QUARTERLY PROGRESS REPORT #17

October, November, December 2002

N.W. MAUTHE
GROUNDWATER TREATMENT SYSTEM

BRRTS I.D. #02-45-000127

Appleton, Wisconsin

Prepared For The

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

MCO
Midwest Contract Operations, Inc.

March 24, 2003
MCO. No. M0050-920764.14
JMS:smdt

MCO
Midwest Contract Operations, Inc.
P.O. BOX 418 MENASHA, WI 54952-0418
TEL: (920) 751-4299 FAX: (920) 751-4284
e-mail: mcm@mcmgrp.com

March 24, 2003

Ms. Jennifer Tobias
Wisconsin Department Of Natural Resources
625 East County Road "Y", Suite #700
Oshkosh, WI 54901-9731

Re: N.W. Mauthe Groundwater Treatment System
Appleton, Wisconsin
Quarterly Progress Report #17
BRRTS I.D. #02-45-000127
MCO. No. M0050-920764.14

Dear Ms. Tobias:

Enclosed, please find Midwest Contract Operations, Inc.'s "Quarterly Progress Report #17" for the N.W. Mauthe Groundwater Treatment System, 725 South Outagamie Street, Appleton, Wisconsin.

The Progress Report includes a brief background of the site history, a summary of any sampling results at the site or in the adjacent groundwater monitoring wells and operation and maintenance activities. This quarterly report includes the months of October, November and December 2002.

If you have any questions or require additional information, feel free to contact me.

Very truly yours,

MIDWEST CONTRACT OPERATIONS, INC.

John M. Stoeger
Project Manager

JMS:smdt

cc: Jessica Garratt – City of Appleton
Randy Much - MCO

Enclosure: Quarter Progress Report #17

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Scott Hassett, Secretary
Ronald W. Kazmierczak, Regional Director

Oshkosh Service Center
625 East County Road Y, STE 700
Oshkosh, Wisconsin 54901-9731
TELEPHONE 920-424-3050
FAX 920-424-4404

March 31, 2003

Mr. Mazin Enwiya, RPM
U.S. EPA, HSRM-6J
77 W. Jackson Blvd.
Chicago, IL 60604-3590

SUBJECT: Quarterly Progress Report #17 (Oct, Nov, Dec 2002) for
N. W. Mauthe Superfund Site, 725 S. Outagamie St., Appleton, WI
WDNR BRRTS #:02-45-000127

Dear Mr. Enwiya:

Enclosed please find a copy of the *Quarterly Progress Report #17 – October, November, December 2002* for the N. W. Mauthe Superfund Site. The report was prepared by the operation and maintenance contractor, Midwest Contract Operations, Inc. (MCO). Please call me at the number below if you have any questions.

Sincerely,

Jennifer Tobias
Hydrogeologist
Bureau for Remediation & Redevelopment
(920) 424-7887

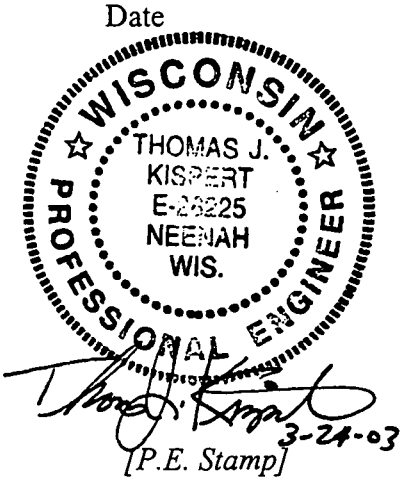
Encl.

Professional Qualifications Statement

"I, Thomas J. Kispert, hereby certify that I am a Registered Professional Engineer in the State of Wisconsin, registered in accordance with the requirements of ch. A-E 4, Wis. Adm. Code; that this document has been prepared in accordance with the Rules of Professional Conduct in ch. A-E 8, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. 700 to 726, Wis. Adm. Code."

Thomas J. Kispert, P.E., C.C.S. / P.E. No. E-26225
Senior Project Engineer

3-24-03
Date

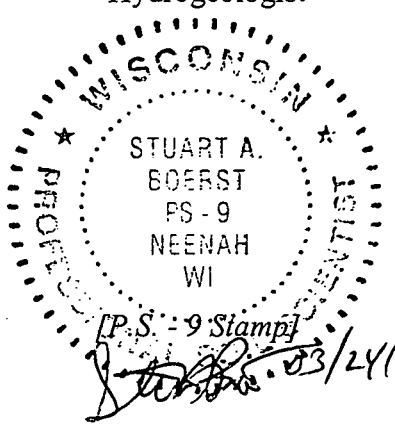


[P.E. Stamp]

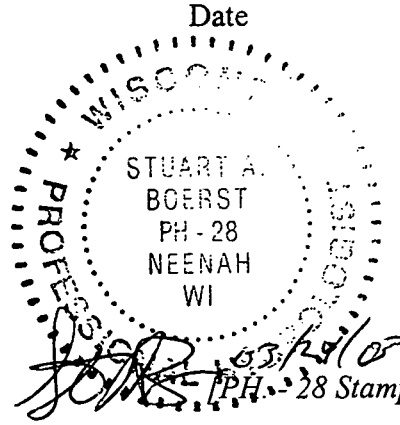
"I, Stuart A. Boerst, hereby certify that I am a Hydrogeologist, as the term is defined in s. NR 712.03(1), Wisconsin Administrative Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wisconsin Administrative Code."

Stuart A. Boerst, P.S., P.H.
Hydrogeologist

3/24/03
Date



[P.S. - 9 Stamp]



[P.H. - 28 Stamp]

QUARTERLY PROGRESS REPORT #17
October, November, December 2002

N.W. MAUTHE
GROUNDWATER TREATMENT SYSTEM
BRRTS I.D. #02-45-000127
Appleton, Wisconsin

Prepared For The
WISCONSIN DEPARTMENT OF NATURAL RESOURCES

Prepared By
Midwest Contract Operations, Inc.
March 24, 2003
MCO. No. M0050-920764.14

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QUARTERLY PROGRESS REPORT #17

October, November, December 2002

N.W. MAUTHE
GROUNDWATER TREATMENT SYSTEM

BRRTS I.D. #02-45-000127

Appleton, Wisconsin

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I. SITE BACKGROUND

The N.W. Mauthe site is a former electroplating facility, located at 725 South Outagamie Street, Appleton, Wisconsin (refer to Figure #1, Site Location Map). The property was used for a chrome plating company, from 1960 until 1976. Electroplating of zinc, cadmium and, possibly, copper and silver was conducted from 1978 to 1987 in an adjacent building on the same property. After 1987, all plating operations ceased on the property.

Concerns over sub-surface discharges to the surrounding environment led the Wisconsin Department of Natural Resources (DNR) and United States Environmental Protection Agency (USEPA) to conduct a remedial investigation and clean up of the N.W. Mauthe site and surrounding properties.

The investigation determined the N.W. Mauthe site was contaminated with zinc, cadmium, chromium and cyanide. Additionally, several volatile organic compounds (VOC's) were also present.

Based upon the findings of the remedial investigation, the following actions were taken to remediate the N.W. Mauthe site and adjacent properties of the sub-surface contamination.

A. Demolition and removal of the buildings on the N.W. Mauthe property.

B. Excavation and off-site treatment of soils with a total chromium concentration of greater than 500 mg/kg.

C. Backfilling of the excavation with clean soils, capping the site with 2-feet of clay and topsoil, and the establishment of vegetative cover.

D. Installation of groundwater collection trenches and construction and operation of a groundwater treatment facility to contain and/or control groundwater contamination with ultimate compliance with groundwater Applicable or Relevant and Appropriate Requirements (ARAR's).

E. Improvement or installation of foundation drain systems and cleaning, painting or sealing of basement walls and floors, as needed, for homes or businesses in the area of the site, to prevent seepage of contaminated water into the buildings.

The groundwater collection trench system, the location of sump pump and drain connections, and the groundwater monitoring wells and piezometers associated with the site are shown in Figure #2.

Midwest Contract Operations, Inc. (MCO) began operating the groundwater treatment system in February 1997. CH_2M Hill, the site engineer and project manager for the U.S. EPA, retained responsibility for the overall site operations and the groundwater monitoring wells associated with the treatment system.

The objectives of the collection and treatment system are to reduce the contaminant concentrations in the groundwater to achieve federal drinking water standards and/or state groundwater quality standards, whichever are more stringent.

In October 1998, after the first year of operation and maintenance of the remediation system, the Wisconsin DNR assumed the responsibility from the U.S. EPA for all operation and maintenance of the site. MCO was retained by the Wisconsin DNR for the operation and maintenance of the entire groundwater treatment system, including the groundwater monitoring wells. To date, MCO has completed 17 rounds of groundwater sampling and is operating the batch treatment process, which is designed to remove chromium from the groundwater. A description of the batch process will be discussed in the following section of this report.

II. BATCH TREATMENT PROCESS

As part of the remediation phase at the N.W. Mauthe site, a groundwater collection system was installed on and adjacent to the N.W. Mauthe property. Approximately 1,000 lineal feet of coarse sand filled trenching was installed to draw groundwater from the contaminated areas to two collection sumps. From the collection sumps, groundwater is pumped to a 9,000 gallon holding tank, located within the treatment building.

Each batch of groundwater to be treated is pumped from the storage tank to the reaction tank. The batch process treatment system utilizes ferrous sulfate and caustic additions to treat the contaminated groundwater. Through chemical addition, mixing, aeration and settling, the chromium is removed from the groundwater. The fully automated process treats approximately 2,600 gallons per batch (based on physical tank measurements) and is capable of treating four batches per day.

Treated groundwater decants from the reaction tank to the City of Appleton sanitary sewer system. The chromium containing sludge settles to the bottom of the reaction tank. Excess sludge is pumped to a sludge storage tank, also located within the treatment building.

During each discharge, the effluent is tested for hexavalent chromium using a Hach Test kit. The pH is recorded off two meters, located in the reaction tank. The pH values from the two meters are recorded during discharge as the high and low pH values on a daily log sheet. The average of the two pH values is calculated. The effluent wastewater is tested quarterly for total chromium at a DNR approved environmental laboratory. The total chromium concentration for the sample collected at Outfall #001 on December 17, 2002 was 8.2 ug/l. Additionally, the City of Appleton conducts semi-annual compliance testing of the treatment system effluent. The most recent compliance sample was collected on October 12, 2002. Results from the City of Appleton compliance monitoring are contained in Table #6.

For the months of October, November and December 2002, a total of 127,979 gallons of contaminated groundwater was treated and discharged. The average groundwater concentration was calculated by taking an average of the weekly influent chromium concentrations over the 3-month period. Using the average groundwater concentration of .92 mg/l hexavalent chromium, the calculated reduction in hexavalent chromium would be .98 pounds over the 3-month period.

The effluent flows are recorded based on the effluent meter reading. Past readings generally overstated the effluent flows, as compared to volumetric tank measurements, due to design constraints regarding the flow meter installation. As of January 8, 2001,

the effluent piping was reconfigured to factory specifications. Effluent flows are now more consistent with the volumetric tank measurements.

A summary of batches of groundwater treated, for the period of October through December 2002, is included in Table #1.

III. GROUNDWATER SAMPLING

A. Groundwater Sampling Procedures

A total of 11 groundwater monitoring wells are associated with the groundwater treatment system. Additionally, four piezometers were installed to measure the effectiveness of the groundwater collection trench system.

Groundwater levels are measured in the monitoring wells and the piezometers, relative to the north side of the top of the well casing. A summary of the current groundwater levels for the site is included in Table #2. The groundwater contours for groundwater monitoring wells, relative to the site, are shown on Figure #3. The groundwater potentiometric contours for the piezometers, relative to the site, are shown on Figure #4.

The 11 groundwater monitoring wells were sampled on December 17, 2002. A dedicated submersible pump is installed in each well. Water level measurements were collected from each monitoring well, prior to sampling. Each well was slowly pumped dry and allowed to recharge for approximately 3-hours. The wells were then pumped dry again, allowed to recharge and then sampled. Two duplicate samples were also collected as a quality control measure. Purge water from the wells was collected and dumped into the collection sumps. The pump water volumes collected from the groundwater wells and the field testing data are included in Table #5. The groundwater sampling field documentation sheets are contained in Appendix A.

The sampling process utilized a flow through cell to read the pH, temperature, conductivity, redox potential and dissolved oxygen in each well. The flow through cell consisted of a 1-liter laboratory beaker placed over a 5-gallon bucket. Flow through the cell was maintained at approximately 250 ml/min. utilizing a resister to control pump flow. The same approximate flow rate was maintained for purging and sampling. Groundwater samples were collected after a well had been purged dry twice. The pH, conductivity, redox potential and dissolved oxygen readings for each monitoring well were recorded upon stabilization of the conductivity or just prior to sampling. The groundwater samples were collected in the order of VOC vials first (if applicable) and metal samples second. The

metal samples were field filtered with a 45 mircon in-line filter. The laboratory containers supplied for metals analysis include nitric acid as preservative. The collected samples were submitted to Northern Lake Service, Inc., Crandon, Wisconsin. The collected samples were analyzed for selected metals and Volatile Organic Compounds (VOC's), as specified by the Wisconsin DNR. Alkalinity and ferrous iron testing was conducted using field Hach test kits. As of the December 15, 1999 sampling event, the sampling parameters were modified by the Wisconsin DNR. Copper, Cyanide, Mercury and Zinc analysis was discontinued on all wells. VOC analysis was reduced to annually for all wells except MW-107. MW-107 will continue to be sampled for VOC's quarterly.

B. Groundwater Sampling Results

The collected groundwater samples were analyzed for Cadmium, Chromium and Manganese. Additionally, monitoring well MW-107 was sampled for VOC's as part of the quarterly sampling requirements. The annual VOC sampling for all monitoring wells is conducted in March of each year. Field analysis was conducted at each well for pH, temperature, conductivity, dissolved oxygen, Redox potential, alkalinity and ferrous iron. The field analysis sampling results will track the ability of the VOC groundwater contamination to naturally bio-remediate at the site.

The laboratory analytical results indicate that levels of total chromium exceed the DNR NR 140.10 Groundwater Preventive Action Limit (PAL) and Enforcement Standard (ES) in monitoring wells MW-104 (240 ug/l) and MW-107 (3,700 ug/l). MW-107 is the closest down-gradient well to the remediation building. Additionally, three VOC compounds in MW-107 (1,1-Dichoroethene, 1,1,1-Trichloroethane and Trichloroethene) were detected in excess of either the NR 149.21(9) maximum contaminant levels (MCL's) or the PAL. Exceedances of the MCL, PAL and ES for manganese have been found in all of the groundwater wells since sampling began in February 1997. These exceedances also appear in the background wells (W-2 and MW-108), which would indicate that the high levels of manganese in the groundwater occurs naturally. The laboratory analytical results are contained in Tables #3 and #4. The field testing results are contained in Table #5. An isoconcentration map for total chromium concentrations is shown in Figure #5. The Chain Of Custody Forms and laboratory analytical data are included in Appendix B.

The City of Appleton's compliance sample, collected on October 17, 2002 at Outfall #001, had a Total Chromium concentration of 0.23 milligrams per liter.

A summary of the sample results from Outfall #001 are shown in Table #6. The sampling results are contained in Appendix C. A summary of the influent Hexavelent Chromium concentrations is contained in Table #7. The listed concentrations are based upon the weekly Hatch kit analysis of the treatment system influent.

The effectiveness of the existing groundwater treatment system will require analysis of data over an extended period of time to evaluate trends in metals and VOC reductions.

IV. PUBLIC CONTACTS

There were no public contacts during the report period.

V. CONCLUSIONS & RECOMMENDATIONS

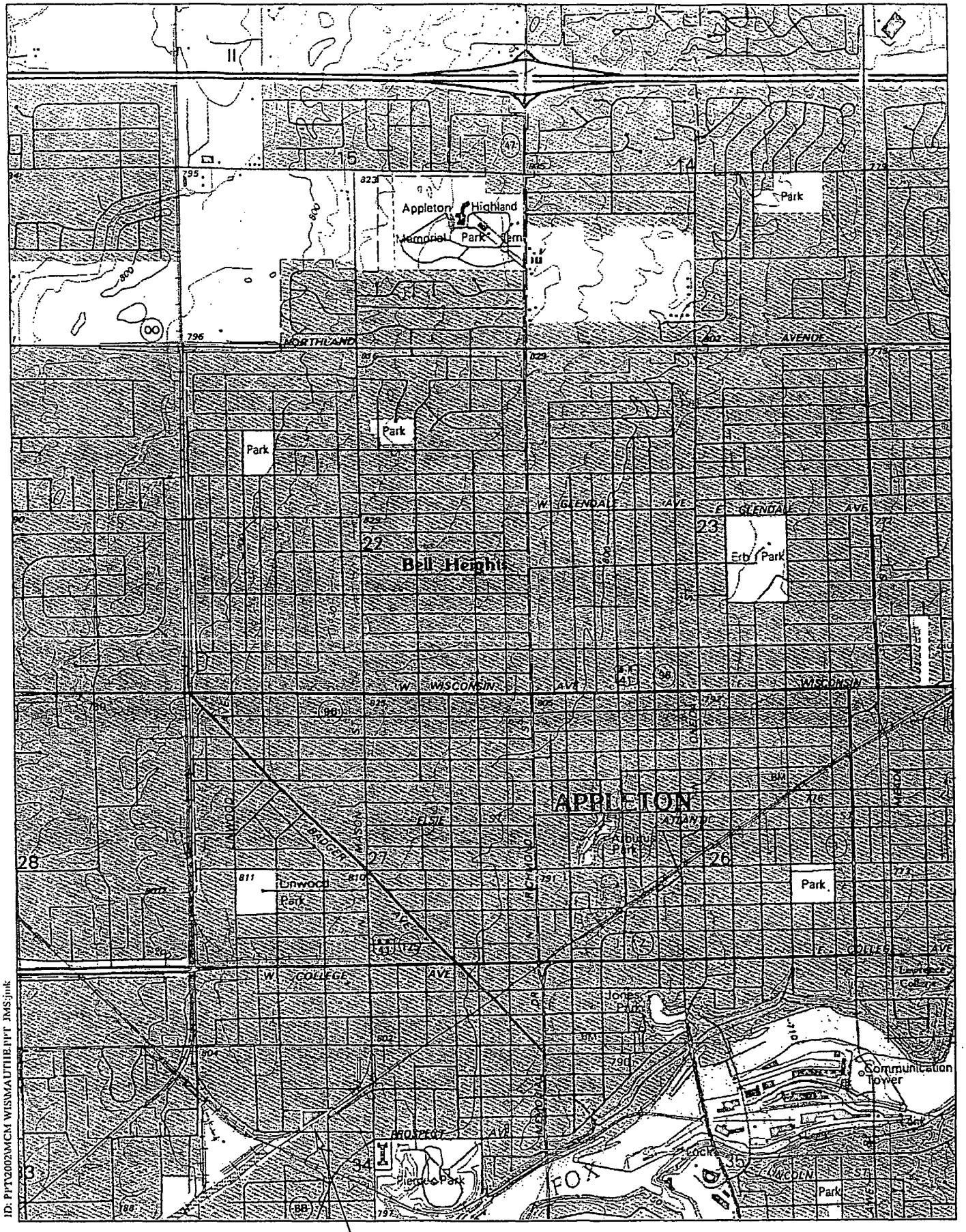
Groundwater level data collected from the 11 monitoring wells and four piezometers associated with the N.W. Mauthe groundwater treatment system indicate the groundwater collection trenches, installed as part of the site remediation system, have created a capture zone that directs the groundwater flows in the remediation area to the collection trenches and, ultimately, to the groundwater treatment system.

The purpose of creating the capture zone is to contain the migration of the contamination down-gradient of the contamination source and to direct impacted groundwater to the collection system and, ultimately, treatment in the batch process.

The latest round (December 17, 2002) of groundwater samples collected from the 11 monitoring wells, indicates residual chromium contamination above the DNR NR 140.10 PAL and ES exists in monitoring wells MW-104 and MW-107. Additionally, three VOC compounds in excess of the NR 140.10 PAL and ES or the NR 149.21(9) maximum contaminant levels (MCL's) were detected in MW-107. High levels of manganese, noted historically in all wells, appears to occur naturally and may not be related to the past site uses.

A total of 127,979 gallons of impacted groundwater has been treated during the months of October, November and December 2002, and discharged to the City of Appleton municipal sanitary sewer system. Analysis by MCO and the City of Appleton of the treatment system effluent did not indicate any exceedances of the local discharge permit limits for the site.

Based upon the December 17, 2002 groundwater sampling results and the batch treatment process analytical results, MCO recommends continued operation of the groundwater treatment system at the N.W. Mauthe groundwater remediation site.



NORTH
SCALE: 1" = 2000'

Figure 1
SITE LOCATION MAP
N.W. MAUTHE SUPERFUND SITE - APPLETON, WI
McM #M050-91692.14 2/1/02

McMAHON ASSOCIATES, INC.
ENGINEERS ■ ARCHITECTS
PROJ. MGRS. ■ SURVEYORS

ID: PPT2002\MCM WIS\MAUTHE.PPT JMS:jmk

MW-108

W-2

MELVIN STREET

ELECTRIC SUBSTATION

PZ-4

WEST GROUNDWATER COLLECTION TRENCH

MW-101

GROUNDWATER TREATMENT FACILITY

MANHOLE No.2

MW-102

MW-107

HSE

PZ-3

CENTRAL GROUNDWATER COLLECTION TRENCH

FOUNDATION DRAIN LATERAL

MANHOLE No.1

MW-103

PZ-1

W-15

BLDG

GAR

FOUNDATION DRAIN LATERAL

MW-104

GAR

HSE

HSE

TAVERN

MW-106

PZ-2

TAVERN SUMP EFFLUENT PIPE

FOUNDATION DRAIN LATERAL

SOUTHEAST GROUNDWATER COLLECTION TRENCH

SECOND STREET

W-8

MW-105

OUTAGAMIE STREET

NORTH

40 20 0 40

SCALE – FEET

FIGURE 2

COLLECTION TRENCH AND MONITORING WELL LOCATIONS
N.W. MAUTHE SUPERFUND SITE

APPLETON, WISCONSIN

McM# M0050–920764.14 DECEMBER 17, 2002

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MW-108
798.83

MELVIN STREET

W-2
797.85

ELECTRIC SUBSTATION

WEST GROUNDWATER COLLECTION TRENCH

PZ-4

MW-101
795.12

GROUNDWATER TREATMENT FACILITY

MW-107
796.95

MANHOLE No.1

MANHOLE No.2

MW-102
779.15

OUTAGAMIE STREET

HSE

CENTRAL GROUNDWATER COLLECTION TRENCH

FOUNDATION DRAIN LATERAL

PZ-3

MW-103
790.73

PZ-1

W-15
793.78

GAR

BLDG

MW-104
794.58

FOUNDATION DRAIN LATERAL

HSE

HSE

MW-106
793.59

TAVERN

PZ-2

TAVERN SUMP EFFLUENT PIPE

FOUNDATION DRAIN LATERAL

SOUTHEAST GROUNDWATER COLLECTION TRENCH

SECOND STREET

W-8
794.36

MW-105
796.62

798 797 796 795 794 793 792 791 790 789 788 787 786 785 784 783 782 781 780 779 778

NORTH

40 20 0 40

SCALE – FEET

LEGEND

W-2 803.06 — MONITORING WELL & GROUNDWATER ELEVATION

GROUNDWATER FLOW DIRECTION

797 — GROUNDWATER CONTOUR

FIGURE 3

GROUNDWATER MONITORING WELL LOCATIONS & GROUNDWATER CONTOURS N.W. MAUTHE SUPERFUND SITE

APPLETON, WISCONSIN

McM# M0050-920764.14 DECEMBER 17, 2002

cclemens C:\DwgCNC\M0050\920764.14\20021217\Fig-03.dwg 03/20/03 2:04 PM (Z-FIG03TIFF)

MW-108

W-2

MELVIN STREET

ELECTRIC SUBSTATION

WEST GROUNDWATER COLLECTION TRENCH

PZ-4
786.76

MW-101

GROUNDWATER TREATMENT FACILITY

MW-107

PZ-3
781.91

MW-103

CENTRAL GROUNDWATER COLLECTION TRENCH

MW-102

MANHOLE No.2

HSE FOUNDATION DRAIN LATERAL

MANHOLE No.1

BLDG

GAR

MW-104

FOUNDATION DRAIN LATERAL

GAR

HSE

HSE

PZ-1
785.45

W-15

TAVERN

MW-106

TAVERN SUMP EFFLUENT PIPE

PZ-2
787.60

FOUNDATION DRAIN LATERAL

SOUTHEAST GROUNDWATER COLLECTION TRENCH

786

785

784

783

782

782

783

784

785

786

787

SECOND STREET

W-8

MW-105

OUTAGAMIE STREET

NORTH

40 20 0 40

SCALE – FEET

LEGEND

PZ-1
785.96 — PIEZOMETER & POTENTIOMETRIC SURFACE ELEVATION

POTENTIOMETRIC GRADIENT

FIGURE 4

PIEZOMETER LOCATIONS AND POTENTIOMETRIC CONTOURS N.W. MAUTHE SUPERFUND SITE

APPLETON, WISCONSIN

McM# M0050-920764.14 DECEMBER 17, 2002

cclemens C:\DwgCNC\M0050\920764.14\20021217\Fig-04.dwg 03/20/03 1:36 PM (Z-FIG04TIFF)

MW-108
0.67 ug/L *

W-2
< 0.44 ug/L

MELVIN STREET

ELECTRIC SUBSTATION

WEST GROUNDWATER COLLECTION TRENCH

PZ-4

MW-101
< 0.44 ug/L

10

GROUNDWATER TREATMENT FACILITY

100

1000

MW-107
3700 ug/L

MANHOLE No.1

MANHOLE No.2

MW-102
< 0.44 ug/L

HSE

CENTRAL GROUNDWATER COLLECTION TRENCH

FOUNDATION DRAIN LATERAL

PZ-3

MW-103
6.2 ug/L

PZ-1

W-15
< 0.44 ug/L

BLDG

GAR

MW-104
240 ug/L

GAR

FOUNDATION DRAIN LATERAL

HSE

HSE

TAVERN

MW-106
< 0.44 ug/L

PZ-2

TAVERN

SUMP EFFLUENT PIPE

10

FOUNDATION DRAIN LATERAL

SOUTHEAST GROUNDWATER COLLECTION TRENCH

SECOND STREET

W-8
< 0.44 ug/L

MW-105
< 0.44 ug/L

OUTAGAMIE STREET

NORTH

40 20 0 40

SCALE – FEET

LEGEND

10	ISOCONCENTRATION OF CHROMIUM (ESTIMATED)
<	LESS THAN THE DETECTION LIMIT
ug/L	MICROGRAM/LITER
MW-102	MONITORING WELL
*	ANOLYTE DETECTED IN THE AREA OF LESS CERTAIN QUANTITATION

FIGURE 5

ISOCONCENTRATION MAP
TOTAL CHROMIUM ug/L In Groundwater
N.W. MAUTHE SUPERFUND SITE

APPLETON, WISCONSIN
McM# M0050-920764.14 DECEMBER 17, 2002

cclemens C:\DwgCNC\M0050\920764.14\20021217\Fig-05.dwg 03/20/03 11:51 AM (05-SCAN)

Table #1

GROUNDWATER BATCH DISCHARGES - October, November, December 2002
N.W. Mauthe Superfund Site - Appleton, Wisconsin
MCO No. M0050-920764.14

Sample Date	Batch No.	Effluent Meter	Gallons Discharged	High pH	Low pH	Average pH	Hexavalent* Chromium Concentration (mg/l)
10/02/02	100202A	4,367,536	2,728	7.2	7.2	7.2	0.00
10/05/02	100502A	4,370,269	2,733	7.4	7.1	7.3	0.00
10/06/02	100602A	4,372,998	2,729	7.3	7.1	7.2	0.00
10/07/02	100702A	4,375,728	2,730	7.3	7.1	7.2	0.00
10/07/02	100702B	4,378,442	2,714	7.3	7.1	7.2	0.00
10/08/02	100802A	4,381,170	2,728	7.2	7.1	7.2	0.00
10/09/02	100902A	4,383,892	2,722	7.3	7.2	7.3	0.00
10/10/02	101002A	4,386,614	2,722	7.3	7.2	7.3	0.00
10/11/02	101102A	4,389,336	2,722	7.2	7.2	7.2	0.00
10/13/02	101302A	4,392,053	2,717	7.2	7.2	7.2	0.00
10/14/02	101402A	4,394,778	2,725	7.2	7.2	7.2	0.00
10/16/02	101602A	4,397,508	2,730	7.2	7.2	7.2	0.00
10/18/02	101802A	4,400,239	2,731	7.2	7.2	7.2	0.00
10/20/02	102002A	4,402,946	2,707	7.2	7.2	7.2	0.00
10/21/02	102102A	4,405,649	2,703	7.2	7.2	7.2	0.00
10/22/02	102202A	4,408,359	2,710	7.2	7.2	7.2	0.00
10/23/02	102302A	4,411,061	2,702	7.2	7.2	7.2	0.00
10/23/02	102302B	4,413,764	2,703	7.2	7.2	7.2	0.00
10/24/02	102402A	4,416,475	2,711	7.3	7.20	7.3	0.00
10/25/02	102502A	4,419,189	2,714	7.3	7.2	7.3	0.00
10/26/02	102602A	4,421,896	2,707	7.3	7.2	7.3	0.00
10/27/02	102702A	4,424,602	2,706	7.2	7.2	7.2	0.00
10/28/02	102802A	4,427,328	2,726	7.2	7.2	7.2	0.00
10/29/02	102902A	4,430,042	2,714	7.3	7.2	7.3	0.00
10/30/02	103002A	4,432,763	2,721	7.3	7.2	7.3	0.00
11/01/02	110102A	4,435,490	2,727	7.3	7.2	7.3	0.00
11/03/02	110302A	4,438,217	2,727	7.4	7.3	7.4	0.00
11/04/02	110402A	4,440,946	2,729	7.3	7.3	7.3	0.00
11/06/02	110602A	4,443,669	2,723	7.3	7.2	7.3	0.00
11/08/02	110802A	4,446,396	2,727	7.3	7.3	7.3	0.00
11/10/02	111002A	4,449,113	2,717	7.2	7.2	7.2	0.00
11/12/02	111202A	4,451,833	2,720	7.3	7.2	7.3	0.00
11/14/02	111402A	4,454,573	2,740	7.3	7.2	7.3	0.00
11/17/02	111702A	4,457,298	2,725	7.3	7.1	7.2	0.00
11/19/02	111902A	4,460,025	2,727	7.3	7.1	7.2	0.00
11/22/02	112202A	4,462,741	2,716	7.2	7.1	7.2	0.00
11/26/02	112602A	4,465,469	2,728	7.3	7.3	7.3	0.00
11/27/02	112702A	4,468,193	2,724	7.5	7.5	7.5	0.00
12/01/02	120102A	4,470,920	2,727	7.7	7.5	7.6	0.00
12/05/02	120502A	4,473,637	2,717	7.5	7.5	7.5	0.00
12/09/02	120902A	4,476,364	2,727	7.7	7.5	7.6	0.00
12/13/02	121302A	4,479,099	2,735	7.8	7.8	7.8	0.00
12/19/02	121902A	4,481,828	2,729	7.8	7.8	7.8	0.00
12/20/02	122002A	4,484,549	2,721	7.8	7.7	7.8	0.00
12/23/02	122302A	4,487,277	2,728	7.8	7.7	7.8	0.00
12/26/02	122602A	4,490,004	2,727	7.9	7.8	7.9	0.00
12/30/02	123002A	4,492,727	2,723	7.8	7.8	7.8	0.00
Total			127,919				

Table #2

GROUNDWATER ELEVATIONS
N.W. Mauthe Superfund Site - Appleton, Wisconsin
MCO No. M0050-920764.14

Well Name	Date Measured	Depth To Water (feet)	Reference Elevation (To Top PVC) (feet)	Groundwater Elevation (feet)
W-2	02/01/97	-		798.66
	05/01/97	-		801.01
	09/01/97	-		800.28
	12/01/97	-	804.66	797.69
	03/01/98	-		802.08
	06/01/98	-		799.38
	10/27/98	5.85		798.81
	02/08/99	4.50		800.16
	06/08/99	3.31		801.35
	09/13/99	5.78		798.88
	12/15/1999	6.63		798.03
	03/13/00	1.60		803.06
	06/22/00	2.63		802.03
	09/27/00	3.28		801.38
	12/19/00	4.78		799.88
	03/01/01	5.93		798.73
	06/19/01	1.83		802.83
	09/24/01	5.94		798.72
	12/05/01	4.93		799.73
	03/19/02	1.08		803.58
	06/20/02	2.78		801.88
	09/18/02	6.38		798.28
	12/17/02	6.81		797.85
W-8	02/01/97	-		797.22
	05/01/97	-		797.66
	09/01/97	-		798.01
	12/01/97	-	803.36	796.52
	03/01/98	-		798.16
	06/01/98	-		797.31
	10/27/98	6.41		796.95
	02/08/99	5.49		797.87
	06/08/99	4.38		798.98
	09/13/99	6.71		796.65
	12/15/1999	6.91		796.45
	03/13/00	6.25		797.11
	06/22/00	6.42		797.34
	09/27/00	5.66		797.70
	12/19/00	6.80		796.56
	03/01/01	5.41		797.95
	06/19/01	5.02		798.34
	09/24/01	3.38		799.98
	12/05/01	7.02		796.34
	03/19/02	3.63		799.73
	06/20/02	5.66		797.70
	09/18/02	6.93		796.43
	12/17/02	9.00		794.36
W-15	02/01/97	-		793.97
	05/01/97	-		796.92
	09/01/97	-		797.23
	12/01/97	-	803.76	795.52
	03/01/98	-		796.78
	06/01/98	-		796.32
	10/27/98	7.95		795.81
	02/08/99	9.19		794.57
	06/08/99	6.89		796.87
	09/13/99	7.85		795.91
	12/15/99	8.97		794.79
	03/13/00	7.80		795.96
	06/22/00	6.42		797.34
	09/27/00	6.30		797.46
	12/19/00	7.99		795.77
	03/01/01	9.52		794.24
	06/19/01	6.91		796.82
	09/24/01	6.65		797.11
	12/05/01	8.15		795.61
	03/19/02	7.22		796.54
	06/20/02	6.84		796.92
	09/18/02	7.28		796.48
	12/17/02	9.98		793.78

Table #2

GROUNDWATER ELEVATIONS
N.W. Mauthe Superfund Site - Appleton, Wisconsin
MCO No. M0050-920764.14

Well Name	Date Measured	Depth To Water (feet)	Reference Elevation (To Top PVC) (feet)	Groundwater Elevation (feet)
MW-101	02/01/97	-		797.16
	05/01/97	-		799.99
	09/01/97	-		798.67
	12/01/97	-	807.59	798.21
	03/01/98	-		803.43
	06/01/98	-		800.48
	10/27/98	10.26		797.33
	02/08/99	11.91		795.68
	06/08/99	9.79		797.80
	09/13/99	10.35		797.24
	12/15/99	9.01		798.58
	03/13/00	12.67		794.92
	06/22/00	6.28		801.31
	09/27/00	10.41		797.18
	12/19/00	10.73		796.86
	03/01/01	12.61		794.98
	06/19/01	8.43		799.16
	09/24/01	10.50		797.09
	12/05/01	10.98		796.61
	03/19/02	8.10		799.49
	06/20/02	7.08		800.51
	09/18/02	10.23		797.36
	12/17/02	12.47		795.12
MW-102	02/01/97	-		780.72
	05/01/97	-		780.89
	09/01/97	-		780.79
	12/01/97	-	804.45	780.95
	03/01/98	-		780.47
	06/01/98	-		780.72
	10/27/98	24.11		780.34
	02/08/99	23.84		780.61
	06/08/99	23.59		780.86
	09/13/99	23.70		780.75
	12/15/99	24.27		780.18
	03/13/00	24.00		780.45
	06/22/00	23.69		780.76
	09/27/00	23.65		780.80
	12/19/00	24.06		780.39
	03/01/01	26.01		778.44
	06/19/01	23.35		781.10
	09/24/01	23.88		780.57
	12/05/01	24.08		780.37
	03/19/02	23.75		780.70
	06/20/02	23.05		781.40
	09/18/02	24.50		779.95
	12/17/03	25.30		779.15
MW-103	02/01/97	-		795.29
	05/01/97	-		791.83
	09/01/97	-		789.60
	12/01/97	-	803.74	787.78
	03/01/98	-		791.03
	06/01/98	-		789.13
	10/27/98	11.96		791.78
	02/08/99	10.24		793.50
	06/08/99	8.69		795.05
	09/13/99	9.79		793.95
	12/15/99	12.68		791.06
	03/13/00	9.63		794.07
	06/22/00	8.22		795.52
	09/27/00	7.76		795.98
	12/19/00	10.78		792.96
	03/01/01	9.15		794.59
	06/19/01	5.52		798.22
	09/24/01	9.80		793.94
	12/05/01	11.13		792.61
	03/19/02	4.96		798.78
	06/20/02	7.42		796.32
	09/18/02	9.00		794.74
	12/17/02	13.01		790.73

Table #2

GROUNDWATER ELEVATIONS
N.W. Mauthe Superfund Site - Appleton, Wisconsin
MCO No. M0050-920764.14

Well Name	Date Measured	Depth To Water (feet)	Reference Elevation (To Top PVC) (feet)	Groundwater Elevation (feet)
MW-104	02/01/97	-		792.94
	05/01/97	-		789.91
	09/01/97	-		798.59
	12/01/97	-	807.28	795.70
	03/01/98	-		799.46
	06/01/98	-		796.60
	10/27/98	10.51		796.77
	02/08/99	9.04		798.24
	06/08/99	7.49		799.79
	09/13/99	10.28		797.00
	12/15/99	10.78		796.50
	03/13/00	9.51		797.77
	06/22/00	8.41		798.88
	09/27/00	8.61		798.67
	12/19/00	10.49		796.79
	03/01/01	8.44		798.84
	06/19/01	7.51		799.71
	09/24/01	10.39		796.89
	12/05/01	10.81		796.47
	03/19/02	7.82		799.46
	06/20/02	8.60		798.68
	09/18/02	12.05		795.23
	12/17/02	12.70		794.58
MW-105	02/01/97	-		793.74
	05/01/97	-		800.60
	09/01/97	-		800.37
	12/01/97	-	803.96	799.03
	03/01/98	-		800.08
	06/01/98	-		800.50
	10/27/98	5.41		798.55
	02/08/99	6.46		797.50
	06/08/99	3.04		800.92
	09/13/99	4.60		799.36
	12/15/99	5.28		798.68
	03/13/00	4.97		798.99
	06/22/00	3.06		800.90
	09/27/00	3.38		800.58
	12/19/00	5.28		798.68
	03/01/01	7.24		796.72
	06/19/01	2.43		801.53
	09/24/01	3.87		800.09
	12/05/01	5.55		798.41
	03/19/02	3.94		800.02
	06/20/02	4.08		799.88
	09/18/02	5.40		798.56
	12/17/02	7.34		796.62
MW-106	02/01/97	-	-	794.75
	05/01/97	-		797.23
	09/01/97	-		796.91
	12/01/97	-	804.08	795.48
	03/01/98	-		797.37
	06/01/98	-		796.76
	10/27/98	8.12		795.96
	02/08/99	9.75		794.33
	06/08/99	6.72		797.36
	09/13/99	7.88		796.20
	12/15/99	8.71		795.37
	03/13/00	8.72		795.36
	06/22/00	6.87		797.21
	09/27/00	7.41		796.67
	12/19/00	8.55		795.53
	03/01/01	9.54		794.54
	06/19/01	6.30		797.78
	09/24/01	7.57		796.51
	12/05/01	8.72		795.36
	03/19/02	7.64		796.44
	06/20/02	7.21		796.87
	09/18/02	7.88		796.20
	12/17/02	10.49		793.59

Table #2

GROUNDWATER ELEVATIONS
N.W. Mauthe Superfund Site - Appleton, Wisconsin
MCO No. M0050-920764.14

Well Name	Date Measured	Depth To Water (feet)	Reference Elevation (To Top PVC) (feet)	Groundwater Elevation (feet)
MW-107	02/01/97	-		788.23
	05/01/97	-		796.60
	09/01/97	-		797.64
	12/01/97	-	809.01	796.49
	03/01/98	-		796.68
	06/01/98	-		796.31
	10/27/98	10.71		798.30
	02/08/99	11.11		797.90
	06/08/99	11.04		797.97
	09/13/99	11.55		797.46
	12/15/99	11.66		797.35
	03/13/00	11.13		797.88
	06/22/00	10.69		798.32
	09/27/00	12.36		796.65
	12/19/00	7.32		799.29
	03/01/01 *	-		-
	06/19/01	10.10	809.06 **	798.96
	09/24/01	11.23		797.88
	12/05/01	11.59		797.47
	03/19/02	9.79		799.27
	06/20/02	10.18		798.88
	09/18/02	11.16		797.90
	12/17/02	12.11		796.95
MW-108	02/01/97	-		798.36
	05/01/97	-		793.32
	09/01/97	-		790.53
	12/01/97	-	806.61	788.65
	03/01/98	-		795.59
	06/01/98	-		789.30
	10/27/98	6.98		799.63
	02/08/99	6.72		799.89
	06/08/99	5.80		800.81
	09/13/99	6.68		799.93
	12/15/99	6.87		799.74
	03/13/00	6.84		799.77
	06/22/00	6.28		800.33
	09/27/00	6.31		800.30
	12/19/00	11.42		797.59
	03/01/01	7.04		799.57
	06/19/01	5.87		800.74
	09/24/01	6.52		800.09
	12/05/01	7.70		798.91
	03/19/02	6.25		800.36
	06/20/02	6.43		800.18
	09/18/02	6.72		799.89
	12/17/02	7.78		798.83
PZ-01	10/27/98	17.43	804.17	786.74
	02/08/99	18.24		785.93
	06/08/99	18.22		785.95
	09/13/99	18.25		785.92
	12/15/99	18.25		785.92
	03/13/00	18.25		785.92
	06/22/00	18.21		785.96
	09/27/00	18.21		785.96
	12/19/00	18.43		785.74
	03/01/01	19.51		784.66
	06/19/01	18.93		785.24
	09/24/01	18.23		785.94
	12/05/01	18.51		785.66
	03/19/02	18.23		785.94
	06/20/02	19.44		784.73
	09/18/02	18.25		785.92
	12/17/02	18.72		785.45
PZ-02	10/27/98	14.66	803.64	788.98
	02/08/99	14.70		788.94
	06/08/99	14.70		788.94
	09/13/99	14.74		788.90
	12/15/99	14.72		788.92
	03/13/00	14.76		788.88
	06/22/00	14.41		789.23
	09/27/00	14.43		789.21
	12/19/00	14.60		789.04
	03/01/01	16.00		787.64
	06/19/01	16.60		787.04
	09/24/01	16.81		786.83
	12/05/01	15.02		788.62
	03/19/02	15.04		788.60
	06/20/02	18.36		789.28
	09/18/02	16.38		787.26
	12/17/02	16.04		787.60

Table #2

GROUNDWATER ELEVATIONS
N.W. Mauthe Superfund Site - Appleton, Wisconsin
MCO No. M0050-920764.14

Well Name	Date Measured	Depth To Water (feet)	Reference Elevation (To Top PVC) (feet)	Groundwater Elevation (feet)
PZ-03	10/27/98	22.71	803.62	780.91
	02/08/99	23.74		779.88
	06/08/99	23.74		779.88
	09/13/99	23.55		780.07
	12/15/99	23.52		780.10
	03/13/00	23.30		780.24
	06/22/00	23.40		780.22
	09/27/00	20.21		783.41
	12/19/00	20.24		783.38
	03/01/01	21.92		781.70
	06/19/01	23.05		780.57
	09/24/01	21.30		782.32
	12/05/01	20.66		782.96
	03/19/02	23.12		780.50
	06/20/02	23.18		780.44
	09/18/02	23.15		780.47
	12/17/02	21.71		781.91
PZ-04	10/27/98	15.18	807.30	792.12
	02/08/99	23.61		783.69
	06/08/99	21.69		785.61
	09/13/99	23.87		783.43
	12/15/99	23.80		783.50
	03/13/00	25.77		781.53
	06/22/00	22.51		784.79
	09/27/00	19.60		787.70
	12/19/00	19.91		787.39
	03/01/01	20.98		786.32
	06/19/01	19.93		787.37
	09/24/01	19.83		787.47
	12/05/01	20.35		786.95
	03/19/02	19.84		787.46
	06/20/02	23.01		784.29
	09/18/02	23.44		783.86
	12/17/02	21.04		786.26

* Casing for MW-107 was damaged. Groundwater elevation could not be determined.
** Reflects new elevation of MW-107 after repair to well casing.

Table #3

LABORATORY ANALYTICAL RESULTS / Selected Metals
N.W. Mauthe Superfund Site - Appleton, Wisconsin
MCO No. M0050-920764.14

Well Name	Sample Date	Cadmium (ug/l)	Chromium (ug/l)	Copper (ug/l)	Cyanide (ug/l)	Manganese (ug/l)	Mercury (ug/l)	Zinc (ug/l)
W-2	02/20/97	NA	15	26	NA	460.0	NA	49
	05/27/97	0.43	8.5	<10	NA	170.0	<.2	30
	09/18/97	0.27	4.5**	9.5**	3**	116.0	<.03	16.9
	12/12/97	.13*	6.2	<9.7	<.8	133.0	.06*	20.4
	03/25/98	0.08	<3.9	<9.5	<1.7	83.8	.007*	18.6
	06/10/98	.31*	16.4	18.6**	<1.7	466.0	.027*	40.8
	10/27/98	.51*	3.60	4.7*	<.0032	69.0	<.05	170
	02/09/99	.46*	<.62	4.0	<.0032	240.0	<0.05	23
	06/08/99	<.31	<.62	1.8*	<.0032	290.0	<0.05	<12
	09/13/99	<.31	2.00	3.2	<.0032	240.0	<.05	<12
	12/15/99	<.31	.72 *	NA	NA	2.8	NA	NA
	03/13/00	<.31	.79 *	NA	NA	7.8	NA	NA
	06/22/00	<.31	<.62	NA	NA	<.42	NA	NA
	09/27/00	2.70	1.1*	NA	NA	17.0	NA	NA
	12/19/00	.24*	.91*	NA	NA	8.0	NA	NA
	03/01/01	<.23	<.57	NA	NA	<2.0	NA	NA
	06/19/01	<.17	.55 *	NA	NA	48.0	NA	NA
	09/24/01	<.17	<.34	NA	NA	52	NA	NA
	12/05/01	<.23	<.57	NA	NA	<2.0	NA	NA
	03/19/02	.27*	<.57	NA	NA	<2.0	NA	NA
	06/20/02	<.23	<.44	NA	NA	61.0	NA	NA
	09/18/02	<.23	<.44	NA	NA	110.0	NA	NA
	12/17/02	<.23	<.44	NA	NA	150.0	NA	NA
W-8	02/20/97	NA	17	22	NA	320.0	NA	34
	05/27/97	1.6	37	27	NA	670.0	<.2	54
	09/18/97	0.45	14.4	14.6**	1**	338.0	.11**	31.8
	12/12/97	0.5*	5.7	<9.7	<.8	147.0	.07*	17.1
	03/25/98	0.43	10.1	15**	<1.7	205.0	.007*	21
	06/10/98	0.54	9.9	12.6**	<1.7	264.0	.016*	21.6
	10/27/98	0.80	3.90	4.8*	<.0032	64.0	<.05	85
	02/09/99	<.31	<.62	<60	<.0032	850.0	<.05	12
	06/08/99	<.31	<.62	2.6	<.0032	50.0	<.05	<12
	09/13/99	<.31	1.90	2.7	<.0032	98.0	<.05	29
	12/15/99	<.31	2.80	NA	NA	180.0	NA	NA
	03/13/00	<.31	1.4 *	NA	NA	65.0	NA	NA
	06/22/00	<.31	3.10	NA	NA	74.0	NA	NA
	09/27/00	.27*	.75*	NA	NA	26.0	NA	NA
	12/19/00	<.23	.66*	NA	NA	40.0	NA	NA
	03/01/01	<.23	<.57	NA	NA	23.0	NA	NA
	06/19/01	<.17	1*	NA	NA	100.0	NA	NA
	09/24/01	<.17	<.34	NA	NA	380.0	NA	NA
	12/25/01	<.23	<.57	NA	NA	<2.0	NA	NA
	03/19/02	<.23	<.57	NA	NA	21.0	NA	NA
	06/20/02	<.23	.47*	NA	NA	1400.0	NA	NA
	09/18/02	<.23	<.44	NA	NA	620.0	NA	NA
	12/17/02	<.23	<.44	NA	NA	34.0	NA	NA

Table #3

LABORATORY ANALYTICAL RESULTS / Selected Metals
N.W. Mauthe Superfund Site - Appleton, Wisconsin
MCO No. M0050-920764.14

Well Name	Sample Date	Cadmium (ug/l)	Chromium (ug/l)	Copper (ug/l)	Cyanide (ug/l)	Manganese (ug/l)	Mercury (ug/l)	Zinc (ug/l)
W-15	02/20/97	NA	32	52	NA	430.0	NA	88
	05/27/97	0.27	5.9	15	NA	97.0	<.2	39
	09/18/97	0.31	13.9	18.8**	<.78	325.0	<.03	35.5
	12/12/97	.12*	5.7	9.7**	<.8	80.9	.03*	18.5
	03/25/98	.04*	<3.9	<9.5	<1.7	85.7	.038*	13.7
	06/10/98	.11*	10	13.2**	<1.7	147.0	.016*	18.8
	10/27/98	.41*	6.80	7.40	<.0032	110.0	<.05	100
	02/09/99	<.31	<.62	<.60	<.0032	320.0	<.05	<12
	06/08/99	<.31	2.40	14.00	<.0032	130.0	<.05	66
	09/13/99	<.31	5.30	6.40	<.0032	130.0	<.05	16
	12/15/99	<.31	5.00	NA	NA	90.0	NA	NA
	03/13/00	<.31	7.00	NA	NA	130.0	NA	NA
	06/22/00	<.31	1.80	NA	NA	11.0	NA	NA
	09/27/00	<.23	4.20	NA	NA	24.0	NA	NA
	12/19/00	<.23	1.4*	NA	NA	930.0	NA	NA
	03/01/01	<.23	<.57	NA	NA	<2.0	NA	NA
	06/19/01	<.17	<.34	NA	NA	<2	NA	NA
	09/24/01	<.17	<.34	NA	NA	290.0	NA	NA
	12/05/01	<.23	<.57	NA	NA	2.5	NA	NA
	03/19/02	<.23	<.57	NA	NA	22.0	NA	NA
	06/20/02	.36*	.47*	NA	NA	3.1	NA	NA
	09/18/02	<.23	<.44	NA	NA	110.0	NA	NA
	12/17/02	<.23	<.44	NA	NA	31.0	NA	NA
MW-101	02/20/97	NA	36	41	NA	820.0	NA	49
	05/27/97	<.2	10	11	NA	170.0	<.03	18
	09/18/97	.06**	11.9	10.7**	1**	145.0	<.05	18.2
	12/12/97	.06*	12.8	<9.7	<.8	176.0	.05*	20.7
	03/25/98	.04*	20.9	21.6**	<1.7	239.0	.007*	32.7
	06/10/98	.27*	48.2	46.8	<1.7	604.0	.044*	75.9
	10/27/98	<.16	3.20	4.2*	<.0032	24.0	<.05	54
	02/09/99	<.31	<.62	<.60	<.0032	1900.0	<.05	14
	06/08/99	<.31	1.80	8.2	<.0032	380.0	<.05	39
	09/13/99	<.31	2.90	5.1	<.0032	31.0	<.05	<12
	12/15/99	<.31	2.50	NA	NA	9.1	NA	NA
	03/13/00	<.31	2.30	NA	NA	100.0	NA	NA
	06/22/00	<.31	1.4 *	NA	NA	<4.2	NA	NA
	09/27/00	<.23	19.00	NA	NA	37.0	NA	NA
	12/19/00	<.23	7.20	NA	NA	18.0	NA	NA
	03/01/01	<.23	<.57	NA	NA	13.0	NA	NA
	06/19/01	<.17	8.50	NA	NA	9.1	NA	NA
	09/24/01	<.17	.55 *	NA	NA	<2.0	NA	NA
	12/05/01	<.23	.90*	NA	NA	<2.0	NA	NA
	03/19/02	<.23	.66*	NA	NA	<2.0	NA	NA
	06/20/02	<.23	.58*	NA	NA	2.2	NA	NA
	09/18/02	<.23	<.44	NA	NA	13.0	NA	NA
	12/17/02	<.23	<.44	NA	NA	33.0	NA	NA

Table #3

LABORATORY ANALYTICAL RESULTS / Selected Metals
N.W. Mauthe Superfund Site - Appleton, Wisconsin
MCO No. M0050-920764.14

Well Name	Sample Date	Cadmium (ug/l)	Chromium (ug/l)	Copper (ug/l)	Cyanide (ug/l)	Manganese (ug/l)	Mercury (ug/l)	Zinc (ug/l)
MW-102	02/20/97	NA	26	38	NA	570.0	NA	34
	05/27/97	0.21	48	77	NA	920.0	<.2	73
	09/18/97	.08**	<3.92	6.9**	2**	302.0	<.03	8.7
	12/12/97	.04*	<3.9	<9.7	<.8	387.0	.04*	10.9
	03/25/98	.11*	<3.9	9.5**	<1.7	302.0	.007*	7.4*
	06/10/98	.04*	<3.9	<9.8	<1.7	318.0	.018*	9.5
	10/27/98	.27*	.98*	3.2*	<.0032	340.0	<.05	24
	02/09/99	<.31	.73*	<.60	<.0032	670.0	<.05	20
	06/08/99	<.31	1.2*	5.8	<.0032	140.0	<.05	36
	09/13/99	<.31	4.00	15.0	<.0032	160.0	<.05	73
	12/15/99	<.31	1.2 *	NA	NA	550.0	NA	NA
	03/13/00	<.31	1.70	NA	NA	580.0	NA	NA
	06/22/00	<.31	<.62	NA	NA	310.0	NA	NA
	09/27/00	<.23	2.10	NA	NA	130.0	NA	NA
	12/19/00	.33*	2.90	NA	NA	110.0	NA	NA
	03/01/01	<.23	<.57	NA	NA	<2.0	NA	NA
	06/19/01	<.17	<.34	NA	NA	<2	NA	NA
	09/24/01	.48 *	1.40	NA	NA	46.0	NA	NA
	12/05/01	<.23	<.57	NA	NA	100.0	NA	NA
	03/19/02	<.23	<.57	NA	NA	87.0	NA	NA
	06/20/02	<.17	1.80	NA	NA	44.0	NA	NA
	09/18/02	<.23	1.4*	NA	NA	<2.0	NA	NA
	12/17/02	<.23	<.44	NA	NA	38.0	NA	NA
MW-103	02/20/97	NA	1,300	47	NA	800.0	NA	27
	05/27/97	<.2	160.0	31	NA	900.0	<.2	29
	09/18/97	.06**	35.2	13.5**	3**	287.0	<.03	13.7
	12/12/97	.04*	16.3	<9.7	<.8	84.3	.09*	21.4
	03/25/98	.04*	15.5	<9.5	<1.7	83.0	.007*	7.5*
	06/10/98	.15*	57.6	27.5	<1.7	417.0	.02*	33.7
	10/27/98	<.16	6.30	2.3*	<.0032	27.0	<.05	30.0
	06/08/99	<.31	87.00	3.5	<.0032	810.0	<.05	30
	09/13/99	<.31	720.0	5.9	<.0032	83.0	<.05	15
	12/15/99	<.31	260.0	NA	NA	160.0	NA	NA
	03/13/00	<.31	600.0	NA	NA	79.0	NA	NA
	06/22/00	<.31	130.0	NA	NA	180.0	NA	NA
	09/27/00	<.23	280.0	NA	NA	230.0	NA	NA
	12/19/00	<.23	180.0	NA	NA	170.0	NA	NA
	03/01/01	<.23	49.0	NA	NA	240.0	NA	NA
	06/19/01	<.17	11.0	NA	NA	350.0	NA	NA
	09/24/01	<.17	12.0	NA	NA	280.0	NA	NA
	12/05/01	<.23	2.9	NA	NA	230.0	NA	NA
	03/19/02	<.23	73.0	NA	NA	7.9	NA	NA
	06/20/02	<.23	14.0	NA	NA	630.0	NA	NA
	09/18/02	<.23	6.5	NA	NA	560.0	NA	NA
	12/17/02	<.23	6.2	NA	NA	3.7	NA	NA

Table #3

LABORATORY ANALYTICAL RESULTS / Selected Metals
N.W. Mauthe Superfund Site - Appleton, Wisconsin
MCO No. M0050-920764.14

Well Name	Sample Date	Cadmium (ug/l)	Chromium (ug/l)	Copper (ug/l)	Cyanide (ug/l)	Manganese (ug/l)	Mercury (ug/l)	Zinc (ug/l)
MW-104	02/20/97	NA	5.9	15	NA	550.0	NA	6.9
	05/27/97	<.02	6.9	11	NA	470.0	<.2	5.2
	09/18/97	<.04	35.6	5**	3**	235.0	<.03	4.74
	12/12/97	.04*	61.8	9.8**	<.8	279.0	.05*	14
	03/25/98	.04*	66.8	<9.5	<1.7	73.6	.008*	7.4*
	06/10/98	.04*	219.0	<9.8	<1.7	107.0	.016*	12.8
	10/27/98	.29*	150.0	2.3*	<.0032	25.0	<.05	30
	02/09/99	<.31	94.0	1.4*	<.0032	1000.0	<.05	<12
	06/08/99	1*	62.0	12.0	<.0032	620.0	<.05	17
	09/13/99	<.31	80.0	3.2	<.0032	9.2	<.05	<12
	12/15/99	<.31	170.0	NA	NA	1.6	NA	NA
	03/13/00	<.31	300.0	NA	NA	13.0	NA	NA
	06/22/00	<.31	210.0	NA	NA	41.0	NA	NA
	09/27/00	<.23	510.0	NA	NA	3.9	NA	NA
	12/19/00	<.23	790.0	NA	NA	<2	NA	NA
	03/01/01	<.23	840.0	NA	NA	<2	NA	NA
	06/19/01	<.17	680.0	NA	NA	2.3	NA	NA
	09/24/01	<.17	310.0	NA	NA	17.0	NA	NA
	12/05/02	<.23	390.0	NA	NA	2.2	NA	NA
	03/19/02	<.23	430.0	NA	NA	<2.0	NA	NA
	06/20/02	<.23	490.0	NA	NA	14.0	NA	NA
	09/18/02	<.23	410.0	NA	NA	27.0	NA	NA
	12/17/02	<.23	240.0	NA	NA	8.9	NA	NA
MW-105	02/20/97	NA	21	22	NA	1100.0	NA	23
	05/27/97	<.2	5	<10	NA	120.0	<.2	12
	09/18/97	.14**	29.5	28.3	1**	532.0	<.03	46
	12/12/97	.36*	15.8	12.5**	<.8	297.0	.03*	27.1
	03/25/98	.04*	30.8	27.6	<1.7	518.0	.064*	44
	06/10/98	.048*	13.7	15.3**	<1.7	217.0	.016*	22.1
	10/27/98	.29*	8.80	8.20	<.0032	150.0	<.05	70
	02/09/99	<.31	1.3*	4.30	<.0032	2000.0	<.05	19
	06/08/99	<.31	1*	18.00	<.0032	1300.0	<.05	66
	09/13/99	<.31	.64*	24.00	<.0032	1700.0	<.05	30
	12/15/99	<.31	<.62	NA	NA	860.0	NA	NA
	03/13/00	<.31	4.80	NA	NA	660.0	NA	NA
	06/22/00	<.31	1.0 *	NA	NA	600.0	NA	NA
	09/27/00	<.23	1.2*	NA	NA	700.0	NA	NA
	12/19/00	<.23	<.4	NA	NA	230.0	NA	NA
	03/01/01	<.23	<.57	NA	NA	43.0	NA	NA
	06/19/01	<.17	.75*	NA	NA	230.0	NA	NA
	09/24/01	<.17	.73*	NA	NA	530.0	NA	NA
	12/05/01	<.23	<.57	NA	NA	<2.0	NA	NA
	03/19/02	<.23	<.57	NA	NA	22.0	NA	NA
	06/20/02	<.23	.60*	NA	NA	1400.0	NA	NA
	09/18/02	<.23	<.44	NA	NA	600.0	NA	NA
	12/17/02	<.23	<.44	NA	NA	58.0	NA	NA

Table #3

LABORATORY ANALYTICAL RESULTS / Selected Metals
N.W. Mauthe Superfund Site - Appleton, Wisconsin
MCO No. M0050-920764.14

Well Name	Sample Date	Cadmium (ug/l)	Chromium (ug/l)	Copper (ug/l)	Cyanide (ug/l)	Manganese (ug/l)	Mercury (ug/l)	Zinc (ug/l)
MW-106	02/20/97	NA	21	24	NA	320.0	NA	26
	05/27/97	<.02	40	35	NA	590.0	<.2	68
	09/18/97	.05**	5.5	6.2**	1**	56.9	<.03	35.6
	12/12/97	.04*	9.2	9.7**	<.08	155.0	.03*	18.4
	03/25/98	NA	13.40	14.4**	<1.7	150.0	.007*	18.5
	06/10/98	.04*	<3.9	10.2**	<1.7	10.0	.016*	10.9
	10/27/98	.27*	3.20	4.3*	<.0032	38.0	<.05	88
	02/09/99	<.31	<.62	1.1*	<.0032	760.0	<.05	22
	06/08/99	<.31	.79*	2.3	<.0032	900.0	<.05	<12
	09/13/99	<.31	1.80	4.7	<.0032	1100.0	<.05	30
	12/15/99	<.31	1.3 *	NA	NA	130.0	NA	NA
	03/31/00	<.31	2.30	NA	NA	270.0	NA	NA
	06/22/00	<.31	.73 *	NA	NA	<4.2	NA	NA
	09/27/00	<.23	.88*	NA	NA	50.0	NA	NA
	12/19/00	<.23	.77*	NA	NA	22.0	NA	NA
	03/01/01	<.23	<.57	NA	NA	45.0	NA	NA
	06/19/01	.21*	.39*	NA	NA	57.0	NA	NA
	09/24/01	<.17	<.34	NA	NA	950.0	NA	NA
	12/05/01	<.23	<.57	NA	NA	310.0	NA	NA
	03/19/02	<.23	<.57	NA	NA	92.0	NA	NA
	06/20/02	<.23	<.44	NA	NA	270.0	NA	NA
	09/18/02	<.23	<.44	NA	NA	420.0	NA	NA
	12/17/02	<.23	<.44	NA	NA	41.0	NA	NA
MW-107	02/20/97	NA	2,000	13	NA	190.0	NA	6.9
	05/27/97	<.2	3,600	<10	NA	91.0	<.2	10
	09/18/97	<.04	2,670	<8.1	1**	59.3	<.03	33.5
	12/12/97	.04*	2,310	<9.7	<.8	48.4	.1*	6.7
	03/25/98	.04*	11,200*	12.1**	<1.7	68.2	.041*	9.3*
	06/10/98	.11*	6,240	13.8**	<1.7	161.0	.027*	17.3*
	10/27/98	<.16	7,100	1.2*	<.0032	28.0	<.05	94
	02/09/99	<.31	3,200	1.9*	<.0032	49.0	<.05	<12
	06/08/99	<.31	5,800	3.0	<.0032	25.0	<.05	<12
	09/13/99	<.31	4,000	1.9*	<.0032	18.0	<.05	<12
	12/15/99	<.31	14,000	NA	NA	.83 *	NA	NA
	03/13/00	<.31	8,100	NA	NA	22.0	NA	NA
	06/22/00	<.31	14,000	NA	NA	<42	NA	NA
	09/27/00	<.23	11,000	NA	NA	4.9	NA	NA
	12/19/00	<.23	10,000	NA	NA	2.4	NA	NA
	03/01/01	<.23	5,000	NA	NA	2.2	NA	NA
	06/19/01	<.17	8,200	NA	NA	<2	NA	NA
	09/24/01	<17	5,300	NA	NA	270.0	NA	NA
	12/05/01	<.23	6,200	NA	NA	10.0	NA	NA
	03/19/02	<.23	7,000	NA	NA	<20	NA	NA
	06/20/02	<2.3	7,000	NA	NA	<20	NA	NA
	09/18/02	<.17	4,300	NA	NA	24.0	NA	NA
	12/17/02	<.17	3,700	NA	NA	15.0	NA	NA

Table #3

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N.W. Mauthe Superfund Site - Appleton, Wisconsin
MCO No. M0050-920764.14

Well Name	Sample Date	Cadmium (ug/l)	Chromium (ug/l)	Copper (ug/l)	Cyanide (ug/l)	Manganese (ug/l)	Mercury (ug/l)	Zinc (ug/l)
MW-108	02/20/97	NA	25	23	NA	490.0	NA	31
	05/27/97	<.2	11	13	NA	210.0	<.2	15
	09/18/97	.14**	27.4	22.4**	1**	462.0	<.03	36.6
	12/12/97	.04*	5.6	<9.7	<.8	74.8	.03*	27.9
	03/25/98	.04*	9.4	10.4**	<1.7	142.0	.007*	13.8
	06/10/98	.14*	28.4	25.5	<1.7	478.0	.021*	40.5
	10/27/98	.26*	8.90	7.40	<.0032	88.0	<0.5	44
	02/09/99	<.31	1.70	3.90	<.0032	560.0	<.05	30
	06/08/99	<.31	3.10	1.4*	<.0032	450.0	<.05	54
	09/13/99	<.31	4.50	5.30	<.0032	100.0	<.05	<12
	12/15/99	<.31	6.10	NA	NA	79.0	NA	NA
	03/13/00	<.31	3.6	NA	NA	41.0	NA	NA
	06/22/00	<.31	6.5	NA	NA	<4.2	NA	NA
	09/27/00	<.23	2.9	NA	NA	29.0	NA	NA
	12/19/00	<.23	3.0	NA	NA	22.0	NA	NA
	03/01/01	<.23	<.57	NA	NA	<2.0	NA	NA
	06/19/01	<.17	2.40	NA	NA	110.0	NA	NA
	09/24/01	<.17	<.34	NA	NA	40.0	NA	NA
	12/05/01	<.23	<.57	NA	NA	7.4	NA	NA
	03/19/02	<.23	<.57	NA	NA	3.4	NA	NA
	06/20/02	<.23	.85*	NA	NA	39.0	NA	NA
	09/18/02	<.23	<.44	NA	NA	150.0	NA	NA
	12/17/02	<.23	.67*	NA	NA	34.0	NA	NA
Maximum Contaminant Level (MCL)		5	100	100	200	50.0	2	5,000
Enforcement Standard Chapter NR 140.10		5	100	1,300	200	50.0	2	5,000
Preventive Action Limit Chapter NR 140.10		0.5	10	130	40	25.0	0.2	2,500

EXPLANATION:

Samples collected prior to 10/27/98 were collected by CH2M Hill.
* = Detection of compound in area of less certain quantification.
** = Compound was found in sample and blank.
ND = Not detected above the analytical laboratories method detection limit
NA = Not Analyzed
MW-104 = Was tested for Aluminum, Nickel, Arsenic & Lead. No quantifiable detections were noted for any of the analytes.
ug/L = Microgram/Liter
mg/L = Milligram / Liter
Indicates an exceedance of the NR 140 Preventive Action Limit (PAL) and Groundwater Quality Enforcement Standard
Indicates Exceedance of the NR 140 Groundwater Preventive Action Limit (PAL)

Table #4

LABORATORY ANALYTICAL RESULTS
Volatile Organic Compounds (VOC's)
N.W. Mauthe Superfund Site - Appleton, Wisconsin
MCO No. M0050-920764.14

Well Name	Sample Date	Benzene (ug/l)	Chloroform (ug/l)	1,1-Dichloroethane (ug/l)	1,1-Dichloroethene (ug/l)	cis-1,2,-Dichloroethene (ug/l)	Trans-1,2,-Dichloroethene (ug/l)	Ortho-Xylene (ug/l)	Toluene (ug/l)	1,1,1-Trichloroethane (ug/l)	1,1,2-Trichloroethane (ug/l)	Trichloroethene (ug/l)	Meta, para Xylene (ug/l)	Total Xylenes (ug/l)
W-2	02/20/97	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	-
	05/27/97	<.6	<.5	<.5	<.6	<.5	<.5	<.5	<.5	<.6	<.5	<.5	<.6	-
	09/18/97	<.5	<.6	<85	<.7	<7	<7	<124	<68	<40	<.5	<.5	<124	-
	12/12/97	<.5	<.6	<85	<.7	<7	<7	<120	<68	<40	<.5	<.5	<120	-
	03/25/98	<.5	<.6	<85	<.7	<7	<7	<.4	<68	<40	<.5	<.5	.4**	-
	06/10/98	<.5	<.6	<85	<.7	<7	<7	<120	<68	<40	<.5	<.5	<120	-
	10/27/98	<.24	<.23	<.27	<.28	<.27	<.26	<.17	<.21	<.26	<.23	<.29	<.36	-
	02/09/99	.15*	<.15	<.14	<.15	<.16	<.17	***	<.13	<.14	<.15	<.14	***	<.37
	06/08/99	<.13	<.15	<.14	<.15	<.16	<.17	***	<.13	<.14	<.15	<.14	***	<.37
	09/13/99	<.13	<.15	<.14	<.15	<.16	<.17	***	.13*	<.14	<.15	<.14	***	<37
	03/13/00	<.32	<.28	<.36	<.35	<.15	<.39	***	<.37	<.33	<.11	<.34	***	<.71
	03/01/01	<.12	<.15	<.64	<.13	<.28	<.13	***	<.17	<.17	<.25	<.13	***	<.56
	03/19/02	<.12	<.15	<.64	<.13	<.28	<.13	***	<.17	<.17	<.25	<.13	***	<.56
W-8	02/20/97	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-
	05/27/97	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	-
	09/18/97	<.5	<.6	<85	<40	<7	<7	<124	<68	<40	<.5	<.5	<124	-
	12/12/97	<.5	<.6	<85	<40	<7	<7	<.4	<68	<40	<.5	<.5	.4**	-
	03/25/98	<.5	<.6	<85	<40	<7	<7	<.3	<68	<40	<.5	<.5	.3**	-
	06/10/98	<.5	<.6	<85	<40	<7	<7	<120	<68	<40	<.5	<.5	<120	-
	10/27/98	<.24	<.23	<.27	<.28	<.27	<.26	<.17	<.21	<.26	<.23	<.29	<.36	-
	02/09/99	.19*	<.15	<.15	<.15	<.16	<.17	***	.15*	<.14	<.15	<.15	***	<.37
	06/08/99	<.13	<.16	<.14	<.15	<.16	<.17	***	0.13	<.14	<.15	<.14	***	<.37
	09/13/99	<.13	<.15	<.14	<.15	<.16	<.17	***	<.13	<.14	<.15	<.14	***	<.37
	03/13/00	<.32	<.28	<.36	<.35	<.15	<.39	***	<.37	<.33	<.11	<.34	***	<.71
	03/01/01	<.12	<.15	<.64	<.13	<.28	<.13	***	<.17	<.17	<.25	<.13	***	<.56
	03/19/02	<.12	<.15	<.64	<.13	<.28	<.13	***	<.17	<.17	<.25	<.13	***	<.56

Table #4

LABORATORY ANALYTICAL RESULTS
Volatile Organic Compounds (VOC's)
N.W. Mauthe Superfund Site - Appleton, Wisconsin
MCO No. M0050-920764.14

Well Name	Sample Date	Benzene (ug/l)	Chloroform (ug/l)	1,1-Dichloroethane (ug/l)	1,1-Dichloroethene (ug/l)	cis-1,2,-Dichloroethene (ug/l)	Trans-1,2,-Dichloroethene (ug/l)	Ortho-Xylene (ug/l)	Toluene (ug/l)	1,1,1-Trichloroethane (ug/l)	1,1,2-Trichloroethane (ug/l)	Trichloroethene (ug/l)	Meta, para Xylene (ug/l)	Total Xylenes (ug/l)
W-15	02/20/97	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	-
	05/27/97	<.5	0.22	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	-
	09/18/97	<.5	<.6	<85	<.7	<7	<7	<124	<68	<40	<.5	<.5	<124	-
	12/12/97	<.6	<.6	<85	<.7	<7	<7	<120	<68	<40	<.5	<.5	<120	-
	03/25/98	<.5	<.6	<85	<.7	<7	<7	<.4	<68	<40	<.5	<.5	.4**	-
	06/10/98	<.5	<.6	<85	<.7	<7	<7	<120	<68	<40	<.5	<.5	<120	-
	10/27/98	<.24	<.23	<.27	<.28	<.27	<.26	<.17	<.21	<.26	<.23	<.29	<.36	-
	02/09/99	<.13	<.15	<.14	<.15	<.16	<.17	***	<.13	<.14	<.15	<.14	***	<.37
	06/08/99	.16*	<.15	<.14	<.15	<.16	<.17	***	<.13	<.14	<.15	<.14	***	<.37
	09/13/99	<.13	<.15	<.14	<.15	<.16	<.17	***	<.13	<.14	<.15	<.14	***	<.37
	03/13/00	<.32	<.28	<.36	<.35	<.15	<.39	***	<.37	<.33	<.11	<.34	***	<.71
	03/01/01	<.12	<.15	<.64	<.13	<.28	<.13	***	<.17	<.17	<.25	<.13	***	<.56
	03/19/02	<.12	<.15	<.64	<.13	<.28	<.13	***	<.17	<.17	<.25	<.13	***	<.56
MW-101	02/20/97	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	-
	05/27/97	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	-
	09/18/97	<.5	<.6	.491*	.353*	<7	<7	<124	<68	3.03	<.5	3.31	<124	-
	12/12/97	<.5	<.6	<85	<.7	<7	<7	<120	<68	<40	<.5	<.5	<120	-
	03/25/98	<.5	<.6	<85	<.7	<7	<7	<120	<68	<40	<.5	<.5	<120	-
	06/10/98	<.5	<.6	<85	<.7	<7	<7	<120	<68	<40	<.5	<.5	<120	-
	10/27/98	<.24	<.23	<.27	<.28	<.27	<.26	<.17	<.21	<.26	<.23	<.29	<.36	-
	02/09/99	<.13	<.15	<.14	<.15	<.16	<.17	***	0.91	<.14	<.15	<.14	***	<.37
	06/08/99	<.13	<.15	<.14	<.15	<.16	<.17	***	<.13	<.14	<.15	<.14	***	<.37
	03/13/00	<.32	<.28	<.36	<.35	<.15	<.39	***	<.37	<.33	<.11	<.34	***	<.71
	03/01/01	<.12	<.15	<.64	<.13	<.28	<.13	***	<.17	<.17	<.25	<.13	***	<.56
	03/19/02	<.12	<.15	<.64	<.13	<.28	<.13	***	<.17	<.17	<.25	<.13	***	<.56

Table #4

LABORATORY ANALYTICAL RESULTS
Volatile Organic Compounds (VOC's)
N.W. Mauthe Superfund Site - Appleton, Wisconsin
MCO No. M0050-920764.14

Well Name	Sample Date	Benzene (ug/l)	Chloroform (ug/l)	1,1-Dichloroethane (ug/l)	1,1-Dichloroethene (ug/l)	cis-1,2,-Dichloroethene (ug/l)	Trans-1,2,-Dichloroethene (ug/l)	Ortho-Xylene (ug/l)	Toluene (ug/l)	1,1,1-Trichloroethane (ug/l)	1,1,2-Trichloroethane (ug/l)	Trichloroethene (ug/l)	Meta, para Xylene (ug/l)	Total Xylenes (ug/l)
MW-102	02/20/97	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.6	<.5	<.5	-
	05/27/97	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.6	<.5	-
	09/18/97	<.6	<.6	<.85	<85	<7	<7	<124	<68	<40	<.5	<.6	<124	-
	12/12/97	<.5	<.6	<85	<85	<7	<7	<120	<68	<40	<.5	<.5	<120	-
	03/25/98	<.5	<.6	<85	<85	<7	<7	<.4	<68	<40	<.5	<.5	.4*	-
	06/10/98	<.5	<.6	<85	<85	<7	<7	<120	<68	<40	<.5	<.5	<120	-
	10/27/98	<.24	<.23	<.27	<.28	<.27	<.26	<.17	<.21	<.26	<.23	<.29	<.36	-
	02/09/99	<.13	<.15	<.14	<.15	<.16	<.17	***	0.65	<.14	<.15	<.14	***	<.37
	06/08/99	<.13	<.15	<.14	<.15	<.16	<.17	***	.21*	<.14	<.15	<.14	***	<.37
	09/13/99	<.13	<.15	<.14	<.15	<.16	<.17	***	<.13	<.14	<.15	<.14	***	<.37
	03/13/00	<.32	<.28	<.36	<.35	<.15	<.39	***	<.37	<.33	<.11	<.34	***	<.71
	03/01/01	<.12	<.15	<.64	<.13	<.28	<.13	***	<.17	<.17	<.25	<.13	***	<.56
	03/19/02	<.12	<.15	<.64	<.13	<.28	<.13	***	<.17	<.17	<.25	<.13	***	<.56
MW-103	02/20/97	<.5	<.5	<.5	<.5	<.5	<.5	<.6	<.5	<.5	<.5	<.6	<.5	-
	05/27/97	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	-
	09/18/97	<.5	<.6	<85	<.7	<7	<7	<124	<68	<40	<.5	<.6	<124	-
	12/12/97	<.5	<.6	<85	<.7	<7	<7	<120	<68	<40	<.5	<.5	<120	-
	03/25/98	<.5	<.6	<85	<.7	<7	<7	<120	<68	<40	<.5	<.6	<120	-
	06/10/98	<.5	<.6	<85	<.7	<7	<7	<120	<68	<40	<.5	<.6	<120	-
	10/27/98	<.24	<.23	<.27	<.28	<.27	<.26	<.17	<.21	<.26	<.23	<.29	<.36	-
	02/09/99	<.13	<.15	<.14	<.15	<.16	<.17	***	.15*	<.14	<.15	<.14	***	<.37
	06/08/99	<.13	<.15	<.14	<.15	<.16	<.17	***	<.13	<.14	<.15	<.14	***	<.37
	09/13/99	<.13	<.15	<.14	<.15	<.16	<.17	***	<.13	<.14	<.15	<.14	***	<.37
	03/13/00	<.32	<.28	<.36	<.35	<.15	<.39	***	<.37	<.33	<.11	<.34	***	<.71
	03/01/01	<.12	<.15	<.64	<.13	<.28	<.13	***	<.17	<.17	<.25	<.13	***	<.56
	03/19/02	<.12	<.15	<.64	<.13	<.28	<.13	***	<.17	<.17	<.25	.23*	***	<.56

Table #4

LABORATORY ANALYTICAL RESULTS
Volatile Organic Compounds (VOC's)
N.W. Mauthe Superfund Site - Appleton, Wisconsin
MCO No. M0050-920764.14

Well Name	Sample Date	Benzene (ug/l)	Chloroform (ug/l)	1,1-Dichloroethane (ug/l)	1,1-Dichloroethene (ug/l)	cis-1,2,-Dichloroethene (ug/l)	Trans-1,2,-Dichloroethene (ug/l)	Ortho-Xylene (ug/l)	Toluene (ug/l)	1,1,1-Trichloroethane (ug/l)	1,1,2-Trichloroethane (ug/l)	Trichloroethene (ug/l)	Meta, para Xylene (ug/l)	Total Xylenes (ug/l)
MW-104	02/20/97	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	-
	05/27/97	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	-
	09/18/97	<.5	<.6	<85	<.7	<7	<7	<124	<68	.324*	<.5	<.5	<124	-
	12/12/97	<.5	<.6	0.4	<.7	<7	<7	<120	<68	1*	<.5	0.9	<120	-
	03/26/98	<.5	<.6	<85	<.7	<7	<7	<120	<68	.8*	<.5	<.5	<120	-
	06/10/98	<.5	<.6	<85	<.7	<7	<7	<120	<68	2*	<.6	<.6	<120	-
	10/27/98	<.24	<.23	.35*	<.28	<.27	<.26	<.17	<.21	1.8	<.23	<.29	<.36	-
	02/09/99	<.13	<.15	.38*	<.15	<.16	<.17	***	.17*	1.5	<.15	<.14	***	<.37
	06/08/99	<.13	<.15	.34*	<.15	<.16	<.17	***	.14*	1.4	<.15	<.14	***	<.37
	09/13/99	<.13	<.15	.38*	<.15	<.16	<.17	***	.27*	1.6	<.15	<.14	***	<.37
	03/13/00	<.32	<.28	.38 *	<.35	<.15	<.39	***	<.37	1.6	<.11	<.34	***	<.71
	03/01/01	<.12	<.15	<.64	<.13	<.28	<.13	***	<.17	2.8	<.25	<.13	***	<.56
	03/19/02	<.12	<.15	<.64	<.13	<.28	<.13	***	<.17	2.4	<.25	<.23 *	***	<.56
MW-105	02/20/97	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	-
	05/27/97	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	-
	09/18/97	<.5	<.6	<85	<.7	<7	<7	<124	<68	<40	<.5	<.5	<124	-
	12/12/97	<.5	<.6	<85	<.7	<7	<7	<120	<68	<40	<.5	<.5	<120	-
	03/25/98	<.5	<.6	<85	<.7	<7	<7	<.4	<68	<40	<.5	<.5	.4*	-
	06/10/98	<.5	<.6	<85	<.7	<7	<7	<120	<68	<40	<.5	<.5	<120	-
	10/27/98	<.24	<.23	<.27	<.28	<.27	<.26	<.17	<.21	<.26	<.23	<.29	<.36	-
	02/09/99	.16*	<.15	<.14	<.15	<.16	<.17	***	.3*	<.14	<.15	<.14	***	<.37
	06/08/99	<.13	<.15	<.14	<.15	<.16	<.17	***	<.13*	<.14	<.15	<.14	***	<.37
	09/13/99	<.13	<.15	<.14	<.15	<.16	<.17	***	<.13	<.14	<.15	<.14	***	<.37
	03/13/00	<.32	<.28	<.36	<.35	<.15	<.39	***	<.37	<.33	<.11	<.34	***	<.71
	03/01/01	<.12	<.15	<.64	<.13	<.28	<.13	****	<.17	<.17	<.25	<.13	***	<.56
	03/19/02	<.12	<.15	<.64	<.13	<.28	<.13	***	<.17	<.17	<.25	<.13	***	<.56

Table #4

LABORATORY ANALYTICAL RESULTS
Volatile Organic Compounds (VOC's)
N.W. Mauthe Superfund Site - Appleton, Wisconsin
MCO No. M0050-920764.14

Well Name	Sample Date	Benzene (ug/l)	Chloroform (ug/l)	1,1-Dichloroethane (ug/l)	1,1-Dichloroethene (ug/l)	cis-1,2,-Dichloroethene (ug/l)	Trans-1,2,-Dichloroethene (ug/l)	Ortho-Xylene (ug/l)	Toluene (ug/l)	1,1,1-Trichloroethane (ug/l)	1,1,2-Trichloroethane (ug/l)	Trichloroethene (ug/l)	Meta, para Xylene (ug/l)	Total Xylenes (ug/l)
MW-106	02/20/97	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	-
	05/27/97	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	-
	09/18/97	<.5	<.6	<85	<.7	<7	<7	<124	<68	2.73*	<.5	<.5	<124	-
	12/12/97	<.5	<.6	<85	<.7	<7	<7	<120	<68	<40	<.5	<.5	<120	-
	03/25/98	<.5	<.6	<85	<.7	<7	<7	<120	<68	<40	<.5	<.5	<120	-
	06/10/98	<.5	<.6	<85	<.7	<7	<7	<120	<68	<40	<.5	<.5	<120	-
	10/27/98	<.24	<.23	<.27	<.28	<.27	<.26	<.17	<.21	<.26	<.23	<.29	<.36	-
	02/09/99	.18*	<.15	<.14	<.15	<.16	<.17	***	<.17	<.14	<.15	<.14	***	<.37
	06/08/99	<.13	<.15	<.14	<.15	<.16	<.17	***	<.13	<.14	<.15	<.14	***	<.37
	09/13/99	<.13	<.15	<.14	<.15	<.16	<.17	***	<.13	<.14	<.15	<.14	***	<.37
	03/13/00	<.32	<.28	<.36	<.35	<.15	0.39	***	<.37	<.33	<.11	<.34	***	<.71
	03/01/01	<.12	<.15	<.64	<.13	<.28	<.13	***	<.17	<.17	<.25	<.13	***	<.56
	03/19/02	<.12	<.15	<.64	<.13	<.28	<.13	***	<.17	<.17	<.25	<.13	***	<.56
MW-107	02/20/97	<.5	0.3	11	8.4	0.7	<.7	<.5	<.5	81	0.6	50	<.5	-
	05/27/97	0.09	1.10	36	40	3.1	<3.1	<.5	0.34	390	3.5	420	<.5	-
	09/18/97	<10	<12	47.6*	22.1	2.61*	<2.61	<2480	<68	265*	2.83	295	<2480	-
	12/12/97	<10	<12	56*	23	3*	<3	<2500	<68	280	3	290	<2500	-
	03/25/98	<25	<30	61*	69	5*	<5	<17	<68	720	5	620	17*	-
	06/10/98	<12	<15	59*	58	<3	<3	<3100	63*	340*	4*	390	<3100	-
	10/27/98	<.24	1.4	62	46*	3.6	.51*	<.17	<.21	550	4.9	640	<.36	-
	02/09/99	<3.2	<3.8	48	24	<4.0	<4.2	***	<3.2	220	<.38	250	***	<9.2
	06/08/99	<2.6	<3.0	42	20	<3.2	<3.4	***	<2.6	200	<3.0	310	***	<7.4
	09/13/99	<.26	<3.0	34	19	<.32	<3.4	***	<2.6	180	<.3.0	320	***	<.7.4
	12/15/99	<3.2	<3.8	37	56	4.6 *	<4.2	***	<3.2	570	4.5 *	880	***	<9.2
	03/13/00	<26	<23	50 *	32 *	<12	<31	***	<30	340	<.90	630	***	<57
	06/22/00	<26	<23	<29	50 *	<12	<31	***	<30	540	<9	850	***	<57
	09/27/00	<26	<23	35*	54*	<12	<31	***	<30	560	<9	870	***	<57
	12/19/00	<6.4	<5.6	36	53	4.5*	<7.8	***	<7.5	480	4.1*	790	***	<20
	03/01/01	<6.0	<7.4	<32	<6.7	<14	<6.5	***	<8.7	420	<13	760	***	<28
	06/25/01	<6.5	<15	26	35	<9	<6.1	***	<6.2	360	<6.5	620	***	<32
	09/24/01	<6.5	<15	36	50	<9	<6.1	***	<6.2	480	<6.5	760	***	<32
	12/05/01	<6.5	<15	40	50	<9	<6.1	***	<6.2	500	<6.5	810	***	<32
	03/19/02	<6.0	<7.5	37*	43	<14	<6.5	***	<8.7	440	<13	740	***	<28
	06/20/02	<7.9	<11	31	39	<7.2	<8.9	***	<7.6	410	<6.8	690	***	<14
	09/18/02	<7.9	<11	34	39	<7.2	<8.9	***	<7.6	430	<6.8	710	***	<14
	12/17/02	<7.9	<11	40	43	<7.2	<8.9	***	<7.6	470	<6.8	850	***	<14

Table #4

LABORATORY ANALYTICAL RESULTS
Volatile Organic Compounds (VOC's)
N.W. Mauthe Superfund Site - Appleton, Wisconsin
MCO No. M0050-920764.14

Well Name	Sample Date	Benzene (ug/l)	Chloroform (ug/l)	1,1-Dichloroethane (ug/l)	1,1-Dichloroethene (ug/l)	cis-1,2,-Dichloroethene (ug/l)	Trans-1,2,-Dichloroethene (ug/l)	Ortho-Xylene (ug/l)	Toluene (ug/l)	1,1,1-Trichloroethane (ug/l)	1,1,2-Trichloroethane (ug/l)	Trichloroethene (ug/l)	Meta, para Xylene (ug/l)	Total Xylenes (ug/l)
MW-108	02/20/97	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	-
	05/27/97	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	-
	09/18/97	<.5	<.6	<85	<.7	<7	<7	<124	<68	<40	<.5	<.5	<124	-
	12/12/97	<.5	<.6	<85	<.7	<7	<7	<120	<68	<40	<.5	<.5	<120	-
	03/25/98	<.5	<.6	<85	<.7	<7	<7	<120	<68	<40	<.5	<.5	<120	-
	06/10/98	<.5	<.6	<85	<.7	<7	<7	<120	<68	<44	<.5	<.5	<120	-
	10/27/98	<.24	<.23	<.22	<.28	<.27	<.26	<.17	<.21	<.26	<.23	<.29	<.36	-
	02/09/99	<.13	<.15	<.14	<.15	<.16	<.17	***	0.83	<.14	<.15	<.14	***	<.37
	06/08/99	<.13	<.15	<.14	<.15	<.16	<.17	***	.15*	<.14	<.15	<.14	***	<.37
	09/13/99	<.13	<.15	<.14	<.15	<.16	<.17	***	0.84	<.14	<.15	<.14	***	<.32
	03/13/00	<.32	<.28	<.36	<.35	<.15	<.39	***	<.37	<.33	<.11	<.36	***	<.71
	03/31/01	<.12	<.15	<.64	<.13	<.28	<.13	***	<.17	<.17	<.25	<.13	***	<56
	03/19/02	<.12	<.15	<.64	<.13	<.28	<.13	***	<.17	<.17	<.25	<.13	***	<.56
MCL NR 149.21 (9)		5.0	-	-	7.0	70	100	-	1,000	200	5.0	5.0	—	-
Enforcement Standards (ES) 140.10		5	6	850	7	70	100	620**	343	200	5	5	620**	620
Preventive Action Plan (PAL) 140.10		0.5	0.6	85	0.7	7	20	124**	686	40	0.5	0.5	124**	124

EXPLANATION:

Results prior to 10/27/98 for cis-1,2,-Dichloroethene and Trans-1,2 Dichloroethene were listed as Total Dichloroethene and were placed in this table under the heading cis-1,2,-Dichloroethene.
Results prior to 10/27/98 for Ortho Xylene and Meta, para Xylene were listed as Total Xylenes and were placed in this table under the heading Meta, para Xylene.
* = Detection of compound in area of less certain quantification
** = Standard includes Ortho-, Meta, para-Xylenes
*** = As of 02/09/99 Xylene results are listed as "Total Xylenes".
ND = Not Detected
NA = Not Analyzed
MCL = Maximum Contaminant Levels
ug/l = Microgram/Liter
[ ] = Indicates an exceedance of the MCL 149.21(9), Preventive Action Limit (PAL) 140.10 or ES 140.10

Table #5

NATURAL ATTENTUTION-GEOCHEMICAL PARAMETERS
N.W. Mauthe Supefund Site - Appleton, Wisconsin
MCO No. M0050-920764.14

Well Name	Sample Date	Purge* Volume (gallons)	pH (units)	Temperature (degree C)	Conductivity (units as shown)	Dissolved Oxygen (ppm)	Redox (mV)	Alkalinity (gpg)	Ferrous Iron (mg/l)
W-2	02/20/97	NR	8.00	6.00	750 us	NA	NA	NA	NA
	05/27/97	NR	7.74	10.10	NA	NA	NA	NA	NA
	09/18/97	NR	7.01	14.50	910 us	NA	NA	NA	NA
	12/12/97	NR	7.33	9.50	820 us	NA	NA	NA	NA
	03/25/98	NR	7.96	7.90	1235 us	NA	NA	NA	NA
	06/10/98	NR	6.59	10.20	1057 us	NA	NA	NA	NA
	10/27/98	4.00	7.93	14.80	1278 us	1.40	119.00	12.00	0.00
	02/09/99	4.00	8.47	9.50	1278 us	2.10	146.00	16.00	0.20
	06/08/99	4.00	7.20	14.60	1234 us	1.00	85.00	11.20	1.00
	09/13/99	5.10	7.34	15.00	1254 us	1.90	(136.00)	9.60	0.00
	12/15/99	4.80	7.77	11.80	1199 us	1.50	(231.00)	4.80	0.00
	03/13/00	7.00	6.17	8.90	1278 us	1.30	59.00	7.60	0.00
	06/22/00	4.40	7.86	12.10	1240 us	1.50	59.00	7.60	0.00
	09/27/00	6.60	6.39	16.40	1140 us	1.90	(187.00)	9.60	0.00
	12/19/00	5.00	7.66	9.50	1171 us	1.85	(161.00)	11.20	0.00
	03/01/01	3.50	7.42	10.50	1084 us	1.41	(222.00)	9.20	0.00
	06/19/01	7.00	7.81	15.60	1980 us	1.10	(18.00)	8.40	0.00
	09/24/01	5.00	7.48	13.40	1712 us	0.90	(38.00)	6.60	0.00
	12/05/01	5.00	7.51	10.20	1244 us	1.10	(71.00)	9.60	0.00
	03/19/02	6.00	7.51	10.60	977 us	1.10	(210.00)	13.20	0.00
	06/20/02	6.00	7.40	15.00	1870 us	0.80	(88.00)	8.80	0.00
	09/18/02	5.00	7.18	14.80	1138 us	1.00	(99.00)	10.40	0.00
	12/17/02	4.00	7.34	10.30	1187 us	1.00	(103.00)	9.60	0.00
W-8	02/20/97	NR	8.20	7.50	1000 us	NA	NA	NA	NA
	05/27/97	NR	7.30	10.40	NA	NA	NA	NA	NA
	09/18/97	NR	7.07	17.00	1250 us	NA	NA	NA	NA
	12/12/97	NR	7.32	11.20	1090 us	NA	NA	NA	NA
	03/25/98	NR	7.34	7.90	1590 us	NA	NA	NA	NA
	06/10/98	NR	6.95	11.50	1407 us	NA	NA	NA	NA
	10/27/98	5.00	7.42	16.70	1459 us	1.30	97.00	14.40	0.20
	02/09/99	3.90	8.08	11.20	1386 us	1.30	21.00	8.00	2.40
	06/08/99	5.50	7.23	14.80	1283 us	1.80	85.00	14.00	5.60
	09/13/99	5.20	7.12	16.30	1363 us	1.70	(143.00)	14.40	1.60
	12/15/99	5.10	7.25	10.30	1375 us	0.90	(288.00)	14.40	1.20
	03/13/00	5.00	7.06	8.80	1277 us	1.10	(33.00)	8.40	1.00
	06/22/00	4.80	8.58	14.60	1177 us	1.97	(120.00)	6.80	0.00
	09/27/00	6.00	7.60	18.10	1098 us	1.50	(178.00)	10.00	0.00
	12/19/00	4.00	7.67	8.30	1227 us	1.14	(267.00)	11.60	0.00
	03/01/01	5.00	7.51	11.10	1175 us	1.20	(311.00)	11.20	0.00
	06/19/01	6.00	7.93	14.80	1310 us	0.80	(24.00)	6.20	0.00
	09/24/01	6.00	7.37	13.10	1177 us	0.40	4.00	6.40	0.00
	12/05/01	5.00	7.30	10.40	1288 us	1.00	(163.00)	12.40	0.00
	03/19/02	6.00	7.44	10.90	1044 us	1.30	(280.00)	11.20	0.00
	06/20/02	6.00	7.51	14.20	1240 us	0.80	(90.00)	6.20	0.00
	09/18/02	5.00	7.31	15.60	1221 us	1.30	(104.00)	14.60	1.00
	12/17/03	3.00	7.28	10.60	1,155	1.10	(172.00)	12.40	0.40
W-15	02/20/97	NR	8.15	9.00	920 us	NA	NA	NA	NA
	05/27/97	NR	7.66	10.00	NA	NA	NA	NA	NA
	09/18/97	NR	7.22	16.00	1300 us	NA	NA	NA	NA
	12/12/97	NR	7.18	10.40	1180 us	NA	NA	NA	NA
	03/25/98	NR	7.70	8.40	1450 us	NA	NA	NA	NA
	06/10/98	NR	6.46	11.60	1496 us	NA	NA	NA	NA
	10/27/98	4.00	7.27	16.00	1551 us	0.80	137.00	14.40	0.00
	02/09/99	2.60	8.07	10.00	1418 us	1.30	7.00	12.00	0.60
	06/08/99	4.50	7.54	16.70	1465 us	1.50	75.00	12.00	1.40
	09/13/99	3.60	7.18	17.60	1647 us	1.90	(137.00)	10.40	0.80
	12/15/99	3.30	7.52	11.70	1544 us	1.50	(281.00)	12.40	1.00
	03/13/00	4.00	7.14	8.90	1266 us	1.40	(19.00)	7.60	0.40
	06/22/00	3.00	8.22	14.90	1546 us	1.63	36.00	7.30	0.00
	09/27/00	5.00	5.43	17.40	1711 us	1.30	(41.00)	12.40	0.00
	12/19/00	3.00	7.55	8.90	1628 us	3.23	(305.00)	15.20	1.60
	03/01/01	4.00	7.43	10.90	1435 us	2.10	(381.00)	16.00	0.80
	06/19/01	5.00	8.18	14.80	1380 us	1.40	(64.00)	6.00	0.00
	09/24/01	5.00	7.22	12.60	1160 us	1.00	(49.00)	8.00	0.00
	12/05/01	3.00	7.28	9.90	1544 us	2.00	(280.00)	12.80	1.20
	03/19/02	5.00	7.58	10.30	1284 us	1.80	(318.00)	12.20	0.40
	06/20/02	5.00	8.00	14.60	1280 us	1.00	(180.00)	12.40	0.00
	09/18/02	5.00	7.20	16.30	1399 us	1.60	(152.00)	13.60	0.40
	12/17/02	3.00	7.18	10.00	1234 US	2.00	(220.00)	8.80	1.00

Table #5

NATURAL ATTENTUTION-GEOCHEMICAL PARAMETERS

N.W. Mauthe Supefund Site - Appleton, Wisconsin

MCO No. M0050-920764.14

Well Name	Sample Date	Purge* Volume (gallons)	pH (units)	Temperature (degree C)	Conductivity (units as shown)	Dissolved Oxygen (ppm)	Redox (mV)	Alkalinity (gpg)	Ferrous Iron (mg/l)
MW-101	02/20/97	NR	7.12	8.00	1400 us	NA	NA	NA	NA
	05/27/97	NR	7.56	12.90	NA	NA	NA	NA	NA
	09/18/97	NR	6.54	14.00	1380 us	NA	NA	NA	NA
	12/12/97	NR	6.64	11.40	1390 us	NA	NA	NA	NA
	03/25/98	NR	7.58	10.50	2142 us	NA	NA	NA	NA
	06/10/98	NR	6.29	11.50	2116 us	NA	NA	NA	NA
	10/27/98	9.00	7.13	14.10	2.27 ms	0.50	116.00	12.00	0.00
	02/09/99	7.00	8.11	12.70	2.11 ms	1.10	165.00	8.80	0.20
	06/08/99	6.00	7.05	15.00	2.17 ms	0.70	161.00	8.00	0.20
	09/13/99	5.90	7.25	14.90	2.12 ms	0.90	(125.00)	13.60	0.00
	12/15/99	6.00	8.71	12.70	2.06 ms	1.00	(262.00)	8.80	0.00
	03/13/00	7.00	6.34	11.60	1939 us	1.10	44.00	8.00	0.00
	06/22/00	5.00	7.73	15.20	2.25 ms	0.96	50.00	8.00	0.00
	09/27/00	8.50	6.80	15.50	2.18 ms	0.70	3.00	12.80	0.00
	12/19/00	10.50	7.12	11.90	2.18 ms	1.48	(233.00)	14.40	0.00
	03/01/01	8.00	7.41	11.00	2.31 ms	1.32	(283.00)	12.20	0.00
	06/19/01	9.00	8.04	13.60	1265 us	1.00	10.00	7.20	0.00
	09/24/01	8.00	7.79	13.40	1304 us	1.00	(11.00)	11.20	0.00
	12/05/01	9.00	7.40	11.20	2240 us	1.20	(304.00)	8.40	0.00
	03/19/02	9.00	7.36	10.80	1984 us	1.40	(210.00)	12.20	0.00
	06/20/02	10.00	7.93	13.80	1190 us	0.80	(30.00)	14.00	0.00
	09/18/02	10.00	7.24	15.00	2248 us	0.80	(113.00)	8.80	0.00
	12/17/02	8.00	7.27	11.40	1988 us	1.60	(334.00)	8.40	0.00
MW-102	02/20/97	NR	8.00	10.50	700 us	NA	NA	NA	NA
	05/27/97	NR	7.47	10.50	NA	NA	NA	NA	NA
	09/18/97	NR	6.99	13.00	810 us	NA	NA	NA	NA
	12/12/97	NR	7.23	8.50	690 us	NA	NA	NA	NA
	03/25/98	NR	7.68	10.20	1145 us	NA	NA	NA	NA
	06/10/98	NR	6.97	10.30	1046 us	NA	NA	NA	NA
	10/27/98	2.00	8.07	13.00	1197 us	1.50	103.00	17.60	0.40
	02/09/99	0.50	7.48	11.00	1164 us	1.00	0.33	14.40	0.00
	06/08/99	0.50	7.89	18.60	1226 us	1.00	151.00	4.80	0.80
	09/13/99	0.50	7.84	13.30	1208 us	1.20	(246.00)	10.00	1.20
	12/15/99	0.50	7.78	9.00	1152 us	1.60	(288.00)	10.80	1.00
	03/13/00	0.50	6.74	9.70	1096 us	1.20	(260.00)	6.80	0.00
	06/22/00	0.50	8.01	12.30	1233 us	0.53	(13.00)	6.00	0.00
	09/27/00	0.50	8.25	12.50	1182 us	1.90	(241.00)	9.20	0.00
	12/19/00	0.50	7.59	8.70	1126 us	1.27	(454.00)	11.60	0.00
	03/01/01	0.50	7.30	10.90	1321 us	1.02	(521.00)	9.20	0.00
	06/19/01	0.50	8.64	13.20	1944 us	0.60	35.00	6.40	0.00
	09/24/01	0.50	7.63	13.40	1622 us	0.80	18.00	7.20	0.00
	12/05/01	0.50	7.59	9.40	1233 us	0.80	(110.00)	12.40	0.00
	03/19/02	0.50	7.41	10.80	1143 us	0.90	(503.00)	9.20	0.50
	06/20/02	0.50	8.18	13.80	1720 us	0.40	4.00	9.60	0.00
	09/18/02	0.50	7.04	13.50	1318 us	1.00	(212.00)	10.80	1.00
	12/17/02	0.50	7.55	10.00	1186 us	0.60	(94.00)	11.20	0.00
MW-103	02/20/97	NR	6.30	6.00	700 us	NA	NA	NA	NA
	05/27/97	NR	7.67	11.60	NA	NA	NA	NA	NA
	09/18/97	NR	7.21	10.50	1030 us	NA	NA	NA	NA
	12/12/97	NR	7.43	9.00	970 us	NA	NA	NA	NA
	03/25/98	NR	7.82	9.40	1441 us	NA	NA	NA	NA
	06/10/98	NR	6.24	9.90	1356 us	NA	NA	NA	NA
	10/27/98	8.00	7.66	12.70	1566 us	0.70	147.00	12.00	0.20
	02/09/99	7.80	7.48	9.90	1443 us	1.40	53.00	11.20	0.80
	06/08/99	9.50	7.42	13.90	1350 us	0.70	109.00	7.20	0.00
	09/13/99	4.10	7.41	12.90	985 us	1.60	(165.00)	12.00	0.00
	12/15/99	4.60	7.82	10.60	2.58 ms	1.40	(294.00)	10.80	0.00
	03/13/00	4.00	6.57	9.40	1292 us	1.00	76.00	8.40	0.40
	06/22/00	4.00	8.43	11.50	1354 us	0.99	(90.00)	6.00	0.00
	09/27/00	11.00	7.48	13.70	1131 us	1.40	(302.00)	7.60	0.00
	12/19/00	9.00	7.90	6.60	1063 us	1.56	(344.00)	9.20	0.40
	03/01/01	8.50	7.68	11.20	1160 us	1.88	(374.00)	8.00	0.60
	06/19/01	13.00	7.81	14.10	1848 us	1.10	(28.00)	7.40	0.00
	09/24/01	2.00	7.32	12.70	1743 us	1.00	(47.00)	12.00	0.00
	12/05/01	11.00	7.18	9.00	1121 us	1.40	(291.00)	10.80	0.60
	03/19/02	11.00	7.60	11.40	1050 us	1.50	(311.00)	10.00	0.40
	06/20/02	12.00	7.47	14.40	1830 us	0.80	(62.00)	10.80	0.00
	09/18/02	10.00	7.18	13.00	748 us	1.40	(170.00)	11.20	0.00
	12/17/02	8.00	7.22	9.60	1134 us	1.20	(284.00)	10.00	0.40

Table #5

NATURAL ATTENTUTION-GEOCHEMICAL PARAMETERS

N.W. Mauthe Supefund Site - Appleton, Wisconsin

MCO No. M0050-920764.14

Well Name	Sample Date	Purge* Volume (gallons)	pH (units)	Temperature (degree C)	Conductivity (units as shown)	Dissolved Oxygen (ppm)	Redox (mV)	Alkalinity (gpg)	Ferrous Iron (mg/l)
MW-104	02/20/97	NR	7.43	8.00	1000 us	NA	NA	NA	NA
	05/27/97	NR	8.00	12.00	NA	NA	NA	NA	NA
	09/18/97	NR	7.13	10.50	1030 us	NA	NA	NA	NA
	12/12/97	NR	7.10	9.60	1000 us	NA	NA	NA	NA
	03/25/98	NR	7.94	8.30	1378 us	NA	NA	NA	NA
	06/10/98	NR	6.53	9.70	1101 us	NA	NA	NA	NA
	10/27/98	8.00	7.84	13.20	1272 us	0.90	103.00	16.40	0.40
	02/09/99	9.50	7.66	10.10	1126 us	1.50	193.00	11.20	0.00
	06/08/99	13.00	6.80	15.60	1259 us	1.60	103.00	6.40	0.00
	09/13/99	13.80	7.08	13.90	1334 us	1.80	(146.00)	10.80	0.00
	12/15/99	11.20	7.68	10.80	1172 us	2.00	(232.00)	11.20	0.00
	03/13/00	16.50	6.91	10.20	1121 us	0.40	69.00	11.20	0.60
	06/22/00	11.00	8.65	11.60	1137 us	0.71	(211.00)	6.80	0.00
	09/27/00	8.00	7.24	12.90	1130 us	1.70	(123.00)	13.20	0.00
	12/19/00	8.00	7.75	8.20	1144 us	1.05	(240.00)	12.40	0.00
	03/01/01	9.50	7.72	10.60	1230 us	0.90	(220.00)	12.40	0.20
	06/19/01	13.00	7.91	12.90	1581 us	0.80	(110.00)	6.80	0.00
	09/24/01	8.00	7.18	12.40	1580 us	0.80	(99.00)	9.60	0.20
	12/05/01	7.00	7.22	9.90	1300 us	1.00	(311.00)	9.60	0.00
	03/19/02	10.00	7.70	10.60	1110 us	0.70	(210.00)	11.60	0.20
	06/20/02	10.00	7.53	13.00	1420 us	0.80	(174.00)	12.40	0.20
	09/18/02	9.00	7.03	14.60	1275 us	1.60	(148.00)	12.40	0.00
	12/17/02	8.00	7.31	10.00	1264 us	0.80	(294.00)	8.80	0.00
MW-105	02/20/97	NR	7.70	7.00	1600 us	NA	NA	NA	NA
	05/27/97	NR	7.44	10.50	NA	NA	NA	NA	NA
	09/18/98	NR	6.89	16.00	2150 us	NA	NA	NA	NA
	12/12/97	NR	7.04	12.00	2050 us	NA	NA	NA	NA
	03/25/98	NR	7.35	6.70	2878 us	NA	NA	NA	NA
	06/10/98	NR	6.25	11.10	2695 us	NA	NA	NA	NA
	10/27/98	5.00	7.57	16.80	2.87 ms	0.10	121.00	13.60	0.00
	02/09/99	5.90	7.34	10.60	2.76 ms	0.90	281.00	16.80	1.80
	06/08/99	5.00	7.32	17.80	2.87 ms	0.70	90.00	9.60	0.20
	09/13/99	3.50	7.00	17.20	2.74 ms	1.70	(182.00)	13.20	1.40
	1215/99	3.60	7.36	13.00	2.62 ms	1.60	(255.00)	8.80	1.20
	03/13/00	4.50	6.58	8.40	2430 us	1.30	23.00	9.60	0.80
	06/22/00	3.20	8.44	14.30	2.71 ms	0.88	(304.00)	6.40	0.00
	09/27/00	6.00	6.62	17.90	2.53 ms	1.10	(198.00)	12.80	0.00
	12/19/00	6.00	7.42	9.60	2.32 ms	2.27	(167.00)	12.40	0.00
	03/01/01	5.00	7.24	10.80	2.45 ms	1.89	(184.00)	11.60	0.00
	06/19/01	7.00	8.19	12.80	1877 us	0.60	(200.00)	6.80	0.00
	09/24/01	6.00	7.41	13.80	1809 us	0.80	(183.00)	7.20	0.00
	12/05/01	6.00	7.34	10.00	2148 us	1.80	(188.00)	11.20	0.20
	03/19/02	5.00	6.94	10.20	1984 us	1.80	(169.00)	9.60	0.00
	06/20/02	6.00	8.04	13.00	1400 us	1.00	(310.00)	10.80	0.00
	09/18/02	6.00	7.21	17.20	2800 us	1.60	(183.00)	10.80	1.60
	12/17/02	5.00	7.08	10.40	2008 us	1.40	(194.00)	13.20	0.40
MW-106	02/20/97	NR	7.75	10.00	1000 us	NA	NA	NA	NA
	05/27/97	NR	7.47	10.10	NA	NA	NA	NA	NA
	09/18/97	NR	7.19	15.00	1310 us	NA	NA	NA	NA
	12/12/97	NR	7.06	11.50	1260 us	NA	NA	NA	NA
	03/25/98	NR	7.61	8.70	1716 us	NA	NA	NA	NA
	06/10/98	NR	7.11	11.60	1604 us	NA	NA	NA	NA
	10/27/98	4.00	7.31	16.80	1824 us	1.20	138.00	12.80	0.00
	02/09/99	2.50	7.33	10.20	1605 us	1.10	197.00	20.80	0.00
	06/08/99	3.50	7.15	15.40	1332 us	0.70	17.00	6.40	0.20
	09/13/99	2.30	7.02	17.40	1357 us	1.00	(168.00)	11.60	0.00
	12/15/99	2.00	8.41	12.10	1445 us	0.80	(266.00)	10.00	0.00
	03/13/00	2.50	6.92	9.10	1513 us	1.60	18.00	10.40	0.00
	06/22/00	1.50	8.18	14.50	1736 us	2.02	38.00	7.20	0.00
	09/27/00	6.00	6.84	19.10	1715 us	1.60	(8.00)	12.00	0.00
	12/19/00	4.00	7.48	10.70	1694 us	1.43	(218.00)	10.80	0.00
	03/01/01	4.00	7.33	10.80	1722 us	1.50	(210.00)	9.20	0.00
	06/19/01	4.00	8.28	13.00	1,361	1.10	(210.00)	6.40	0.00
	09/24/01	6.00	7.66	14.00	1220 us	0.80	(104.00)	11.20	0.00
	12/05/01	4.00	7.60	10.40	1702 us	0.90	(217.00)	12.80	0.00
	03/19/02	5.00	7.13	10.40	1630 us	1.70	(235.00)	9.20	0.00
	06/20/02	5.00	8.08	12.80	1288 us	1.20	(240.00)	8.80	0.00
	09/18/02	5.00	7.30	17.80	1438 us	1.00	(141.00)	8.80	0.00
	12/17/02	3.00	7.15	10.20	1788 us	0.80	(220.00)	11.20	0.00

Table #5

NATURAL ATTENTUTION-GEOCHEMICAL PARAMETERS

N.W. Mauthe Supefund Site - Appleton, Wisconsin

MCO No. M0050-920764.14

Well Name	Sample Date	Purge* Volume (gallons)	pH (units)	Temperature (degree C)	Conductivity (units as shown)	Dissolved Oxygen (ppm)	Redox (mV)	Alkalinity (gpg)	Ferrous Iron (mg/l)
MW-107	02/20/97	NR	7.46	9.00	650 us	NA	NA	NA	NA
	05/27/97	NR	7.12	10.80	NA	NA	NA	NA	NA
	09/18/97	NR	7.07	12.50	700 us	NA	NA	NA	NA
	12/12/97	NR	7.08	10.50	730 us	NA	NA	NA	NA
	03/25/98	NR	7.87	10.20	1081 us	NA	NA	NA	NA
	06/10/98	NR	7.17	10.60	1042 us	NA	NA	NA	NA
	10/27/98	10.00	7.41	12.10	1179 us	1.10	62.00	20.00	10.00
	02/09/99	9.00	8.10	12.00	1189 us	1.30	263.00	7.20	0.40
	06/08/99	9.00	7.48	15.60	1406 us	2.20	163.00	4.80	0.40
	09/13/99	8.00	7.30	12.90	1301 us	2.60	(114.00)	14.00	0.60
	12/15/99	10.00	7.63	11.30	1419 us	2.80	(42.00)	12.40	1.00
	03/13/00	14.50	5.76	10.90	1389 us	1.20	58.00	8.40	0.60
	06/22/00	10.00	8.75	12.40	1574 us	0.62	(120.00)	6.40	0.00
	09/27/00	10.00	7.42	14.20	1505 us	1.60	(114.00)	9.20	0.00
	12/19/00	13.00	7.69	9.50	1524 us	1.21	(38.00)	10.40	0.00
	03/01/01	16.00	7.81	9.90	1704 us	1.31	(93.00)	12.40	0.20
	06/19/01	15.00	7.64	13.40	1221 us	0.80	(80.00)	6.00	0.20
	09/24/01	9.00	7.04	12.40	977 us	0.60	(77.00)	12.00	0.40
	12/05/01	13.00	7.15	9.20	1611 us	0.80	(95.00)	8.40	0.00
	03/19/02	12.00	7.64	10.00	1730 us	1.30	8.00	9.60	0.20
	06/20/02	10.00	7.48	13.60	1304 us	0.60	(110.00)	9.60	0.40
	09/10/02	10.00	7.52	13.10	1403 us	2.00	(104.00)	12.40	0.40
	12/17/02	10.00	7.22	10.40	1593 us	0.80	(110.00)	7.80	0.00
MW-108	02/20/97	NR	8.10	10.00	100 us	NA	NA	NA	NA
	05/27/97	NR	6.02	11.40	NA	NA	NA	NA	NA
	09/18/97	NR	6.51	12.00	1160 us	NA	NA	NA	NA
	12/12/97	NR	6.98	10.40	1130 us	NA	NA	NA	NA
	03/25/98	NR	7.64	10.20	1568 us	NA	NA	NA	NA
	06/10/98	NR	6.54	10.70	1525 us	NA	NA	NA	NA
	10/27/98	10.00	7.95	14.30	1696 us	1.40	116.00	12.80	0.20
	02/09/99	8.10	7.51	11.00	1810 us	1.10	(65.00)	10.40	0.40
	06/08/99	12.50	7.60	15.00	1706 us	0.90	173.00	7.20	0.60
	09/13/99	13.50	7.29	13.60	1849 us	1.20	(180.00)	8.00	0.00
	12/15/99	12.80	7.68	11.80	1885 us	1.00	(286.00)	8.40	0.00
	03/13/00	14.00	6.25	10.20	1642 us	1.70	(4.00)	9.20	0.20
	06/22/00	11.50	7.62	14.10	1989 us	1.01	69.00	6.40	0.00
	09/27/00	12.00	7.43	13.10	1983 us	0.40	(73.00)	10.40	0.00
	12/19/00	10.50	7.60	10.10	2.01 ms	2.18	(184.00)	10.80	0.00
	03/01/01	9.00	7.49	11.20	2.38 ms	2.20	(211.00)	11.60	0.00
	06/19/01	8.00	8.20	13.80	1634 us	0.80	(90.00)	7.00	0.00
	09/24/01	9.00	7.59	14.20	1512 us	0.80	(83.00)	9.60	0.00
	12/5/2001	10.00	7.49	10.50	2111 us	1.80	(199.00)	9.60	0.00
	3/19/2002	12.00	7.30	10.80	2120 us	2.10	(170.00)	11.60	0.00
	6/20/2002	12.00	7.92	14.00	1424 us	0.80	(120.00)	12.40	0.00
	9/18/2002	12.00	7.13	13.40	1744 us	1.00	(132.00)	11.20	0.00
	12/17/2002	10.00	7.36	10.40	1986 us	1.60	(174.00)	8.40	0.00

ppm = parts per million
us = microsiemens / centimeter
mV = millivolts
gpg = grains per gallon
ms = millisiemens / centimeter
NA = not analyzed
NR = not recorded
* = Each monitoring well was purged dry twice prior to sampling
The second purging was conducted approximately 3-hrs after initial purging. The volume of purge water collected represents the total of the two well purges. Purge volumes prior to 10/27/98 were not available.
( ) = Indicates a negative value.

Table #6

LABORATORY ANALYTICAL RESULTS
Effluent Point 001
N.W. Mauthe Superfund Site - Appleton, Wisconsin
MCO No. M0050-920764.14

Sample Name	Sample Date	Aluminum (mg/l)	Arsenic (mg/l)	Cadmium (mg/l)	Chromium Total (mg/l)	Copper (mg/l)	Cyanide (mg/l)	Lead (mg/l)	Mercury (mg/l)	Nickel (mg/l)	Zinc (mg/l)	Hexavalent Chromium (mg/L)
Outfall 001*	02/20/97	<.02	<.003	<.00050	0.0400	<.01	<.00001	<.005	<.0002	<.005	0.0051	<.01
Outfall 001*	05/27/97	NA	NA	NA	0.2600	NA	NA	NA	NA	NA	NA	NA
Outfall 001*	09/11/97	NA	NA	NA	0.5570	NA	NA	NA	NA	NA	NA	NA
Outfall 001*	12/12/97	NA	NA	NA	0.2790	NA	NA	NA	NA	NA	NA	NA
Outfall 001*	03/24/98	0.0152	<.002	<.00004	0.0637	<.0095	<.0017	<.0006	<.000015	<.0095	0.0046	0.1000
Outfall 001**	04/29/98	<.011	<.002	<.005	0.2200	<.05	0.0020	<.1	<.0002	<.04	<.005	NA
Outfall 001*	06/10/98	NA	NA	NA	0.0784	NA	NA	NA	NA	NA	NA	NA
Outfall 001**	10/07/98	<.011	<.002	0.0050	0.1700	<.05	<.001	<.1	<.0002	<.04	0.0250	NA
Outfall 001***	10/27/98	NA	NA	NA	0.0940	NA	NA	NA	NA	NA	NA	NA
Outfall 001***	02/09/99	NA	NA	NA	0.1600	NA	NA	NA	NA	NA	NA	NA
Outfall 001***	03/18/99	<.009	<.003	<.00031	NA	.00068****	<.000032	<.0024	<.00005	.00351****	<.012	<.0036
Outfall 001**	03/18/99	<.011	<.002	<.005	<0.05	<.05	0.0010	0.1000	<.00005	0.0400	0.0180	NA
Outfall 001***	06/08/99	NA	NA	NA	0.1900	NA	NA	NA	NA	NA	NA	NA
Outfall 001***	09/13/99	NA	NA	NA	0.1700	NA	NA	NA	NA	NA	NA	NA
Outfall 001**	09/21/99	<.011	<.002	<.005	<.05	<.05	0.0030	<.1	<.00015	<.04	0.0080	NA
Outfall 001***	12/15/99	NA	NA	NA	0.0870	NA	NA	NA	NA	NA	NA	NA
Outfall 001**	02/15/00	<.015	<.0020	<.005	0.0900	<.05	<.001	<.1	<.00013	<.04	0.0280	NA
Outfall 001***	03/13/00	<.009	<.003	<.00031	0.1400	<.0006	<.0044	<.0024	<.00005	0.0012	<.012	NA
Outfall 001***	06/22/00	NA	NA	NA	0.2400	NA	NA	NA	NA	NA	NA	NA
Outfall 001***	09/27/00	NA	NA	NA	0.5100	NA	NA	NA	NA	NA	NA	NA
Outfall 001***	12/19/00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Outfall 001**	02/21/01	<0.15	<.002	<.005	0.11	<.05	0.001	<.1	<.00013	<.04	0.042	NA
Outfall 001***	03/01/01	<.034	<.0027	.012 ****	0.25	.0088 ****	<.0033	<.17	<.00005	.036 ****	0.015	<.0036
Outfall 001***	06/19/01	NA	NA	NA	0.11	NA	NA	NA	NA	NA	NA	NA
Outfall 001***	09/24/01	NA	NA	NA	0.16	NA	NA	NA	NA	NA	NA	NA
Outfall 001**	10/02/01	0.016	<.002	<.005	0.14	<.05	<.001	<.1	<.00013	<.04	0.065	NA
Outfall 001***	12/05/01	NA	NA	NA	0.042	NA	NA	NA	NA	NA	NA	NA
Outfall 001***	03/19/02	<.034	<.0027	<.0075	0.36	<.0077	<.0027	<.17	<.00005	<.017	<.012	<.0036
Outfall 001**	05/02/02	<.049	<.012	<.014	0.362	<.015	<.0014	<.060	<.00011	<.011	<.009	NA
Outfall 001***	06/20/02	NA	NA	NA	0.67	NA	NA	NA	NA	NA	NA	NA
Outfall 001***	09/18/02	NA	NA	NA	0.11	NA	NA	NA	NA	NA	NA	NA
Outfall 001**	11/12/02	0.027	<.0082	<.00053	0.23	<.009	<.0007	<.00084	<.000028	0.0044	0.0081	NA
Outfall 001***	12/17/02	NA	NA	NA	0.0082	NA	NA	NA	NA	NA	NA	NA
Effluent Limits Permit #00-21		70.0000	1.0000	0.3000	7.0000	3.5000	1.0000	2.0000	0.0020	2.0000	10.0000	4.5000

mg/l = milligram / liter
ug/l = microgram / liter
NA = not analyzed
* = Sampled by CH2M Hill
** = Sampled by the City of Appleton
*** = Sampled by MCO
**** = Detected of compound in area of less certain quantitation.

Table #7

WEEKLY INFLUENT HEXAVALENT CHROMIUM RESULTS
N.W. Mauthe Superfund Site - Appleton, Wisconsin
MCO. No. M0050-920764.14

DATE	INFLUENT HEXAVALENT CHROMIUM* (ppm)
02/26/97	1.0
03/03/97	.8
03/06/97	1.0
03/10/97	1.5
03/23/97	.9
03/29/97	1.2
04/06/97	1.1
04/09/97	1.2
04/16/97	1.0
04/25/97	1.0
04/27/97	1.1
05/02/97	1.1
05/08/97	1.1
05/13/97	1.2
05/21/97	1.1
05/29/97	1.1
06/06/97	1.2
06/13/97	1.2
06/17/97	1.3
06/23/97	1.2
07/02/97	1.2
07/08/97	1.2
07/14/97	1.2
07/21/97	1.2
07/28/97	1.4
08/04/97	1.4
08/13/97	1.3
08/18/97	1.3
08/25/97	1.3
09/04/97	1.3
09/08/97	1.5
09/15/97	1.4
09/24/97	1.3
10/01/97	1.3
10/08/97	1.4
10/15/97	1.3
10/22/97	1.4
10/29/97	1.4
11/05/97	1.3
11/11/97	1.2
11/22/97	1.0
11/24/97	1.0
12/03/97	1.0
12/10/97	1.0
12/17/97	1.1
01/07/98	1.0
01/14/98	1.0
01/21/98	1.0

DATE	INFLUENT HEXAVALENT CHROMIUM* (ppm)
01/28/98	1.0
02/04/98	1.4
02/11/98	1.4
02/18/98	1.4
02/25/98	0.8
03/04/98	1.3
03/11/98	1.3
03/18/98	1.3
03/26/98	1.3
04/01/98	0.8
04/08/98	1.0
04/15/98	1.3
04/23/98	1.3
04/29/98	1.3
05/06/98	1.3
05/13/98	1.3
05/20/98	1.3
05/27/98	1.4
06/03/98	1.3
06/10/98	1.4
06/17/98	1.2
06/24/98	1.2
07/01/98	1.1
07/08/98	1.1
07/15/98	1.1
07/23/98	1.3
07/29/98	1.3
08/06/98	1.2
08/12/98	1.2
08/19/98	1.2
08/26/98	1.2
09/02/98	1.2
09/09/98	1.2
09/16/98	1.2
09/23/98	1.2
09/30/98	1.2
10/07/98	1.0
10/15/98	1.1
10/21/98	1.3
10/28/98	1.3
11/04/98	1.1
11/11/98	1.1
11/18/98	1.2
11/25/98	1.2
12/02/96	1.2
12/09/98	1.5
12/16/98	1.3
12/23/98	1.3

DATE	INFLUENT HEXAVALENT CHROMIUM* (ppm)
12/30/98	1.3
01/06/99	1.3
01/12/99	1.1
01/20/99	1.2
01/28/99	1.3
02/03/99	1.3
02/10/99	1.4
02/17/99	1.4
02/24/99	1.4
03/03/99	1.3
03/10/99	1.3
03/17/99	1.3
03/24/99	1.3
03/31/99	1.3
04/07/99	1.2
04/14/99	1.2
04/21/99	1.1
04/28/99	1.2
05/05/99	1.2
05/12/99	1.2
05/19/99	1.1
05/26/99	1.2
06/02/99	1.1
06/10/99	1.4
06/16/99	1.5
06/23/99	2.2
06/30/99	2.2
07/07/99	2.4
07/14/99	2.0
07/21/99	1.8
07/28/99	1.2
08/04/99	1.5
08/11/99	1.4
08/18/99	1.3
08/25/99	1.3
09/01/99	1.3
09/08/99	1.4
09/15/99	1.5
09/21/99	1.3
09/29/99	1.2
10/06/99	1.4
10/13/99	1.5
10/20/99	1.4
10/27/99	1.4
11/04/99	1.3
11/10/99	1.2
11/18/99	1.3
11/24/99	1.2

DATE	INFLUENT HEXAVALENT CHROMIUM* (ppm)
11/30/99	1.3
12/08/99	1.3
12/15/99	1.2
12/22/99	1.3
12/29/99	1.2
01/06/00	1.3
01/12/00	1.3
01/19/00	1.2
01/26/00	1.2
02/02/00	1.1
02/09/00	1.1
02/16/00	1.2
02/23/00	1.3
03/01/00	1.2
03/08/00	1.3
03/14/00	1.2
03/22/00	1.2
03/29/00	1.1
04/05/00	1.4
04/11/00	1.1
04/19/00	1.1
04/26/00	1.1
05/03/00	1.3
05/10/00	1.1
05/17/00	1.2
05/24/00	1.1
05/31/00	1.1
06/07/00	1.4
06/14/00	0.5
06/21/00	1.0
06/26/00	1.1
07/05/00	1.3
07/12/00	1.2
07/19/00	1.3
07/26/00	1.3
08/02/00	1.3
08/09/00	1.4
08/16/00	1.2
08/23/00	1.4
08/30/00	1.3
09/06/00	1.4
09/13/00	1.2
09/20/00	1.2
09/27/00	1.4
10/03/00	1.3
10/11/00	1.3
10/18/00	2.5
10/25/00	2.2

DATE	INFLUENT HEXAVALENT CHROMIUM* (ppm)
11/01/00	1.8
11/08/00	1.4
11/15/00	1.8
11/22/00	1.8
11/29/00	1.4
12/06/00	1.6
12/13/00	1.4
12/20/00	1.2
12/27/00	1.3
01/03/01	1.2
01/10/01	1.4
01/17/01	1.8
01/24/01	1.4
01/31/01	1.3
02/07/01	1.2
02/13/01	2.0
02/21/01	1.5
02/28/01	1.4
03/17/01	1.3
03/14/01	1.2
03/21/01	1.3
03/28/01	1.2
04/04/01	1.4
04/11/01	1.2
04/18/01	1.2
04/25/01	1.4
05/02/01	1.3
05/09/01	1.3
05/16/01	1.2
05/23/01	1.3
05/30/01	1.1
06/06/01	1.2
06/13/01	1.4
06/20/01	1.2
06/27/01	1.3
07/04/01	1.3
07/11/01	1.2
07/18/01	1.4
07/25/01	1.3
08/01/01	1.6
08/08/01	1.3
08/15/01	1.2
08/22/01	1.1
08/29/01	1.3
09/05/01	1.4
09/12/01	1.4
09/19/01	3.0
09/25/01	2.4

DATE	INFLUENT HEXAVALENT CHROMIUM* (ppm)
10/01/01	1.5
10/09/01	2.5
10/18/01	2.0
10/24/01	2.3
10/31/01	2.5
11/09/01	1.4
11/17/01	1.2
11/21/01	1.3
11/29/01	1.4
12/06/01	1.5
12/14/01	2.0
12/20/01	2.0
12/27/01	2.5
01/03/02	2.5
01/10/02	2.0
01/17/02	2.5
01/24/02	2.0
01/31/02	1.5
02/07/02	2.5
02/13/02	2.5
02/21/02	3.0
02/28/02	2.5
03/07/02	2.0
03/14/02	1.5
03/21/02	2.5
03/28/02	1.5
04/04/02	1.5
04/11/02	1.5
04/18/02	2.0
04/25/02	2.5
05/02/02	3.0
05/09/02	1.5
05/16/02	1.5
05/23/02	1.5
05/30/02	2.0
06/06/02	1.5
06/13/02	2.0
06/20/02	3.0
06/27/02	2.0
07/03/02	2.0
07/11/02	1.5
07/18/02	1.0
07/25/02	0.1
08/01/02	0.0
08/06/02	0.0
08/15/02	0.0
08/22/02	0.0
08/29/02	0.0

DATE	INFLUENT HEXAVALENT CHROMIUM* (ppm)
09/09/02	0.0
09/12/02	0.4
09/19/02	0.1
09/26/02	0.0
10/03/02	0.0
10/10/02	1.5
10/17/02	1.5
10/24/02	1.5
10/31/02	1.5
11/07/02	1.5
11/14/02	1.5
11/21/02	1.0
11/27/02	1.5
12/05/02	0.0
12/12/02	0.0
12/19/02	0.2
12/26/02	0.2

*Hexavalent Chromium is Measured Utilizing a Hach Test Kit.

APPENDIX A

Groundwater Sampling
Data Sheets

Groundwater Monitoring Field Form

McM

Project Number _____

Project Name N.W. Mantle

Location Appleton

Date December 17, 2002

Personnel JMS

Temp./Weather Cloudy 30°

Well	Date	Time	Depth to Water (Top of PVC) (ft)	Total Well Depth (Top of PVC) (ft)	Water Column Length (ft)	Req'd Gals to Purge 4 Casing Volumes	Amount Purged (gal)	Water Appear. (see below)	Sampling Method (see below)	Free Product (ft)	Sampl. (Y/N)	pH	Temp °C	Conductivity uS	D.O. mg/l	Redox mV	Alkalinity ppg	Ferrous Iron mg/l	Comments
W-2	12/17/02	9:40AM	6.81	13.0	6.19	4.9	4	2	EP	N	Y	7.34	10.3	1187	1.0	(103)	96	0	3, 1
W-8			9.00	14.5	5.50	3.7	3	3	EP	N	Y	7.28	10.6	1155	1.1	(172)	12.4	.4	2, 1
W-15			9.98	15.0	5.02	3.4	3	2	EP	N	Y	7.18	10.0	1234	2.0	(220)	8.4	1.0	2, 1
MW-101			12.47	27.5	15.03	10.2	8	2	EP	N	Y	7.27	11.4	1988	1.6	(334)	8.4	0	5, 3
MW-102			25.30	28.0	2.70	1.8	.5	2	EP	N	Y	7.55	10.0	1186	.6	(94)	11.2	0	.5
MW-103			13.01	27.0	13.99	9.5	8	2	EP	N	Y	7.22	9.6	1134	1.2	(284)	10	.4	5, 3
MW-104			12.70	26.0	13.30	9.0	8	3	EP	N	Y	7.31	10.0	1264	.8	(294)	8.8	0	5, 3
MW-105			7.34	15.5	8.16	5.4	5	2	EP	N	Y	7.08	10.4	2008	1.4	(194)	13.2	.4	4, 1
MW-106			10.49	16.0	5.51	3.6	3	2	EP	N	Y	7.15	10.2	1798	.8	(220)	11.2	0	2, 1
MW-107			12.11	30.5	18.39	12.5	10	3	EP	Y	Y	7.22	10.4	1543	.8	(110)	7.8	0	6, 4
MW-108			7.78	27.0	19.22	13.1	10	2	EP	N	Y	7.36	10.4	1986	1.6	(174)	8.4	0	6, 4
P2-01			18.72	—															
P2-02			16.04	—															
P2-03			21.71	—															
P2-04	″	″	21.04	—															

EQUIPMENT USED:

- ☑ Solinst Water Level Indicator
- ☐ Keck Interface Probe
- ☐ Alkalinity Hach Kit
- ☑ Ferrous Iron Hach Kit
- ☑ EC20 Portable Meter
- ☐ ICM Water Analyzer
- ☐ Other: _____

Comments: _____

Numbers in "Comments" section represent purge volumes.

SAMPLING METHOD

- DB - Disposable Bailer
- PP - Peristaltic Pump
- EP - Electric Pump (whale)

WATER APPEARANCE

1 - Clear
2 - Slightly Cloudy
3 - Cloudy
4 - Very Cloudy
5 - Slightly Muddy
6 - Muddy

GALLONS PER FOOT TO GET 1 CASING VOLUME

1" PVC - 0.05 gallons/ft.
2" PVC - 0.17 gallons/ft.
4" PVC - 0.66 gallons/ft.
6" PVC - 1.47 gallons/ft.

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McMAHON ASSOCIATES, INC. 1445 McMahon Drive/P.O. Box 1025 Neenah, WI 54956/57-1025 Phone: 920-751-4200 Fax: 920-751-4284

GROUNDWATER SAMPLING FIELD PROCEDURES DOCUMENTATION

Facility/Project Name: New Mark Superfund Site Date: December 17, 2002
Section/Grid Location or Address: 725 S Outagamie St. Appleton, WI
Facility Type: Groundwater Treatment System License/Permit #:
DNR Regulatory Program: BRRTS
Weather (temp., cloudiness, bar. pres., wind): Cloudy 30°

Persons Sampling and Title: John Stoeger Project Manager

Water Level Equipment (type, model): Solinst Water Level Indicator
Purging Equipment (type, model, material): Whale GP9/6 B Purge Pump

Purging Method (4 well vol. or stabilization): 4 well volumes
How Purge Volume Measured? (eg., calibrated bucket): Calibrated Bucket
Sample Collection Equipment (type, model, material): Whale Purge Pump

Method of Sample Withdrawal (bottom emptying device, low flow): Low Flow Pump
Type of Transfer Containers: NA
Filtering Equipment (type, material): 45 micron in-line filter
Filter Membrane (type, pore size): 45 micron
When Were Samples Sent to Lab? December 17, 2002
What Lab Were the Samples Sent to? Northern Lake Service Crandon, WI
Were Enforcement Samples Sent? NO
How Were Samples Kept Cool (ice, other)? Ice
Equipment Decontamination Procedures? Latex Gloves, pumps are dedicated to each well.
Decontamination Water Disposal? Placed in building collection sump

pH Meter (type, model): Orion Model 1230 pH, Conductivity, Redox, DO
Person calibrating: John Stoeger
Frequency calibrated: Prior to Sampling
Calibration procedures (buffers used): Per Factory Specifications
Problems with meter: None
Conductivity Meter (type, model): As Above
Person calibrating:
Frequency calibrated:
Calibration procedures:
Problems with meter:

Turbidity Equipment (type, model): NA

Person calibrating/set-up: _____

Frequency calibrated: _____

Calibration procedures: _____

Problems with meter: _____

Dissolved Oxygen Meter (type, model): See Page 45

Person calibrating/set-up: _____

Frequency calibrated: _____

Calibration procedures: _____

Problems with meter: _____

When Were In-field Measurements Taken (immediately after collection or XX minutes after collection)?: After Collection

Comments (difficulties, questionable data, deviations from sampling plan, etc): _____

fpd.fm

APPENDIX B

Laboratory Analytical Results
Groundwater Monitoring Wells

Form 13
Evaluation Form 1

INDUSTRIAL USER MONITORING SUMMARY REPORT
(Summation of POTW Compliance Monitoring and Industrial Self-Monitoring)

Industrial User Name N. W. Mauthe Superfund Site / SIU 00 - 21
Location 725 South Outagamie Street

Sampling Point (Refer to Control Document) 001 discharge valve in Pretreatment Facility

SAMPLE TYPE			FP TC (G)	FP TC (G)	FP TC (G)	FP TC G	FP TC G	FP TC G	FP TC G	FP TC G
			SAMPLE 03/19/02	SAMPLE 05/02/02	SAMPLE 11/12/02	SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE
PARAMETERS	UNIT	LIMITS MAX / AVG	DATE SELF X SCHEDUL UNSCHED DEMAND	DATE SELF SCHEDUL X UNSCHED DEMAND	DATE SELF SCHEDUL X UNSCHED DEMAND	DATE SELF SCHEDUL UNSCHED DEMAND	DATE SELF SCHEDUL UNSCHED DEMAND	DATE SELF SCHEDUL UNSCHED DEMAND	DATE SELF SCHEDUL UNSCHED DEMAND	DATE SELF SCHEDUL UNSCHED DEMAND
Flow, Regulated	GPD									
Flow, Unregulated	GPD	Variable								
Flow, Dilutional	GPD									
Flow, Total	GPD	Variable								
Arsenic	mg/L	1.0	< 0.0027	< 0.012	< 0.0082					
Cadmium	mg/L	0.3	< 0.0075	< 0.014	< 0.00053					
Chromium	mg/L	7.0	0.36	0.362	0.23					
Copper	mg/L	3.5	< 0.007	< 0.015	< 0.009					
Cyanide	mg/L	1.0	< 0.0027	< 0.0014	< 0.0027					
Lead	mg/L	2.0	< 0.017	< 0.060	< 0.00084					
Nickel	mg/L	2.0	< 0.017	0.011	0.0044					
Silver	mg/L									
Zinc	mg/L	10.0	< 0.012	< 0.009	0.0081					
Total Toxic Organics	mg/L									
Aluminum	mg/L	70.0	< 0.034	< 0.049	0.027					
Hex Chromium	mg/L		< 0.0036							
Mercury	mg/L	0.002	< 0.00005	< 0.00011	< 0.000028					
	mg/L									
	mg/L									
pH	s. u.	5.0-12.4		7.3	7.5					
Oil & Grease	mg/L									
Phosphorus	mg/L									

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

ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105 000330
EPA Laboratory ID No. WI00034

NLS Project: 71093
NLS Customer: 20239

Client: McMahon Associates Inc
Attn: John Stoeger
1445 McMahon Drive
P O Box 1025
Neenah,WI 54957

Fax: 920 751 4284 Phone: 920 751 4200

Project: NW Mauthe Superfund Site

W-2 NLS ID: 300382
Ref. Line 1 COC 59392 W-2 Matrix: GW
Collected: 12/17/02 09:00 Received: 12/19/02

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Cadmium, dis. as Cd by ICP-Trace	ND	ug/L	1	0.23	0.80	01/02/03	SW846 6010	721026460
Chromium, dis. as Cr by ICP-Trace	ND	ug/L	1	0.44	1.6	01/06/03	SW846 6010	721026460
Manganese, dis. as Mn by ICP-Trace	150	ug/L	1	2.0*		01/02/03	SW846 6010	721026460

W-8 NLS ID: 300383
Ref. Line 2 COC 59392 W-8 Matrix: GW
Collected: 12/17/02 09:00 Received: 12/19/02

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Cadmium, dis. as Cd by ICP-Trace	ND	ug/L	1	0.23	0.80	01/02/03	SW846 6010	721026460
Chromium, dis. as Cr by ICP-Trace	ND	ug/L	1	0.44	1.6	01/06/03	SW846 6010	721026460
Manganese, dis. as Mn by ICP-Trace	34	ug/L	1	2.0*		01/02/03	SW846 6010	721026460

W-15 NLS ID: 300384
Ref. Line 3 COC 59392 W-15 Matrix: GW
Collected: 12/17/02 09:00 Received: 12/19/02

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Cadmium, dis. as Cd by ICP-Trace	ND	ug/L	1	0.23	0.80	01/02/03	SW846 6010	721026460
Chromium, dis. as Cr by ICP-Trace	ND	ug/L	1	0.44	1.6	01/02/03	SW846 6010	721026460
Manganese, dis. as Mn by ICP-Trace	31	ug/L	1	2.0*		01/02/03	SW846 6010	721026460

MW-101 NLS ID: 300385
Ref. Line 4 COC 59392 MW-101 Matrix: GW
Collected: 12/17/02 09:00 Received: 12/19/02

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Cadmium, dis. as Cd by ICP-Trace	ND	ug/L	1	0.23	0.80	01/02/03	SW846 6010	721026460
Chromium, dis. as Cr by ICP-Trace	ND	ug/L	1	0.44	1.6	01/02/03	SW846 6010	721026460
Manganese, dis. as Mn by ICP-Trace	33	ug/L	1	2.0*		01/02/03	SW846 6010	721026460

MW-102 NLS ID: 300386
Ref. Line 5 COC 59392 MW-102 Matrix: GW
Collected: 12/17/02 09:00 Received: 12/19/02

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Cadmium, dis. as Cd by ICP-Trace	ND	ug/L	1	0.23	0.80	01/02/03	SW846 6010	721026460
Chromium, dis. as Cr by ICP-Trace	ND	ug/L	1	0.44	1.6	01/02/03	SW846 6010	721026460
Manganese, dis. as Mn by ICP-Trace	38	ug/L	1	2.0*		01/02/03	SW846 6010	721026460

MW-103 NLS ID: 300387
Ref. Line 6 COC 59392 MW-103 Matrix: GW
Collected: 12/17/02 09:00 Received: 12/19/02

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Cadmium, dis. as Cd by ICP-Trace	ND	ug/L	1	0.23	0.80	01/02/03	SW846 6010	721026460
Chromium, dis. as Cr by ICP-Trace	6.2	ug/L	1	0.44	1.6	01/02/03	SW846 6010	721026460
Manganese, dis. as Mn by ICP-Trace	3.7	ug/L	1	2.0*		01/02/03	SW846 6010	721026460

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

ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105 000330
EPA Laboratory ID No. WI00034

Client: McMahon Associates Inc
Attn: John Stoeger
1445 McMahon Drive
P O Box 1025
Neenah,WI 54957

NLS Project: 71093
NLS Customer: 20239
Fax: 920 751 4284 Phone: 920 751 4200

Project: NW Mauthe Superfund Site

MW-104 NLS ID: 300388
Ref. Line 7 COC 59392 MW-104 Matrix: GW
Collected: 12/17/02 09:00 Received: 12/19/02

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Cadmium, dis. as Cd by ICP-Trace	ND	ug/L	1	0.23	0.80	01/02/03	SW846 6010	721026460
Chromium, dis. as Cr by ICP-Trace	240	ug/L	1	0.44	1.6	01/02/03	SW846 6010	721026460
Manganese, dis. as Mn by ICP-Trace	8.9	ug/L	1	2.0*		01/02/03	SW846 6010	721026460

MW-104A NLS ID: 300389
Ref. Line 8 COC 59392 MW-104A Matrix: GW
Collected: 12/17/02 09:00 Received: 12/19/02

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Cadmium, dis. as Cd by ICP-Trace	ND	ug/L	1	0.23	0.80	01/02/03	SW846 6010	721026460
Chromium, dis. as Cr by ICP-Trace	190	ug/L	1	0.44	1.6	01/02/03	SW846 6010	721026460
Manganese, dis. as Mn by ICP-Trace	16	ug/L	1	2.0*		01/02/03	SW846 6010	721026460

MW-105 NLS ID: 300390
Ref. Line 9 COC 59392 MW-105 Matrix: GW
Collected: 12/17/02 09:00 Received: 12/19/02

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Cadmium, dis. as Cd by ICP-Trace	ND	ug/L	1	0.23	0.80	01/02/03	SW846 6010	721026460
Chromium, dis. as Cr by ICP-Trace	ND	ug/L	1	0.44	1.6	01/02/03	SW846 6010	721026460
Manganese, dis. as Mn by ICP-Trace	58	ug/L	1	2.0*		01/02/03	SW846 6010	721026460

MW-106 NLS ID: 300391
Ref. Line 10 COC 59392 MW-106 Matrix: GW
Collected: 12/17/02 09:00 Received: 12/19/02

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Cadmium, dis. as Cd by ICP-Trace	ND	ug/L	1	0.23	0.80	01/02/03	SW846 6010	721026460
Chromium, dis. as Cr by ICP-Trace	ND	ug/L	1	0.44	1.6	01/06/03	SW846 6010	721026460
Manganese, dis. as Mn by ICP-Trace	41	ug/L	1	2.0*		01/02/03	SW846 6010	721026460

MW-107 NLS ID: 300392
Ref. Line 1 COC 59393 MW-107 Matrix: GW
Collected: 12/17/02 09:00 Received: 12/19/02

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Cadmium, dis. as Cd by ICP-Trace	ND	ug/L	1	0.17	0.61	01/03/03	SW846 6010	721026460
Chromium, dis. as Cr by ICP-Trace	3700	ug/L	1	0.45	1.6	01/03/03	SW846 6010	721026460
Manganese, dis. as Mn by ICP-Trace	15	ug/L	1	2.0*		01/03/03	SW846 6010	721026460
Metals digestion - dissolved ICP	yes		-			12/23/02	SW846 3005	721026460
DW Volatile Organics (VOCs) by EPA 524.2	see attached		-			12/24/02	EPA 524.2	721026460

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ANALYTICAL REPORT

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Client: McMahon Associates Inc
Attn: John Stoeger
1445 McMahon Drive
P O Box 1025
Neenah,WI 54957

NLS Project: 71093
NLS Customer: 20239
Fax: 920 751 4284 Phone: 920 751 4200

Project: NW Mauthe Superfund Site

MW-107A NLS ID: 300393
Ref. Line 2 COC 59393 MW-107A Matrix: GW
Collected: 12/17/02 09:00 Received: 12/19/02

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Cadmium, dis. as Cd by ICP-Trace	ND	ug/L	1	0.17	0.61	01/03/03	SW846 6010	721026460
Chromium, dis. as Cr by ICP-Trace	3700	ug/L	1	0.45	1.6	01/03/03	SW846 6010	721026460
Manganese, dis. as Mn by ICP-Trace	14	ug/L	1	2.0*		01/03/03	SW846 6010	721026460
Metals digestion - dissolved ICP	yes		-			12/23/02	SW846 3005	721026460
DW Volatile Organics (VOCs) by EPA 524.2	see attached		-			12/24/02	EPA 524.2	721026460

MW-108 NLS ID: 300394
Ref. Line 3 COC 59393 MW-108 Matrix: GW
Collected: 12/17/02 09:00 Received: 12/19/02

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Cadmium, dis. as Cd by ICP-Trace	ND	ug/L	1	0.23	0.80	01/02/03	SW846 6010	721026460
Chromium, dis. as Cr by ICP-Trace	[0.67]	ug/L	1	0.44	1.6	01/02/03	SW846 6010	721026460
Manganese, dis. as Mn by ICP-Trace	34	ug/L	1	2.0*		01/02/03	SW846 6010	721026460

Outfall 001 NLS ID: 300395
Ref. Line 4 COC 59393 Outfall 001 Matrix: WW
Collected: 12/17/02 09:00 Received: 12/19/02

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Chromium, tot. as Cr by ICP-Trace	8.2	ug/L	1	0.44	1.6	01/02/03	EPA 200.7	721026460

Trip Blank NLS ID: 300396
Ref. Line 5 COC 59393 Trip Blank Matrix: TB
Collected: 12/17/02 00:00 Received: 12/19/02

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
DW Volatile Organics (VOCs) by EPA 524.2	see attached		-			12/24/02	EPA 524.2	721026460

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

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

Reviewed by: Jerry R Buck

Authorized by:
R. T. Krueger
President

ANALYTICAL RESULTS: GCMS 524.2 Safe Drinking Water Analysis (Sat 3)

Customer: McMahon Associates Inc **NLS Project: 71093**
Project Description: NW Mauthe Superfund Site
Project Title: **Template: 524S3MC**

Sample: 300392 MW-107 **Collected: 12/17/02** **Analyzed: 12/24/02**

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL
Benzene	ND	ug/L	50	7.9	26	5
Chloroform	ND	ug/L	50	11	38	80
1,1-Dichloroethane	40	ug/L	50	8.4	28	
1,1-Dichloroethene	43	ug/L	50	6.4	21	7
cis-1,2-Dichloroethene	ND	ug/L	50	7.2	24	70
trans-1,2-Dichloroethene	ND	ug/L	50	8.9	30	100
Toluene	ND	ug/L	50	7.6	25	1000
1,1,1-Trichloroethane	470	ug/L	50	6.0	20	200
1,1,2-Trichloroethane	ND	ug/L	50	6.8	23	5
Trichloroethene	850	ug/L	50	7.6	25	5
Xylene Total	ND	ug/L	50	14	46	10000
4-Bromofluorobenzene (SURR**)	113%					
1,2-Dichlorobenzene-d4 (SURR**)	111%					

Sample: 300393 MW-107A **Collected: 12/17/02** **Analyzed: 12/24/02**

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL
Benzene	ND	ug/L	50	7.9	26	5
Chloroform	ND	ug/L	50	11	38	80
1,1-Dichloroethane	36	ug/L	50	8.4	28	
1,1-Dichloroethene	40	ug/L	50	6.4	21	7
cis-1,2-Dichloroethene	ND	ug/L	50	7.2	24	70
trans-1,2-Dichloroethene	ND	ug/L	50	8.9	30	100
Toluene	ND	ug/L	50	7.6	25	1000
1,1,1-Trichloroethane	430	ug/L	50	6.0	20	200
1,1,2-Trichloroethane	ND	ug/L	50	6.8	23	5
Trichloroethene	780	ug/L	50	7.6	25	5
Xylene Total	ND	ug/L	50	14	46	10000
4-Bromofluorobenzene (SURR**)	111%					
1,2-Dichlorobenzene-d4 (SURR**)	107%					

Sample: 300396 Trip Blank **Collected: 12/17/02** **Analyzed: 12/24/02**

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL
Benzene	ND	ug/L	1	0.16	0.53	5
Chloroform	ND	ug/L	1	0.21	0.75	80
1,1-Dichloroethane	ND	ug/L	1	0.17	0.56	
1,1-Dichloroethene	ND	ug/L	1	0.13	0.42	7
cis-1,2-Dichloroethene	ND	ug/L	1	0.14	0.48	70
trans-1,2-Dichloroethene	ND	ug/L	1	0.18	0.59	100
Toluene	ND	ug/L	1	0.15	0.50	1000
1,1,1-Trichloroethane	ND	ug/L	1	0.12	0.40	200
1,1,2-Trichloroethane	ND	ug/L	1	0.14	0.46	5
Trichloroethene	ND	ug/L	1	0.15	0.50	5
Xylene Total	ND	ug/L	1	0.28	0.92	10000
4-Bromofluorobenzene (SURR**)	109%					
1,2-Dichlorobenzene-d4 (SURR**)	101%					

** Surrogates are used to evaluate a method's Quality Control.

SAMPLE COLLECTION AND CHAIN OF CUSTODY RECORD

Wisconsin Lab Cert. No. 721026460

NORTHERN LAKE SERVICE, INC.

Analytical Laboratory and Environmental Services
400 North Lake Avenue · Crandon, WI 54520-1298
Tel: (715) 478-2777 · Fax: (715) 478-3060

NO. 59393

CLIENT	McMahon
ADDRESS	Box 1025
CITY / STATE / ZIP	Neenah / WI / 54957-1025
PROJECT DESCRIPTION / NO.	N.W. Mauthe Superfund site
QUOTATION NO.	
CONTACT	John Stoeger
PHONE	920-751-4200
PURCHASE ORDER NO.	
FAX	920-751-4284

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

ANALYZE PER ORDER OF ANALYSIS

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

ITEM NO.	NLS LAB. NO.	SAMPLE ID	COLLECTION DATE	COLLECTION TIME	MATRIX	Total Chromium	Cadmium	Manganese	VOC's SO4-2	COLLECTION REMARKS
						Y	Y	Y	N	
1.	300392	MW-107	12/17/02	9:00 AM	GW	X	X	X	X	
2.	300393	MW-107A	↓	↓	↓	X	X	X	X	
3.	300394	MW-108	↓	↓	↓	X	X	X		
4.	300395	Outfall 001	↓	↓	WW	X				
5.	300396									
6.										
7.										
8.										
9.										
10.										

ONE SAMPLE PER LINE

COLLECTED BY (signature)	CUSTODY SEAL NO. (IF ANY)	DATE/TIME
[signature]		
RELINQUISHED BY (signature)	**RECEIVED BY (signature)**	**DATE/TIME**
[signature] / To UPS		12/17/02 3:00 PM
DISPATCHED BY (signature)	**METHOD OF TRANSPORT**	**DATE/TIME**

REPORT TO: John Stoeger

INVOICE TO: John Stoeger

RECEIVED AT NLS BY (signature)	DATE/TIME	CONDITION	TEMP
[signature]	12-19-02 9:45	On Ice	

COOLER: 26-1627

REMARKS & OTHER INFORMATION: Outfall 001 Sample Not Filtered

WDNR FACILITY NUMBER:

E-MAIL ADDRESS:

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

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

SAMPLE COLLECTION AND CHAIN OF CUSTODY RECORD — NORTHERN LAKE SERVICE, INC.

Wisconsin Lab Cert. No. 721026460

Analytical Laboratory and Environmental Services
400 North Lake Avenue · Crandon, WI 54520-1298
Tel: (715) 478-2777 · Fax: (715) 478-5060

NO. 59392

CLIENT	McMahon
ADDRESS	Box 1025
CITY / STATE / ZIP	Neenah / WI / 54957-1025
PROJECT DESCRIPTION / NO.	N.W. Mauthe Superfund Site
QUOTATION NO.	
CONTACT	John Stocger
PHONE	920-751-4200
PURCHASE ORDER NO.	
FAX	920-751-4284

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

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

ANALYZE PER ORDER OF ANALYSIS

ITEM NO.	NLS LAB. NO.	SAMPLE ID	COLLECTION DATE	COLLECTION TIME	MATRIX	Total Chromium	Cadmium	Mercury	VOCs 524.2	COLLECTION REMARKS
						Y	Y	N		
1.	300382	W-2	12/17/02	9:00AM	GW	X	X	X		
2.	300383	W-8				X	X	X		
3.	300384	W-15				X	X	X		
4.	300385	MW-101				X	X	X		
5.	300386	MW-102				X	X	X		
6.	300387	MW-103				X	X	X		
7.	300388	MW-104				X	X	X		
8.	300389	MW-104A				X	X	X		
9.	300390	MW-105				X	X	X		
10.	300391	MW-106				X	X	X		

ONE SAMPLE PER LINE

COLLECTED BY (signature)	CUSTODY SEAL NO. (IF ANY)	DATE/TIME
RELINQUISHED BY (signature)	RECEIVED BY (signature) TO UPS	DATE/TIME 12/17/02 3:00pm
DISPATCHED BY (signature)	METHOD OF TRANSPORT	DATE/TIME

REPORT TO: John Stocger

INVOICE TO: John Stocger

RECEIVED AT NLS BY (signature)	DATE/TIME 12-18-02 9:45	CONDITION GOOD	TEMP
COOLER #	REMARKS & OTHER INFORMATION		
WDNR FACILITY NUMBER	E-MAIL ADDRESS		

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

IMPORTANT:
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300382

APPENDIX C

Laboratory Analytical Results
Outfall #001

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

ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105 000330
EPA Laboratory ID No. WI00034

Client: McMahon Associates Inc
Attn: John Stoeger
1445 McMahon Drive
P O Box 1025
Neenah,WI 54957

NLS Project: 71093
NLS Customer: 20239
Fax: 920 751 4284 Phone: 920 751 4200

Project: NW Mauthe Superfund Site

MW-107A NLS ID: 300393
Ref. Line 2 COC 59393 MW-107A Matrix: GW
Collected: 12/17/02 09:00 Received: 12/19/02

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Cadmium, dis. as Cd by ICP-Trace	ND	ug/L	1	0.17	0.61	01/03/03	SW846 6010	721026460
Chromium, dis. as Cr by ICP-Trace	3700	ug/L	1	0.45	1.6	01/03/03	SW846 6010	721026460
Manganese, dis. as Mn by ICP-Trace	14	ug/L	1	2.0*		01/03/03	SW846 6010	721026460
Metals digestion - dissolved ICP	yes		-			12/23/02	SW846 3005	721026460
DW Volatile Organics (VOCs) by EPA 524.2	see attached		-			12/24/02	EPA 524.2	721026460

MW-108 NLS ID: 300394
Ref. Line 3 COC 59393 MW-108 Matrix: GW
Collected: 12/17/02 09:00 Received: 12/19/02

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Cadmium, dis. as Cd by ICP-Trace	ND	ug/L	1	0.23	0.80	01/02/03	SW846 6010	721026460
Chromium, dis. as Cr by ICP-Trace	[0.67]	ug/L	1	0.44	1.6	01/02/03	SW846 6010	721026460
Manganese, dis. as Mn by ICP-Trace	34	ug/L	1	2.0*		01/02/03	SW846 6010	721026460

Outfall 001 NLS ID: 300395
Ref. Line 4 COC 59393 Outfall 001 Matrix: WW
Collected: 12/17/02 09:00 Received: 12/19/02

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Chromium, tot. as Cr by ICP-Trace	8.2	ug/L	1	0.44	1.6	01/02/03	EPA 200.7	721026460

Trip Blank NLS ID: 300396
Ref. Line 5 COC 59393 Trip Blank Matrix: TB
Collected: 12/17/02 00:00 Received: 12/19/02

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
DW Volatile Organics (VOCs) by EPA 524.2	see attached		-			12/24/02	EPA 524.2	721026460

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

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

Reviewed by: Jerry R. Bozek

Authorized by:
R. T. Krueger
President

SAMPLE COLLECTION AND CHAIN OF CUSTODY RECORD

NORTHERN LAKE SERVICE, INC.

Analytical Laboratory and Environmental Services

Wisconsin Lab Cert. No. 721026460

400 North Lake Avenue · Crandon, WI 54520-1298

Tel: (715) 478-2777 · Fax: (715) 478-8060

NO. 59392

CLIENT	McMahon
ADDRESS	Box 1025
CITY / STATE / ZIP	Neenah / WI / 54957-1025
PROJECT DESCRIPTION / NO.	N.W. Mantle Superfund Site
QUOTATION NO.	
CONTACT	John Stoeger
PHONE	920-751-4200
PURCHASE ORDER NO.	
FAX	920-751-4284

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

ANALYZE PER ORDER OF ANALYSIS

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

ITEM NO.	NLS LAB. NO.	SAMPLE ID	COLLECTION DATE	COLLECTION TIME	MATRIX	Total Chromium	Cadmium	Manganese	VOCs SW8260	COLLECTION REMARKS
						Y	Y	N		
1.	300382	W-2	12/17/02	9:00AM	GW	X	X	X		
2.	300383	W-8				X	X	X		
3.	300384	W-15				X	X	X		
4.	300385	MW-101				X	X	X		
5.	300386	MW-102				X	X	X		
6.	300387	MW-103				X	X	X		
7.	300388	MW-104				X	X	X		
8.	300389	MW-104A				X	X	X		
9.	300390	MW-105				X	X	X		
10.	300391	MW-106				X	X	X		

ONE SAMPLE PER LINE

COLLECTED BY (signature)	CUSTODY SEAL NO. (IF ANY)	DATE/TIME
RELINQUISHED BY (signature)	RECEIVED BY (signature): TO UPS	DATE/TIME: 12/17/02 3:00pm
DISPATCHED BY (signature)	METHOD OF TRANSPORT	DATE/TIME

RECEIVED AT NLS BY (signature)	DATE/TIME: 12-18-02 9:15	CONDITION: GOOD	TEMP.
COOLER #	REMARKS & OTHER INFORMATION		
PRESERVATIVE: NP = no preservative; S = sulfuric acid; N = nitric acid; Z = zinc acetate; M = methanol; OH = sodium hydroxide; HA = hydrochloric & ascorbic acid; H = hydrochloric acid	WDNR FACILITY NUMBER	E-MAIL ADDRESS	

REPORT TO	INVOICE TO
John Stoeger	John Stoeger

IMPORTANT:

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300392

SAMPLE COLLECTION AND CHAIN OF CUSTODY RECORD

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Analytical Laboratory and Environmental Services

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

NO. 59393

CLIENT	McMahon
ADDRESS	Box 1025
CITY	Neenah
STATE	WI
ZIP	54957-1025
PROJECT DESCRIPTION / NO.	N.W. Mauthe Superfund site
QUOTATION NO.	
CONTACT	John Stoeger
PHONE	920-751-4200
PURCHASE ORDER NO.	
FAX	920-751-4284

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OTHER

ANALYZE PER ORDER OF ANALYSIS

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

ITEM NO.	NLS LAB. NO.	SAMPLE ID	COLLECTION DATE	COLLECTION TIME	MATRIX	Total Chromium (Y)	Cadmium (Y)	Manganese (Y)	VOC's SDA 2 (N)								COLLECTION REMARKS
1.	300392	MW-107	12/17/02	9:00 AM	GW	X	X	X	X								
2.	300393	MW-107A	↓	↓	↓	X	X	X	X								
3.	300394	MW-108	↓	↓	↓	X	X	X									
4.	300395	Outfall 001	↓	↓	WW	X											
5.	300396																
6.																	
7.																	
8.																	
9.																	
10.																	

ONE SAMPLE PER LINE

COLLECTED BY (signature): [signature]	CUSTODY SEAL NO. (IF ANY)	DATE/TIME
RELINQUISHED BY (signature): [signature] To UPS	RECEIVED BY (signature)	DATE/TIME: 12/17/02 3:00 pm
DISPATCHED BY (signature)	METHOD OF TRANSPORT	DATE/TIME

REPORT TO: John Stoeger

INVOICE TO: John Stoeger

RECEIVED AT NLS BY (signature): [signature]	DATE/TIME: 12-19-02 9:45	CONDITION: on ice	TEMP
COOLER: 26/62	REMARKS & OTHER INFORMATION: Outfall 001 Sample Not Filtered		
PRESERVATIVE: NP = no preservative, S = sulfuric acid, N = nitric acid, Z = zinc acetate, M = methanol, OH = sodium hydroxide, HA = hydrochloric & ascorbic acid, H = hydrochloric acid	WDNR FACILITY NUMBER	E-MAIL ADDRESS	

IMPORTANT:
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