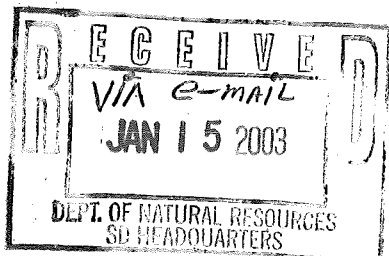


FOR DECEMBER 2002

**MONTHLY MONITORING REPORT
FOR THE
OCONOMOWOC ELECTROPLATING
GROUNDWATER TREATMENT FACILITY**



ASHIPPUN, WISCONSIN 53003

Prepared for:

**U.S. ARMY CORPS OF ENGINEERS
ST. PAUL DISTRICT
WINONA, MINNESOTA
CONTRACT DACW37-01-C-0004**

Prepared by:

**APL, Inc.
8222 West Calumet Road
Milwaukee, WI 53223**

January 15, 2003

1.0 Introduction

This report summarizes the monthly effluent monitoring results for the Oconomowoc Electroplating Groundwater Treatment Plant (OEGTP) for December, 2002. The OEGTP is located at the site of the former Oconomowoc Electroplating Company, in Ashippun, WI.

Laboratory results of effluent sampling can be found in the Discharge Monitoring Report Form, sent under separate cover. The effluent sampling was conducted by Dean Groleau and Burt Bushke of APL, Inc. Laboratory analysis was provided by APL, Inc., 8222 W. Calumet Road, Milwaukee, WI 53223 and En Chem, Inc., 1241 Bellevue Street, Green Bay, WI 54302. All sampling and analyses were conducted in accordance with the Oconomowoc Electroplating Groundwater Treatment System's Chemical Data Acquisition Plan (CDAP). The parameters tested for, frequency of testing, sample type, and limits are set forth in the Final Discharge Limits, Table 1 of the Oconomowoc Electroplating Superfund Site Limits and Requirements for Discharge of Treated Groundwater, issued by the Wisconsin Department of Natural Resources (WDNR) on September 24, 1996. This report is submitted in accordance with the reporting requirements of the WDNR permit.

1.1 Site Background Review

The OEGTP is located at 2572 Oak Street in Ashippun, Wisconsin, in the NW 1/4 of the SE 1/4 of Section 30, Township 30 North, Range 17 East. The site consists of approximately 10 acres, which includes approximately 3.5 acres of the former electroplating facility. The site is bounded by Oak Street (Highway 'O') and Eva Street to the North, and Davey Creek and the Town of Ashippun's garage facilities to the South. The property directly across Oak Street is occupied by Thermogas, Inc. A residential area is located across Eva Street, and a wetlands surrounds Davey Creek.

The contact person is Sharonne Baylor of the U.S. Army Corps of Engineers (USACE). Ms. Baylor can be reached at (507) 454-6150, Fax (507) 454-4963, or Sharonne.N.Baylor@mvp02.usace.army.mil. The contact for the Treatment Plant is Dean Groleau who can be reached at (920) 474-3212, Fax (920) 474-4241, or ogtp@netwurx.net. APL, Inc. is contracted by the USACE to operate and maintain the plant. The contact for APL, Inc. is James Chang, who can be reached at (414) 355-5800, Fax (414) 355-3099, or jschang@aaahawk.com.

1.2 Project Objectives

The objective of this project is to prevent the spreading of any plume of contamination that may exist at the site. Contaminated groundwater is pumped from five extraction wells, treated for iron bacteria, suspended solids, and volatile organic compounds (VOC's). The treated water is then transferred to a groundwater effluent gallery, located south of Elm Street, near Davey Creek.

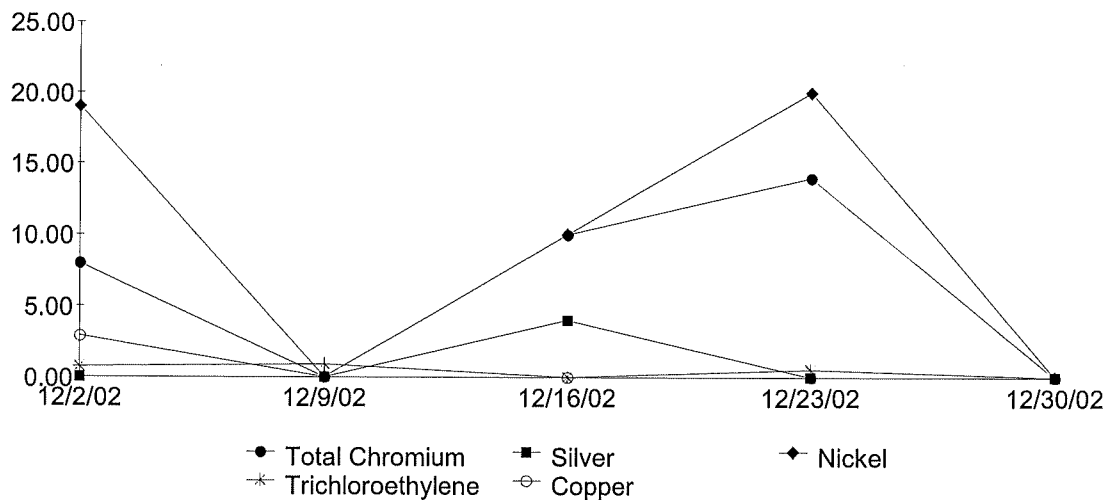
1.3 Effluent Monitoring

Weekly monitoring was conducted on December 2, 9, 16, 23, and 30. The weekly samples for December were tested by APL, Inc. The monthly samples that were taken on December 2, were split-sampled and sent to En Chem, Inc. located in Green Bay, WI. This was requested by the USACE and is conducted quarterly for their QA requirements. The results of the effluent monitoring tests for the samples taken in December showed exceedences in Trichloroethylene and Total Chromium of the WDNR effluent discharge permit.

1.4 Monitoring Results

Results from weekly effluent monitoring can be found in the *Discharge Monitoring Report Form*, sent under a separate cover. Chart 1, below, shows the results of effluent monitoring for five important indicator parameters listed in the Monitoring Requirements of the *Oconomowoc Electroplating Superfund Site Substantive WPDES Permit Requirements Summary (9/96)*.

Chart 1 - 5 Important Indicator Parameters



1.5 Monitoring Well Monitoring

Another round of Monitoring Well sampling was conducted on December 2, 3, and 4. The Monitoring Well sampling is conducted on a quarterly basis. The results of the Monitoring Wells' analyses are enclosed with this report.

2.0 Plant Permit Exceedences

The results of the effluent monitoring tests for the samples taken in December showed exceedences in Trichloroethylene of the WDNR effluent discharge permit. Paul Kozol, Project Manager from the WDNR, was notified about the exceedences of Trichloroethylene from the December 2, 9, and 23 samplings. On December 11, Mr. Kozol allowed the treatment plant to

continue to run unless the Trichloroethylene results were > 1.0 ug/l for 3 consecutive weeks. If the Trichloroethylene results were > 1.0 ug/l for 3 consecutive weeks, then a more drastic decision will be made on allowing the treatment plant to continue to operate. The December 2 Trichloroethylene result was 0.73 ug/l. The December 9 Trichloroethylene result was 0.91 ug/l. The December 23 Trichloroethylene result was 0.55 ug/l. The permit limit is 0.5 ug/l. The possible causes of the Trichloroethylene exceedences may be due to old (spent) Carbon or too much Iron Bacteria imbedded into the Carbon that was preventing the adsorption of VOC's. The operators have performed acid cleansings of both Carbon Filters since the exceedences.

Paul Kozol, Project Manager from the WDNR, was notified about the exceedence of Total Chromium from the December 23 sampling. The December 23 result of Total Chromium was 20 ug/l. The permit limit for Total Chromium is 10 ug/l. The December 23 sample was re-tested for Total Chromium and the result of the re-test for Total Chromium was 14 ug/l. Mr. Kozol allowed the treatment plant to continue operating based on both results fell between the lab's Level of Detection (8 ug/l) and Level of Quantitation (30 ug/l). Mr. Kozol stated that if the analyses show that the exceedences were continuing, then more drastic measures will be taken. The possible causes of the Total Chromium exceedence may be due to leaching of metals from the fittings or the flaking off of metals from the opening and closing of the Motor Operated Valve (MOV-711) during discharging of the Effluent Holding Tank (EHT-700). The operators are in the process of trying to find a replacement PVC-lined valve that will fit the actuator of MOV-711.

3.0 Treatment Plant Shut Downs

The Treatment Plant had no down time during the month of December, 2002.

4.0 Sludge Press Operations

The Sludge Filter Press (FP-800) was operated during the month of December, 2002. There was not enough sludge to completely fill the press, so, there were no press loads in the hopper at the end of December, 2002.

5.0 Summary

Groundwater Treatment Plant effluent monitoring was conducted on December 2, 9, 16, 23, and 30 of 2002. Another round of Monitoring Wells' samplings were conducted in December, 2002. The monthly samples that were taken on December 2, were split-sampled and sent to En Chem, Inc. located in Green Bay, WI. This was requested by the USACE and is conducted quarterly for their QA requirements. The laboratory results of these samples showed that there were exceedences of Trichloroethylene and Total Chromium from the limits listed in the requirements of the *Oconomowoc Electroplating Superfund Site Substantive WPDES Permit Requirements Summary (9/96)*. See Chart 1, Section 1.4 for *Important Indicator Parameters*.

During the month of December, 2002, the treatment plant had no down time.

The Sludge Filter Press (FP-800) was operated during the month of December, 2002. There were no Filter Press loads of dewatered sludge in the hopper at the end of December, 2002.

FLOW FROM EXTRACTION WELLS

YEAR: 2002			
MONTH: DEC. DAY	FE-100 FLOW TOTALIZER	TOTAL DAYS FLOW (GAL.)	DAILY FLOW MGD
1	6,356,208.00	44,319.00	0.044
2	6,400,527.00	36,543.00	0.037
3	6,437,070.00	33,660.00	0.034
4	6,470,730.00	31,827.00	0.032
5	6,502,557.00	33,098.00	0.033
6	6,535,655.00	25,829.00	0.026
7	6,561,484.00	35,033.00	0.035
8	6,596,517.00	39,771.00	0.040
9	6,636,288.00	35,978.00	0.036
10	6,672,266.00	32,326.00	0.032
11	6,704,592.00	36,399.00	0.036
12	6,740,991.00	35,408.00	0.035
13	6,776,399.00	23,726.00	0.024
14	6,800,125.00	34,193.00	0.034
15	6,834,318.00	46,189.00	0.046
16	6,880,507.00	33,756.00	0.034
17	6,914,263.00	33,086.00	0.033
18	6,947,359.00	35,152.00	0.035
19	6,982,511.00	34,384.00	0.034
20	7,016,895.00	29,924.00	0.030
21	7,046,819.00	32,002.00	0.032
22	7,078,821.00	43,398.00	0.043
23	7,122,219.00	30,102.00	0.030
24	7,152,321.00	27,652.00	0.028
25	7,179,973.00	46,897.00	0.047
26	7,226,870.00	34,618.00	0.035
27	7,261,488.00	22,433.00	0.022
28	7,283,921.00	32,598.00	0.033
29	7,316,519.00	49,989.60	0.050
30	7,366,508.60	28,316.40	0.028
31	7,394,825.00	24,917.00	0.025
January 01	7,419,742.00		
TOTAL			1.063
AVERAGE			0.034

SHUT DOWN
SHUT DOWN

SHUT DOWN
SHUT DOWN

FLOW FROM EQT-100

YEAR: 2002			
MONTH: DEC. DAY	FE-112 FLOW TOTALIZER	TOTAL DAY'S FLOW (GAL.)	DAILY FLOW MGD
1	9,512,861.00	53,257.00	0.053
2	9,566,118.00	43,959.00	0.044
3	9,610,077.00	38,094.00	0.038
4	9,648,171.00	37,858.00	0.038
5	9,686,029.00	41,378.00	0.041
6	9,727,407.00	32,535.00	0.033
7	9,759,942.00	43,624.00	0.044
8	9,803,566.00	44,188.00	0.044
9	9,847,754.00	45,371.00	0.045
10	9,893,125.00	36,772.00	0.037
11	9,929,897.00	44,444.00	0.044
12	9,974,341.00	44,689.21	0.045
13	10,019,030.21	27,000.61	0.027
14	10,046,030.82	40,694.43	0.041
15	10,086,725.25	59,128.35	0.059
16	10,145,853.80	42,360.50	0.042
17	10,188,214.10	41,580.40	0.042
18	10,229,794.50	39,469.80	0.039
19	10,269,264.30	40,522.90	0.041
20	10,309,787.20	35,134.40	0.035
21	10,344,921.60	37,387.40	0.037
22	10,382,309.00	52,417.60	0.052
23	10,434,726.60	36,685.60	0.037
24	10,471,412.20	29,134.30	0.029
25	10,500,546.60	54,413.90	0.054
26	10,554,960.40	43,070.10	0.043
27	10,598,030.60	25,530.60	0.026
28	10,623,561.00	37,474.20	0.037
29	10,661,035.20	61,354.20	0.061
30	10,722,389.40	34,810.40	0.035
31	10,757,199.80	30,391.80	0.030
January 01	10,787,591.60		

TOTAL 1.273
AVERAGE 0.041

EFFLUENT FLOW FROM PLANT

YEAR: 2002			
MONTH: DEC. DAY	NPDES STATION TOTALIZER	TOTAL DAY'S FLOW (GAL.)	DAILY FLOW MGD
1	276,843.80	46,040.80	0.046
2	322,884.60	40,175.30	0.040
3	363,059.90	31,279.20	0.031
4	394,339.10	32,296.80	0.032
5	426,634.90	34,637.70	0.035
6	461,272.60	28,814.80	0.029
7	490,087.20	39,309.20	0.039
8	529,396.40	35,587.20	0.036
9	564,983.60	40,624.50	0.041
10	605,608.10	29,236.70	0.029
11	634,844.80	37,564.80	0.038
12	672,409.60	38,241.20	0.038
13	710,650.80	23,401.20	0.023
14	734,052.00	37,636.50	0.038
15	771,688.50	49,442.40	0.049
16	821,130.90	40,393.80	0.040
17	861,524.70	32,821.10	0.033
18	894,346.80	36,395.80	0.036
19	930,741.60	32,927.90	0.033
20	963,669.50	32,201.40	0.032
21	995,870.90	33,612.10	0.034
22	1,029,483.00	44,919.00	0.045
23	1,074,402.00	33,882.00	0.034
24	1,108,284.00	26,659.00	0.027
25	1,134,943.00	44,377.00	0.044
26	1,179,320.00	37,882.00	0.038
27	1,217,002.00	23,544.00	0.024
28	1,240,546.00	34,798.00	0.035
29	1,275,344.00	37,237.00	0.037
30	1,312,581.00	37,237.00	0.037
31	1,349,818.00	37,239.00	0.037
January 01	1,387,057.00		
		TOTAL	1.110
		AVERAGE	0.036

OCONOMOWOC GROUNDWATER TREATMENT PLANT

Weekly Sampling Results

Date: 12-02-02

Parameter	Influent	After FT-311	After Air Stripper	After Carbon Filters	Effluent	WDNR Site Permit ug/l	
pH	6.9	7.4	N/A	N/A	7.7	Monitor	
TSS	<1	NT	NT	NT	<1/<5	Monitor	mg/l
Arsenic	<5.6	<5.6	<5.6	NT	<5.6/<8.2	5	
Barium	90	100	100	NT	90/100	400	
Cadmium	<0.4	<0.4	<0.4	NT	<0.4/<0.53	0.5	
Cadmium Total Recoverable	<0.4	<0.4	<0.4	NT	<0.4/<0.39	Monitor	
Chromium +6	<4.2	NT	NT	NT	<4.2/<2.5	Monitor	
Chromium Total	<8	<8	<8	NT	8/1.2	10	
Copper	<6	<6	<6	NT	<6/2.9	Monitor	
Iron	910	1000	970	NT	210/270	Monitor	
Lead	<1.5	<1.5	<1.5	NT	<1.5/<0.84	1.5	
Manganese	110	100	100	NT	8/13	Monitor	
Mercury	<0.2	<0.2	<0.2	NT	<0.2/<0.028	0.2	
Nickel	<11	<11	<11	NT	<11/19	20	
Selenium	<4.8	<4.8	<4.8	NT	<4.8/<3.5	10	
Silver	<4	<4	<4	NT	<4/<1.1	10	
Thallium	<1.3	<1.3	<1.3	NT	<1.3/<4.3	0.4	
Zinc	<14	<14	<14	NT	<14/4.6	Monitor	
Cyanide	<6	<6	NT	NT	<6/3.4	40	
Cyanide Amenable	<6	<6	NT	NT	<6/4.5	Monitor	
1,1-Dichloroethane	12	NT	<0.32	NT	<0.32/<0.87	85	
1,2-Dichloroethane	<1.8	NT	<0.35	NT	<0.35/<0.55	0.5	
1,1-Dichloroethene	2.2	NT	<0.34	NT	<0.34/<0.56	0.7	
1,2-Dichloroethene Cis	24	NT	<0.27	NT	<0.27/<0.81	7	
1,2-Dichloroethene Trans	4.5	NT	<0.25	NT	<0.25/<0.8	20	
Ethylbenzene	<1.3	NT	<0.25	NT	<0.25/<0.53	140	
Methylene Chloride	<1.5	NT	<0.3	NT	<0.3/<0.47	0.5	
Tetrachloroethene	<1.8	NT	<0.31	NT	<0.31/<0.63	0.5	
Toluene	<1.5	NT	<0.29	NT	<0.29/<0.84	68	
1,1,1-Trichloroethane	38	NT	<0.31	NT	<0.31/<0.65	40	
1,1,2-Trichloroethane	<2.2	NT	<0.44	NT	<0.44/<0.5	0.5	
TCE	167	NT	<0.34	NT	<0.34/0.73	0.5	**
Vinyl Chloride	1	NT	<0.2	NT	<0.2/<0.11	0.2	
Xylene Total	<2.7	NT	<0.53	NT	<0.53/<1.9	124	
Chlorine, Total	>200	NT	NT	49	<40	38	*
COD	<5.7	NT	NT	NT	<5.7/22	Monitor	mg/l
Phosphorus Total	NT	NT	NT	NT	0.12/<0.06	Monitor	mg/l
Nitrate + Nitrite	NT	NT	NT	NT	0.83/1.1	Monitor	mg/l
Ammonia Nitrogen	NT	NT	NT	NT	<0.1/<0.3	Monitor	mg/l

NT = Not Tested.

N/A = Not Applicable at this time.

ug/l = Micrograms per Liter.

mg/l = Milligrams per Liter.

* Chlorine, Total = Weekly average.

Sample Point "Effluent Grab & Composite Samples" were split sampled (second result) for the USACE QA Sampling Comparison with En Chem, Inc.

** Exceedences-

OCONOMOWOC GROUNDWATER TREATMENT PLANT

Weekly Sampling Results

Date: 12-09-02

Parameter	Influent	After FT-311	After Air Stripper	After Carbon Filters	Effluent	WDNR Site Permit ug/l	
pH	7/7.1	7.6	N/A	N/A	7.9	Monitor	
TSS	NT	NT	NT	NT	NT	Monitor	mg/l
Arsenic	<5.6/<5.6	NT	NT	NT	<5.6	5	
Barium	100/100	NT	NT	NT	90	400	
Cadmium	<0.4/<0.4	NT	NT	NT	<0.4	0.5	
Cadmium Total Recoverable	<0.4/<0.4	NT	NT	NT	<0.4	Monitor	
Chromium +6	<4.2/<4.2	NT	NT	NT	<4.2	Monitor	
Chromium Total	<8/20	NT	NT	NT	<8	10	
Copper	<6/<6	NT	NT	NT	<6	Monitor	
Iron	1200/1100	NT	NT	NT	180	Monitor	
Lead	<1.5/<1.5	NT	NT	NT	<1.5	1.5	
Manganese	120/130	NT	NT	NT	20	Monitor	
Mercury	<0.2/<0.2	NT	NT	NT	<0.2	0.2	
Nickel	<11/20	NT	NT	NT	<11	20	
Selenium	<4.8/<4.8	NT	NT	NT	<4.8	10	
Silver	<4/<4	NT	NT	NT	<4	10	
Thallium	<1.3/<1.3	NT	NT	NT	<1.3	0.4	
Zinc	<14/<14	NT	NT	NT	<14	Monitor	
Cyanide	10/10	NT	NT	NT	<6	40	
Cyanide Amenable	<6/<6	NT	NT	NT	<6	Monitor	
1,1-Dichloroethane	13/2.5	NT	<0.32	NT	<0.32	85	
1,2-Dichloroethane	<1.7/<0.35	NT	<0.35	NT	<0.35	0.5	
1,1-Dichloroethene	<2.2/<0.34	NT	<0.34	NT	<0.34	0.7	
1,2-Dichloroethene Cis	24/4.7	NT	<0.27	NT	<0.27	7	
1,2-Dichloroethene Trans	5.5/1.1	NT	<0.25	NT	<0.25	20	
Ethylbenzene	<1.3/<0.25	NT	<0.25	NT	<0.25	140	
Methylene Chloride	<1.5/<0.3	NT	<0.3	NT	<0.3	0.5	
Tetrachloroethene	<1.6/<0.31	NT	<0.31	NT	<0.31	0.5	
Toluene	<1.5/<0.29	NT	<0.29	NT	<0.29	68	
1,1,1-Trichloroethane	44/8.3	NT	0.47	NT	0.72	40	
1,1,2-Trichloroethane	<2.2/<0.44	NT	<0.44	NT	<0.44	0.5	
TCE	200/39	NT	0.76	NT	0.91	0.5	**
Vinyl Chloride	1.2/<0.2	NT	<0.2	NT	<0.2	0.2	
Xylene Total	<2.7/<0.53	NT	<0.53	NT	<0.53	124	
Chlorine, Total	>200	NT	NT	100	<40	38	*
COD	NT	NT	NT	NT	NT	Monitor	mg/l
Phosphorus Total	NT	NT	NT	NT	NT	Monitor	mg/l
Nitrate + Nitrite	NT	NT	NT	NT	NT	Monitor	mg/l
Ammonia Nitrogen	NT	NT	NT	NT	NT	Monitor	mg/l

NT = Not Tested.

N/A = Not Applicable at this time.

ug/l = Micrograms per Liter.

mg/l = Milligrams per Liter.

* Chlorine, Total = Weekly average.

** Exceedences-

Influent Sample Point was duplicate sampled (second result).

OCONOMOWOC GROUNDWATER TREATMENT PLANT

Weekly Sampling Results

Date: 12-16-02

Parameter	Influent	After FT-311	After Air Stripper	After Carbon Filters	Effluent	WDNR Site Permit ug/l	
pH	7	7.5	N/A	N/A	7.7	Monitor	
TSS	NT	NT	NT	NT	NT	Monitor	mg/l
Arsenic	<5.6	NT	NT	NT	<5.6	5	
Barium	110	NT	NT	NT	110	400	
Cadmium	<0.4	NT	NT	NT	<0.4	0.5	
Cadmium Total Recoverable	<0.4	NT	NT	NT	<0.4	Monitor	
Chromium +6	<4.2	NT	NT	NT	<4.2	Monitor	
Chromium Total	<8	NT	NT	NT	10	10	
Copper	<6	NT	NT	NT	<6	Monitor	
Iron	970	NT	NT	NT	240	Monitor	
Lead	<1.5	NT	NT	NT	<1.5	1.5	
Manganese	120	NT	NT	NT	20	Monitor	
Mercury	<0.2	NT	NT	NT	<0.2	0.2	
Nickel	<11	NT	NT	NT	10	20	
Selenium	5.3	NT	NT	NT	<4.8	10	
Silver	<4	NT	NT	NT	4	10	
Thallium	<1.3	NT	NT	NT	<1.3	0.4	
Zinc	<14	NT	NT	NT	20	Monitor	
Cyanide	10	NT	NT	NT	<6	40	
Cyanide Amenable	<6	NT	NT	NT	<6	Monitor	
1,1-Dichloroethane	15	NT	<0.32	<0.32	<0.32	85	
1,2-Dichloroethane	<1.8	NT	<0.35	<0.35	<0.35	0.5	
1,1-Dichloroethene	4.9	NT	<0.34	<0.34	<0.34	0.7	
1,2-Dichloroethene Cis	27	NT	<0.27	<0.27	<0.27	7	
1,2-Dichloroethene Trans	<1.3	NT	<0.25	<0.25	<0.25	20	
Ethylbenzene	<1.3	NT	<0.25	<0.25	<0.25	140	
Methylene Chloride	<2	NT	<0.3	<0.3	<0.3	0.5	
Tetrachloroethene	1.6	NT	<0.31	<0.31	<0.31	0.5	
Toluene	<1.5	NT	<0.29	<0.29	<0.29	68	
1,1,1-Trichloroethane	47	NT	<0.31	0.59	<0.31	40	
1,1,2-Trichloroethane	<2.2	NT	<0.44	<0.44	<0.44	0.5	
TCE	207	NT	0.54	0.37	<0.34	0.5	
Vinyl Chloride	1.4	NT	<0.2	<0.2	<0.2	0.2	
Xylene Total	<2.7	NT	<0.53	<0.53	<0.53	124	
Chlorine, Total	>200	NT	NT	189	<40	38	*
COD	NT	NT	NT	NT	NT	Monitor	mg/l
Phosphorus Total	NT	NT	NT	NT	NT	Monitor	mg/l
Nitrate + Nitrite	NT	NT	NT	NT	NT	Monitor	mg/l
Ammonia Nitrogen	NT	NT	NT	NT	NT	Monitor	mg/l

NT = Not Tested.

N/A = Not Applicable at this time.

ug/l = Micrograms per Liter.

mg/l = Milligrams per Liter.

* Chlorine, Total = Weekly average.

OCONOMOWOC GROUNDWATER TREATMENT PLANT						
Weekly Sampling Results			Date: 12-23-02			
Parameter	Influent	After FT-311	After Air Stripper	After Carbon Filters	Effluent	WDNR Site Permit ug/l
pH	8.9	7.3	N/A	N/A	7.8	Monitor
TSS	NT	NT	NT	NT	NT	Monitor
Arsenic	<5.6	NT	NT	NT	<5.6	5
Barium	110	NT	NT	NT	110	400
Cadmium	<0.4	NT	NT	NT	<0.4	0.5
Cadmium Total Recoverable	<0.4	NT	NT	NT	<0.4	Monitor
Chromium +6	<4.2	NT	NT	NT	<4.2	Monitor
Chromium Total	<8	NT	NT	NT	20/14	10
Copper	<6	NT	NT	NT	<6	Monitor
Iron	1800	NT	NT	NT	260	Monitor
Lead	<1.5	NT	NT	NT	<1.5	1.5
Manganese	160	NT	NT	NT	20	Monitor
Mercury	<0.2	NT	NT	NT	<0.2	0.2
Nickel	20	NT	NT	NT	20	20
Selenium	<4.8	NT	NT	NT	<4.8	10
Silver	<4	NT	NT	NT	<4	10
Thallium	<1.3	NT	NT	NT	<1.3	0.4
Zinc	<14	NT	NT	NT	<14	Monitor
Cyanide	10	NT	NT	NT	<6	40
Cyanide Amenable	<6	NT	NT	NT	<6	Monitor
1,1-Dichloroethane	17	NT	<0.32	<0.32	<0.32	85
1,2-Dichloroethane	<1.8	NT	<0.35	<0.35	<0.35	0.5
1,1-Dichloroethene	5.8	NT	<0.34	<0.34	<0.34	0.7
1,2-Dichloroethene Cis	33	NT	<0.27	<0.27	<0.27	7
1,2-Dichloroethene Trans	11	NT	<0.25	<0.25	<0.25	20
Ethylbenzene	<1.3	NT	<0.25	<0.25	<0.25	140
Methylene Chloride	<1.5	NT	<0.3	<0.3	<0.3	0.5
Tetrachloroethene	3.4	NT	<0.31	<0.31	<0.31	0.5
Toluene	<1.5	NT	<0.29	<0.29	<0.29	68
1,1,1-Trichloroethane	70	NT	<0.31	<0.31	<0.31	40
1,1,2-Trichloroethane	<2.2	NT	<0.44	<0.44	<0.44	0.5
TCE	276	NT	<0.34	0.84	0.55	0.5
Vinyl Chloride	1.7	NT	<0.2	<0.2	<0.2	0.2
Xylene Total	<2.7	NT	<0.53	<0.53	<0.53	124
Chlorine, Total	>200	NT	NT	154	<40	38
COD	NT	NT	NT	NT	NT	Monitor
Phosphorus Total	NT	NT	NT	NT	NT	Monitor
Nitrate + Nitrite	NT	NT	NT	NT	NT	Monitor
Ammonia Nitrogen	NT	NT	NT	NT	NT	Monitor

NT = Not Tested.

N/A = Not Applicable at this time.

ug/l = Micrograms per Liter.

mg/l = Milligrams per Liter.

* Chlorine, Total = Weekly average.

** Exceedences—Paul Kozol, WDNR, authorized that the plant still operate unless TCE result is >1.0 ug/l for 3 straight weeks.

*** Exceedences--Requested that Chromium Total be re-run to verify result (second number).

OCONOMOWOC GROUNDWATER TREATMENT PLANT

Weekly Sampling Results

Date: 12-30-02

Parameter	Influent	After FT-311	After Air Stripper	After Carbon Filters	Effluent	WDNR Site Permit ug/l	
pH	6.9	7.3	N/A	N/A	7.7	Monitor	
TSS	NT	NT	NT	NT	NT	Monitor	mg/l
Arsenic	<5.6	NT	NT	NT	<5.6	5	
Barium	120	NT	NT	NT	100	400	
Cadmium	<0.4	NT	NT	NT	<0.4	0.5	
Cadmium Total Recoverable	<0.4	NT	NT	NT	<0.4	Monitor	
Chromium +6	<4.2	NT	NT	NT	<4.2	Monitor	
Chromium Total	10	NT	NT	NT	<8	10	
Copper	<6	NT	NT	NT	<6	Monitor	
Iron	2300	NT	NT	NT	230	Monitor	
Lead	<1.5	NT	NT	NT	<1.5	1.5	
Manganese	140	NT	NT	NT	8	Monitor	
Mercury	<0.2	NT	NT	NT	<0.2	0.2	
Nickel	20	NT	NT	NT	<11	20	
Selenium	<4.8	NT	NT	NT	<4.8	10	
Silver	<4	NT	NT	NT	<4	10	
Thallium	<1.3	NT	NT	NT	<1.3	0.4	
Zinc	<14	NT	NT	NT	<14	Monitor	
Cyanide	<6	NT	NT	NT	<6	40	
Cyanide Amenable	<6	NT	NT	NT	<6	Monitor	
1,1-Dichloroethane	13	NT	<0.32	<0.32	<0.32	85	
1,2-Dichloroethane	<1.8	NT	<0.35	<0.35	<0.35	0.5	
1,1-Dichloroethene	2.1	NT	<0.34	<0.34	<0.34	0.7	
1,2-Dichloroethene Cis	20	NT	<0.27	<0.27	<0.27	7	
1,2-Dichloroethene Trans	3	NT	<0.25	<0.25	<0.25	20	
Ethylbenzene	<1.3	NT	<0.25	<0.25	<0.25	140	
Methylene Chloride	<1.5	NT	<0.3	<0.3	<0.3	0.5	
Tetrachloroethene	<1.6	NT	<0.31	<0.31	<0.31	0.5	
Toluene	<1.5	NT	<0.29	<0.29	<0.29	88	
1,1,1-Trichloroethane	26	NT	<0.31	<0.31	<0.31	40	
1,1,2-Trichloroethane	<2.2	NT	<0.44	<0.44	<0.44	0.5	
TCE	120	NT	<0.34	<0.34	<0.34	0.5	
Vinyl Chloride	1.1	NT	<0.2	<0.2	<0.2	0.2	
Xylene Total	<2.7	NT	<0.53	<0.53	<0.53	124	
Chlorine, Total	>200	NT	NT	131	<40	38	*
COD	NT	NT	NT	NT	NT	Monitor	mg/l
Phosphorus Total	NT	NT	NT	NT	NT	Monitor	mg/l
Nitrate + Nitrite	NT	NT	NT	NT	NT	Monitor	mg/l
Ammonia Nitrogen	NT	NT	NT	NT	NT	Monitor	mg/l

NT = Not Tested.

N/A = Not Applicable at this time.

ug/l = Micrograms per Liter.

mg/l = Milligrams per Liter.

* Chlorine, Total = Weekly average.

OCONOMOWOC GROUNDWATER TREATMENT PLANT

MONITORING WELL						(ug/l)
						Date: December 2002
Parameter	MW02DP	MW03SP	MW05P	MW05DP	MW06P	MW11BP
pH	6.32	DRY	DRY	6.38	DRY	COVERED
Conductivity	945	NT	NT	1462	NT	NT
Arsenic	<5.6	NT	NT	<5.6	NT	NT
Barium	100	NT	NT	180	NT	NT
Cadmium	<0.4	NT	NT	<0.4	NT	NT
Cadmium Total	<0.4	NT	NT	<0.4	NT	NT
Recoverable						
Chromium +6	<4.2	NT	NT	<4.2	NT	NT
Chromium Total	10	NT	NT	20	NT	NT
Copper	<6	NT	NT	<6	NT	NT
Iron	980	NT	NT	4800	NT	NT
Lead	<1.5	NT	NT	<1.5	NT	NT
Manganese	30	NT	NT	130	NT	NT
Mercury	<0.2	NT	NT	<0.2	NT	NT
Nickel	<11	NT	NT	<11	NT	NT
Selenium	<4.8	NT	NT	<4.8	NT	NT
Silver	<4	NT	NT	<4	NT	NT
Thallium	<1.3	NT	NT	<1.3	NT	NT
Zinc	<14	NT	NT	<14	NT	NT
Cyanide	<6	NT	NT	8	NT	NT
Cyanide Amenable	<6	NT	NT	<6	NT	NT
1,1-Dichloroethane	<0.32	NT	NT	25	NT	NT
1,2-Dichloroethane	<0.35	NT	NT	<1.8	NT	NT
1,1-Dichloroethene	<0.34	NT	NT	4.2	NT	NT
1,2-Dichloroethene Cis	<0.27	NT	NT	151	NT	NT
1,2-Dichloroethene Trans	<0.25	NT	NT	17	NT	NT
Ethylbenzene	<0.25	NT	NT	<1.3	NT	NT
Methylene Chloride	<0.3	NT	NT	<1.5	NT	NT
Tetrachloroethene	<0.31	NT	NT	<1.6	NT	NT
Toluene	<0.29	NT	NT	<1.5	NT	NT
1,1,1-Trichloroethane	<0.31	NT	NT	<1.6	NT	NT
1,1,2-Trichloroethane	<0.44	NT	NT	<2.2	NT	NT
TCE	<0.34	NT	NT	620	NT	NT
Vinyl Chloride	<0.2	NT	NT	5	NT	NT
Xylene Total	<0.53	NT	NT	<2.7	NT	NT
Temperature (C)	12.4	NT	NT	11.8	NT	NT

µMHOS/CM

MW05P, MW06P, & MW03SP Were Too Dry To Sample.

OCONOMOWOC GROUNDWATER TREATMENT PLANT

MONITORING WELL	(ug/l)					
	Date: December 2002					
Parameter	MW12BP	MW12DP	MW13SP	MW14DP	MW15DP	MW16SP
pH	7.3	6.74	7.28	7.32	7.25	6.13
Conductivity	730	1142	752	514	1079	2135
Arsenic	<5.6	<5.6	<5.6	<5.6	<5.6	<5.6
Barium	130	80	50	20	90	30
Cadmium	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Cadmium Total	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Recoverable						
Chromium +6	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2
Chromium Total	10	20	50	<8	<8	40
Copper	450	<6	<6	<6	<6	<6
Iron	5300	530	4800	40	50	17,000
Lead	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
Manganese	90	20	170	50	240	270
Mercury	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	10	<11	50	<11	<11	<11
Selenium	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8
Silver	<4	<4	<4	<4	<4	<4
Thallium	3.9	<1.3	<1.3	<1.3	<1.3	<1.3
Zinc	<14	<14	20	20	<14	<14
Cyanide	<6	<6	<6	<6	<6	7
Cyanide Amenable	<6	<6	<6	<6	<6	<6
1,1-Dichloroethane	141	<0.64	<0.32	<0.32	<1.6	<1.6
1,2-Dichloroethane	1.3	<0.7	<0.35	<0.35	<1.8	<1.8
1,1-Dichloroethene	46	<0.68	<0.34	<0.34	<1.7	<1.7
1,2-Dichloroethene Cis	31	<0.54	<0.27	<0.27	1.6	284
1,2-Dichloroethene Trans	14	<0.5	<0.25	<0.25	<1.3	4.5
Ethylbenzene	0.76	<0.5	<0.25	<0.25	<1.3	<1.3
Methylene Chloride	<0.3	<0.6	<0.3	<0.3	<1.5	<1.5
Tetrachloroethene	<0.31	<0.62	<0.31	<0.31	<1.6	<1.6
Toluene	<0.29	<0.58	<0.29	<0.29	<1.5	<1.5
1,1,1-Trichloroethane	99	<0.62	0.79	<0.31	<1.6	<1.6
1,1,2-Trichloroethane	<0.44	<0.88	<0.44	<0.44	<2.2	<2.2
TCE	48	<0.68	1	<0.34	31	<1.7
Vinyl Chloride	9.1	<0.4	<0.2	<0.2	<1	71
Xylene Total	<0.53	<1.1	<0.53	<0.53	<2.7	<2.7
Temperature (C)	9.5	8.7	10.2	13.8	11.8	8

UMHOS/CM

MONITOR WELL DEPTHS

OCONOMOWOC GROUNDWATER TREATMENT PLANT						
MONITORING WELLS	WATER LEVEL			FEET		
DATE	MW02DP	MW03SP	MW05SP	MW05DP	MW06P	MW11BP
January 4, 2002	6.71	DRY	3.98	4.65	DRY	COVERED
February 6-7, 2002	7.03	DRY	DRY	4.82	DRY	COVERED
March 28, 2002	5.90	DRY	3.45	3.95	DRY	COVERED
April 09, 2002	4.91	3.82	2.82	2.6	DRY	COVERED
May 01, 2002	5.91	DRY	3.44	3.97	DRY	COVERED
June 03, 2002	5.42	3.72	2.83	2.42	DRY	COVERED
July 02, 2002	6.73	DRY	4.1	4.75	DRY	COVERED
August 01, 2002	7.82	DRY	DRY	5.89	DRY	COVERED
September 09, 2002	7.85	DRY	DRY	5.82	DRY	COVERED
October 1, 2002	7.69	DRY	DRY	5.65	DRY	COVERED
November 1, 2002	7.34	DRY	DRY	5.25	DRY	COVERED
December 02, 2002	7.67	DRY	DRY	5.66	DRY	COVERED

OCONOMOWOC GROUNDWATER TREATMENT PLANT						
MONITORING WELLS	WATER LEVEL			FEET		
DATE	MW07P	MW08P	MW09SP			
January 04, 2002	DRY	4.21	6.32			
February 6-7, 2002	DRY	4.54	6.81			
March 28, 2002	3.9	2.09	5.49			
April 09, 2002	2.99	1.52	4.46			
May 01, 2001	3.77	2.04	5.36			
June 03, 2002	2.95	1.6	4.91			
July 02, 2002	5.03	4.08	6.21			
August 01, 2002	6.31	5.27	7.58			
September 09, 2002	6.17	5.42	7.56			
October 1, 2002	6.11	5.62	7.49			
November 1, 2002	6.24	5.79	7.5			
December 02, 2002	6.93	6.61	7.81			

MONITOR WELL DEPTHS

OCONOMOWOC GROUNDWATER TREATMENT PLANT						
MONITORING WELLS	WATER LEVEL			FEET		
DATE	MW12BP	MW12DP	MW13SP	MW14DP	MW15DP	MW16SP
January 4, 2002	4.72	4.27	5.64	4.07	10.11	3.39
February 6-7, 2002	5.11	4.51	5.98	4.31	10.39	3.59
March 28, 2002	4.19	3.07	5.05	3.03	9.67	2.78
April 9 & 11, 2002	3.1	1.99	4.16	2.84	8.68	2.19
May 01, 2002	4.16	3.09	4.9	2.71	6.66	2.68
June 3-6, 2002	3.9	2.6	4.24	2.02	9.33	2.4
July 02, 2002	4.91	3.88	5.63	3.67	10.55	4.01
August 01, 2002	5.96	4.89	6.49	4.98	11.57	5.04
September 09, 2002	5.96	5.87	6.6	5.45	11.62	5.93
October 1, 2002	5.76	3.63	6.47	5.58	11.53	3.52
November 1, 2002	5.37	4.24	6.22	5.42	11.11	3.37
December 02, 2002	5.68	4.55	6.37	5.66	11.47	3.57

OCONOMOWOC GROUNDWATER TREATMENT PLANT						
MONITORING WELLS	WATER LEVEL			FEET		
DATE	MW01DP	MW01SP	MW02SP	MW03DP	MW04DP	MW04SP
January 04, 2002	6.71	6.28	DRY	8.47	9.2	7.81
February 6-7, 2002	7.05	6.49	DRY	8.55	9.45	7.95
March 28, 2002	5.5	5.37	5.97	8.97	7.53	6.83
April 09, 2002	5.59	4.56	3.93	7	6.39	5.1
May 01, 2002	5.25	5.12	5.83	7.93	7.12	6.44
June 03, 2002	5.78	4.61	2.77	7.73	7.76	6.09
July 02, 2002	5.74	6.13	DRY	8.71	8.27	7.55
August 01, 2002	7.12	7.53	DRY	9.83	9.24	8.93
September 09, 2002	7.67	7.79	DRY	9.92	9.64	9.36
October 1, 2002	7.82	7.78	DRY	9.6	9.87	9.47
November 1, 2002	7.6	7.83	DRY	9.4	9.64	9.38
December 02, 2002	8	8.24	DRY	9.74	9.85	9.64

OCONOMOWOC GROUNDWATER TREATMENT PLANT BACTERIA		
DAYS	EFFLUENT 11/27/02-12/5/02	EFFLUENT 12/5/02-12/13/02
1	CLEAR	CLEAR
2	CLEAR	YELLOW
3	YELLOW	YELLOW W/YELLOW BUBBLES
4	DARK YELLOW W/YELLOW BUBBLES	DARK YELLOW W/YELLOW BUBBLES
5	DARK YELLOW W/YELLOW BUBBLES	DARK YELLOW W/YELLOW BUBBLES
6	DARK YELLOW W/YELLOW BUBBLES	DARK YELLOW W/YELLOW BUBBLES
7	DARK YELLOW W/YELLOW BUBBLES	DARK YELLOW W/YELLOW BUBBLES
8	DARK YELLOW W/YELLOW BUBBLES	DARK YELLOW W/YELLOW BUBBLES

FOAM/BUBBLES=ANAEROBIC BACTERIA.
 GREEN=PSEUDOMONADS.
 BLACK=PSEUDOMONADS AND ENTERICS.
 YELLOW=NO BACTERIA
 BROWN=IRON BACTERIA
 YELLOW=NEGATIVE

OCONOMOWOC GROUNDWATER TREATMENT PLANT BACTERIA		
DAYS	EFFLUENT 12/13/02-12/21/02	EFFLUENT 12/21/02-12/29/02
1	CLEAR	CLEAR
2	CLEAR	CLEAR
3	LIGHT YELLOW W/BUBBLES	LIGHT YELLOW W/BUBBLES
4	DARK YELLOW W/YELLOW BUBBLES	LIGHT YELLOW W/BUBBLES
5	DARK YELLOW W/YELLOW BUBBLES	LIGHT YELLOW W/YELLOW BUBBLES
6	DARK YELLOW W/YELLOW BUBBLES	YELLOW W/DARK YELLOW BUBBLES
7	DARK YELLOW W/YELLOW BUBBLES	DARK YELLOW W/YELLOW BUBBLES
8	DARK YELLOW W/YELLOW BUBBLES	DARK YELLOW W/YELLOW BUBBLES

PRECIPITATION

YEAR: 2002	
MONTH: DEC.	PRECIPITATION
DAY	(INCHES)
1	0.00
2	0.10
3	0.00
4	0.00
5	0.00
6	0.00
7	0.00
8	0.00
9	0.00
10	0.00
11	0.00
12	0.00
13	0.00
14	0.00
15	0.00
16	0.00
17	0.00
18	0.50
19	0.00
20	0.00
21	0.12
22	0.00
23	0.00
24	0.00
25	0.10
26	0.00
27	0.00
28	0.00
29	0.00
30	0.00
31	0.00
TOTAL	0.82