined

TABLE 2.1

GROUNDWATER VELOCITY CALCULATIONS AND ESTIMATED TRAVEL TIMES
WAUSAU WATER SUPPLY NPL SITE
WAUSAU, WISCONSIN

ASSUMPTIONS

- K - Hydraulic conductivity ranges from 90 ft/day to 200 ft/day. Based on values used to model flow system (CRA, 1993).
- i – hydraulic gradient from R3D north to W55 = 0.002 ft/ft. Based on historical water table elevations prior to EW1 operation
- i – hydraulic gradient from EW1 area southeast to E21 = 0.001 ft/ft. Based on 2012 water table elevations
- n- effective porosity = 0.25
- V- groundwater flow velocity = Ki/n

RANGE OF CALCULATED FLOW VELOCITIES

Vnorth (R3D to W55) = 260 to 580 ft/yr
Vsoutheast (EW1 to IWD) = 130 to 290 ft/yr

ESTIMATED TRAVEL TIMES

R3D north to W55 (810 ft) = 1.4 to 3.1 years
EW1 southeast to IWD (760 ft) = 2.6 to 5.8 years

TABLE 2.2

INSTITUTIONAL CONTROLS SUMMARY
WAUSAU WATER SUPPLY NPL SITE
WAUSAU, WISCONSIN

Media, Engineered Controls, & Areas that Do Not Support UU/UE Based on Current Conditions.	*IC Objective*	*Title of Institutional Control Instrument Implemented*
Groundwater – Wellhead Protection Zone A	Prevent activities that increase risk of groundwater contamination	City of Wausau Municipal Code Chapter 23.54
Groundwater – all areas within Wausau City limits	Prohibit private groundwater use through the prohibition of private water supply well installations and requirement to abandon existing private wells	City of Wausau Municipal Code Chapter 19.30
Groundwater - Impermeable surface maintenance (paved parking lot) at Wausau Chemical	Prohibit infiltration of precipitation in the former source area on the south end of the facility	Deed Restriction - Document # 1475599

TABLE 3.1

CURRENT MONITORING PLAN AND PROPOSED MONITORING PLAN
WAUSAU WATER SUPPLY NPL SITE
WAUSAU, WISCONSIN

CURRENT MONITORING PLAN

Monitoring Event	*VOC SAMPLE LOCATIONS*			*Laboratory Analysis*	*Groundwater Elevations*
	East Bank	*West Bank*	*Treatment Building*		
February 1st Quarter					
May 2nd Quarter					
August 3rd Quarter					
November 4th Quarter	CW3, E24AR, MW10A, MW10B, WW4, FVD5, E22A, E37A, E23A, WC3B, WW6, WC5A, IWD	EW1, CW6, W53A, W54, R4D, C2S, R3D, C4S, W52, W56, R2D, WSWD, W55, MW1A		VOC (8260)	All Monitoring Wells, City Wells, and EW1 (63 wells total)

PROPOSED MONITORING PLAN

Monitoring Event	*VOC SAMPLE LOCATIONS*			*Laboratory Analysis*	*Groundwater Elevations*
	East Bank	*West Bank*	*Treatment Building*		
February 1st Quarter	CW3, E21, IWD	CW6, R2D, R3D, W53A, W55	West Well Field influent (combined discharge from wells other than CW6)	VOC (8260)	All Monitoring Wells, City Wells, and EW1 (63 wells total)
May 2nd Quarter	CW3, E21, IWD	EW1, CW6, W53A, W54, R4D, C2S, R3D, C4S, W52, W56, R2D, WSWD, W55, MW1A	West Well Field influent (combined discharge from wells other than CW6)	VOC (8260)	All Monitoring Wells, City Wells, and EW1 (63 wells total)
August 3rd Quarter	CW3, E21, IWD	CW6, R2D, R3D, W53A, W55	West Well Field influent (combined discharge from wells other than CW6)	VOC (8260)	All Monitoring Wells, City Wells, and EW1 (63 wells total)
November 4th Quarter	CW3, E24AR, MW10A, MW10B, WW4, FVD5, E22A, E37A, E23A, WC3B, WW6, WC5A, E21, IWD	EW1, CW6, W53A, W54, R4D, C2S, R3D, C4S, W52, W56, R2D, WSWD, W55, MW1A	West Well Field influent (combined discharge from wells other than CW6)	VOC (8260)	All Monitoring Wells, City Wells, and EW1 (63 wells total)

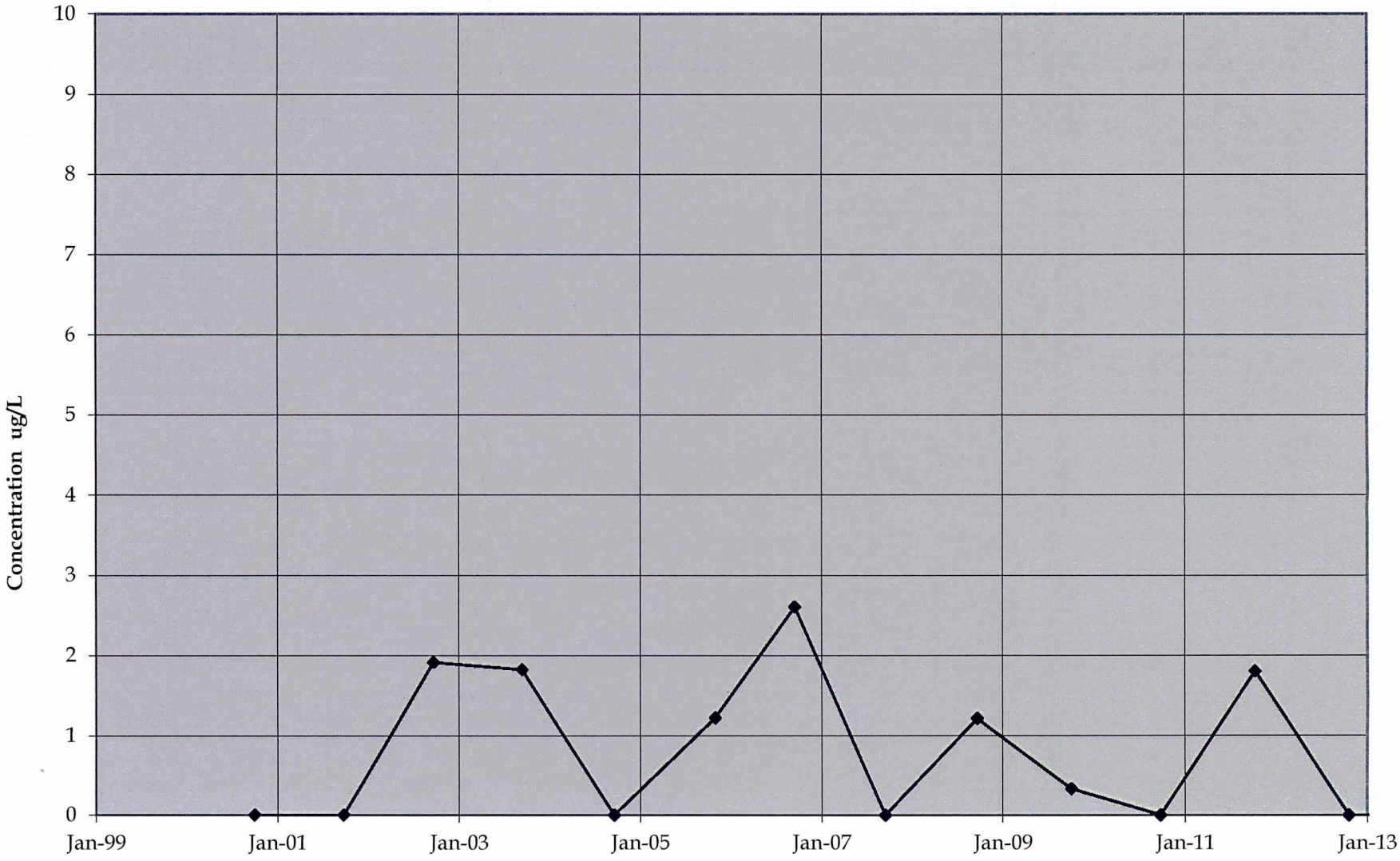
Notes:

Additional data to be obtained includes:
1. Pumping rates of all City wells on a quarterly basis
2. City water supply quarterly VOC analytical results. These data will be provided by the City Water Treatment Plant.

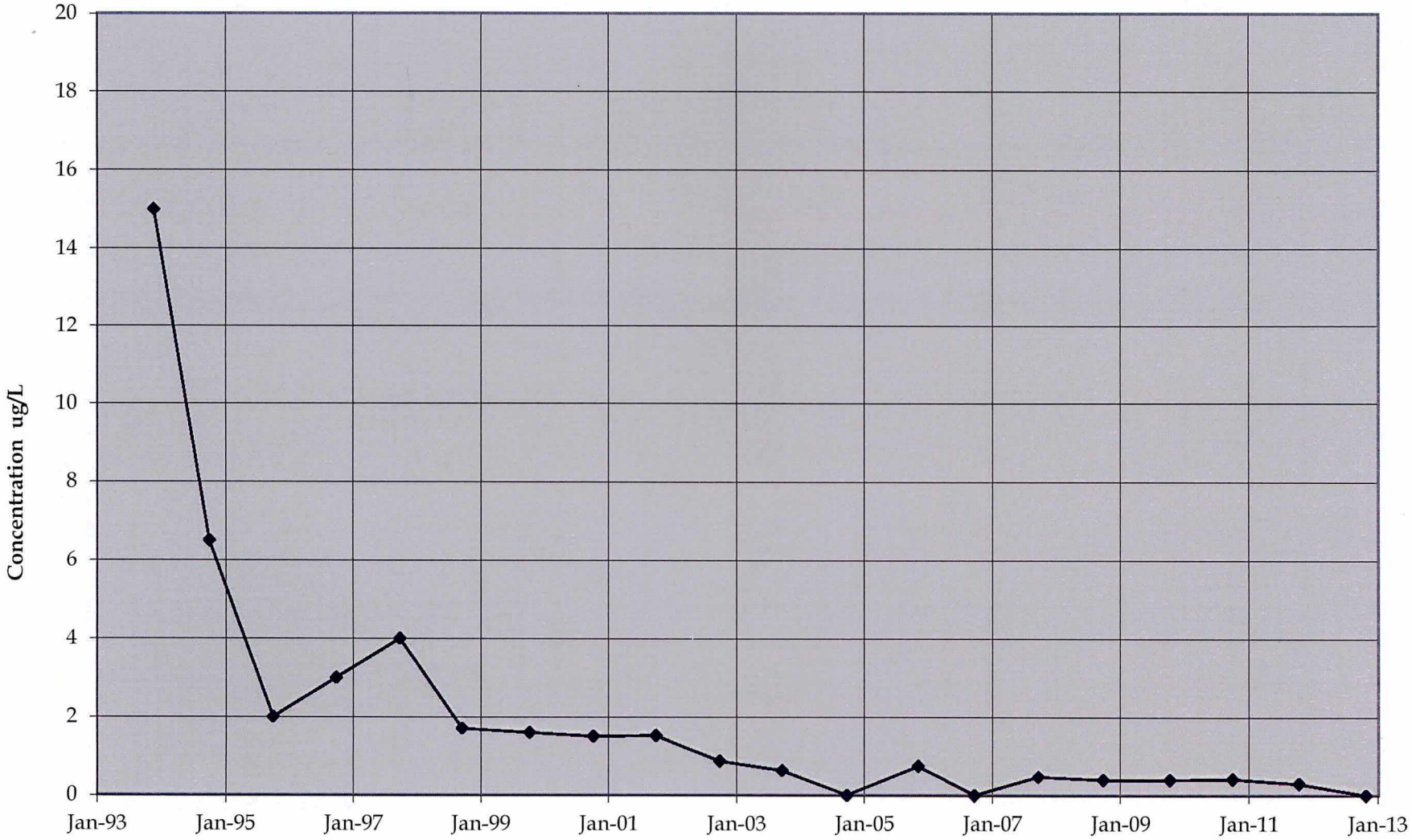
APPENDIX A

TOTAL CHLORINATED VOC CHARTS

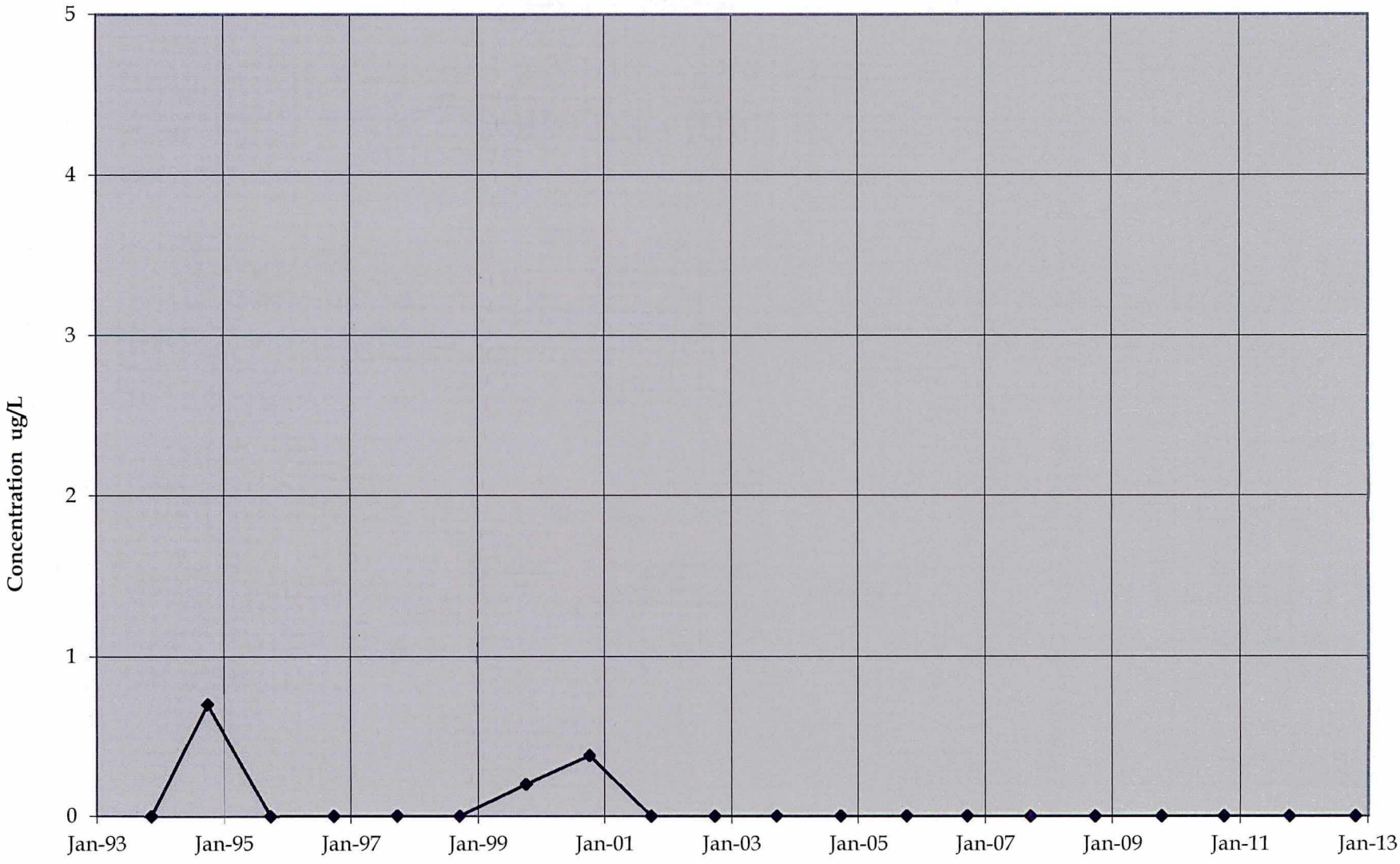
MW1A TCVOC


Concentration ug/L
10
9
8
7
6
5
4
3
2
1
0
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13

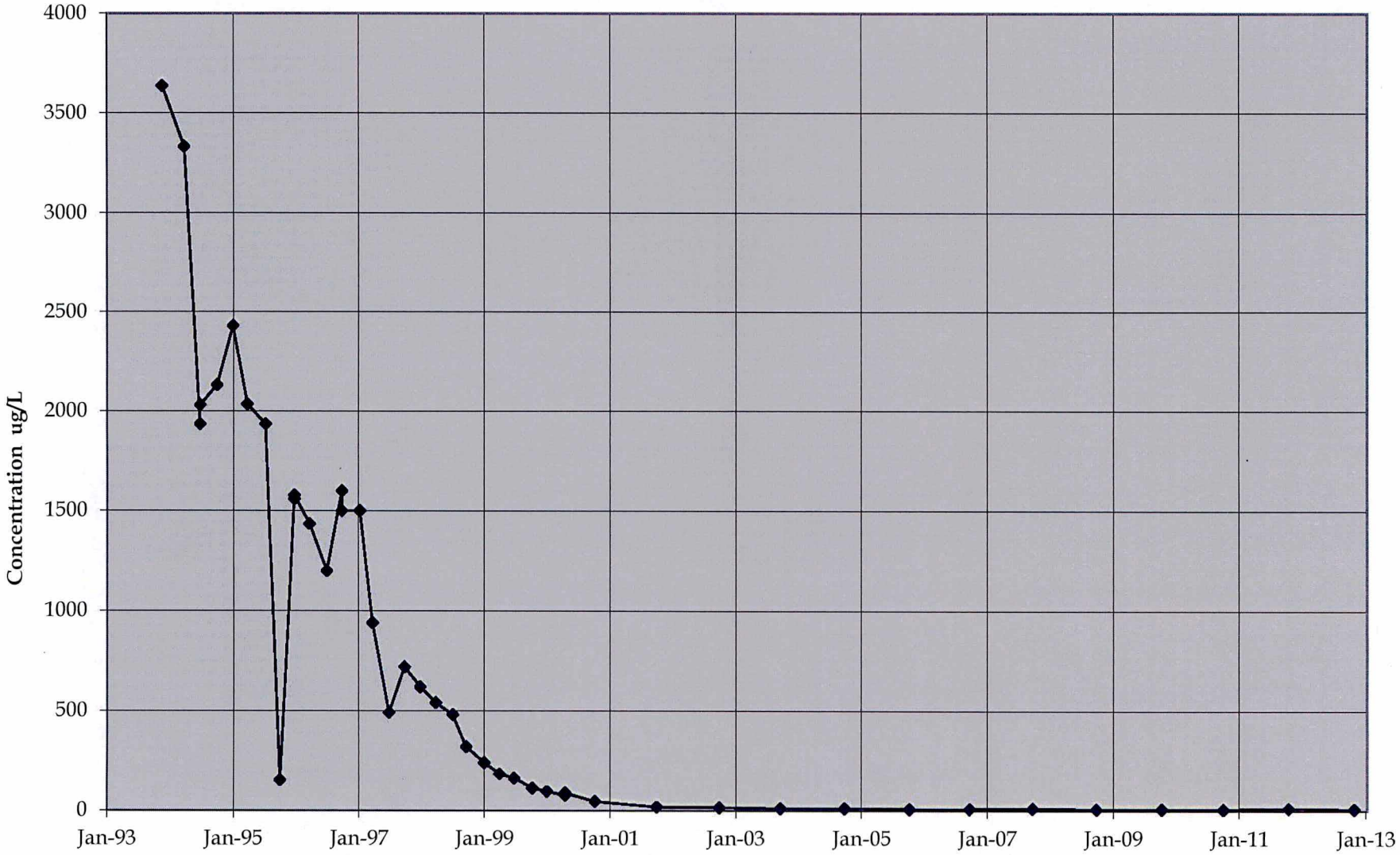
WSWD TCVOC


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

W54 TCVOC


Concentration ug/L
5
4
3
2
1
0
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13

R2D TCVOC


Concentration ug/L
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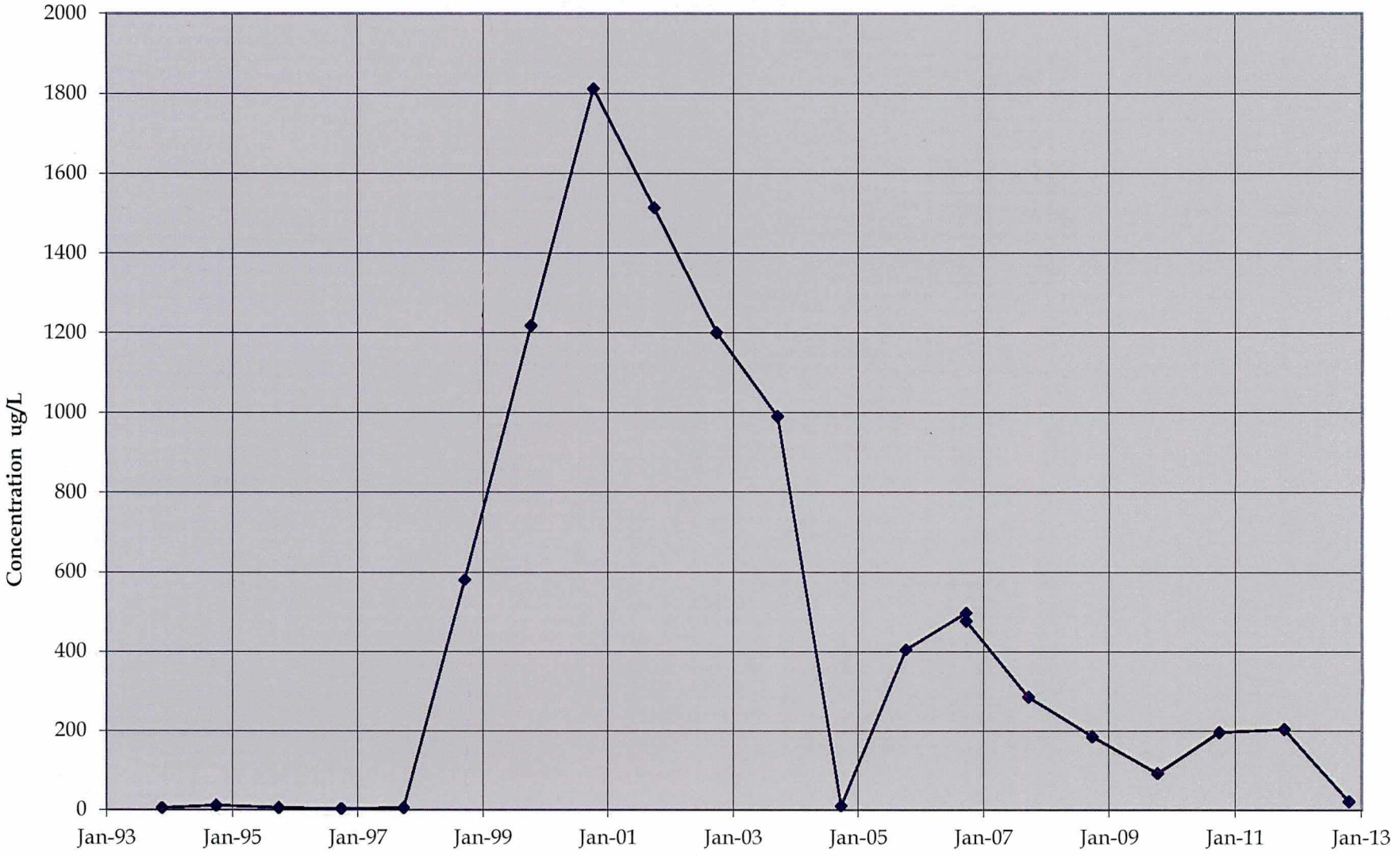
3500
3000
2500
2000
1500
1000
500
0
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13

R3D TCVOC


Concentration ug/L
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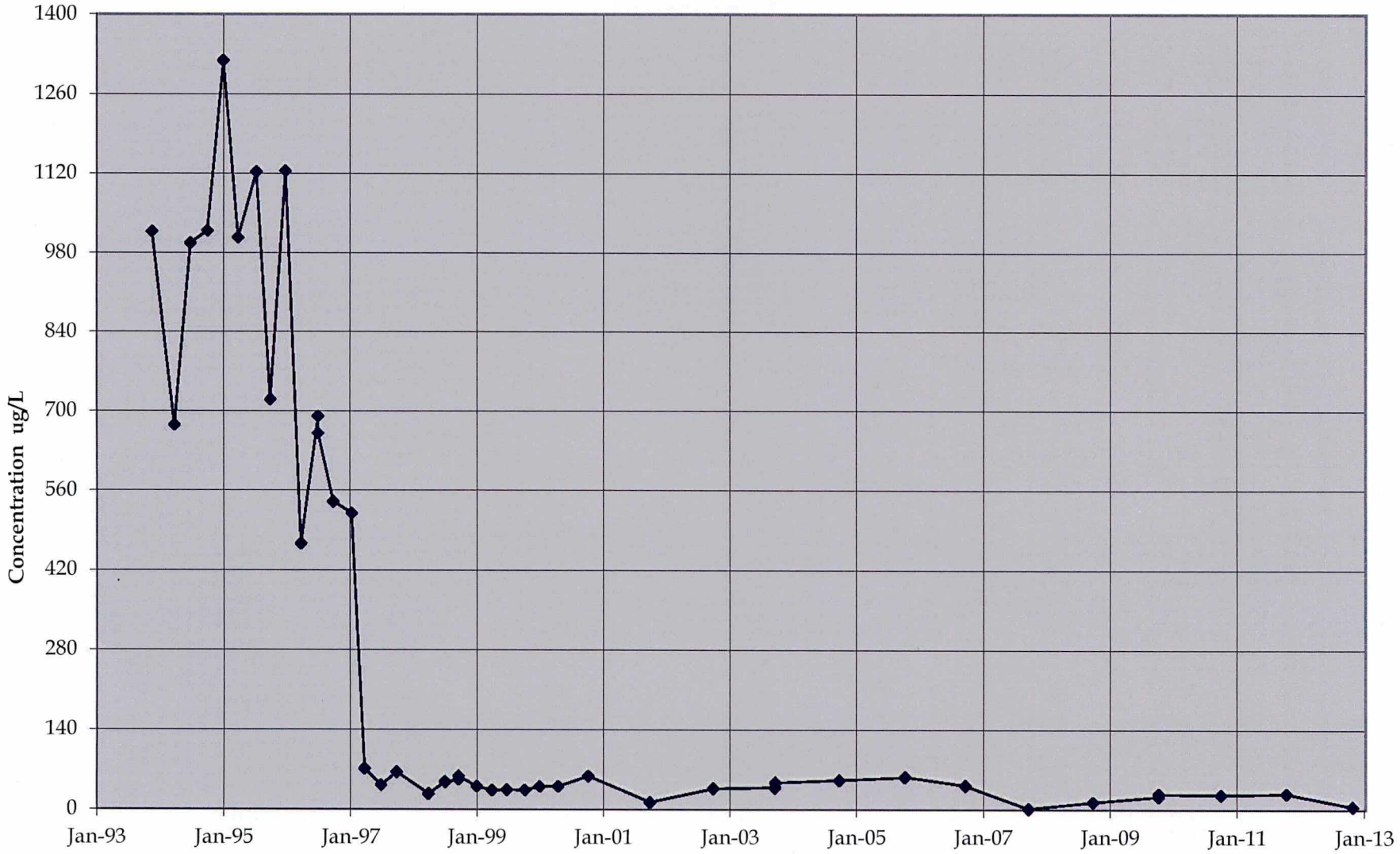
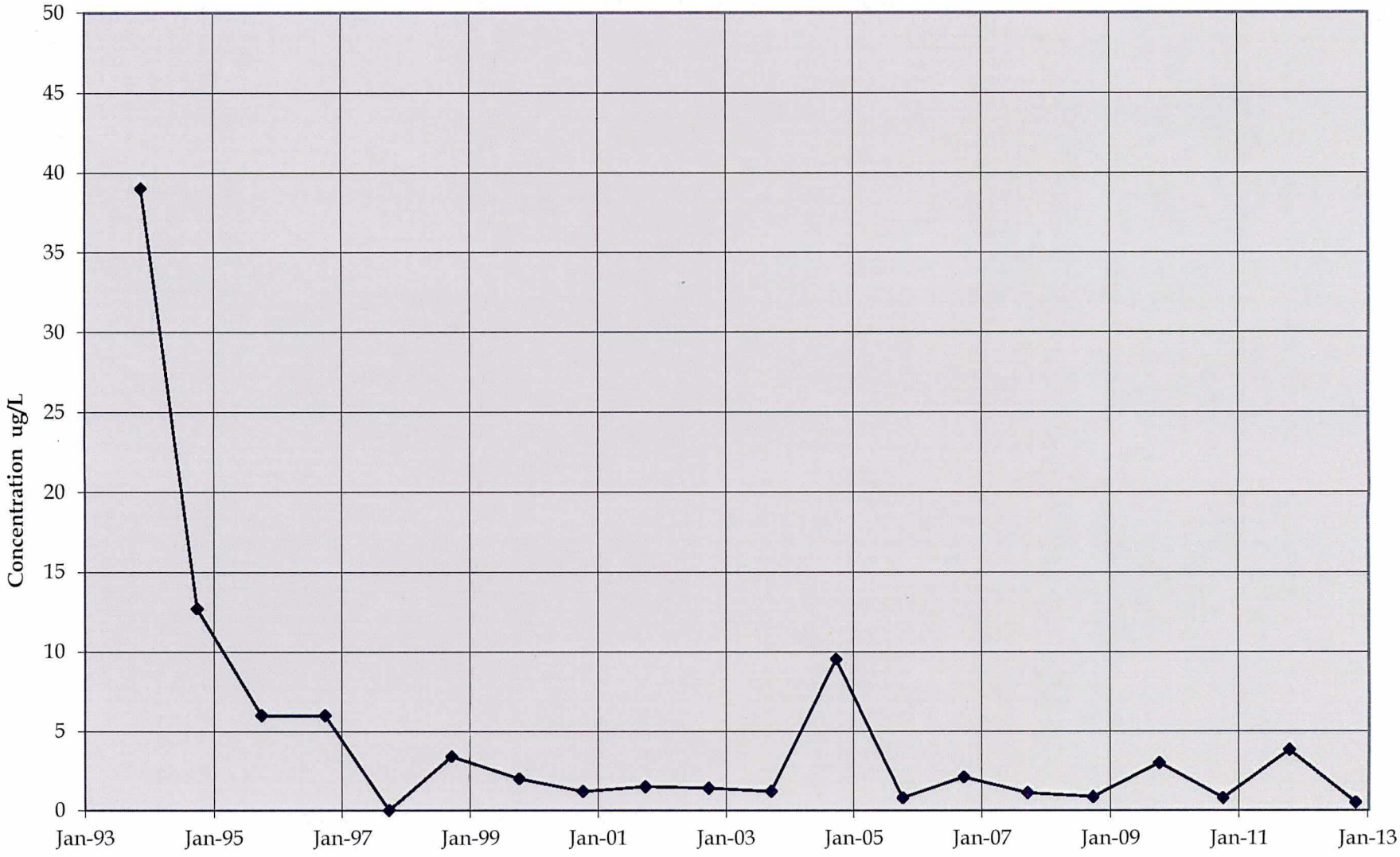
1800
1600
1400
1200
1000
800
600
400
200
0
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13

R4D TCVOC


1400
1260
1120
980
840
700
560
420
280
140
0
Concentration ug/L
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13

W52 TCVOC


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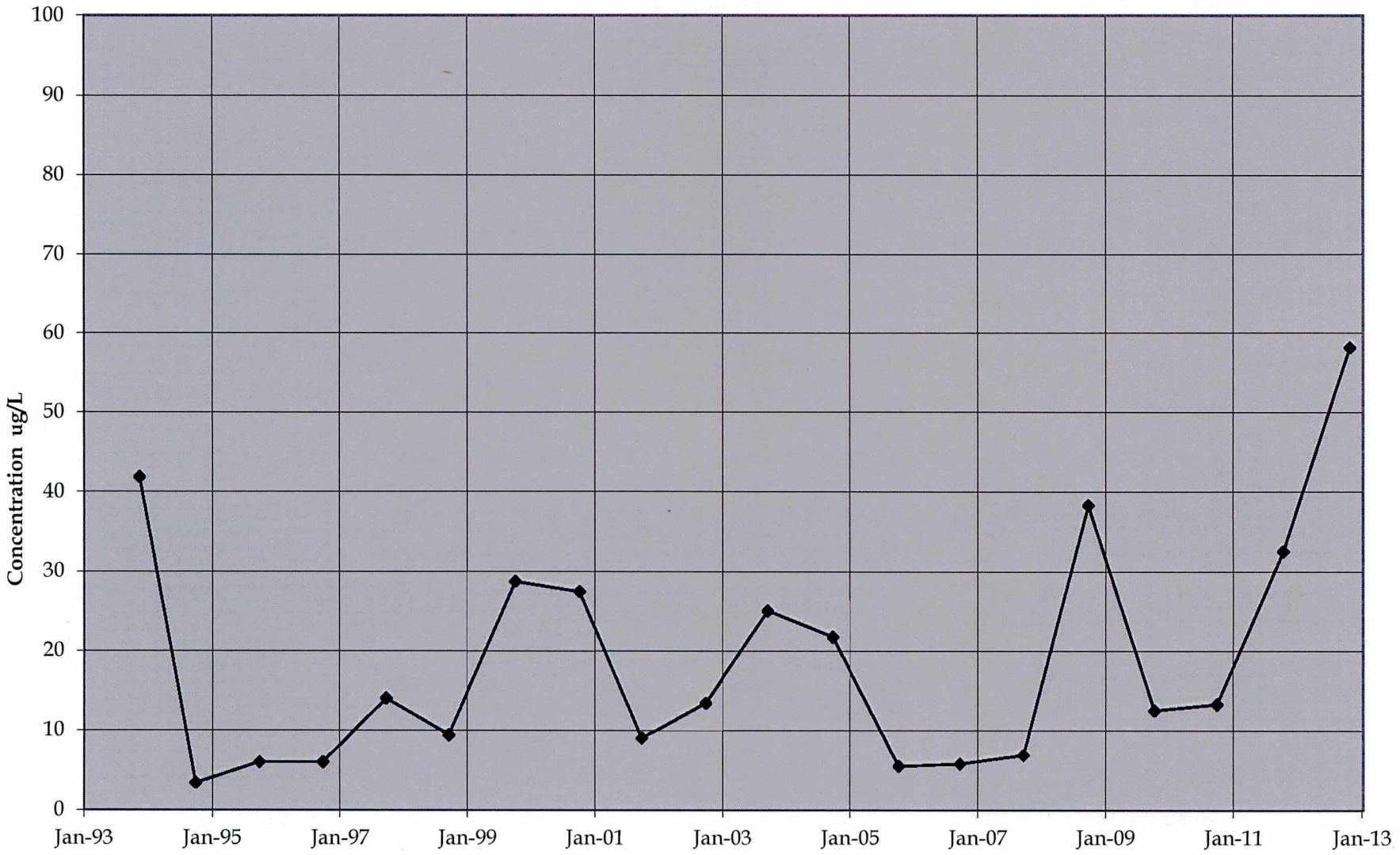
45
40
35
30
25
20
15
10
5
0
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13

W53A TCVOC


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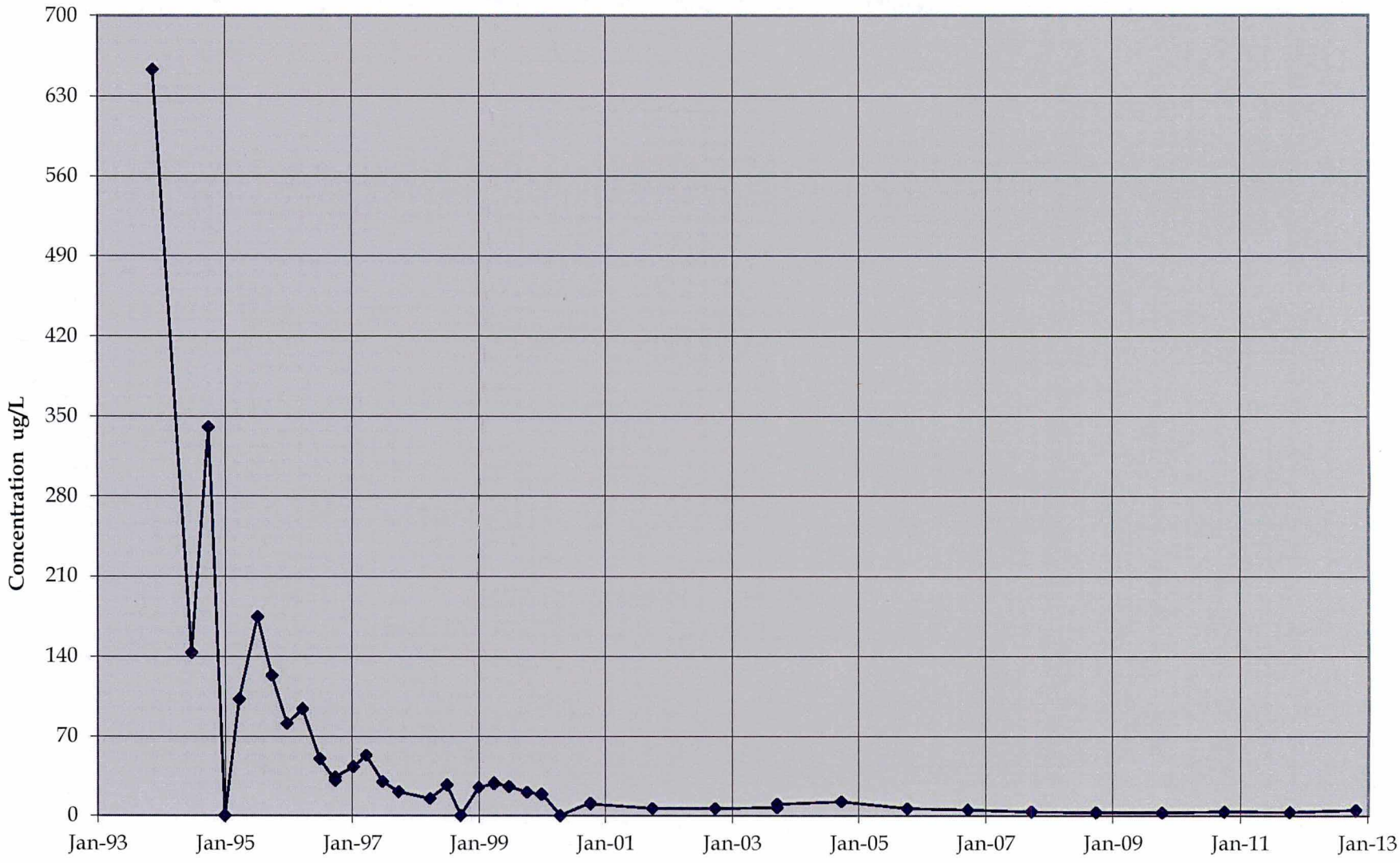
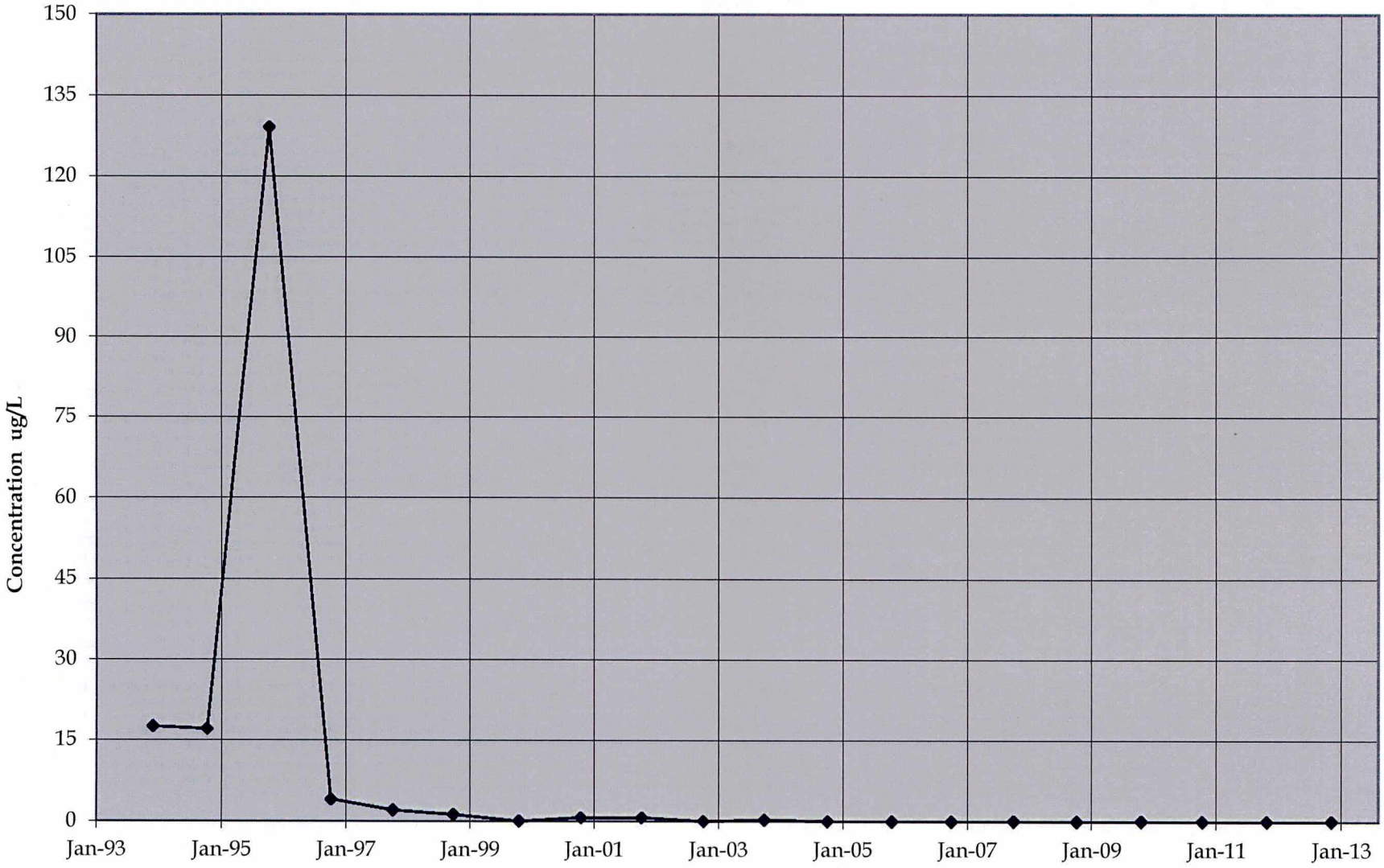
90
80
70
60
50
40
30
20
10
0
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13

W55 TCVOC


700
630
560
490
420
350
280
210
140
70
0
Concentration ug/L
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13

W56 TCVOC


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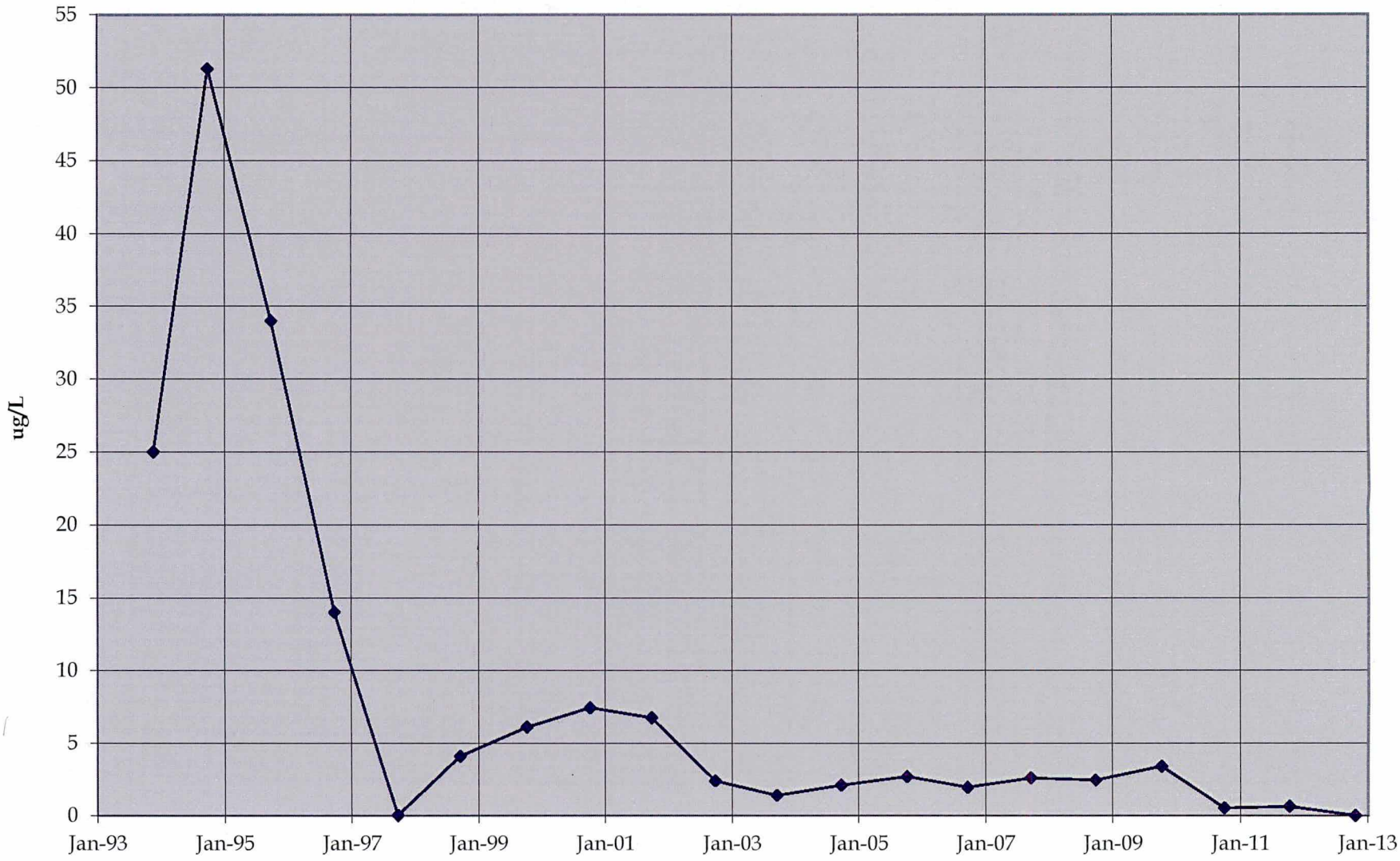
135
120
105
90
75
60
45
30
15
0
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13

C2S TCVOC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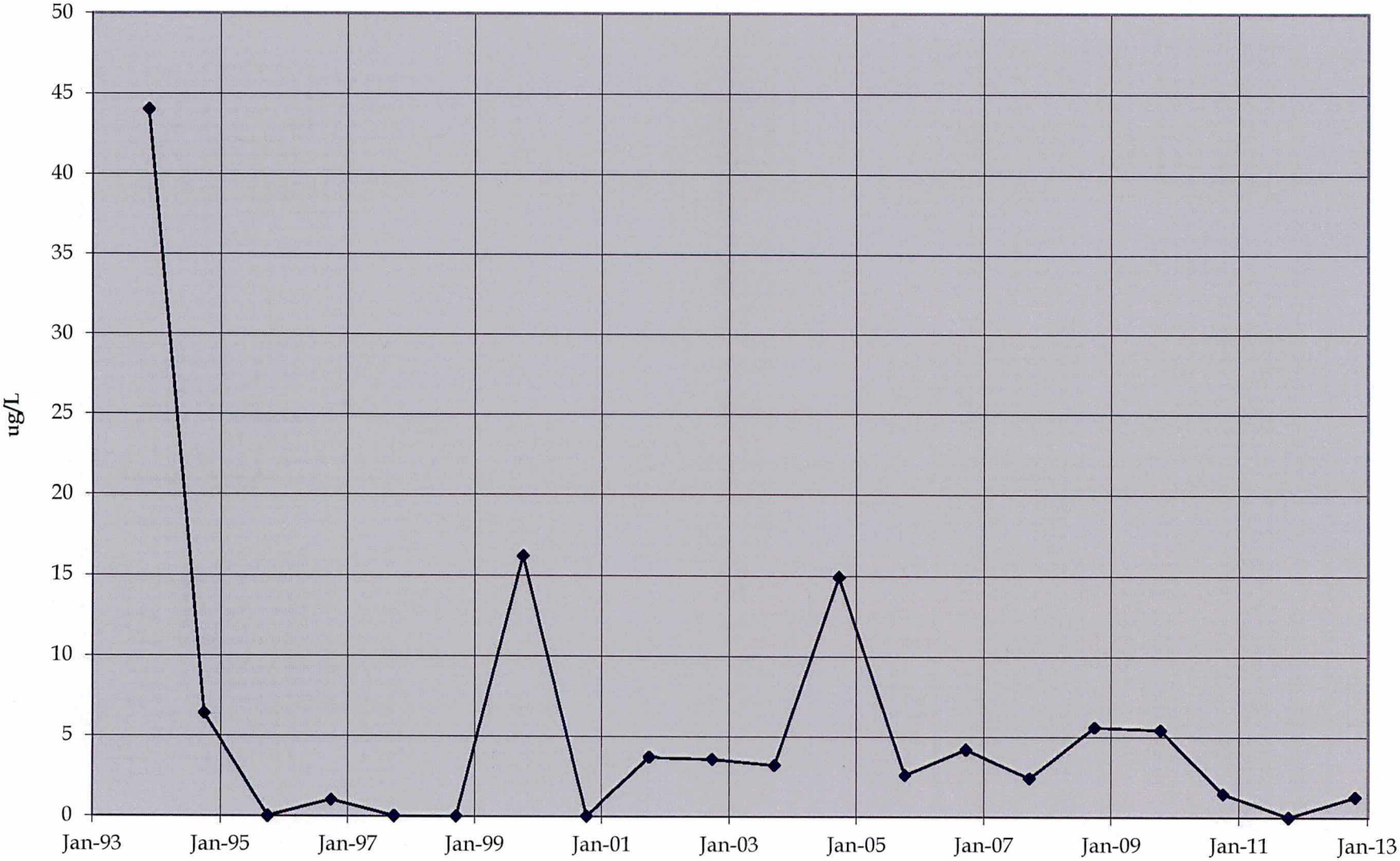
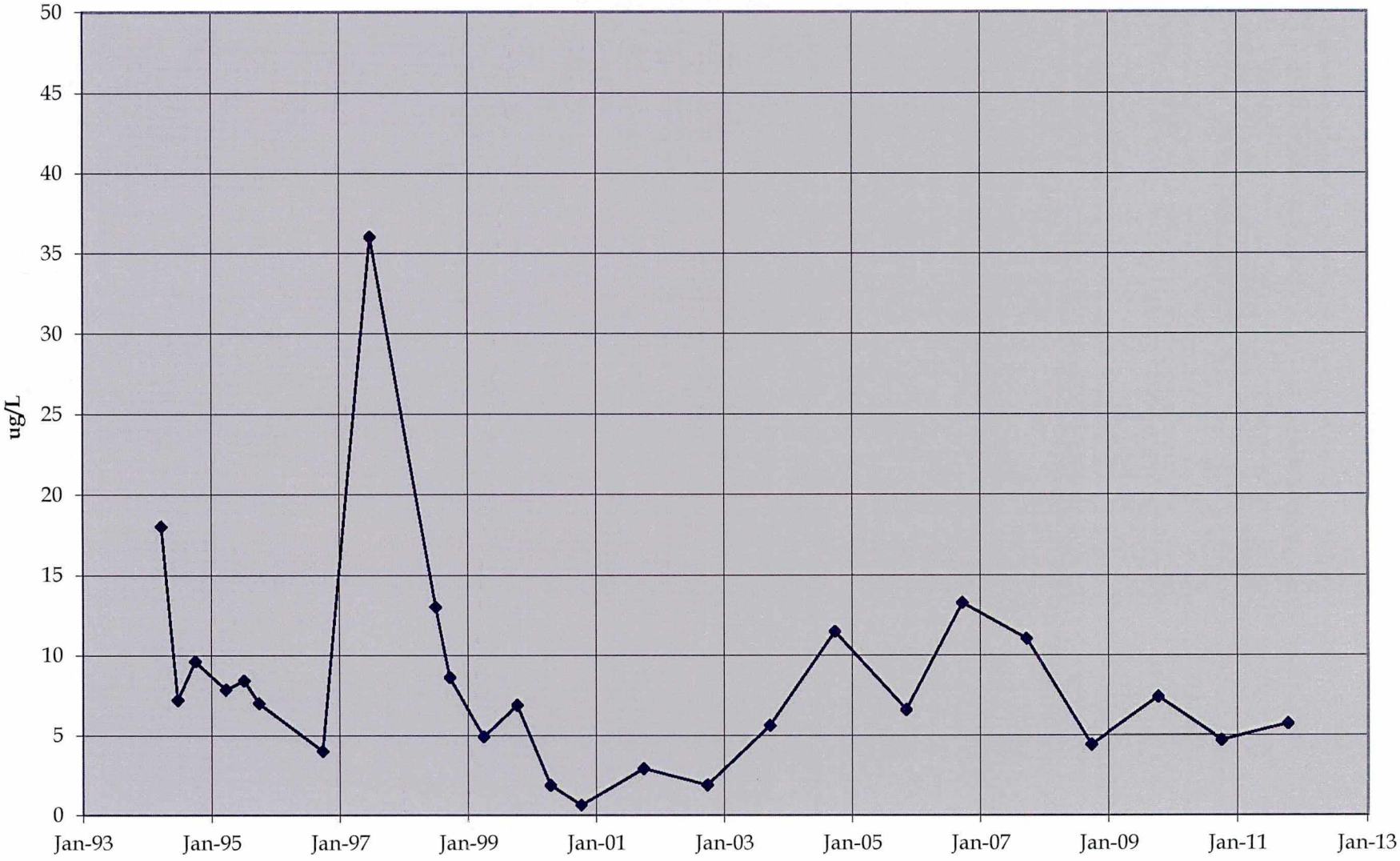
50
45
40
35
30
25
20
15
10
5
0
ug/L
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13

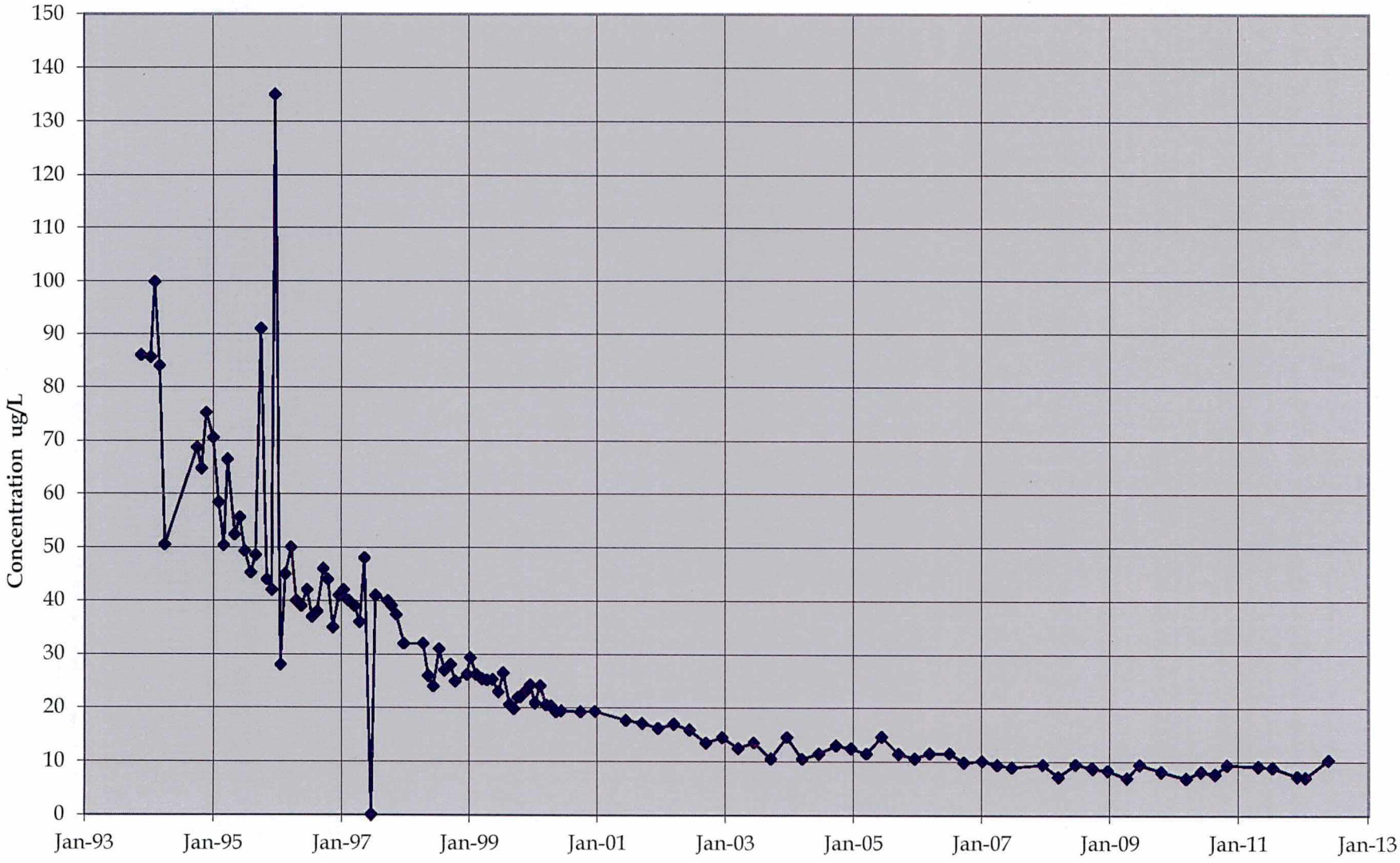
C4S TCVOC


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

IWD TCVOC


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

EW1 TCVOC


Concentration ug/L
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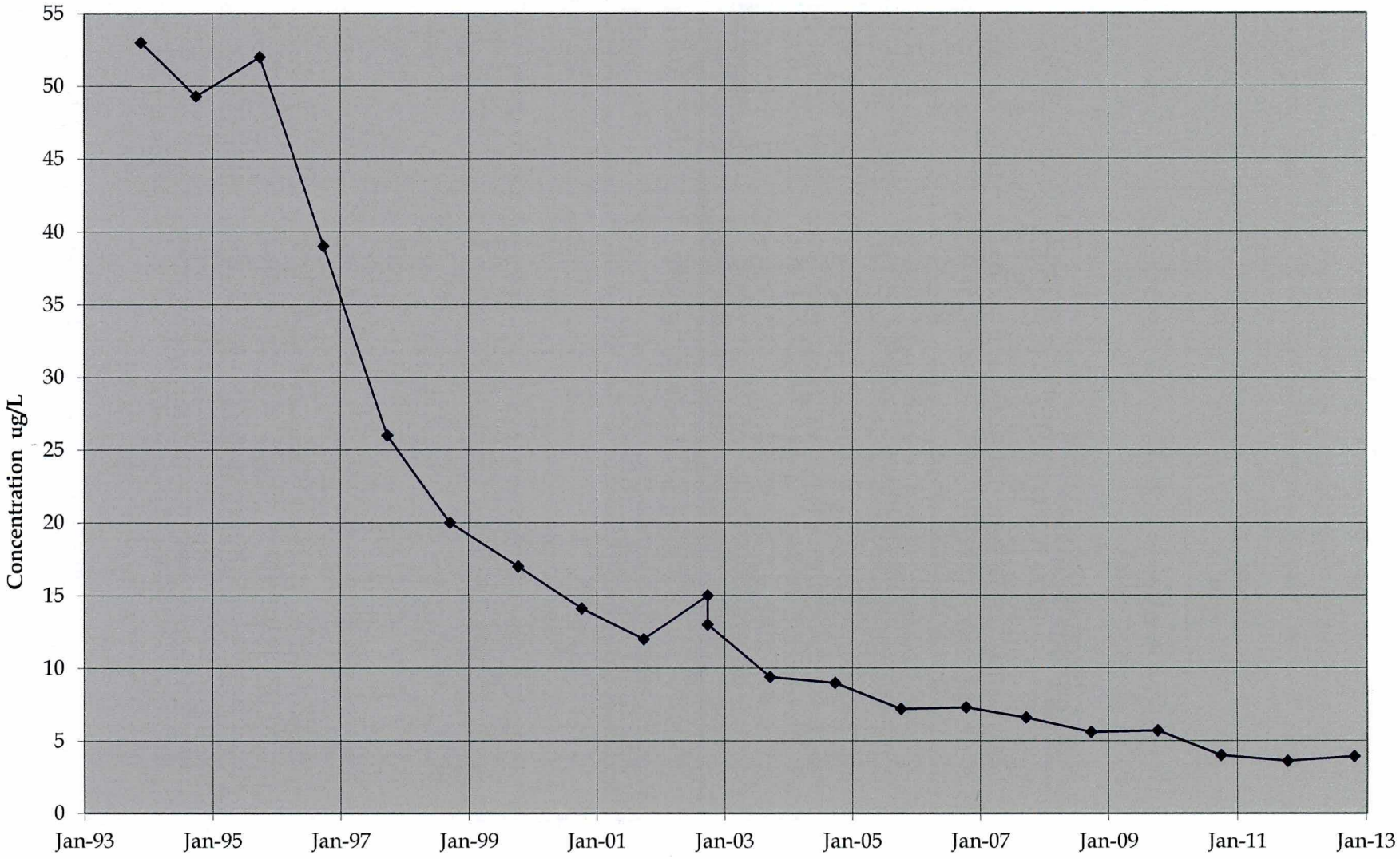
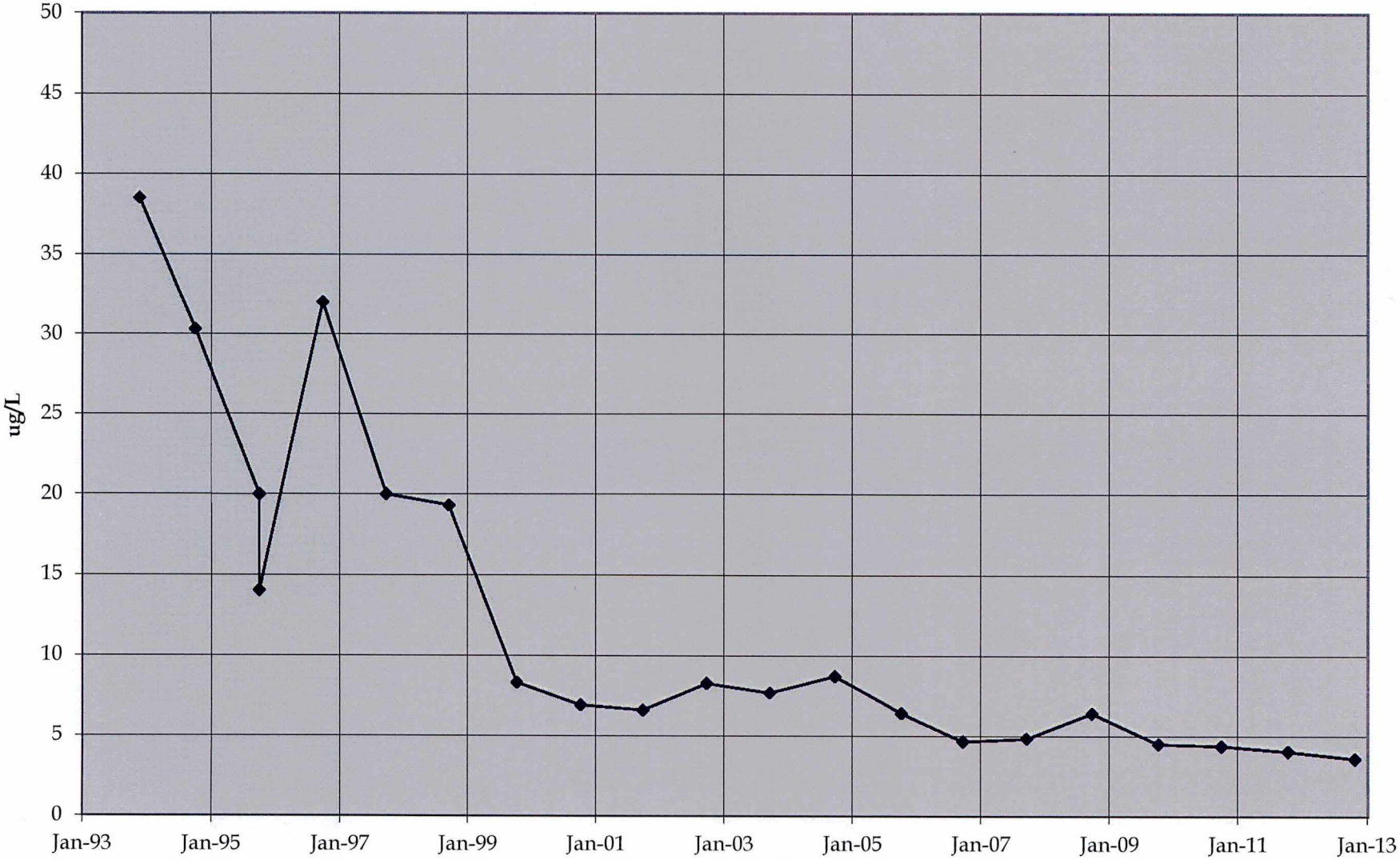
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13

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

CW3 TCVOC


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

APPENDIX B

WAUSAU CITY TREATMENT SYSTEM LABORATORY REPORTS

SIEMENS

April 02, 2012

City of Wausau
407 Grant Street
Wausau, WI 54403

Attn: Richard Boers

REPORT NO.: 1203371 **PROJECT NO.: PWS# 73701023, VOC testing**

Please find enclosed the analytical report, including the Sample Summary, Sample Narrative and Chain of Custody for your sample set received March 28, 2012.

All analyses were performed in accordance with TNI Standards using approved methods as indicated on this report.

If you have any questions about the results, please call. Thank you for using Siemens Industry, Inc. for your analytical needs.

Sincerely,

Siemens Industry, Inc.

ELECTRONICALLY REPORTED
TO WIS DNR 4 / 2 / 12

Bruce Schertz
Lab Manager
Enviroscan Analytical™ Services

I certify that the data contained in this report has been generated and reviewed in accordance with the Siemens Industry, Inc. Quality Assurance Manual. Exceptions, if any, are discussed in the sample narrative. Samples will be retained for 30 days from the date of this report, then disposed in an appropriate manner. Siemens Industry, Inc. reserves the right to return samples identified as hazardous. Release of this Final Report is authorized as verified by the following signature. The contents of this report apply to the sample(s) analyzed. No duplication of this report is allowed except in its entirety.

Reviewed by: _____

Certifications:
Wisconsin 737053130
Minnesota 055-999-302
Illinois 100317

Siemens Industry, Inc.
301 West Military Road
Rothschild, WI 54474
Tel: 800-338-7226
Fax: 715-355-3221
www.siemens.com/enviroscan

SIEMENS

SAMPLE SUMMARY

Lab Id	Client Sample Id	Date/Time	Matrix
1203371-01	Entry pt 200	03/28/12 07:17	Drinking Water
1203371-02	Entry pt 300	03/28/12 12:30	Drinking Water
1203371-03	Trip Blank	03/28/12 00:00	Water

SIEMENS

City of Wausau
407 Grant Street
Wausau, WI 54403

Attn: Richard Boers

PROJECT NO. : PWS# 73701023, VOC testing
REPORT NO. : 1203371
DATE REC'D : 03/28/12 12:58
REPORT DATE : 04/02/12 12:08
PREPARED BY : BMS

Sample ID: **Entry pt 200** Matrix: **Drinking Water** Sample Date/Time: **03/28/12 7:17** Lab No. : **1203371-01**

	USEPA MCL ( )	Results	Units	LOD	LOQ	Dilution Factor	Qualifiers	Date Analyzed	Analyst
EPA 524.2									
1,1,1,2-Tetrachloroethane	-	ND	ug/L	0.30	1.00	1		03/30/12	MRD
1,1,1-Trichloroethane	(200)	ND	ug/L	0.50	1.70	1		03/30/12	MRD
1,1,2,2-Tetrachloroethane	-	ND	ug/L	0.40	1.30	1		03/30/12	MRD
1,1,2-Trichloroethane	(5)	ND	ug/L	0.40	1.30	1		03/30/12	MRD
1,1-Dichloroethane	-	ND	ug/L	0.40	1.30	1		03/30/12	MRD
1,1-Dichloroethylene	(7)	ND	ug/L	0.40	1.30	1		03/30/12	MRD
1,1-Dichloropropylene	-	ND	ug/L	0.80	2.70	1		03/30/12	MRD
1,2,3-Trichloropropane	-	ND	ug/L	1.00	3.30	1		03/30/12	MRD
1,2,4-Trichlorobenzene	(70)	ND	ug/L	0.50	1.70	1		03/30/12	MRD
1,2-Dichlorobenzene	(600)	ND	ug/L	0.80	2.70	1		03/30/12	MRD
1,2-Dichloroethane	(5)	ND	ug/L	0.30	1.00	1		03/30/12	MRD
1,2-Dichloropropane	(5)	ND	ug/L	0.40	1.30	1		03/30/12	MRD
1,3-Dichlorobenzene	-	ND	ug/L	0.20	1.00	1		03/30/12	MRD
1,3-Dichloropropane	-	ND	ug/L	0.20	1.00	1		03/30/12	MRD
1,3-Dichloropropylene (Total)	-	ND	ug/L	0.40	1.33	1		03/30/12	MRD
1,4-Dichlorobenzene	(75)	ND	ug/L	0.80	2.70	1		03/30/12	MRD
2,2-Dichloropropane	-	ND	ug/L	1.00	3.30	1		03/30/12	MRD
2-Chlorotoluene	-	ND	ug/L	0.30	1.00	1		03/30/12	MRD
4-Chlorotoluene	-	ND	ug/L	0.30	1.00	1		03/30/12	MRD
Benzene	(5)	ND	ug/L	0.20	1.00	1		03/30/12	MRD
Bromobenzene	-	ND	ug/L	0.30	1.00	1		03/30/12	MRD
Bromodichloromethane	(80)	ND	ug/L	0.40	1.30	1		03/30/12	MRD
Bromoform	(80)	ND	ug/L	0.20	1.00	1		03/30/12	MRD
Bromomethane	-	ND	ug/L	1.00	3.30	1		03/30/12	MRD
Carbon Tetrachloride	(5)	ND	ug/L	0.30	1.00	1		03/30/12	MRD
Chlorobenzene	(100)	ND	ug/L	0.20	1.00	1		03/30/12	MRD
Chloroethane	-	ND	ug/L	0.70	2.30	1		03/30/12	MRD
Chloroform	(80)	6.54	ug/L	0.20	1.00	1		03/30/12	MRD
Chloromethane	-	ND	ug/L	0.40	1.30	1		03/30/12	MRD
cis-1,2-Dichloroethylene	(70)	ND	ug/L	0.40	1.30	1		03/30/12	MRD
Dibromochloromethane	(80)	ND	ug/L	0.40	1.30	1		03/30/12	MRD
Dibromomethane	-	ND	ug/L	0.40	1.30	1		03/30/12	MRD
Ethylbenzene	(700)	ND	ug/L	0.20	1.00	1		03/30/12	MRD
Methylene Chloride	(5)	ND	ug/L	0.40	1.30	1		03/30/12	MRD
Styrene	(100)	ND	ug/L	0.10	1.00	1		03/30/12	MRD
Tetrachloroethene	(5)	ND	ug/L	0.30	1.00	1		03/30/12	MRD
Toluene	(1000)	ND	ug/L	0.40	1.30	1		03/30/12	MRD
trans-1,2-Dichloroethylene	(100)	ND	ug/L	0.50	1.70	1		03/30/12	MRD

SIEMENS

City of Wausau
407 Grant Street
Wausau, WI 54403

Attn: Richard Boers

PROJECT NO. : PWS# 73701023, VOC testing
REPORT NO. : 1203371
DATE REC'D : 03/28/12 12:58
REPORT DATE : 04/02/12 12:08
PREPARED BY : BMS

Sample ID: **Entry pt 200** Matrix: **Drinking Water** Sample Date/Time: **03/28/12 7:17** Lab No. : **1203371-01**

	USEPA MCL ( )	Results	Units	LOD	LOQ	Dilution Factor	Qualifiers	Date Analyzed	Analyst
EPA 524.2 Continued									
Trichloroethene	(5)	ND	ug/L	0.40	1.30	1		03/30/12	MRD
Vinyl chloride	(0.2)	ND	ug/L	0.20	1.00	1		03/30/12	MRD
Xylenes, (Total)	(10000)	ND	ug/L	1.00	1.00	1		03/30/12	MRD

SIEMENS

City of Wausau
407 Grant Street
Wausau, WI 54403

Attn: Richard Boers

PROJECT NO. : PWS# 73701023, VOC testing
REPORT NO. : 1203371
DATE REC'D : 03/28/12 12:58
REPORT DATE : 04/02/12 12:08
PREPARED BY : BMS

Sample ID: **Entry pt 300** Matrix: **Drinking Water** Sample Date/Time: **03/28/12 12:30** Lab No. : **1203371-02**

	USEPA MCL ( )	Results	Units	LOD	LOQ	Dilution Factor	Qualifiers	Date Analyzed	Analyst
EPA 524.2									
1,1,1,2-Tetrachloroethane	-	ND	ug/L	0.30	1.00	1		03/30/12	MRD
1,1,1-Trichloroethane	(200)	ND	ug/L	0.50	1.70	1		03/30/12	MRD
1,1,2,2-Tetrachloroethane	-	ND	ug/L	0.40	1.30	1		03/30/12	MRD
1,1,2-Trichloroethane	(5)	ND	ug/L	0.40	1.30	1		03/30/12	MRD
1,1-Dichloroethane	-	ND	ug/L	0.40	1.30	1		03/30/12	MRD
1,1-Dichloroethylene	(7)	ND	ug/L	0.40	1.30	1		03/30/12	MRD
1,1-Dichloropropylene	-	ND	ug/L	0.80	2.70	1		03/30/12	MRD
1,2,3-Trichloropropane	-	ND	ug/L	1.00	3.30	1		03/30/12	MRD
1,2,4-Trichlorobenzene	(70)	ND	ug/L	0.50	1.70	1		03/30/12	MRD
1,2-Dichlorobenzene	(600)	ND	ug/L	0.80	2.70	1		03/30/12	MRD
1,2-Dichloroethane	(5)	ND	ug/L	0.30	1.00	1		03/30/12	MRD
1,2-Dichloropropane	(5)	ND	ug/L	0.40	1.30	1		03/30/12	MRD
1,3-Dichlorobenzene	-	ND	ug/L	0.20	1.00	1		03/30/12	MRD
1,3-Dichloropropane	-	ND	ug/L	0.20	1.00	1		03/30/12	MRD
1,3-Dichloropropylene (Total)	-	ND	ug/L	0.40	1.33	1		03/30/12	MRD
1,4-Dichlorobenzene	(75)	ND	ug/L	0.80	2.70	1		03/30/12	MRD
2,2-Dichloropropane	-	ND	ug/L	1.00	3.30	1		03/30/12	MRD
2-Chlorotoluene	-	ND	ug/L	0.30	1.00	1		03/30/12	MRD
4-Chlorotoluene	-	ND	ug/L	0.30	1.00	1		03/30/12	MRD
Benzene	(5)	ND	ug/L	0.20	1.00	1		03/30/12	MRD
Bromobenzene	-	ND	ug/L	0.30	1.00	1		03/30/12	MRD
Bromodichloromethane	(80)	ND	ug/L	0.40	1.30	1		03/30/12	MRD
Bromoform	(80)	ND	ug/L	0.20	1.00	1		03/30/12	MRD
Bromomethane	-	ND	ug/L	1.00	3.30	1		03/30/12	MRD
Carbon Tetrachloride	(5)	ND	ug/L	0.30	1.00	1		03/30/12	MRD
Chlorobenzene	(100)	ND	ug/L	0.20	1.00	1		03/30/12	MRD
Chloroethane	-	ND	ug/L	0.70	2.30	1		03/30/12	MRD
Chloroform	(80)	9.09	ug/L	0.20	1.00	1		03/30/12	MRD
Chloromethane	-	ND	ug/L	0.40	1.30	1		03/30/12	MRD
cis-1,2-Dichloroethylene	(70)	ND	ug/L	0.40	1.30	1		03/30/12	MRD
Dibromochloromethane	(80)	ND	ug/L	0.40	1.30	1		03/30/12	MRD
Dibromomethane	-	ND	ug/L	0.40	1.30	1		03/30/12	MRD
Ethylbenzene	(700)	ND	ug/L	0.20	1.00	1		03/30/12	MRD
Methylene Chloride	(5)	ND	ug/L	0.40	1.30	1		03/30/12	MRD
Styrene	(100)	ND	ug/L	0.10	1.00	1		03/30/12	MRD
Tetrachloroethene	(5)	ND	ug/L	0.30	1.00	1		03/30/12	MRD
Toluene	(1000)	ND	ug/L	0.40	1.30	1		03/30/12	MRD
trans-1,2-Dichloroethylene	(100)	ND	ug/L	0.50	1.70	1		03/30/12	MRD

SIEMENS

City of Wausau
407 Grant Street
Wausau, WI 54403

Attn: Richard Boers

PROJECT NO. : PWS# 73701023, VOC testing
REPORT NO. : 1203371
DATE REC'D : 03/28/12 12:58
REPORT DATE : 04/02/12 12:08
PREPARED BY : BMS

Sample ID: **Entry pt 300** Matrix: **Drinking Water** Sample Date/Time: **03/28/12 12:30** Lab No. : **1203371-02**

	USEPA MCL ( )	Results	Units	LOD	LOQ	Dilution Factor	Qualifiers	Date Analyzed	Analyst
EPA 524.2 Continued									
Trichloroethene	(5)	ND	ug/L	0.40	1.30	1		03/30/12	MRD
Vinyl chloride	(0.2)	ND	ug/L	0.20	1.00	1		03/30/12	MRD
Xylenes, (Total)	(10000)	ND	ug/L	1.00	1.00	1		03/30/12	MRD

SIEMENS

City of Wausau
407 Grant Street
Wausau, WI 54403

Attn: Richard Boers

PROJECT NO. : PWS# 73701023, VOC testing
REPORT NO. : 1203371
DATE REC'D : 03/28/12 12:58
REPORT DATE : 04/02/12 12:08
PREPARED BY : BMS

Sample ID: Trip Blank | Matrix: Water | Sample Date/Time: 03/28/12 0:00 | Lab No. : 1203371-03

	USEPA MCL ( )	Results	Units	LOD	LOQ	Dilution Factor	Qualifiers	Date Analyzed	Analyst
EPA 524.2									
1,1,1,2-Tetrachloroethane	-	ND	ug/L	0.30	1.00	1		03/30/12	MRD
1,1,1-Trichloroethane	-	ND	ug/L	0.50	1.70	1		03/30/12	MRD
1,1,2,2-Tetrachloroethane	-	ND	ug/L	0.40	1.30	1		03/30/12	MRD
1,1,2-Trichloroethane	-	ND	ug/L	0.40	1.30	1		03/30/12	MRD
1,1-Dichloroethane	-	ND	ug/L	0.40	1.30	1		03/30/12	MRD
1,1-Dichloroethylene	-	ND	ug/L	0.40	1.30	1		03/30/12	MRD
1,1-Dichloropropylene	-	ND	ug/L	0.80	2.70	1		03/30/12	MRD
1,2,3-Trichloropropane	-	ND	ug/L	1.00	3.30	1		03/30/12	MRD
1,2,4-Trichlorobenzene	-	ND	ug/L	0.50	1.70	1		03/30/12	MRD
1,2-Dichlorobenzene	-	ND	ug/L	0.80	2.70	1		03/30/12	MRD
1,2-Dichloroethane	-	ND	ug/L	0.30	1.00	1		03/30/12	MRD
1,2-Dichloropropane	-	ND	ug/L	0.40	1.30	1		03/30/12	MRD
1,3-Dichlorobenzene	-	ND	ug/L	0.20	1.00	1		03/30/12	MRD
1,3-Dichloropropane	-	ND	ug/L	0.20	1.00	1		03/30/12	MRD
1,3-Dichloropropylene (Total)	-	ND	ug/L	0.40	1.33	1		03/30/12	MRD
1,4-Dichlorobenzene	-	ND	ug/L	0.80	2.70	1		03/30/12	MRD
2,2-Dichloropropane	-	ND	ug/L	1.00	3.30	1		03/30/12	MRD
2-Chlorotoluene	-	ND	ug/L	0.30	1.00	1		03/30/12	MRD
4-Chlorotoluene	-	ND	ug/L	0.30	1.00	1		03/30/12	MRD
Benzene	-	ND	ug/L	0.20	1.00	1		03/30/12	MRD
Bromobenzene	-	ND	ug/L	0.30	1.00	1		03/30/12	MRD
Bromodichloromethane	-	ND	ug/L	0.40	1.30	1		03/30/12	MRD
Bromoform	-	ND	ug/L	0.20	1.00	1		03/30/12	MRD
Bromomethane	-	ND	ug/L	1.00	3.30	1		03/30/12	MRD
Carbon Tetrachloride	-	ND	ug/L	0.30	1.00	1		03/30/12	MRD
Chlorobenzene	-	ND	ug/L	0.20	1.00	1		03/30/12	MRD
Chloroethane	-	ND	ug/L	0.70	2.30	1		03/30/12	MRD
Chloroform	-	ND	ug/L	0.20	1.00	1		03/30/12	MRD
Chloromethane	-	ND	ug/L	0.40	1.30	1		03/30/12	MRD
cis-1,2-Dichloroethylene	-	ND	ug/L	0.40	1.30	1		03/30/12	MRD
Dibromochloromethane	-	ND	ug/L	0.40	1.30	1		03/30/12	MRD
Dibromomethane	-	ND	ug/L	0.40	1.30	1		03/30/12	MRD
Ethylbenzene	-	ND	ug/L	0.20	1.00	1		03/30/12	MRD
Methylene Chloride	-	ND	ug/L	0.40	1.30	1		03/30/12	MRD
Styrene	-	ND	ug/L	0.10	1.00	1		03/30/12	MRD
Tetrachloroethene	-	ND	ug/L	0.30	1.00	1		03/30/12	MRD
Toluene	-	ND	ug/L	0.40	1.30	1		03/30/12	MRD
trans-1,2-Dichloroethylene	-	ND	ug/L	0.50	1.70	1		03/30/12	MRD

SIEMENS

City of Wausau
407 Grant Street
Wausau, WI 54403

Attn: Richard Boers

PROJECT NO. : PWS# 73701023, VOC testing
REPORT NO. : 1203371
DATE REC'D : 03/28/12 12:58
REPORT DATE : 04/02/12 12:08
PREPARED BY : BMS

Sample ID: **Trip Blank** Matrix: **Water** Sample Date/Time: **03/28/12 0:00** Lab No. : **1203371-03**

	USEPA MCL ( )	Results	Units	LOD	LOQ	Dilution Factor	Qualifiers	Date Analyzed	Analyst
EPA 524.2 Continued									
Trichloroethene	-	ND	ug/L	0.40	1.30	1		03/30/12	MRD
Vinyl chloride	-	ND	ug/L	0.20	1.00	1		03/30/12	MRD
Xylenes, (Total)	-	ND	ug/L	1.00	1.00	1		03/30/12	MRD

SIEMENS

Qualifier Descriptions

Definitions

LOD = Limit of Detection (Dilution Corrected)
LOQ = Limit of Quantitation (Dilution Corrected)
Reporting Limit = LOQ (Dilution Corrected)
ND = Not Detected
COMP = Complete
SUBCON = Subcontracted analysis
mv = millivolts
pci/L = picocuries per Liter
mL/L = milliliters per Liter
mg = milligram

When the word "dry" follows the units on the result page the sample results are dry weight corrected.

LODs and LOQs are dry weight corrected for all soils except WI GRO, EPA 8021 and WI DNR/EPA 8260B methanol and WI DNR methylene chloride preserved soils being reported to the State of Wisconsin.

ug/l = Micrograms per Liter = parts per billion (ppb)
ug/kg = Micrograms per kilogram = parts per billion (ppb)
mg/l = Milligrams per liter = parts per million (ppm)
mg/kg = Milligrams per kilogram = parts per million (ppm)
NOT PRES = Not Present
ppth = Parts per thousand
* = Result outside established limits.
mg/m3 = Milligrams per meter cubed
ng/L = Nanograms per Liter = Parts per trillion(ppt)
> = Greater Than

State of Wisconsin Methanol Soils for WI GRO, WI DNR/EPA 8260B and EPA 8021 are reported to the LOQ.

SIEMENS

Company Name	Project
WAUSAU Water Works	PWS# 73701023
Report Mailing Address	**Contact Name, Phone, Fax, Email**
407 Grant St.	
Invoice Address	**Purchase Order #** / **Invoice Contact and Phone No.**

Matrix: Drinking Water (Y) Groundwater Wastewater Soil/Solid Other:_____

Wis. PECFA Project subject to U&C? Yes No

For Compliance Monitoring? (Yes) No State: WI
(If Yes, please specify Agency or Regulation) Agency/Reg.: DNR

Turnaround Request: [ ] Normal (10 Bus. Days)
[ ] Rush (Must be pre-approved by Lab and is subject to surcharges)
Date Needed: _____

WO No. 1203371

Lab Use Only	Sample Date	Sample Time	No. of Containers Comp	No. of Containers Grab	Sample ID	Analyses Requested: VOC	Comments
-1	3-28-12	7:17 AM	3	3	EP 200		3 vials Ascorbic + HCl
-2	3-28-12	12:30 PM	3	3	EP 300		
-3					Trip Blank		2 vials HCl 02-27-12 +B169

Lab Use Only

Delivered by:	(Walk-in)		Courier
Ship. Cont. OK?	Y	N	NA
Samples Leaking?	Y	(N)	NA
Seals OK?	(Y)	N	NA
Rec'd on Ice?	(Y)	N	NA

Sample Receiving Comments:
4°
w/DNR form

Relinquished By:	Date	Time	Received By:
Harold H. Fuge	3-28-12	12:35 PM	T. Mason
T. Mason	3-28-12	12:58	
	03-28-12	1258	Gina Andrews

Chain of Custody Record

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Ph: (715)-478-2777 Fax: (715)-478-3060

ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. WI00034

NLS Project: 178685
NLS Customer: 36394

Fax: 715 261 6946 Phone: 715 261 7288

Client: Wausau Waterworks
Attn: Dick Boers
Drinking Water Division
407 Grant Street
Wausau, WI 54403 4783

Project: Drinking Water PWS #73701023

EP 300 VOC NLS ID: 664883
COC: 144155:1 Matrix: DW
Collected: 05/29/12 07:11 Received: 05/29/12

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
SDWA Volatile Organics (VOCs) by EPA 524.2	see attached					06/04/12	EPA 524.2	721026460

EP 200 VOC NLS ID: 664884
COC: 144155:2 Matrix: DW
Collected: 05/29/12 11:50 Received: 05/29/12

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
SDWA Volatile Organics (VOCs) by EPA 524.2	see attached					06/04/12	EPA 524.2	721026460

Trip Blank NLS ID: 664885
COC: 144155:3 Matrix: TB
Collected: 05/29/12 00:00 Received: 05/29/12

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
SDWA Volatile Organics (VOCs) by EPA 524.2	see attached					06/04/12	EPA 524.2	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and/or LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution.

LOD = Limit of Detection LOQ = Limit of Quantitation ND = Not Detected (< LOD) 1000 ug/L = 1 mg/L
DWB = Dry Weight Basis NA = Not Applicable %DWB = (mg/kg DWB) / 10000
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by:

Authorized by:
R. T. Krueger
President

Per NR 809.80 (4) (Wisconsin Drinking water code), your data has been electronically delivered to the DNR. This report is for your records only.

ANALYTICAL RESULTS: GCMS 524.2 Safe Drinking Water Analysis - DNR Form

Customer: Wausau Waterworks **NLS Project: 178685**

Project Description: Drinking Water

Project Title: PWS #73701023 **Template: SAT3DNRL Printed: 06/05/2012 09:49**

Sample: 664883 EP 300 VOC Collected: 05/29/12 Analyzed: 06/04/12 -

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.12	0.39	5	
Bromobenzene	ND	ug/L	1	0.21	0.70		
Bromodichloromethane	0.76	ug/L	1	0.21	0.70	80	
Bromoform	ND	ug/L	1	0.33	1.1	80	
Bromomethane	ND	ug/L	1	0.26	0.87		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.63	5	
Chloroethane	ND	ug/L	1	1.0	3.4		
Chloroform	10	ug/L	1	0.11	0.37	80	
Chloromethane	ND	ug/L	1	0.16	0.54		
o-Chlorotoluene	ND	ug/L	1	0.15	0.50		
p-Chlorotoluene	ND	ug/L	1	0.11	0.38		
Dibromochloromethane	ND	ug/L	1	0.27	0.91	80	
Dibromomethane	ND	ug/L	1	0.24	0.79		
1,3-Dichlorobenzene (m)	ND	ug/L	1	0.11	0.38		
1,2-Dichlorobenzene (o)	ND	ug/L	1	0.17	0.58	600	
1,4-Dichlorobenzene (p)	ND	ug/L	1	0.12	0.39	75	
1,1-Dichloroethane	ND	ug/L	1	0.14	0.55		
1,2-Dichloroethane	ND	ug/L	1	0.16	0.54	5	
1,1-Dichloroethene	ND	ug/L	1	0.11	0.37	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.13	0.47	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.11	0.38	100	
Dichloromethane	ND	ug/L	1	0.34	1.1	5	
1,2-Dichloropropane	ND	ug/L	1	0.16	0.53	5	
1,3-Dichloropropane	ND	ug/L	1	0.26	0.86		
2,2-Dichloropropane	ND	ug/L	1	0.13	0.42		
1,1-Dichloropropene	ND	ug/L	1	0.11	0.37		
1,3-Dichloropropene	ND	ug/L	1	0.40	1.3		
Ethylbenzene	ND	ug/L	1	0.11	0.42	700	
Chlorobenzene	ND	ug/L	1	0.13	0.42	100	
Styrene	ND	ug/L	1	0.14	0.46	100	
1,1,1,2-Tetrachloroethane	ND	ug/L	1	0.18	0.61		
1,1,2,2-Tetrachloroethane	ND	ug/L	1	0.33	1.1		
Tetrachloroethene	ND	ug/L	1	0.10	0.34	5	
Toluene	ND	ug/L	1	0.11	0.43	1000	
1,2,4-Trichlorobenzene	ND	ug/L	1	0.36	1.2	70	
1,1,1-Trichloroethane	ND	ug/L	1	0.12	0.43	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.28	0.94	5	
Trichloroethene	ND	ug/L	1	0.12	0.41	5	
1,2,3-Trichloropropane	ND	ug/L	1	0.46	1.5		
Vinyl chloride	ND	ug/L	1	0.13	0.42	.2	
Xylene total	ND	ug/L	1	0.33	1.1	10000	
4-Bromofluorobenzene (SURR)	97%						S
1,2-Dichlorobenzene-d4 (SURR)	100%						S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

ANALYTICAL RESULTS: GCMS 524.2 Safe Drinking Water Analysis - DNR Form

Customer: Wausau Waterworks **NLS Project: 178685**

Project Description: Drinking Water

Project Title: PWS #73701023 **Template: SAT3DNRL** **Printed: 06/05/2012 09:49**

Sample: 664884 EP 200 VOC Collected: 05/29/12 Analyzed: 06/04/12 -

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.12	0.39	5	
Bromobenzene	ND	ug/L	1	0.21	0.70		
Bromodichloromethane	[0.43]	ug/L	1	0.21	0.70	80	
Bromoform	ND	ug/L	1	0.33	1.1	80	
Bromomethane	ND	ug/L	1	0.26	0.87		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.63	5	
Chloroethane	ND	ug/L	1	1.0	3.4		
Chloroform	8.2	ug/L	1	0.11	0.37	80	
Chloromethane	ND	ug/L	1	0.16	0.54		
o-Chlorotoluene	ND	ug/L	1	0.15	0.50		
p-Chlorotoluene	ND	ug/L	1	0.11	0.38		
Dibromochloromethane	ND	ug/L	1	0.27	0.91	80	
Dibromomethane	ND	ug/L	1	0.24	0.79		
1,3-Dichlorobenzene (m)	ND	ug/L	1	0.11	0.38		
1,2-Dichlorobenzene (o)	ND	ug/L	1	0.17	0.58	600	
1,4-Dichlorobenzene (p)	ND	ug/L	1	0.12	0.39	75	
1,1-Dichloroethane	ND	ug/L	1	0.14	0.55		
1,2-Dichloroethane	ND	ug/L	1	0.16	0.54	5	
1,1-Dichloroethene	ND	ug/L	1	0.11	0.37	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.13	0.47	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.11	0.38	100	
Dichloromethane	ND	ug/L	1	0.34	1.1	5	
1,2-Dichloropropane	ND	ug/L	1	0.16	0.53	5	
1,3-Dichloropropane	ND	ug/L	1	0.26	0.86		
2,2-Dichloropropane	ND	ug/L	1	0.13	0.42		
1,1-Dichloropropene	ND	ug/L	1	0.11	0.37		
1,3-Dichloropropene	ND	ug/L	1	0.40	1.3		
Ethylbenzene	ND	ug/L	1	0.11	0.42	700	
Chlorobenzene	ND	ug/L	1	0.13	0.42	100	
Styrene	ND	ug/L	1	0.14	0.46	100	
1,1,1,2-Tetrachloroethane	ND	ug/L	1	0.18	0.61		
1,1,2,2-Tetrachloroethane	ND	ug/L	1	0.33	1.1		
Tetrachloroethene	ND	ug/L	1	0.10	0.34	5	
Toluene	ND	ug/L	1	0.11	0.43	1000	
1,2,4-Trichlorobenzene	ND	ug/L	1	0.36	1.2	70	
1,1,1-Trichloroethane	ND	ug/L	1	0.12	0.43	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.28	0.94	5	
Trichloroethene	ND	ug/L	1	0.12	0.41	5	
1,2,3-Trichloropropane	ND	ug/L	1	0.46	1.5		
Vinyl chloride	ND	ug/L	1	0.13	0.42	.2	
Xylene total	ND	ug/L	1	0.33	1.1	10000	
4-Bromofluorobenzene (SURR)	94%						S
1,2-Dichlorobenzene-d4 (SURR)	97%						S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

ANALYTICAL RESULTS: GCMS 524.2 Safe Drinking Water Analysis - DNR Form
Customer: Wausau Waterworks NLS Project: 178685
Project Description: Drinking Water
Project Title: PWS #73701023 Template: SAT3DNRL Printed: 06/05/2012 09:49

Sample: 664885 Trip Blank Collected: 05/29/12 Analyzed: 06/04/12 -

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	Note
Benzene	ND	ug/L	1	0.12	0.39	
Bromobenzene	ND	ug/L	1	0.21	0.70	
Bromodichloromethane	ND	ug/L	1	0.21	0.70	
Bromoform	ND	ug/L	1	0.33	1.1	
Bromomethane	ND	ug/L	1	0.26	0.87	
Carbon Tetrachloride	ND	ug/L	1	0.19	0.63	
Chloroethane	ND	ug/L	1	1.0	3.4	
Chloroform	ND	ug/L	1	0.11	0.37	
Chloromethane	ND	ug/L	1	0.16	0.54	
o-Chlorotoluene	ND	ug/L	1	0.15	0.50	
p-Chlorotoluene	ND	ug/L	1	0.11	0.38	
Dibromochloromethane	ND	ug/L	1	0.27	0.91	
Dibromomethane	ND	ug/L	1	0.24	0.79	
1,3-Dichlorobenzene (m)	ND	ug/L	1	0.11	0.38	
1,2-Dichlorobenzene (o)	ND	ug/L	1	0.17	0.58	
1,4-Dichlorobenzene (p)	ND	ug/L	1	0.12	0.39	
1,1-Dichloroethane	ND	ug/L	1	0.14	0.55	
1,2-Dichloroethane	ND	ug/L	1	0.16	0.54	
1,1-Dichloroethene	ND	ug/L	1	0.11	0.37	
cis-1,2-Dichloroethene	ND	ug/L	1	0.13	0.47	
trans-1,2-Dichloroethene	ND	ug/L	1	0.11	0.38	
Dichloromethane	ND	ug/L	1	0.34	1.1	
1,2-Dichloropropane	ND	ug/L	1	0.16	0.53	
1,3-Dichloropropane	ND	ug/L	1	0.26	0.86	
2,2-Dichloropropane	ND	ug/L	1	0.13	0.42	
1,1-Dichloropropene	ND	ug/L	1	0.11	0.37	
1,3-Dichloropropene	ND	ug/L	1	0.40	1.3	
Ethylbenzene	ND	ug/L	1	0.11	0.42	
Chlorobenzene	ND	ug/L	1	0.13	0.42	
Styrene	ND	ug/L	1	0.14	0.46	
1,1,1,2-Tetrachloroethane	ND	ug/L	1	0.18	0.61	
1,1,2,2-Tetrachloroethane	ND	ug/L	1	0.33	1.1	
Tetrachloroethene	ND	ug/L	1	0.10	0.34	
Toluene	ND	ug/L	1	0.11	0.43	
1,2,4-Trichlorobenzene	ND	ug/L	1	0.36	1.2	
1,1,1-Trichloroethane	ND	ug/L	1	0.12	0.43	
1,1,2-Trichloroethane	ND	ug/L	1	0.28	0.94	
Trichloroethene	ND	ug/L	1	0.12	0.41	
1,2,3-Trichloropropane	ND	ug/L	1	0.46	1.5	
Vinyl chloride	ND	ug/L	1	0.13	0.42	
Xylene total	ND	ug/L	1	0.33	1.1	
4-Bromofluorobenzene (SURR)	97%					S
1,2-Dichlorobenzene-d4 (SURR)	103%					S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

DNR Drinking Water Program
West Central Region Headquarters
PO Box 4001
Eau Claire, WI 54702-4001

VOLATILE ORGANIC ANALYSES
(ENCLOSE FORM WHEN SENDING SAMPLE TO LAB)

Form: 3300-218
Rev: 10/11

Section I: To be completed by the Department of Natural Resources/SAMPLER

System Name: **WAUSAU WATERWORKS** System Type: (Check one) MC X NN___ OC TN___

System Address: **407 GRANT ST** City: **WAUSAU** County: **37 - Marathon** Region Code: **6**

Pws Id#: **73701023** Entry Point ID: **200** WI Unique Well No: _____ DNR Contact: **GLENN FALKOWSKI (715) 359-5284**

Sampler Phone/Name/Address (**Notify DNR Contact of Corrections**)
(715) 261-7286
Richard Boers
CITY HALL 407 GRANT ST
WAUSAU WI 54401

Sampler: Provide information to have results faxed or e-mailed or to change a billing address, if your lab offers these services (leave blank if you don't use these services).
Fax number: _____
E-mail: _____
Billing address: _____

Sample Source:
___ W Well
X E Entry Point
___ D Distribution System

Sample Type:
X D Compliance Sample
___ C Confirmation Sample
___ I Investigation Sample
___ W Raw Water Sample

Special Instructions: _____

Collect sample between: 04/01/2012 and 06/30/2012

Section II: To be completed by SAMPLER -- ALL ITEMS REQUIRED

Sample Collection Date: 5 / 29 / 12 (mm / dd / yyyy) Time: 11 : 50 ☑ a.m. ☐ p.m.

Address where sample was collected: 1801 N. River Dr.

Monitoring Point ID: EP 200 Sample Point Description: LAB TAP

First Initial and Last Name of Sampler: H. - Fergc

Section III: To be completed by LAB. Report test results on back for PWS and electronically to DNR within 10 days per NR 809.80

☐ **Check here if some or all of the parameters were analyzed by a subcontracted lab.**
NOTE: A separate form must be completed by each lab with data for only the parameters which that lab analyzed.

Laboratory ID Number: _____ Laboratory Name: _____

Date Sample Received: ___/___/_____ Time Sample Received: ___ ___ : ___ ___ Laboratory Sample ID: _____

Signature of Receiving Lab Official: _____ Date Reported to PWS: ___/___/_____

Condition of Sample Upon Receipt: _____

Notice: This form must be submitted with laboratory samples analyzed to determine compliance with ch. NR 809, Wis. Adm. Code, Safe Drinking Water. Completion of this form or a similar form approved by the Department is mandatory. Failure to submit a completed form to the Department is a violation punishable by a forfeiture of no less than $10 nor more than $5000, or by a fine of not less than $10 nor more than $100 or imprisonment of not less than 30 days, or both. Each day of continued violation is a separate offense (ss. 144.99, Wis. Stats.). Authorization for these requirements is under s. 280.13(d), Wis. Stats. and ch. NR 809.80. Personally identifiable information on this form will be used for no other purpose.

VOLATILE ORGANIC ANALYSES

System Name: WAUSAU WATERWORKS

This page to be completed by the laboratory performing analysis.

PWS ID: 73701023

Lab Sample ID: _____

Storet Code		Parameter	SDWA Method	MDL	Results	MCL	Units
34030	X	BENZENE				5	UG/L
81555	X	BROMOBENZENE					UG/L
32101	X	BROMODICHLOROMETHANE				80	UG/L
32104	X	BROMOFORM				80	UG/L
34413	X	BROMOMETHANE					UG/L
32102	X	CARBON TETRACHLORIDE				5	UG/L
34311	X	CHLOROETHANE					UG/L
32106	X	CHLOROFORM				80	UG/L
34418	X	CHLOROMETHANE					UG/L
77275	X	O-CHLOROTOLUENE					UG/L
77277	X	P-CHLOROTOLUENE					UG/L
32105	X	DIBROMOCHLOROMETHANE				80	UG/L
77596	X	DIBROMOMETHANE					UG/L
34566	X	1,3-DICHLOROBENZENE (M-)					UG/L
34536	X	1,2-DICHLOROBENZENE (O-)				600	UG/L
34571	X	1,4-DICHLOROBENZENE (P-)				75	UG/L
34668		DICHLORODIFLUOROMETHANE					UG/L
34496	X	1,1-DICHLOROETHANE					UG/L
34531	X	1,2-DICHLOROETHANE				5	UG/L
34501	X	1,1-DICHLOROETHYLENE				7	UG/L
77093	X	1,2-DICHLOROETHYLENE CIS				70	UG/L
34546	X	1,2-DICHLOROETHYLENE, TRA				100	UG/L
34423	X	DICHLOROMETHANE				5	UG/L
34541	X	1,2-DICHLOROPROPANE				5	UG/L
77173	X	1,3-DICHLOROPROPANE					UG/L
77170	X	2,2-DICHLOROPROPANE					UG/L
77168	X	1,1-DICHLOROPROPENE					UG/L
34561	X	1,3-DICHLOROPROPENE					UG/L
34371	X	ETHYL BENZENE				700	UG/L
71880		FORMALDEHYDE					
34391		HEXACHLOROBUTADIENE					UG/L
77223		ISOPROPYLBENZENE					UG/L
77356		ISOPROPYLTOLUENE P					UG/L
77885		METHANOL					
78032		METHYL T-BUTYL ETHER					UG/L
34301	X	CHLOROBENZENE				100	UG/L
34696		NAPHTHALENE					UG/L
77128	X	STYRENE				100	UG/L
77562	X	1,1,1,2 TETRACHLOROETHANE					UG/L
34516	X	1,1,2,2 TETRACHLOROETHANE					UG/L
34475	X	TETRACHLOROETHYLENE				5	UG/L
34010	X	TOLUENE				1000	UG/L
34551	X	1,2,4-TRICHLOROBENZENE				70	UG/L
34506	X	1,1,1-TRICHLOROETHANE				200	UG/L
34511	X	1,1,2-TRICHLOROETHANE				5	UG/L
39180	X	TRICHLOROETHYLENE				5	UG/L
34488		TRICHLOROFLUOROMETHANE					UG/L
77443	X	1,2,3-TRICHLOROPROPANE					UG/L
81611		TRICHLOROTRIFLUOROETHANE					UG/L
77222		1,2,4-TRIMETHYLBENZENE					UG/L
77226		1,3,5-TRIMETHYLBENZENE					UG/L
39175	X	VINYL CHLORIDE				0.2	UG/L
79724	X	XYLENE TOTAL				10000	UG/L

Approved By: QA Officer: _____ Date: _____

Laboratory Manager: _____ Date: _____

Comments: _____

DNR Drinking Water Program
West Central Region Headquarters
PO Box 4001
Eau Claire, WI 54702-4001

VOLATILE ORGANIC ANALYSES
(ENCLOSE FORM WHEN SENDING SAMPLE TO LAB)

Form: 3300-218
Rev: 10/11

Section I: To be completed by the Department of Natural Resources/SAMPLER

System Name: **WAUSAU WATERWORKS** System Type: (Check one) MC_X_ NN___ OC TN___

System Address: **407 GRANT ST** City: **WAUSAU** County: **37 - Marathon** Region Code: **6**

Pws Id#: **73701023** Entry Point ID: **300** WI Unique Well No: _____ DNR Contact: **GLENN FALKOWSKI (715) 359-5284**

Sampler Phone/Name/Address (**Notify DNR Contact of Corrections**)
(715) 261-7286
Richard Boers
CITY HALL 407 GRANT ST
WAUSAU WI 54401

Sampler: Provide information to have results faxed or e-mailed or to change a billing address, if your lab offers these services (leave blank if you don't use these services).
Fax number: _____
E-mail: _____
Billing address: _____

Sample Source:
___ W Well
_X_ E Entry Point
___ D Distribution System

Sample Type:
_X_ D Compliance Sample
___ C Confirmation Sample
___ I Investigation Sample
___ W Raw Water Sample

Special Instructions: _____

Collect sample between: 04/01/2012 and 06/30/2012

Section II: To be completed by SAMPLER -- ALL ITEMS REQUIRED

Sample Collection Date: 5 / 29 / 12 (mm dd yyyy) Time: 7 : 11 ☒a.m. ☐p.m.

Address where sample was collected: 1801 N. River Dr. Wausau Wis. 54403

Monitoring Point ID: EP 300 Sample Point Description: Lab tap

First Initial and Last Name of Sampler: H. Ferge

Section III: To be completed by LAB. Report test results on back for PWS and electronically to DNR within 10 days per NR 809.80

☐ **Check here if some or all of the parameters were analyzed by a subcontracted lab.**
NOTE: A separate form must be completed by each lab with data for only the parameters which that lab analyzed.

Laboratory ID Number: _ _ _ _ _ _ _ _ _ _ Laboratory Name: _____

Date Sample Received: ___/___/_____ Time Sample Received: ___ ___ : ___ ___ Laboratory Sample ID: _ _ _ _ _ _ _ _ _ _

Signature of Receiving Lab Official: _____ Date Reported to PWS: ___/___/_____

Condition of Sample Upon Receipt: _____

Notice: This form must be submitted with laboratory samples analyzed to determine compliance with ch. NR 809, Wis. Adm. Code, Safe Drinking Water. Completion of this form or a similar form approved by the Department is mandatory. Failure to submit a completed form to the Department is a violation punishable by a forfeiture of no less than $10 nor more than $5000, or by a fine of not less than $10 nor more than $100 or imprisonment of not less than 30 days, or both. Each day of continued violation is a separate offense (ss. 144.99, Wis. Stats.). Authorization for these requirements is under s. 280.13(d), Wis. Stats. and ch. NR 809.80. Personally identifiable information on this form will be used for no other purpose.

VOLATILE ORGANIC ANALYSES

System Name: WAUSAU WATERWORKS

This page to be completed by the laboratory performing analysis.

PWS ID: 73701023

Lab Sample ID: _____

Storet Code		Parameter	SDWA Method	MDL	Results	MCL	Units
34030	X	BENZENE				5	UG/L
81555	X	BROMOBENZENE					UG/L
32101	X	BROMODICHLOROMETHANE				80	UG/L
32104	X	BROMOFORM				80	UG/L
34413	X	BROMOMETHANE					UG/L
32102	X	CARBON TETRACHLORIDE				5	UG/L
34311	X	CHLOROETHANE					UG/L
32106	X	CHLOROFORM				80	UG/L
34418	X	CHLOROMETHANE					UG/L
77275	X	O-CHLOROTOLUENE					UG/L
77277	X	P-CHLOROTOLUENE					UG/L
32105	X	DIBROMOCHLOROMETHANE				80	UG/L
77596	X	DIBROMOMETHANE					UG/L
34566	X	1,3-DICHLOROBENZENE (M-)					UG/L
34536	X	1,2-DICHLOROBENZENE (O-)				600	UG/L
34571	X	1,4-DICHLOROBENZENE (P-)				75	UG/L
34668		DICHLORODIFLUOROMETHANE					UG/L
34496	X	1,1-DICHLOROETHANE					UG/L
34531	X	1,2-DICHLOROETHANE				5	UG/L
34501	X	1,1-DICHLOROETHYLENE				7	UG/L
77093	X	1,2-DICHLOROETHYLENE CIS				70	UG/L
34546	X	1,2-DICHLOROETHYLENE, TRA				100	UG/L
34423	X	DICHLOROMETHANE				5	UG/L
34541	X	1,2-DICHLOROPROPANE				5	UG/L
77173	X	1,3-DICHLOROPROPANE					UG/L
77170	X	2,2-DICHLOROPROPANE					UG/L
77168	X	1,1-DICHLOROPROPENE					UG/L
34561	X	1,3-DICHLOROPROPENE					UG/L
34371	X	ETHYL BENZENE				700	UG/L
71880		FORMALDEHYDE					
34391		HEXACHLOROBUTADIENE					UG/L
77223		ISOPROPYLBENZENE					UG/L
77356		ISOPROPYLTOLUENE P					UG/L
77885		METHANOL					
78032		METHYL T-BUTYL ETHER					UG/L
34301	X	CHLOROBENZENE				100	UG/L
34696		NAPHTHALENE					UG/L
77128	X	STYRENE				100	UG/L
77562	X	1,1,1,2 TETRACHLOROETHANE					UG/L
34516	X	1,1,2,2 TETRACHLOROETHANE					UG/L
34475	X	TETRACHLOROETHYLENE				5	UG/L
34010	X	TOLUENE				1000	UG/L
34551	X	1,2,4-TRICHLOROBENZENE				70	UG/L
34506	X	1,1,1-TRICHLOROETHANE				200	UG/L
34511	X	1,1,2-TRICHLOROETHANE				5	UG/L
39180	X	TRICHLOROETHYLENE				5	UG/L
34488		TRICHLOROFLUOROMETHANE					UG/L
77443	X	1,2,3-TRICHLOROPROPANE					UG/L
81611		TRICHLOROTRIFLUOROETHANE					UG/L
77222		1,2,4-TRIMETHYLBENZENE					UG/L
77226		1,3,5-TRIMETHYLBENZENE					UG/L
39175	X	VINYL CHLORIDE				0.2	UG/L
79724	X	XYLENE TOTAL				10000	UG/L

Approved By: QA Officer: _____ Date: _____

Laboratory Manager: _____ Date: _____

Comments: _____

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Ph: (715)-478-2777 Fax: (715)-478-3060

ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. WI00034

NLS Project: 183059
NLS Customer: 36394

Fax: 715 261 6946 Phone: 715 261 7288

Client: Wausau Waterworks
Attn: Dick Boers
Drinking Water Division
407 Grant Street
Wausau, WI 54403 4783

Project: 2012 Drinking Waters PWS#73701023

EP300 - VOC NLS ID: 677966
COC: 139466:1 Matrix: DW
Collected: 08/15/12 07:03 Received: 08/15/12

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
SDWA Volatile Organics (VOCs) by EPA 524.2	see attached					08/21/12	EPA 524.2, Rev 4.1	721026460

EP300 - NO3 NLS ID: 677967
COC: 139466:2 Matrix: DW
Collected: 08/15/12 07:05 Received: 08/15/12

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Nitrate as N, uncorr. for NO2 (unfilt)	0.83	mg/L	1	0.025	0.075 / 10	08/16/12	SM 4500NO3-F 20ed	721026460

Disinfection - Plaza NLS ID: 677968
COC: 139466:3 Matrix: DW
Collected: 08/15/12 09:43 Received: 08/15/12

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Total Trihalomethanes (TTHM) EPA 524.2	see attached					08/21/12	EPA 524.2, Rev 4.1	721026460
Micro extraction - (552.2)	yes					08/23/12	EPA 552.2, Rev 1	721026460
Haloacetic Acids by EPA 552.2	see attached					08/30/12	EPA 552.2, Rev 1	721026460

Disinfection - Van Ert Electric NLS ID: 677969
COC: 139466:4 Matrix: DW
Collected: 08/15/12 10:01 Received: 08/15/12

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Total Trihalomethanes (TTHM) EPA 524.2	see attached					08/21/12	EPA 524.2, Rev 4.1	721026460
Micro extraction - (552.2)	yes					08/23/12	EPA 552.2, Rev 1	721026460
Haloacetic Acids by EPA 552.2	see attached					08/30/12	EPA 552.2, Rev 1	721026460

EP200 - VOC NLS ID: 677970
COC: 139466:5 Matrix: DW
Collected: 08/15/12 11:03 Received: 08/15/12

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
SDWA Volatile Organics (VOCs) by EPA 524.2	see attached					08/21/12	EPA 524.2, Rev 4.1	721026460

EP200 - NO3 NLS ID: 677971
COC: 139466:6 Matrix: DW
Collected: 08/15/12 11:07 Received: 08/15/12

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Nitrate as N, uncorr. for NO2 (unfilt)	0.63	mg/L	1	0.025	0.075 / 10	08/16/12	SM 4500NO3-F 20ed	721026460

EP200 - SOC NLS ID: 677972
COC: 139466:7 Matrix: DW
Collected: 08/15/12 11:12 Received: 08/15/12

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
EPA 525.2 Solid Phase Extraction	yes					08/22/12	EPA 525.2, Rev 2	721026460
Semi-Volatile Drinking Water Analysis GC/MS by 525.2	see attached					08/28/12	EPA 525.2, Rev 2	721026460

Trip Blank NLS ID: 677973
COC: 139466 Matrix: DW
Collected: 08/15/12 00:00 Received: 08/15/12

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
SDWA Volatile Organics (VOCs) by EPA 524.2	see attached					08/21/12	EPA 524.2, Rev 4.1	721026460

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Ph: (715)-478-2777 Fax: (715)-478-3060

ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. WI00034

NLS Project: 183059
NLS Customer: 36394

Fax: 715 261 6946 Phone: 715 261 7288

Client: Wausau Waterworks
Attn: Dick Boers
Drinking Water Division
407 Grant Street
Wausau, WI 54403 4783

Project: 2012 Drinking Waters PWS#73701023

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and/or LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution.

LOD = Limit of Detection LOQ = Limit of Quantitation ND = Not Detected (< LOD) 1000 ug/L = 1 mg/L
DWB = Dry Weight Basis NA = Not Applicable %DWB = (mg/kg DWB) / 10000
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by:

Authorized by:
R. T. Krueger
President

ANALYTICAL RESULTS: Haloacetic Acids by EPA 552.2, Rev 1

Customer: Wausau Waterworks **NLS Project: 183059**

Project Description: 2012 Drinking Waters

Project Title: PWS#73701023 **Template: 552DW** **Printed: 09/05/2012 10:12**

Sample: 677968 Disinfection - Plaza Collected: 08/15/12 Analyzed: 08/30/12 -

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Dibromoacetic acid	ND	ug/L	1	0.092	0.31		
Dichloroacetic acid	12	ug/L	2	1.0	3.4		
Total Haloacetic Acid (HAA5)	16	ug/L	1			60	
Monobromoacetic acid	ND	ug/L	1	0.27	0.90		
Monochloroacetic acid	2.0	ug/L	1	0.40	1.3		
Trichloroacetic acid	1.8	ug/L	1	0.15	0.51		
2,3-Dibromopropionic Acid (SURR)	95%						S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

Sample: 677969 Disinfection - Van Ert Electric Collected: 08/15/12 Analyzed: 08/30/12 -

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Dibromoacetic acid	ND	ug/L	1	0.092	0.31		
Dichloroacetic acid	[1.2]	ug/L	1	0.51	1.7		
Total Haloacetic Acid (HAA5)	2.7	ug/L	1			60	
Monobromoacetic acid	ND	ug/L	1	0.27	0.90		
Monochloroacetic acid	ND	ug/L	1	0.40	1.3		
Trichloroacetic acid	1.5	ug/L	1	0.15	0.51		
2,3-Dibromopropionic Acid (SURR)	101%						S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

ANALYTICAL RESULTS: GCMS 524.2, Rev 4.1 Safe Drinking Water Analysis - DNR Form

Customer: Wausau Waterworks **NLS Project: 183059**

Project Description: 2012 Drinking Waters

Project Title: PWS#73701023 **Template: SATRTHM** **Printed: 09/05/2012 10:12**

Sample: 677968 Disinfection - Plaza Collected: 08/15/12 Analyzed: 08/21/12 -

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Bromodichloromethane	[0.72]	ug/L	1	0.33	1.1	80	
Bromoform	ND	ug/L	1	0.13	0.46	80	
Chloroform	11	ug/L	1	0.24	0.79	80	
Dibromochloromethane	ND	ug/L	1	0.26	0.86	80	
TTHM IN WATER,(SUMMATION)	12	ug/L	1			80	
4-Bromofluorobenzene (SURR)	102%						S
1,2-Dichlorobenzene-d4 (SURR)	87%						S
Toluene	[0.50]	ug/L	1	0.26	0.85	1000	NR

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

NR = Compound was detected in the sample, but was not requested in the order of analyses.

Sample: 677969 Disinfection - Van Ert Electric Collected: 08/15/12 Analyzed: 08/21/12 -

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Bromodichloromethane	[0.64]	ug/L	1	0.33	1.1	80	
Bromoform	ND	ug/L	1	0.13	0.46	80	
Chloroform	15	ug/L	1	0.24	0.79	80	
Dibromochloromethane	ND	ug/L	1	0.26	0.86	80	
TTHM IN WATER,(SUMMATION)	16	ug/L	1			80	
4-Bromofluorobenzene (SURR)	108%						S
1,2-Dichlorobenzene-d4 (SURR)	94%						S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

ANALYTICAL RESULTS: GCMS 525.2, Rev 2 Safe Drinking Water Analysis - DNR form

Customer: Wausau Waterworks **NLS Project: 183059**

Project Description: 2012 Drinking Waters

Project Title: PWS#73701023 **Template: 525DNRSP** **Printed: 09/05/2012 10:12**

Sample: 677972 EP200 - SOC Collected: 08/15/12 Analyzed: 08/28/12 -

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Di(2-ethylhexyl)phthalate	ND	ug/L	1	0.60	1.2	6	
1,3-Dimethyl-2-Nitrobenzene (SURR)	96%						S
Triphenylphosphate (SURR)	106%						S
Perylene-d12 (SURR)	53%						S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

ANALYTICAL RESULTS: GCMS 524.2, Rev 4.1 Safe Drinking Water Analysis - DNR Form

Customer: Wausau Waterworks **NLS Project: 183059**

Project Description: 2012 Drinking Waters

Project Title: PWS#73701023 **Template: SAT3DNRL** **Printed: 09/05/2012 10:12**

Sample: 677966 EP300 - VOC Collected: 08/15/12 Analyzed: 08/21/12 -

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.12	0.39	5	
Bromobenzene	ND	ug/L	1	0.21	0.70		
Bromodichloromethane	[0.55]	ug/L	1	0.21	0.70	80	
Bromoform	ND	ug/L	1	0.33	1.1	80	
Bromomethane	ND	ug/L	1	0.26	0.87		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.63	5	
Chloroethane	ND	ug/L	1	1.0	3.4		
Chloroform	6.0	ug/L	1	0.11	0.37	80	
Chloromethane	ND	ug/L	1	0.16	0.54		
o-Chlorotoluene	ND	ug/L	1	0.15	0.50		
p-Chlorotoluene	ND	ug/L	1	0.11	0.38		
Dibromochloromethane	ND	ug/L	1	0.27	0.91	80	
Dibromomethane	ND	ug/L	1	0.24	0.79		
1,3-Dichlorobenzene (m)	ND	ug/L	1	0.11	0.38		
1,2-Dichlorobenzene (o)	ND	ug/L	1	0.17	0.58	600	
1,4-Dichlorobenzene (p)	ND	ug/L	1	0.12	0.39	75	
1,1-Dichloroethane	ND	ug/L	1	0.14	0.55		
1,2-Dichloroethane	ND	ug/L	1	0.16	0.54	5	
1,1-Dichloroethene	ND	ug/L	1	0.11	0.37	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.13	0.47	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.11	0.38	100	
Dichloromethane	ND	ug/L	1	0.34	1.1	5	
1,2-Dichloropropane	ND	ug/L	1	0.16	0.53	5	
1,3-Dichloropropane	ND	ug/L	1	0.26	0.86		
2,2-Dichloropropane	ND	ug/L	1	0.13	0.42		
1,1-Dichloropropene	ND	ug/L	1	0.11	0.37		
1,3-Dichloropropene	ND	ug/L	1	0.40	1.3		
Ethylbenzene	ND	ug/L	1	0.11	0.42	700	
Chlorobenzene	ND	ug/L	1	0.13	0.42	100	
Styrene	ND	ug/L	1	0.14	0.46	100	
1,1,1,2-Tetrachloroethane	ND	ug/L	1	0.18	0.61		
1,1,2,2-Tetrachloroethane	ND	ug/L	1	0.33	1.1		
Tetrachloroethene	ND	ug/L	1	0.10	0.34	5	
Toluene	ND	ug/L	1	0.11	0.43	1000	
1,2,4-Trichlorobenzene	ND	ug/L	1	0.36	1.2	70	
1,1,1-Trichloroethane	ND	ug/L	1	0.12	0.43	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.28	0.94	5	
Trichloroethene	ND	ug/L	1	0.12	0.41	5	
1,2,3-Trichloropropane	ND	ug/L	1	0.46	1.5		
Vinyl chloride	ND	ug/L	1	0.13	0.42	.2	
Xylene total	ND	ug/L	1	0.33	1.1	10000	
4-Bromofluorobenzene (SURR)	89%						S
1,2-Dichlorobenzene-d4 (SURR)	95%						S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

ANALYTICAL RESULTS: GCMS 524.2, Rev 4.1 Safe Drinking Water Analysis - DNR Form

Customer: Wausau Waterworks **NLS Project: 183059**

Project Description: 2012 Drinking Waters

Project Title: PWS#73701023 **Template: SAT3DNRL** **Printed: 09/05/2012 10:12**

Sample: 677970 EP200 - VOC Collected: 08/15/12 Analyzed: 08/21/12 -

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.12	0.39	5	
Bromobenzene	ND	ug/L	1	0.21	0.70		
Bromodichloromethane	[0.42]	ug/L	1	0.21	0.70	80	
Bromoform	ND	ug/L	1	0.33	1.1	80	
Bromomethane	ND	ug/L	1	0.26	0.87		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.63	5	
Chloroethane	ND	ug/L	1	1.0	3.4		
Chloroform	4.8	ug/L	1	0.11	0.37	80	
Chloromethane	ND	ug/L	1	0.16	0.54		
o-Chlorotoluene	ND	ug/L	1	0.15	0.50		
p-Chlorotoluene	ND	ug/L	1	0.11	0.38		
Dibromochloromethane	ND	ug/L	1	0.27	0.91	80	
Dibromomethane	ND	ug/L	1	0.24	0.79		
1,3-Dichlorobenzene (m)	ND	ug/L	1	0.11	0.38		
1,2-Dichlorobenzene (o)	ND	ug/L	1	0.17	0.58	600	
1,4-Dichlorobenzene (p)	ND	ug/L	1	0.12	0.39	75	
1,1-Dichloroethane	ND	ug/L	1	0.14	0.55		
1,2-Dichloroethane	ND	ug/L	1	0.16	0.54	5	
1,1-Dichloroethene	ND	ug/L	1	0.11	0.37	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.13	0.47	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.11	0.38	100	
Dichloromethane	ND	ug/L	1	0.34	1.1	5	
1,2-Dichloropropane	ND	ug/L	1	0.16	0.53	5	
1,3-Dichloropropane	ND	ug/L	1	0.26	0.86		
2,2-Dichloropropane	ND	ug/L	1	0.13	0.42		
1,1-Dichloropropene	ND	ug/L	1	0.11	0.37		
1,3-Dichloropropene	ND	ug/L	1	0.40	1.3		
Ethylbenzene	ND	ug/L	1	0.11	0.42	700	
Chlorobenzene	ND	ug/L	1	0.13	0.42	100	
Styrene	ND	ug/L	1	0.14	0.46	100	
1,1,1,2-Tetrachloroethane	ND	ug/L	1	0.18	0.61		
1,1,2,2-Tetrachloroethane	ND	ug/L	1	0.33	1.1		
Tetrachloroethene	ND	ug/L	1	0.10	0.34	5	
Toluene	ND	ug/L	1	0.11	0.43	1000	
1,2,4-Trichlorobenzene	ND	ug/L	1	0.36	1.2	70	
1,1,1-Trichloroethane	ND	ug/L	1	0.12	0.43	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.28	0.94	5	
Trichloroethene	ND	ug/L	1	0.12	0.41	5	
1,2,3-Trichloropropane	ND	ug/L	1	0.46	1.5		
Vinyl chloride	ND	ug/L	1	0.13	0.42	2	
Xylene total	ND	ug/L	1	0.33	1.1	10000	
4-Bromofluorobenzene (SURR)	95%						S
1,2-Dichlorobenzene-d4 (SURR)	110%						S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

ANALYTICAL RESULTS: GCMS 524.2, Rev 4.1 Safe Drinking Water Analysis - DNR Form

Customer: Wausau Waterworks **NLS Project: 183059**

Project Description: 2012 Drinking Waters

Project Title: PWS#73701023 **Template: SAT3DNRL** **Printed: 09/05/2012 10:12**

Sample: 677973 Trip Blank Collected: 08/15/12 Analyzed: 08/21/12 -

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	Note
Benzene	ND	ug/L	1	0.12	0.39	
Bromobenzene	ND	ug/L	1	0.21	0.70	
Bromodichloromethane	ND	ug/L	1	0.21	0.70	
Bromoform	ND	ug/L	1	0.33	1.1	
Bromomethane	ND	ug/L	1	0.26	0.87	
Carbon Tetrachloride	ND	ug/L	1	0.19	0.63	
Chloroethane	ND	ug/L	1	1.0	3.4	
Chloroform	ND	ug/L	1	0.11	0.37	
Chloromethane	ND	ug/L	1	0.16	0.54	
o-Chlorotoluene	ND	ug/L	1	0.15	0.50	
p-Chlorotoluene	ND	ug/L	1	0.11	0.38	
Dibromochloromethane	ND	ug/L	1	0.27	0.91	
Dibromomethane	ND	ug/L	1	0.24	0.79	
1,3-Dichlorobenzene (m)	ND	ug/L	1	0.11	0.38	
1,2-Dichlorobenzene (o)	ND	ug/L	1	0.17	0.58	
1,4-Dichlorobenzene (p)	ND	ug/L	1	0.12	0.39	
1,1-Dichloroethane	ND	ug/L	1	0.14	0.55	
1,2-Dichloroethane	ND	ug/L	1	0.16	0.54	
1,1-Dichloroethene	ND	ug/L	1	0.11	0.37	
cis-1,2-Dichloroethene	ND	ug/L	1	0.13	0.47	
trans-1,2-Dichloroethene	ND	ug/L	1	0.11	0.38	
Dichloromethane	ND	ug/L	1	0.34	1.1	
1,2-Dichloropropane	ND	ug/L	1	0.16	0.53	
1,3-Dichloropropane	ND	ug/L	1	0.26	0.86	
2,2-Dichloropropane	ND	ug/L	1	0.13	0.42	
1,1-Dichloropropene	ND	ug/L	1	0.11	0.37	
1,3-Dichloropropene	ND	ug/L	1	0.40	1.3	
Ethylbenzene	ND	ug/L	1	0.11	0.42	
Chlorobenzene	ND	ug/L	1	0.13	0.42	
Styrene	ND	ug/L	1	0.14	0.46	
1,1,1,2-Tetrachloroethane	ND	ug/L	1	0.18	0.61	
1,1,2,2-Tetrachloroethane	ND	ug/L	1	0.33	1.1	
Tetrachloroethene	ND	ug/L	1	0.10	0.34	
Toluene	ND	ug/L	1	0.11	0.43	
1,2,4-Trichlorobenzene	ND	ug/L	1	0.36	1.2	
1,1,1-Trichloroethane	ND	ug/L	1	0.12	0.43	
1,1,2-Trichloroethane	ND	ug/L	1	0.28	0.94	
Trichloroethene	ND	ug/L	1	0.12	0.41	
1,2,3-Trichloropropane	ND	ug/L	1	0.46	1.5	
Vinyl chloride	ND	ug/L	1	0.13	0.42	
Xylene total	ND	ug/L	1	0.33	1.1	
4-Bromofluorobenzene (SURR)	100%					S
1,2-Dichlorobenzene-d4 (SURR)	107%					S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

DNR Drinking Water Program
West Central Region Headquarters
PO Box 4001
Eau Claire, WI 54702-4001

VOLATILE ORGANIC ANALYSES
(ENCLOSE FORM WHEN SENDING SAMPLE TO LAB)

Form: 3300-218
Rev: 10/11

Section I: To be completed by the Department of Natural Resources/SAMPLER

System Name: **WAUSAU WATERWORKS** System Type: (Check one) MC X NN___ OC TN___

System Address: **407 GRANT ST** City: **WAUSAU** County: **37 - Marathon** Region Code: **6**

Pws Id#: **73701023** Entry Point ID: **300** WI Unique Well No: _____ DNR Contact: **GLENN FALKOWSKI (715) 359-5284**

Sampler Phone/Name/Address (**Notify DNR Contact of Corrections**)
(715) 261-7286
Richard Boers
CITY HALL 407 GRANT ST
WAUSAU WI 54401

Sampler: Provide information to have results faxed or e-mailed or to change a billing address, if your lab offers these services (leave blank if you don't use these services).
Fax number: _____
E-mail: _____
Billing address: _____

Sample Source:
___ W Well
X E Entry Point
___ D Distribution System

Sample Type:
X D Compliance Sample
___ C Confirmation Sample
___ I Investigation Sample
___ W Raw Water Sample

Special Instructions: _____

Collect sample between: 07/01/2012 and 09/30/2012

Section II: To be completed by SAMPLER -- ALL ITEMS REQUIRED

Sample Collection Date: 8 / 15 / 12 (mm dd yyyy) Time: 7 : 03 ☒a.m. ☐p.m.

Address where sample was collected: 1801 N. River Dr.

Monitoring Point ID: 300 Sample Point Description: Sample Tap - LAB After treatment

First Initial and Last Name of Sampler: H. Fergc

Section III: To be completed by LAB. Report test results on back for PWS and electronically to DNR within 10 days per NR 809.80

☐ **Check here if some or all of the parameters were analyzed by a subcontracted lab.**
NOTE: A separate form must be completed by each lab with data for only the parameters which that lab analyzed.

Laboratory ID Number: _____ Laboratory Name: _____

Date Sample Received: ___/___/_____ Time Sample Received: ___ ___ : ___ ___ Laboratory Sample ID: _____

Signature of Receiving Lab Official: _____ Date Reported to PWS: ___/___/_____

Condition of Sample Upon Receipt: _____

Notice: This form must be submitted with laboratory samples analyzed to determine compliance with ch. NR 809, Wis. Adm. Code, Safe Drinking Water. Completion of this form or a similar form approved by the Department is mandatory. Failure to submit a completed form to the Department is a violation punishable by a forfeiture of no less than $10 nor more than $5000, or by a fine of not less than $10 nor more than $100 or imprisonment of not less than 30 days, or both. Each day of continued violation is a separate offense (ss. 144.99, Wis. Stats.). Authorization for these requirements is under s. 280.13(d), Wis. Stats. and ch. NR 809.80. Personally identifiable information on this form will be used for no other purpose.

VOLATILE ORGANIC ANALYSES

System Name: WAUSAU WATERWORKS

This page to be completed by the laboratory performing analysis.

PWS ID: 73701023

Lab Sample ID: _____

Storet Code		Parameter	SDWA Method	MDL	Results	MCL	Units
34030	X	BENZENE				5	UG/L
81555	X	BROMOBENZENE					UG/L
32101	X	BROMODICHLOROMETHANE				80	UG/L
32104	X	BROMOFORM				80	UG/L
34413	X	BROMOMETHANE					UG/L
32102	X	CARBON TETRACHLORIDE				5	UG/L
34311	X	CHLOROETHANE					UG/L
32106	X	CHLOROFORM				80	UG/L
34418	X	CHLOROMETHANE					UG/L
77275	X	O-CHLOROTOLUENE					UG/L
77277	X	P-CHLOROTOLUENE					UG/L
32105	X	DIBROMOCHLOROMETHANE				80	UG/L
77596	X	DIBROMOMETHANE					UG/L
34566	X	1,3-DICHLOROBENZENE (M-)					UG/L
34536	X	1,2-DICHLOROBENZENE (O-)				600	UG/L
34571	X	1,4-DICHLOROBENZENE (P-)				75	UG/L
34668		DICHLORODIFLUOROMETHANE					UG/L
34496	X	1,1-DICHLOROETHANE					UG/L
34531	X	1,2-DICHLOROETHANE				5	UG/L
34501	X	1,1-DICHLOROETHYLENE				7	UG/L
77093	X	1,2-DICHLOROETHYLENE CIS				70	UG/L
34546	X	1,2-DICHLOROETHYLENE, TRA				100	UG/L
34423	X	DICHLOROMETHANE				5	UG/L
34541	X	1,2-DICHLOROPROPANE				5	UG/L
77173	X	1,3-DICHLOROPROPANE					UG/L
77170	X	2,2-DICHLOROPROPANE					UG/L
77168	X	1,1-DICHLOROPROPENE					UG/L
34561	X	1,3-DICHLOROPROPENE					UG/L
34371	X	ETHYL BENZENE				700	UG/L
71880		FORMALDEHYDE					
34391		HEXACHLOROBUTADIENE					UG/L
77223		ISOPROPYLBENZENE					UG/L
77356		ISOPROPYLTOLUENE P					UG/L
77885		METHANOL					
78032		METHYL T-BUTYL ETHER					UG/L
34301	X	CHLOROBENZENE				100	UG/L
34696		NAPHTHALENE					UG/L
77128	X	STYRENE				100	UG/L
77562	X	1,1,1,2 TETRACHLOROETHANE					UG/L
34516	X	1,1,2,2 TETRACHLOROETHANE					UG/L
34475	X	TETRACHLOROETHYLENE				5	UG/L
34010	X	TOLUENE				1000	UG/L
34551	X	1,2,4-TRICHLOROBENZENE				70	UG/L
34506	X	1,1,1-TRICHLOROETHANE				200	UG/L
34511	X	1,1,2-TRICHLOROETHANE				5	UG/L
39180	X	TRICHLOROETHYLENE				5	UG/L
34488		TRICHLOROFLUOROMETHANE					UG/L
77443	X	1,2,3-TRICHLOROPROPANE					UG/L
81611		TRICHLOROTRIFLUOROETHANE					UG/L
77222		1,2,4-TRIMETHYLBENZENE					UG/L
77226		1,3,5-TRIMETHYLBENZENE					UG/L
39175	X	VINYL CHLORIDE				0.2	UG/L
79724	X	XYLENE TOTAL				10000	UG/L

Approved By: QA Officer: _____ Date: _____

Laboratory Manager: _____ Date: _____

Comments: _____

DNR Drinking Water Program
West Central Region Headquarters
PO Box 4001
Eau Claire, WI 54702-4001

NITRATE ANALYSIS

(ENCLOSE FORM WHEN SENDING SAMPLE TO LAB)

Form: 3300-232
Rev: 10/11

Section I: To be completed by the Department of Natural Resources/SAMPLER

System Name: WAUSAU WATERWORKS
System Type: (Check one) MC X NN ___ OC ___ TN ___

System Address: 407 GRANT ST
City: WAUSAU
County: 37 - Marathon
Region Code: 6

Pws Id#: 73701023
Entry Point ID: 300
WI Unique Well No: ___
DNR Contact: GLENN FALKOWSKI (715) 359-5284

Sampler Phone/Name/Address (**Notify DNR Contact of Corrections**)
(715) 261-7286
Richard Boers
CITY HALL 407 GRANT ST
WAUSAU WI 54401

Sampler: Provide information to have results faxed or e-mailed or to change a billing address, if your lab offers these services (leave blank if you don't use these services).
Fax number: ___
E-mail: ___
Billing address: ___

Sample Source:
___ W Well
X E Entry Point
___ D Distribution System

Sample Type:
X D Compliance Sample
___ C Confirmation Sample
___ I Investigation Sample
___ W Raw Water Sample

Special Instructions: ___

Collect sample between: 01/01/2012 and 09/30/2012

Section II: To be completed by SAMPLER -- ALL ITEMS REQUIRED

Sample Collection Date: 8 / 15 / 12 (mm dd yyyy)
Time: 7 : 05 ☑ a.m. ☐ p.m.

Address where sample was collected: 1801 N. River Dr.

Monitoring Point ID: 300
Sample Point Description: Sample Tap - LAB after Treatment

First Initial and Last Name of Sampler: H. Feige

Section III: To be completed by LAB. Report test results on back for PWS and electronically to DNR within 10 days per NR 809.80

☐ **Check here if some or all of the parameters were analyzed by a subcontracted lab.**
NOTE: A separate form must be completed by each lab with data for only the parameters which that lab analyzed.

Laboratory ID Number: ___
Laboratory Name: ___

Date Sample Received: ___/___/___
Time Sample Received: ___:___
Laboratory Sample ID: ___

Signature of Receiving Lab Official: ___
Date Reported to PWS: ___/___/___

Condition of Sample Upon Receipt: ___

Notice: This form must be submitted with laboratory samples analyzed to determine compliance with ch. NR 809, Wis. Adm. Code, Safe Drinking Water. Completion of this form or a similar form approved by the Department is mandatory. Failure to submit a completed form to the Department is a violation punishable by a forfeiture of no less than $10 nor more than $5000, or by a fine of not less than $10 nor more than $100 or imprisonment of not less than 30 days, or both. Each day of continued violation is a separate offense (ss. 144.99, Wis. Stats.). Authorization for these requirements is under s. 280.13(d), Wis. Stats. and ch. NR 809.80. Personally identifiable information on this form will be used for no other purpose.

NITRATE ANALYSIS

System Name: WAUSAU WATERWORKS

This page to be completed by the laboratory performing analysis.

PWS ID: 73701023

Lab Sample ID: _____

Storet Code		Parameter	SDWA Method	MDL	Results	MCL	Units
620	X	NITRATE AS N				10	MG/L

Approved By: QA Officer: _____ Date: _____

Laboratory Manager: _____ Date: _____

Comments: _____

DNR Drinking Water Program
West Central Region Headquarters
PO Box 4001
Eau Claire, WI 54702-4001

DISINFECTION BYPRODUCT ANALYSES
(ENCLOSE FORM WHEN SENDING SAMPLE TO LAB)

Form: 3300-218
Rev: 10/11

Section I: To be completed by the Department of Natural Resources/SAMPLER

System Name: **WAUSAU WATERWORKS** System Type: (Check one) MC X NN___ OC TN___

System Address: **407 GRANT ST** City: **WAUSAU** County: **37 - Marathon** Region Code: **6**

Pws Id#: **73701023** Entry Point ID: ____ WI Unique Well No: ____ DNR Contact: **GLENN FALKOWSKI (715) 359-5284**

Sampler Phone/Name/Address (**Notify DNR Contact of Corrections**)
(715) 261-7286
Richard Boers
CITY HALL 407 GRANT ST
WAUSAU WI 54401

Sampler: Provide information to have results faxed or e-mailed or to change a billing address, if your lab offers these services (leave blank if you don't use these services).
Fax number: ____
E-mail: ____
Billing address: ____

Sample Source:
___ W Well
___ E Entry Point
X D Distribution System

Sample Type:
X D Compliance Sample
___ C Confirmation Sample
___ I Investigation Sample
___ W Raw Water Sample

Special Instructions: ____

Collect sample between: 07/01/2012 and 09/30/2012

Section II: To be completed by SAMPLER -- ALL ITEMS REQUIRED

Sample Collection Date: 8 / 15 / 12 (mm dd yyyy) Time: 9 : 43 ☒a.m. ☐p.m.

Address where sample was collected: PLAZA 201 N. 17TH Ave

Monitoring Point ID: 11 Sample Point Description: BASEMENT MOP SINK

First Initial and Last Name of Sampler: H. Ferge

Section III: To be completed by LAB. Report test results on back for PWS and electronically to DNR within 10 days per NR 809.80

☐ **Check here if some or all of the parameters were analyzed by a subcontracted lab.**
NOTE: A separate form must be completed by each lab with data for only the parameters which that lab analyzed.

Laboratory ID Number: ____ Laboratory Name: ____

Date Sample Received: ___/___/___ Time Sample Received: ___ : ___ Laboratory Sample ID: ____

Signature of Receiving Lab Official: ____ Date Reported to PWS: ___/___/___

Condition of Sample Upon Receipt: ____

Notice: This form must be submitted with laboratory samples analyzed to determine compliance with ch. NR 809, Wis. Adm. Code, Safe Drinking Water. Completion of this form or a similar form approved by the Department is mandatory. Failure to submit a completed form to the Department is a violation punishable by a forfeiture of no less than $10 nor more than $5000, or by a fine of not less than $10 nor more than $100 or imprisonment of not less than 30 days, or both. Each day of continued violation is a separate offense (ss. 144.99, Wis. Stats.). Authorization for these requirements is under s. 280.13(d), Wis. Stats. and ch. NR 809.80. Personally identifiable information on this form will be used for no other purpose.

DISINFECTION BYPRODUCT ANALYSES System Name: WAUSAU WATERWORKS

This page to be completed by the laboratory performing analysis.

PWS ID: 73701023

Lab Sample ID: _____

Storet Code		Parameter	SDWA Method	MDL	Results	MCL	Units
32101	X	BROMODICHLOROMETHANE				80	UG/L
32104	X	BROMOFORM				80	UG/L
32106	X	CHLOROFORM				80	UG/L
82721	X	DIBROMOACETIC ACID					UG/L
32105	X	DIBROMOCHLOROMETHANE				80	UG/L
77288	X	DICHLOROACETIC ACID					UG/L
2456	X	Total Haloacetic acids (HAA5)				60	UG/L
2453	X	MONOBROMOACETIC ACID					UG/L
78213	X	MONOCHLOROACETIC ACID					UG/L
82723	X	TRICHLOROACETIC ACID					UG/L
82080	X	TTHM IN WATER,(SUMMATION)				80	UG/L

Approved By: QA Officer: _____ Date: _____

Laboratory Manager: _____ Date: _____

Comments: _____

DNR Drinking Water Program
West Central Region Headquarters
PO Box 4001
Eau Claire, WI 54702-4001

DISINFECTION BYPRODUCT ANALYSES
(ENCLOSE FORM WHEN SENDING SAMPLE TO LAB)

Form: 3300-218
Rev: 10/11

Section I: To be completed by the Department of Natural Resources/SAMPLER

System Name: **WAUSAU WATERWORKS** System Type: (Check one) MC X NN___ OC TN___

System Address: **407 GRANT ST** City: **WAUSAU** County: **37 - Marathon** Region Code: **6**

Pws Id#: **73701023** Entry Point ID: ____ WI Unique Well No: ____ DNR Contact: **GLENN FALKOWSKI (715) 359-5284**

Sampler Phone/Name/Address **(Notify DNR Contact of Corrections)**
(715) 261-7286
Richard Boers
CITY HALL 407 GRANT ST
WAUSAU WI 54401

Sampler: Provide information to have results faxed or e-mailed or to change a billing address, if your lab offers these services (leave blank if you don't use these services).
Fax number: ____
E-mail: ____
Billing address: ____

Sample Source:
___ W Well
___ E Entry Point
X D Distribution System

Sample Type:
X D Compliance Sample
___ C Confirmation Sample
___ I Investigation Sample
___ W Raw Water Sample

Special Instructions: ____

Collect sample between: 07/01/2012 and 09/30/2012

Section II: To be completed by SAMPLER -- ALL ITEMS REQUIRED

Sample Collection Date: 8 / 15 / 12 (mm / dd / yyyy) Time: 10 : 01 ☒ a.m. ☐ p.m.

Address where sample was collected: VanEst Electric, 7019 W. Stewart Ave.

Monitoring Point ID: 16 Sample Point Description: Shop Sink

First Initial and Last Name of Sampler: H. Feege

Section III: To be completed by LAB. Report test results on back for PWS and electronically to DNR within 10 days per NR 809.80

☐ **Check here if some or all of the parameters were analyzed by a subcontracted lab.**
NOTE: A separate form must be completed by each lab with data for only the parameters which that lab analyzed.

Laboratory ID Number: ____ Laboratory Name: ____

Date Sample Received: ___/___/___ Time Sample Received: ___:___ Laboratory Sample ID: ____

Signature of Receiving Lab Official: ____ Date Reported to PWS: ___/___/___

Condition of Sample Upon Receipt: ____

Notice: This form must be submitted with laboratory samples analyzed to determine compliance with ch. NR 809, Wis. Adm. Code, Safe Drinking Water. Completion of this form or a similar form approved by the Department is mandatory. Failure to submit a completed form to the Department is a violation punishable by a forfeiture of no less than $10 nor more than $5000, or by a fine of not less than $10 nor more than $100 or imprisonment of not less than 30 days, or both. Each day of continued violation is a separate offense (ss. 144.99, Wis. Stats.). Authorization for these requirements is under s. 280.13(d), Wis. Stats. and ch. NR 809.80. Personally identifiable information on this form will be used for no other purpose.

DISINFECTION BYPRODUCT ANALYSES System Name: WAUSAU WATERWORKS

This page to be completed by the laboratory performing analysis.

PWS ID: 73701023

Lab Sample ID: _____

Storet Code		Parameter	SDWA Method	MDL	Results	MCL	Units
32101	X	BROMODICHLOROMETHANE				80	UG/L
32104	X	BROMOFORM				80	UG/L
32106	X	CHLOROFORM				80	UG/L
82721	X	DIBROMOACETIC ACID					UG/L
32105	X	DIBROMOCHLOROMETHANE				80	UG/L
77288	X	DICHLOROACETIC ACID					UG/L
2456	X	Total Haloacctic acids (HAA5)				60	UG/L
2453	X	MONOBROMOACETIC ACID					UG/L
78213	X	MONOCHLOROACETIC ACID					UG/L
82723	X	TRICHLOROACETIC ACID					UG/L
82080	X	TTHM IN WATER,(SUMMATION)				80	UG/L

Approved By: QA Officer: _____ Date: _____

Laboratory Manager: _____ Date: _____

Comments: _____

DNR Drinking Water Program
West Central Region Headquarters
PO Box 4001
Eau Claire, WI 54702-4001

VOLATILE ORGANIC ANALYSES
(ENCLOSE FORM WHEN SENDING SAMPLE TO LAB)

Form: 3300-218
Rev: 10/11

Section I: To be completed by the Department of Natural Resources/SAMPLER

System Name: WAUSAU WATERWORKS System Type: (Check one) MC X NN ___ OC ___ TN ___

System Address: 407 GRANT ST City: WAUSAU County: 37 - Marathon Region Code: 6

Pws Id#: 73701023 Entry Point ID: 200 WI Unique Well No: ___ DNR Contact: GLENN FALKOWSKI (715) 359-5284

Sampler Phone/Name/Address (**Notify DNR Contact of Corrections**)
(715) 261-7286
Richard Boers
CITY HALL 407 GRANT ST
WAUSAU WI 54401

Sampler: Provide information to have results faxed or e-mailed or to change a billing address, if your lab offers these services (leave blank if you don't use these services).
Fax number: ___
E-mail: ___
Billing address: ___

Sample Source:
___ W Well
X E Entry Point
___ D Distribution System

Sample Type:
X D Compliance Sample
___ C Confirmation Sample
___ I Investigation Sample
___ W Raw Water Sample

Special Instructions: ___

Collect sample between: 07/01/2012 and 09/30/2012

Section II: To be completed by SAMPLER -- ALL ITEMS REQUIRED

Sample Collection Date: 8 / 15 / 12 (mm / dd / yyyy) Time: 11 : 03 ☒ a.m. ☐ p.m.

Address where sample was collected: 1801 N. River Dr

Monitoring Point ID: 200 Sample Point Description: Sample Tap after Treatment

First Initial and Last Name of Sampler: H. Ferge

Section III: To be completed by LAB. Report test results on back for PWS and electronically to DNR within 10 days per NR 809.80

☐ **Check here if some or all of the parameters were analyzed by a subcontracted lab.**
NOTE: A separate form must be completed by each lab with data for only the parameters which that lab analyzed.

Laboratory ID Number: ___ Laboratory Name: ___

Date Sample Received: ___/___/___ Time Sample Received: ___:___ Laboratory Sample ID: ___

Signature of Receiving Lab Official: ___ Date Reported to PWS: ___/___/___

Condition of Sample Upon Receipt: ___

Notice: This form must be submitted with laboratory samples analyzed to determine compliance with ch. NR 809, Wis. Adm. Code, Safe Drinking Water. Completion of this form or a similar form approved by the Department is mandatory. Failure to submit a completed form to the Department is a violation punishable by a forfeiture of no less than $10 nor more than $5000, or by a fine of not less than $10 nor more than $100 or imprisonment of not less than 30 days, or both. Each day of continued violation is a separate offense (ss. 144.99, Wis. Stats.). Authorization for these requirements is under s. 280.13(d), Wis. Stats. and ch. NR 809.80. Personally identifiable information on this form will be used for no other purpose.

VOLATILE ORGANIC ANALYSES

System Name: WAUSAU WATERWORKS

This page to be completed by the laboratory performing analysis.

PWS ID: 73701023

Lab Sample ID: _____

Storet Code		Parameter	SDWA Method	MDL	Results	MCL	Units
34030	X	BENZENE				5	UG/L
81555	X	BROMOBENZENE					UG/L
32101	X	BROMODICHLOROMETHANE				80	UG/L
32104	X	BROMOFORM				80	UG/L
34413	X	BROMOMETHANE					UG/L
32102	X	CARBON TETRACHLORIDE				5	UG/L
34311	X	CHLOROETHANE					UG/L
32106	X	CHLOROFORM				80	UG/L
34418	X	CHLOROMETHANE					UG/L
77275	X	O-CHLOROTOLUENE					UG/L
77277	X	P-CHLOROTOLUENE					UG/L
32105	X	DIBROMOCHLOROMETHANE				80	UG/L
77596	X	DIBROMOMETHANE					UG/L
34566	X	1,3-DICHLOROBENZENE (M-)					UG/L
34536	X	1,2-DICHLOROBENZENE (O-)				600	UG/L
34571	X	1,4-DICHLOROBENZENE (P-)				75	UG/L
34668		DICHLORODIFLUOROMETHANE					UG/L
34496	X	1,1-DICHLOROETHANE					UG/L
34531	X	1,2-DICHLOROETHANE				5	UG/L
34501	X	1,1-DICHLOROETHYLENE				7	UG/L
77093	X	1,2-DICHLOROETHYLENE CIS				70	UG/L
34546	X	1,2-DICHLOROETHYLENE, TRA				100	UG/L
34423	X	DICHLOROMETHANE				5	UG/L
34541	X	1,2-DICHLOROPROPANE				5	UG/L
77173	X	1,3-DICHLOROPROPANE					UG/L
77170	X	2,2-DICHLOROPROPANE					UG/L
77168	X	1,1-DICHLOROPROPENE					UG/L
34561	X	1,3-DICHLOROPROPENE					UG/L
34371	X	ETHYL BENZENE				700	UG/L
71880		FORMALDEHYDE					
34391		HEXACHLOROBUTADIENE					UG/L
77223		ISOPROPYLBENZENE					UG/L
77356		ISOPROPYLTOLUENE P					UG/L
77885		METHANOL					
78032		METHYL T-BUTYL ETHER					UG/L
34301	X	CHLOROBENZENE				100	UG/L
34696		NAPHTHALENE					UG/L
77128	X	STYRENE				100	UG/L
77562	X	1,1,1,2 TETRACHLOROETHANE					UG/L
34516	X	1,1,2,2 TETRACHLOROETHANE					UG/L
34475	X	TETRACHLOROETHYLENE				5	UG/L
34010	X	TOLUENE				1000	UG/L
34551	X	1,2,4-TRICHLOROBENZENE				70	UG/L
34506	X	1,1,1-TRICHLOROETHANE				200	UG/L
34511	X	1,1,2-TRICHLOROETHANE				5	UG/L
39180	X	TRICHLOROETHYLENE				5	UG/L
34488		TRICHLOROFLUOROMETHANE					UG/L
77443	X	1,2,3-TRICHLOROPROPANE					UG/L
81611		TRICHLOROTRIFLUOROETHANE					UG/L
77222		1,2,4-TRIMETHYLBENZENE					UG/L
77226		1,3,5-TRIMETHYLBENZENE					UG/L
39175	X	VINYL CHLORIDE				0.2	UG/L
79724	X	XYLENE TOTAL				10000	UG/L

Approved By: QA Officer: _____ Date: _____

Laboratory Manager: _____ Date: _____

Comments: _____

01/23/12

DNR Drinking Water Program
West Central Region Headquarters
PO Box 4001
Eau Claire, WI 54702-4001

NITRATE ANALYSIS

(ENCLOSE FORM WHEN SENDING SAMPLE TO LAB)

Form: 3300-232
Rev: 10/11

Section I: To be completed by the Department of Natural Resources/SAMPLER

System Name: **WAUSAU WATERWORKS** System Type: (Check one) MC X NN___ OC___ TN___

System Address: **407 GRANT ST** City: **WAUSAU** County: **37 - Marathon** Region Code: **6**

Pws Id#: **73701023** Entry Point ID: **200** WI Unique Well No: _____ DNR Contact: **GLENN FALKOWSKI (715) 359-5284**

Sampler Phone/Name/Address (**Notify DNR Contact of Corrections**)
(715) 261-7286
Richard Boers
CITY HALL 407 GRANT ST
WAUSAU WI 54401

Sampler: Provide information to have results faxed or e-mailed or to change a billing address, if your lab offers these services (leave blank if you don't use these services).
Fax number: _____
E-mail: _____
Billing address: _____

Sample Source:
___ W Well
X E Entry Point
___ D Distribution System

Sample Type:
X D Compliance Sample
___ C Confirmation Sample
___ I Investigation Sample
___ W Raw Water Sample

Special Instructions: _____

Collect sample between: 01/01/2012 and 09/30/2012

Section II: To be completed by SAMPLER -- ALL ITEMS REQUIRED

Sample Collection Date: 8 / 15 / 12 (mm dd yyyy) Time: 11 : 07 ☒ a.m. ☐ p.m.

Address where sample was collected: 1801 N. River Dr

Monitoring Point ID: 200 Sample Point Description: Sample Tap after Treatment

First Initial and Last Name of Sampler: H. Feige

Section III: To be completed by LAB. Report test results on back for PWS and electronically to DNR within 10 days per NR 809.80

☐ **Check here if some or all of the parameters were analyzed by a subcontracted lab.**
NOTE: A separate form must be completed by each lab with data for only the parameters which that lab analyzed.

Laboratory ID Number: _____ Laboratory Name: _____

Date Sample Received: ___/___/___ Time Sample Received: ___:___ Laboratory Sample ID: _____

Signature of Receiving Lab Official: _____ Date Reported to PWS: ___/___/___

Condition of Sample Upon Receipt: _____

Notice: This form must be submitted with laboratory samples analyzed to determine compliance with ch. NR 809, Wis. Adm. Code, Safe Drinking Water. Completion of this form or a similar form approved by the Department is mandatory. Failure to submit a completed form to the Department is a violation punishable by a forfeiture of no less than $10 nor more than $5000, or by a fine of not less than $10 nor more than $100 or imprisonment of not less than 30 days, or both. Each day of continued violation is a separate offense (ss. 144.99, Wis. Stats.). Authorization for these requirements is under s. 280.13(d), Wis. Stats. and ch. NR 809.80. Personally identifiable information on this form will be used for no other purpose.

NITRATE ANALYSIS

System Name: WAUSAU WATERWORKS

This page to be completed by the laboratory performing analysis.

PWS ID: 73701023

Lab Sample ID: _____

Storet Code		Parameter	SDWA Method	MDL	Results	MCL	Units
620	X	NITRATE AS N				10	MG/L

Approved By: QA Officer: _____ Date: _____

Laboratory Manager: _____ Date: _____

Comments: _____

01/23/12

DNR Drinking Water Program
West Central Region Headquarters
PO Box 4001
Eau Claire, WI 54702-4001

SYNTHETIC ORGANIC ANALYSES
(ENCLOSE FORM WHEN SENDING SAMPLE TO LAB)

Form: 3300-216
Rev: 10/11

Section I: To be completed by the Department of Natural Resources/SAMPLER

System Name: **WAUSAU WATERWORKS** System Type: (Check one) MC X NN ___ OC ___ TN ___

System Address: **407 GRANT ST** City: **WAUSAU** County: **37 - Marathon** Region Code: **6**

Pws Id#: **73701023** Entry Point ID: **200** WI Unique Well No: ___ DNR Contact: **GLENN FALKOWSKI (715) 359-5284**

Sampler Phone/Name/Address (**Notify DNR Contact of Corrections**)
(715) 261-7286
Richard Boers
CITY HALL 407 GRANT ST
WAUSAU WI 54401

Sampler: Provide information to have results faxed or e-mailed or to change a billing address, if your lab offers these services (leave blank if you don't use these services).
Fax number: ___
E-mail: ___
Billing address: ___

Sample Source:
___ W Well
X E Entry Point
___ D Distribution System

Sample Type:
X D Compliance Sample
___ C Confirmation Sample
___ I Investigation Sample
___ W Raw Water Sample

Special Instructions: ___

Collect sample between: 01/01/2012 and 09/30/2012

Section II: To be completed by SAMPLER -- ALL ITEMS REQUIRED

Sample Collection Date: 8 / 15 / 12 (mm dd yyyy) Time: 11 : 12 ☒a.m. ☐p.m.

Address where sample was collected: 1801 N. River Dr.

Monitoring Point ID: 200 Sample Point Description: Sample Tap after Treatment

First Initial and Last Name of Sampler: H. Ferge

Section III: To be completed by LAB. Report test results on back for PWS and electronically to DNR within 10 days per NR 809.80

☐ **Check here if some or all of the parameters were analyzed by a subcontracted lab.**
NOTE: A separate form must be completed by each lab with data for only the parameters which that lab analyzed.

Laboratory ID Number: ___ Laboratory Name: ___

Date Sample Received: ___/___/___ Time Sample Received: ___ : ___ Laboratory Sample ID: ___

Signature of Receiving Lab Official: ___ Date Reported to PWS: ___/___/___

Condition of Sample Upon Receipt: ___

Notice: This form must be submitted with laboratory samples analyzed to determine compliance with ch. NR 809, Wis. Adm. Code, Safe Drinking Water. Completion of this form or a similar form approved by the Department is mandatory. Failure to submit a completed form to the Department is a violation punishable by a forfeiture of no less than $10 nor more than $5000, or by a fine of not less than $10 nor more than $100 or imprisonment of not less than 30 days, or both. Each day of continued violation is a separate offense (ss. 144.99, Wis. Stats.). Authorization for these requirements is under s. 280.13(d), Wis. Stats. and ch. NR 809.80. Personally identifiable information on this form will be used for no other purpose.

SYNTHETIC ORGANIC ANALYSES

System Name: WAUSAU WATERWORKS

This page to be completed by the laboratory performing analysis.

PWS ID: 73701023

Lab Sample ID: _____

Storet Code		Parameter	SDWA Method	MDL	Results	MCL	Units
46317		ALACHLOR (LASSO)				2	UG/L
39053		ALDICARB (TEMIK)				3	UG/L
82587		ALDICARB SULFONE				2	UG/L
82586		ALDICARB SULFOXIDE				4	UG/L
34680		ALDRIN					UG/L
39033		ATRAZINE				3	UG/L
34247		BENZO (A) PYRENE				0.2	UG/L
77860		BUTACHLOR					UG/L
77700		CARBARYL					UG/L
81405		CARBOFURAN				40	UG/L
39350		CHLORDANE				2	UG/L
39348		CHLORDANE ALPHA					UG/L
39810		CHLORDANE GAMMA					UG/L
77780		CYANAZINE					
39730		2,4-D				70	UG/L
38432		DALAPON				200	UG/L
46373		DEETHYLATRAZINE					UG/L
46374		DEISOPROPYLATRAZINE					UG/L
4442		DIAMINOATRAZINE					UG/L
38760		1,2-DIBROMO-3-CHLOROPROPA				0.2	UG/L
82052		DICAMBA					UG/L
39380		DIELDRIN					UG/L
77903		DI(2-ETHYLHEXYL)ADIPATE				400	UG/L
46312	X	DI(2-ETHYLHEXYL)PHTHALATE				6	UG/L
81287		DINOSEB				7	UG/L
78885		DIQUAT				20	UG/L
38926		ENDOTHALL				100	UG/L
39390		ENDRIN				2.0	UG/L
46369		ETHYLENE DIBROMIDE (EDB)				0.05	UG/L
39941		GLYPHOSATE (ROUND-UP)				700	UG/L
39410		HEPTACHLOR				0.4	UG/L
39420		HEPTACHLOR EPOXIDE				0.2	UG/L
34688		HEXACHLOROBENZENE				1	UG/L
34386		HEXACHLOROCYCLOPENTADIENE				50	UG/L
82584		3-HYDROXYCARBOFURAN					UG/L
39340		BHC GAMMA (LINDANE)				0.2	UG/L
39051		METHOMYL					UG/L
39480		METHOXYCHLOR				40	UG/L
39356		METOLACHLOR (DUAL)					UG/L
81408		METRIBUZIN (SENCOR)					UG/L
38865		OXAMYL (VYDATE)				200	UG/L
39516		PCB TOTAL				0.5	UG/L
39032		PENTACHLOROPHENOL				1	UG/L
39720		PICLORAM (TORDON)				500	UG/L
30295		PROPACHLOR					UG/L
39760		2,4,5-TP (SILVEX)				50	UG/L
39055		SIMAZINE				4	UG/L
34675		2,3,7,8-TCDD (DIOXIN)				.00003	UG/L
39400		TOXAPHENE				3	UG/L

Approved By: QA Officer: _____ Date: _____

Laboratory Manager: _____ Date: _____

Comments: _____

SAMPLE COLLECTION AND CHAIN OF CUSTODY RECORD

NORTHERN LAKE SERVICE, INC.

Analytical Laboratory and Environmental Services

400 North Lake Avenue • Crandon, WI 54520-1298

Tel: (715) 478-2777 • Fax: (715) 478-3060

Wisconsin Lab Cert. No. 721026460

WI DATCP 105-000330

CLIENT	WAUSAU WATER WORKS
ADDRESS	1801 N. River Dr.
CITY / STATE / ZIP	WAUSAU / WIS / 54403
PROJECT DESCRIPTION / NO.	QUOTATION NO.
DNR FID #	DNR LICENSE #
CONTACT	PHONE: Dick Boaks 715-261-7288
PURCHASE ORDER NO.	FAX

MATRIX:
SW = surface water
WW = waste water
GW = groundwater
DW = drinking water
TIS = tissue
AIR = air
SOIL = soil
SED = sediment
PROD = product
SL = sludge
OTHER

ANALYZE PER ORDER OF ANALYSIS

USE BOXES BELOW: Indicate Y or N if GW Sample is field filtered.
Indicate G or C if WW Sample is Grab or Composite.

NO. 139466

ITEM NO.	NLS LAB. NO.	SAMPLE ID	COLLECTION DATE	COLLECTION TIME	MATRIX (See above)	COLLECTION REMARKS (i.e. DNR Well ID #)
1.	677966	VOC 300	8-15-12	7:03 AM		
2.	967	NITRATE 300	8-15-12	7:05 AM		
3.	968	DISINFECT. - PLAZA	8-15-12	9:43 AM		
4.	969	DISINFECT. - INWENT	8-15-12	10:01 AM		
5.	970	VOC 200	8-15-12	11:03 AM		
6.	971	NITRATE 200	8-15-12	11:07 AM		
7.	972	SYNTHETIC 200	8-15-12	11:12 AM		
8.	973					
9.						
10.						

ONE SAMPLE PER LINE

COLLECTED BY (signature): Howard H. Fuge	CUSTODY SEAL NO. (IF ANY)	DATE/TIME: 8-15-12
RELINQUISHED BY (signature)	RECEIVED BY (signature)	DATE/TIME
DISPATCHED BY (signature)	METHOD OF TRANSPORT	DATE/TIME

REPORT TO

INVOICE TO

RECEIVED AT NLS BY (signature): Cinnamon Combs	DATE/TIME: 8/15/12 12:50	CONDITION: on ice	TEMP.: 0.3
COOLER #	REMARKS & OTHER INFORMATION		
	WDNR FACILITY NUMBER	E-MAIL ADDRESS	

PRESERVATIVE:
NP = no preservative
S = sulfuric acid
N = nitric acid
Z = zinc acetate
M = methanol
OH = sodium hydroxide
HA = hydrochloric & ascorbic acid
H = hydrochloric acid

IMPORTANT:

1. TO MEET REGULATORY REQUIREMENTS, THIS FORM **MUST** BE COMPLETED IN DETAIL AND INCLUDED IN THE COOLER CONTAINING THE SAMPLES DESCRIBED.
2. PLEASE USE ONE LINE PER SAMPLE, **NOT** PER BOTTLE.
3. RETURN THIS FORM WITH SAMPLES - CLIENT MAY KEEP PINK COPY.
4. PARTIES COLLECTING SAMPLE, LISTED AS **REPORT TO** AND LISTED AS **INVOICE TO** AGREE TO STANDARD TERMS & CONDITIONS ON REVERSE.

DUPLICATE COPY

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Ph: (715)-478-2777 Fax: (715)-478-3060

ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. WI00034

NLS Project: 186521
NLS Customer: 36394

Fax: 715 261 6946 Phone: 715 261 7288

Client: Wausau Waterworks
Attn: Dick Boers
Drinking Water Division
407 Grant Street
Wausau, WI 54403 4783

Project: Drinking Water PWS #73701023

200 NLS ID: 688675
COC: 164838:1 Matrix: DW
Collected: 10/11/12 07:04 Received: 10/11/12

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
SDWA Volatile Organics (VOCs) by EPA 524.2	see attached					10/16/12	EPA 524.2, Rev 4.1	721026460 JLG

300 NLS ID: 688676
COC: 164838:2 Matrix: DW
Collected: 10/11/12 11:06 Received: 10/11/12

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
SDWA Volatile Organics (VOCs) by EPA 524.2	see attached					10/16/12	EPA 524.2, Rev 4.1	721026460 JLG

Trip Blank NLS ID: 688677
COC: 164838:3 Matrix: TB
Collected: 10/11/12 00:00 Received: 10/11/12

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
SDWA Volatile Organics (VOCs) by EPA 524.2	see attached					10/17/12	EPA 524.2, Rev 4.1	721026460 JLG

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and/or LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution.

LOD = Limit of Detection LOQ = Limit of Quantitation ND = Not Detected (< LOD) 1000 ug/L = 1 mg/L
DWB = Dry Weight Basis NA = Not Applicable %DWB = (mg/kg DWB) / 10000
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by:

Authorized by:
R. T. Krueger
President

Per NR 809.80 (4) (Wisconsin Drinking water code), your data has been electronically delivered to the DNR. This report is for your records only.

ANALYTICAL RESULTS: GCMS 524.2, Rev 4.1 Safe Drinking Water Analysis - DNR Form

Customer: Wausau Waterworks **NLS Project: 186521**

Project Description: Drinking Water

Project Title: PWS #73701023 **Template: SAT3DNRL** **Printed: 10/18/2012 11:14**

Sample: 688675 200 Collected: 10/11/12 Analyzed: 10/16/12 -

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.12	0.39	5	
Bromobenzene	ND	ug/L	1	0.21	0.70		
Bromodichloromethane	0.77	ug/L	1	0.21	0.70	80	
Bromoform	ND	ug/L	1	0.33	1.1	80	
Bromomethane	ND	ug/L	1	0.26	0.87		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.63	5	
Chloroethane	ND	ug/L	1	1.0	3.4		
Chloroform	19	ug/L	1	0.11	0.37	80	
Chloromethane	ND	ug/L	1	0.16	0.54		
o-Chlorotoluene	ND	ug/L	1	0.15	0.50		
p-Chlorotoluene	ND	ug/L	1	0.11	0.38		
Dibromochloromethane	ND	ug/L	1	0.27	0.91	80	
Dibromomethane	ND	ug/L	1	0.24	0.79		
1,3-Dichlorobenzene (m)	ND	ug/L	1	0.11	0.38		
1,2-Dichlorobenzene (o)	ND	ug/L	1	0.17	0.58	600	
1,4-Dichlorobenzene (p)	ND	ug/L	1	0.12	0.39	75	
1,1-Dichloroethane	ND	ug/L	1	0.14	0.55		
1,2-Dichloroethane	ND	ug/L	1	0.16	0.54	5	
1,1-Dichloroethene	ND	ug/L	1	0.11	0.37	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.13	0.47	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.11	0.38	100	
Dichloromethane	ND	ug/L	1	0.34	1.1	5	
1,2-Dichloropropane	ND	ug/L	1	0.16	0.53	5	
1,3-Dichloropropane	ND	ug/L	1	0.26	0.86		
2,2-Dichloropropane	ND	ug/L	1	0.13	0.42		
1,1-Dichloropropene	ND	ug/L	1	0.11	0.37		
1,3-Dichloropropene	ND	ug/L	1	0.40	1.3		
Ethylbenzene	ND	ug/L	1	0.11	0.42	700	
Chlorobenzene	ND	ug/L	1	0.13	0.42	100	
Styrene	ND	ug/L	1	0.14	0.46	100	
1,1,1,2-Tetrachloroethane	ND	ug/L	1	0.18	0.61		
1,1,2,2-Tetrachloroethane	ND	ug/L	1	0.33	1.1		
Tetrachloroethene	ND	ug/L	1	0.10	0.34	5	
Toluene	ND	ug/L	1	0.11	0.43	1000	
1,2,4-Trichlorobenzene	ND	ug/L	1	0.36	1.2	70	
1,1,1-Trichloroethane	ND	ug/L	1	0.12	0.43	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.28	0.94	5	
Trichloroethene	ND	ug/L	1	0.12	0.41	5	
1,2,3-Trichloropropane	ND	ug/L	1	0.46	1.5		
Vinyl chloride	ND	ug/L	1	0.13	0.42	.2	
Xylene total	ND	ug/L	1	0.33	1.1	10000	
4-Bromofluorobenzene (SURR)	104%						S
1,2-Dichlorobenzene-d4 (SURR)	106%						S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

ANALYTICAL RESULTS: GCMS 524.2, Rev 4.1 Safe Drinking Water Analysis - DNR Form

Customer: Wausau Waterworks **NLS Project: 186521**

Project Description: Drinking Water

Project Title: PWS #73701023 **Template: SAT3DNRL** **Printed: 10/18/2012 11:14**

Sample: 688676 300 Collected: 10/11/12 Analyzed: 10/16/12 -

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.12	0.39	5	
Bromobenzene	ND	ug/L	1	0.21	0.70		
Bromodichloromethane	[0.31]	ug/L	1	0.21	0.70	80	
Bromoform	ND	ug/L	1	0.33	1.1	80	
Bromomethane	ND	ug/L	1	0.26	0.87		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.63	5	
Chloroethane	ND	ug/L	1	1.0	3.4		
Chloroform	12	ug/L	1	0.11	0.37	80	
Chloromethane	ND	ug/L	1	0.16	0.54		
o-Chlorotoluene	ND	ug/L	1	0.15	0.50		
p-Chlorotoluene	ND	ug/L	1	0.11	0.38		
Dibromochloromethane	ND	ug/L	1	0.27	0.91	80	
Dibromomethane	ND	ug/L	1	0.24	0.79		
1,3-Dichlorobenzene (m)	ND	ug/L	1	0.11	0.38		
1,2-Dichlorobenzene (o)	ND	ug/L	1	0.17	0.58	600	
1,4-Dichlorobenzene (p)	ND	ug/L	1	0.12	0.39	75	
1,1-Dichloroethane	ND	ug/L	1	0.14	0.55		
1,2-Dichloroethane	ND	ug/L	1	0.16	0.54	5	
1,1-Dichloroethene	ND	ug/L	1	0.11	0.37	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.13	0.47	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.11	0.38	100	
Dichloromethane	ND	ug/L	1	0.34	1.1	5	
1,2-Dichloropropane	ND	ug/L	1	0.16	0.53	5	
1,3-Dichloropropane	ND	ug/L	1	0.26	0.86		
2,2-Dichloropropane	ND	ug/L	1	0.13	0.42		
1,1-Dichloropropene	ND	ug/L	1	0.11	0.37		
1,3-Dichloropropene	ND	ug/L	1	0.40	1.3		
Ethylbenzene	ND	ug/L	1	0.11	0.42	700	
Chlorobenzene	ND	ug/L	1	0.13	0.42	100	
Styrene	ND	ug/L	1	0.14	0.46	100	
1,1,1,2-Tetrachloroethane	ND	ug/L	1	0.18	0.61		
1,1,2,2-Tetrachloroethane	ND	ug/L	1	0.33	1.1		
Tetrachloroethene	ND	ug/L	1	0.10	0.34	5	
Toluene	ND	ug/L	1	0.11	0.43	1000	
1,2,4-Trichlorobenzene	ND	ug/L	1	0.36	1.2	70	
1,1,1-Trichloroethane	ND	ug/L	1	0.12	0.43	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.28	0.94	5	
Trichloroethene	ND	ug/L	1	0.12	0.41	5	
1,2,3-Trichloropropane	ND	ug/L	1	0.46	1.5		
Vinyl chloride	ND	ug/L	1	0.13	0.42	.2	
Xylene total	ND	ug/L	1	0.33	1.1	10000	
4-Bromofluorobenzene (SURR)	94%						S
1,2-Dichlorobenzene-d4 (SURR)	107%						S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

ANALYTICAL RESULTS: GCMS 524.2, Rev 4.1 Safe Drinking Water Analysis - DNR Form

Customer: Wausau Waterworks **NLS Project: 186521**

Project Description: Drinking Water

Project Title: PWS #73701023 **Template: SAT3DNRL** **Printed: 10/18/2012 11:14**

Sample: 688677 Trip Blank Collected: 10/11/12 Analyzed: 10/17/12 -

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	Note
Benzene	ND	ug/L	1	0.12	0.39	
Bromobenzene	ND	ug/L	1	0.21	0.70	
Bromodichloromethane	ND	ug/L	1	0.21	0.70	
Bromoform	ND	ug/L	1	0.33	1.1	
Bromomethane	ND	ug/L	1	0.26	0.87	
Carbon Tetrachloride	ND	ug/L	1	0.19	0.63	
Chloroethane	ND	ug/L	1	1.0	3.4	
Chloroform	ND	ug/L	1	0.11	0.37	
Chloromethane	ND	ug/L	1	0.16	0.54	
o-Chlorotoluene	ND	ug/L	1	0.15	0.50	
p-Chlorotoluene	ND	ug/L	1	0.11	0.38	
Dibromochloromethane	ND	ug/L	1	0.27	0.91	
Dibromomethane	ND	ug/L	1	0.24	0.79	
1,3-Dichlorobenzene (m)	ND	ug/L	1	0.11	0.38	
1,2-Dichlorobenzene (o)	ND	ug/L	1	0.17	0.58	
1,4-Dichlorobenzene (p)	ND	ug/L	1	0.12	0.39	
1,1-Dichloroethane	ND	ug/L	1	0.14	0.55	
1,2-Dichloroethane	ND	ug/L	1	0.16	0.54	
1,1-Dichloroethene	ND	ug/L	1	0.11	0.37	
cis-1,2-Dichloroethene	ND	ug/L	1	0.13	0.47	
trans-1,2-Dichloroethene	ND	ug/L	1	0.11	0.38	
Dichloromethane	ND	ug/L	1	0.34	1.1	
1,2-Dichloropropane	ND	ug/L	1	0.16	0.53	
1,3-Dichloropropane	ND	ug/L	1	0.26	0.86	
2,2-Dichloropropane	ND	ug/L	1	0.13	0.42	
1,1-Dichloropropene	ND	ug/L	1	0.11	0.37	
1,3-Dichloropropene	ND	ug/L	1	0.40	1.3	
Ethylbenzene	ND	ug/L	1	0.11	0.42	
Chlorobenzene	ND	ug/L	1	0.13	0.42	
Styrene	ND	ug/L	1	0.14	0.46	
1,1,1,2-Tetrachloroethane	ND	ug/L	1	0.18	0.61	
1,1,2,2-Tetrachloroethane	ND	ug/L	1	0.33	1.1	
Tetrachloroethene	ND	ug/L	1	0.10	0.34	
Toluene	ND	ug/L	1	0.11	0.43	
1,2,4-Trichlorobenzene	ND	ug/L	1	0.36	1.2	
1,1,1-Trichloroethane	ND	ug/L	1	0.12	0.43	
1,1,2-Trichloroethane	ND	ug/L	1	0.28	0.94	
Trichloroethene	ND	ug/L	1	0.12	0.41	
1,2,3-Trichloropropane	ND	ug/L	1	0.46	1.5	
Vinyl chloride	ND	ug/L	1	0.13	0.42	
Xylene total	ND	ug/L	1	0.33	1.1	
4-Bromofluorobenzene (SURR)	92%					S
1,2-Dichlorobenzene-d4 (SURR)	94%					S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

DNR Drinking Water Program
West Central Region Headquarters
PO Box 4001
Eau Claire, WI 54702-4001

VOLATILE ORGANIC ANALYSES
(ENCLOSE FORM WHEN SENDING SAMPLE TO LAB)

Form: 3300-218
Rev: 10/11

Section I: To be completed by the Department of Natural Resources/SAMPLER

System Name: **WAUSAU WATERWORKS** System Type: (Check one) MC X NN ___ OC ___ TN ___

System Address: **407 GRANT ST** City: **WAUSAU** County: **37 - Marathon** Region Code: **6**

Pws Id#: **73701023** Entry Point ID: **200** WI Unique Well No: ___ DNR Contact: **GLENN FALKOWSKI (715) 359-5284**

Sampler Phone/Name/Address (**Notify DNR Contact of Corrections**)
(715) 261-7286
Richard Boers
CITY HALL 407 GRANT ST
WAUSAU WI 54401

Sampler: Provide information to have results faxed or e-mailed or to change a billing address, if your lab offers these services (leave blank if you don't use these services).
Fax number: ___
E-mail: ___
Billing address: ___

Sample Source:
- ___ W Well
- X E Entry Point
- ___ D Distribution System

Sample Type:
- X D Compliance Sample
- ___ C Confirmation Sample
- ___ I Investigation Sample
- ___ W Raw Water Sample

Special Instructions: ___

Collect sample between: 10/01/2012 and 12/31/2012

Section II: To be completed by SAMPLER -- ALL ITEMS REQUIRED

Sample Collection Date: 10 / 11 / 12 (mm dd yyyy) Time: 7 : 04 ☒ a.m. ☐ p.m.

Address where sample was collected: 1801 N. River Dr. WAUSAU WI. 54403

Monitoring Point ID: 200 Sample Point Description: LAB TAP

First Initial and Last Name of Sampler: H. Fergc

Section III: To be completed by LAB. Report test results on back for PWS and electronically to DNR within 10 days per NR 809.80

☐ **Check here if some or all of the parameters were analyzed by a subcontracted lab.**
NOTE: A separate form must be completed by each lab with data for only the parameters which that lab analyzed.

Laboratory ID Number: ___ Laboratory Name: ___

Date Sample Received: ___/___/___ Time Sample Received: ___ : ___ Laboratory Sample ID: ___

Signature of Receiving Lab Official: ___ Date Reported to PWS: ___/___/___

Condition of Sample Upon Receipt: ___

Notice: This form must be submitted with laboratory samples analyzed to determine compliance with ch. NR 809, Wis. Adm. Code, Safe Drinking Water. Completion of this form or a similar form approved by the Department is mandatory. Failure to submit a completed form to the Department is a violation punishable by a forfeiture of no less than $10 nor more than $5000, or by a fine of not less than $10 nor more than $100 or imprisonment of not less than 30 days, or both. Each day of continued violation is a separate offense (ss. 144.99, Wis. Stats.). Authorization for these requirements is under s. 280.13(d), Wis. Stats. and ch. NR 809.80. Personally identifiable information on this form will be used for no other purpose.

VOLATILE ORGANIC ANALYSES

System Name: WAUSAU WATERWORKS

This page to be completed by the laboratory performing analysis.

PWS ID: 73701023

Lab Sample ID: _____

Storet Code		Parameter	SDWA Method	MDL	Results	MCL	Units
34030	X	BENZENE				5	UG/L
81555	X	BROMOBENZENE					UG/L
32101	X	BROMODICHLOROMETHANE				80	UG/L
32104	X	BROMOFORM				80	UG/L
34413	X	BROMOMETHANE					UG/L
32102	X	CARBON TETRACHLORIDE				5	UG/L
34311	X	CHLOROETHANE					UG/L
32106	X	CHLOROFORM				80	UG/L
34418	X	CHLOROMETHANE					UG/L
77275	X	O-CHLOROTOLUENE					UG/L
77277	X	P-CHLOROTOLUENE					UG/L
32105	X	DIBROMOCHLOROMETHANE				80	UG/L
77596	X	DIBROMOMETHANE					UG/L
34566	X	1,3-DICHLOROBENZENE (M-)					UG/L
34536	X	1,2-DICHLOROBENZENE (O-)				600	UG/L
34571	X	1,4-DICHLOROBENZENE (P-)				75	UG/L
34668		DICHLORODIFLUOROMETHANE					UG/L
34496	X	1,1-DICHLOROETHANE					UG/L
34531	X	1,2-DICHLOROETHANE				5	UG/L
34501	X	1,1-DICHLOROETHYLENE				7	UG/L
77093	X	1,2-DICHLOROETHYLENE CIS				70	UG/L
34546	X	1,2-DICHLOROETHYLENE, TRA				100	UG/L
34423	X	DICHLOROMETHANE				5	UG/L
34541	X	1,2-DICHLOROPROPANE				5	UG/L
77173	X	1,3-DICHLOROPROPANE					UG/L
77170	X	2,2-DICHLOROPROPANE					UG/L
77168	X	1,1-DICHLOROPROPENE					UG/L
34561	X	1,3-DICHLOROPROPENE					UG/L
34371	X	ETHYL BENZENE				700	UG/L
71880		FORMALDEHYDE					
34391		HEXACHLOROBUTADIENE					UG/L
77223		ISOPROPYLBENZENE					UG/L
77356		ISOPROPYLTOLUENE P					UG/L
77885		METHANOL					
78032		METHYL T-BUTYL ETHER					UG/L
34301	X	CHLOROBENZENE				100	UG/L
34696		NAPHTHALENE					UG/L
77128	X	STYRENE				100	UG/L
77562	X	1,1,1,2 TETRACHLOROETHANE					UG/L
34516	X	1,1,2,2 TETRACHLOROETHANE					UG/L
34475	X	TETRACHLOROETHYLENE				5	UG/L
34010	X	TOLUENE				1000	UG/L
34551	X	1,2,4-TRICHLOROBENZENE				70	UG/L
34506	X	1,1,1-TRICHLOROETHANE				200	UG/L
34511	X	1,1,2-TRICHLOROETHANE				5	UG/L
39180	X	TRICHLOROETHYLENE				5	UG/L
34488		TRICHLOROFLUOROMETHANE					UG/L
77443	X	1,2,3-TRICHLOROPROPANE					UG/L
81611		TRICHLOROTRIFLUOROETHANE					UG/L
77222		1,2,4-TRIMETHYLBENZENE					UG/L
77226		1,3,5-TRIMETHYLBENZENE					UG/L
39175	X	VINYL CHLORIDE				0.2	UG/L
79724	X	XYLENE TOTAL				10000	UG/L

Approved By: QA Officer: _____ Date: _____

Laboratory Manager: _____ Date: _____

Comments: _____

DNR Drinking Water Program
West Central Region Headquarters
PO Box 4001
Eau Claire, WI 54702-4001

VOLATILE ORGANIC ANALYSES
(ENCLOSE FORM WHEN SENDING SAMPLE TO LAB)

Form: 3300-218
Rev: 10/11

Section I: To be completed by the Department of Natural Resources/SAMPLER

System Name: **WAUSAU WATERWORKS** System Type: (Check one) MC X NN___ OC TN___

System Address: **407 GRANT ST** City: **WAUSAU** County: **37 - Marathon** Region Code: **6**

Pws Id#: **73701023** Entry Point ID: **300** WI Unique Well No: _____ DNR Contact: **GLENN FALKOWSKI (715) 359-5284**

Sampler Phone/Name/Address (**Notify DNR Contact of Corrections**)
(715) 261-7286
Richard Boers
CITY HALL 407 GRANT ST
WAUSAU WI 54401

Sampler: Provide information to have results faxed or e-mailed or to change a billing address, if your lab offers these services (leave blank if you don't use these services).
Fax number: _____
E-mail: _____
Billing address: _____

Sample Source:
___ W Well
X E Entry Point
___ D Distribution System

Sample Type:
X D Compliance Sample
___ C Confirmation Sample
___ I Investigation Sample
___ W Raw Water Sample

Special Instructions: _____

Collect sample between: 10/01/2012 and 12/31/2012

Section II: To be completed by SAMPLER -- ALL ITEMS REQUIRED

Sample Collection Date: 10/11/12 (mm/dd/yyyy) Time: 11 : 06 ☒a.m. ☐p.m.

Address where sample was collected: 1801 N. River Dr WAUSAU WI. 54403

Monitoring Point ID: 300 Sample Point Description: HAB TAP

First Initial and Last Name of Sampler: H. - Forse

Section III: To be completed by LAB. Report test results on back for PWS and electronically to DNR within 10 days per NR 809.80

☐ **Check here if some or all of the parameters were analyzed by a subcontracted lab.**
NOTE: A separate form must be completed by each lab with data for only the parameters which that lab analyzed.

Laboratory ID Number: _____ Laboratory Name: _____

Date Sample Received: ___/___/_____ Time Sample Received: ___ ___ : ___ ___ Laboratory Sample ID: _____

Signature of Receiving Lab Official: _____ Date Reported to PWS: ___/___/_____

Condition of Sample Upon Receipt: _____

Notice: This form must be submitted with laboratory samples analyzed to determine compliance with ch. NR 809, Wis. Adm. Code, Safe Drinking Water. Completion of this form or a similar form approved by the Department is mandatory. Failure to submit a completed form to the Department is a violation punishable by a forfeiture of no less than $10 nor more than $5000, or by a fine of not less than $10 nor more than $100 or imprisonment of not less than 30 days, or both. Each day of continued violation is a separate offense (ss. 144.99, Wis. Stats.). Authorization for these requirements is under s. 280.13(d), Wis. Stats. and ch. NR 809.80. Personally identifiable information on this form will be used for no other purpose.

VOLATILE ORGANIC ANALYSES

System Name: WAUSAU WATERWORKS

This page to be completed by the laboratory performing analysis.

PWS ID: 73701023

Lab Sample ID: _____

Storet Code		Parameter	SDWA Method	MDL	Results	MCL	Units
34030	X	BENZENE				5	UG/L
81555	X	BROMOBENZENE					UG/L
32101	X	BROMODICHLOROMETHANE				80	UG/L
32104	X	BROMOFORM				80	UG/L
34413	X	BROMOMETHANE					UG/L
32102	X	CARBON TETRACHLORIDE				5	UG/L
34311	X	CHLOROETHANE					UG/L
32106	X	CHLOROFORM				80	UG/L
34418	X	CHLOROMETHANE					UG/L
77275	X	O-CHLOROTOLUENE					UG/L
77277	X	P-CHLOROTOLUENE					UG/L
32105	X	DIBROMOCHLOROMETHANE				80	UG/L
77596	X	DIBROMOMETHANE					UG/L
34566	X	1,3-DICHLOROBENZENE (M-)					UG/L
34536	X	1,2-DICHLOROBENZENE (O-)				600	UG/L
34571	X	1,4-DICHLOROBENZENE (P-)				75	UG/L
34668		DICHLORODIFLUOROMETHANE					UG/L
34496	X	1,1-DICHLOROETHANE					UG/L
34531	X	1,2-DICHLOROETHANE				5	UG/L
34501	X	1,1-DICHLOROETHYLENE				7	UG/L
77093	X	1,2-DICHLOROETHYLENE CIS				70	UG/L
34546	X	1,2-DICHLOROETHYLENE, TRA				100	UG/L
34423	X	DICHLOROMETHANE				5	UG/L
34541	X	1,2-DICHLOROPROPANE				5	UG/L
77173	X	1,3-DICHLOROPROPANE					UG/L
77170	X	2,2-DICHLOROPROPANE					UG/L
77168	X	1,1-DICHLOROPROPENE					UG/L
34561	X	1,3-DICHLOROPROPENE					UG/L
34371	X	ETHYL BENZENE				700	UG/L
71880		FORMALDEHYDE					
34391		HEXACHLOROBUTADIENE					UG/L
77223		ISOPROPYLBENZENE					UG/L
77356		ISOPROPYLTOLUENE P					UG/L
77885		METHANOL					
78032		METHYL T-BUTYL ETHER					UG/L
34301	X	CHLOROBENZENE				100	UG/L
34696		NAPHTHALENE					UG/L
77128	X	STYRENE				100	UG/L
77562	X	1,1,1,2 TETRACHLOROETHANE					UG/L
34516	X	1,1,2,2 TETRACHLOROETHANE					UG/L
34475	X	TETRACHLOROETHYLENE				5	UG/L
34010	X	TOLUENE				1000	UG/L
34551	X	1,2,4-TRICHLOROBENZENE				70	UG/L
34506	X	1,1,1-TRICHLOROETHANE				200	UG/L
34511	X	1,1,2-TRICHLOROETHANE				5	UG/L
39180	X	TRICHLOROETHYLENE				5	UG/L
34488		TRICHLOROFLUOROMETHANE					UG/L
77443	X	1,2,3-TRICHLOROPROPANE					UG/L
81611		TRICHLOROTRIFLUOROETHANE					UG/L
77222		1,2,4-TRIMETHYLBENZENE					UG/L
77226		1,3,5-TRIMETHYLBENZENE					UG/L
39175	X	VINYL CHLORIDE				0.2	UG/L
79724	X	XYLENE TOTAL				10000	UG/L

Approved By: QA Officer: _____ Date: _____

Laboratory Manager: _____ Date: _____

Comments: _____

01/23/12

APPENDIX C

WAUSAU CITY ORDINANCES

Chapter 19.30

PRIVATE WATER WELLS

Sections:

19.30.010 Purpose. This chapter regulates the construction and continued use of private wells within the city where public water service is provided. This chapter is also intended to prevent contamination of groundwater and to protect public health, safety and welfare by assuring that unused, unsafe or noncomplying wells or wells which may serve as conduits for contamination or wells which may be illegally cross-connected to the public water system are properly abandoned. (Ord. 61-4738 §1(part), 1991.)

19.30.020 Definitions. For the purpose of this chapter:

(a) "Municipal water system" means Wausau Water Works.

(b) "Noncomplying" means a well or pump installation which does not comply with the provisions of Chapter NR 812, Wisconsin Administrative Code, in effect at the time the well was constructed, a potential contamination source was installed, the pump was installed or work was done on either the well or pump installation.

(c) "Pump installation" means the pump and related equipment used for withdrawing water from a well including the discharge piping, the underground connections, pitless adapters, pressure tanks, pits, sampling faucets and well seals or caps.

(d) "Unsafe" means a well or pump installation which produces water which is bacteriologically contaminated or contaminated with substances exceeding the standards of Chs. NR 109 or 140, Wisconsin Administrative Code, or for which a health advisory has been issued by the Department of Natural Resources.

(e) "Unused" means a well or pump installation which is not in use or does not have a functional pumping system.

(f) "Well" means an excavation or opening into the ground made by digging, boring, drilling, driving, or other methods for the purpose of obtaining groundwater for consumption or other use.

(g) "Well abandonment" means the filling and sealing of a well according to the provisions of Ch. NR 812, Wisconsin Administrative Code. (Ord. 61-5126 §1(part), 2001, File No. 01-0833; Ord. 61-4738 §1(part), 1991.)

19.30.030 Private well permit. The plumbing inspector may grant a permit to a private well owner to operate a well for a period not to exceed five years, providing conditions of this code and other applicable state and health requirements are met. An owner may request an initial or renewal of a private well permit on an application form provided by Wausau Water Works. The permit request must clearly state the purpose of the well. Applications for a new permit or to renew an existing permit submitted after July1, 2011 must include the following:

(a) A copy of a Bacteriological Analysis report from a state approved drinking water laboratory indicating the water is bacteriologically safe;

(b) A Wisconsin Department of Natural Resources Well and Pressure System Inspection form signed by a licensed well driller or pump installer certifying that the well system is in compliance with ch. NR812 requirements;

(c) A separate statement signed by a licensed well driller, pump installer, plumber, or certified cross connection inspector surveyor stating that ther are no cross connections between the well or pump system and the municipal water system;

(d) The permit application for existing wells shall be reviewed by the utility director or environmental engineer prior to the permit issuance by the plumbing inspector. Requests for permits for new private water supply wells to be constructed within the city limits shall be reviewed by the commission. (Ord. 61-5477 §1(part), 2011, File No. 11-0508; Ord. 61-5126 §1(part), 2001, File No. 01-0833; Ord. 61-5021 §1, 1999; Ord. 61-4738 §1(part), 1991.)

19.30.040 Private well abandonment. All wells located on premises served by the municipal water system shall be abandoned in accordance with the terms of this code and Ch. NR 812, Wisconsin Administrative Code, no later than one year from the date of connection to the municipal water system, unless a private well permit has been obtained by the well owner from the city as specified by this code.

All wells abandoned under the jurisdiction of this code or rule shall be abandoned according to the procedures and methods of Ch. NR 812, Wisconsin Administrative Code. All debris, pump, piping, unsealed liners and any other obstructions which may interfere with sealing operations shall be removed prior to abandonment.

An abandonment report form, supplied by the Department of Natural Resources, shall be submitted by the well owner to Wausau Water Works and the Department of Natural Resources within ten days of the completion of the well abandonment. (Ord. 61-5472 §7 (part), 2011, File No. 78-0745; Ord. 61-5126 §1(part), 2001, File No. 01-0833; Ord. 61-4738 §1(part), 1991.)

19.30.050 Penalties. Any well owner violating any provision of this chapter shall upon conviction be punished by forfeiture of not less than twenty dollars nor more than one hundred

dollars and the cost of prosecution. Each day of violation is a separate offense. If any person fails to comply with this chapter for more than ten days after receiving written notice of the violation, the municipality may impose a penalty and cause the well abandonment to be performed and the expense to be assessed as a special tax against the property. (Ord. 61-4738 §1(part), 1991.)

Chapter 23.54

WH—WELL HEAD PROTECTION OVERLAY DISTRICT

Sections:

23.54.010 Purpose. The consequences of certain land use activities, whether intentional or accidental, can seriously impair groundwater quality. The purpose of the well head protection overlay district (WH) is to help protect municipal well groundwater resources from contamination by certain land use activities. This is accomplished by imposing certain land use restrictions upon the area located within the approximate groundwater recharge area of the city municipal wells. The restrictions imposed upon the property within this overlay district are in addition to the regulations governing the underlying residential, commercial, industrial or other zoning districts or any other provisions of the zoning ordinance. (Ord. 61-4988 §1(part), 1997.)

23.54.020 General provisions. (a) The regulations established by this overlay district are intended to either prohibit certain land uses that might otherwise be permitted in the underlying zoning districts or to allow certain activities as a conditional use that might otherwise be permitted in the underlying zoning district.

(b) The uses prohibited in the well head protection overlay district are activities that, as a result of normal operations or accidents, may impair groundwater quality. These prohibitions are intended to provide a reasonably high degree of assurance that, within the municipal well recharge area, discharges of contaminants into the groundwater supply will be minimized. These preventive measures are important since groundwater clean-up is often prohibitively expensive, and liability for such clean-up is often hard or impossible to establish.

(c) The uses prohibited within a well head protection overlay district are prohibited based upon the pollution experience of the individual uses, the operational methods and technology generally employed by that type of use, or the materials or products commonly handled by these uses. As the technology of identified uses changes to nonrisk materials or operational methods, the list of prohibited land uses may be amended to reflect these changes. (Ord. 61-4988 §1(part), 1997.)

23.54.030 Establishment of districts. For purposes of minimizing the potential for groundwater contamination in close proximity to the municipal wells, two zoning districts are established: The Well Head Zone A (WH-A) and the Well Head Zone B (WH-B).

(a) Zone WH-A is identified as the primary source of water for recharge of the municipal well aquifer and as the area from which groundwater contaminants are most likely to be transmitted to the municipal wells. Zone WH-A is more restrictive than Zone WH-B.

(b) Zone WH-B is identified as a secondary source of water for recharge of the municipal wells aquifer and as an area where there is a lower probability of surface contaminants reaching the municipal well fields. Zone WH-B is less restrictive than Zone WH-A. (Ord. 61-4988 §1(part), 1997.)

23.54.040 Permitted and prohibited uses. (a) Well Head Zone A (WH-A). All principal and accessory uses which are permitted uses within the underlying zoning districts are permitted within Zone A of the well head protection overlay district except the following uses, which are specifically prohibited and those uses identified as conditional uses in section 23.54.050:

(1) Areas for dumping or disposal of garbage, refuse or trash;

(2) Asphalt products manufacture;

(3) Automobile service stations;

(4) Building materials and products sales;

(5) Cartage and express facilities;

(6) Car washes;

(7) Cemeteries;

(8) Chemical processing and manufacturing;

(9) Contractor or construction shops or yards;

(10) Demolition and construction material disposal sites;

(11) Dry cleaning establishments;

(12) Electroplating;

(13) Exterminating shops or businesses;

(14) Feed and seed sales;

(15) Foundries and forge plants;

(16) Fuel and ice sales;

(17) Garages for repair and servicing of motor vehicles, including body repair, painting or engine rebuilding;

(18) Garden supply, tool and seed stores;

(19) Greenhouses and nurseries;

(20) Heavy machinery production;

(21) Industrial liquid waste storage areas;

(22) Junk yards and auto graveyards;

(23) Leather tanning or processing;

(24) Linoleum manufacturing;

(25) Machine shop;

(26) Metal reduction and refinement;

(27) Metal stamping;

(28) Mining operations;

(29) Motor freight terminals;

(30) Outdoor kennels;

(31) Paint products manufacture;

(32) Paper products manufacture;

(33) Petroleum products storage or processing;

(34) Photography studios which include the developing of film and pictures;

(35) Plastics manufacture;

(36) Printing and publishing establishments;

(37) Rubber processing or manufacture;

(38) Sewage treatment plants;

(39) Soap manufacture;

(40) Steel manufacture;

(41) Stone products manufacture;

(42) Underground petroleum products storage tanks for industrial, commercial, residential or other uses;

(43) Woodworking and wood products.

(b) Well Head Zone B (WH-B). All principal and accessory permitted uses within the underlying zoning districts are permitted within Zone B of the well head protection overlay district except those uses identified as conditional uses in section 23.54.050 and underground petroleum products storage tanks for residential use. Said tanks are specifically prohibited in Zone B. (Ord. 61-4988 §1(part), 1997.)

23.54.050 Conditional uses. (a) The following conditional uses may be allowed in the WH-A Zone subject to the provisions of Chapter 23.72:

(1) Any other business or industrial use which is not listed as a prohibited use in section 23.54.040(a) provided that the proposed use is a permitted or conditional use in the underlying zoning district.

(b) The following conditional uses may be allowed in the WH-B Zone subject to the provisions of Chapter 23.72:

(1) Underground petroleum products storage tanks for industrial, commercial or other nonresidential uses;

(2) Any business or industrial use provided that the proposed use is a permitted or conditional use in the underlying zoning district.

(Ord. 61-4988 §1(part), 1997.)

23.54.060 Nonconforming uses. Any lawfully existing building, structure or use which does not conform to the regulations of a mapped well head protection overlay district may be continued subject to the following provisions:

(a) For nonconforming buildings, structures or uses which were nonconforming prior to being designated as part of a well head protection overlay district, the regulations in Chapter 23.70 apply.

(b) For nonconforming buildings, structures or uses which are made nonconforming through establishment of a well head protection overlay district, the regulations identified in Chapter 23.70 also apply; however, these regulations may be modified to meet the particular circumstances

4768 §1, 1992; Ord. 61-4753 §1, 1991; Ord. 61-4714 §1, 1990; Ord. 61-4711 §1, 1990; Ord. 61-4709 §1, 1990; Ord. 61-4703 §1, 1990; Ord. 61-4688 §1, 1989; Ord. No. 61-4679 §1, 1989.)

1.01.027 Providing inspectors with the ability to issue citations. The director of inspections and electrical systems, the building inspector, the plumbing inspector, the electrical inspector, the property inspector, the director of public works, the fire chief, and the police chief, and any employee within the table of organization of the department of public works specifically delegated with this citation authority by the director of public works, and any employee within the table of organization of the fire department specifically delegated with this citation authority by the fire chief, and any employee within the table of organization of the police department specifically delegated with this citation authority by the police chief, are given the authority, pursuant to the provisions of Section 66.0113 of the Wisconsin Statutes, to issue citations for violations of ordinances directly relating to their official responsibilities. (Ord. 61-5106 §1, 2001, File No. 89-0425; Ord. 61-4784 §1, 1992; Ord. 61-4710 §1, 1990; Ord. 61-4680 §1, 1989.)

1.01.030 Reference applies to amendments. Whenever a reference is made to this code as the Wausau Municipal Code or to any portion thereof, or to any ordinance of the city, the reference shall apply to all amendments, corrections and additions heretofore, now, or hereafter made. (Ord. 61-4113 §3, 1968.)

1.01.040 Codification authority. This code consists of all of the regulatory and penal ordinances and certain of the administrative ordinances of the city, codified pursuant to Section 66.0103 of the Wisconsin Statutes. (Ord. 61-4113 §4, 1968.)

1.01.050 Definitions. The following words and phrases whenever used in this code shall be construed as defined in this section unless from the context a different meaning is intended, or unless a different meaning is specifically defined and more particularly directed to the use of such words or phrases:

(a) "City" means the city of Wausau, Wisconsin, and such territory outside of this city over which the city has jurisdiction or control by virtue of any constitutional provisions, or any law;

(b) "Common council" means the common council of the city;

(c) "Mayor" means the mayor of the city;

(d) "County" means the county of Marathon;

(e) "Fiscal year." The calendar year shall be the fiscal year;

(f) "Person" means any natural person, firm, association, joint venture, joint stock company, partnership, organization, club, company, corporation, business trust, or its manager, lessee, agent, servant, officer, or employee or any of them;

(g) "Oath" includes affirmative;

(i) "Office." The use of the title of any officer, employee, or any office, or ordinance shall mean such officer, employee, office, ordinance of the city, unless otherwise specifically designated;

(j) "State" means the state of Wisconsin;

(k) "Shall" and "must." Each is mandatory;

(l) "May" is permissive;

(m) "Written" includes printed, typewritten, mimeographed or multigraphed. (Ord. 41-4113 §5, 1968.)

1.01.060 Grammatical interpretation. The following grammatical rules shall apply in this code:

(a) Gender. Any gender includes the other genders;

(b) Singular and plural. The singular number includes the plural and the plural includes the singular;

(c) Tenses. Words used in the present tense include the past and the future tenses and vice versa;

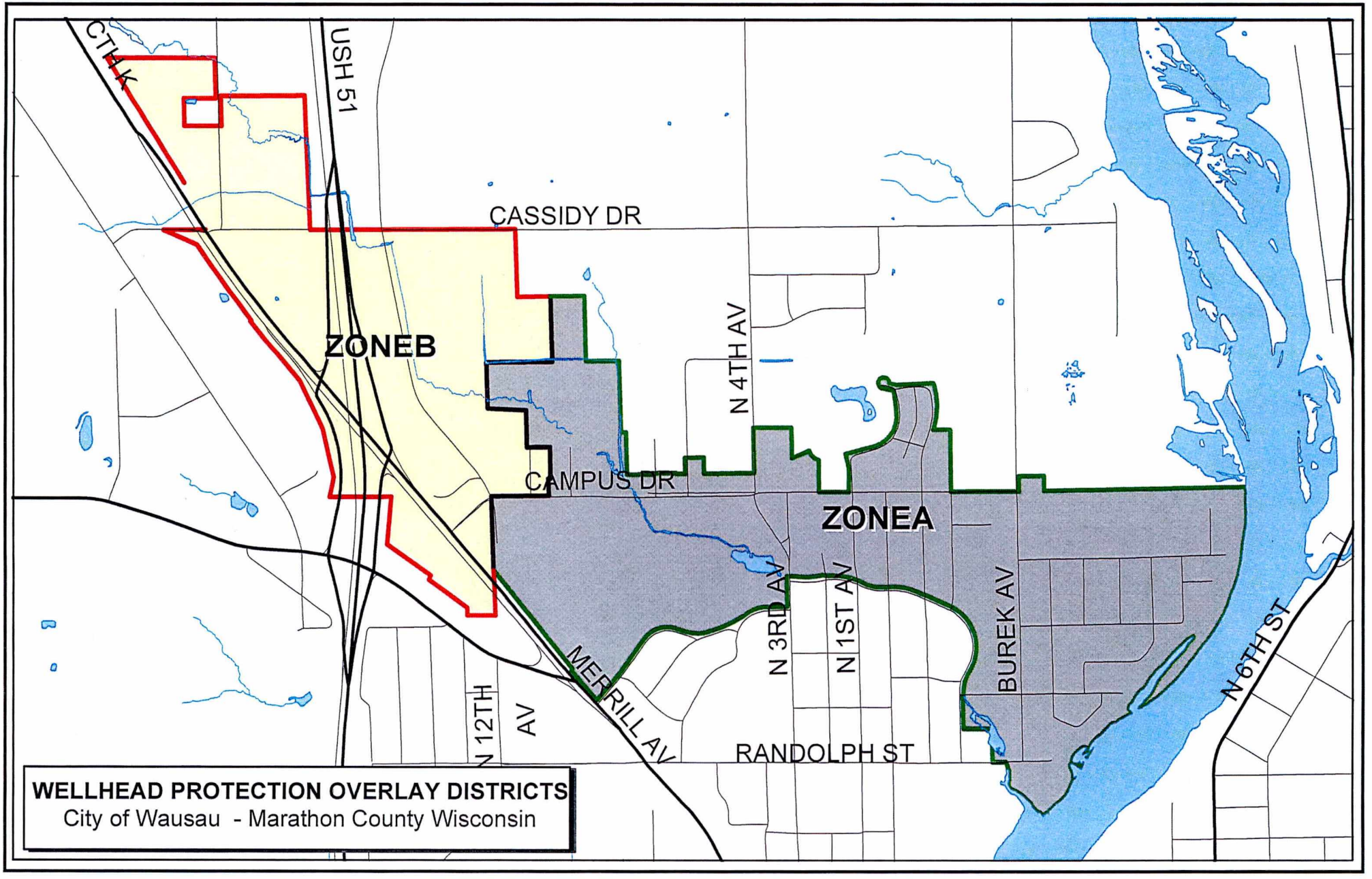
(d) Use of words and phrases. Words and phrases used in this code and not specifically defined shall be construed according to the context and approved usage of the language. (Ord. 61-4113 §6, 1968.)

1.01.070 Construction. The provisions of this code and all proceedings under it are to be construed with a view to effect its objects and to promote justice. (Ord. 61-4113 §7, 1968.)

1.01.080 Title, chapter and section headings. Title, chapter and section headings contained herein shall not be deemed to govern, limit, modify or in any manner affect the scope, meaning or intent of the provisions of any title, chapter or section hereof. (Ord. 61-4113 §8, 1968.)

1.01.090 Reference to specific ordinances. The provisions of this code shall not in any manner affect deposits or other matters of record which refer to, or are otherwise connected with ordinances which are therein specifically designated by number or otherwise and which are included within this code, but such reference shall be construed to apply to the corresponding provisions contained within this code. (Ord. 61-4113 §9, 1968.)

1.01.100 Effect on past actions and obligations. Neither the adoption of this code nor the repeal or amendments hereby of any ordinance or part or portion of any ordinance of the city shall in any manner affect the prosecution for violations of ordinances, which violations where committed prior to the effective date hereof, nor be construed as a waiver of any license, fee, or penalty at said effective date due and unpaid under such ordinances, nor be construed as affecting any of the


CTH K
USH 51
CASSIDY DR
ZONEB
N 4TH AV
CAMPUS DR
ZONEA
N 3RD AV
N 1ST AV
BUREK AV
N 6TH ST
N 12TH AV
MERRILL AV
RANDOLPH ST
WELLHEAD PROTECTION OVERLAY DISTRICTS
City of Wausau - Marathon County Wisconsin