RAC V

RESPONSE ACTION CONTRACT FOR

Remedial, Enforcement Oversight, and
Non-Time Critical Removal Activities at Sites of Release
or Threatened Release of Hazardous Substances in Region V

PREPARED FOR

U.S. Environmental Protection Agency

PREPARED BY

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GROUNDWATER MANAGEMENT PLAN

OCONOMOWOC ELECTROPLATING
Oconomowoc, Wisconsin

Long-Term Remedial Action

WA No. 236-RALR-05M8 / Contract 68-W6-0025

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Executive Summary

For 8 years, a groundwater extraction system operated at the Oconomowoc Electroplating (OEP) site located in Oconomowoc, Wisconsin. This extraction system substantially lowered the concentration of metals and chlorinated volatile organic compounds (CVOCs) in groundwater. The extraction system was shut down in July 2004 because groundwater concentrations from the extraction wells were no longer decreasing with continued operation or were decreasing at a very small rate. Other source reduction activities performed previously at the site include the removal of the former lagoon sediment and sludge, contaminated soil, and contaminated sediment in the wetlands around Davy Creek.

For the remaining groundwater concentrations of CVOCs, natural attenuation processes are being monitored and evaluated at the site and at downgradient locations. In October 2004, groundwater samples were collected from a subset of existing wells at OEP to assess current natural attenuation (NA) conditions at the site and at downgradient locations. In spite of the groundwater treatment system shutdown, October 2004 data show similar concentrations as those measured in the previous sampling round of April 2003, when the system was in operation. This suggests that the CVOC plume is currently stable.

Groundwater chemistry data support that NA of CVOCs is occurring at downgradient portions of the CVOC plume. To date, monitoring data suggest that significant NA is occurring at or near the wetland area located on the south side of the site. Specifically, the data collected from well nests MW-12, MW-13, and MW-16 show that extensive anaerobic conditions exist, which contribute to NA of CVOCs.

At this time, CH2M HILL recommends continuing with NA groundwater monitoring as specified in the Sampling and Analysis Plan (CH2M HILL 2004b) on a quarterly basis for 3 years. CH2M HILL recommends that the program be enhanced to monitor potential receptors, and detect plume expansion through the addition of a new sentinel well nest on the south side of Davy Creek and completion of surface water sampling in Davy Creek and the wetland area. Following collection of sufficient data (several monitoring rounds), recommendations for monitored natural attentuation (MNA) or possibly enhanced attenuation can be made and documented in a report.

In the event that CVOCs are detected in private water-supply wells—the recommended sentinel well or plume expansion is documented for several consecutive quarters of monitoring—the implementation of a contingency plan is recommended. The contingency approach may consist of modifications to the monitoring program or remediation approach for the site.

Contents

Abbreviations and Acronyms List

1,1-DCA	1,1-dichloroethane
1,1-DCE	1,1-dichloroethene
1,2-DCE	1,2-dichloroethene
1,1,1-TCA	1,1,1-trichloroethane
cis-1,2-DCE	cis-1,2-dichloroethene
CVOC	chlorinated volatile organic compounds
DMP	Data Management Plan
DO	dissolved oxygen
ES	Enforcement Standard
FIT	Field Investigation Team
FSP	Field Sampling Plan
GMP	Groundwater Management Plan
MCL	maximum concentration limit
MNA	monitored natural attenuation
NA	natural attenuation
NAPL	nonaqueous phase liquids
NPL	National Priorities List
OEP	Oconomowoc Electroplating
ORP	oxidation reduction potential
OSWER	Office of Solid Waste and Emergency Response
OU	operable unit
PAL	Preventative Action Limit
PCE	perchloroethene
QAPP	Quality Assurance Project Plan
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Discussion
SAP	Sampling and Analysis Plan
TCE	trichloroethene
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
VOC	volatile organic compounds
VC	vinyl chloride
WAC	Wisconsin Administrative Code
WDNR	Wisconsin Department of Natural Resources
WGNHS	Wisconsin Geologic and Natural History Survey

SECTION 1

Introduction

In October 2004, groundwater samples were collected from a subset of existing wells at the Oconomowoc Electroplating Plant (OEP) in Oconomowoc, Wisconsin. The data was used to assess current natural attenuation (NA) conditions at the site and at downgradient locations. An evaluation of the data indicated strong evidence of NA. Based on the October 2004 sample results and a meeting with U.S. Environmental Protection Agency (USEPA) on December 13, 2004, to discuss these results, the scope of this Groundwater Management Plan was changed. The plan does not include a review of enhanced attenuation options, including RMT Inc.'s process, since NA is occurring at and downgradient of the site. NA enhancements would be evaluated in the future should conditions change.

The purpose of this Groundwater Management Plan (GMP) is to summarize the natural attenuation processes occurring at and downgradient of the site based on the October 2004 data and provide recommendations for continued monitoring. Details on the recommended monitoring will be documented in a separate Sampling and Analysis Plan which will include a Quality Assurance Project Plan (QAPP), Field Sampling Plan (FSP), and Data Management Plan (DMP).

SECTION 2

Project Description

2.1 Site Setting

The 10-acre study area comprises the former 4-acre OEP site (bounded by Elm, Oak, and Eva Streets, and Town of Ashippun buildings) located at 2572 Oak Street in Ashippun, Wisconsin, and 6 acres of a wet, low-lying area located adjacent to the southwest portion of the former site (Figure 1). This low-lying area is referred to in this plan as a wetland area similar to previous project documents.

Due to the proximity of Ashippun to Oconomowoc, Wisconsin, the names of the township and the city are often interchanged. This document will refer to the project location as Oconomowoc, Wisconsin.

The site is in southeastern Wisconsin in Dodge County, roughly 40 miles west-northwest of Milwaukee. The site is located in the northwest quarter of the southeast quarter of Section 30 Township 9 North, Range 17 East. Nearby surface water bodies include Davy Creek, located a few hundred feet to the southwest of the site, and Rock River, located about 1 mile west of the site. The site slopes gently toward Davy Creek to the southwest. Landscaped linear berms bound the site at its northwestern, northeastern, and southeastern perimeters, with rough heights above the surrounding ground surface that generally range from 3 to 4 feet. The former OEP buildings have been demolished at the site. The groundwater treatment plant building is present in the northeast portion of the site.

2.2 Plant History and Operations

Various onsite metal cleaning and electroplating processes that used chlorinated solvents, cyanide, chromium, cadmium, copper, nickel, tin, and zinc were performed at OEP since operation began in 1957. Chromate conversion, coating, and anodizing were also used as part of the finishing processes. Degreasing operations were performed at the site, however the constituents used in these operations were not documented (Ebasco 1990).

Wastes generated as a byproduct of these processes were discharged into low areas on the east side of the site, wastewater lagoons on the southwest side of the site, and the wetland area and Davy Creek to the south of the site (Figure 1). These waste disposal practices led to the widespread contamination of soil, sediment, and groundwater across the site (RMT Inc. 2004).

OEP ceased operation in 1990 due to financial hardship. Buildings at the site were demolished and removed in May 1992.

2.3 Previous Investigations and Remediation

A USEPA Field Investigation Team (FIT) performed a preliminary assessment of the OEP site in 1983. As a result of this preliminary assessment, the site was placed on the National Priorities List (NPL) (Ebasco 1990). The Wisconsin Department of Natural Resources (WDNR) and Wisconsin Geologic and Natural History Survey (WGNHS) conducted preliminary groundwater sampling efforts at the site from 1983 to 1987. The results of this sampling showed that chlorinated solvents (primarily trichloroethene [TCE] and 1,1,1-trichloroethane and their associated degradation products) and metals were detected in groundwater (RMT 2004).

USEPA, in consultation with the WDNR, conducted a Remedial Investigation and Feasibility Study (RI/FS) at the site from April 1987 to September 1990. The RI determined that, as a result of hazardous waste disposal at the electroplating site, various chemical contaminants had leached into the shallow groundwater, which in turn flows mostly toward Davy Creek. Soils were contaminated with organic chemicals and metals. The concentrations of chemicals found in the groundwater and soils were found to present unacceptable potential risk levels to human and/or environmental receptors based on a baseline risk assessment (Ebasco 1990). For the purposes of the FS, the site was divided into the following four operable units (OUs): OU-1—the lagoons, OU-2—the contaminated soil, OU-3—the contaminated groundwater, and OU-4—the Davy Creek wetland area sediment.

USEPA issued a Record of Decision (ROD) in 1990 that declared remedies for each OU. These remedies include:

- OU-1—the excavation and disposal of lagoon sludge and surrounding soils
- OU-2—the excavation and disposal of nonlagoon contaminated soils and debris (including an abandoned electroplating building)
- OU-3—the extraction and treatment of groundwater to state groundwater quality standards
- OU-4—the excavation and disposal of metals-contaminated sediments offsite from the wetland area adjacent to Davy Creek

Remedial actions for OU-1 (removal of 650 cubic yards [yd^3] of lagoon sludge/soil), OU-2 (removal of 700 yd^3 of soil), and OU-4 (removal of 6,000 yd^3 of creek sediment) have been completed in accordance with the approved remedial design. In 1996, USEPA constructed a treatment system to treat groundwater extracted by five wells (Figure 1). This system is operated on behalf of the USEPA by the U.S. Army Corps of Engineers (USACE). Although pumping and treating the groundwater has substantially lowered the concentration of contaminants, the rate of concentration decrease has leveled off. The extraction system was shut down in July 2004 because groundwater concentrations from the extraction wells were no longer decreasing with continued operation or were decreasing at a very small rate.

A subsequent study conducted by RMT Inc. of Madison, Wisconsin, (on behalf of the WDNR) utilized both ground/surface water sampling and three-dimensional groundwater flow and contaminant transport modeling to evaluate the effectiveness of the groundwater treatment system. The results of the study were documented by RMT (RMT Inc. 2004) and

are not included in this report. Groundwater sampling was performed in April 2003 during apparent groundwater extraction system operation. However, the system was temporarily turned off in July 2003 to collect water level measurements.

Modeling, performed by RMT Inc. to evaluate the effectiveness of the pump and treat system, suggested that a possible reason for the stabilized concentrations in groundwater was the presence of residual nonaqueous phase liquids (NAPLs) that remained sorbed to the organic material deposited within soil. As a result, the treatment plant was shutdown in July 2004. Shutdown details are found in the Groundwater Treatment Facility Shutdown Plan (CH2M HILL 2004a).

2.4 Geologic and Hydrogeologic Settings

The geologic and hydrogeologic settings summarized below are discussed both in terms of regional conditions and those encountered during investigations for the site as documented in previous reports (RMT Inc. 2004).

2.4.1 Geology

The OEP site is located in Dodge County in southeastern Wisconsin. The regional geology beneath the site is comprised of unconsolidated Quaternary- and/or Holocene-aged deposits underlain by a succession of Precambrian and Paleozoic bedrock units. Precambrian crystalline basement rock is overlain by Cambrian sandstone and Ordovician dolomite, sandstone, and shale. Silurian dolomite is present in some locations of Dodge County, but not beneath the OEP site. The Paleozoic units (Cambrian, Ordovician, and Silurian) are all sedimentary in their origins, and they generally dip to the east and southeast. Due to the thickness and great depth of the Precambrian and Cambrian units, only the uppermost bedrock (Ordovician-aged) and unconsolidated deposits are discussed in greater detail.

The Ordovician bedrock units, from oldest to youngest, are composed of the Prairie du Chien Group, St. Peter Sandstone, Galena-Platteville Unit, and Maquoketa Shale. The Prairie du Chien Group and the Galena-Platteville Unit primarily consist of dolomite, but they also contain some sandstone, sandy dolomite, and shaly dolomite. The St. Peter Sandstone is predominantly a fine- to medium-grained sandstone, but it is dolomitic and shaly in some locations. The Maquoketa Shale is primarily dolomitic shale, but it is dolomite in some locations. A dolomite portion of the Maquoketa Shale lies directly beneath the site. Rock cores collected from the Maquoketa shale that underlie the site indicated both distinct zones with heavy amounts of fracturing and zones with little fracturing. A preglacial and glacial erosional surface unconformity separates the Ordovician bedrock surface from the overlying unconsolidated deposits.

The unconsolidated deposits beneath the site range in thickness from 28 feet beneath the former OEP site to 55 feet at the southwestern edge of the site (RMT Inc. 2004). Silt and clay fill is sporadically present in the upper 4 to 10 feet of unconsolidated material at several locations at and in the vicinity of the former OEP site.

The unconsolidated glacial material consists of gray-brown and yellow-brown sand, silty sand, and clay. The silt content in the glacial material varies from trace amounts to greater

than 50 percent. Discontinuous lenses of silt and clay were observed to be present within the sands in several borings across the study area. Compacted clay up to 8 feet thick is present directly above the top of bedrock in some locations (RMT Inc. 2004).

2.4.2 Hydrogeology

Dodge County has four major aquifers named here in order from shallowest to deepest: 1) the unconsolidated sand and gravel, 2) the Silurian dolomite, 3) the Galena-Plateville dolomite, and 4) the St. Peter Sandstone aquifers (Devaul, Harr, and Schiller 1983). Only two of these aquifers are present beneath the OEP site: the Galena-Platteville dolomite and the St. Peter Sandstone aquifers. Maquoketa shale, which sits above these bedrock aquifers and is the uppermost bedrock encountered at the site, is considered to be an aquitard unit on a regional basis. However, it does contain some dolomite layers that are capable of yielding sufficient quantities of water for residential use.

Groundwater is present in the unconsolidated silty sand that sits above the Maquoketa shale at the site, although it is not considered to be part of the regional sand and gravel aquifer due to its higher silt content. The water table in this unconfined water-bearing unit roughly parallels the ground surface topography (the groundwater is assumed to be under atmospheric pressure [Devaul, Harr, and Schiller 1983]).

Groundwater monitoring wells are installed at the site study area in the unconsolidated zone and in the upper bedrock. Nested wells are installed in the unconsolidated zone, with the shallow wells monitoring the upper portion of this unit and the deep wells monitoring the lower portion of this unit (Figure 2).

Groundwater levels were measured in the unconsolidated zone October 2004, over 2 months after the extraction system was shutdown. Because of the length of time that elapsed between system shutdown and the water level measurements, the data is believed to represent current natural flow conditions (that is, there are no influences from previous pumping at the site). The water table surface (shallow unconsolidated groundwater) measured in October 2004 indicates groundwater flow from the site is to the south toward the wetland area and Davy Creek, similar to previous investigations (RMT Inc. 2004) (Figure 3). An apparent lowpoint at MW-9S and MW-5 is present and may be related to a low-lying topography in the vicinity of these wells. The depth to shallow groundwater ranges from 4 feet in wells closest to Davy Creek, and up to 10 feet at the west side of the site.

Based on October 2004 data, groundwater in the deeper portions of the unconsolidated aquifer radiates to the southeast and southwest from the site(Figure 4). A low point is present on the southeast portion of the site similar to what was observed for the shallow portion of the unconsolidated groundwater (Figure 3).

Bedrock wells penetrate into areas of the water-bearing dolomite portions of the Maquoketa shale. In October 2004, bedrock well groundwater levels showed groundwater flow to be variable and may reflect the monitoring of discontinuous dolomite beds within the Maquoketa shale.

Historically, vertical gradients in the unconsolidated aquifer and between the unconsolidated aquifer and the bedrock were slightly upward in the area of Davy Creek and the wetland area, and slightly downward in well nests upgradient from the wetland

area. Recent conditions observed in October 2004 indicate a similar vertical flow pattern. Table 1 summarizes the October 2004 vertical gradients calculated for the project's well nests. Vertical gradients are very low, ranging from 0.061 ft/ft (downward) to -0.016 ft/ft (upward). In the unconsolidated aquifer, slightly upward gradients are generally found in the nests near the wetland area of Davy Creek, while slightly downward gradients are found in nests to the northeast of the wetland area.

In general, vertical gradient calculations suggest downward groundwater flow near the site reversing to upward groundwater flow near Davy Creek between the shallow and deep portions of the unconsolidated aquifer. Measurements between the unconsolidated aquifer and bedrock aquifer suggest overall similar trends however, the magnitude of upward groundwater flow near Davy Creek and the wetlands appears to be less. This suggests that unconsolidated zone groundwater may discharge to Davy Creek.

TABLE 1
Vertical Gradients
Oconomowoc Electroplating

Well Nest	Screen Midpoint Shallow	Screen Midpoint Deep	Screen Midpoint Bedrock	GW Elev. Shallow - Oct 2004	GW Elev. Deep - Oct 2004	Unconsolidated Aquifer Vertical Gradient (ft/ft)	GW Elev. Unconsolidated - Oct 2004	GW Elev. Bedrock - Oct 2004	Vertical Gradient (ft/ft)
1	842.62		806.04	844.86			844.86	844.96	-0.0027
4	844.78		809.73	844.68			844.68	841.80	0.082
5	841.07	825.30		843.38	842.47	0.058			
12	841.17	827.81	810.90	843.70	843.92	-0.016	843.92	843.94	-0.001
13	842.91	823.52		844.08	843.90	0.009			
15	843.18	818.30	799.35	844.25	843.99	0.010			
101	843.24		804.58				844.64	844.16	0.012
102	842.65	807.20		844.13	843.76	0.010			
103	842.84	830.47		844.24	844.24	0.000			
104	840.56	825.07		844.17	843.22	0.061			
105	841.01	824.40	807.40	843.85	843.89	-0.002	843.89	843.30	0.035
106	838.92	797.51		843.21	843.78	-0.014			
					Average =	0.013		Average =	0.025

Negative values for vertical gradients indicate upward movement. Positive Values indicate downward movement.

Horizontal groundwater flow velocities have been estimated for both the shallow and deep unconsolidated aquifers, using a variation of the Darcian Velocity equation to provide average linear velocity (Fetter 1994):

$$V = (K_h I)/n_e$$

Where: K_h = horizontal hydraulic conductivity (ft/year)
I = horizontal gradient (dimensionless)
N_e = effective porosity (dimensionless)

The "K_h" used is the median hydraulic conductivity determined from RMT Inc.'s five extraction well pump test results (1.2×10^{-2} cm/sec; 34 ft/day). The "N_e" used is 0.20, taken from the effective porosity used in groundwater modeling for the site study area (RMT Inc. 2004). This value is consistent with effective porosity values found in various literature sources for unconsolidated silty sand aquifers. The "I" values used are the mean, maximum, and minimum calculated horizontal gradients determined for several locations across the study area and calculated for both the shallow and deep portions of the unconsolidated aquifer. The range of gradients and average linear velocities calculated are included in Table 2.

TABLE 2
Horizontal Gradients and Average Linear Groundwater Velocity using October 2004 Data
Oconomowoc Electroplating

	Shallow portion of aquifer	Deep portion of aquifer
Horizontal Gradient (ft/ft)		
Maximum	0.0154	0.013
Minimum	0.0023	0.0012
Mean	0.0067	0.0055
Avg. Linear Velocity (ft/yr)		
Maximum	960	810
Minimum	140	75
Mean	420	340

The estimated average linear velocities range from roughly 75 to 960 feet per year.

2.5 Potential Receptors

Potential human and ecological receptors for the OEP site's groundwater include Davy Creek and its associated wetland area, private water supply wells, and residential structures. Davy Creek and its associated wetland area are likely connected to unconsolidated groundwater in the area.

Several water supply wells associated with private residences are located to the west and southwest of the site (Figure 1). These wells are screened in the Maquoketa shale and upper portions of the Galena-Platteville dolomite, and previous investigation has shown no detection of site contaminants (RMT Inc. 2004). The water supply wells will be sampled semiannually beginning May 2005.

Private residences located west and southwest of the site may contain basements or other substructures which may be susceptible to vapor intrusion. A vapor intrusion evaluation is planned for Fall 2005.

SECTION 3

October 2004 Groundwater Sampling

In October 2004, groundwater samples were collected from a subset of existing wells to assess current NA conditions at and downgradient of the site. Data collected consists of NA parameters (nitrate, dissolved manganese, total and dissolved iron, dissolved manganese, sulfate, sulfide, methane, ethene, ethane, chloride, alkalinity, and soluble organic carbon), volatile organic compounds (VOCs), and field parameters (water level, pH, specific conductance, dissolved oxygen [DO], oxidation reduction potential [ORP], and temperature).

Groundwater samples were analyzed for VOCs to assess their distribution relative to source areas, to assess the active degradation pathways, and to determine the extent of degradation. Groundwater samples were analyzed for dissolved hydrocarbon gases (ethene, ethane, and methane) to assess whether the dechlorination processes, if occurring, are proceeding to completion, and to identify the distribution of these compounds relative to the distribution of VOCs. Ethene is the final nonchlorinated end product from anaerobic dechlorination of chlorinated ethenes (for example, perchloroethene [PCE], TCE, cis-1,2-dichloroethene [cis-1,2-DCE], and vinyl chloride [VC]).

Samples were collected at the locations shown in Table 3 on October 6 through 8, 2004. Analyses were performed by CT Laboratories of Baraboo, Wisconsin.

TABLE 3
Groundwater Wells Sampled during October 2004
Oconomowoc Electroplating

Well	Screen Location	Description
MW-001S	Shallow groundwater	Upgradient
MW-012S	Shallow groundwater	Downgradient
MW-012D	Deep groundwater	Downgradient
MW-013D	Deep groundwater	Downgradient
MW-014D	Deep groundwater	Upgradient
MW-015S	Shallow groundwater	Downgradient
MW-015D	Deep groundwater	Downgradient
MW-016S	Shallow groundwater	Downgradient
MW-103S	Shallow groundwater	Near source area
MW-103D	Deep groundwater	Near source area
MW-105S	Shallow groundwater	Downgradient
MW-105D	Deep groundwater	Downgradient

Hydraulic, field, and analytical data collected during October 2004 are summarized in Table 4. Analytical data reports are presented in Appendix A.

TABLE 4
Field and Analytical Results—Groundwater Sampling October 2004
Oconomowoc Electroplating

Constituent	Units	WAC NR 140 PAL	WAC NR 140 ES	MW-001S	MW-001S (Duplicate)	MW-012S	MW-012D	MW-013D	MW-014D	MW-015S	MW-015D	MW-016S	MW-103S	MW-103D	MW-105S	MW-105D
Field Parameters																
Dissolved Oxygen (DO)	mg/l			1.82		0.34	0.18	0.31	0.45	8.47	0.43	3.33	0.38	0.35	0.19	6.09
Oxidation Reduction Potential (ORP)	millivolts			73.5		14.6	-81.6	-85.7	43.4	72	60.5	-157.8	197.7	24.8	-32.8	-56.3
Ph	pH units			6.93		7.26	7.33	7.16	7.28	7.46	7.12	7.03	6.95	7.12	7.31	7.34
Specific Conductivity	mmhos/cm			0.956		1.522	1.587	2.081	0.947	0.48	1.832	3.293	1.249	1.565	1.62	1.299
Temperature	deg c			16.34		12.84	11.05	12.35	13.2	15.83	14.2	12.87	16.17	14.35	12.98	12.1
Depth to water	feet			8.56		5.47	4.39	6.12	5.88	10.43	11.31	4.17	7.6	7.73	5.16	5.01
Natural Attenuation Parameters																
Alkalinity, total (as CaCO3)	mg/l	N/A	N/A	370	367	391	392	475	347	229	422	930	445	452	367	362
Chloride (as Cl)	mg/l	125	250	65.9	60	**207**	**224**	**271**	82.9	9.86 J	**291**	**155**	**218**	**200**	**281**	**159**
Ethane	ug/l	N/A	N/A	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	0.5 U	0.5 U	0.5 U	1.8 J	0.5 U	0.6 J	1.4 J	0.62 J
Ethene	ug/l	N/A	N/A	0.5 U	0.5 U	0.82 J	1.4 J	2.5 U	0.5 U	0.5 U	0.5 U	12	0.5 U	0.96 J	0.61 J	0.8 J
Iron, total	ug/l	150	300	281 J	163	499	2060	2180	7 U	224 J	7.2 J	6450	154	29.6	384	845 J
Iron, dissolved	ug/l	150	300	14 U	14 U	19.4 J	**1010**	**2180**	14 U	14 U	14 U	**5830**	139	14 U	**338**	**863** J
Manganese, dissolved	ug/l	25	50	14.6	15	**123**	**42.5**	**65.5**	**67**	9.6	**314**	**81.5**	**402**	**283**	**227**	**67.5**
Methane	ug/l	N/A	N/A	2.3 J	2.6 J	130	31	66	14	1 J	4.6 J	680	7.5 J	72	110	1900
Nitrogen, nitrate (as N)	mg/l	2	10	0.4 J	0.45 J	0.06 U	0.06 U	0.06 U	0.97 J	**4.65** J	0.16 J	0.06 U	0.19 J	0.06 UJ	0.06 UJ	0.06 UJ
Sulfate (as SO4)	mg/l	125	250	47.2	46.8	60	85.2	**225**	32.4	13.1 J	43.8	**941** J	**128**	60	77.5	75.9
Sulfide	mg/l	N/A	N/A	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Total Organic Carbon	mg/l	N/A	N/A	1.6 J	1.4 J	4.7	4.6	4.9	2.7 J	1.5 J	3.3	5	6.6	5.3	3.5	4.1
VOCs																
1,1,1-Trichloroethane	ug/l	40	200	0.07 U	0.07 U	**66**	25	0.07 U	0.07 U	1.1	0.07 U	0.07 U	**140**	**480**	0.64 J	0.5 J
1,1,2,2-Tetrachloroethane	ug/l	0.02	0.2	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U
1,1,2-Trichloroethane	ug/l	0.5	5	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	**0.7**	0.09 U	0.09 U
1,1-Dichloroethane	ug/l	85	850	0.031 U	0.031 U	43	46	0.031 U	0.031 U	0.031 U	0.13 J	0.067 J	7.6	**120**	4.8	16
1,1-Dichloroethene	ug/l	0.7	7	0.06 U	0.06 U	**7.1**	**3.9**	0.06 U	0.06 U	0.06 U	0.3	0.12 J	**3.5**	**80**	**0.94**	**2.6**
1,2,3-Trichlorobenzene	ug/l	N/A	N/A	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U
1,2,4-Trichlorobenzene	ug/l	14	70	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
1,2-Dibromo-3-chloropropane	ug/l	0.02	0.2	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U
1,2-Dibromoethane	ug/l	0.5	5	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U
1,2-Dichlorobenzene	ug/l	60	600	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
1,2-Dichloroethane	ug/l	0.5	5	0.04 U	0.04 U	0.04 U	0.27	0.04 U	0.04 U	0.04 U	**0.16** J	**0.54**	0.26	**0.75**	0.04 U	0.17 J
1,2-Dichloropropane	ug/l	0.5	5	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
1,3-Dichlorobenzene	ug/l	125	1250	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
1,4-Dichlorobenzene	ug/l	15	75	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2-Butanone	ug/l	N/A	N/A	0.4 UJ	0.4 UJ	0.4 UJ	0.4 UJ	0.4 UJ	0.4 UJ	0.4 UJ	0.4 UJ	0.4 UJ	0.4 UJ	0.4 UJ	0.4 UJ	0.4 UJ
2-Hexanone	ug/l	N/A	N/A	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
4-Methyl-2-pentanone	ug/l	N/A	N/A	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Acetone	ug/l	200	1000	1.5 UJ	1.5 UJ	1.5 UJ	1.5 UJ	1.5 UJ	1.5 UJ	1.5 UJ	1.5 UJ	1.5 UJ	1.5 UJ	1.5 UJ	1.5 UJ	1.5 UJ

TABLE 4
Field and Analytical Results—Groundwater Sampling October 2004
Oconomowoc Electroplating

Constituent	Units	WAC NR 140 PAL	WAC NR 140 ES	MW-001S	MW-001S (Duplicate)	MW-012S	MW-012D	MW-013D	MW-014D	MW-015S	MW-015D	MW-016S	MW-103S	MW-103D	MW-105S	MW-105D
Benzene	ug/l	0.5	5	0.05 U	0.05 U	0.085 UB	0.069 UB	0.05 U	0.05 U	0.05 U	0.11 UB	0.05 U	0.096 UB	0.18 UB	0.056 UB	0.05 U
Bromochloromethane	ug/l	N/A	N/A	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
VOCs Continued																
Bromodichloromethane	ug/l	0.06	0.6	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
Bromoform	ug/l	0.44	4.4	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U
Bromomethane	ug/l	1	10	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Carbon disulfide	ug/l	200	1000	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Carbon tetrachloride	ug/l	0.5	5	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Chlorobenzene	ug/l	N/A	N/A	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	4.1	0.05 U	3.5	0.073 J	0.6	0.05 U
Chloroethane	ug/l	80	400	0.06 U	0.06 U	0.6 J	0.16 J	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.37 J	0.98 J	0.06 U	0.06 U
Chloroform	ug/l	0.6	6	0.07 U	0.07 U	0.1 UB	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.24 UB	1.2 UB	0.07 U	0.07 U
Chloromethane	ug/l	0.3	3	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
cis-1,2-Dichloroethene	ug/l	7	70	0.06 U	0.06 U	**29**	**13**	0.21 J	0.06 U	0.06 U	6	**190**	**21**	**360**	**58**	**56**
cis-1,3-Dichloropropene	ug/l	0.02	0.2	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U
Dibromochloromethane	ug/l	6	60	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U
Dichlorodifluoromethane	ug/l	200	1000	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Ethylbenzene	ug/l	140	700	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Isopropylbenzene	ug/l	N/A	N/A	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
M,P-XYLENE (SUM OF ISOMERS)	ug/l	1000	10000	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
Methyl tert-butyl ether	ug/l	12	60	0.15 J	0.12 J	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.69 J	0.05 U	0.05 U	0.05 U	0.17 J	0.05 U
Methylene chloride	ug/l	0.5	5	0.11 UJ	0.11 UJ	0.11 UJ	0.11 UJ	0.11 UJ	0.11 UJ	0.11 UJ	0.11 UJ	0.11 UJ	0.11 UJ	0.11 UJ	0.11 UJ	0.11 UJ
o-Xylene	ug/l	N/A	N/A	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
Styrene	ug/l	10	100	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
Tetrachloroethene	ug/l	0.5	5	0.05 U	0.05 U	0.051 J	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**1.4**	0.05 U	0.05 U	0.05 U
Toluene	ug/l	200	1000	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U
trans-1,2-Dichloroethene	ug/l	20	100	0.04 U	0.04 U	16 J	3.2	0.04 U	0.04 U	0.04 U	0.6 J	5	0.35 J	5.5	0.71 J	2.6
trans-1,3-Dichloropropene	ug/l	0.02	0.2	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U
Trichloroethene	ug/l	0.5	5	0.07 J	0.06 J	**120**	**10**	0.03 U	0.03 U	0.15 J	**41**	0.03 U	**200**	**2200**	**63**	**240**
Vinyl chloride	ug/l	0.02	0.2	0.018 U	0.018 U	**0.38**	**3**	**0.23**	0.018 U	0.018 U	**0.074**	**85**	**0.4**	**2.9**	**2.3**	**1.5**

J indicates that the value was between the method detection limit and the limit of quantitation, and therefore is estimated.
U indicates that the constituent was not detected above the method detection limit.
UJ indicates that the constituent was not detected above the estimated method detection limit.
UB Indicates that the constiuent is considered to be below the detection limit listed due to blank contamination.
Bolded values indicate attainment or exceedance of the Wisconsin Administrative Code (WAC) NR 140 Preventative Action Limit (PAL)
Shaded values indicate attainment or exceedance of the Wisconsin Administrative Code (WAC) NR 140 Enforcement Standard (ES)

SECTION 4

Natural Attenuation Data Evaluation

4.1 Background

Under the right environmental conditions, many organic compounds can be attenuated naturally to nonregulated end products. Monitoring and documentation of these processes is known as monitored NA (MNA), which can achieve remediation objectives by reducing the mass, toxicity, mobility, volume, or concentration of contaminants within a time frame that is reasonable compared to that offered by other, more active methods (USEPA 1999). NA processes acting on contaminants can involve a number of interactive processes that may include dilution, adsorption, advection, and dispersion; volatilization; geochemical dynamics; and chemical or biological transformation (microbial attenuation).

In anaerobic-reducing environments, the main degradation mechanism for effective Chlorinated volatile organic compound (CVOC) attenuation is reductive dechlorination, which involves the sequential replacement of chlorine atoms on the alkene molecule by hydrogen atoms. The chlorinated ethenes serve as electron acceptors in these degradation reactions; simple organic carbon compounds (for example, sugars, alcohols, and fatty acids) serve as electron donors. For TCE, a site constituent, the sequential dechlorination proceeds to 1,2-dichloroethene (1,2-DCE), preferentially the cis-isomer, and to VC, and finally to ethene. Metals can also be attenuated in reductive subsurface conditions.

NA will occur to some degree at any site, and the NA process helps to govern the nature and distribution of the contaminants in the subsurface environment. The magnitude of each individual NA process will be governed by the prevailing site conditions and by the nature of the compound under study. The Office of Solid Waste and Emergency Response (OSWER) Directive 9200.4-17 (1999) identifies three lines of evidence that can be used to demonstrate the occurrence of the NA of CVOC compounds, consisting of the following:

- Documented loss of primary contaminants at the field scale
- Documented presence and distribution of geochemical and biochemical indicators of NA
- Direct microbiological evidence

Field monitoring of groundwater conditions or laboratory testing are used to evaluate these lines of evidence and to ultimately evaluate the significance of NA processes. For this project, NA is being evaluated using the first two lines of evidence. These two lines of evidence are often sufficient to determine if NA is viable at and downgradient of the site.

4.2 Distribution of Organic Compounds

TCE was detected at the highest concentrations in samples from well nest MW-103 (Figure 5). The October 2004 data show a similar distribution and concentration range when compared to sampling performed in April 2003 (RMT Inc. 2004) when the ground water extraction system was in operation; however, the MW-105 well nest, situated due south of

MW-103, has shown a rough order of magnitude decrease in concentration. 1,1,1-trichloroethane (1,1,1-TCA), showed a similar distribution as TCE, but with more limited extent and lower concentrations.

In general, the distribution of parent products, TCE and 1,1,1-TCA, in the shallow aquifer extends from the southern portion of the site generally south of Elm Street toward the wetland area, corresponding with the groundwater flow direction. TCE and 1,1,1-TCA were not detected above the method detection limit at sampled wells (MW-13D and MW-16S) located close to Davy Creek. The highest concentrations of TCE were detected during this sampling event in the deep wells at MW-103D and MW-105D. During the previous sampling event (April 2003), TCE was only detected in one of the sampled bedrock monitoring wells. It was detected between the limit of detection and limit of quantitation.

Concentrations of degradation products of TCE and 1,1,1-TCA were detected during the October 2004 sampling event that were similar to those measured during the April 2003 sampling event, and include cis-1,2-DCE, VC, 1,1-dichloroethane (1,1-DCA), 1,1-dichloroethene (1,1-DCE), and chloroethane. The highest concentrations of degradation products were observed near the apparent source area (MW-103 well nest) and at downgradient locations. In general, degradation products were detected further downgradient toward Davy Creek than parent products including those sampled wells (MW-13D and MW-16S) closest to Davy Creek.

Overall, the CVOC data (parent and degradation data) show similar distributions and concentrations as those collected in April 2003, except for reductions in concentrations at the MW-105 well nest. In April 2003, the groundwater extraction system appears to have been in operation and outflow from the system occurred in the vicinity of the MW-105 well nest and may have influenced the concentrations observed during April 2003. It would be expected that the outflow would have contained oxygenated water, thus creating conditions that would not have been conducive for reductive dehalogenation of the CVOCs. The treatment system had been shut down for 2 months prior to the October 2004 sampling.

In spite of the groundwater treatment system shutdown, October 2004 data show similar concentrations as the previous sampling round in April 2003 when the system was in operation. This suggests that the CVOC plume is currently stable.

4.3 Natural Attenuation Data

Based upon groundwater monitoring data for the shallow and deep unconsolidated zones performed in October 2004, parent products in groundwater (TCE and 1,1,1-TCA) are being degraded by anaerobic reductive dehalogenation and other NA processes to transformation products (1,2-DCE, VC, 1,1-DCA, 1,1-DCE, and chloroethane). Additionally, final and nontoxic degradation byproducts, ethene and ethane, were also detected at the site in October 2004. The detection of ethene and ethane indicates that microorganisms currently present in the subsurface at and downgradient of the site have the capacity to degrade parent products through each step of the dechlorination degradation process. Ethane can also be produced by plants during spring and summer vegetative growth phases so any significant ethene or ethane data noted during fall or winter months suggest that the ethene/ethane is likely the result of CVOC reductive dechlorination. Based on the data

collected to date, the presence of ethene/ethane in the groundwater provides evidence that CVOCs are being dechlorinated to environmentally-acceptable end products.

Results of field measurements of DO and ORP support the occurrence of reductive dehalogenation in the area of CVOC detection. DO and ORP were measured during well purging to assess the redox conditions in the groundwater. These data suggest that anaerobic conditions exist within the proximity of the downgradient wetland area located near well nests MW-12, MW-13, and MW-16. Generally DO is below 1 mg/L in these wells located near the wetland area. ORP data also suggest that anaerobic conditions persist in this area. DO and ORP data from the site suggest that aerobic to just slightly anaerobic conditions persist specifically near the area of highest CVOC detections (at well nest MW-103). In these areas CVOC NA will likely be dominated by advective and dilution processes only.

In general, specific conductance, alkalinity, dissolved iron, and methane were detected at the highest concentrations within the wetland area well nests (MW-12, MW-13, MW-16, and MW-105). Similarly, total organic carbon, chloride, and sulfate were also observed to have the highest concentrations at well nests within the wetland area and at well nest MW-103 (the "near source" well). Increased concentrations of alkalinity, iron, methane, and chloride in the source and downgradient areas as compared to upgradient/background locations provide evidence of biodegradation (Wiedemeier et al. 1998). However, sulfate concentrations observed for the study area (generally observed at or above 60 mg/L), especially at locations located within the wetland area, are at concentrations that are not the most favorable for biodegradation. Ethene and methane have been detected in samples collected from well nests MW-12, MW-16, MW-105, and MW-103D, indicating that methanogenic conditions exist at portions of the study area. Methane is produced by the metabolism of a wide range of organic substrates by methanogenic bacteria. This group of bacteria is known to play a role in CVOC attenuation. Data collected from other areas of the study area suggest that NA is occurring, but is at a much reduced rate when compared to the wetland area.

Sampling performed in October 2004 provides support for the occurrence of NA of CVOCs at and downgradient of the site, including:

- Detections of ethene and ethane, the end biodegradation products of TCE and 1,1,1-TCA. The detection of TCE and 1,1,1-TCA degradation products documents the loss of contaminants achieving the first line of evidence of MNA (USEPA 1999).
- The general observance of DO concentrations less than 1 mg/L in the area of highest CVOC detections. The low concentrations observed for DO support the presence of anaerobic conditions appropriate for biodegradation of CVOCs and support the second line of evidence of MNA (USEPA 1999).
- Detection of dissolved iron, dissolved manganese, and methane above background concentrations in the area of CVOC detections indicates the presence of reducing conditions needed for biodegradation to occur. Nitrate was generally not detected or was below 1 mg/L, further supporting conditions appropriate for biodegradation. These geochemical and biochemical conditions are indicators of NA and support the second line of evidence of MNA (USEPA 1999).

- The observance of chloride concentrations three to four times higher than background locations in the area of highest CVOC detections. During each step of the reductive dehalogenation process, chloride is released as a by-product. The chloride observations also support the second line of evidence of MNA (USEPA 1999).

Using the methods presented by Wiedemeier and others (Wiedemeier et al. 1998), data were compared to the preferred concentrations of NA indicator parameters for an overall screening of study area conditions. Based on data collected in October 2004 and the NA evaluation, "adequate evidence" supporting anaerobic biodegradation of chlorinated organics for the unconsolidated aquifer is present (Table 5).

TABLE 5
Screening for Anaerobic Biodegradation Processes and Interpretation of Screening Results
Oconomowoc Electroplating

Analysis	Preferred Concentration Indicating Anaerobic Biodegradation[a]	Interpretation[a]	Value[a]	Points Awarded for Study Area[a,b,c]
Oxygen (mg/L)	< 0.5 mg/L	Tolerated, suppresses the reductive pathway at higher concentrations.	3	3
Oxygen (mg/L)	> 5 mg/L	Not tolerated, however, VC may be oxidized aerobically.	-3	0
Nitrate (mg/L)	< 1 mg/L	At higher concentrations, may compete with reductive pathway.	2	2
Iron II [d]	> 1 mg/L	Reductive pathway possible; VC may be oxidized under Fe (III)-reducing conditions.	3	3
Sulfate (mg/L)	< 20 mg/L	At higher concentrations, may compete with reductive pathway.	2	0
Sulfide (mg/L)	> 1 mg/L	Reductive pathway possible.	3	0
Methane (mg/L)	< 0.5 mg/L	VC oxidizes.	0	0
Methane (mg/L)	> 0.5 mg/L	Ultimate reductive daughter product, VC accumulates.	3	0
Oxidation Reduction Potential (mV)	< 50 mV	Reductive pathway possible.	1	1
Oxidation Reduction Potential (mV)	< -100 mV	Reductive pathway likely.	2	0
pH	5 < pH < 9	Optimal range for reductive pathway.	0	0
pH	5 > pH > 9	Outside optimal range for reductive pathway.	-2	0
TOC (mg/L)	> 20 mg/L	Carbon and energy source; drives dechlorination; can be natural or anthropogenic.	2	0
Temperature (degrees Celsius)	> 20C	At T .20C, biochemical process is accelerated.	1	0
Alkalinity (mg/L)	> 2x background	Results from interaction between CO2 and aquifer materials.	1	0
Chloride (mg/L)	> 2x background	Daughter product of organic chlorine.	2	2
BTEX (mg/L)	> 0.1 mg/L	Carbon and energy source; drives dechlorination.	2	0
Trichloroethene (mg/L)	Not applicable	Material released.	0	0
Dichloroethene (mg/L)	Not applicable	Daughter product of TCE; If cis is > 80% of total DCE it is likely a daughter product, 1,1DCE can be chemical reaction product of TCA.	2	2

TABLE 5
Screening for Anaerobic Biodegradation Processes and Interpretation of Screening Results
Oconomowoc Electroplating

Analysis	Preferred Concentration Indicating Anaerobic Biodegradation[a]	Interpretation[a]	Value[a]	Points Awarded for Study Area[a,b,c]
Vinyl chloride (mg/L)	Not applicable	Daughter product of DCE.	2	2
1,1,1-trichloroethane (mg/L)	Not applicable	Material released.		0
1,1-dichloroethane (mg/L)	Not applicable	Daughter product of TCA under reducing conditions.	2	2
Chloroethane (mg/L)	Not applicable	Daughter product of DCA or VC under reducing conditions.	2	0
Ethene/Ethane (mg/L)	> 0.01 mg/L	Daughter product of VC/ethene.	2	2
Ethene/Ethane (mg/L)	> 0.1 mg/L	Daughter product of VC/ethene.	3	0
			SCORE:[a,e]	19

[a] See Table 2.3 in Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water, EPA/600/R-98/128.

[b] See Table 4 of this report for study area constituent values.

[c] Points awarded only when 50 percent or more of results for a particular parameter for the wells sampled were at the preferred concentration.

[d] Sampled for dissolved iron. Compared values to background concentrations (>2x background).

[e] Scores of 15 to 20 = Adequate evidence for anaerobic biodegradation of CVOCs.

4.4 Data Comparison to State Standards

Groundwater quality standards are defined in Wisconsin Administrative Code (WAC) NR 140 and include the Preventative Action Limit (PAL) and Enforcement Standard (ES). PAL values are generally 10 to 50 percent of the ES values for their respective individual compounds. ES values frequently correspond to maximum concentration limits (MCLs).

For the October 2004 sampling event, the following compounds were detected at or above their respective ES: chloride, iron, manganese, sulfate, 1,1,1-TCA, 1,1-DCE, cis-1,2-DCE, TCE, and VC (Table 4). In addition to these compounds, nitrate, 1,1,2-trichloroethane, 1,1-DCA, 1,2-dichloroethane, and tetrachloroethene were detected above their respective PAL. PAL and ES exceedances were generally observed in the near source well nest (MW-103) or at well nests (shallow and deep locations) near downgradient Davy Creek south-southwest of the site (MW-12, MW-13, MW-15, MW-16, and MW-105). The exception includes the manganese exceedance observed at MW-14D (upgradient well). As compared to all the compounds analyzed, manganese had the highest number of ES exceedances for the wells sampled (9 out of 12 wells had ES exceedances). This suggests that manganese may naturally occur at concentrations near the ES in the study area.

ES exceedances of CVOCs were observed predominately at the near source well nest (MW-103) and at downgradient shallow and deep wells (MW-12, MW-15, MW-16, and MW-105). Chloride ES exceedances show a similar trend; however the levels at MW-103 (near source well) were below the ES, but exceeded the PAL. Lastly, ES exceedances for iron and sulfate were only observed in well nests located in the wetland area (MW-12, MW-13, MW-16, and MW-105).

Several rounds of natural attenuation data is needed to confirm the exceedances to state standards, estimate rates of NA, and predict the length of time needed to be below state and federal standards.

4.5 Potential Receptors

Potential human and ecological receptors for the OEP site's groundwater include Davy Creek and its associated wetland area, private water-supply wells, and residential structures. Davy Creek and its associated wetland area may be impacted by the discharge of unconsolidated zone groundwater migrating from the site. Based on the October 2004 groundwater data, the downgradient extent of CVOC degradation products is not known, but CVOCs were detected at wells located closest to the creek (MW-16S and MW-13D). These wells were installed in areas that were accessible in the wetland area nearest the creek. It is unknown whether all of the groundwater in the unconsolidated unit (shallow and/or deep) discharges to Davy Creek or whether part of it flows beneath the creek.

Private water-supply wells will be sampled in May 2005. An evaluation of the need for vapor intrusion will be performed in Fall 2005.

SECTION 5

Recommendations

Source reduction activities have been previously performed at the site and include the removal of the former lagoon sediment and sludge, contaminated soil, and contaminated sediment in the wetlands around Davy Creek and the operation of a groundwater extraction system. The extraction system was shut down in July 2004 because groundwater concentrations from the extraction wells were no longer decreasing with continued operation or were decreasing at a very small rate.

In spite of the groundwater treatment system shutdown, October 2004 data show similar concentrations as those measured in the previous sampling round of April 2003, when the system was in operation. This suggests that the CVOC plume is currently stable.

Groundwater chemistry data indicates evidence supporting NA of CVOCs near the downgradient portions of the CVOC plume. Monitoring data suggest that, to date, significant NA occurs at or near the wetland area located on the south side of the site. Specifically, the data collected from well nests MW-12, MW-13, and MW-16 show that extensive anaerobic conditions exist that are contributing to NA of CVOCs.

The migration of CVOCs appears to be limited to the unconsolidated zone groundwater onsite and downgradient from the site. NA in the wetland area, downgradient of the site, should minimize further migration and may meet remedial goals for the site. Monitoring data collected over time can be used to verify that the NA is sufficient to control CVOC migration such that MNA may be an appropriate stand-alone remedy.

At this time, CH2M HILL recommends the continuation of groundwater monitoring as specified in the *Sampling and Analysis Plan* (SAP) dated October 2004. This SAP included a QAPP, FSP, and DMP. Quarterly groundwater sampling events should be conducted for 3 years to collect MNA data to properly evaluate seasonal trends in the biogeochemistry and NA. In addition to MNA, CH2M HILL recommends that the program be enhanced in 2005 to monitor potential receptors and detect plume expansion through:

- The addition of a double completion (nested) monitoring well on the south side of Davy Creek. This well will evaluate the flow between Davy Creek and the shallow and deep unconsolidated groundwater and serve as a sentinel well to evaluate plume expansion. The general location of the sentinel well is show on Figure 1; however, the actual location will be dependent on obtaining an access agreement from the property owner and available access to the area using standard drilling equipment.
- The addition of surface water monitoring in Davy Creek and the wetland area at three locations: upstream in Davy Creek, downgradient from the site in Davy Creek, and downgradient from the site in wetland area.

Finally, CH2M HILL recommends that the October 2004 data be used with future NA sampling rounds to evaluate seasonal variability of groundwater flow patterns and CVOC distributions for the study area and to confirm trends in NA data. The list of wells to be

sampled and the parameters analyzed at each well should be revisited each year based on previous data collected. Following collection of sufficient data (several monitoring rounds), recommendations for MNA or possibly enhanced attenuation can be made and documented in a report in accordance with Pope and others (Pope et. al. 2004) and WDNR (WDNR 2003).

Additional downgradient groundwater monitoring wells and private water supply wells will be sampled at the site to monitor compliance with state and federal water quality standards. Details of this supplemental, compliance sampling will be documented in a separate SAP which will include a QAPP, FSP, and DMP.

SECTION 6

Contingency Plan

In the event that CVOCs are detected in private water-supply wells in the sentinel well (recommended for installation in 2005), or plume expansion is documented for several consecutive quarters of monitoring, the implementation of a contingency plan is recommended. The contingency approach may consist of modifications to the monitoring program or remediation approach for the site. For example, if trends in groundwater data suggest an expanding plume, additional wells may be monitored or the frequency of monitoring may be increased. However, if CVOCs are detected at concentrations above the MCLs in a private water supply well or in a sentinel well, then additional remedial activities should be considered. These may consist of point of service treatment or enhancement of natural attenuation through the addition of carbon substrates to the groundwater, respectively. A detailed design would be prepared, if deemed necessary, for USEPA review and approval.

SECTION 7

References

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Figures

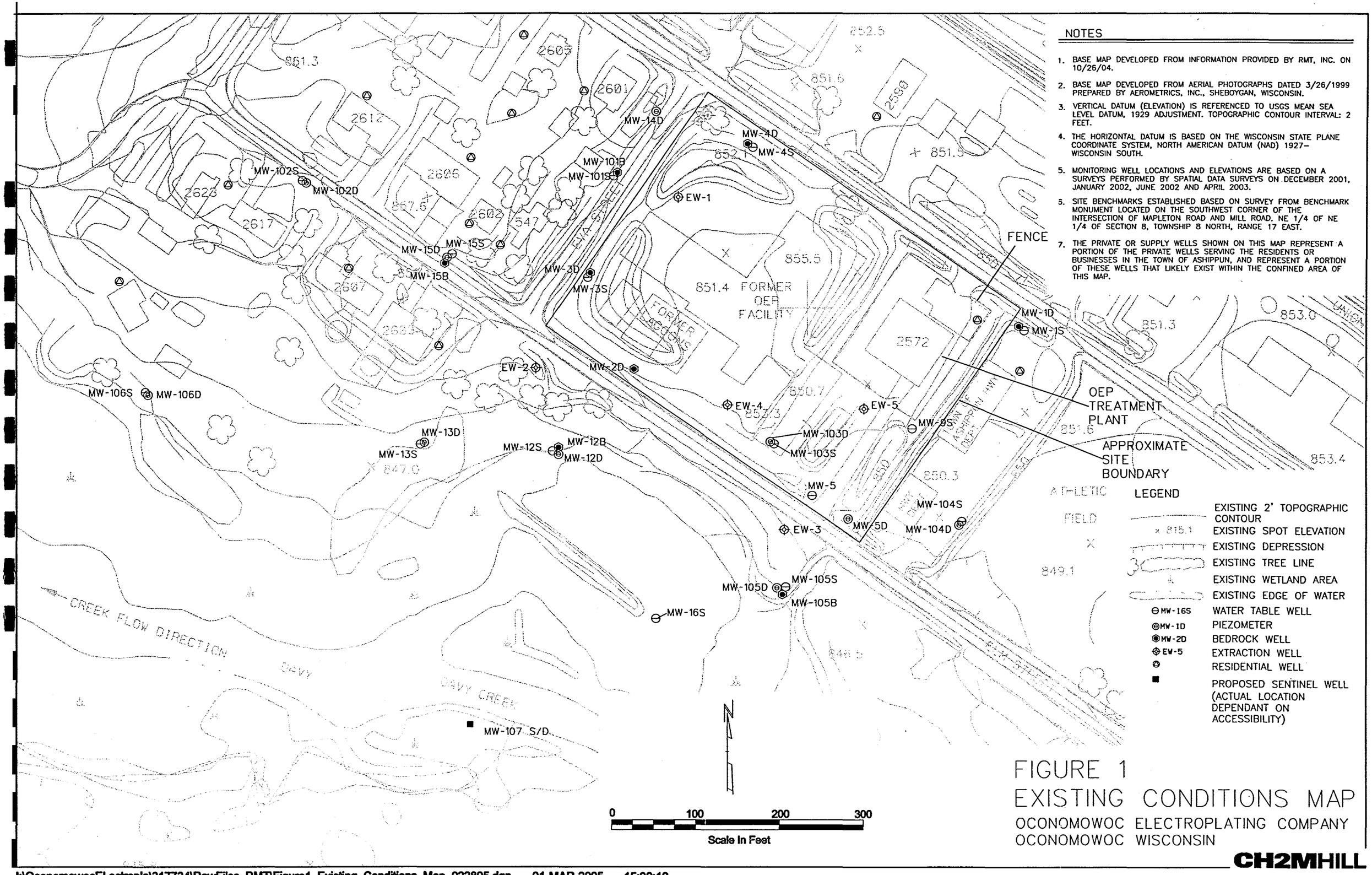

FIGURE 1
EXISTING CONDITIONS MAP
OCONOMOWOC ELECTROPLATING COMPANY
OCONOMOWOC WISCONSIN

CH2MHILL

I:\OconomowocElectropla\317734\RawFiles_RMT\Figure1_Existing_Conditions_Map_022805.dgn 01-MAR-2005 15:20:18

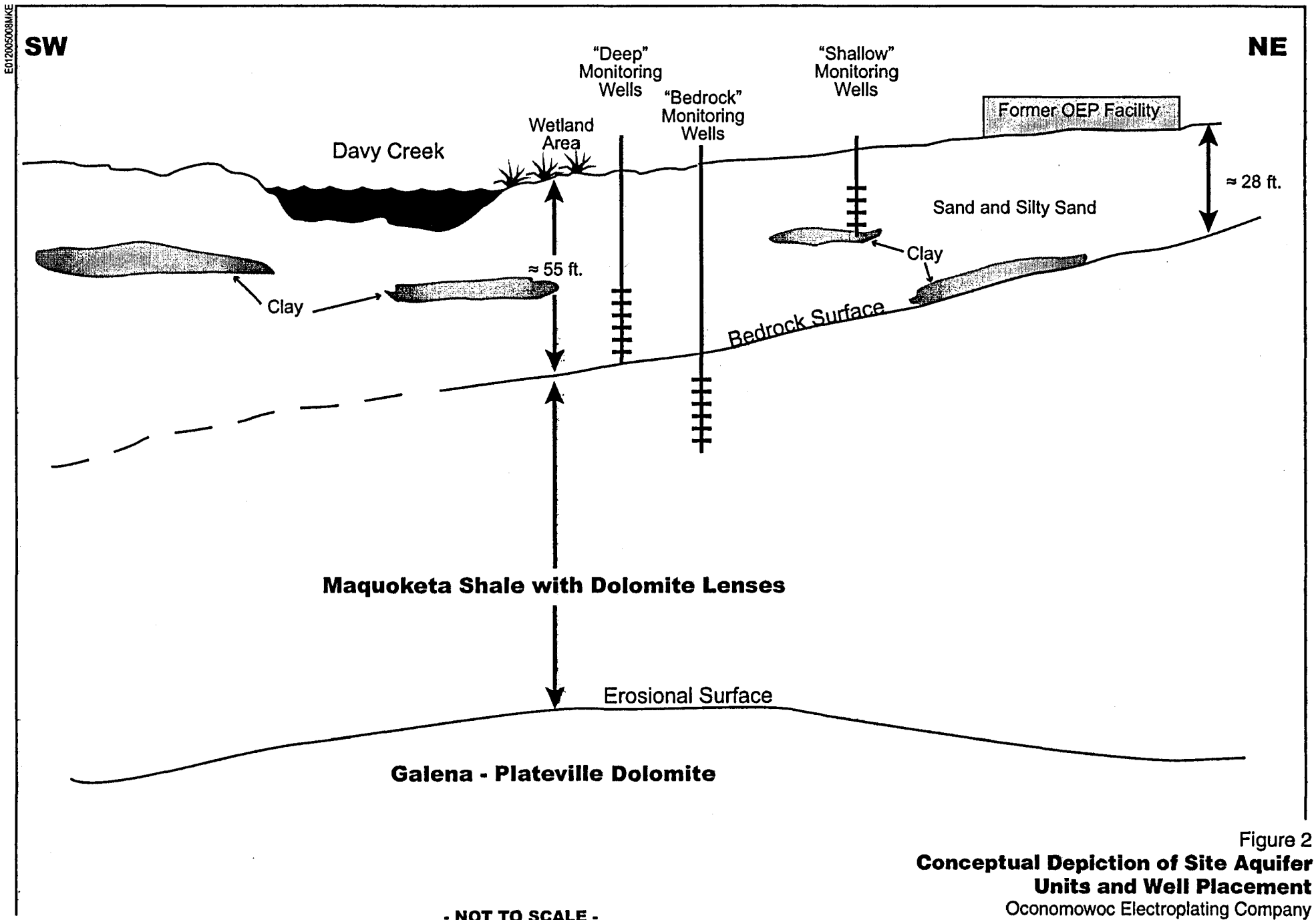

Figure 2
Conceptual Depiction of Site Aquifer Units and Well Placement
Oconomowoc Electroplating Company
Oconomowoc, WI

NOTES

1. BASE MAP DEVELOPED FROM INFORMATION PROVIDED BY RMT, INC. ON 10/26/04.

MW-102S 844.13
MW-101S 844.64
MW-4S 844.68
MW-15S 844.25
MW-3S
MW-1S 844.86
MW-106S 843.21
MW-13S 844.08
MW-12S 843.7
MW-9S 842.11
MW-103S 844.24
MW-5 843.38
MW-104S 844.17
MW-105S 843.85
MW-16S 843.73

FENCE
FORMER OEP FACILITY
FORMER ACCESS
OEP TREATMENT PLANT
APPROXIMATE SITE BOUNDARY
ATHLETIC FIELD
O.S.
EVA STREET
UNION
CREEK FLOW DIRECTION
DAVY
DAVY CREEK

LEGEND

- EXISTING 2' TOPOGRAPHIC CONTOUR
- EXISTING SPOT ELEVATION
- EXISTING DEPRESSION
- EXISTING TREE LINE
- EXISTING WETLAND AREA
- EXISTING EDGE OF WATER
- MW-16S WATER TABLE WELL
- MW-1D PIEZOMETER
- MW-2D BEDROCK WELL
- -844- GROUNDWATER ELEVATIONS 0.5 FT CONTOUR
- GROUNDWATER FLOW DIRECTION

0 100 200 300
Scale In Feet

FIGURE 3
SHALLOW UNCONSOLIDATED AQUIFER GROUNDWATER ELEVATION - OCTOBER 6, 2004

OCONOMOWOC ELECTROPLATING COMPANY
OCONOMOWOC WISCONSIN

CH2MHILL

I:\OconomowocElectropla\317734\RawFiles_RMT\Figure3_GW_Shallow_Oct_04.dgn 01-MAR-2005

NOTES

1. BASE MAP DEVELOPED FROM INFORMATION PROVIDED BY RMT, INC. ON 10/26/04.

MW-14D 844.7
MW-102D 843.76
MW-15D 843.99
MW-106D 843.78
MW-13D 843.9
MW-12D 843.92
MW-103D 844.24
MW-5D 842.47
MW-104D 843.22
MW-105D 843.89

FENCE
OEP TREATMENT PLANT
APPROXIMATE SITE BOUNDARY
FORMER OEP FACILITY
FORMER LAGOONS
ELM STREET
TOWN OF SHIPPLEY DEPT.
ATHLETIC FIELD
CREEK FLOW DIRECTION
DAVY
DAVY CREEK

LEGEND

- EXISTING 2' TOPOGRAPHICAL CONTOUR
- EXISTING SPOT ELEVATION
- EXISTING DEPRESSION
- EXISTING TREE LINE
- EXISTING WETLAND AREA
- EXISTING EDGE OF WATER
- MW-16S WATER TABLE WELL
- MW-1D PIEZOMETER
- MW-2D BEDROCK WELL
- -844- GROUNDWATER ELEVATION 0.5 FT CONTOUR
- GROUNDWATER FLOW DIRECTION

0 100 200 300
Scale In Feet

FIGURE 4
DEEP UNCONSOLIDATED AQUIFER GROUNDWATER ELEVATION - OCTOBER 6, 2004

OCONOMOWOC ELECTROPLATING COMPANY
OCONOMOWOC WISCONSIN

CH2MHILL

I:\OconomowocElectropla\317734\RawFiles_RMT\Figure4_GW_Deep_Oct_04.dgn 28-FEB-2005

NOTES

1. BASE MAP DEVELOPED FROM INFORMATION PROVIDED BY RMT, INC. ON 10/26/04.
2. "J" INDICATES THAT THE VALUE WAS BETWEEN THE METHOD DETECTION LIMIT AND THE LIMIT OF QUANTITATION AND THEREFORE IS ESTIMATED.
3. "U" INDICATES THAT THE CONSTITUENT WAS NOT DETECTED ABOVE THE METHOD DETECTION LIMIT.
4. "NS" INDICATES THAT THE WELL WAS NOT SAMPLED

MW-14D 0.03U
MW-4D NS
MW-4S NS
MW-101B NS
MW-101D NS
MW-102S NS
MW-102D NS
MW-15S 0.15J
MW-15D 41
MW-15B NS
MW-3D NS
MW-3S NS
MW-2D NS
MW-1D NS
MW-1S 0.07 J
MW-106S NS
MW-106D NS
MW-13D 0.03U
MW-13S NS
MW-12S 120
MW-12B NS
MW-12D 10
MW-103D 2200
MW-103S 200
MW-8S NS
MW-5 NS
MW-5D NS
MW-104S NS
MW-104D NS
MW-105D 240
MW-105S 63
MW-105B NS
MW-16S 0.03U

FENCE
OEP TREATMENT PLANT
APPROXIMATE SITE BOUNDARY
FORMER LAGOONS
851.4 FORMER OEP FACILITY
EVA STREET
ASHIPPUN DRAINAGE DITCH
ATHLETIC FIELD
CREEK FLOW DIRECTION
DAVY CREEK
UNION

LEGEND

- EXISTING 2' TOPOGRAPHICAL CONTOUR
- × 815.1 EXISTING SPOT ELEVATION
- EXISTING DEPRESSION
- EXISTING TREE LINE
- EXISTING WETLAND AREA
- EXISTING EDGE OF WATER
- ⊖ MW-16S WATER TABLE WELL
- ◎ MW-1D PIEZOMETER
- ◎ MW-2D BEDROCK WELL

0 100 200 300
Scale In Feet

FIGURE 5
TRICHLOROETHENE(TCE) CONCENTRATIONS(ug/l)
OCTOBER 2004

OCONOMOWOC ELECTROPLATING COMPANY
OCONOMOWOC WISCONSIN

CH2MHILL

I:\OCONOMOWOCELECTROPLA\317734\RAWFILES_RMT\FIGURE5_TCE_CONC_OCT_04.DGN 13-JAN-2005

Appendix A
Analytical Data Reports

CT Laboratories

1230 Lange Court
Baraboo, WI 53913-3109
Phone: (800) 228-3012
Fax: (608) 356-2766
www.ctlaboratories.com

Sample Delivery Group

43523

CH2M HILL
HEATHER HODACH
135 S 84TH ST
SUITE 325
MILWAUKEE, WI 53214

Project Name: OCONOMOWOC EP
Project #: 317734.AI.01

CTI Sample #	Folder #	Client Sample #	Sample Description	Matrix	Date Sampled	Date Received
278804	43523	05CA05-05	OEP-MW-012D	GROUND WATER	10/07/2004	10/08/2004
278817	43523	05CA05-06	OEP-MW-012D(F)	GROUND WATER	10/07/2004	10/08/2004
278818	43523	05CA05-07	OEP-MW-012S	GROUND WATER	10/07/2004	10/08/2004
278819	43523	05CA05-08	OEP-MW-012S(F)	GROUND WATER	10/07/2004	10/08/2004
278820	43523	05CA05-09	OEP-MW-013D	GROUND WATER	10/07/2004	10/08/2004
278821	43523	05CA05-10	OEP-MW-013D(F)	GROUND WATER	10/07/2004	10/08/2004
278822	43523	05CA05-30	OEP-TB-001	TRIP BLANK	10/07/2004	10/08/2004
278827	43523	05CA05-17	OEP-MW-016S	GROUND WATER	10/07/2004	10/08/2004
278828	43523	05CA05-18	OEP-MW-016S(F)	GROUND WATER	10/07/2004	10/08/2004
279452	43557	05CA05-23	OEP-MW-105D	GROUND WATER	10/08/2004	10/12/2004
279453	43557	05CA05-24	OEP-MW-105D(F)	GROUND WATER	10/08/2004	10/12/2004
279454	43557	05CA05-11	OEP-MW-014D	GROUND WATER	10/08/2004	10/12/2004
279455	43557	05CA05-12	OEP-MW-014D(F)	GROUND WATER	10/08/2004	10/12/2004
279456	43557	05CA05-25	OEP-MW-105S	GROUND WATER	10/08/2004	10/12/2004
279457	43557	05CA05-26	OEP-MW-105S (F)	GROUND WATER	10/08/2004	10/12/2004
279458	43557	05CA05-32	OEP-TB-004	TRIP BLANK	10/11/2004	10/12/2004
279459	43557	05CA05-19	OEP-MW-103D	GROUND WATER	10/08/2004	10/12/2004
279460	43557	05CA05-20	OEP-MW-103D(F)	GROUND WATER	10/08/2004	10/12/2004
279461	43557	05CA05-21	OEP-MW-103S	GROUND WATER	10/08/2004	10/12/2004
279462	43557	05CA05-22	OEP-MW-103S(F)	GROUND WATER	10/08/2004	10/12/2004
279463	43557	05CA05-31	OEP-TB-003	TRIP BLANK	10/11/2004	10/12/2004
279471	43557	05CA05-13	OEP-MW-015D	GROUND WATER	10/08/2004	10/12/2004
279472	43557	05CA05-14	OEP-MW-015D(F)	GROUND WATER	10/08/2004	10/12/2004
279474	43557	05CA05-15	OEP-MW-015S	GROUND WATER	10/08/2004	10/12/2004
279475	43557	05CA05-16	OEP-MW-015S(F)	GROUND WATER	10/08/2004	10/12/2004
279476	43557	05CA05-29	OEP-TB-002	TRIP BLANK	10/11/2004	10/12/2004
279477	43557	05CA05-01	OEP-MW-001S	GROUND WATER	10/08/2004	10/12/2004
279478	43557	05CA05-02	OEP-MW-001S(F)	GROUND WATER	10/08/2004	10/12/2004
279479	43557	05CA05-03	OEP-MW-001SFR	GROUND WATER	10/08/2004	10/12/2004
279480	43557	05CA05-04	OEP-MW-001SFR(F)	GROUND WATER	10/08/2004	10/12/2004
279481	43557	05CA05-27	OEP-EB-100	GROUND WATER	10/11/2004	10/12/2004

CT Laboratories

1230 Lange Court
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Fax: (608) 356-2766
www.ctlaboratories.com

Sample Delivery Group

43523

CH2M HILL
HEATHER HODACH
135 S 84TH ST
SUITE 325
MILWAUKEE, WI 53214

Project Name: OCONOMOWOC EP
Project #: 317734.AI.01

CTI Sample #	Folder #	Client Sample #	Sample Description	Matrix	Date Sampled	Date Received
279482	43557	05CA05-27	OEP-EB-100	GROUND WATER	10/11/2004	10/12/2004
279483	43557	05CA05-28	OEP-FB-200	GROUND WATER	10/08/2004	10/12/2004
279485	43557	05CA05-33	OEP-TB-005	TRIP BLANK	10/11/2004	10/12/2004

VOLATILE ORGANIC ANALYSIS
QUALITY CONTROL SUMMARY
DOCUMENTS

CT Laboratories

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-MW-012D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	278804
% Solids:		Date Received:	10/08/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/19/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	0.050	U
74-83-9	Bromomethane	0.060	U
75-01-4	Vinyl chloride	3.0	
541-73-1	1,3-Dichlorobenzene	0.040	U
75-00-3	Chloroethane	0.16	
106-46-7	1,4-Dichlorobenzene	0.050	U
75-09-2	Methylene chloride	0.11	U Q
95-50-1	1,2-Dichlorobenzene	0.040	U
67-64-1	Acetone	1.5	U
75-15-0	Carbon disulfide	0.10	U
75-35-4	1,1-Dichloroethene	3.9	
67-66-3	Chloroform	0.070	U
107-06-2	1,2-Dichloroethane	0.27	
78-93-3	2-Butanone	0.40	U
56-23-5	Carbon tetrachloride	0.050	U
75-27-4	Bromodichloromethane	0.040	U
78-87-5	1,2-Dichloropropane	0.060	U
120-82-1	1,2,4-Trichlorobenzene	0.060	U
10061-01-5	cis-1,3-Dichloropropene	0.016	U
124-48-1	Dibromochloromethane	0.090	U
79-00-5	1,1,2-Trichloroethane	0.090	U
71-43-2	Benzene	0.069	
10061-02-6	trans-1,3-Dichloropropene	0.015	U
75-25-2	Bromoform	0.070	U
108-10-1	4-Methyl-2-pentanone	0.60	U
591-78-6	2-Hexanone	0.50	U
127-18-4	Tetrachloroethene	0.050	U
79-34-5	1,1,2,2-Tetrachloroethane	0.018	U
108-88-3	Toluene	0.080	U
108-90-7	Chlorobenzene	0.050	U
100-41-4	Ethylbenzene	0.050	U
100-42-5	Styrene	0.040	U
1330-20-7	m & p-Xylene	0.12	U

CT Laboratories

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-MW-012D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	278804
% Solids:		Date Received:	10/08/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/19/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
87-61-6	1,2,3-Trichlorobenzene	0.080	U
96-12-8	1,2-Dibromo-3-chloropropane	0.026	U
106-93-4	1,2-Dibromoethane	0.023	U
74-97-5	Bromochloromethane	0.050	U
75-71-8	Dichlorodifluoromethane	0.060	U
98-82-8	Isopropylbenzene	0.030	U
1634-04-4	Methyl tert-butyl ether	0.050	U
95-47-6	o-Xylene	0.040	U
156-60-5	trans-1,2-Dichloroethene	3.2	

CT Laboratories

1A

Sample Description

VOLATILE ORGANICS ANALYSIS DATA SHEET

OEP-MW-012D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	278804
% Solids:		Date Received:	10/08/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/20/2004
		Dilution Factor:	10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-34-3	1,1-Dichloroethane	46	
71-55-6	1,1,1-Trichloroethane	25	
79-01-6	Trichloroethene	10	
156-59-2	cis-1,2-Dichloroethene	13	

CT Laboratories

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-MW-012D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	278804
% Solids:		Date Received:	10/08/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	Modified RSK 17	Date Analyzed:	10/13/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
78-84-0	- - - - - - Ethane	0.50	U
74-85-1	- - - - - - Ethene	1.4	

CT Laboratories

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-MW-012D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	278804
% Solids:		Date Received:	10/08/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	Modified RSK 17	Date Analyzed:	10/13/2004
		Dilution Factor:	2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-82-8	- - - - - - Methane	31	

CT Laboratories

1A

Sample Description

VOLATILE ORGANICS ANALYSIS DATA SHEET

OEP-MW-012S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	278818
% Solids:		Date Received:	10/08/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/19/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	0.050	U
74-83-9	Bromomethane	0.060	U
75-01-4	Vinyl chloride	0.38	
541-73-1	1,3-Dichlorobenzene	0.040	U
75-00-3	Chloroethane	0.60	
106-46-7	1,4-Dichlorobenzene	0.050	U
75-09-2	Methylene chloride	0.11	U Q
95-50-1	1,2-Dichlorobenzene	0.040	U
67-64-1	Acetone	1.5	U
75-15-0	Carbon disulfide	0.10	U
75-35-4	1,1-Dichloroethene	7.1	
67-66-3	Chloroform	0.10	
107-06-2	1,2-Dichloroethane	0.040	U
78-93-3	2-Butanone	0.40	U
56-23-5	Carbon tetrachloride	0.050	U
75-27-4	Bromodichloromethane	0.040	U
78-87-5	1,2-Dichloropropane	0.060	U
120-82-1	1,2,4-Trichlorobenzene	0.060	U
10061-01-5	cis-1,3-Dichloropropene	0.016	U
124-48-1	Dibromochloromethane	0.090	U
79-00-5	1,1,2-Trichloroethane	0.090	U
71-43-2	Benzene	0.085	
10061-02-6	trans-1,3-Dichloropropene	0.015	U
75-25-2	Bromoform	0.070	U
108-10-1	4-Methyl-2-pentanone	0.60	U
591-78-6	2-Hexanone	0.50	U
127-18-4	Tetrachloroethene	0.051	
79-34-5	1,1,2,2-Tetrachloroethane	0.018	U
108-88-3	Toluene	0.080	U
108-90-7	Chlorobenzene	0.050	U
100-41-4	Ethylbenzene	0.050	U
100-42-5	Styrene	0.040	U
1330-20-7	m & p-Xylene	0.12	U

CT Laboratories

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-MW-012S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	278818
% Solids:		Date Received:	10/08/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/19/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
87-61-6	1,2,3-Trichlorobenzene	0.080	U
96-12-8	1,2-Dibromo-3-chloropropane	0.026	U
106-93-4	1,2-Dibromoethane	0.023	U
74-97-5	Bromochloromethane	0.050	U
75-71-8	Dichlorodifluoromethane	0.060	U
98-82-8	Isopropylbenzene	0.030	U
1634-04-4	Methyl tert-butyl ether	0.050	U
95-47-6	o-Xylene	0.040	U

CT Laboratories

1A

Sample Description

VOLATILE ORGANICS ANALYSIS DATA SHEET

OEP-MW-012S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	278818
% Solids:		Date Received:	10/08/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/21/2004
		Dilution Factor:	25.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-34-3	1,1-Dichloroethane	43	
71-55-6	1,1,1-Trichloroethane	66	
79-01-6	Trichloroethene	120	
156-59-2	cis-1,2-Dichloroethene	29	
156-60-5	trans-1,2-Dichloroethene	16	

CT Laboratories

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-MW-012S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	278818
% Solids:		Date Received:	10/08/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	Modified RSK 17	Date Analyzed:	10/13/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
78-84-0	- - - - - - Ethane	0.50	U
74-85-1	- - - - - - Ethene	0.82	

CT Laboratories

1A

Sample Description

VOLATILE ORGANICS ANALYSIS DATA SHEET

OEP-MW-012S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	278818
% Solids:		Date Received:	10/08/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	Modified RSK 17	Date Analyzed:	10/13/2004
		Dilution Factor:	10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-82-8	Methane	130	

CT Laboratories

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description: OEP-MW-013D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	278820
% Solids:		Date Received:	10/08/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/20/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q	
74-87-3	Chloromethane	0.050	U	
74-83-9	Bromomethane	0.060	U	
75-01-4	Vinyl chloride	0.23		B
541-73-1	1,3-Dichlorobenzene	0.040	U	
75-00-3	Chloroethane	0.060	U	
106-46-7	1,4-Dichlorobenzene	0.050	U	
75-09-2	Methylene chloride	0.11	U	Q
95-50-1	1,2-Dichlorobenzene	0.040	U	
67-64-1	Acetone	1.5	U	
75-15-0	Carbon disulfide	0.10	U	
75-35-4	1,1-Dichloroethene	0.060	U	
75-34-3	1,1-Dichloroethane	0.031	U	
67-66-3	Chloroform	0.070	U	
107-06-2	1,2-Dichloroethane	0.040	U	
78-93-3	2-Butanone	0.40	U	
71-55-6	1,1,1-Trichloroethane	0.070	U	
56-23-5	Carbon tetrachloride	0.050	U	
75-27-4	Bromodichloromethane	0.040	U	
78-87-5	1,2-Dichloropropane	0.060	U	
120-82-1	1,2,4-Trichlorobenzene	0.060	U	
10061-01-5	cis-1,3-Dichloropropene	0.016	U	
79-01-6	Trichloroethene	0.030	U	
124-48-1	Dibromochloromethane	0.090	U	
79-00-5	1,1,2-Trichloroethane	0.090	U	
71-43-2	Benzene	0.050	U	
10061-02-6	trans-1,3-Dichloropropene	0.015	U	
75-25-2	Bromoform	0.070	U	
108-10-1	4-Methyl-2-pentanone	0.60	U	
591-78-6	2-Hexanone	0.50	U	
127-18-4	Tetrachloroethene	0.050	U	
79-34-5	1,1,2,2-Tetrachloroethane	0.018	U	
108-88-3	Toluene	0.080	U	
108-90-7	Chlorobenzene	0.050	U	

CT Laboratories

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-MW-013D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	278820
% Solids:		Date Received:	10/08/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/20/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
100-41-4	Ethylbenzene	0.050	U
100-42-5	Styrene	0.040	U
1330-20-7	m & p-Xylene	0.12	U
87-61-6	1,2,3-Trichlorobenzene	0.080	U
96-12-8	1,2-Dibromo-3-chloropropane	0.026	U
106-93-4	1,2-Dibromoethane	0.023	U
74-97-5	Bromochloromethane	0.050	U
156-59-2	cis-1,2-Dichloroethene	0.21	
75-71-8	Dichlorodifluoromethane	0.060	U
98-82-8	Isopropylbenzene	0.030	U
1634-04-4	Methyl tert-butyl ether	0.050	U
95-47-6	o-Xylene	0.040	U
156-60-5	trans-1,2-Dichloroethene	0.040	U

CT Laboratories

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-MW-013D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	278820
% Solids:		Date Received:	10/08/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	Modified RSK 17	Date Analyzed:	10/13/2004
		Dilution Factor:	5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
78-84-0	Ethane	2.5	U
74-85-1	Ethene	2.5	U
74-82-8	Methane	66	

CT Laboratories

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description: OEP-TB-001

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	TRIP BLANK	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	278822
% Solids:		Date Received:	10/08/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/19/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	0.25	B
74-83-9	Bromomethane	0.060	U
75-01-4	Vinyl chloride	0.018	U
541-73-1	1,3-Dichlorobenzene	0.040	U
75-00-3	Chloroethane	0.060	U
106-46-7	1,4-Dichlorobenzene	0.050	U
75-09-2	Methylene chloride	0.11	U Q
95-50-1	1,2-Dichlorobenzene	0.040	U
67-64-1	Acetone	1.5	U
75-15-0	Carbon disulfide	0.10	U
75-35-4	1,1-Dichloroethene	0.060	U
75-34-3	1,1-Dichloroethane	0.031	U
67-66-3	Chloroform	0.070	U
107-06-2	1,2-Dichloroethane	0.040	U
78-93-3	2-Butanone	0.40	U
71-55-6	1,1,1-Trichloroethane	0.070	U
56-23-5	Carbon tetrachloride	0.050	U
75-27-4	Bromodichloromethane	0.040	U
78-87-5	1,2-Dichloropropane	0.060	U
120-82-1	1,2,4-Trichlorobenzene	0.060	U
10061-01-5	cis-1,3-Dichloropropene	0.016	U
79-01-6	Trichloroethene	0.030	U
124-48-1	Dibromochloromethane	0.090	U
79-00-5	1,1,2-Trichloroethane	0.090	U
71-43-2	Benzene	0.050	U
10061-02-6	trans-1,3-Dichloropropene	0.015	U
75-25-2	Bromoform	0.070	U
108-10-1	4-Methyl-2-pentanone	0.60	U
591-78-6	2-Hexanone	0.50	U
127-18-4	Tetrachloroethene	0.050	U
79-34-5	1,1,2,2-Tetrachloroethane	0.018	U
108-88-3	Toluene	0.080	U
108-90-7	Chlorobenzene	0.050	U

CT Laboratories

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-TB-001

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	TRIP BLANK	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	278822
% Solids:		Date Received:	10/08/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/19/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
100-41-4	Ethylbenzene	0.050	U
100-42-5	Styrene	0.040	U
1330-20-7	m & p-Xylene	0.12	U
87-61-6	1,2,3-Trichlorobenzene	0.080	U
96-12-8	1,2-Dibromo-3-chloropropane	0.026	U
106-93-4	1,2-Dibromoethane	0.023	U
74-97-5	Bromochloromethane	0.050	U
156-59-2	cis-1,2-Dichloroethene	0.060	U
75-71-8	Dichlorodifluoromethane	0.060	U
98-82-8	Isopropylbenzene	0.030	U
1634-04-4	Methyl tert-butyl ether	0.050	U
95-47-6	o-Xylene	0.040	U
156-60-5	trans-1,2-Dichloroethene	0.040	U

CT Laboratories

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description: OEP-MW-016S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	278827
% Solids:		Date Received:	10/08/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/19/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	0.05C	U
74-83-9	Bromomethane	0.06C	U
541-73-1	1,3-Dichlorobenzene	0.04C	U
75-00-3	Chloroethane	0.06C	U
106-46-7	1,4-Dichlorobenzene	0.05C	U
75-09-2	Methylene chloride	0.11	U Q
95-50-1	1,2-Dichlorobenzene	0.04C	U
67-64-1	Acetone	1.5	U
75-15-0	Carbon disulfide	0.10	U
75-35-4	1,1-Dichloroethene	0.12	
75-34-3	1,1-Dichloroethane	0.067	
67-66-3	Chloroform	0.07C	U
107-06-2	1,2-Dichloroethane	0.54	
78-93-3	2-Butanone	0.40	U
71-55-6	1,1,1-Trichloroethane	0.07C	U
56-23-5	Carbon tetrachloride	0.05C	U
75-27-4	Bromodichloromethane	0.04C	U
78-87-5	1,2-Dichloropropane	0.06C	U
120-82-1	1,2,4-Trichlorobenzene	0.06C	U
10061-01-5	cis-1,3-Dichloropropene	0.01C	U
79-01-6	Trichloroethene	0.03C	U
124-48-1	Dibromochloromethane	0.09C	U
79-00-5	1,1,2-Trichloroethane	0.09C	U
71-43-2	Benzene	0.05C	U
10061-02-6	trans-1,3-Dichloropropene	0.01C	U
75-25-2	Bromoform	0.07C	U
108-10-1	4-Methyl-2-pentanone	0.60	U
591-78-6	2-Hexanone	0.50	U
127-18-4	Tetrachloroethene	0.05C	U
79-34-5	1,1,2,2-Tetrachloroethane	0.01C	U
108-88-3	Toluene	0.08C	U
108-90-7	Chlorobenzene	0.05C	U
100-41-4	Ethylbenzene	0.05C	U

CT Laboratories

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-MW-016S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	278827
% Solids:		Date Received:	10/08/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/19/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
100-42-5	Styrene	0.040	U
1330-20-7	m & p-Xylene	0.12	U
87-61-6	1,2,3-Trichlorobenzene	0.080	U
96-12-8	1,2-Dibromo-3-chloropropane	0.026	U
106-93-4	1,2-Dibromoethane	0.023	U
74-97-5	Bromochloromethane	0.050	U
75-71-8	Dichlorodifluoromethane	0.060	U
98-82-8	Isopropylbenzene	0.030	U
1634-04-4	Methyl tert-butyl ether	0.050	U
95-47-6	o-Xylene	0.040	U
156-60-5	trans-1,2-Dichloroethene	5.0	

CT Laboratories

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Sample Description

VOLATILE ORGANICS ANALYSIS DATA SHEET

OEP-MW-016S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	278827
% Solids:		Date Received:	10/08/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/21/2004
		Dilution Factor:	50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	- - - - - - Vinyl chloride	85	
156-59-2	- - - - - - cis-1,2-Dichloroethene	190	

CT Laboratories

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-MW-016S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	278827
% Solids:		Date Received:	10/08/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	Modified RSK 17	Date Analyzed:	10/13/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
78-84-0	- - - - - - Ethane	1.8	
74-85-1	- - - - - - Ethene	12	

CT Laboratories

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Sample Description

VOLATILE ORGANICS ANALYSIS DATA SHEET

OEP-MW-016S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	278827
% Solids:		Date Received:	10/08/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	Modified RSK 17	Date Analyzed:	10/13/2004
		Dilution Factor:	50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-82-8	- - - - - - Methane	680	

CT Laboratories

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description: OEP-MW-105D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279452
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/19/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	0.05C	U
74-83-9	Bromomethane	0.06C	U
75-01-4	Vinyl chloride	1.5	
541-73-1	1,3-Dichlorobenzene	0.04C	U
75-00-3	Chloroethane	0.06C	U
106-46-7	1,4-Dichlorobenzene	0.05C	U
75-09-2	Methylene chloride	0.11	U Q
95-50-1	1,2-Dichlorobenzene	0.04C	U
67-64-1	Acetone	1.5	U
75-15-0	Carbon disulfide	0.10	U
75-35-4	1,1-Dichloroethene	2.6	
67-66-3	Chloroform	0.07C	U
107-06-2	1,2-Dichloroethane	0.17	
78-93-3	2-Butanone	0.40	U
71-55-6	1,1,1-Trichloroethane	0.50	
56-23-5	Carbon tetrachloride	0.05C	U
75-27-4	Bromodichloromethane	0.04C	U
78-87-5	1,2-Dichloropropane	0.06C	U
120-82-1	1,2,4-Trichlorobenzene	0.06C	U
10061-01-5	cis-1,3-Dichloropropene	0.01C	U
124-48-1	Dibromochloromethane	0.09C	U
79-00-5	1,1,2-Trichloroethane	0.09C	U
71-43-2	Benzene	0.05C	U
10061-02-6	trans-1,3-Dichloropropene	0.01C	U
75-25-2	Bromoform	0.07C	U
108-10-1	4-Methyl-2-pentanone	0.60	U
591-78-6	2-Hexanone	0.50	U
127-18-4	Tetrachloroethene	0.05C	U
79-34-5	1,1,2,2-Tetrachloroethane	0.01C	U
108-88-3	Toluene	0.08C	U
108-90-7	Chlorobenzene	0.05C	U
100-41-4	Ethylbenzene	0.05C	U
100-42-5	Styrene	0.04C	U

CT Laboratories

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-MW-105D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279452
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/19/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
1330-20-7	m & p-Xylene	0.12	U
87-61-6	1,2,3-Trichlorobenzene	0.080	U
96-12-8	1,2-Dibromo-3-chloropropane	0.026	U
106-93-4	1,2-Dibromoethane	0.023	U
74-97-5	Bromochloromethane	0.050	U
75-71-8	Dichlorodifluoromethane	0.060	U
98-82-8	Isopropylbenzene	0.030	U
1634-04-4	Methyl tert-butyl ether	0.050	U
95-47-6	o-Xylene	0.040	U
156-60-5	trans-1,2-Dichloroethene	2.6	

CT Laboratories

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-MW-105D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279452
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/21/2004
		Dilution Factor:	50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-34-3	1,1-Dichloroethane	16	
79-01-6	Trichloroethene	240	
156-59-2	cis-1,2-Dichloroethene	56	

CT Laboratories

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-MW-105D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279452
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	Modified RSK 17	Date Analyzed:	10/13/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
78-84-0	- - - - - - Ethane	0.62	
74-85-1	- - - - - - Ethene	0.80	

CT Laboratories

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description: OEP-MW-105D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279452
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	Modified RSK 17	Date Analyzed:	10/13/2004
		Dilution Factor:	20.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-82-8	- - - - - - Methane	1900	

CT Laboratories

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-MW-014D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279454
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/20/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	0.050	U
74-83-9	Bromomethane	0.060	U
75-01-4	Vinyl chloride	0.018	U
541-73-1	1,3-Dichlorobenzene	0.040	U
75-00-3	Chloroethane	0.060	U
106-46-7	1,4-Dichlorobenzene	0.050	U
75-09-2	Methylene chloride	0.11	U Q
95-50-1	1,2-Dichlorobenzene	0.040	U
67-64-1	Acetone	1.5	U
75-15-0	Carbon disulfide	0.10	U
75-35-4	1,1-Dichloroethene	0.060	U
75-34-3	1,1-Dichloroethane	0.031	U
67-66-3	Chloroform	0.070	U
107-06-2	1,2-Dichloroethane	0.040	U
78-93-3	2-Butanone	0.40	U
71-55-6	1,1,1-Trichloroethane	0.070	U
56-23-5	Carbon tetrachloride	0.050	U
75-27-4	Bromodichloromethane	0.040	U
78-87-5	1,2-Dichloropropane	0.060	U
120-82-1	1,2,4-Trichlorobenzene	0.060	U
10061-01-5	cis-1,3-Dichloropropene	0.016	U
79-01-6	Trichloroethene	0.030	U
124-48-1	Dibromochloromethane	0.090	U
79-00-5	1,1,2-Trichloroethane	0.090	U
71-43-2	Benzene	0.050	U
10061-02-6	trans-1,3-Dichloropropene	0.015	U
75-25-2	Bromoform	0.070	U
108-10-1	4-Methyl-2-pentanone	0.60	U
591-78-6	2-Hexanone	0.50	U
127-18-4	Tetrachloroethene	0.050	U
79-34-5	1,1,2,2-Tetrachloroethane	0.018	U
108-88-3	Toluene	0.080	U
108-90-7	Chlorobenzene	0.050	U

CT Laboratories

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Sample Description

VOLATILE ORGANICS ANALYSIS DATA SHEET

OEP-MW-014D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279454
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/20/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
100-41-4	Ethylbenzene	0.05C	U
100-42-5	Styrene	0.04C	U
1330-20-7	m & p-Xylene	0.12	U
87-61-6	1,2,3-Trichlorobenzene	0.08C	U
96-12-8	1,2-Dibromo-3-chloropropane	0.026	U
106-93-4	1,2-Dibromoethane	0.023	U
74-97-5	Bromochloromethane	0.05C	U
156-59-2	cis-1,2-Dichloroethene	0.06C	U
75-71-8	Dichlorodifluoromethane	0.06C	U
98-82-8	Isopropylbenzene	0.03C	U
1634-04-4	Methyl tert-butyl ether	0.05C	U
95-47-6	o-Xylene	0.04C	U
156-60-5	trans-1,2-Dichloroethene	0.04C	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-MW-014D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279454
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	Modified RSK 17	Date Analyzed:	10/13/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
78-84-0	Ethane	0.50	U
74-85-1	Ethene	0.50	U
74-82-8	Methane	14	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description: OEP-MW-105S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279456
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/20/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q	
74-87-3	Chloromethane	0.05	U	
74-83-9	Bromomethane	0.06	U	
75-01-4	Vinyl chloride	2.3		
541-73-1	1,3-Dichlorobenzene	0.04	U	
75-00-3	Chloroethane	0.06	U	
106-46-7	1,4-Dichlorobenzene	0.05	U	
75-09-2	Methylene chloride	0.11	U	Q
95-50-1	1,2-Dichlorobenzene	0.04	U	
67-64-1	Acetone	1.5	U	
75-15-0	Carbon disulfide	0.10	U	
75-35-4	1,1-Dichloroethene	0.94		
75-34-3	1,1-Dichloroethane	4.8		
67-66-3	Chloroform	0.07	U	
107-06-2	1,2-Dichloroethane	0.04	U	
78-93-3	2-Butanone	0.40	U	
71-55-6	1,1,1-Trichloroethane	0.64		
56-23-5	Carbon tetrachloride	0.05	U	
75-27-4	Bromodichloromethane	0.04	U	
78-87-5	1,2-Dichloropropane	0.06	U	
120-82-1	1,2,4-Trichlorobenzene	0.06	U	
10061-01-5	cis-1,3-Dichloropropene	0.01	U	
124-48-1	Dibromochloromethane	0.09	U	
79-00-5	1,1,2-Trichloroethane	0.09	U	
71-43-2	Benzene	0.05		
10061-02-6	trans-1,3-Dichloropropene	0.01	U	
75-25-2	Bromoform	0.07	U	
108-10-1	4-Methyl-2-pentanone	0.60	U	
591-78-6	2-Hexanone	0.50	U	
127-18-4	Tetrachloroethene	0.05	U	
79-34-5	1,1,2,2-Tetrachloroethane	0.01	U	
108-88-3	Toluene	0.08	U	
108-90-7	Chlorobenzene	0.60		
100-41-4	Ethylbenzene	0.05	U	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-MW-105S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279456
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/20/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
100-42-5	Styrene	0.040	U
1330-20-7	m & p-Xylene	0.12	U
87-61-6	1,2,3-Trichlorobenzene	0.080	U
96-12-8	1,2-Dibromo-3-chloropropane	0.026	U
106-93-4	1,2-Dibromoethane	0.023	U
74-97-5	Bromochloromethane	0.050	U
75-71-8	Dichlorodifluoromethane	0.060	U
98-82-8	Isopropylbenzene	0.030	U
1634-04-4	Methyl tert-butyl ether	0.17	
95-47-6	o-Xylene	0.040	U
156-60-5	trans-1,2-Dichloroethene	0.71	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description: OEP-MW-105S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279456
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/21/2004
		Dilution Factor:	20.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		Q
79-01-6	Trichloroethene	63	
156-59-2	cis-1,2-Dichloroethene	58	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-MW-105S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279456
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	Modified RSK 17	Date Analyzed:	10/13/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
78-84-0	Ethane	1.4	
74-85-1	Ethene	0.61	

CT Laboratories

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-MW-105S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279456
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	Modified RSK 17	Date Analyzed:	10/13/2004
		Dilution Factor:	10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-82-8	Methane	110	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-TB-004

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	TRIP BLANK	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279458
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/19/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q	
74-87-3	Chloromethane	0.19	B	
74-83-9	Bromomethane	0.060	U	
75-01-4	Vinyl chloride	0.018	U	
541-73-1	1,3-Dichlorobenzene	0.040	U	
75-00-3	Chloroethane	0.060	U	
106-46-7	1,4-Dichlorobenzene	0.050	U	
75-09-2	Methylene chloride	0.11	U	Q
95-50-1	1,2-Dichlorobenzene	0.040	U	
67-64-1	Acetone	1.5	U	
75-15-0	Carbon disulfide	0.10	U	
75-35-4	1,1-Dichloroethene	0.060	U	
75-34-3	1,1-Dichloroethane	0.031	U	
67-66-3	Chloroform	0.070	U	
107-06-2	1,2-Dichloroethane	0.040	U	
78-93-3	2-Butanone	0.40	U	
71-55-6	1,1,1-Trichloroethane	0.070	U	
56-23-5	Carbon tetrachloride	0.050	U	
75-27-4	Bromodichloromethane	0.040	U	
78-87-5	1,2-Dichloropropane	0.060	U	
120-82-1	1,2,4-Trichlorobenzene	0.060	U	
10061-01-5	cis-1,3-Dichloropropene	0.016	U	
79-01-6	Trichloroethene	0.030	U	
124-48-1	Dibromochloromethane	0.090	U	
79-00-5	1,1,2-Trichloroethane	0.090	U	
71-43-2	Benzene	0.050	U	
10061-02-6	trans-1,3-Dichloropropene	0.015	U	
75-25-2	Bromoform	0.070	U	
108-10-1	4-Methyl-2-pentanone	0.60	U	
591-78-6	2-Hexanone	0.50	U	
127-18-4	Tetrachloroethene	0.050	U	
79-34-5	1,1,2,2-Tetrachloroethane	0.018	U	
108-88-3	Toluene	0.080	U	
108-90-7	Chlorobenzene	0.050	U	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-TB-004

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	TRIP BLANK	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279458
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/19/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
100-41-4	Ethylbenzene	0.050	U
100-42-5	Styrene	0.040	U
1330-20-7	m & p-Xylene	0.12	U
87-61-6	1,2,3-Trichlorobenzene	0.080	U
96-12-8	1,2-Dibromo-3-chloropropane	0.026	U
106-93-4	1,2-Dibromoethane	0.023	U
74-97-5	Bromochloromethane	0.050	U
156-59-2	cis-1,2-Dichloroethene	0.060	U
75-71-8	Dichlorodifluoromethane	0.060	U
98-82-8	Isopropylbenzene	0.030	U
1634-04-4	Methyl tert-butyl ether	0.050	U
95-47-6	o-Xylene	0.040	U
156-60-5	trans-1,2-Dichloroethene	0.040	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description: OEP-MW-103D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279459
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/20/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q	
74-87-3	Chloromethane	0.05C	U	
74-83-9	Bromomethane	0.06C	U	
75-01-4	Vinyl chloride	2.9		
541-73-1	1,3-Dichlorobenzene	0.04C	U	
75-00-3	Chloroethane	0.98		
106-46-7	1,4-Dichlorobenzene	0.05C	U	
75-09-2	Methylene chloride	0.11	U	Q
95-50-1	1,2-Dichlorobenzene	0.04C	U	
67-64-1	Acetone	1.5	U	
75-15-0	Carbon disulfide	0.10	U	
67-66-3	Chloroform	1.2		
107-06-2	1,2-Dichloroethane	0.75		
78-93-3	2-Butanone	0.40	U	
56-23-5	Carbon tetrachloride	0.05C	U	
75-27-4	Bromodichloromethane	0.04C	U	
78-87-5	1,2-Dichloropropane	0.06C	U	
120-82-1	1,2,4-Trichlorobenzene	0.06C	U	
10061-01-5	cis-1,3-Dichloropropene	0.01C	U	
124-48-1	Dibromochloromethane	0.09C	U	
79-00-5	1,1,2-Trichloroethane	0.70		
71-43-2	Benzene	0.18		
10061-02-6	trans-1,3-Dichloropropene	0.01C	U	
75-25-2	Bromoform	0.07C	U	
108-10-1	4-Methyl-2-pentanone	0.60	U	
591-78-6	2-Hexanone	0.50	U	
127-18-4	Tetrachloroethene	0.05C	U	
79-34-5	1,1,2,2-Tetrachloroethane	0.01C	U	
108-88-3	Toluene	0.08C	U	
108-90-7	Chlorobenzene	0.07C		
100-41-4	Ethylbenzene	0.05C	U	
100-42-5	Styrene	0.04C	U	
1330-20-7	m & p-Xylene	0.12	U	
87-61-6	1,2,3-Trichlorobenzene	0.08C	U	

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Sample Description

VOLATILE ORGANICS ANALYSIS DATA SHEET

OEP-MW-103D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279459
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/20/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
96-12-8	1,2-Dibromo-3-chloropropane	0.026	U
106-93-4	1,2-Dibromoethane	0.023	U
74-97-5	Bromochloromethane	0.050	U
75-71-8	Dichlorodifluoromethane	0.060	U
98-82-8	Isopropylbenzene	0.030	U
1634-04-4	Methyl tert-butyl ether	0.050	U
95-47-6	o-Xylene	0.040	U
156-60-5	trans-1,2-Dichloroethene	5.5	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-MW-103D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279459
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/21/2004
		Dilution Factor:	100.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-35-4	1,1-Dichloroethene	80	
75-34-3	1,1-Dichloroethane	120	
71-55-6	1,1,1-Trichloroethane	480	
156-59-2	cis-1,2-Dichloroethene	360	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-MW-103D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279459
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/21/2004
		Dilution Factor:	500.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
79-01-6	- - - - - - Trichloroethene	2200	

CT Laboratories

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-MW-103D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279459
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	Modified RSK 17	Date Analyzed:	10/13/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
78-84-0	- - - - - - Ethane	0.60	
74-85-1	- - - - - - Ethene	0.96	

CT Laboratories

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Sample Description

VOLATILE ORGANICS ANALYSIS DATA SHEET

OEP-MW-103D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279459
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	Modified RSK 17	Date Analyzed:	10/13/2004
		Dilution Factor:	5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-82-8	- - - - - - Methane	72	

CT Laboratories

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description: OEP-MW-103S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279461
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/20/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q	
74-87-3	Chloromethane	0.050	U	
74-83-9	Bromomethane	0.060	U	
75-01-4	Vinyl chloride	0.40		
541-73-1	1,3-Dichlorobenzene	0.040	U	
75-00-3	Chloroethane	0.37		
106-46-7	1,4-Dichlorobenzene	0.050	U	
75-09-2	Methylene chloride	0.11	U	Q
95-50-1	1,2-Dichlorobenzene	0.040	U	
67-64-1	Acetone	1.5	U	
75-15-0	Carbon disulfide	0.10	U	
75-35-4	1,1-Dichloroethene	3.5		
75-34-3	1,1-Dichloroethane	7.6		
67-66-3	Chloroform	0.24		
107-06-2	1,2-Dichloroethane	0.26		
78-93-3	2-Butanone	0.40	U	
56-23-5	Carbon tetrachloride	0.050	U	
75-27-4	Bromodichloromethane	0.040	U	
78-87-5	1,2-Dichloropropane	0.060	U	
120-82-1	1,2,4-Trichlorobenzene	0.060	U	
10061-01-5	cis-1,3-Dichloropropene	0.016	U	
124-48-1	Dibromochloromethane	0.090	U	
79-00-5	1,1,2-Trichloroethane	0.090	U	
71-43-2	Benzene	0.096		
10061-02-6	trans-1,3-Dichloropropene	0.015	U	
75-25-2	Bromoform	0.070	U	
108-10-1	4-Methyl-2-pentanone	0.60	U	
591-78-6	2-Hexanone	0.50	U	
127-18-4	Tetrachloroethene	1.4		
79-34-5	1,1,2,2-Tetrachloroethane	0.018	U	
108-88-3	Toluene	0.080	U	
108-90-7	Chlorobenzene	3.5		
100-41-4	Ethylbenzene	0.050	U	
100-42-5	Styrene	0.040	U	

CT Laboratories

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description: OEP-MW-103S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279461
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/20/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
1330-20-7	m & p-Xylene	0.12	U
87-61-6	1,2,3-Trichlorobenzene	0.080	U
96-12-8	1,2-Dibromo-3-chloropropane	0.026	U
106-93-4	1,2-Dibromoethane	0.023	U
74-97-5	Bromochloromethane	0.050	U
75-71-8	Dichlorodifluoromethane	0.060	U
98-82-8	Isopropylbenzene	0.030	U
1634-04-4	Methyl tert-butyl ether	0.050	U
95-47-6	o-Xylene	0.040	U
156-60-5	trans-1,2-Dichloroethene	0.35	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-MW-103S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279461
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/21/2004
		Dilution Factor:	50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
71-55-6	1,1,1-Trichloroethane	140	
79-01-6	Trichloroethene	200	
156-59-2	cis-1,2-Dichloroethene	21	

CT Laboratories

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-MW-103S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279461
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	Modified RSK 17	Date Analyzed:	10/13/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
78-84-0	- - - - - - Ethane	0.50	U
74-85-1	- - - - - - Ethene	0.50	U
74-82-8	- - - - - - Methane	7.5	

CT Laboratories

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description: OEP-TB-003

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	TRIP BLANK	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279463
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/19/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	0.24	B
74-83-9	Bromomethane	0.060	U
75-01-4	Vinyl chloride	0.018	U
541-73-1	1,3-Dichlorobenzene	0.040	U
75-00-3	Chloroethane	0.060	U
106-46-7	1,4-Dichlorobenzene	0.050	U
75-09-2	Methylene chloride	0.11	U Q
95-50-1	1,2-Dichlorobenzene	0.040	U
67-64-1	Acetone	1.5	U
75-15-0	Carbon disulfide	0.10	U
75-35-4	1,1-Dichloroethene	0.060	U
75-34-3	1,1-Dichloroethane	0.031	U
67-66-3	Chloroform	0.070	U
107-06-2	1,2-Dichloroethane	0.040	U
78-93-3	2-Butanone	0.40	U
71-55-6	1,1,1-Trichloroethane	0.070	U
56-23-5	Carbon tetrachloride	0.050	U
75-27-4	Bromodichloromethane	0.040	U
78-87-5	1,2-Dichloropropane	0.060	U
120-82-1	1,2,4-Trichlorobenzene	0.060	U
10061-01-5	cis-1,3-Dichloropropene	0.016	U
79-01-6	Trichloroethene	0.030	U
124-48-1	Dibromochloromethane	0.090	U
79-00-5	1,1,2-Trichloroethane	0.090	U
71-43-2	Benzene	0.050	U
10061-02-6	trans-1,3-Dichloropropene	0.015	U
75-25-2	Bromoform	0.070	U
108-10-1	4-Methyl-2-pentanone	0.60	U
591-78-6	2-Hexanone	0.50	U
127-18-4	Tetrachloroethene	0.050	U
79-34-5	1,1,2,2-Tetrachloroethane	0.018	U
108-88-3	Toluene	0.080	U
108-90-7	Chlorobenzene	0.050	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-TB-003

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	TRIP BLANK	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279463
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/19/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
100-41-4	Ethylbenzene	0.050	U
100-42-5	Styrene	0.040	U
1330-20-7	m & p-Xylene	0.12	U
87-61-6	1,2,3-Trichlorobenzene	0.080	U
96-12-8	1,2-Dibromo-3-chloropropane	0.026	U
106-93-4	1,2-Dibromoethane	0.023	U
74-97-5	Bromochloromethane	0.050	U
156-59-2	cis-1,2-Dichloroethene	0.060	U
75-71-8	Dichlorodifluoromethane	0.060	U
98-82-8	Isopropylbenzene	0.030	U
1634-04-4	Methyl tert-butyl ether	0.050	U
95-47-6	o-Xylene	0.040	U
156-60-5	trans-1,2-Dichloroethene	0.040	U

CT Laboratories

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-MW-015D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279471
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/21/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	0.050	U
74-83-9	Bromomethane	0.060	U
75-01-4	Vinyl chloride	0.074	
541-73-1	1,3-Dichlorobenzene	0.040	U
75-00-3	Chloroethane	0.060	U
106-46-7	1,4-Dichlorobenzene	0.050	U
75-09-2	Methylene chloride	0.11	U Q
95-50-1	1,2-Dichlorobenzene	0.040	U
67-64-1	Acetone	1.5	U
75-15-0	Carbon disulfide	0.10	U
75-35-4	1,1-Dichloroethene	0.30	
75-34-3	1,1-Dichloroethane	0.13	
67-66-3	Chloroform	0.070	U
107-06-2	1,2-Dichloroethane	0.16	
78-93-3	2-Butanone	0.40	U
71-55-6	1,1,1-Trichloroethane	0.070	U
56-23-5	Carbon tetrachloride	0.050	U
75-27-4	Bromodichloromethane	0.040	U
78-87-5	1,2-Dichloropropane	0.060	U
120-82-1	1,2,4-Trichlorobenzene	0.060	U
10061-01-5	cis-1,3-Dichloropropene	0.016	U
124-48-1	Dibromochloromethane	0.090	U
79-00-5	1,1,2-Trichloroethane	0.090	U
71-43-2	Benzene	0.11	
10061-02-6	trans-1,3-Dichloropropene	0.015	U
75-25-2	Bromoform	0.070	U
108-10-1	4-Methyl-2-pentanone	0.60	U
591-78-6	2-Hexanone	0.50	U
127-18-4	Tetrachloroethene	0.050	U
79-34-5	1,1,2,2-Tetrachloroethane	0.018	U
108-88-3	Toluene	0.080	U
108-90-7	Chlorobenzene	4.1	
100-41-4	Ethylbenzene	0.050	U

CT Laboratories

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-MW-015D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279471
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/21/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
100-42-5	Styrene	0.040	U
1330-20-7	m & p-Xylene	0.12	U
87-61-6	1,2,3-Trichlorobenzene	0.080	U
96-12-8	1,2-Dibromo-3-chloropropane	0.026	U
106-93-4	1,2-Dibromoethane	0.023	U
74-97-5	Bromochloromethane	0.050	U
156-59-2	cis-1,2-Dichloroethene	6.0	
75-71-8	Dichlorodifluoromethane	0.060	U
98-82-8	Isopropylbenzene	0.030	U
1634-04-4	Methyl tert-butyl ether	0.69	
95-47-6	o-Xylene	0.040	U
156-60-5	trans-1,2-Dichloroethene	0.60	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-MW-015D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279471
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/21/2004
		Dilution Factor:	10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
79-01-6	- - - - - - Trichloroethene	41	

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Sample Description

VOLATILE ORGANICS ANALYSIS DATA SHEET

OEP-MW-015D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279471
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	Modified RSK 17	Date Analyzed:	10/13/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
78-84-0	Ethane	0.50	U
74-85-1	Ethene	0.50	U
74-82-8	Methane	4.6	

CT Laboratories

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description: OEP-MW-015S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279474
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/20/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q	
74-87-3	Chloromethane	0.05C	U	
74-83-9	Bromomethane	0.06C	U	
75-01-4	Vinyl chloride	0.018	U	
541-73-1	1,3-Dichlorobenzene	0.04C	U	
75-00-3	Chloroethane	0.06C	U	
106-46-7	1,4-Dichlorobenzene	0.05C	U	
75-09-2	Methylene chloride	0.11	U	M,Q
95-50-1	1,2-Dichlorobenzene	0.04C	U	
67-64-1	Acetone	1.5	U	
75-15-0	Carbon disulfide	0.10	U	M
75-35-4	1,1-Dichloroethene	0.06C	U	
75-34-3	1,1-Dichloroethane	0.031	U	
67-66-3	Chloroform	0.07C	U	
107-06-2	1,2-Dichloroethane	0.04C	U	
78-93-3	2-Butanone	0.40	U	
71-55-6	1,1,1-Trichloroethane	1.1		
56-23-5	Carbon tetrachloride	0.05C	U	
75-27-4	Bromodichloromethane	0.04C	U	
78-87-5	1,2-Dichloropropane	0.06C	U	
120-82-1	1,2,4-Trichlorobenzene	0.06C	U	
10061-01-5	cis-1,3-Dichloropropene	0.01C	U	
79-01-6	Trichloroethene	0.15		
124-48-1	Dibromochloromethane	0.09C	U	
79-00-5	1,1,2-Trichloroethane	0.09C	U	
71-43-2	Benzene	0.05C	U	
10061-02-6	trans-1,3-Dichloropropene	0.01C	U	
75-25-2	Bromoform	0.07C	U	
108-10-1	4-Methyl-2-pentanone	0.60	U	
591-78-6	2-Hexanone	0.50	U	
127-18-4	Tetrachloroethene	0.05C	U	
79-34-5	1,1,2,2-Tetrachloroethane	0.018	U	
108-88-3	Toluene	0.08C	U	
108-90-7	Chlorobenzene	0.05C	U	

CT Laboratories

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-MW-015S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279474
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/20/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
100-41-4	Ethylbenzene	0.050	U
100-42-5	Styrene	0.040	U
1330-20-7	m & p-Xylene	0.12	U
87-61-6	1,2,3-Trichlorobenzene	0.080	U
96-12-8	1,2-Dibromo-3-chloropropane	0.026	U
106-93-4	1,2-Dibromoethane	0.023	U
74-97-5	Bromochloromethane	0.050	U
156-59-2	cis-1,2-Dichloroethene	0.060	U
75-71-8	Dichlorodifluoromethane	0.060	U
98-82-8	Isopropylbenzene	0.030	U
1634-04-4	Methyl tert-butyl ether	0.050	U
95-47-6	o-Xylene	0.040	U
156-60-5	trans-1,2-Dichloroethene	0.040	U

CT Laboratories

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-MW-015S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279474
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	Modified RSK 17	Date Analyzed:	10/13/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
78-84-0	- - - - - - Ethane	0.50	U
74-85-1	- - - - - - Ethene	0.50	U
74-82-8	- - - - - - Methane	1.0	

CT Laboratories

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description: OEP-TB-002

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	TRIP BLANK	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279476
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/19/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	0.22	B
74-83-9	Bromomethane	0.060	U
75-01-4	Vinyl chloride	0.018	U
541-73-1	1,3-Dichlorobenzene	0.040	U
75-00-3	Chloroethane	0.060	U
106-46-7	1,4-Dichlorobenzene	0.050	U
75-09-2	Methylene chloride	0.11	U Q
95-50-1	1,2-Dichlorobenzene	0.040	U
67-64-1	Acetone	1.5	U
75-15-0	Carbon disulfide	0.10	U
75-35-4	1,1-Dichloroethene	0.060	U
75-34-3	1,1-Dichloroethane	0.031	U
67-66-3	Chloroform	0.070	U
107-06-2	1,2-Dichloroethane	0.040	U
78-93-3	2-Butanone	0.40	U
71-55-6	1,1,1-Trichloroethane	0.070	U
56-23-5	Carbon tetrachloride	0.050	U
75-27-4	Bromodichloromethane	0.040	U
78-87-5	1,2-Dichloropropane	0.060	U
120-82-1	1,2,4-Trichlorobenzene	0.060	U
10061-01-5	cis-1,3-Dichloropropene	0.016	U
79-01-6	Trichloroethene	0.030	U
124-48-1	Dibromochloromethane	0.090	U
79-00-5	1,1,2-Trichloroethane	0.090	U
71-43-2	Benzene	0.050	U
10061-02-6	trans-1,3-Dichloropropene	0.015	U
75-25-2	Bromoform	0.070	U
108-10-1	4-Methyl-2-pentanone	0.60	U
591-78-6	2-Hexanone	0.50	U
127-18-4	Tetrachloroethene	0.050	U
79-34-5	1,1,2,2-Tetrachloroethane	0.018	U
108-88-3	Toluene	0.080	U
108-90-7	Chlorobenzene	0.050	U

CT Laboratories

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-TB-002

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	TRIP BLANK	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279476
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/19/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
100-41-4	Ethylbenzene	0.05C	U
100-42-5	Styrene	0.04C	U
1330-20-7	m & p-Xylene	0.12	U
87-61-6	1,2,3-Trichlorobenzene	0.08C	U
96-12-8	1,2-Dibromo-3-chloropropane	0.02C	U
106-93-4	1,2-Dibromoethane	0.023	U
74-97-5	Bromochloromethane	0.05C	U
156-59-2	cis-1,2-Dichloroethene	0.06C	U
75-71-8	Dichlorodifluoromethane	0.06C	U
98-82-8	Isopropylbenzene	0.03C	U
1634-04-4	Methyl tert-butyl ether	0.05C	U
95-47-6	o-Xylene	0.04C	U
156-60-5	trans-1,2-Dichloroethene	0.04C	U

CT Laboratories

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-MW-001S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279477
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/20/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	0.050	U
74-83-9	Bromomethane	0.060	U
75-01-4	Vinyl chloride	0.018	U
541-73-1	1,3-Dichlorobenzene	0.040	U
75-00-3	Chloroethane	0.060	U
106-46-7	1,4-Dichlorobenzene	0.050	U
75-09-2	Methylene chloride	0.11	U Q
95-50-1	1,2-Dichlorobenzene	0.040	U
67-64-1	Acetone	1.5	U
75-15-0	Carbon disulfide	0.10	U
75-35-4	1,1-Dichloroethene	0.060	U
75-34-3	1,1-Dichloroethane	0.031	U
67-66-3	Chloroform	0.070	U
107-06-2	1,2-Dichloroethane	0.040	U
78-93-3	2-Butanone	0.40	U
71-55-6	1,1,1-Trichloroethane	0.070	U
56-23-5	Carbon tetrachloride	0.050	U
75-27-4	Bromodichloromethane	0.040	U
78-87-5	1,2-Dichloropropane	0.060	U
120-82-1	1,2,4-Trichlorobenzene	0.060	U
10061-01-5	cis-1,3-Dichloropropene	0.016	U
79-01-6	Trichloroethene	0.070	
124-48-1	Dibromochloromethane	0.090	U
79-00-5	1,1,2-Trichloroethane	0.090	U
71-43-2	Benzene	0.050	U
10061-02-6	trans-1,3-Dichloropropene	0.015	U
75-25-2	Bromoform	0.070	U
108-10-1	4-Methyl-2-pentanone	0.60	U
591-78-6	2-Hexanone	0.50	U
127-18-4	Tetrachloroethene	0.050	U
79-34-5	1,1,2,2-Tetrachloroethane	0.018	U
108-88-3	Toluene	0.080	U
108-90-7	Chlorobenzene	0.050	U

CT Laboratories

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-MW-001S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279477
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/20/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
100-41-4	Ethylbenzene	0.050	U
100-42-5	Styrene	0.040	U
1330-20-7	m & p-Xylene	0.12	U
87-61-6	1,2,3-Trichlorobenzene	0.080	U
96-12-8	1,2-Dibromo-3-chloropropane	0.026	U
106-93-4	1,2-Dibromoethane	0.023	U
74-97-5	Bromochloromethane	0.050	U
156-59-2	cis-1,2-Dichloroethene	0.060	U
75-71-8	Dichlorodifluoromethane	0.060	U
98-82-8	Isopropylbenzene	0.030	U
1634-04-4	Methyl tert-butyl ether	0.15	
95-47-6	o-Xylene	0.040	U
156-60-5	trans-1,2-Dichloroethene	0.040	U

CT Laboratories

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description: OEP-MW-001S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279477
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	Modified RSK 17	Date Analyzed:	10/13/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
78-84-0	Ethane	0.50	U
74-85-1	Ethene	0.50	U
74-82-8	Methane	2.3	

CT Laboratories

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description: OEP-MW-001SFR

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279479
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/20/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	0.050	U
74-83-9	Bromomethane	0.060	U
75-01-4	Vinyl chloride	0.018	U
541-73-1	1,3-Dichlorobenzene	0.040	U
75-00-3	Chloroethane	0.060	U
106-46-7	1,4-Dichlorobenzene	0.050	U
75-09-2	Methylene chloride	0.11	U Q
95-50-1	1,2-Dichlorobenzene	0.040	U
67-64-1	Acetone	1.5	U
75-15-0	Carbon disulfide	0.10	U
75-35-4	1,1-Dichloroethene	0.060	U
75-34-3	1,1-Dichloroethane	0.031	U
67-66-3	Chloroform	0.070	U
107-06-2	1,2-Dichloroethane	0.040	U
78-93-3	2-Butanone	0.40	U
71-55-6	1,1,1-Trichloroethane	0.070	U
56-23-5	Carbon tetrachloride	0.050	U
75-27-4	Bromodichloromethane	0.040	U
78-87-5	1,2-Dichloropropane	0.060	U
120-82-1	1,2,4-Trichlorobenzene	0.060	U
10061-01-5	cis-1,3-Dichloropropene	0.016	U
79-01-6	Trichloroethene	0.060	
124-48-1	Dibromochloromethane	0.090	U
79-00-5	1,1,2-Trichloroethane	0.090	U
71-43-2	Benzene	0.050	U
10061-02-6	trans-1,3-Dichloropropene	0.015	U
75-25-2	Bromoform	0.070	U
108-10-1	4-Methyl-2-pentanone	0.60	U
591-78-6	2-Hexanone	0.50	U
127-18-4	Tetrachloroethene	0.050	U
79-34-5	1,1,2,2-Tetrachloroethane	0.018	U
108-88-3	Toluene	0.080	U
108-90-7	Chlorobenzene	0.050	U

CT Laboratories

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-MW-001SFR

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279479
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/20/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
100-41-4	Ethylbenzene	0.050	U
100-42-5	Styrene	0.040	U
1330-20-7	m & p-Xylene	0.12	U
87-61-6	1,2,3-Trichlorobenzene	0.080	U
96-12-8	1,2-Dibromo-3-chloropropane	0.026	U
106-93-4	1,2-Dibromoethane	0.023	U
74-97-5	Bromochloromethane	0.050	U
156-59-2	cis-1,2-Dichloroethene	0.060	U
75-71-8	Dichlorodifluoromethane	0.060	U
98-82-8	Isopropylbenzene	0.030	U
1634-04-4	Methyl tert-butyl ether	0.12	
95-47-6	o-Xylene	0.040	U
156-60-5	trans-1,2-Dichloroethene	0.040	U

CT Laboratories

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description: OEP-MW-001SFR

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279479
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	Modified RSK 17	Date Analyzed:	10/13/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
78-84-0	Ethane	0.50	U
74-85-1	Ethene	0.50	U
74-82-8	Methane	2.6	

CT Laboratories

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description: OEP-EB-100

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279481
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/20/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	0.05C	U
74-83-9	Bromomethane	0.06C	U
75-01-4	Vinyl chloride	0.018	U
541-73-1	1,3-Dichlorobenzene	0.04C	U
75-00-3	Chloroethane	0.06C	U
106-46-7	1,4-Dichlorobenzene	0.05C	U
75-09-2	Methylene chloride	0.23	Q,A,B
95-50-1	1,2-Dichlorobenzene	0.04C	U
67-64-1	Acetone	1.5	U
75-15-0	Carbon disulfide	0.10	U
75-35-4	1,1-Dichloroethene	0.06C	U
75-34-3	1,1-Dichloroethane	0.031	U
67-66-3	Chloroform	0.52	
107-06-2	1,2-Dichloroethane	0.04C	U
78-93-3	2-Butanone	0.40	U
71-55-6	1,1,1-Trichloroethane	0.07C	U
56-23-5	Carbon tetrachloride	0.05C	U
75-27-4	Bromodichloromethane	0.04C	U
78-87-5	1,2-Dichloropropane	0.06C	U
120-82-1	1,2,4-Trichlorobenzene	0.06C	U
10061-01-5	cis-1,3-Dichloropropene	0.016	U
79-01-6	Trichloroethene	0.03C	U
124-48-1	Dibromochloromethane	0.09C	U
79-00-5	1,1,2-Trichloroethane	0.09C	U
71-43-2	Benzene	0.086	
10061-02-6	trans-1,3-Dichloropropene	0.015	U
75-25-2	Bromoform	0.07C	U
108-10-1	4-Methyl-2-pentanone	0.60	U
591-78-6	2-Hexanone	0.50	U
127-18-4	Tetrachloroethene	0.05C	U
79-34-5	1,1,2,2-Tetrachloroethane	0.018	U
108-88-3	Toluene	0.33	
108-90-7	Chlorobenzene	0.05C	U

CT Laboratories

1A

Sample Description

VOLATILE ORGANICS ANALYSIS DATA SHEET

OEP-EB-100

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279481
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/20/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
100-41-4	Ethylbenzene	0.099	
100-42-5	Styrene	0.063	
1330-20-7	m & p-Xylene	0.18	
87-61-6	1,2,3-Trichlorobenzene	0.080	U
96-12-8	1,2-Dibromo-3-chloropropane	0.026	U
106-93-4	1,2-Dibromoethane	0.023	U
74-97-5	Bromochloromethane	0.050	U
156-59-2	cis-1,2-Dichloroethene	0.060	U
75-71-8	Dichlorodifluoromethane	0.060	U
98-82-8	Isopropylbenzene	0.030	U
1634-04-4	Methyl tert-butyl ether	0.050	U
95-47-6	o-Xylene	0.081	
156-60-5	trans-1,2-Dichloroethene	0.040	U

CT Laboratories

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Sample Description

VOLATILE ORGANICS ANALYSIS DATA SHEET

OEP-EB-100

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279481
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	Modified RSK 17	Date Analyzed:	10/13/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
78-84-0	Ethane	0.50	U
74-85-1	Ethene	0.50	U
74-82-8	Methane	0.50	U

CT Laboratories

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description: OEP-FB-200

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279483
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/20/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	0.050	U
74-83-9	Bromomethane	0.060	U
75-01-4	Vinyl chloride	0.018	U
541-73-1	1,3-Dichlorobenzene	0.040	U
75-00-3	Chloroethane	0.060	U
106-46-7	1,4-Dichlorobenzene	0.050	U
75-09-2	Methylene chloride	0.14	Q,A,B
95-50-1	1,2-Dichlorobenzene	0.040	U
67-64-1	Acetone	1.5	U
75-15-0	Carbon disulfide	0.10	U
75-35-4	1,1-Dichloroethene	0.060	U
75-34-3	1,1-Dichloroethane	0.031	U
67-66-3	Chloroform	0.49	
107-06-2	1,2-Dichloroethane	0.040	U
78-93-3	2-Butanone	0.40	U
71-55-6	1,1,1-Trichloroethane	0.070	U
56-23-5	Carbon tetrachloride	0.050	U
75-27-4	Bromodichloromethane	0.045	
78-87-5	1,2-Dichloropropane	0.060	U
120-82-1	1,2,4-Trichlorobenzene	0.060	U
10061-01-5	cis-1,3-Dichloropropene	0.016	U
79-01-6	Trichloroethene	0.030	U
124-48-1	Dibromochloromethane	0.090	U
79-00-5	1,1,2-Trichloroethane	0.090	U
71-43-2	Benzene	0.092	
10061-02-6	trans-1,3-Dichloropropene	0.025	
75-25-2	Bromoform	0.070	U
108-10-1	4-Methyl-2-pentanone	0.60	U
591-78-6	2-Hexanone	0.50	U
127-18-4	Tetrachloroethene	0.050	U
79-34-5	1,1,2,2-Tetrachloroethane	0.018	U
108-88-3	Toluene	0.32	
108-90-7	Chlorobenzene	0.050	U

CT Laboratories

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-FB-200

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279483
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/20/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
100-41-4	Ethylbenzene	0.084	
100-42-5	Styrene	0.040	U
1330-20-7	m & p-Xylene	0.17	
87-61-6	1,2,3-Trichlorobenzene	0.080	U
96-12-8	1,2-Dibromo-3-chloropropane	0.026	U
106-93-4	1,2-Dibromoethane	0.023	U
74-97-5	Bromochloromethane	0.050	U
156-59-2	cis-1,2-Dichloroethene	0.060	U
75-71-8	Dichlorodifluoromethane	0.060	U
98-82-8	Isopropylbenzene	0.030	U
1634-04-4	Methyl tert-butyl ether	0.050	U
95-47-6	o-Xylene	0.064	
156-60-5	trans-1,2-Dichloroethene	0.040	U

CT Laboratories

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description: OEP-FB-200

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	GROUND WATER	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279483
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	Modified RSK 17	Date Analyzed:	10/13/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
78-84-0	Ethane	0.50	U
74-85-1	Ethene	0.50	U
74-82-8	Methane	0.50	U

CT Laboratories

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description: OEP-TB-005

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	TRIP BLANK	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279485
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/19/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q	
74-87-3	Chloromethane	0.37	B	
74-83-9	Bromomethane	0.060	U	
75-01-4	Vinyl chloride	0.018	U	
541-73-1	1,3-Dichlorobenzene	0.040	U	
75-00-3	Chloroethane	0.060	U	
106-46-7	1,4-Dichlorobenzene	0.050	U	
75-09-2	Methylene chloride	0.11	U	Q
95-50-1	1,2-Dichlorobenzene	0.040	U	
67-64-1	Acetone	1.5	U	
75-15-0	Carbon disulfide	0.10	U	
75-35-4	1,1-Dichloroethene	0.060	U	
75-34-3	1,1-Dichloroethane	0.031	U	
67-66-3	Chloroform	0.070	U	
107-06-2	1,2-Dichloroethane	0.040	U	
78-93-3	2-Butanone	0.40	U	
71-55-6	1,1,1-Trichloroethane	0.070	U	
56-23-5	Carbon tetrachloride	0.050	U	
75-27-4	Bromodichloromethane	0.040	U	
78-87-5	1,2-Dichloropropane	0.060	U	
120-82-1	1,2,4-Trichlorobenzene	0.060	U	
10061-01-5	cis-1,3-Dichloropropene	0.016	U	
79-01-6	Trichloroethene	0.030	U	
124-48-1	Dibromochloromethane	0.090	U	
79-00-5	1,1,2-Trichloroethane	0.090	U	
71-43-2	Benzene	0.050	U	
10061-02-6	trans-1,3-Dichloropropene	0.015	U	
75-25-2	Bromoform	0.070	U	
108-10-1	4-Methyl-2-pentanone	0.60	U	
591-78-6	2-Hexanone	0.50	U	
127-18-4	Tetrachloroethene	0.050	U	
79-34-5	1,1,2,2-Tetrachloroethane	0.018	U	
108-88-3	Toluene	0.080	U	
108-90-7	Chlorobenzene	0.050	U	

CT Laboratories

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Sample Description

OEP-TB-005

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix:	TRIP BLANK	SDG No.:	43523
Sample wt/vol:	(g/mL)	CTL Sample ID:	279485
% Solids:		Date Received:	10/12/2004
Soil Extract Vol:	(mL)	Date Extracted:	
Analytical Method:	EPA 8260B	Date Analyzed:	10/19/2004
		Dilution Factor:	1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
100-41-4	Ethylbenzene	0.050	U
100-42-5	Styrene	0.040	U
1330-20-7	m & p-Xylene	0.12	U
87-61-6	1,2,3-Trichlorobenzene	0.080	U
96-12-8	1,2-Dibromo-3-chloropropane	0.026	U
106-93-4	1,2-Dibromoethane	0.023	U
74-97-5	Bromochloromethane	0.050	U
156-59-2	cis-1,2-Dichloroethene	0.060	U
75-71-8	Dichlorodifluoromethane	0.060	U
98-82-8	Isopropylbenzene	0.030	U
1634-04-4	Methyl tert-butyl ether	0.050	U
95-47-6	o-Xylene	0.040	U
156-60-5	trans-1,2-Dichloroethene	0.040	U

METALS
CLP FORMS
DOCUMENTS

CT Laboratories

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INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-012D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	278804
Analytical Method:	EPA 6010B	Date Received:	10/08/2004

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Total Iron	2060			P
7439-96-5	Total Manganese	42.5			P

CT Laboratories

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INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-012D(F)

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	278817
Analytical Method:	EPA 6010B	Date Received:	10/08/2004

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Dissolved Iron	1010			P

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-012S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	278818
Analytical Method:	EPA 6010B	Date Received:	10/08/2004

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Total Iron	499			P
7439-96-5	Total Manganese	123			P

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-012S(F)

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	278819
Analytical Method:	EPA 6010B	Date Received:	10/08/2004

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Dissolved Iron	19.4			P

CT Laboratories

1

Sample Description

INORGANIC ANALYSIS DATA SHEET

OEP-MW-013D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	278820
Analytical Method:	EPA 6010B	Date Received:	10/08/2004

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Total Iron	2180			P
7439-96-5	Total Manganese	65.5			P

CT Laboratories

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INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-013D(F)

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	278821
Analytical Method:	EPA 6010B	Date Received:	10/08/2004

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Dissolved Iron	2180			P

CT Laboratories

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INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-016S

Lab Name: CT Laboratories Contract: CH2M HILL-OCONOMOWOC EP

Matrix (soil/water) GROUND WATER SDG No.: 43523

% Solids: Lab Sample ID: 278827

Analytical Method: EPA 6010B Date Received: 10/08/2004

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Total Iron	6450			P
7439-96-5	Total Manganese	81.5			P

CT Laboratories

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INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-016S(F)

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	278828
Analytical Method:	EPA 6010B	Date Received:	10/08/2004

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Dissolved Iron	5830			P

CT Laboratories

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INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-105D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279452
Analytical Method:	EPA 6010B	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Total Iron	845			P
7439-96-5	Total Manganese	67.5			P

CT Laboratories

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INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-105D(F)

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279453
Analytical Method:	EPA 6010B	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Dissolved Iron	863			P

CT Laboratories

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INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-014D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279454
Analytical Method:	EPA 6010B	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Total Iron	25	U		P
7439-96-5	Total Manganese	67.0			P

CT Laboratories

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INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-014D(F)

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279455
Analytical Method:	EPA 6010B	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Dissolved Iron	14.1[illegible]	U		P

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-105S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279456
Analytical Method:	EPA 6010B	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Total Iron	384			P
7439-96-5	Total Manganese	227			P

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-105S (F)

Lab Name: CT Laboratories

Contract: CH2M HILL-OCONOMOWOC EP

Matrix (soil/water) GROUND WATER

SDG No.: 43523

% Solids:

Lab Sample ID: 279457

Analytical Method: EPA 6010B

Date Received: 10/12/2004

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Dissolved Iron	338			P

CT Laboratories

1

Sample Description

INORGANIC ANALYSIS DATA SHEET

OEP-MW-103D

Lab Name: CT Laboratories Contract: CH2M HILL-OCONOMOWOC EP

Matrix (soil/water) GROUND WATER SDG No.: 43523

% Solids: Lab Sample ID: 279459

Analytical Method: EPA 6010B Date Received: 10/12/2004

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Total Iron	29.6			P
7439-96-5	Total Manganese	283			P

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-103D(F)

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279460
Analytical Method:	EPA 6010B	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Dissolved Iron	14.1[illegible]	U		P

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-103S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279461
Analytical Method:	EPA 6010B	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Total Iron	154			P
7439-96-5	Total Manganese	402			P

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-103S(F)

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279462
Analytical Method:	EPA 6010B	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Dissolved Iron	139			P

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description: OEP-MW-015D

Lab Name: CT Laboratories
Contract: CH2M HILL-OCONOMOWOC EP
Matrix (soil/water): GROUND WATER
SDG No.: 43523
% Solids:
Lab Sample ID: 279471
Analytical Method: EPA 6010B
Date Received: 10/12/2004

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Total Iron	25	U		P
7439-96-5	Total Manganese	314			P

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-015D(F)

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279472
Analytical Method:	EPA 6010B	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Dissolved Iron	14.16	U		P

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-015S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279474
Analytical Method:	EPA 6010B	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Total Iron	224			P
7439-96-5	Total Manganese	9.6			P

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-015S(F)

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279475
Analytical Method:	EPA 6010B	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Dissolved Iron	14.1[illegible]	U		P

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-001S

Lab Name: CT Laboratories

Contract: CH2M HILL-OCONOMOWOC EP

Matrix (soil/water) GROUND WATER

SDG No.: 43523

% Solids:

Lab Sample ID: 279477

Analytical Method: EPA 6010B

Date Received: 10/12/2004

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Total Iron	281			P
7439-96-5	Total Manganese	14.6			P

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-001S(F)

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279478
Analytical Method:	EPA 6010B	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Dissolved Iron	14.1[illegible]	U		P

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-001SFR

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279479
Analytical Method:	EPA 6010B	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Total Iron	163			P
7439-96-5	Total Manganese	15.0			P

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-001SFR(F)

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279480
Analytical Method:	EPA 6010B	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Dissolved Iron	14.1[illegible]	U		P

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-EB-100

Lab Name: CT Laboratories Contract: CH2M HILL-OCONOMOWOC EP

Matrix (soil/water) GROUND WATER SDG No.: 43523

% Solids: Lab Sample ID: 279481

Analytical Method: EPA 6010B Date Received: 10/12/2004

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Total Iron	25	U		P
7439-96-5	Total Manganese	2.0	U		P

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-EB-100

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279482
Analytical Method:	EPA 6010B	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Dissolved Iron	14.16	U		P

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-FB-200

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279483
Analytical Method:	EPA 6010B	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Total Iron	25	U		P
7439-96-5	Total Manganese	2.0	U		P

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CT Laboratories

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Sample Description

INORGANIC ANALYSIS DATA SHEET

OEP-MW-012D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	278804
Analytical Method:	EPA 376.1	Date Received:	10/08/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
18496-25-8	Total Sulfide	1.0	U		TIT

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-012D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	278804
Analytical Method:	EPA 9060	Date Received:	10/08/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
	Total Organic Carbo	4.6			TOC

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-012S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	278818
Analytical Method:	EPA 376.1	Date Received:	10/08/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
18496-25-8	Total Sulfide	1.0	U		TIT

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-012S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	278818
Analytical Method:	EPA 9060	Date Received:	10/08/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
	Total Organic Carbo	4.7			TOC

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-013D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	278820
Analytical Method:	EPA 376.1	Date Received:	10/08/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
18496-25-8	Total Sulfide	1.0	U		TIT

CT Laboratories

1

Sample Description

INORGANIC ANALYSIS DATA SHEET

OEP-MW-013D

Lab Name: CT Laboratories Contract: CH2M HILL-OCONOMOWOC EP

Matrix (soil/water) GROUND WATER SDG No.: 43523

% Solids: Lab Sample ID: 278820

Analytical Method: EPA 9060 Date Received: 10/08/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
	Total Organic Carbo	4.9			TOC

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-016S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	278827
Analytical Method:	EPA 376.1	Date Received:	10/08/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
18496-25-8	Total Sulfide	1.0	U		TIT

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-016S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	278827
Analytical Method:	EPA 9060	Date Received:	10/08/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
	Total Organic Carbo	5.0			TOC

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-105D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279452
Analytical Method:	EPA 376.1	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
18496-25-8	Total Sulfide	1.0	U		TIT

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-105D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279452
Analytical Method:	EPA 9060	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
	Total Organic Carbo	4.1			TOC

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-014D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279454
Analytical Method:	EPA 376.1	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
18496-25-8	Total Sulfide	1.0	U		TIT

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-014D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279454
Analytical Method:	EPA 9060	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
	Total Organic Carbo	2.7			TOC

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-105S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279456
Analytical Method:	EPA 376.1	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
18496-25-8	Total Sulfide	1.0	U		TIT

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-105S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279456
Analytical Method:	EPA 9060	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
	Total Organic Carbo	3.5			TOC

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-103D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279459
Analytical Method:	EPA 376.1	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
18496-25-8	Total Sulfide	1.0	U		TIT

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-103D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279459
Analytical Method:	EPA 9060	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
	Total Organic Carbo	5.3			TOC

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-103S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279461
Analytical Method:	EPA 376.1	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
18496-25-8	Total Sulfide	1.0	U		TIT

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-103S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279461
Analytical Method:	EPA 9060	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
	Total Organic Carbo	6.6			TOC

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-015D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279471
Analytical Method:	EPA 376.1	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
18496-25-8	Total Sulfide	1.0	U		TIT

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-015D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279471
Analytical Method:	EPA 9060	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
	Total Organic Carbo	3.3			TOC

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-015S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279474
Analytical Method:	EPA 376.1	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
18496-25-8	Total Sulfide	1.0	U		TIT

CT Laboratories

1

Sample Description

INORGANIC ANALYSIS DATA SHEET

OEP-MW-015S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279474
Analytical Method:	EPA 9060	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
	Total Organic Carbo	1.5			TOC

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-001S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279477
Analytical Method:	EPA 376.1	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
18496-25-8	Total Sulfide	1.0	U		TIT

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-001S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279477
Analytical Method:	EPA 9060	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
	Total Organic Carbo	1.6			TOC

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-001SFR

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279479
Analytical Method:	EPA 376.1	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
18496-25-8	Total Sulfide	1.0	U		TIT

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-001SFR

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279479
Analytical Method:	EPA 9060	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
	Total Organic Carbo	1.4			TOC

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-EB-100

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279481
Analytical Method:	EPA 9060	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
	Total Organic Carbo	0.84	U		TOC

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-FB-200

Lab Name: CT Laboratories

Contract: CH2M HILL-OCONOMOWOC EP

Matrix (soil/water) GROUND WATER

SDG No.: 43523

% Solids:

Lab Sample ID: 279483

Analytical Method: EPA 9060

Date Received: 10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
	Total Organic Carbo	0.84	U		TOC

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description: OEP-MW-012D

Lab Name: CT Laboratories
Contract: CH2M HILL-OCONOMOWOC EP
Matrix (soil/water): GROUND WATER
SDG No.: 43523
% Solids:
Lab Sample ID: 278804
Analytical Method: EPA 9056
Date Received: 10/08/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
14797-55-8	Nitrate Nitrogen To	0.06C	U		IC
16887-00-6	Total Chloride	224			IC
14808-79-8	Total Sulfate	85.2			IC

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-012S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	278818
Analytical Method:	EPA 9056	Date Received:	10/08/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
14797-55-8	Nitrate Nitrogen To	0.06C	U		IC
16887-00-6	Total Chloride	207			IC
14808-79-8	Total Sulfate	60.0			IC

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-013D

Lab Name: CT Laboratories Contract: CH2M HILL-OCONOMOWOC EP

Matrix (soil/water) GROUND WATER SDG No.: 43523

% Solids: Lab Sample ID: 278820

Analytical Method: EPA 9056 Date Received: 10/08/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
14797-55-8	Nitrate Nitrogen To	0.060	U		IC
16887-00-6	Total Chloride	271			IC
14808-79-8	Total Sulfate	225			IC

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-016S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	278827
Analytical Method:	EPA 9056	Date Received:	10/08/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
14797-55-8	Nitrate Nitrogen To	0.060	U		IC
16887-00-6	Total Chloride	155			IC
14808-79-8	Total Sulfate	941			IC

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description: OEP-MW-105D

Lab Name: CT Laboratories | Contract: CH2M HILL-OCONOMOWOC EP

Matrix (soil/water): GROUND WATER | SDG No.: 43523

% Solids: | Lab Sample ID: 279452

Analytical Method: EPA 9056 | Date Received: 10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
14797-55-8	Nitrate Nitrogen To	0.06C	U	H	IC
16887-00-6	Total Chloride	159			IC
14808-79-8	Total Sulfate	75.9			IC

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-014D

Lab Name: CT Laboratories

Contract: CH2M HILL-OCONOMOWOC EP

Matrix (soil/water) GROUND WATER

SDG No.: 43523

% Solids:

Lab Sample ID: 279454

Analytical Method: EPA 9056

Date Received: 10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
14797-55-8	Nitrate Nitrogen To	0.97C		H	IC
16887-00-6	Total Chloride	82.9			IC
14808-79-8	Total Sulfate	32.4			IC

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-105S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279456
Analytical Method:	EPA 9056	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
14797-55-8	Nitrate Nitrogen To	0.060	U	H	IC
16887-00-6	Total Chloride	281			IC
14808-79-8	Total Sulfate	77.5			IC

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-103D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279459
Analytical Method:	EPA 9056	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
14797-55-8	Nitrate Nitrogen To	0.060	U	H	IC
16887-00-6	Total Chloride	200			IC
14808-79-8	Total Sulfate	60.0			IC

CT Laboratories

1

Sample Description

INORGANIC ANALYSIS DATA SHEET

OEP-MW-103S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279461
Analytical Method:	EPA 9056	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
14797-55-8	Nitrate Nitrogen To	0.19	C	H	IC
16887-00-6	Total Chloride	218			IC
14808-79-8	Total Sulfate	128			IC

CT Laboratories

1

Sample Description

INORGANIC ANALYSIS DATA SHEET

OEP-MW-015D

Lab Name: CT Laboratories Contract: CH2M HILL-OCONOMOWOC EP

Matrix (soil/water) GROUND WATER SDG No.: 43523

% Solids: Lab Sample ID: 279471

Analytical Method: EPA 9056 Date Received: 10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
14797-55-8	Nitrate Nitrogen To	0.16C		H	IC
16887-00-6	Total Chloride	291			IC
14808-79-8	Total Sulfate	43.8			IC

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-015S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279474
Analytical Method:	EPA 9056	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
14797-55-8	Nitrate Nitrogen To	4.65		H,Y	IC
16887-00-6	Total Chloride	9.86		Y	IC
14808-79-8	Total Sulfate	13.1		Y	IC

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-001S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279477
Analytical Method:	EPA 9056	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
14797-55-8	Nitrate Nitrogen To	0.400		H	IC
16887-00-6	Total Chloride	65.9			IC
14808-79-8	Total Sulfate	47.2			IC

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description: OEP-MW-001SFR

Lab Name: CT Laboratories
Contract: CH2M HILL-OCONOMOWOC EP
Matrix (soil/water): GROUND WATER
SDG No.: 43523
% Solids:
Lab Sample ID: 279479
Analytical Method: EPA 9056
Date Received: 10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
14797-55-8	Nitrate Nitrogen To	0.450		H	IC
16887-00-6	Total Chloride	60.0			IC
14808-79-8	Total Sulfate	46.8			IC

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-EB-100

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279481
Analytical Method:	EPA 9056	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
14797-55-8	Nitrate Nitrogen To	0.120			IC
16887-00-6	Total Chloride	0.52	U		IC
14808-79-8	Total Sulfate	0.74	U		IC

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-FB-200

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279483
Analytical Method:	EPA 9056	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
14797-55-8	Nitrate Nitrogen To	0.06	U	H	IC
16887-00-6	Total Chloride	0.52	U		IC
14808-79-8	Total Sulfate	0.74	U		IC

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-012D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	278804
Analytical Method:	EPA 310.2	Date Received:	10/08/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
	Alkalinity Total	392			AS

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-012S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	278818
Analytical Method:	EPA 310.2	Date Received:	10/08/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
	Alkalinity Total	391			AS

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-013D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	278820
Analytical Method:	EPA 310.2	Date Received:	10/08/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
	Alkalinity Total	475			AS

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-016S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	278827
Analytical Method:	EPA 310.2	Date Received:	10/08/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
	Alkalinity Total	930			AS

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-105D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279452
Analytical Method:	EPA 310.2	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
	Alkalinity Total	362			AS

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-014D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279454
Analytical Method:	EPA 310.2	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
	Alkalinity Total	347			AS

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-105S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279456
Analytical Method:	EPA 310.2	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
	Alkalinity Total	367			AS

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-103D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279459
Analytical Method:	EPA 310.2	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
	Alkalinity Total	452			AS

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description: OEP-MW-103S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279461
Analytical Method:	EPA 310.2	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
	Alkalinity Total	445			AS

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-015D

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279471
Analytical Method:	EPA 310.2	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
	Alkalinity Total	422			AS

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-015S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279474
Analytical Method:	EPA 310.2	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
	Alkalinity Total	229			AS

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-001S

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279477
Analytical Method:	EPA 310.2	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
	Alkalinity Total	370			AS

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-MW-001SFR

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279479
Analytical Method:	EPA 310.2	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
	Alkalinity Total	367			AS

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-EB-100

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279481
Analytical Method:	EPA 310.2	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
	Alkalinity Total	17.1		B	AS

CT Laboratories

1

INORGANIC ANALYSIS DATA SHEET

Sample Description

OEP-FB-200

Lab Name:	CT Laboratories	Contract:	CH2M HILL-OCONOMOWOC EP
Matrix (soil/water)	GROUND WATER	SDG No.:	43523
% Solids:		Lab Sample ID:	279483
Analytical Method:	EPA 310.2	Date Received:	10/12/2004

Concentration Units (ug/L or mg/kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	Q	M
	Alkalinity Total	12.5		B	AS