347586
EPA Region 5 Records Ctr.
347586

2005 ANNUAL REMEDIAL ACTION GROUND-WATER MONITORING REPORT ORMET CORPORATION SUPERFUND SITE HANNIBAL, OHIO

MARCH 29, 2006

Prepared for:

Ormet Primary Aluminum Corporation
Hannibal, Ohio

Prepared by:

HMI
Environmental Consulting Services

HYDROSYSTEMS MANAGEMENT, INC.
Glass Works Center - Suite 109
331 S. Main Street
Washington, PA 15301
Phone: (724) 228-4310 Fax: (724) 228-4343

TABLE OF CONTENTS

BACKGROUND 1

SUMMARY OF GROUND-WATER MONITORING PROGRAM 3

RESULTS OF 2005 REMEDIAL ACTION GROUND-WATER MONITORING 6

GROUND-WATER FLOW 6

GROUND-WATER QUALITY 7

Time vs. Concentration Trends 7
Cyanide (Amenable to Chlorination) 10
Fluoride 11
Arsenic 11
Beryllium 12
Manganese 12
Vanadium 13
Tetrachloroethene (PCE) 14
Contaminant Mass-in-Place 14
Aquifer Area Above Cleanup Goals 17
Analytical Results for PCBS 18

SUMMARY/CONCLUSIONS 19

TABLES

Table 1 Water-Level Elevation Data January 18, 2005

Table 2 Water-Level Elevation Data May 16, 2005

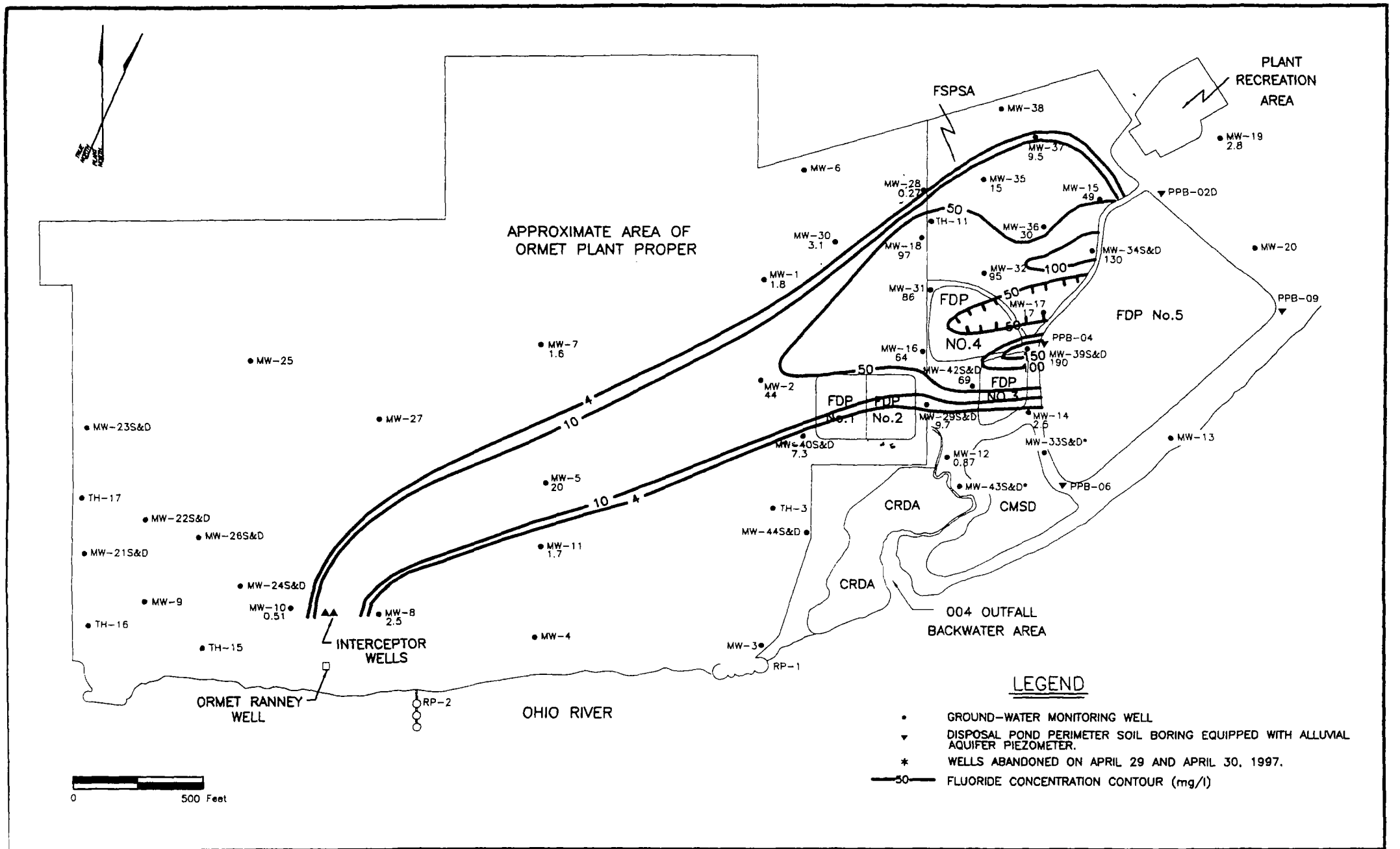
Table 3 Water-Level Elevation Data October 5, 2005

Table 4 Summary of Analytical Results for Remedial Action Ground-Water Monitoring Wells and Parameters

Table 5 Summary of Analytical Results for PCB's

Table 6 Summary of Estimated Aquifer Areas Above Cleanup Goals and Contaminant Mass-In-Place

Table 7 Comparison of Calculated Mass Removal to Changes in Estimated Mass-in-Place



HMI Environmental Consulting Services

PROJECT NO: HM00319	FILE NO:
DRAWING:	PLOT SIZE=1"=500'
DRAFTED BY: C.L.	DATE: 02/13/2006
CHECKED BY: S.C.M.	DATE: 02/13/2006
APPROVED BY: R.L.F.	DATE: 02/13/2006
REVISION NO:	DATE:

FLUORIDE ISOPLETH MAP FOR THE ALLUVIAL AQUIFER

(BASED ON SAMPLES COLLECTED MAY 16–19, 2005)

ORMET CORPORATION

HANNIBAL OHIO

FIGURE 5

APPENDICES

Appendix A Water Sampling Log Forms

Appendix A-1 Water Sampling Log Forms for January 2005 Monitoring Event
Appendix A-2 Water Sampling Log Forms for May 2005 Monitoring Event
Appendix A-3 Water Sampling Log Forms for October 2005 Monitoring Event

Appendix B Laboratory Analytical Reports

Appendix B-1 Laboratory Analytical Report for January 2005 Monitoring Event
Appendix B-2 Laboratory Analytical Report for May 2005 Monitoring Event
Appendix B-3 Laboratory Analytical Report for October 2005 Monitoring Event

Appendix C Data Validation Summary Report for 2005 Monitoring Events

Appendix D Concentration vs. Time Graphs for Remedial Action Monitoring Parameters

Appendix D-1 Total Cyanide
Appendix D-2 Cyanide Amenable to Chlorination
Appendix D-3 Fluoride
Appendix D-4 Arsenic
Appendix D-5 Beryllium
Appendix D-6 Manganese
Appendix D-7 Vanadium
Appendix D-8 Tetrachloroethene
Appendix D-9 Sodium

Appendix E Contaminant Mass-In-Place Estimation Supporting Data
May 2005 Monitoring Event

2005 ANNUAL REMEDIAL ACTION GROUND-WATER MONITORING REPORT ORMET CORPORATION SUPERFUND SITE HANNIBAL, OHIO

BACKGROUND

Under the terms of a Consent Decree entered on December 18, 1995 between the United States Environmental Protection Agency (USEPA) and the Ormet Primary Aluminum Corporation for the Ormet Corporation Superfund Site, Ormet has undertaken Remedial Action (RA) at the site consisting of the following:

- Containment of the plume in the alluvial aquifer through continued pumping of the interceptor wells and Ormet Ranney well and treatment of ground water pumped by the interceptor wells using ferrous salt precipitation;

- Installation and operation of a soil-flushing system in the Former Spent Potliner Storage Area (FSPSA);

- Capping of the former construction material scrap dump (CMSD) with a multi-layer cap, including construction of a TSCA-compliant cell within the CMSD for disposal of backwater area sediment containing PCBs;

- Installation of a drain system around the toe of the former CMSD to collect seeps, with treatment of the collected seep water using activated carbon followed by treatment at the ground-water treatment plant;

- Excavation of carbon material from the former carbon runoff and deposition area and disposal of the material in the former CMSD;

- Excavation of sediment from the former Outfall 004 backwater area and disposal of the sediment in the CMSD; and

- Relocation of the Outfall 004 channel.

Areas of the site that were subject to remedial action are shown on Figure 1.

Remedial construction was initiated in April 1997 and was certified as being complete in August 1998. During the period from August 1998 through October 1998, the FSPSA soil-flushing system was operated on a trial basis, with flushing occurring for a period of approximately three hours per day. Beginning in April 1999, the soil-flushing system began full operation (i.e., flushing for eight hours per day). To reduce ponding of water which occurred over a portion of the FSPSA, the flushing schedule was modified during 2001. Under the modified schedule, the flushing system is on for 1 ½ hours and off for ¾ of an hour for a total of about 14 hours per day. The flushing system is not operated during that period when freezing of the lines could occur and the ground may be frozen, typically from November through March.

As specified in the Statement of Work (SOW) attached to the Consent Decree, Ormet began a program of routine ground-water monitoring in conjunction with the completion of remedial construction. The purpose of ground-water monitoring is to document/evaluate changes in ground-water conditions beneath the site associated with the remedial actions. To provide a baseline characterization of ground-water conditions immediately prior to remedial activities, a sitewide ground-water monitoring event was conducted during May 5 to 9, 1997. Routine ground-water monitoring was initiated in May 1998. Ground-water monitoring activities have been conducted in accordance with the Remedial Action Ground-Water Monitoring Plan (Revision 1 - April 28, 1997) that was submitted to the USEPA during Remedial Design.

SUMMARY OF GROUND-WATER MONITORING PROGRAM

The current system of ground-water monitoring wells and piezometers at the Ormet site is shown on Figure 1. Under the RA Ground-Water Monitoring Plan, monitoring is to be conducted three times per year (approximately once every four months). During 2005, ground-water monitoring events were conducted during January 18 and 19, May 16 to 19, and October 5 to 7.

Each monitoring event included measurement of water-level elevations at all MW- and TH-series monitoring wells, PPB-series piezometers monitoring the alluvial aquifer, and at the Ohio River pool measuring points RP-1 and RP-2. Water-level elevation data collected in conjunction with the 2005 monitoring events are provided in Tables 1, 2, and 3, respectively.

During each monitoring event, ground-water samples were collected from the following wells located within and downgradient of the FSPSA:

MW - 2	MW - 31
MW - 5	MW - 32
MW - 16	MW - 35
MW - 18	MW - 36
MW - 28	MW - 37

Each monitoring event also included sampling of monitoring well MW-12, MW-44S, and MW-44D located immediately downgradient of the CMSD. These wells were identified in the RA Ground-Water Monitoring Plan as Points of Compliance, as required under Section II.6. of the Consent Decree SOW.

The RA Ground-Water Monitoring Plan specifies that one monitoring event each year is to be an expanded monitoring event that includes sampling of selected wells not hydraulically downgradient from any of the potential source areas at the site (i.e., background wells) and additional wells located within the plume outside of the FSPSA. These wells include the following:

MW-1	MW-19 (background)
MW-7 (background)	MW-29S & D
MW-8	MW-30
MW-10	MW-34S & D
MW-11	MW-39S & D
MW-14	MW-40S & D
MW-15	MW-41 (background)
MW-17	MW-42S & D

Water Sampling Log forms for each of the monitoring events conducted during 2005 are provided in Appendix A.

The primary purpose of the annual expanded monitoring event is to collect data to facilitate preparation of plume isopleth maps. Based on the isopleth maps, estimates of contaminant mass-in-place and the total area of the aquifer exceeding cleanup goals for selected indicator parameters were made and compared with estimates based on historical monitoring results as a means of assessing the progress of the remediation program. The expanded monitoring event to characterize baseline conditions at the start of remedial construction in 1997 was conducted in May. To facilitate a more direct comparison of the associated estimates of contaminant mass-in-place and aquifer area exceeding cleanup goals, previous expanded monitoring events have also been conducted during May.

Ground-water samples from all monitoring wells, except MW-44S and MW-44D, were analyzed for constituents for which cleanup goals were specified in the Record of Decision (ROD) for the site; i.e., arsenic, beryllium, cyanide, manganese, vanadium, and fluoride. Samples were also analyzed for pH, specific conductance, and sodium, which are additional indicators of the plume in the alluvial aquifer. Tetrachloroethene (PCE) was analyzed in samples from the MW-2, MW-5, MW-18, MW-30, and MW-31 monitoring wells, in which PCE was detected during the Remedial Investigation (RI). Samples from wells MW-44S and MW-44D were analyzed for PCBs only. Ground-water analyses for samples collected during the 2005 events were performed by Pace Analytical Services, Inc. (Pace) of Export, PA. Methods used by Pace to analyze ground-water samples from the 2005 RA monitoring events were as shown below.

Analytical Parameter	Analytical Method	Ground-Water Clean-Up Goal (ug/L)	Reporting Limit (ug/L)
Arsenic	SW846/6010B	10*	4
Beryllium	SW846/6010B	4	0.5
Manganese	SW846/6010B	230*	10
Vanadium	SW846/6010B	260	10
Cyanide (total)	EPA 335.2	N/A	10
Cyanide (amenable)	EPA 335.1	200	10
Fluoride	EPA 340.2	4000	100
PCBs	SW846/8082	N/A	0.5
Tetrachloroethene	SW846/8260B	5	5
pH	EPA 150.1	N/A	N/A
Specific Conductance	EPA 120.1	N/A	N/A
Sodium	SW846/6010B	N/A	500

N/A - Not Applicable

* - Final determination of cleanup goals for arsenic and manganese are pending. The USEPA and Ormet negotiated a Consent Decree and associated Statement of Work for implementation of the ROD. Because arsenic and manganese are common ground-water constituents in the Ohio River Valley and can occur naturally at concentrations above the cleanup goals presented in the ROD, the SOW specified that as part of the Remedial Design process, Ormet would conduct a statistical evaluation to determine background levels of arsenic and manganese in the alluvial aquifer. The resulting background levels would then be considered for use as cleanup goals in place of the levels presented in the ROD. The results of the statistical analyses, which were presented to USEPA in the August 28, 1996 HydroSystems Management, Inc. report titled, "Statistical Analyses of Background Levels of Manganese and Arsenic in Ground Water", indicated background levels of 40 ug/L for arsenic and 9,780 ug/L for manganese.

Laboratory analytical reports for the 2005 monitoring events are provided in Appendix B. The analytical results are summarized in Table 4 and Table 5 (PCBs). For purposes of comparison, Table 4 also includes historical results for the parameters and wells being monitored. Analytical results for the 2005 monitoring events were validated by applying principles and concepts of the USEPA National Functional Guidelines. A data validation summary report is provided in Appendix C.

RESULTS OF 2005 REMEDIAL ACTION GROUND-WATER MONITORING

GROUND-WATER FLOW

Water-level elevation data collected during the 2005 monitoring events (Tables 1 through 3) were used to construct the water-table contour maps shown in Figures 2, 3, and 4. The ground-water elevation contours and associated ground-water flow patterns shown in Figures 2 through 4 are consistent with those previously mapped. The contour maps show that the ground-water pumping component of the site remedy is effective in containing the plume in the alluvial aquifer beneath the Ormet Reduction Mill property. Ground-water flow in the alluvial aquifer is generally from northeast to southwest, toward the Ormet Reduction Mill Ranney well and interceptor wells. Current pumping maintains the water table at an elevation that is below the pool elevation of the Ohio River, and a hydraulic potential does not exist for the natural discharge of ground water from the alluvial aquifer to the Ohio River along the river/plant boundary. The ground-water elevation contour maps for the 2005 monitoring events indicate that the operation of the FSPSA soil flushing system has had no discernable effect on ground-water flow patterns beneath that area of the site and has not caused a reversal of hydraulic gradients, such that ground water would discharge from the alluvial aquifer to the Ohio River.

Pumping by the Ormet Reduction Mill Ranney well and the Ormet Rolling Mill Ranney well (located approximately 2000 feet west of the Reduction Mill Ranney well) during 2005 created large cones of influence around each pumping center, which converge to form a gently rounded ground-water divide, situated roughly parallel to and west of the fenceline separating the two plants. A ground-water divide is a high point, or ridge, in the surface of the water table. The ground-water divide creates a hydraulic barrier, such that ground water on the west side of the divide flows toward the Rolling Mill Ranney well, and ground water on the east side flows toward the Reduction Mill Ranney well and interceptor wells. By this condition, a hydraulic potential does not exist for ground water beneath the Reduction Mill to flow toward the Rolling Mill Ranney well.

GROUND-WATER QUALITY

Time vs. Concentration Trends

To evaluate changes in plume concentrations within the alluvial aquifer beneath the Ormet site, concentration versus time graphs were prepared for each monitoring parameter for which a cleanup goal was established in the ROD, with each parameter being graphed separately for each of the compliance point wells identified in the RA Ground-Water Monitoring Plan (see Appendix D). Analytical results for sodium have also been graphed, because it is an additional indicator of overall water quality in the plume. The graphs show the analytical results for the 2005 monitoring events, along with previous data. Summaries of time versus concentration trends and comparisons of the latest reported concentrations versus cleanup goals or background concentrations for the compliance wells are provided in the following tables. Possible time versus concentration trends were evaluated primarily with regard to the period since remediation was initiated at the site (e.g., 1997 or later).

SUMMARY OF TIME VERSUS CONCENTRATION TRENDS

	TOTAL CN	AMEN. CN	As	Be	Mn	V	F	Na
Wells within FSPSA								
MW - 32	- -	- -	- -	⇑	⇑	⇑	⇑	- -
MW - 35	⇓	- -	⇓	<	- -	⇓	⇓	⇓
MW - 36	- -	- -	⇓	- -	⇓	⇓⇑	⇓	⇓
MW - 37	⇓	- -	⇓	<	⇑⇓	- -	⇓	⇓
Downgradient Edge of FSPSA								
MW - 16	⇑⇓	- -	⇑⇓	- -	⇑⇓	⇑⇓	- -	⇓⇑
MW - 18	⇑⇓	⇑⇓	- -	- -	- -	- -	⇓	⇓
MW - 28	⇑⇓	⇓	<	<	⇑	<	- -	- -
MW - 31	- -	- -	- -	⇑	⇑	⇑	⇓	⇓
Mid - Plant Area								
MW - 2	⇓	- -	⇓	- -	- -	- -	⇓	⇓
MW - 5	⇑	- -	⇓	<	⇑⇓	<	⇑⇓	- -
Downgradient of CMSD								
MW - 12	<	<	<	<	- -	<	- -	- -

Total CN - Total Cyanide; Amen. CN - Amenable Cyanide; As - Arsenic; Be - Beryllium; Mn - Manganese; Vanadium; F - Fluoride; Na - Sodium

⇑ - Trend of increasing concentration. ⇓ - Trend of decreasing concentration.

- - No consistent trend. < - Predominantly below detection results.

Combinations of symbols indicate changes in trends.

COMPARISON OF LATEST REPORTED CONCENTRATION TO CLEANUP GOALS/BACKGROUND[1]

	AMEN. CN	As	Be	Mn	V	F
Wells within FSPSA						
MW - 32				+	*	
MW - 35		*	*	+	*	
MW - 36		*	*	+	*	
MW - 37		*	*	+	*	
Downgradient Edge of FSPSA						
MW - 16			*	+	*	
MW - 18			*	+	*	
MW - 28	*	*	*	*	*	*
MW - 31			*	+	*	
Mid-Plant Area						
MW - 2	*		*	+	*	
MW - 5		*	*	+	*	
Downgradient of CMSD						
MW - 12	*	*	*	+	*	*

Amen. CN - Amenable Cyanide; As - Arsenic; Be - Beryllium; Mn - Manganese; V - Vanadium; F - Fluoride

* - Latest result at or below ROD Cleanup Goal.

+ - Latest result above Cleanup Goal, but below background.

Blanks indicate latest result is above cleanup goal. For arsenic, a blank indicates latest result is above background.

(1) Background values calculated by HMI (August, 1996). Arsenic background = 40 µg/L; manganese background = 9,780 µg/L.

Discussions of the time versus concentrations trends for each parameter for which a cleanup goal has been established are provided in the following sections.

Cyanide (Amenable to Chlorination)

The cleanup goal for cyanide established in the ROD (0.2 mg/L) is the Safe Drinking Water Act Maximum Contaminant Level (MCL) for cyanide amenable to chlorination. Cyanide amenable to chlorination is that portion of total cyanide which is weakly bound in cyanide complexes or is in the form of free (non-complexed) cyanide. Cyanide amenable to chlorination is a more reactive form of cyanide than the more strongly bound metal-cyanide complexes (e.g., iron cyanide). The form of cyanide occurring in the ground water beneath the Ormet site appears to be predominantly the stable cyanide complexes, which exhibit relatively low toxicity. This interpretation is supported by the relative concentrations of total versus amenable or free cyanide reported in ground-water samples from the site; i.e., at a given well, the concentration of amenable or free cyanide is typically much lower than the total cyanide concentration in a sample. Also, the area of the alluvial aquifer containing concentrations of amenable cyanide above the cleanup goal is substantially smaller than the area of aquifer containing total cyanide at levels above 0.2 mg/L. This comparison is further discussed later in this report.

Analyses for amenable cyanide tend to be subject to a higher degree of variability than other plume indicators, such as total cyanide and fluoride. Consequently, concentration versus time graphs for amenable cyanide tend to be somewhat erratic and exhibit less consistent trends. For this reason, the long-term concentration trends for amenable cyanide at a given monitoring well are more significant than fluctuations observed from one monitoring event to the next.

Concentration versus time graphs for total cyanide and amenable cyanide are presented in Appendix D-1 and D-2, respectively. At three of the eleven compliance point wells (MW-2, MW-12 and MW-28), the most recently reported amenable cyanide concentration was below the clean-up goal of 0.2 mg/L. Amenable cyanide results for MW-12 are predominantly below detection. At MW-18 and MW-28, more recent amenable cyanide concentrations exhibit a downward trend. The eight remaining compliance wells exhibit no consistent trend in amenable

cyanide concentrations. With regard to total cyanide, concentrations appear to exhibit a downward trend at six of the 10 compliance wells having detectable concentrations. Total cyanide concentrations appear to exhibit an upward trend only at the MW-5 compliance well.

Fluoride

Of the main plume indicators, fluoride is less prone to analytical variability than cyanide, and is potentially a more reliable indicator of changes in overall plume quality. Concentration versus time graphs for fluoride for each of the compliance wells are provided in Appendix D-3.

The most recent result for fluoride was below the cleanup goal of 4 mg/L at two of the eleven compliance point wells, MW-12 and MW-28, and a downward concentration trend was observed at seven of the compliance wells (MW-2, MW-5, MW-18, MW-31, MW-35, MW-36, and MW-37). At compliance well MW-32, concentrations of fluoride exhibit an increasing trend. The remaining three compliance wells exhibit no consistent trend. As shown on the ground-water contour maps for the 2005 monitoring events, (Figures 2, 3, and 4), the MW-32 monitoring well is within the FSPSA. Increases in concentrations of fluoride at this well are believed to reflect increased leaching of residual spent potliner materials in the soil of the FSPSA due to soil flushing.

Arsenic

Concentration versus time graphs for arsenic for each of the compliance point wells are provided in Appendix D-4. At three of the eleven compliance point wells, MW-5, MW-12, and MW-28, the concentrations of arsenic reported for the most recent sampling event are below the clean-up goal of 0.01 mg/L specified in the ROD. At MW-12 and MW-28, arsenic concentrations have been consistently below detection. Data for MW-2, MW-5, MW-16, MW-35, MW-36, and MW-37 wells show a decreasing trend, while data for three of the compliance wells (MW-18, MW-31 and MW-32) exhibit no consistent trend.

As discussed earlier in this report, the final cleanup goal for arsenic is pending. In the ROD, the cleanup goal for arsenic was set at 0.010 mg/L. Because arsenic is a common constituent of ground water in the Ohio River Valley for which naturally-occurring concentrations can exceed the cleanup goal presented in the ROD, the SOW specified that as part of the Remedial Design process, Ormet would conduct a statistical evaluation to determine the background level of arsenic in the alluvial aquifer. The resulting background level would then be considered for use as the cleanup goal in place of the level presented in the ROD. The results of the statistical analyses, which were presented to USEPA in the August 28, 1996 HydroSystems Management, Inc. report titled, "Statistical Analyses of Background Levels of Manganese and Arsenic in Ground Water", indicated a background level of 0.040 mg/L for arsenic. At six of the compliance wells (MW-5, MW-12, MW-28, MW-35, MW-36, and MW-37), the most recent results are below the 0.040 mg/L background level determined for arsenic.

Beryllium

Concentration versus time graphs for beryllium are provided in Appendix D-5. The cleanup goal for beryllium established in the ROD was the MCL, 0.004 mg/L. Beryllium was reported above the MCL only in samples collected during the Phase I RI (June/July 1988) and only at two wells: MW-18 and MW-37. Except for a result of 0.0042 mg/L at MW-32 during the October 2005 monitoring event, beryllium was consistently below the MCL in all samples analyzed from all of the compliance point monitoring wells during each of the 2005 monitoring events.

Manganese

Concentration versus time graphs for manganese are provided in Appendix D-6. Manganese results for MW-28, MW-31, and MW-32 show increasing trends during more recent monitoring events. Results for MW-5, MW-16, MW-36 and MW-37 show a decreasing trend. The data for the remaining four compliance wells exhibit no consistent trend with regard to manganese. The MW-28 well is adjacent to the western edge of the FSPSA. Increases in manganese concentrations at this well may result from soil flushing in the FSPSA.

manganese. The MW-28 well is adjacent to the western edge of the FSPSA. Increases in manganese concentrations at this well may result from soil flushing in the FSPSA.

The final cleanup goal for manganese is pending. In the ROD, the cleanup goal for manganese was set at 0.230 mg/L. Because manganese is a common constituent of ground-water in the Ohio River Valley for which naturally-occurring concentrations can be well above the cleanup goal presented in the ROD, the SOW specified that as part of the remedial Design process, Ormet would conduct a statistical evaluation to determine the background level of manganese in the alluvial aquifer. The resulting background level would then be considered for use as the cleanup goal in place of the level presented in the ROD. The results of the statistical analyses, which were presented to USEPA in the August 28, 1996 HydroSystems Management, Inc. report titled, "Statistical Analyses of Background Levels of Manganese and Arsenic in Ground Water", indicated a background level of 9,780 ug/L for manganese.

At MW-28, the most recent result for manganese was below the 0.230 mg/L cleanup goal presented in the ROD. Manganese concentrations were below the background level in all of the compliance wells during each of the 2005 monitoring events.

Vanadium

Concentration versus time graphs for vanadium are provided in Appendix D-7. The cleanup goal for vanadium established in the ROD was 0.260 mg/L. As with beryllium, vanadium was reported at or above the cleanup goal only in samples collected during the Phase I RI (June/July 1988) and only at well MW-37. Except for anomalous results of 0.36 mg/L and 0.43 mg/L at MW-18 during the January 2002 and the September 2004 monitoring events, vanadium has been consistently below the cleanup goal in all samples analyzed since the Phase I RI, including samples from all of the compliance point monitoring wells during all of the 2005 monitoring events. More recent vanadium results exhibit a decreasing trend at wells MW-16 and MW-35 (within the FSPSA soil flushing area) and an apparent increasing trend at MW-31, MW-32 and MW-36.

Tetrachloroethene (PCE)

Under the RA Ground-Water Monitoring Plan, analyses for tetrachloroethene (PCE) were performed on samples from the five compliance wells where PCE was detected during the RI, MW-2, MW-5, MW-18, MW-30, and MW-31. Concentration versus time graphs for PCE for these five wells are provided in Appendix D-8. Since the Phase I RI, PCE concentrations have been predominantly below detection at MW-5; PCE levels have increased at MW-2 and MW-31, and decreased at MW-18 and MW-30. The cleanup goal for PCE is the MCL of 0.005 mg/L. In the most recent samples from the five wells, the reported concentrations of PCE were below the cleanup goal at MW-5.

Contaminant Mass-in-Place

In accordance with Section II.3.C. of the Consent Decree SOW, data from the May 2005 expanded routine monitoring event were used to estimate the masses of fluoride and cyanide (the primary plume indicators) in the alluvial aquifer as a means of evaluating the progress of the remediation. The procedure used for estimating the mass-in-place was as described in the RD Work Plan and the HydroSystems Management, Inc. (HMI) report titled, "Estimation of Dissolved Contaminant Mass in the Alluvial Aquifer, Ormet Primary Aluminum Corporation Superfund Site, Hannibal, Ohio" (August 28, 1996) that was submitted to the USEPA in conjunction with the 30% RD submittal. The approach used for estimation of contaminant mass-in-place is based on methods described in "Methods for Monitoring Pump-and-Treat Performance" (USEPA, July 1994). Results of the mass-in-place estimates for fluoride and cyanide are summarized in Table 6. For comparison, Table 6 also includes fluoride and cyanide mass-in-place estimates based on previous monitoring events. The mass-in-place estimates are based on the fluoride and total cyanide isopleth maps shown in Figures 5 and 6, respectively. Data and supporting calculations for the May 2005 mass-in-place estimates are provided in Appendix E. Data and supporting calculations for the previous mass-in-place estimates were submitted to the USEPA in prior reports.

Based on the estimates presented in Table 6, the mass of fluoride in the alluvial aquifer declined substantially during the period from June 1988 through May 1998, from approximately 85,700 pounds to just under 24,000 pounds (approximately 72% decrease). However, the fluoride mass-in-place calculated in 1999 (after the start of full-time soil flushing in the FSPSA), about 30,400 pounds, increased by about 6,400 pounds relative to the 1998 value. Between May 1999 and May 2001, the fluoride mass-in-place again declined, to an estimated 21,741 pounds. From May 2001 to May 2004, the estimated fluoride mass-in-place increased to 38,836 pounds. In 2005 the estimated fluoride mass-in-place decreased slightly to about 37,656 pounds.

Similar to fluoride, the estimated cyanide mass-in-place showed substantial decreases during the period from 1988 to 1998 (from over 6,800 pounds to about 2,600 pounds, a reduction of nearly 62%). In 1999, following the start of full-time soil flushing, the estimated cyanide mass-in-place increased to nearly 5,600 pounds. Between 1999 and 2003, the estimates of cyanide mass-in-place have shown an overall decreasing trend. In 2004, the estimated cyanide mass-in-place was 3,062 pounds, and in 2005 was approximately 4,681 pounds.

To assess the extent to which cyanide and fluoride continue to leach from soil in the FSPSA, the masses of fluoride and cyanide removed from the aquifer through pumping of the interceptor wells and Ranney well for the period between the two most recent expanded monitoring events (i.e., May 2004 through May 2005) were calculated and compared to changes in the estimated masses in the aquifer over the same period. The masses of cyanide and fluoride removed through pumping of the interceptor wells were calculated using daily analytical and flow data for the influent to Ormet's ground-water treatment plant, which receives the water pumped by the interceptor wells. The masses of cyanide and fluoride removed through pumping of the Reduction Mill Ranney well were calculated using quarterly analytical data and daily flow data collected by Ormet for NPDES reporting purposes.

As discussed in the ROD and the remedial design (RD) documents for the Ormet site, the purpose of soil flushing in the FSPSA is to accelerate the rate at which contaminants are leached from the source area soils and subsequently removed from the aquifer by ground-water pumping.

mass-in-place to the mass of these constituents removed from the aquifer during the same time period. A summary of these data is provided in Table 7. During the period from May 2004 to May 2005, approximately 8,802 pounds of fluoride and approximately 1,075 pounds of cyanide (total) were removed from the alluvial aquifer by the interceptor wells and the Ranney well. During the same period, the estimated mass of fluoride in the aquifer decreased by approximately 1,180 pounds and the estimated mass of cyanide increased by approximately 1,619 lbs. That the decrease in fluoride mass-in-place was only about $1/7^{th}$ of the mass of fluoride removed from the aquifer by pumping, and that cyanide mass-in-place increased in spite of significant removal by pumping, indicates that appreciable leaching of contaminants from soil in the FSPSA continues to occur. The relationship between mass removal and changes in the calculated mass-in-place will continue to be evaluated through the ongoing monitoring program.

Factors that can affect the calculated contaminant mass-in-place include the following:

- Variation in the soil flushing operation (e.g., duration of flushing, volume of water applied);
- Natural precipitation patterns;
- Presence and duration of frozen ground (less infiltration occurs when ground is frozen);
- Variability in laboratory results; and,
- Concentration contour area estimates used in the mass-in-place calculations.

For these reasons, long-term trends in the calculated mass-in-place and mass removals are more significant than year to year variations. Figure 9 presents graphs of the estimated masses of fluoride and cyanide in the alluvial aquifer versus time. The data for cyanide indicate an overall trend of decreasing mass-in-place, while the data for fluoride are less consistent.

Aquifer Area Above Cleanup Goals

As a further check of the progress of the remediation, the approximate areas of the aquifer containing fluoride and cyanide at concentrations above their respective cleanup goals were estimated using analytical results from the May 2005 sampling event. The results are summarized in Table 6. The estimates of aquifer areas above the cleanup goal are based on the fluoride and total cyanide isopleth maps shown in Figures 5 and 6, respectively. For comparison, Table 6 also includes estimates of the aquifer areas above the fluoride and cyanide cleanup goals, as determined from previous plume isopleth maps submitted to the USEPA in prior Annual Reports.

As shown in Table 6, the area of the alluvial aquifer containing fluoride above the cleanup goal increased slightly between 1988 (approximately 43 acres) and 1995 (approximately 48 acres). Between 1995 and 1998, the area above the cleanup goal for fluoride decreased to approximately 37 acres. Following the start of soil flushing in the FSPSA in 1998, the area of aquifer above the fluoride cleanup goal increased to nearly 44 acres. In 2005, the aquifer area with fluoride concentrations above the cleanup goal was about 39.5 acres.

The area of the aquifer with concentrations of amenable cyanide above the cleanup goal of 0.2 mg/L increased substantially during the period from May 1998 (approximately 10.5 acres) to May 2000 (approximately 36.5 acres). Between May 2000 and May 2004, the aquifer area with concentrations of amenable cyanide above the cleanup goal showed little change. For 2005 the estimated area of aquifer above the cleanup goal was 43.7 acres. As discussed previously, analyses for amenable cyanide tend to be subject to a higher degree of variability than other plume indicators, such as total cyanide and fluoride. Consequently, trends in the area of the aquifer with amenable cyanide above its cleanup goal are best evaluated based on long-term changes, as opposed to differences observed from one monitoring event to the next.

As discussed previously in this report, analytical results for total cyanide and cyanide amenable to chlorination indicate that the form of cyanide occurring in the ground water beneath the Ormet site is predominantly the relatively stable, cyanide complexes. This interpretation is supported by a comparison of the area of the alluvial aquifer with total cyanide concentrations above 0.2 mg/L to the area of the aquifer with amenable cyanide concentrations above 0.2 mg/L. As shown in Figure 8, the area of the aquifer with amenable cyanide above 0.2 mg/L is substantially less than the area with total cyanide above 0.2 mg/L.

Analytical Results for PCBs

During each of the 2005 sampling events, ground-water samples from monitoring wells MW-12, MW-44S and MW-44D were analyzed for PCBs. Analytical results for these samples report no detections of PCBs (see Table 5).

SUMMARY/CONCLUSIONS

- Pumping of the Ranney well and interceptor wells continues to provide containment of the plume beneath the Ormet property and removes contaminant mass from the alluvial aquifer.

- Operation of the soil-flushing system has no discernable effect on ground-water flow patterns beneath the FSPSA. Along the river/plant boundary, the flow of ground water continues to be from the river to the aquifer.

- Pumping of the interceptor wells and Ranney well removed approximately 8,802 pounds of fluoride and approximately 1,075 pounds of cyanide from the alluvial aquifer during the period May 2004 to May 2005. During the same period, the estimated mass of fluoride in the aquifer decreased by only about 1,180 pounds and the mass of cyanide in the aquifer increased by about 1,619 pounds. These results indicate continued leaching of residual spent potliner materials in the soil of the FSPSA.

- Over time, as the leachable material in the soils in the FSPSA is depleted, the removal of fluoride and cyanide mass from the aquifer by pumping of the interceptor wells and the Ranney well is expected to result in sustained decreases in the contaminant mass-in-place.

- The estimated area of the alluvial aquifer with fluoride concentrations above the cleanup goal set forth in the ROD decreased about 6.5% between 2004 and 2005.

- The estimated area of the aquifer with cyanide concentrations above the cleanup goal set forth in the ROD increased about 12.8% between 2004 and 2005.

- Reductions in the contaminant mass-in-place were occurring prior to the completion of Remedial Construction and full-time operation of the FSPSA soil-flushing system. These decreases are attributable to operational changes and remedial activities undertaken by

Ormet prior to the Superfund project, including pumping of wells that intercept the plume, which has been ongoing since 1972, and discontinued use of the disposal ponds and the potliner storage area.

- Ground-water samples analyzed during 2005 for PCBs were reported as non-detect.

TABLES

TABLE 1
WATER-LEVEL ELEVATION DATA
ORMET CORPORATION
HANNIBAL, OHIO
DATE: JANUARY 18, 2005

WATER-LEVEL MEASURING POINT	MEASURING POINT ELEVATION (ft. MSL)	DEPTH TO WATER (feet)	GROUND-WATER ELEVATION (ft. MSL)
MW-1	668.07	48.08	619.99
MW-2	668.12	48.35	619.77
MW-3	645.17	22.76	622.41
MW-4	661.07	44.50	616.57
MW-5	668.16	51.28	616.88
MW-7	667.94	50.96	616.98
MW-8	667.71	53.02	614.69
MW-9	666.59	51.38	615.21
MW-10	667.16	52.45	614.71
MW-11	667.31	50.65	616.66
MW-12	636.73	15.02	621.71
MW-13	661.44	37.20	624.24
MW-14	653.59	30.68	622.91
MW-15	657.31	31.93	625.38
MW-16	662.72	40.64	622.08
MW-17	655.03	30.87	624.16
MW-18	660.91	36.73	624.18
MW-19	662.03	36.64	625.39
MW-20	632.33	8.59	623.74
MW-21s	664.02	48.76	615.26
MW-21d	663.60	48.36	615.24
MW-22s	667.47	52.33	615.14
MW-22d	667.21	52.10	615.11
MW-23s	663.18	48.06	615.12
MW-23d	663.41	48.32	615.09
MW-24s	667.88	52.91	614.97
MW-24d	667.75	52.80	614.95
MW-25	667.73	52.65	615.08
MW-26s	665.54	50.52	615.02
MW-26d	665.59	50.63	614.96
MW-27	667.86	52.38	615.48
MW-28	663.27	20.78	642.49
MW-29s	653.40	31.64	621.76
MW-29d	653.07	31.28	621.79
MW-30	667.58	45.20	622.38
MW-31	661.59	38.31	623.28
MW-32	656.66	32.62	624.04
MW-34s	655.67	31.64	624.03
MW-34d	654.67	29.85	624.82
MW-35	661.90	35.14	626.76
MW-36	655.14	31.62	623.52
MW-37	661.14	20.72	640.42
MW-38	666.64	19.52	647.12
MW-39s	657.30	33.80	623.50
MW-39d	657.18	33.66	623.52
MW-40s	662.22	42.23	619.99
MW-40d	661.95	NM	--
MW-41	637.67	NM	--
MW-42s	654.37	32.20	622.17
MW-42d	654.34	32.12	622.22
MW-44s	662.01	42.09	619.92
MW-44d	661.76	42.56	619.20

TABLE 1 (CONT.)
WATER-LEVEL ELEVATION DATA
ORMET CORPORATION
HANNIBAL, OHIO
DATE: JANUARY 18, 2005

WATER-LEVEL MEASURING POINT	MEASURING POINT ELEVATION (ft. MSL)	DEPTH TO WATER (feet)	GROUND-WATER ELEVATION (ft. MSL)
PPB-01*	663.24	14.00	649.24
PPB-02s*	663.14	17.74	645.40
PPB-02d+	662.78	38.00	624.78
PPB-04+	661.57	38.33	623.24
PPB-05*	661.62	12.18	649.44
PPB-06+	663.04	NM	--
PPB-07*	661.71	NM	--
PPB-09+	664.30	39.83	624.47
PPB-10*	663.45	10.83	652.62
PPB-14*	660.64	NM	--
TH-3	667.81	48.53	619.28
TH-10	658.17	32.68	625.49
TH-11	659.08	34.30	624.78
TH-15	663.62	48.32	615.30
TH-16	664.62	49.28	615.34
TH-17	663.93	48.75	615.18
RP-1	643.17	18.92	624.25
RP-2	643.05	18.74	624.31

NOTE:

All MW-series wells are measured from the top of the PVC casing.

All TH-series wells are measured from the top of steel casing.

River pool measuring point RP-2 is located on the walkway below the dry scrubbers and RP-1 is located on the walkway at the barge unloading dock.

* - Designates a perched zone piezometer

+ - Designates an alluvial aquifer piezometer.

NM = Not measured.

01-18-05WLE.XLS

TABLE 2
WATER-LEVEL ELEVATION DATA
ORMET CORPORATION
HANNIBAL, OHIO
DATE: MAY 16, 2005

WATER-LEVEL MEASURING POINT	MEASURING POINT ELEVATION (ft. MSL)	DEPTH TO WATER (feet)	GROUND-WATER ELEVATION (ft. MSL)
MW-1	668.07	46.85	621.22
MW-2	668.12	47.40	620.72
MW-3	645.17	22.63	622.54
MW-4	661.07	43.20	617.87
MW-5	668.16	49.87	618.29
MW-7	667.94	48.86	619.08
MW-8	667.71	51.54	616.17
MW-9	666.59	49.14	617.45
MW-10	667.16	50.72	616.44
MW-11	667.31	49.28	618.03
MW-12	636.73	14.74	621.99
MW-13	661.44	37.46	623.98
MW-14	653.59	30.73	622.86
MW-15	657.31	32.68	624.63
MW-16	662.72	40.40	622.32
MW-17	655.03	31.32	623.71
MW-18	660.91	36.45	624.46
MW-19	662.03	37.59	624.44
MW-20	632.33	9.10	623.23
MW-21s	664.02	NM	--
MW-21d	663.60	45.78	617.82
MW-22s	667.47	49.96	617.51
MW-22d	667.21	49.73	617.48
MW-23s	663.18	45.20	617.98
MW-23d	663.41	45.50	617.91
MW-24s	667.88	50.98	616.90
MW-24d	667.75	50.88	616.87
MW-25	667.73	50.13	617.60
MW-26s	665.54	48.38	617.16
MW-26d	665.59	48.48	617.11
MW-27	667.86	50.25	617.61
MW-28	663.27	20.23	643.04
MW-29s	653.40	31.34	622.06
MW-29d	653.07	31.00	622.07
MW-30	667.58	43.95	623.63
MW-31	661.59	38.66	622.93
MW-32	656.66	32.88	623.78
MW-34s	655.67	32.24	623.43
MW-34d	654.67	30.48	624.19
MW-35	661.90	34.54	627.36
MW-36	655.14	32.23	622.91
MW-37	661.14	18.99	642.15
MW-38	666.64	19.38	647.26
MW-39s	657.30	34.04	623.26
MW-39d	657.18	33.90	623.28
MW-40s	662.22	41.48	620.74
MW-40d	661.95	41.20	620.75
MW-41	637.67	NM	--
MW-42s	654.37	32.15	622.22
MW-42d	654.34	32.08	622.26
MW-44s	662.01	41.26	620.75
MW-44d	661.76	41.80	619.96

TABLE 2 (CONT.)
WATER-LEVEL ELEVATION DATA
ORMET CORPORATION
HANNIBAL, OHIO
DATE: MAY 16, 2005

WATER-LEVEL MEASURING POINT	MEASURING POINT ELEVATION (ft. MSL)	DEPTH TO WATER (feet)	GROUND-WATER ELEVATION (ft. MSL)
PPB-01*	663.24	NM	--
PPB-02s*	663.14	17.86	645.28
PPB-02d+	662.78	38.82	623.96
PPB-04+	661.57	38.60	622.97
PPB-05*	661.62	16.72	644.90
PPB-06+	663.04	NM	--
PPB-07*	661.71	NM	--
PPB-09+	664.30	40.28	624.02
PPB-10*	663.45	12.18	651.27
PPB-14*	660.64	NM	--
TH-3	667.81	47.63	620.18
TH-10	658.17	33.43	624.74
TH-11	659.08	34.02	625.06
TH-15	663.62	46.44	617.18
TH-16	664.62	46.82	617.80
TH-17	663.93	46.06	617.87
RP-1	643.17	19.12	624.05
RP-2	643.05	18.80	624.25

NOTE:

All MW-series wells are measured from the top of the PVC casing.

All TH-series wells are measured from the top of steel casing.

River pool measuring point RP-2 is located on the walkway below the dry scrubbers and RP-1 is located on the walkway at the barge unloading dock.

* - Designates a perched zone piezometer

+ - Designates an alluvial aquifer piezometer.

NM = Not measured.

5-16-05WLE.XLS

TABLE 3
WATER-LEVEL ELEVATION DATA
ORMET CORPORATION
HANNIBAL, OHIO
DATE: OCTOBER 5, 2005

WATER-LEVEL MEASURING POINT	MEASURING POINT ELEVATION (ft. MSL)	DEPTH TO WATER (feet)	GROUND-WATER ELEVATION (ft. MSL)
MW-1	668.07	48.62	619.45
MW-2	668.12	49.30	618.82
MW-3	645.17	23.76	621.41
MW-4	661.07	46.38	614.69
MW-5	668.16	52.96	615.20
MW-7	667.94	51.73	616.21
MW-8	667.71	55.73	611.98
MW-9	666.59	54.68	611.91
MW-10	667.16	55.42	611.74
MW-11	667.31	52.46	614.85
MW-12	636.73	16.00	620.73
MW-13	661.44	37.78	623.66
MW-14	653.59	31.64	621.95
MW-15	657.31	33.46	623.85
MW-16	662.72	41.60	621.12
MW-17	655.03	31.98	623.05
MW-18	660.91	37.29	623.62
MW-19	662.03	38.16	623.87
MW-20	632.33	9.35	622.98
MW-21s	664.02	NM	--
MW-21d	663.60	51.94	611.66
MW-22s	667.47	55.60	611.87
MW-22d	667.21	55.35	611.86
MW-23s	663.18	51.38	611.80
MW-23d	663.41	51.72	611.69
MW-24s	667.88	55.96	611.92
MW-24d	667.75	55.84	611.91
MW-25	667.73	54.41	613.32
MW-26s	665.54	53.59	611.95
MW-26d	665.59	53.70	611.89
MW-27	667.86	54.10	613.76
MW-28	663.27	20.58	642.69
MW-29s	653.40	32.60	620.80
MW-29d	653.07	32.25	620.82
MW-30	667.58	45.19	622.39
MW-31	661.59	39.83	621.76
MW-32	656.66	33.66	623.00
MW-34s	655.67	32.94	622.73
MW-34d	654.67	31.10	623.57
MW-35	661.90	34.95	626.95
MW-36	655.14	33.06	622.08
MW-37	661.14	19.50	641.64
MW-38	666.64	20.18	646.46
MW-39s	657.30	34.90	622.40
MW-39d	657.18	34.74	622.44
MW-40s	662.22	43.27	618.95
MW-40d	661.95	NM	--
MW-41	637.67	NM	--
MW-42s	654.37	33.22	621.15
MW-42d	654.34	33.14	621.20
MW-44s	662.01	43.09	618.92
MW-44d	661.76	43.55	618.21

TABLE 3 (CONT.)
WATER-LEVEL ELEVATION DATA
ORMET CORPORATION
HANNIBAL, OHIO
DATE: OCTOBER 5, 2005

WATER-LEVEL MEASURING POINT	MEASURING POINT ELEVATION (ft. MSL)	DEPTH TO WATER (feet)	GROUND-WATER ELEVATION (ft. MSL)
PPB-01*	663.24	19.92	643.32
PPB-02s*	663.14	18.12	645.02
PPB-02d+	662.78	39.43	623.35
PPB-04+	661.57	39.40	622.17
PPB-05*	661.62	19.98	641.64
PPB-06+	663.04	NM	--
PPB-07*	661.71	NM	--
PPB-09+	664.30	40.43	623.87
PPB-10*	663.45	15.64	647.81
PPB-14*	660.64	NM	--
TH-3	667.81	49.65	618.16
TH-10	658.17	34.28	623.89
TH-11	659.08	34.75	624.33
TH-15	663.62	51.54	612.08
TH-16	664.62	52.81	611.81
TH-17	663.93	52.25	611.68
RP-1	643.17	18.74	624.43
RP-2	643.05	18.45	624.60

NOTE:

All MW-series wells are measured from the top of the PVC casing.

All TH-series wells are measured from the top of steel casing.

River pool measuring point RP-2 is located on the walkway below the dry scrubbers and RP-1 is located on the walkway at the barge unloading dock.

* - Designates a perched zone piezometer

+ - Designates an alluvial aquifer piezometer.

NM = Not measured.

10-5-05WLE.XLS

TABLE 4
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUND-WATER MONITORING WELLS AND PARAMETERS
ORMET CORPORATION
HANNIBAL, OHIO

	pH (lab)	pH (field)	Specific Conductance (lab)	Specific Conductance (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	Tetrachloroethene
MW-1															
12/83	6.4	6.0	270	210	0.018	0.014		0.1			0.04	0.65	14.2		
2/84	6.1	6.1	270	215	0.04			0.1			0.01	0.54	14.9		
9/84	6.1	5.7	195	210	<0.01	<0.01		<0.2			0.02	0.33	13.8		
5/85	6.4	6.0	200	210	0.13	0.13		<0.2			0.04	0.15	16.2		
6/88	6.2	6.4	670	540	<0.01		<0.01	0.2	0.0024	<0.0015	6.21	0.379	20.3	0.006	
1/95	6.2	4.7	370	550	0.02		<0.01	0.1	<0.004	<0.01	<0.04	0.39	21	<0.01	
5/97	5.9	6.32	470	365	<0.01			0.1	<0.004	<0.0005		0.13	19	<0.01	
5/98	6.01	5.65	480	505	<0.01			0.20	<0.004	<0.0005		0.10	20	<0.01	
5/01	5.95	6.35	450	392	<0.01			0.13	<0.004	<0.0005		0.098	19	<0.01	
5/02	6.62	6.76	470	343	<0.01			0.67	<0.004	<0.0005		0.0298	24.6	<0.01	
5/03	6.32	6.39	570	416	<0.01			0.25	<0.004	<0.0005		0.048	24	<0.01	
5/04	6.66	6.46	690	701	<0.01			2.1	<0.004	<0.0005		0.47	50	<0.01	
5/05	6.66	6.46	660	591	<0.01			1.8 J	<0.004	<0.0005		0.40	47	<0.01	
MW-2															
12/83	10.3	10.3	6,000	6,000	56.0	0.27		400			55.2	1.98	1,950		
2/84	10.3	10.3	7,752	2,750	48.0			420			58	2.46	2,290		
9/84	10.5	9.9	6,308	6,900	40.8	0.095		480			59.3	2.1	2,460		
5/85	10.4	10.4	13,200	5,800	95	0.10		400			54.0	1.74	2150		
10/85	10.5		7,100		140	12		390		<0.01	54.0	1.82	2,060		
7/88	10.4	10.4	6,200	6,000	22		12	330	0.394	<0.0015	34.2	1.00	1,450	0.251	0.011
2/90	10.34	10.2	4,800	3,900	36.2		29.6	200			31.0		1,200		
1/95	10.0	9.6	2,400	>2,000	7.1		<0.01	93	0.085	<0.01	8.6	0.82	520	0.09	
5/97	10.1	10.07	2,100	1,865	17		<1.0	63	0.092	0.001		1	470	0.06	0.008
5/98	9.98	10.24	1,900	1,880	13		<0.01	68	0.082	0.001		0.93	450	0.06	0.0053
9/98	9.96	9.96	1,900	1,991	21		0.30	69	0.086	0.00089		0.90	440	0.051	<0.005
1/99	9.98	10.27	2,000	2,000	21		5.3	65	0.085	0.00064		1.1	440	0.054	<0.005
1/99 (Dup.)	9.98	10.27	1,900	2,000	22		<0.1	66	0.087	0.00064		1.0	440	0.053	<0.005
5/99	10.1	9.94	1,900	1,940	25		3.5	67	0.095	0.00088		0.96	400	0.046	<0.005
9/99	9.88	10.60	1,600	1,830	22		2.6	59	0.077	<0.0005		0.85	430	0.032	<0.005
9/99 (Dup.)	9.88	10.60	1,900	1,830	22		2.5	60	0.079	<0.0005		0.95	460	0.039	<0.005
1/00	9.88	9.65	2,000	1,825	23		2.4	66	0.086	0.0006		0.99	360	0.041	<0.005
5/00	9.92	9.84	2,000	1,863	18		<0.5	66	0.0809	0.00075	13	1.0	430	0.045	<0.005
5/00 (Dup.)	9.97	9.84	1,900	1,863	18		11	67	0.081	0.00076	13	1.1	410	0.045	<0.005
10/00	9.92	9.95	1,800	1,518	17		0.73	61	0.077	0.00051		1.0	270	0.039	<0.005
1/01	9.91	11.34	1,900	1,708	18		3.4	68	0.082	0.00073		1.1	450	0.045	<0.005
5/01	9.88	10.66	1,900	1,621	15		13	67	0.087	0.00078		0.96	360	0.048	<0.005
5/01 (Dup.)	9.87	10.66	1,800	1,621	15		15	68	0.076	0.00071		0.89	360	0.045	<0.005
9/01	9.80	10.14	1,800	1,635	17		2.5	63	0.089	0.00088		1.1	400	0.056	<0.005
1/02	9.90	10.10	2,000	1,767	16		2.7	58	0.0858	0.000866		0.998	354	0.0531	<0.005
5/02	9.91	9.99	1,700	1,458	15		2.1	63	0.103	0.000873		0.845	347	0.0489	<0.005
5/02 (Dup.)	9.90	9.99	1,800	1,458	15		<0.50	66	0.107	0.000980		0.870	368	0.0531	<0.005
9/02	9.73	10.04	1,740	1,637	14.8		1.5	55.4	0.0989	0.000717		0.845	298	0.0474	0.00684
1/03	9.99	9.97	1,680	1,748	14.6		1.05	56.8	0.123	0.001140		0.978	324	0.0575	0.00644
5/03	9.80	10.08	1,700	1,246	14.0		5.1	74	0.088	<0.0005		0.94	310	0.057	0.009
5/03 (Dup.)	9.76	10.08	1,700	1,246	14.0		0.76	82	0.089	0.000850		0.95	310	0.058	0.0075
9/03	9.77	9.90	1,700	1,428	16		0.93	76	0.089	<0.0005		0.73	330	0.048	0.012
1/04	9.67	9.97	1,600	1,354	14		3.4	50	0.080	<0.0005		0.89	310	0.053	0.014
5/04	9.72	9.82	1,500	1,148	14		1.2	47	0.071	0.00088		0.91	490	0.056	0.017
5/04 (Dup.)	9.72	9.82	1,500	1,148	12		1.4	59	0.067	0.0008		0.85	490	0.053	0.018
9/04	9.55	9.79	1,600	1,099	13		4.6	54	0.069	0.00081		0.88	350	0.049	0.02
1/05	9.74	9.74	1,500	1,340	10		4.0	73	0.066	0.0011		1.1	330	0.053	0.023
5/05	6.66	9.64	1,500	1,387	14		7.1	44 J	0.066	0.00081		0.96	360	0.05	0.024
5/05 (Dup.)	9.61	9.64	1,500	1,387	15		2.1	35 J	0.066	0.00093		0.98	370	0.051	0.024
10/05	9.57	9.63	1,500	1,414	16		<0.01	43	0.067	0.00061		0.95	370	0.046	0.026
MW-5															
12/83	9.7	9.5	3,058	2,825	18.8	0.064		130			17.5	1.61	880		
2/84	9.6	9.6	3,636	2,700	14.5			120			18.0	1.39	1,030		
9/84	9.8	9.3	2,278	3,100	4.94	0.032		140			19.4	1.7	850		
5/85	9.8	9.9	4,800	2,400	25.0	0.037		91			15.8	1.01	710		
10/85	9.8		2,550		22.0	2.0		70		<0.01	13.0	0.93	650		
7/88	9.5	9.6	2,000	2,050	5.5		0.10	90	0.076	<0.0015	7.05	0.514	449	0.025	0.012
1/95	8.6	8.5	1,500	1,250	3.1		<0.01	32	0.008	<0.01	1.3	0.27	270	<0.01	
5/97	9.0	9.2	1,500	1,318	3.5		<0.25	16	0.015	<0.0005		0.4	310	<0.01	<0.005
5/98	8.83	8.84	1,400	1,340	2.1		<0.01	18	0.007	<0.0005		0.17	300	<0.01	<0.005
5/98 (Dup.)	8.83	8.84	1,400	1,340	1.3		<0.01	18	0.007	<0.0005		0.18	300	<0.01	<0.005
9/98	8.92	8.66	1,200	1,219	2.0		0.02	18	0.0089	<0.0005		0.16	240	<0.01	<0.005
1/99	8.95	8.93	1,100	1,175	1.8		0.14	17	0.0086	<0.0005		0.16	240	<0.01	<0.005

Note: All results in mg/L unless otherwise noted.

J = One or more quality control criteria not met. Value considered estimated.

TABLE 4 (CONT.)
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUND-WATER MONITORING WELLS AND PARAMETERS
ORMET CORPORATION
HANNIBAL, OHIO

	pH (lab)	pH (field)	Specific Conductance (lab)	Specific Conductance (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	Tetrachloroethene
MW-5 (Cont.)															
5/99	8.97	8.60	1,200	1,260	1.9		<0.01	16	0.0094	<0.0005		0.27	250	<0.01	<0.005
5/99 (Dup.)	8.97	8.60	1,200	1,260	2.2		2.2	16	0.0097	<0.0005		0.25	240	<0.01	<0.005
9/99	8.78	9.10	1,100	1,030	2.4		0.10	17	0.0074	<0.0005		0.23	230	<0.01	<0.005
1/00	8.76	8.30	1,200	1,040	2.0		2.0	15	0.0063	<0.0005		0.24	180	<0.01	<0.005
1/00 (Dup.)	8.77	8.30	1,100	1,040	1.9		1.9	16	0.006	<0.005		0.23	180	<0.01	<0.005
5/00	8.81	8.59	1,100	1,020	2.3		2.3	16	0.0082	<0.0005	1.8	0.37	110	<0.01	<0.005
10/00	8.71	8.59	1,000	817	2.6		2.6	11	0.006	<0.0005		0.35	120	<0.01	<0.005
10/00 (Dup.)	8.71	9	1,000	817	2.5		2.5	11	0.0061	<0.0005		0.35	110	<0.01	<0.005
1/01	8.65	9.27	1,000	863	2.7		0.13	13	<0.004	<0.0005		0.72	190	<0.01	<0.005
1/01 (Dup.)	8.65	9.27	1,000	863	2.8		0.33	14	<0.004	<0.0005		0.58	210	<0.01	<0.005
5/01	8.51	8.99	960	791	2.9		2.9	13	<0.004	<0.0005		0.66	170	<0.01	<0.005
9/01	8.42	8.69	708	970	3.6		0.34	11	<0.004	<0.0005		0.80	160	<0.01	<0.005
9/01 (Dup.)	8.46	8.69	708	950	3.6		0.22	13	<0.004	<0.0005		0.80	170	<0.01	<0.005
1/02	8.53	8.75	908	793	3.1		3.1	13	0.00445	<0.0005		0.59	162	<0.01	<0.005
5/02	7.80	8.51	930	600	2.9		<0.20	14	<0.004	<0.0005		0.67	171	<0.01	<0.005
10/02	8.28	8.59	1,090	1,013	4.13		0.66	15.3	<0.004	<0.0005		0.708	165	<0.01	<0.005
1/03	7.61	7.39	1,190	1,208	1.83		0.17	18.4	<0.004	<0.0005		0.303	246	<0.01	<0.005
5/03	8.35	8.55	1,100	797	3.8		0.093	25	<0.004	<0.0005		0.66	160	<0.01	<0.005
9/03	7.76	7.53	1,300	1,045	4.8		0.15	33	0.0073	<0.0005		0.61	210	<0.01	0.006
9/03 (Dup.)	7.74	7.53	1,300	1,045	4.8		0.34	37	0.0065	<0.0005		0.60	210	<0.01	0.0055
1/04	7.94	8.00	1,200	854	3.9		3.80	23	<0.004	<0.0005		0.41	190	<0.01	
5/04	8.00	8.03	1,200	907	3.6		0.59	25	<0.004	<0.0005		0.42	310	<0.01	<0.005
9/04	7.88	7.94	1,300	838	3.7		0.34	19	0.0046	<0.0005		0.52	210	<0.01	<0.005
1/05	8.19	8.13	1,200	1,093	3.6		0.67	16	0.0046	<0.0005		0.82	220	<0.01	<0.005
5/05	7.87	7.79	1,200	1,070	4.7		0.55	20 J	<0.004	<0.0005		0.57	250	<0.01	<0.005
10/05	7.83	7.79	1,400	1,211	6.4		0.51	17	<0.004	<0.0005		0.61	250	<0.01	<0.005
MW-7															
12/83	6.8	6.2	613	700	0.019	0.020		0.1			1.01	7.88	49.0		
2/84	5.9	5.9	581	750	<0.01			0.1			9.0	4.72	49.2		
9/84	5.8	5.7	410	680	<0.01	<0.01		<0.2			11.6	4.65	58.0		
5/85	6.1	5.6	720	890	0.023	0.021		<0.2			24.7	3.70	61.0		
6/88	5.7	5.8	740	760	0.02		0.01	0.2	0.012	<0.0015	17.6	3.05	64.2	0.0032	
1/95	5.5	5.3	850	1,500	<0.01		<0.01	0.2	0.040	<0.01	22	2.3	72	<0.01	
5/97	5.6	6.04	790	670	<0.01			0.10	0.038	<0.0005		2.2	89	<0.01	
5/97 (Dup.)	5.7		800	670	<0.01			0.20	0.038	<0.0005		2.2	84	<0.01	
5/98	5.71	5.69	770	900	<0.01			0.20	0.051	<0.0005		2.2	78	<0.01	
5/99	5.81	6.00	780	700	<0.01			0.16	0.042	<0.0005		2.0	78	<0.01	
5/00	5.74	5.96	810	777	<0.01			0.14	0.041	<0.0005	18	2.0	93	<0.01	
5/01	5.69	5.27	770	771	<0.01			0.13	0.033	<0.0005		2.0	75	<0.01	
5/02	5.73	5.79	750	515	<0.01			0.16	0.0343	<0.0005		2.01	75.9	<0.01	
5/03	5.70	5.85	810	627	0.098		0.09	<0.10	0.025	<0.0005		2.3	64	<0.01	
5/04	6.12	5.81	840	631	<0.01			2.7	0.041	<0.0005		2.3	120	<0.01	
5/05	5.87	5.64	770	718	<0.01			1.6 J	0.051	<0.0005		2.4	86	<0.01	
MW-8															
12/83	9.5	9.2	820	700	0.32	0.017		18			0.20	0.01	202		
2/84	9.5	9.5	820	700	0.14			18			0.23	0.04	199		
9/84	9.5	9.0	661	800	0.35	0.013		22			1.00	0.04	216		
5/85	9.2	9.2	830	550	0.11	0.024		7.9			0.21	0.01	151		
5/86	8.8		550		0.04						<0.01	<0.01	111		
6/88	8.4	8.3	560	550	0.06		<0.01	2.8	0.0018	<0.0015	0.044	0.023	67.8	<0.0026	<0.005
1/95	7.8	7.8	610	930	0.09		<0.01	3.1	<0.004	<0.01	<0.04	0.08	50	<0.01	
5/97	7.8	8.02	560	442	0.040		<0.01	2.2	<0.004	<0.0005		0.12	44	<0.01	
5/98	7.81	7.60	490	514	0.02		<0.01	2.3	<0.004	<0.0005		0.14	30	<0.01	
5/99	8.00	8.10	530	455	0.028		0.028	2.4	<0.004	<0.0005		0.15	34	<0.01	
5/00	7.91	8.01	600	533	0.026		0.026	2.2	<0.004	<0.0005	0.054	0.24	36	<0.01	
5/01	8.24	7.48	560	482	0.024		0.024	1.9	<0.004	<0.0005		0.26	34	<0.01	
5/02	7.81	7.76	530	374	0.019		<0.01	1.9	<0.004	<0.0005		0.268	33.9	<0.01	
5/03	7.74	7.90	580	440	0.023		<0.01	2.4	<0.004	<0.0005		0.36	42	<0.01	
5/04	7.79	7.80	670	487	0.068		<0.01	3.2	<0.004	<0.0005		0.46	77	<0.01	
5/05	7.40	7.28	680	607	0.034		<0.01	2.5 J	<0.004	<0.0005		0.16	61	<0.01	
MW-10															
12/83	7.7	7.6	1,205	1,280	1.36	0.083		6.9			0.60	0.26	195		
2/84	7.6	7.5	820	800	0.79			5.5			0.30	0.26	106		
9/84	7.6	6.5	547	675	0.22	0.14		4.3			0.13	0.34	88		
5/85	7.7	7.0	800	710	0.33	0.060		2.9			0.07	0.05	53		
6/88	7.3	7.2	770	750	<0.01		<0.01	2.1	0.0038	<0.0015	0.081	<0.001	28.7	<0.0026	
1/95	7.0	6.8	800	560	0.02		0.02	0.5	<0.004	<0.01	<0.04	<0.01	26	<0.01	
5/97	7.2	7.4	670	510	<0.01			0.70	<0.004	<0.0005		<0.01	25	<0.01	

Note: All results in mg/L unless otherwise noted.

J = One or more quality control criteria not met. Value considered estimated.

TABLE 4 (CONT.)
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUND-WATER MONITORING WELLS AND PARAMETERS
ORMET CORPORATION
HANNIBAL, OHIO

	pH (lab)	pH (field)	Specific Conductance (lab)	Specific Conductance (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	Tetrachloroethene
MW-10 (Cont.)															
5/98	7.22	7.23	970	1,110	0.15		0.01	0.60	<0.008	<0.0005		<0.01	120	<0.01	
5/99	7.40	7.32	750	545	<0.01			0.41	<0.004	<0.0005		0.012	30	<0.01	
5/00	7.45	7.51	650	549	<0.01			0.48	<0.004	<0.0005	0.079	<0.01	21	<0.01	
5/01	8.19	7.21	610	502	0.013		0.013	0.47	<0.004	<0.0005		<0.01	27	<0.01	
5/02	7.27	7.13	990	605	0.19		<0.01	0.77	<0.004	<0.0005		0.0499	117	<0.01	
5/03	7.17	7.23	1200	897	0.13		0.019	1.0	<0.004	<0.0005		<0.01	120	<0.01	
5/04	7.81	7.25	740	542	<0.01			0.46	<0.004	<0.0005		0.011	31	<0.01	
5/05	7.27	7.28	520	607	<0.01			0.51 J	<0.004	<0.0005		0.011	24	<0.01	
MW-11															
12/83	9.6	9.4	980	825	0.52	0.021		33			0.48	0.06	238		
2/84	9.6	9.5	962	775	0.25			27			7.9	0.37	232		
9/84	9.7	9.1	656	800	0.20	0.015		22			4.90	0.21	213		
5/85	9.4	9.5	750	650	0.30	0.026		13			2.68	0.13	181		
6/88	8.5	8.4	570	565	0.12		<0.01	4.9	0.0043	<0.0015	0.071	0.227	78.5	<0.0026	<0.005
1/95	7.6	7.9	540	680	0.02		<0.01	2.3	<0.004	<0.01	<0.04	0.40	30	<0.01	
5/97	7.8	7.64	530	404	0.09		<0.01	1.8	<0.004	<0.0005		0.42	33	<0.01	
5/98	7.84	7.57	490	507	0.02		<0.01	1.7	<0.004	<0.0005		0.45	31	<0.01	
5/98 (Dup.)	7.85	7.57	500	507	0.02		<0.01	1.7	<0.004	<0.0005		0.43	29	<0.01	
5/99	8.07	8.39	490	425	0.024		0.011	1.7	<0.004	<0.0005		0.45	28	<0.01	
5/00	7.96	7.58	580	500	0.013		0.013	1.4	<0.004	<0.0005	0.046	0.54	32	<0.01	
5/01	7.84	7.26	550	458	<0.01			1.6	<0.004	<0.0005		0.52	35	<0.01	
5/02	8.42	7.87	510	352	0.017		0.017	1.8	<0.004	<0.0005		0.488	34	<0.01	
5/03	7.87	7.99	540	405	0.016		<0.01	2.1	<0.004	<0.0005		0.57	37	<0.01	
5/04	7.83	7.86	530	394	<0.01		<0.01	1.9	<0.004	<0.0005		0.53	47	<0.01	
5/05	7.79	7.64	480	439	<0.01			1.7 J	<0.004	<0.0005		0.52	36	<0.01	
MW-12															
12/83	7.5	7.3	476	400	0.074	0.021		2.1			<0.01	0.94	24.3		
2/84	7.5	7.2	476	385	0.02			2.0			0.02	0.71	23.8		
9/84	7.7	6.3	366	375	<0.01	<0.01		2.2			<0.01	0.61	29.0		
5/85	7.7	7.4	540	390	0.024	0.022		1.6			<0.01	1.00	27.7		
5/86	7.5		494		<0.01						<0.01	1.23	27		
6/88	7.2	7.5	510	515	<0.01		<0.01	1.3	<0.0015	<0.0015	0.066	1.09	24.4	<0.0026	<0.005
1/95	7.4	7.6	530	350	<0.01		<0.01	1.1	<0.004	<0.01	<0.04	1.5	23	<0.01	
5/97	7.5	7.7	540	422	<0.01			0.90	<0.004	<0.0005		1.7	19	<0.01	
5/98	7.43	7.43	470	550	<0.01			0.80	<0.008	<0.0005		1.9	23	<0.01	
9/98	7.57	7.38	470	481	<0.01			0.92	<0.004	<0.0005		1.6	20	<0.01	
1/99	7.53	7.04	470	440	<0.01			0.89	<0.004	<0.0005		1.8	22	<0.01	
5/99	7.42	7.39	630	515	0.026		0.026	0.73	<0.004	<0.0005		2.5	29	<0.01	
9/99	7.54	7.25	530	565	0.017		0.012	0.68	<0.004	<0.0005		1.9	27	<0.01	
1/00	7.44	6.65	570	495	<0.01			0.74	<0.004	<0.0005		1.8	22	<0.01	
5/00	7.53	7.57	600	558	<0.01			0.73	<0.004	<0.0005	0.043	2.0	29	<0.01	
10/00	7.64	7.33	530	429	<0.01			0.83	<0.004	<0.0005		1.6	22	<0.01	
1/01	7.56	7.69	530	484	<0.01			0.92	<0.004	<0.0005		1.8	28	<0.01	
5/01	7.48	7.13	530	442	<0.01			0.82	<0.004	<0.0005		1.6	23	<0.01	
9/01	7.46	7.96	520	460	<0.01			0.83	<0.004	<0.0005		1.8	28	<0.01	
1/02	7.43	7.66	560	436	<0.01			1.1	<0.004	<0.0005		1.75	27	<0.01	
5/02	7.58	7.6	540	322	<0.01			1.1	<0.004	<0.0005		1.82	27.5	<0.01	
9/02	7.48	7.65	572	540	<0.01			0.629	<0.004	<0.0005		1.72	27.1	<0.01	
1/03	7.70	7.48	536	564	<0.01			0.884	<0.004	<0.0005		1.80	32.2	<0.01	
5/03	7.55	7.21	560	421	<0.01			0.76	<0.004	<0.0005		2.0	31	<0.01	
9/03	7.57	7.44	560	477	<0.01		<0.01	<3.2 B	<0.004	<0.0005		2.0	32	<0.01	
9/03 (Dup.)	7.60	7.44	560	477	<0.01		<0.01	<3.2 B	<0.004	<0.0005		2.0	33	<0.01	
1/04	7.58	7.66	510	400	<0.01			0.69	<0.004	<0.0005		1.9	28	<0.01	
1/04 (Dup.)	7.58	7.66	510	400	<0.01			0.60	<0.004	<0.0005		1.9	28	<0.01	
5/04	7.65	7.55	520	596	<0.01			0.61	<0.004	<0.0005		1.9	31	<0.01	
9/04	7.52	7.55	540	361	<0.01			<1.25 B	<0.004	<0.0005		1.9	30	<0.01	
9/04 (Dup.)	7.53	7.55	540	361	<0.01			<1.25 B	<0.004	<0.0005		1.9	30	<0.01	
1/05	7.67	7.40	520	466	<0.01			0.51	0.0042	<0.0005		1.9	29	<0.01	
1/05 (Dup.)	7.60	7.40	520	466	<0.01			0.50	<0.004	<0.0005		2.0	29	<0.01	
5/05	7.71	7.30	520	443	<0.01			0.87 J	<0.004	<0.0005		2.0	32	<0.01	
10/05	7.55	7.49	520	491	<0.01			2.3	<0.004	<0.0005		1.9	27	<0.01	
10/05 (Dup.)	7.59	7.49	540	491	<0.01			1.4	<0.004	<0.0005		1.9	27	<0.01	
MW-14															
5/02	7.64	7.61	500	309	0.018		<0.01	1.9	<0.004	<0.0005		1.05	29.5	<0.01	
5/03	7.59	7.20	530	398	0.014		<0.01	2.1	<0.004	<0.0005		1.2	34	<0.01	
5/04	7.67	7.64	560	633	0.022		<0.01	2.0	<0.004	<0.0005		1.2	51	<0.01	
5/05	7.75	7.50	520	469	0.025		<0.01	2.5	<0.004	<0.0005		1.2	44	<0.01	

Note: All results in mg/L unless otherwise noted.

J = One or more quality control criteria not met. Value considered estimated.
B - Fluoride reported in field blank. Sample result less than 5x concentration in field blank.

TABLE 4 (CONT.)
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUND-WATER MONITORING WELLS AND PARAMETERS
ORMET CORPORATION
HANNIBAL, OHIO

	pH (lab)	pH (field)	Specific Conductance (lab)	Specific Conductance (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	Tetrachloroethene
MW-15															
12/83	6.9	6.7	568	435	0.44	0.018		0.1			0.14	0.03	28.8		
2/84	6.9	6.7	550	435	0.51			0.1			0.13	<0.01	29.4		
5/85	7.4	6.8	590	445	0.44	0.034		0.3			0.18	<0.01	32.5		
5/86	7.1		550		0.39						0.15	<0.01	34		
7/88	7.0/7.1	7.1/7.1	610/630	600/600	0.43/0.32		0.10/<0.01	0.2/0.2	0.0045	0.0025	10.8	0.117	34.4	0.0059	<0.005
1/95	7.0	7.1	720	420	0.49		0.12	1.4	<0.004	<0.01	0.26	<0.01	45	<0.01	
7/96	6.8	7.07	570	613	1.0	<0.020		2.1	<0.004	<0.0005		<0.01		<0.01	
5/97	7.4	7.44	800	731	2.8		0.20	11	<0.004	<0.0005		0.02	140	<0.01	
5/97 (Dup.)	7.4	7.44	800	731	3.3		0.40	8.9	<0.004	<0.0005		0.05	140	<0.01	
5/98	6.99	6.78	610	625	0.49		0.02	0.40	<0.004	<0.0005		<0.01	40	<0.01	
5/99	7.49	7.70	980	785	8.5		<0.01	15	<0.004	<0.0005		0.017	150	<0.01	
5/00	7.53	7.56	1,200	1,169	12		<0.01	25	<0.004	<0.0005	10	0.17	120	<0.01	
5/01	7.03	6.83	600	501	0.49		0.32	2.0	<0.004	<0.0005		0.017	51	<0.01	
5/02	7.29	7.21	590	333	1.1		<0.10	2.5	0.0222	<0.0005		0.0696	56.8	<0.01	
5/03	7.23	7.47	610	469	0.80		0.11	1.6	<0.004	<0.0005		<0.010	49	<0.01	
5/04	7.53	7.54	1,300	982	4.60		<0.01	13	<0.004	<0.0005		0.024	360	<0.01	
5/05	8.17	8.01	1,200	1,105	8.2		6.6	49 J	0.023	0.0024		0.69	290	0.074	
MW-16															
12/83	9.8	9.9	2,092	1,800	7.35	0.034		110			12.4	0.91	530		
2/84	9.7	9.7	2,049	1,550	5.5			98			13.9	1.41	570		
9/84	9.8	9.2	1,390	10,500	2.11	<0.01		80			9.5	0.5	475		
5/85	9.4	9.0	2,300	1,400	10.0	0.11		72			10.3	1.09	443		
10/85	8.4		1,540		3.9	0.0		30		<0.01	2.10	0.41	186		
7/88	9.4	9.7	1,400	1,410	4.6		<0.01	61	0.063	<0.0015	6.57	0.22	300	0.018	0.006
1/95	7.7	9.0	850	930	1.4		0.13	7.9	<0.004	<0.01	0.52	1.1	81	<0.01	
7/96	7.3	7.75	990	941	1.6	<0.020		7.9	<0.004	<0.0005		1		<0.01	
5/97	7.6	7.6	980	801	1.3		0.3	11	<0.004	<0.0005		0.43	130	<0.01	
5/98	7.72	7.70	750	760	2.0		0.40	11	<0.004	<0.0005		1.2	80	<0.01	
9/98	7.70	7.50	860	790	1.4		1.4	9.5	<0.004	<0.0005		1.3	75	<0.01	
1/99	7.70	7.12	740	665	1.4		<0.04	9.8	<0.004	<0.0005		1.5	85	<0.01	
5/99	7.88	7.90	750	600	2.8		0.16	9.0	<0.004	<0.0005		1.5	82	<0.01	
9/99	7.62	8.15	730	745	2.9		0.88	8.2	<0.004	<0.0005		1.7	78	<0.01	
1/00	7.76	6.95	950	810	5.5		5.5	7.6	<0.004	<0.0005		2.2	68	<0.01	
1/00 (Dup.)	7.77	6.95	940	810	5.8		5.8	7.8	<0.004	<0.005		2.2	70	<0.01	
5/00	7.69	7.53	1,100	945	12		12	7.9	<0.004	<0.0005	4.3	2.3	91	<0.01	
5/00 (Dup.)	7.72	7.53	1,000	945	12		12	8.1	<0.004	<0.0005	4.4	2.4	91	<0.01	
10/00	7.74	7.67	1,000	774	16		<0.01	13	<0.004	<0.0005		1.6	130	<0.01	
10/00 (Dup.)	7.77	7.67	1,000	774	15		<0.01	13	<0.004	<0.0005		1.7	130	<0.01	
1/01	7.84	7.42	1,200	939	16		3.2	24	<0.004	<0.0005		1.6	250	<0.01	
1/01 (Dup.)	7.85	7.42	1,200	939	17		2.5	24	<0.004	<0.0005		1.6	250	<0.01	
5/01	7.89	8.04	1,100	920	12		12	39	<0.004	<0.0005		1.2	200	<0.01	
5/01 (Dup.)	7.90	8.04	1,100	920	11		11	40	<0.004	<0.0005		1.2	210	<0.01	
9/01	7.91	7.86	1,300	754	9.7		0.85	43	<0.004	0.00058		0.89	270	0.013	
9/01 (Dup.)	7.90	7.86	1,200	754	9.0		0.65	43	0.019	0.00096		1.1	260	0.021	
1/02	8.03	8.11	1,300	913	9.5		<0.5	57	0.0102	0.00211		1.46	237	0.055	
1/02 (Dup.)	8.05	8.11	1,300	913	10		0.58	59	0.00816	0.00171		1.33	211	0.0422	
5/02	7.92	7.92	1,300	695	7.9		<0.20	57	0.0332	0.0015		1.12	254	0.0469	
5/02 (Dup.)	8.06	7.92	1,300	695	7.4		<0.20	59	0.0269	0.0016		1.10	242	0.0500	
9/02	8.17	8.33	1,280	1176	9.75		0.56	50.1	0.0263	0.00155		1.12	208	0.0426	
9/02 (Dup.)	8.16	8.33	1,260	1176	10.9		1.56	49	0.0222	0.00198		1.4	211	0.0535	
1/03	8.31	7.78	1,310	1,299	7.03		0.77	27.5	0.0449	0.00136		0.792	235	0.0308	
1/03 (Dup.)	8.28	7.78	1,290	1,299	6.48		1.20	54	0.0381	0.00175		1.0	242	0.0441	
5/03	8.00	8.17	1,300	933	5.5		<0.01	58	0.012	0.0012		1.1	220	0.052	
5/03 (Dup.)	8.05	8.17	1,300	933	5.9		<0.01	52	0.0099	0.00093		1.0	220	0.044	
9/03	8.21	8.17	1,200	1,036	3.9		0.062	74	0.011	<0.0005		0.61	240	0.023	
1/04	7.89	8.07	1,300	883	6.0		1.5	52	<0.004	<0.0005		0.83	220	0.017	
5/04	8.18	8.22	1,300	1,410	5.3		0.35	71	0.0071	0.0014		1.1	390	0.037	
5/04 (Dup.)	8.15	8.22	1,300	1,410	5.9		0.35	71	0.016	0.0014		1.1	390	0.04	
9/04	8.10	8.15	1,400	914	12		3.1	56	0.0053	0.0011		1.2	270	0.027	
1/05	8.46	8.38	1,200	1,048	5.2		0.67	65	0.0085	0.00089		0.86	250	0.021	
5/05	8.46	8.57	1,200	998	6.7		0.14	64 J	0.023	0.0018		1.7	260	0.061	
5/05 (Dup.)	8.61	8.57	1,200	998	7.3		0.14	55 J	0.025	0.0018		1.7	280	0.064	
10/05	9.05	9.18	1,200	1,095	12		0.88	29	0.057	0.0029		2.7	280	0.12	

Note. All results in mg/L unless otherwise noted.

J = One or more quality control criteria not met. Value considered estimated.
B - Fluoride reported in field blank. Sample result less than 5x concentration in field blank.

TABLE 4 (CONT.)
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUND-WATER MONITORING WELLS AND PARAMETERS
ORMET CORPORATION
HANNIBAL, OHIO

	pH (lab)	pH (field)	Specific Conductance (lab)	Specific Conductance (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	Tetrachloroethene
MW-17															
12/83	7.9	7.6	613	475	0.99	0.021		5.6			0.44	1.38	78		
2/84	7.6	7.4	581	470	1.03			4.4			0.39	1.77	52		
9/84	8.0	6.7	485	550	0.17	<0.01		9.1			0.28	1.27	99		
5/85	7.9	7.9	610	470	0.76	0.045		4.1			0.28	1.80	45.3		
10/85	7.9		564		0.56	0.43		4.2		<0.01	6.80	1.93	43.4		
6/88	7.7	7.5	590	475	1.3		0.46	5.2	0.0054	<0.0015	0.973	1.72	39.7	<0.0026	<0.005
2/90	7.7	7.55	680	640	0.582		<0.005	4.1			18		40		
1/95	7.5	7.7	710	420	0.64		<0.01	3.9	<0.004	<0.01	0.26	1.9	36	<0.01	
5/97	7.5	7.67	870	488	0.54		<0.01	3.1	<0.004	<0.0005		1.9	30	<0.01	
5/98	7.6	7.40	570	580	0.72		0.09	3.4	<0.004	<0.0005		1.8	34	<0.01	
5/99	7.50	7.40	550	470	0.46		0.46	3.2	<0.004	<0.0005		1.8	31	<0.01	
5/99 (Dup.)	7.37	7.40	550	470	0.49		0.49	3.2	<0.004	<0.0005		1.8	30	<0.01	
5/00	7.57	7.61	610	523	0.53		0.31	2.9	<0.004	<0.0005	0.34	1.8	24	<0.01	
5/01	7.87	7.36	570	460	0.50		0.50	3.0	<0.004	<0.0005		1.7	28	<0.01	
5/02	7.64	7.62	550	328	0.35		0.35	5.4	<0.004	<0.0005		1.42	40.3	<0.01	
5/03	7.65	7.80	580	435	0.41		0.096	9.8	<0.004	<0.0005		1.6	44	<0.01	
5/04	7.71	7.83	670	511	0.41		<0.01	23	0.0044	<0.0005		1.1	130	<0.01	
5/05	7.66	7.55	910	819	6.2		3.1	17 J	0.0044	<0.0005		1.1	170	<0.01	
MW-18															
12/83	9.9	10.0	10,526	8,750	110.0	0.45		460			58.7	0.26	3,150		
2/84	9.8	9.8	9,615	7,500	52.0			350			61	0.50	2,750		
9/84	10.1	9.5	9,111	10,000	194	0.19		690			103	0.3	4,130		
5/85	9.8	9.9		7,000	35.2	0.091		410			64.2	0.35	2,540		
10/85	9.9		6,300		120	12		350		<0.01	71.4	1.06	1,940		
7/88	10.0	10.1	9,700	10,000	29		25	820	0.159	0.0071	144	1.75	2,640	0.191	0.022
2/90	10.0	10.1	8,000	11,400	67.0		10.5	710			110		3,500		
1/95	9.6	11.1	5,900	>2,000	15		6.6	290	0.062	<0.01	56	0.22	1,500	0.02	
7/96	9.1	8.67	4,300	4,200	7.2	<0.020		180	0.065	0.0006	56	0.19	1,500	0.01	0.006
5/97	9.7	9.58	4,000	4,110	8.7		<0.50	200	0.078	0.0009		0.29	1,100	0.02	
5/98	9.76	10.06	4200	4,300	9.8		0.40	260	0.094	0.0014		0.49	1100	0.05	0.024
9/98	9.70	9.88	3,600	3,590	5.9		<0.01	210	0.085	0.00084		0.29	800	0.022	0.014
1/99	9.67	10.04	3,600	3,450	79		3.0	210	0.088	0.00063		0.29	830	0.028	0.0219
5/99	9.72	9.80	3,000	3,000	95		81	370	0.088	0.0014		0.92	650	0.045	0.017
9/99	9.62	10.26	3,000	2,870	90		14	170	0.074	<0.0005		0.24	700	0.011	0.016
1/00	9.56	9.15	3,000	2,700	27		19	180	0.078	0.00059		0.26	680	0.017	0.020
5/00	9.59	9.73	2,800	2,270	84		75	160	0.075	0.00089	25	0.56	620	0.035	0.019
5/00 (Dup.)	9.60	9.73	2,800	2,270	64		50	160	0.073	0.00062	20	0.33	620	0.023	0.016
10/00	9.54	9.67	2,400	1,948	29		<0.01	130	0.074	0.0024		2.1	400	0.08	0.012
1/01	9.62	10.82	2,500	1,980	53		9.2	170	0.067	0.0006		0.3	580	0.019	0.043
5/01	9.52	10.36	2,100	1,780	15		<0.50	100	0.065	0.0014		0.97	380	0.042	0.040
5/01 (Dup.)	9.52	10.36	2,000	1,780	49		49	110	0.079	0.0037		3.1	380	0.140	0.046
9/01	9.61	9.75	2,100	1,668	91		11	180	0.12	0.00099		0.3	520	0.024	0.027
1/02	9.44	9.65	2,400	1,680	36		<0.01	150	0.15	0.0125		16.8	436	0.360	0.024
5/02	9.48	9.55	2,300	1,693	110		40	150	0.0716	0.00105		0.432	517	0.0269	0.020
5/02 (Dup.)	9.49	9.55	2,300	1,693	72		8.3	150	0.0703	0.00104		0.401	510	0.0248	0.052
9/02	9.49	9.77	1,720	1,599	74		<0.01	108	0.0906	0.00141		0.927	303	0.0525	0.0172
1/03	9.48	9.57	2,010	2,160	62.1		<2.5	163	0.0932	0.00133		0.285	452	0.0220	0.058
5/03	9.34	9.58	1,400	1,257	15		3.0	88	0.061	<0.0005		0.20	240	0.021	0.027
5/03 (Dup.)	9.39	9.58	1,400	1,257	20		<0.01	83	0.066	0.00068		0.30	230	0.034	0.047
9/03	9.42	9.61	1,800	1,424	4		<0.01	97	0.12	0.0044		5.60	380	0.17	0.018
1/04	9.33	9.62	2,400	1,237	17		5.5	77	0.061	0.00066		0.43	290	0.028	0.012
5/04	9.51	9.66	2,300	1,546	1.8		0.33	150	0.081	0.00095		0.35	680	0.037	0.012
5/04 (Dup.)	9.49	9.66	2,200	1,546	2		<0.01	140	0.079	0.00092		0.35	680	0.035	0.014
9/04	9.30	9.48	1,800	1,145	35		22	42	0.17	0.012		13	380	0.43	0.0097
1/05	9.40	9.45	3,000	2,920	81		4.7	130	0.056	0.0014		0.55	570	0.021	0.0071
5/05	9.44	9.45	1,700	1,056	13		0.34	97 J	0.07	0.0014		0.78	430	0.049	0.0057
5/05 (Dup.)	9.49	9.45	1,600	1,056	8.2		0.14	94 J	0.073	0.0012		0.75	440	0.037	0.0056
10/05	9.35	9.47	2,300	1,937	6.6		0.24	52	0.05	0.0015		0.68	510	0.033	0.0071

Note: All results in mg/L unless otherwise noted.

B - Fluoride reported in field blank. Sample result less than 5x concentration in field blank.
J = One or more quality control criteria not met. Value considered estimated.

TABLE 4 (CONT.)
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUND-WATER MONITORING WELLS AND PARAMETERS
ORMET CORPORATION
HANNIBAL, OHIO

	pH (lab)	pH (field)	Specific Conductance (lab)	Specific Conductance (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	Tetrachloroethene
MW-19															
12/83	7.2	7.1	581	435	0.068	0.013		0.3			<0.01	0.54	22.9		
2/84	7.1	6.8	575	405	0.04			0.5			0.05	0.26	20.2		
9/84	7.2	6.3	451	460	0.01	<0.01		0.4			0.02	0.04	23.5		
5/85	7.6	7.0	640	460	0.019	0.014		0.5			0.12	0.02	23.6		
7/88	7.3	7.3	630	600	<0.01		<0.01	0.5	0.0067	<0.0015	17.6	0.23	32.2	0.015	<0.005
2/90	7.3	7.27	520	560	0.2		<0.005	0.7					21.0		
1/95	7.3	7.2	630	410	<0.01		<0.01	1.0	<0.004	<0.01	0.09	<0.01	24	<0.01	
5/97	7.4	7.5	520	431	<0.01		<0.01	2.0	<0.004	<0.0005		<0.01	18	<0.01	
5/98	7.23	6.95	560	575	<0.01			1.4	<0.008	<0.0005		<0.01	23	<0.01	
5/99	7.47	7.40	570	460	<0.01			1.3	<0.004	<0.0005		<0.01	22	<0.01	
5/00	7.33	7.20	580	538	<0.01			1.2	<0.004	<0.0005	0.13	<0.01	16	<0.01	
5/01	7.18	6.96	580	494	<0.01			1.1	<0.004	<0.0005		<0.01	20	<0.01	
5/02	7.39	7.38	530	324	<0.01			1.2	<0.004	<0.0005		<0.005	23.4	<0.01	
5/03	7.53	7.38	550	420	<0.01			2.2	<0.004	<0.0005		<0.01	20	<0.01	
5/04	7.87	7.59	460	342	<0.01			3.6	<0.004	<0.0005		<0.01	16	<0.01	
5/05	7.27	7.10	780	700	0.012		<0.01	2.8 J	<0.004	<0.0005		<0.01	38	<0.01	
MW-28															
5/86	5.5		382		0.89	0.08		<0.1			0.36	0.02	41		
6/88	5.7	5.8	640	665	7.4		0.6	<0.1	<0.0015	<0.0015	2.41	0.035	83.3	<0.0026	<0.005
1/95	6.2	7.4	500	700	0.74		0.26	2.7	<0.004	<0.01	0.38	0.02	79	<0.01	
7/96	5.7	5.92	440	429	0.26	<0.020		0.50	<0.004	<0.0005		0.01		<0.01	
5/97	5.6	6.4	590	453	0.11		<0.02	0.2	<0.004	<0.0005		0.01	62	<0.01	
5/98	5.74	5.32	500	550	0.12		<0.01	0.20	<0.004	<0.0005		0.01	65	<0.01	
9/98	5.81	5.28	540	527	0.11		0.11	0.27	<0.004	<0.0005		0.011	64	<0.01	
9/98 (Dup.)	5.83	5.28	540	527	0.11		0.11	0.24	<0.004	<0.0005		0.01	65	<0.01	
1/99	5.72	5.17	470	450	0.087		0.027	0.38	<0.004	<0.0005		0.013	67	<0.01	
5/99	5.72	5.43	460	405	0.13		0.13	0.35	<0.004	<0.0005		0.011	70	<0.01	
9/99	5.95	6.15	480	480	0.12		0.016	0.26	<0.004	<0.0005		<0.01	57	<0.01	
1/00	6.04	5.25	460	410	0.23		0.22	0.35	<0.004	<0.0005		<0.01	58	<0.01	
5/00	5.89	5.90	470	464	1.0		1.0	0.30	<0.004	<0.0005	0.69	0.014	77	<0.01	
10/00	5.85	5.47	460	384	0.96		0.28	0.27	<0.004	<0.0005		0.014	52	<0.01	
1/01	5.75	5.45	460	412	0.9		0.9	0.32	<0.004	<0.0005		0.015	64	<0.01	
5/01	5.65	5.20	420	391	1.1		0.36	0.22	<0.004	<0.0005		0.014	54	<0.01	
9/01	5.70	6.01	430	415	1.3		<0.1	0.56	<0.004	<0.0005		0.015	64	<0.01	
1/02	5.73	5.77	450	396	0.9		0.9	0.37	<0.004	<0.0005		0.0196	60.5	<0.01	
5/02	5.63	5.71	400	311	0.60		<0.04	0.22	<0.004	<0.0005		0.0146	62.1	<0.01	
9/02	5.65	6.00	449	443	0.975		0.13	0.164	<0.004	<0.0005		0.0265	59.1	<0.01	
1/03	5.72	5.99	412	462	0.65		<0.02	0.305	<0.004	<0.0005		0.0192	70.4	<0.01	
5/03	5.73	6.09	390	305	0.38		0.068	0.13	<0.004	<0.0005		0.017	47	<0.01	
9/03	5.93	6.25	440	377	0.35		0.016	<3.2 B	0.0068	<0.0005		0.018	61	<0.01	
1/04	6.01	7.24	400	341	0.40		0.40	0.53	<0.004	<0.0005		0.021	54	<0.01	
5/04	6.48	5.77	410	306	0.15		0.01	0.21	<0.004	<0.0005		0.024	81	<0.01	
9/04	5.84	5.65	410	276	0.25		0.12	<1.25 B	<0.004	<0.0005		0.03	53	<0.01	
1/05	6.23	5.47	360	293	0.29		0.01	0.19	<0.004	<0.0005		0.018	51	<0.01	
5/05	6.06	5.54	380	336	0.15		0.14	0.27 J	<0.004	<0.0005		0.023	56	<0.01	
10/05	6.08	5.58	380	289	0.54		0.017	2.1	<0.004	<0.0005		0.024	47	<0.01	

Note: All results in mg/L unless otherwise noted.

J = One or more quality control criteria not met. Value considered estimated.
B - Fluoride reported in field blank. Sample result less than 5x concentration in field blank.

TABLE 4 (CONT.)
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUND-WATER MONITORING WELLS AND PARAMETERS
ORMET CORPORATION
HANNIBAL, OHIO

	pH (lab)	pH (field)	Specific Conductance (lab)	Specific Conductance (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	Tetrachloroethene
MW-29S															
5/86	8.4		2,350		1.5	0.02		28			0.64	0.08	590		
6/88	9.0	9.0	1,100	1,090	0.99		0.37	44	0.0052	<0.0015	1.52	0.094	224	0.0044	<0.005
1/95	8.3	10.0	2,900	1,750	0.79		0.07	56	<0.004	<0.01	0.37	0.12	590	<0.01	
5/97	8.3	8.43	2,200	1,735	0.6		<0.1	44	<0.004	<0.0005		0.14	410	<0.01	
5/98	8.64	8.70	1,700	1,665	0.18		<0.01	26	<0.004	<0.0005		0.09	370	<0.01	
5/99	8.35	8.37	1,300	1,090	0.22		0.021	16	<0.004	<0.0005		0.30	230	<0.01	
5/00	8.11	8.11	1,200	1,023	0.17		0.17	16	0.0057	<0.0005	0.14	0.41	130	<0.01	
5/01	7.89	7.54	1,000	828	0.16		0.16	16	<0.004	<0.0005		0.42	160	<0.01	
5/02	7.73	7.71	700	408	0.08		<0.01	10	<0.004	<0.0005		0.563	79.6	<0.01	
5/03	7.68	7.81	1,000	759	0.21		0.049	9.1	<0.004	<0.0005		0.78	110	<0.01	
5/04	7.48	7.56	1,700	1,760	0.93		0.93	8.7	<0.004	<0.0005		1.2	380	<0.01	
5/05	7.82	7.37	1,200	950	1.3		<0.01	9.7 J	<0.004	<0.0005		0.78	170	<0.01	
MW-29D															
5/86	8.6		648		0.31	0.01		9.7			0.18	0.26	139		
6/88	8.1	8.0	590	570	0.25		<0.01	4.2	0.002	<0.0015	0.082	1.16	60.4	<0.0026	<0.005
1/95	7.5	8.9	650	770	0.22		0.03	3.7	<0.004	<0.01	0.09	2.0	33	<0.01	
5/97	7.7	7.9	600	479	0.18		<0.02	3.3	<0.004	<0.0005		2	31	<0.01	
5/98	7.65	7.53	550	560	0.17		<0.01	3.5	<0.004	<0.0005		1.8	28	<0.01	
5/99	7.82	7.60	550	465	0.19		0.19	3.4	<0.004	<0.0005		1.8	28	<0.01	
5/00	7.75	7.66	590	503	0.15		0.15	3.1	<0.004	<0.0005	0.12	1.9	24	<0.01	
5/01	7.55	6.82	570	489	0.15		0.15	3.1	<0.004	<0.0005		1.8	27	<0.01	
5/02	7.56	7.42	540	342	0.13		<0.01	3.6	<0.004	<0.0005		1.7	30.3	<0.01	
5/03	7.64	7.74	590	449	0.13		<0.01	3.6	<0.004	<0.0005		2.0	32	<0.01	
5/04	8.03	7.68	610	682	0.16		0.16	2.4	<0.004	<0.0005		2.0	33	<0.01	
5/05	7.77	7.47	600	530	0.15		0.14	3.9 J	<0.004	<0.0005		2.1	38	<0.01	
MW-30															
5/86	6.6		342		0.01	<0.01		0.5			<0.01	2.10	20		
6/88	6.3	6.3	340	400	0.01		<0.01	<0.1	0.0018	<0.0015	4.42	0.753	18.7	0.0044	0.005
1/95	6.2	6.0	430	570	0.01		<0.01	<0.1	<0.004	<0.01	0.78	0.60	19	<0.01	
5/97	6.2	6.47	420	334	<0.01			<0.1	<0.004	<0.005		0.6	18	<0.01	0.012
5/98	6.19	5.70	390	418	<0.01			0.10	<0.004	<0.0005		0.68	21	<0.01	0.013
5/99	6.43	6.10	400	390	0.016		0.013	0.19	<0.004	<0.0005		0.71	21	<0.01	0.02
5/00	6.34	5.91	430	380	0.026		0.026	0.12	<0.004	<0.0005	1.5	0.70	21	<0.01	0.017
5/01	6.14	6.21	420	409	0.79		0.79	0.17	<0.004	<0.0005		0.54	19	<0.01	0.015
5/02	6.27	6.27	430	282	0.051		0.05	0.18	<0.004	<0.0005		0.434	31.2	<0.01	0.024
5/03	6.27	6.70	440	342	0.019		<0.01	0.16	<0.004	<0.0005		0.81	23	<0.01	0.028
5/04	6.61	6.27	450	512	<0.01			2.1	<0.004	<0.0005		0.50	25	<0.01	0.0065
5/05	7.16	6.16	470	427	4.5		0.96	3.1 J	<0.004	<0.0005		0.90	37	<0.01	0.012
MW-31															
5/86	9.1		1,250		12	1.5		46			84.5	3.67	380		
6/88	10.2	10.5	3,400	3,500	39		<0.01	140	0.046	<0.0015	20.3	1.93	703	0.184	0.040
2/90	10.0	9.95	2,300	2,700	4.80		3.94	110			49		660		
1/95	9.6	10.4	1,900	1,600	7.1		<0.01	89	0.027	<0.01	4.6	0.66	420	<0.02	
7/96	9.5	9.52	2,300	2,100	12	<0.020		91	0.042	0.0007		0.62		0.04	0.041
5/97	9.9	9.69	2,500	2,100	12		<0.50	110	0.04	0.0007		0.68	480	0.05	0.028
5/97 (Dup.)	9.9	9.69	2,500	2,100	6.2			93	0.038	0.0008		0.74	480	0.05	0.029
5/98	9.63	9.80	2,400	2,350	9.3		<0.01	100	0.036	0.0013		1.1	490	0.04	0.022
9/98	9.67	9.86	2,600	2,520	9.8		<0.01	120	0.044	0.0014		1.1	620	0.045	0.017
9/98 (Dup.)	9.67	9.86	2,700	2,520	9.5		<0.01	130	0.045	0.0013		1.1	600	0.043	0.020
1/99	9.72	9.97	2,500	2,240	22		0.63	120	0.047	0.0012		1.3	620	0.065	0.019
5/99	9.91	10.02	2,600	2,510	29		6.5	130	0.06	0.0014		1.2	600	0.07	0.034
9/99	9.83	10.03	2,600	2,810	30		4.3	150	0.063	0.0011		1.6	750	0.088	<0.005
1/00	9.98	9.80	2,900	2,600	24		6.3	150	0.072	0.001		1.4	650	0.120	0.028
5/00	10.1	10.10	2,900	2,400	21		1.7	140	0.096	0.0011	13	1.6	820	0.12	0.020
10/00	9.99	10.18	2,800	2,550	20		0.54	140	0.056	0.00076		1.1	480	0.079	0.043
1/01	10.1	11.21	2,100	1,900	13		1.5	110	0.056	0.001		1.3	560	0.11	0.020
5/01	9.93	10.85	2,100	1,866	12		12	77	0.046	0.0012		1.4	430	0.081	0.027
9/01	9.95	9.98	2,300	1,877	16		1.2	110	0.054	0.0014		1.4	590	0.09	0.032

Note: All results in mg/L unless otherwise noted

J = One or more quality control criteria not met. Value considered estimated.

TABLE 4 (CONT.)
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUND-WATER MONITORING WELLS AND PARAMETERS
ORMET CORPORATION
HANNIBAL, OHIO

	pH (lab)	pH (field)	Specific Conductance (lab)	Specific Conductance (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	Tetrachloroethene
MW-31 (Cont.)															
1/02	9.96	10.17	2,400	1,720	13		1.6	110	0.0493	0.00116		1.46	406	0.0968	0.017
1/02 (Dup.)	9.97	10.17	2,400	1,720	13		2.8	110	0.0519	0.00148		1.98	400	0.106	0.020
5/02	9.91	9.95	1,900	1,651	14		<0.50	91	0.0628	0.00105		1.0	395	0.0691	0.017
9/02	9.80	10.02	1,520	1,991	11.3		3.55	91	0.056	0.000982		1.21	357	0.0698	0.0234
9/02 (Dup.)	9.79	10.02	2,150	1,991	14.7		2.70	92.6	0.0592	0.00106		1.30	356	0.0694	0.0232
1/03	9.87	9.93	2,090	2,270	13.6		<0.5	99.5	0.0745	0.00181		1.47	472	0.0797	0.0323
1/03 (Dup.)	9.88	9.93	2,140	2,270	14		1.41	102	0.0706	0.00146		1.16	438	0.0664	0.029
5/03	9.69	10.00	1,800	1,310	15		4.1	80	0.038	0.001		0.99	330	0.064	0.022
9/03	9.69	9.81	1,800	1,648	12		7.7	91	0.046	0.001		1.3	410	0.074	0.032
1/04	9.55	9.83	2,300	1,375	12		1.3	85	0.033	0.00084		1.2	380	0.062	0.045
1/04 (Dup.)	9.55	9.83	2,300	1,375	13		1.3	62	0.027	0.00097		1.2	380	0.063	0.043
5/04	9.72	9.85	1,700	1,281	15		1.6	71	0.044	0.0015		1.5	570	0.078	0.025
9/04	9.50	9.81	1,800	1,215	15		<0.01	81	0.044	0.0018		1.6	400	0.087	0.041
9/04 (Dup.)	9.52	9.81	1,800	1,215	15		<0.01	95	0.044	0.0019		1.7	410	0.093	0.043
1/05	9.73	9.79	1,600	1,383	12		1.7	88	0.054	0.0018		1.8	350	0.099	0.034
1/05 (Dup.)	9.76	9.79	1,600	1,383	13		1.8	82	0.054	0.0017		1.8	340	0.096	0.029
5/05	9.65	9.68	1,700	1,519	16		0.21	86 J	0.057	0.0024		2.3	430	0.12	0.036
10/05	9.68	9.78	2,100	1,674	22		3.9	86	0.07	0.0031		3.1	440	0.16	0.038
10/05 (Dup.)	9.68	9.78	1,900	1,674	23		8.6	90	0.066	0.003		3.0	440	0.16	0.039
MW-32															
5/86	10.5		6430		97	18		369			27.4	0.69	2120		
7/88	9.2	9.3	890	1,040	7.2		0.30	39	0.014	<0.0015	4.05	0.513	234	0.024	<0.005
1/95	9.4	9.4	1,300	630	12		3.6	47	0.014	<0.01	2.7	0.37	230	0.03	
7/96	8.6	8.89	1,000	1,038	6.9	<0.020		29	0.011	<0.0005		0.84		0.01	
5/97	8.7	8.71	930	697	4.4		1.3	19	0.008	<0.0005		1.1	110	<0.01	
5/98	8.03	8.10	630	697	2.5		0.34	7.7	<0.004	<0.0005		1.9	61	<0.01	
5/98 (Dup.)	8.05	8.10	690	697	2.5		0.09	8.0	<0.004	<0.0005		2.0	68	<0.01	
9/98	8.30	8.26	760	760	4.5		1.0	13	<0.004	<0.0005		1.8	78	<0.01	
1/99	8.39	8.00	710	650	3.1		<0.02	13	<0.004	<0.0005		1.7	77	<0.01	
1/99 (Dup.)	8.39	8.00	720	650	3.7		<0.02	13	<0.004	<0.0005		1.7	76	<0.01	
5/99	8.38	8.50	690	555	4.4		0.59	12	<0.004	<0.0005		2.0	78	<0.01	
9/99	9.84	10.01	2,200	2,300	18		1.8	120	0.057	0.0014		2.2	520	0.093	
1/00	8.93	8.28	950	770	4.8		0.57	27	0.017	<0.0005		1.9	97	0.024	
5/00	8.80	8.95	830	858	3.9		<0.01	19	0.013	<0.0005	3.1	1.6	70	<0.01	
10/00	9.75	9.98	1,500	1,227	8.3		0.76	70	0.051	0.00099		1.6	290	0.058	
1/01	8.46	9.24	740	675	4.3		0.82	13	0.004	<0.0005		2.0	95	<0.01	
5/01	8.51	8.84	790	624	4.9		4.9	17	0.0054	<0.0005		2.1	94	0.012	
9/01	8.69	8.74	720	606	4.9		0.53	99	0.0088	<0.0005		1.9	110	0.011	
1/02	8.45	8.69	770	627	4.3		2.4	14	0.0047	<0.0005		1.68	98.1	<0.01	
5/02	8.75	8.72	850	543	6.9		<0.25	28	0.0293	<0.0005		1.83	134	0.0107	
9/02	8.73	9.02	940	889	6.13		0.55	25.4	0.0299	<0.0005		1.60	101	0.0122	
1/03	8.35	7.70	747	768	4.41		0.11	13	0.00403	<0.0005		1.91	93.1	<0.01	
5/03	8.31	8.47	820	616	3.6		<0.01	21	0.010	<0.0005		2.2	82	<0.01	
9/03	8.67	8.88	920	745	5.9		1.4	32	0.013	<0.0005		1.7	130	0.011	
1/04	8.54	8.77	790	588	5.2		2.0	21	0.0082	<0.0005		1.7	99	<0.01	
5/04	9.43	9.76	1,200	872	5.2		0.38	49	0.034	0.00084		1.1	360	0.054	
9/04	9.72	10.03	1,600	1,100	13		<0.01	90	0.091	0.0026		2.6	360	0.16	
1/05	9.96	9.96	1,600	1,372	17		2.1	70	0.1	0.0028		3.8	330	0.17	
5/05	9.98	9.76	1,600	1,474	15		1.0	95 J	0.11	0.0027		4.3	370	0.19	
10/05	9.99	10.05	1,600	1,444	14		1.1	83	0.1	0.0042		4.9	380	0.24	
MW-34S															
5/86	7.4		668		0.13	<0.01		9.4			0.07	0.42	64		
7/88	7.2	7.2	690	670	40		38	7.3	0.0087	<0.0015	14.6	0.416	33.1	0.018	<0.005
2/90	7.4	6.93	690	740	0.113		0.26	6.5			21		49		
1/95	7.2	7.1	700	430	0.03		<0.01	7.3	<0.004	<0.01	0.18	0.01	35	<0.01	
5/97	7.4	7.43	710	579	0.18		0.04	8.1	<0.004	<0.0005		0.04	69	<0.01	
5/98	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
5/99	7.34	7.55	650	505	0.19		<0.01	6.8	<0.004	<0.0005		0.014	46	<0.01	
5/00	7.60	7.46	740	607	1.1		1.1	11	<0.004	<0.0005	1.2	0.044	83	<0.01	
5/01	7.71	7.34	670	537	0.12		0.12	8.6	0.025	0.0019		2.9	50	0.054	
5/02	7.90	7.98	920	457	0.064		<0.01	49	0.0367	0.00246		2.12	172	0.072	
5/03	7.36	7.63	700	520	0.14		0.012	13	<0.004	<0.0005		0.055	52	<0.01	
5/04	8.08	8.21	950	729	0.38		0.26	41	0.0043	<0.0005		0.068	270	0.01	
5/05	8.63	8.51	1,700	1,673	9.1		0.21	130 J	0.028	0.0038		0.8	520	0.074	

Note: All results in mg/L unless otherwise noted.

J = One or more quality control criteria not met. Value considered estimated.
NS = Not sampled. Well damaged during remedial construction.

TABLE 4 (CONT.)
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUND-WATER MONITORING WELLS AND PARAMETERS
ORMET CORPORATION
HANNIBAL, OHIO

	pH (lab)	pH (field)	Specific Conductance (lab)	Specific Conductance (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	Tetrachloroethene
MW-34D															
5/86	7.3		602		0.05	<0.01		10.2			0.02	0.55	42		
7/88	7.4	7.4	560	580	0.07		<0.01	4.4	0.0031	<0.0015	0.538	0.762	32.4	<0.0026	<0.005
1/95	7.3	7.4	640	400	0.07		0.07	4.2	<0.004	<0.01	<0.04	0.82	34	<0.01	
5/97	7.4	7.43	630	492	0.05		<0.01	3.6	<0.004	<0.0005		0.79	31	<0.01	
5/98	7.37	7.23	590	595	0.09		0.01	3.9	<0.004	<0.0005		0.68	35	<0.01	
5/99	7.40	7.52	470	475	0.062		<0.01	3.6	<0.004	<0.0005		0.72	29	<0.01	
5/00	7.55	7.37	620	519	0.063		0.063	4.2	<0.004	<0.0005	0.14	0.76	28	<0.01	
5/01	8.00	7.16	600	453	0.13		0.13	3.9	<0.004	<0.0005		0.70	30	<0.01	
5/02	7.38	7.37	560	298	0.059		0.022	4.6	<0.004	<0.0005		0.68	32.9	<0.01	
5/03	7.38	7.52	630	470	0.047		<0.01	4.4	0.0041	<0.0005		0.58	31	<0.01	
5/04	7.44	7.35	660	505	0.45		0.37	6.0	<0.004	<0.0005		<0.01	83	<0.01	
5/05	7.83	7.36	1000	853	10		0.14	24 J	<0.004	<0.0005		0.12	190	<0.01	
MW-35															
5/86	10.2		6,430		240	38		358			125	1.76	2,070		
7/88	10.2	10.4	6,100	6,150	43		41	400	0.147	0.002	56.5	0.337	1,630	0.053	<0.005
2/90	9.6	9.7	1,500	1,540	8.0		<0.005	71			20		350		
1/95	9.5	9.7	1,200	562	16		<0.01	35	0.018	<0.01	11	0.43	220	<0.01	
7/96	9.5	9.5	1,700	1,851	6.0	0.040		71	0.028	0.0006		0.5		0.03	
5/97	9.4	9.47	1,000	900	16		<1.0	40	0.02	0.0006		0.68	220	0.02	
5/98	8.93	9.10	710	766	15		2.9	27	0.012	<0.0005		0.92	140	0.01	
9/98	8.97	8.90	550	778	16		0.99	26	0.01	<0.0005		0.88	130	<0.01	
1/99	9.28	9.15	820	925	23		2.9	40	0.019	<0.0005		0.81	190	0.016	
5/99	9.35	9.70	830	870	28		10	38	0.013	<0.0005		0.86	160	0.015	
9/99	9.18	9.60	790	930	18		2.0	34	0.012	<0.0005		0.53	170	0.05	
1/00	8.91	8.15	610	500	13		3.3	21	0.0077	<0.0005		0.47	94	0.068	
5/00	9.07	9.24	690	693	27		20	28	0.081	<0.0005	5.2	0.48	69	0.077	
10/00	8.76	8.84	520	470	7.3		0.59	17	0.0076	<0.0005		0.57	81	0.11	
1/01	8.86	9.59	530	549	10		3.1	19	0.008	<0.0005		0.50	89	0.075	
5/01	9.17	9.43	800	790	17		2.6	35	0.013	<0.0005		0.48	130	0.04	
9/01	9.26	9.03	820	749	15		<0.5	41	0.0097	<0.0005		0.46	120	0.062	
1/02	9.24	9.44	850	662	14		2.1	41	0.0106	<0.0005		0.511	129	0.0659	
5/02	9.03	9.21	600	528	24		7.4	27	0.0347	0.000537		0.576	172	0.0365	
9/02	8.60	9.33	542	733	8.96		1.21	17.5	0.0254	<0.0005		0.435	70.3	0.0259	
1/03	8.85	8.94	579	621	10.8		<0.5	23.6	0.00733	<0.0005		0.449	72.4	0.0255	
5/03	8.87	9.05	660	466	6.6		<0.01	31	0.0099	<0.0005		0.52	76	0.025	
9/03	8.46	8.57	540	437	6.4		1.1	23	0.0098	<0.0005		0.52	53	0.016	
1/04	8.12	8.32	480	335	5.5		2.4	15	0.0046	<0.0005		0.68	49	0.015	
5/04	8.50	8.60	550	401	6.6		<0.01	22	0.011	<0.0005		0.63	120	0.017	
9/04	8.04	8.20	430	305	5.5		2.9	7.5	0.0096	<0.0005		0.61	48	<0.01	
1/05	8.66	8.65	540	529	12		2.3	18	0.011	<0.0005		0.72	76	0.011	
5/05	8.45	8.08	480	467	7.9		4.1	15 J	0.012	<0.0005		0.86	75	0.014	
10/05	8.54	8.62	610	514	15		2.4	33	0.011	<0.0005		0.88	81	0.015	
MW-36															
5/86	9.7		2,700		25	1.4		97			39.5	1.13	760		
7/88	8.9	9.6	940	1,255	8.6		1.3	18	0.0078	<0.0015	3.52	0.332	161	0.0063	<0.005
1/95	9.8	9.7	3,500	1,350	18		<0.01	160	0.034	<0.01	8.7	0.83	770	0.07	
7/96	9.6	9.55	3,300	3,280	8.1	<0.020		160	0.058	0.0021		0.67		0.07	
5/97	9.8	9.64	3,600	3,290	9.2		3.5	180	0.084	0.0035		1.7	850	0.1	
5/98	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
9/98	9.90	10.10	4,500	4,380	6.5		0.03	230	0.11	0.0036		1.4	990	0.074	
1/99	9.76	10.20	3,500	3,300	41		1.2	190	0.076	0.0036		1.5	820	0.072	
5/99	10.10	10.40	2,500	2,260	19		4.4	150	0.12	0.0019		1.3	600	0.12	
9/99	10.10	10.10	1,800	1,790	6.2		0.69	93	0.059	0.00055		1.2	420	0.067	
9/99 (Dup.)	10.10	10.10	1,800	1,790	6.3		<0.5	96	0.061	0.00062		1.2	450	0.07	
1/00	10.2	9.80	1,600	1,450	3.9		0.51	80	0.072	<0.0005		0.70	290	0.082	
5/00	10.2	10.42	1,200	1,272	1.6		<0.01	50	0.03	<0.0005	4.0	0.54	150	0.03	
10/00	9.84	10.05	1,200	1,043	4.9		<0.01	41	0.024	0.00061		1.6	210	0.033	
1/01	9.79	11.00	1,700	1,567	12		2.0	89	0.027	0.0018		1.4	450	0.049	
5/01	9.87	10.28	1,100	1,109	3.0		3.0	49	0.029	0.00054		0.68	220	0.045	
9/01	9.80	9.75	1,100	960	2.7		<0.25	44	0.018	0.00053		0.59	210	0.026	
1/02	9.57	9.83	1,800	1,691	14		<0.01	120	0.0209	0.00205		1.0	310	0.0413	
5/02	9.61	9.61	1,800	1,286	16		4.6	98	0.0336	0.0018		1.15	381	0.0216	
9/02	9.55	9.80	1,400	1,304	4.14		<0.01	52	0.0217	0.000709		1.07	219	<0.01	
1/03	9.65	9.65	2,120	2,130	23.7		1.35	119	0.0711	0.0033		1.37	446	0.0791	
5/03	9.51	9.80	2,000	1,422	9.3		<0.01	120	0.049	0.0027		1.7	380	0.091	
9/03	9.50	9.56	1,500	1,252	6.2		0.74	110	0.046	<0.0005		0.75	290	0.038	

Note: All results in mg/L unless otherwise noted.

J = One or more quality control criteria not met. Value considered estimated.

TABLE 4 (CONT.)
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUND-WATER MONITORING WELLS AND PARAMETERS
ORMET CORPORATION
HANNIBAL, OHIO

	pH (lab)	pH (field)	Specific Conductance (lab)	Specific Conductance (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	Tetrachloroethene
MW-36 (Cont.)															
1/04	9.54	9.79	2,000	1,350	9.5		2.7	93	0.048	0.0013		0.81	350	0.077	
5/04	9.39	9.64	2,000	1,393	13		<0.01	120	0.043	0.0022		0.96	610	0.05	
9/04	9.63	9.82	1,000	701	4.9		2.3	52	0.047	0.00077		0.56	220	0.05	
1/05	9.69	9.61	860	750	3.4		0.69	33	0.026	0.00066		0.44	170	0.03	
5/05	9.66	9.44	800	774	1.8		0.53	30 J	0.02	0.0007		0.41	180	0.029	
10/05	9.44	9.50	1,000	764	12		2.3	28	0.02	<0.0005		0.28	180	0.02	
MW-37															
5/86	10.1		7,340		97	8.2		890			498	46.3	1,800		
7/88	9.9	9.8	5,600	5,500	0.30		<0.01	1000	0.169	0.035	115	15.4	1,470	0.369	<0.005
2/90	9.6	9.65	2,700	3,100	4.6		22.7	360			1000		970		
1/95	9.1	9.2	1,200	970	18		<0.01	87	0.033	<0.01	8.5	0.58	280	0.01	
7/96	9.1	8.89	570	832	14	<0.020		45	0.042	0.0005		0.51		0.03	
5/97	9.2	9.07	1,100	846	13		1.7	53	0.027	<0.0005		0.56	210	0.02	
5/98	8.57	8.30	530	505	6.4		<0.01	6.8	0.018	<0.0005		0.28	120	0.02	
9/98	8.90	8.26	670	682	15		5.5	52	0.020	<0.0005		0.53	140	0.017	
1/99	9.02	9.25	660	750	19		<0.10	25	0.02	<0.0005		0.68	140	0.029	
5/99	9.39	9.45	610	540	11		3.6	22	0.023	<0.0005		0.23	130	0.016	
9/99	8.78	8.91	760	753	7.9		0.91	31	0.01	<0.0005		0.33	170	<0.01	
1/00	8.83	8.40	880	822	10		2.2	32	0.011	<0.0005		0.49	110	<0.01	
5/00	8.51	8.89	770	765	5.2		0.93	32	0.015	<0.0005	9.0	0.72	92	<0.01	
10/00	8.39	8.46	750	630	6.6		<0.01	17	0.0089	<0.0005		0.61	79	<0.01	
1/01	8.42	8.99	780	678	8.8		2.7	29	0.02	0.00088		1.5	160	0.035	
5/01	7.89	7.97	650	528	7.9		<0.01	10	0.018	0.00075		2.0	110	0.026	
9/01	7.84	7.54	680	590	5.6		<0.5	21	0.0042	<0.0005		3.0	110	0.011	
1/02	7.83	8.06	700	570	5.9		0.58	20	0.014	0.00113		3.12	129	0.0355	
5/02	8.15	8.05	610	406	5.0		<0.20	18	0.139	0.0169		14.8	141	0.273	
9/02	7.87	7.59	679	601	5.09		0.65	16.7	<0.004	<0.0005		<0.005	0.975	<0.01	
1/03	7.63	7.89	569	608	5.52		0.83	14.4	<0.004	<0.0005		2.48	107	<0.01	
5/03	7.25	7.50	440	342	6.3		0.093	9.8	0.0061	<0.0005		4.2	53	0.014	
9/03	6.89	7.31	520	444	2.4		0.093	14	0.01	0.0005		4.8	83	0.028	
1/04	7.06	7.34	570	422	1.7		0.72	17	<0.004	<0.0005		3.2	82	0.012	
5/04	7.34	7.01	460	365	2.5		0.66	14	0.0055	<0.0005		2.8	110	0.012	
9/04	6.58	6.60	520	367	4.1		2.0	8.8	0.0055	<0.0005		2.1	85	<0.01	
1/05	6.90	6.39	420	370	2.6		1.0	8.7	<0.004	<0.0005		1.9	59	<0.01	
5/05	6.92	6.51	420	374	3.0		0.068	9.5 J	0.012	0.0016		1.7	72	0.045	
10/05	6.82	6.60	630	512	5.8		0.58	17	0.013	0.0014		0.88	100	0.042	
MW-39S															
5/86	9.5		8,360		11	2.9		244			25.0	1.35	2780		
6/88	9.3	9.1	3,500	2,550	3.8		0.10	110	0.016	<0.0015	36.6	1.63	826	0.053	<0.005
1/95	8.9	8.7	2,700	900	0.64		<0.01	59	<0.004	<0.01	0.36	0.22	520	<0.01	
5/97	8.9	9.2	5,500	5,500	3.6		<0.2	150	0.009	<0.0005		0.15	1300	<0.01	
5/98	9.04	9.09	4,000	4,000	2.3		<0.01	98	0.009	<0.0005		0.11	700	<0.01	
5/99	9.05	9.30	4,300	3,620	3.4		0.24	120	0.0096	<0.0005		0.12	950	<0.01	
5/99 (Dup.)	9.05	9.30	4,200	3,620	3.6		0.89	120	0.009	<0.0005		0.11	1,100	<0.01	
5/00	9.18	9.19	4,500	3,870	3.5		3.5	110	0.013	<0.0005	2.3	0.097	1,100	<0.01	
5/01	8.91	9.38	3,700	2,820	2.0		0.86	97	0.011	<0.005		0.22	880	0.015	
5/02	9.06	9.01	4,200	2,420	4.6		0.55	130	0.0311	0.000659		0.269	1,070	0.0244	
5/03	8.95	9.20	3,800	4,120	3.1		<0.01	140	0.012	<0.0005		0.15	800	0.013	
5/04	9.28	9.46	3,400	5,040	8.5		0.76	150	0.016	<0.0005		0.19	2,000	0.015	
5/05	9.24	9.14	4,800	4,440	7.9		0.025	190 J	0.014	<0.0005		0.15	1,200	<0.01	
MW-39D															
5/86	8.1		627		0.21	0.02		7.4			0.14	0.54	103		
6/88	7.9	7.8	590	595	0.17		0.03	6.1	0.0021	<0.0015	0.36	0.681	53.9	<0.0026	<0.005
1/95	7.5	7.6	630	410	0.07		<0.01	3.9	<0.004	<0.01	0.06	0.87	36	<0.01	
5/97	7.5	7.66	630	457	0.06		0.06	3.8	<0.004	<0.0005		0.87	32	<0.01	
5/98	7.52	7.35	590	560	0.04		<0.01	3.6	<0.004	<0.0005		0.77	34	<0.01	
5/99	7.59	7.64	540	447	0.037		<0.01	3.4	<0.004	<0.0005		0.87	33	<0.01	
5/00	7.68	7.60	580	503	0.027		0.027	3.2	<0.004	<0.0005	0.13	0.90	29	<0.01	
5/01	7.50	7.83	550	423	0.024		0.024	3.1	<0.004	<0.0005		0.78	32	<0.01	
5/02	7.61	7.56	510	301	0.026		<0.01	3.7	<0.004	<0.0005		0.785	32.3	<0.01	
5/03	7.60	7.78	580	430	0.033		<0.01	4.0	<0.004	<0.0005		0.93	33	<0.01	
5/04	7.57	7.66	590	649	0.024		0.024	4.2	<0.004	<0.0005		1.0	33	<0.01	
5/05	7.63	7.25	2,600	2,510	4.2		0.017	15 J	<0.004	<0.0005		2.6	650	<0.01	

Note: All results in mg/L unless otherwise noted.

J = One or more quality control criteria not met. Value considered estimated.

TABLE 4 (CONT.)
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUND-WATER MONITORING WELLS AND PARAMETERS
ORMET CORPORATION
HANNIBAL, OHIO

	pH (lab)	pH (field)	Specific Conductance (lab)	Specific Conductance (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	Tetrachloroethene
MW-40S															
5/86	8.9		2,550		1.7	0.03		28			12.8	0.49	650		
6/88	9.2	9.2	2,100	2,200	1.5		<0.01	5.9	0.018	<0.0015	1.89	0.139	445	0.0056	<0.005
1/95	7.9	7.9	2,500	1,600	0.87		<0.01	40	<0.004	<0.01	0.36	0.33	470	<0.01	
5/97	7.9	8.07	1,900	1,417	0.72		0.40	21	<0.004	<0.0005		0.66	380	<0.01	
5/98	8.2	8.18	1,400	1,335	0.36		<0.01	39	<0.004	<0.0005		0.13	270	<0.01	
5/99	8.50	8.83	1,300	1,100	0.32		<0.01	30	<0.004	<0.0005		0.11	250	<0.01	
5/00	8.08	8.04	1,100	900	0.25		0.25	14	<0.004	<0.0005	0.19	0.42	110	<0.01	
5/01	8.10	7.61	950	693	0.25		0.25	13	<0.004	<0.0005		0.57	140	<0.01	
5/02	7.89	7.91	720	543	0.20		0.17	14	<0.004	<0.0005		0.0577	147	<0.01	
5/03	7.85	7.98	1,400	1,042	0.58		0.02	21	<0.004	<0.0005		0.64	200	<0.01	
5/04	7.86	7.83	1,200	855	0.61		0.017	9.2	<0.004	<0.0005		0.84	220	<0.01	
5/05	7.76	7.51	960	804	0.24		<0.01	7.3 J	<0.004	<0.0005		1.1	160	<0.01	
MW-40D															
5/86	9.4		1,120		7.4	0.06		20			11.7	0.62	280		
6/88	9.4	9.4	1,200	1,290	7.0		<0.01	36	0.018	<0.0015	7.81	0.454	258	0.012	<0.005
1/95	7.6	7.7	2,000	1,375	0.70		<0.01	16	<0.004	<0.01	0.29	0.74	340	<0.01	
5/97	7.6	7.9	1,800	1,350	0.59		<0.1	7.6	<0.004	<0.0005		1.3	340	<0.01	
5/98	7.85	7.73	1,300	1,250	0.49		0.47	19	<0.004	<0.0005		0.36	250	<0.01	
5/99	7.99	8.25	920	745	0.16		0.16	12	<0.004	<0.0005		0.42	150	<0.01	
5/00	7.88	7.84	960	810	0.25		0.25	11	<0.004	<0.0005	0.16	0.69	97	<0.01	
5/01	8.01	7.45	790	611	0.15		0.15	8.6	<0.004	<0.0005		0.90	78	<0.01	
5/02	7.68	7.73	600	450	0.10		<0.01	7.7	<0.004	<0.0005		1.14	79.4	<0.01	
5/03	7.65	7.9	1,000	739	0.13		<0.01	9.6	<0.004	<0.0005		1.2	86	<0.01	
5/04	7.69	7.79	820	595	0.11		0.012	11	<0.004	<0.0005		0.9	120	<0.01	
5/05	7.89	7.56	1,000	849	0.68		0.034	4.9 J	<0.004	<0.0005		0.73	140	<0.01	
MW-41															
1/95	6.6	8.2	490	600	0.04		0.02	0.2	0.017	<0.01	8.9	1.3	22	<0.01	
5/97	6.8	6.98	490	357	<0.01			0.20	0.022	<0.0005		1.6	21	<0.01	
5/98	6.67	6.74	420	449	<0.01			0.30	0.016	<0.0005		1.3	21	<0.01	
5/99	6.79	6.80	420	370	<0.01			0.33	0.014	<0.0005		1.1	20	<0.01	
5/00	6.79	6.96	430	424	<0.01			0.25	0.016	<0.0005	9.2	1.1	17	<0.01	
5/01	6.70	7.00	450	421	<0.01			0.34	0.015	<0.0005		1.0	19	<0.01	
5/02	7.01	7.10	430	377	<0.01			0.24	0.0135	<0.0005		0.938	22.9	<0.01	
5/03	6.87	6.83	460	372	<0.01			0.28	0.016	<0.0005		1.1	23	<0.01	
5/04	6.85	6.85	450	361	<0.01			0.45	0.017	<0.0005		1.1	26	<0.01	
MW-42S															
6/88	8.0	8.4	930	870	0.70		0.25	14.0	0.002	<0.0015	0.232	0.237	143	0.0027	<0.005
2/90	8.4	8.25	2,100	2,400	0.266		0.079	35.0			0.88		520		
1/95	8.2	8.4	1,600	765	0.45		<0.01	22	<0.004	<0.01	0.2	0.35	280	<0.01	
5/97	8.2	8.57	1,700	1,350	0.56		<0.02	29	<0.004	<0.0005		0.33	300	<0.01	
5/98	8.26	8.46	1,400	1,460	0.52		<0.01	27	<0.004	<0.0005		0.37	270	<0.01	
5/99	8.19	8.54	1,500	1,100	0.54		0.033	26	<0.004	<0.0005		0.49	260	<0.01	
5/00	8.19	8.18	1,900	1,530	0.66		0.66	28	<0.004	<0.0005	0.39	0.65	280	<0.01	
5/01	8.03	8.03	1,700	1,208	0.51		0.062	23	<0.004	<0.0005		0.84	300	<0.01	
5/02	8.20	8.15	1,900	859	0.52		<0.02	37	<0.004	<0.0005		0.603	475	<0.01	
5/03	8.25	7.32	2,300	1,721	0.94		0.14	51	<0.004	<0.0005		0.41	430	<0.01	
5/04	8.29	8.37	4,500	4,040	3.1		<0.01	74	0.0068	<0.0005		0.38	1,500	<0.01	
5/05	8.30	8.10	2,700	3,110	4.0		0.068	69 J	<0.004	<0.0005		1.2	580	<0.01	
MW-42D															
6/88	7.9	8.1	550	600	0.16		<0.01	6.0	0.0028	<0.0015	1.11	0.636	68.6	0.0028	<0.005
1/95	7.5	7.7	640	410	0.04		<0.01	3.6	<0.004	<0.01	0.08	1.5	31	<0.01	
5/97	7.6	7.99	580	468	0.04		<0.01	3.2	<0.004	<0.0005		1.3	27	<0.01	
5/98	7.54	7.64	550	535	0.07		0.01	3.3	<0.008	<0.0005		1.2	26	<0.01	
5/99	7.56	7.83	530	435	0.03		<0.01	3.4	<0.004	<0.0005		1.3	26	<0.01	
5/00	7.73	7.74	580	490	0.027		0.027	3.0	<0.004	<0.0005	0.053	1.3	24	<0.01	
5/01	7.53	7.68	550	462	0.023		0.023	3.1	<0.004	<0.0005		1.3	32	<0.01	
5/02	7.57	7.60	530	316	0.021		<0.01	3.0	<0.004	<0.0005		1.17	29.5	<0.01	
5/03	7.57	7.21	600	461	0.017		0.017	4.0	<0.004	<0.0005		1.4	34	<0.01	
5/04	7.66	7.70	1,700	1,899	0.65		0.65	9.6	<0.004	<0.0005		1.6	430	<0.01	
5/05	7.87	7.53	2,100	1,844	1.6		0.017	11.0 J	0.0073	<0.0005		0.35	810	<0.01	

Note: All results in mg/L unless otherwise noted.

J = One or more quality control criteria not met. Value considered estimated.

0319-ANN-T4.XLS

TABLE 5

SUMMARY OF ANALYTICAL RESULTS FOR PCBS

ORMET CORPORATION

HANNIBAL, OHIO

		MW-12										
		5/15/02	10/01/02	1/15/03	5/22/03	9/11/03	1/13/04	5/11/04	9/28/04	1/18/05	5/19/05	10/6/05
Aroclor-1016	µg/L	<0.52	<0.521	<0.5	<0.5	<0.5/<0.5	<0.52/<0.52	<0.5	<0.51/<0.53	<0.51/<0.5	<0.5	<0.5/<0.5
Aroclor-1221	µg/L	<0.52	<0.521	<0.5	<0.5	<0.5/<0.5	<0.52/<0.52	<0.5	<0.51/<0.53	<0.51/<0.5	<0.5	<0.5/<0.5
Aroclor-1232	µg/L	<0.52	<0.521	<0.5	<0.5	<0.5/<0.5	<0.52/<0.52	<0.5	<0.51/<0.53	<0.51/<0.5	<0.5	<0.5/<0.5
Aroclor-1242	µg/L	<0.52	<0.521	<0.5	<0.5	<0.5/<0.5	<0.52/<0.52	<0.5	<0.51/<0.53	<0.51/<0.5	<0.5	<0.5/<0.5
Aroclor-1248	µg/L	<0.52	<0.521	<0.5	<0.5	<0.5/<0.5	<0.52/<0.52	<0.5	<0.51/<0.53	<0.51/<0.5	<0.5	<0.5/<0.5
Aroclor-1254	µg/L	<0.52	<0.521	<0.5	<0.5	<0.5/<0.5	<0.52/<0.52	<0.5	<0.51/<0.53	<0.51/<0.5	<0.5	<0.5/<0.5
Aroclor-1260	µg/L	<0.52	<0.521	<0.5	<0.5	<0.5/<0.5	<0.52/<0.52	<0.5	<0.51/<0.53	<0.51/<0.5	<0.5	<0.5/<0.5

		MW-44S										
		5/15/02	10/01/02	1/15/03	5/22/03	9/11/03	1/14/04	5/14/04	9/28/04	1/18/05	5/18/05	10/5/05
Aroclor-1016	µg/L	<0.52	<0.5	<0.5	<0.5	<0.5	<0.52	<0.5	<0.52	<0.51	<0.5	<0.5
Aroclor-1221	µg/L	<0.52	<0.5	<0.5	<0.5	<0.5	<0.52	<0.5	<0.52	<0.51	<0.5	<0.5
Aroclor-1232	µg/L	<0.52	<0.5	<0.5	<0.5	<0.5	<0.52	<0.5	<0.52	<0.51	<0.5	<0.5
Aroclor-1242	µg/L	<0.52	<0.5	<0.5	<0.5	<0.5	<0.52	<0.5	<0.52	<0.51	<0.5	<0.5
Aroclor-1248	µg/L	<0.52	<0.5	<0.5	<0.5	<0.5	<0.52	<0.5	<0.52	<0.51	<0.5	<0.5
Aroclor-1254	µg/L	<0.52	<0.5	<0.5	<0.5	<0.5	<0.52	<0.5	<0.52	<0.51	<0.5	<0.5
Aroclor-1260	µg/L	<0.52	<0.5	<0.5	<0.5	<0.5	<0.52	<0.5	<0.52	<0.51	<0.5	<0.5

		MW-44D										
		5/15/02	10/01/02	1/15/03	5/22/03	9/11/03	1/14/04	5/14/04	9/28/04	1/18/05	5/18/05	10/5/05
Aroclor-1016	µg/L	<0.5	<0.51	<0.5	<0.5	<0.5	<0.51	<0.5	<0.51	<0.51	<0.5	<0.5
Aroclor-1221	µg/L	<0.5	<0.51	<0.5	<0.5	<0.5	<0.51	<0.5	<0.51	<0.51	<0.5	<0.5
Aroclor-1232	µg/L	<0.5	<0.51	<0.5	<0.5	<0.5	<0.51	<0.5	<0.51	<0.51	<0.5	<0.5
Aroclor-1242	µg/L	<0.5	<0.51	<0.5	<0.5	<0.5	<0.51	<0.5	<0.51	<0.51	<0.5	<0.5
Aroclor-1248	µg/L	<0.5	<0.51	<0.5	<0.5	<0.5	<0.51	<0.5	<0.51	<0.51	<0.5	<0.5
Aroclor-1254	µg/L	<0.5	<0.51	<0.5	<0.5	<0.5	<0.51	<0.5	<0.51	<0.51	<0.5	<0.5
Aroclor-1260	µg/L	<0.5	<0.51	<0.5	<0.5	<0.5	<0.51	<0.5	<0.51	<0.51	<0.5	<0.5

HM0317-PCB-HIST.XLS

TABLE 6
SUMMARY OF ESTIMATED AQUIFER AREAS ABOVE CLEANUP GOALS
AND CONTAMINANT MASS-IN-PLACE
ORMET CORPORATION
HANNIBAL REDUCTION DIVISION
HANNIBAL, OHIO

Sampling Date	Estimated Area of Aquifer Above 4 mg/L Fluoride	% Change	Estimated Area of Aquifer Above 0.2 mg/L Total CN	% Change
6/88	43.3 a.		24.5 a.	
1/95	48.4 a.	+11.6	5.9 a.	-75.8
5/97	43.7 a.	-9.7	21.3 a.	+259
5/98	36.9 a.	-15.6	10.5 a.	-50.6
5/99	43.7*a.	+18.4	27.5 a.	+161
5/00	41.6 a.	-4.8	36.5 a.	+32.7
5/01	41.4 a.	-0.5	36.7 a.	+0.5
5/02	37.9 a.	-8.5	37.2 a.	+1.3
5/03	38.8 a.	+2.3	37.2 a.	0.0
5/04	42.1 a.	+7.8	38.1 a.	+2.4
5/05	39.5 a.	-6.2	43.7 a.	+12.8

Sampling Date	Estimated Fluoride Mass-in-Place	% Change	Estimated Total CN Mass-in-Place	% Change
6/88	85,702 lbs.		6,821 lbs.	
1/95	28,168 lbs.	-67.1	4,271 lbs.	-37.4
5/97	29,033 lbs.	+3.1	2,943 lbs.	-31.1
5/98	23,888 lbs.	-17.7	2,597 lbs.	-11.8
5/99	30,416* lbs.	+27.3	5,566 lbs.	+114
5/00	27,071 lbs.	-11.0	4,679 lbs.	-15.9
5/01	21,741 lbs.	-19.7	4,300 lbs.	-8.1
5/02	28,789 lbs.	+24.5	4,530 lbs.	+5.1
5/03	32,127 lbs.	+10.4	2,773 lbs.	-38.8
5/04	38,836 lbs.	+17.3	3,062 lbs.	+9.4
5/05	37,656 lbs.	-3.0	4,681 lbs.	+34.6

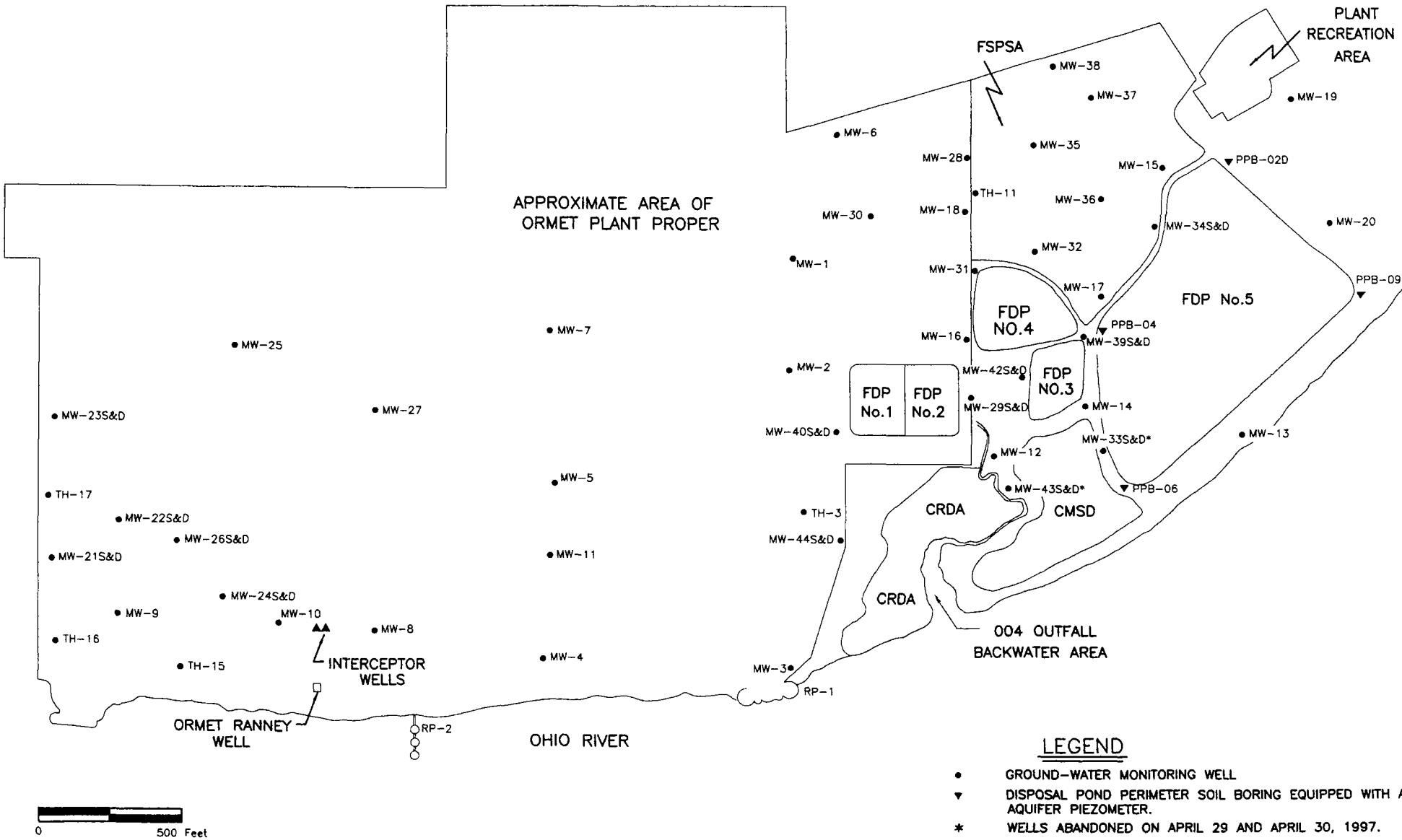
* - Value corrected due to omission during 1999 calculation.

TABLE 7
COMPARISON OF CALCULATED MASS REMOVAL TO CHANGES IN ESTIMATED MASS-IN-PLACE

	FLUORIDE			TOTAL CYANIDE		
SAMPLE DATE	ESTIMATED MASS-IN-PLACE	CHANGE	MASS REMOVED	ESTIMATED MASS-IN-PLACE	CHANGE	MASS REMOVED
6/88	85,702			6,821		
1/95	28,168	-57,534		4,271	-2,550	
5/97	29,033	+864		2,943	-1,328	
5/98	23,888	-5,145	26,383	2,597	-346	3,462
5/99	30,416	+6,528	29,516	5,566	+2,969	3,248
5/00	27,071	-3,345	18,934	4,679	-887	2,884
5/01	21,741	-5,330	19,653	4,300	-379	2,897
5/02	28,789	+7,048	16,470	4,530	+230	2,321
5/03	32,127	+3,338	12,042	2,773	-1,757	1,726
5/04	38,836	+6,709	9,845	3,062	+289	1,597
5/05	37,656	-1,180	8,802	4,681	+1,619	1,075
	TOTAL MASS REMOVED		141,645	TOTAL MASS REMOVED		19,210

All values given in pounds.

FIGURES



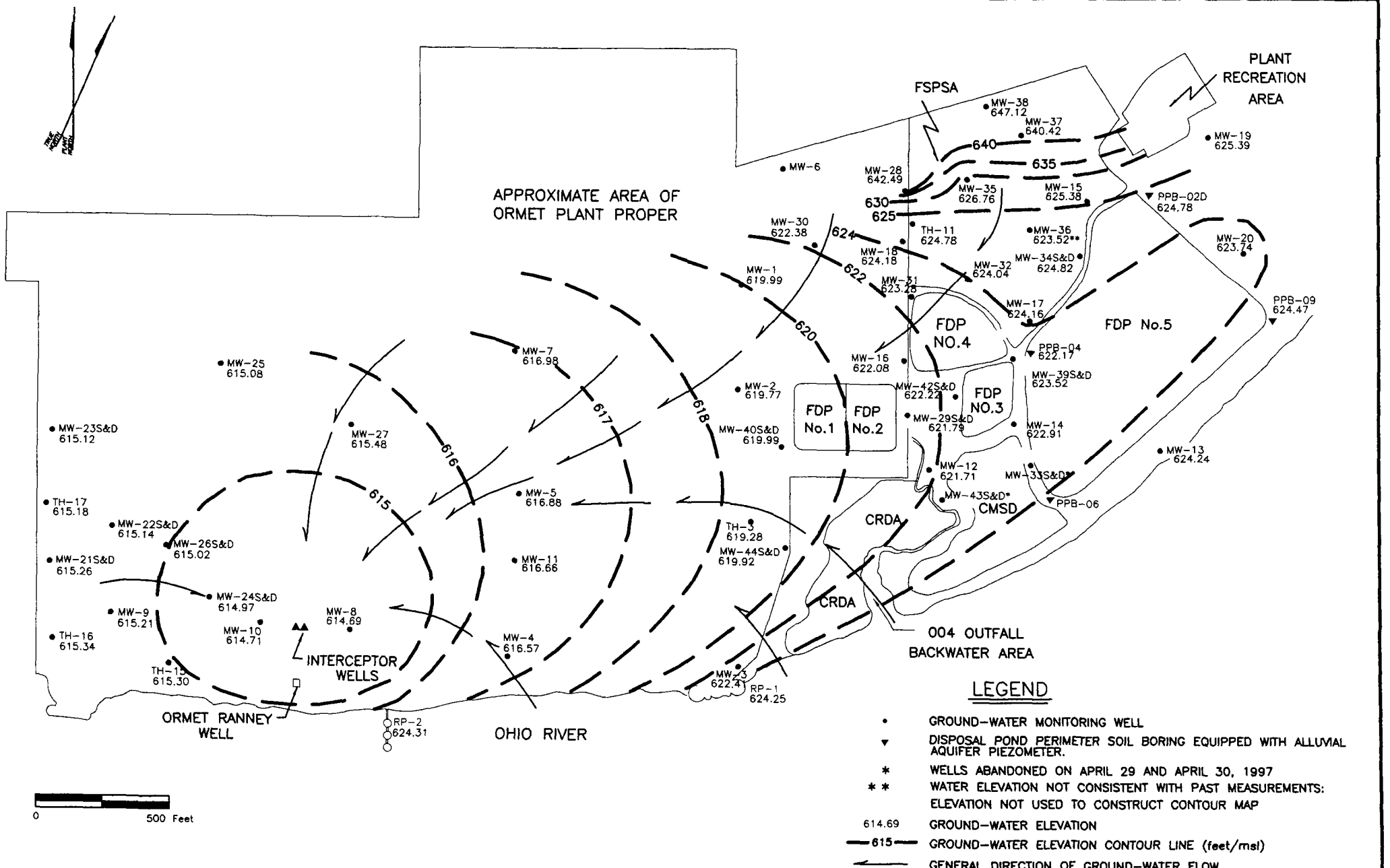
HMI Environmental Consulting Services

PROJECT NO: HM00319	FILE NO:
DRAWING:	PLOT SIZE=1"=500'
DRAFTED BY: C.L.	DATE: 02/13/2006
CHECKED BY: S.C.M.	DATE: 02/13/2006
APPROVED BY: R.L.F.	DATE: 02/13/2006
REVISION NO:	DATE:

BASE MAP
ORMET CORPORATION

HANNIBAL OHIO

FIGURE 1



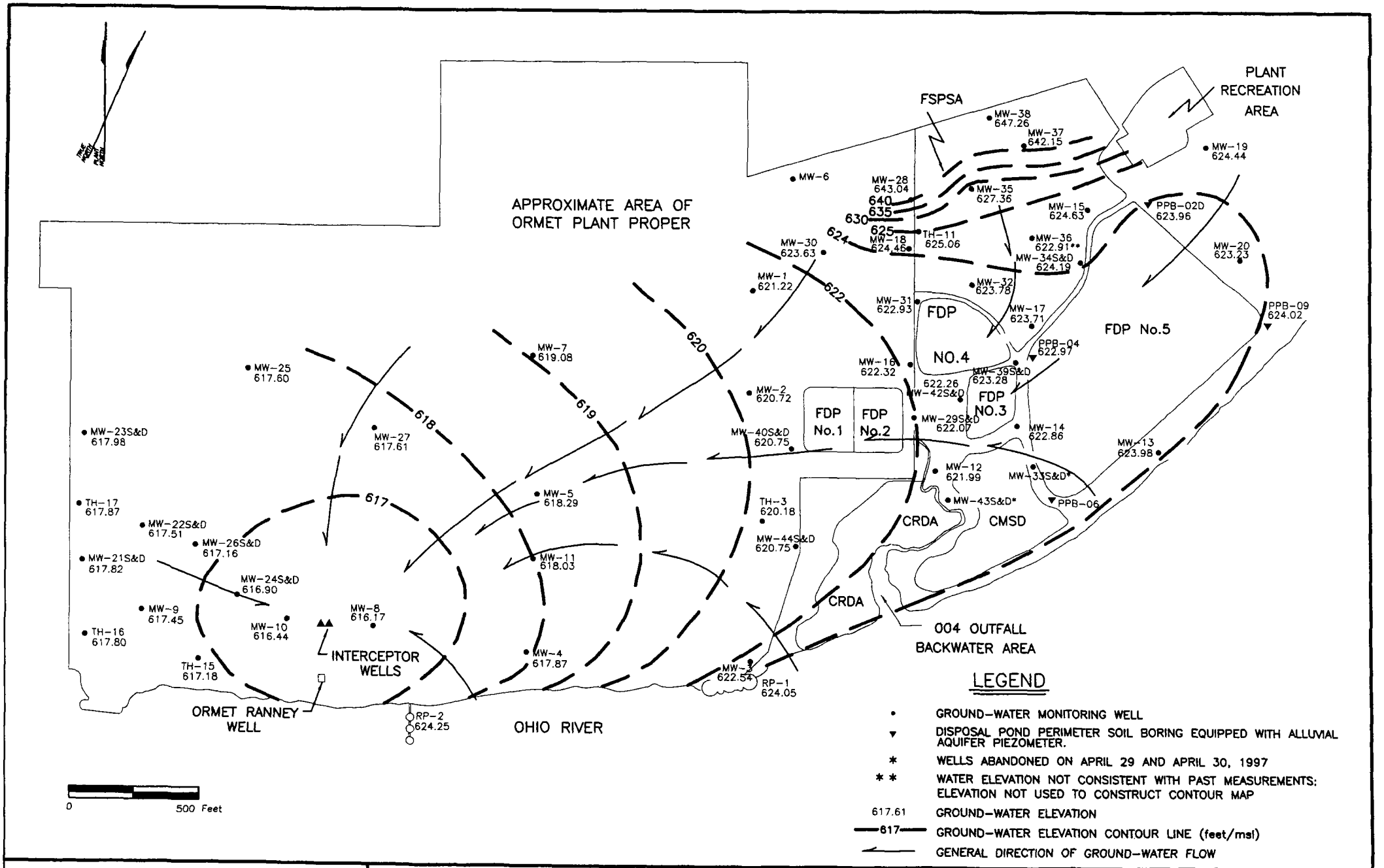
HMI Environmental Consulting Services

PROJECT NO: HM00319	FILE NO:
DRAWING:	PLOT SIZE=1"=500'
DRAFTED BY: C.L.	DATE: 02/13/2006
CHECKED BY: S.C.M.	DATE: 02/13/2006
APPROVED BY: R.L.F.	DATE: 02/13/2006
REVISION NO:	DATE:

GROUND-WATER ELEVATION CONTOUR MAP
(BASED ON SAMPLES COLLECTED JANUARY 18, 2005)

ORMET CORPORATION

FIGURE 2



HMI Environmental Consulting Services

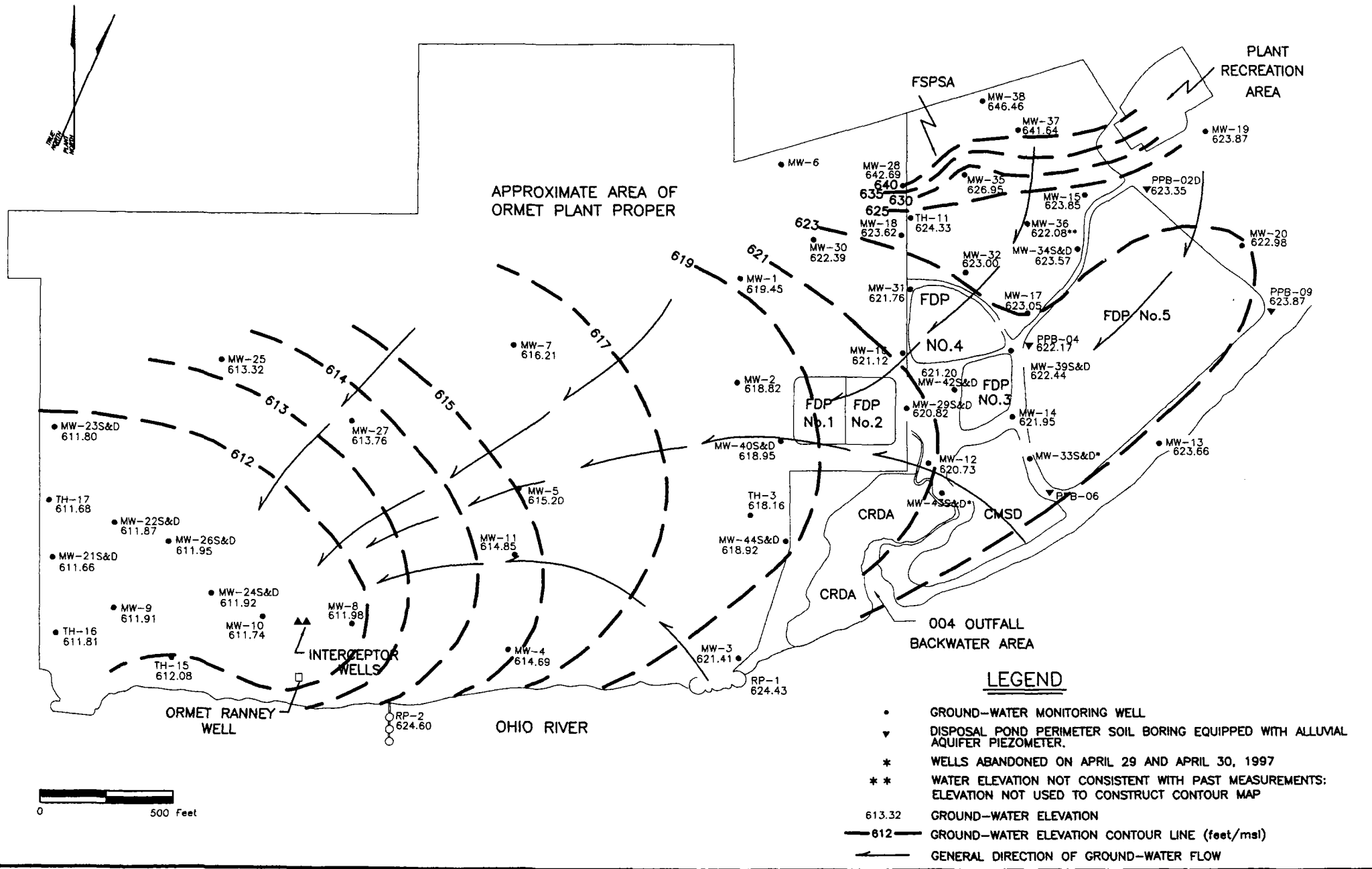
PROJECT NO: HM00319	FILE NO:
DRAWING:	PLOT SIZE=1"=500'
DRAFTED BY: C.L.	DATE: 02/13/2006
CHECKED BY: S.C.M.	DATE: 02/13/2006
APPROVED BY: R.L.F.	DATE: 02/13/2006
REVISION NO:	DATE:

GROUND-WATER ELEVATION CONTOUR MAP

(BASED ON DATA COLLECTED MAY 16, 2005)

ORMET CORPORATION

FIGURE 3



HMI Environmental Consulting Services

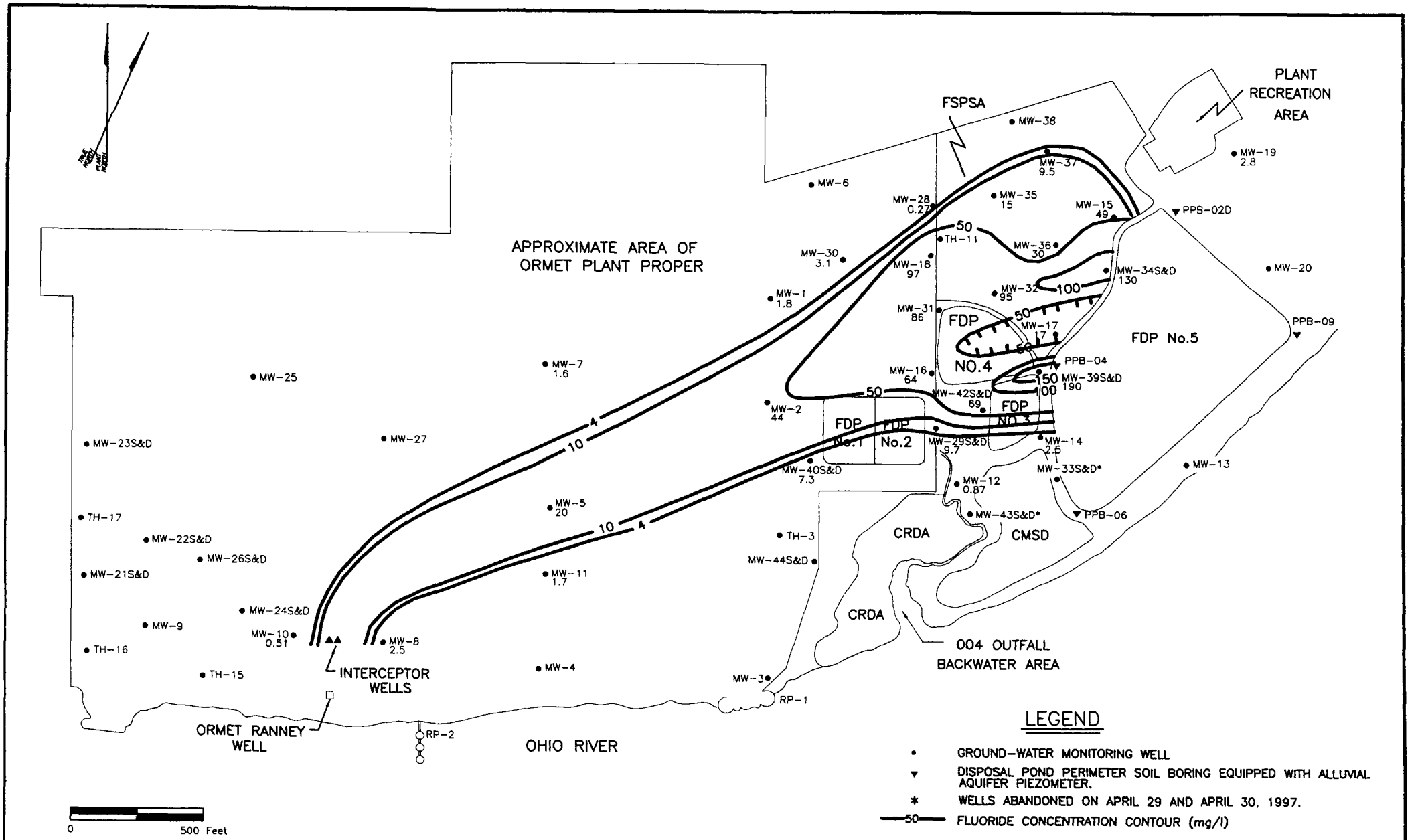
PROJECT NO: HM00319	FILE NO:
DRAWING:	PLOT SIZE=1"=500'
DRAFTED BY: C.L.	DATE: 02/13/2006
CHECKED BY: S.C.M.	DATE: 02/13/2006
APPROVED BY: R.L.F.	DATE: 02/13/2006
REVISION NO:	DATE:

GROUND-WATER ELEVATION CONTOUR MAP
(BASED ON DATA COLLECTED OCTOBER 5, 2005)

ORMET CORPORATION

HANNIBAL OHIO

FIGURE 4



LEGEND

- • GROUND-WATER MONITORING WELL
- ▼ DISPOSAL POND PERIMETER SOIL BORING EQUIPPED WITH ALLUVIAL AQUIFER PIEZOMETER.
- * WELLS ABANDONED ON APRIL 29 AND APRIL 30, 1997.
- —50— FLUORIDE CONCENTRATION CONTOUR (mg/l)

HMI Environmental Consulting Services

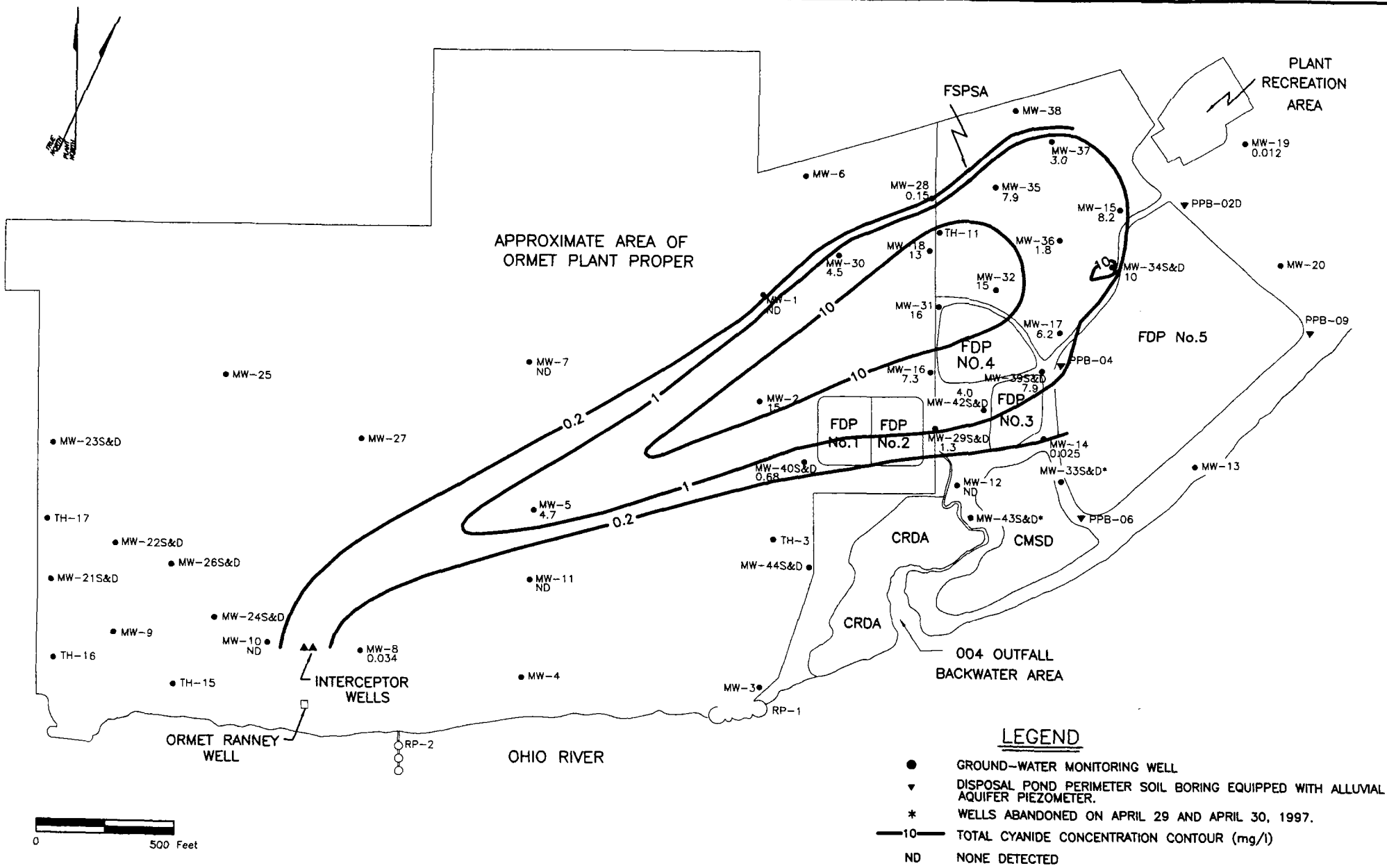
PROJECT NO: HM00319	FILE NO:
DRAWING:	PLOT SIZE=1"=500'
DRAFTED BY: C.L.	DATE: 02/13/2006
CHECKED BY: S.C.M.	DATE: 02/13/2006
APPROVED BY: R.L.F.	DATE: 02/13/2006
REVISION NO:	DATE:

FLUORIDE ISOPLETH MAP FOR THE ALLUVIAL AQUIFER
(BASED ON SAMPLES COLLECTED MAY 16-19, 2005)

ORMET CORPORATION

HANNIBAL OHIO

FIGURE 5



HMI Environmental Consulting Services

PROJECT NO: HM00319	FILE NO:
DRAWING:	PLOT SIZE=1"=500'
DRAFTED BY: C.L.	DATE: 02/13/2006
CHECKED BY: S.C.M.	DATE: 02/13/2006
APPROVED BY: R.L.F.	DATE: 02/13/2006
REVISION NO:	DATE:

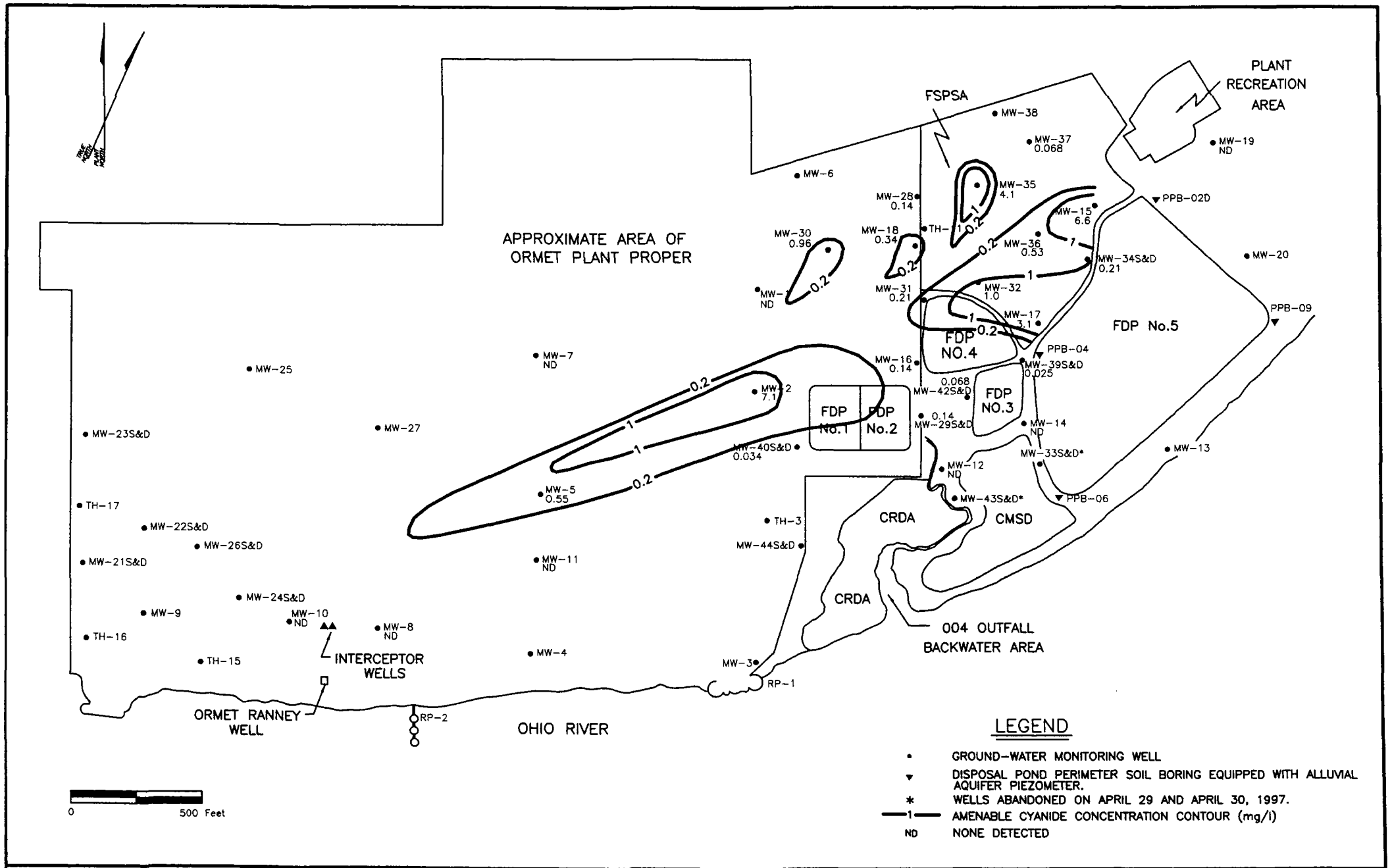
TOTAL CYANIDE ISOPLETH MAP FOR THE ALLUVIAL AQUIFER

(BASED ON SAMPLES COLLECTED MAY 16–19, 2005)

ORMET CORPORATION

HANNIBAL OHIO

FIGURE 6



HMI Environmental Consulting Services

PROJECT NO: HM00319	FILE NO:
DRAWING:	PLOT SIZE=1"=500'
DRAFTED BY: C.L.	DATE: 02/13/2006
CHECKED BY: S.C.M.	DATE: 02/13/2006
APPROVED BY: R.L.F.	DATE: 02/13/2006
REVISION NO:	DATE:

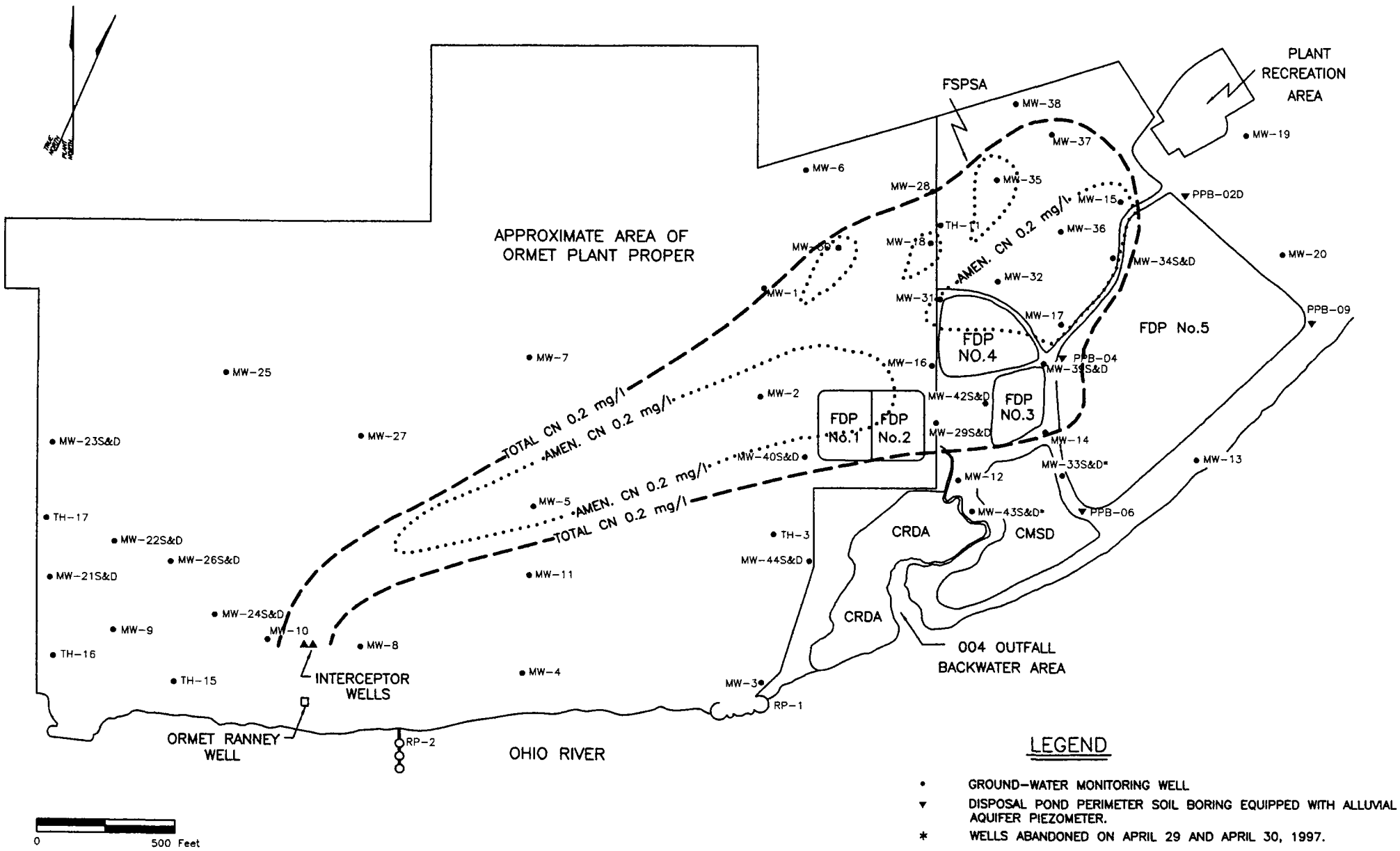
AMENABLE CYANIDE ISOPLETH MAP FOR THE ALLUVIAL AQUIFER

(BASED ON SAMPLES COLLECTED MAY 16–19, 2005)

ORMET CORPORATION

HANNIBAL OHIO

FIGURE 7



HMI
Environmental Consulting Services

PROJECT NO: HM00319	FILE NO:
DRAWING: A-BORDER	PLOT SIZE=1"=500'
DRAFTED BY: C.L.	DATE: 02/13/2006
CHECKED BY: S.C.M.	DATE: 02/13/2006
APPROVED BY: R.L.F.	DATE: 02/13/2006
REVISION NO:	DATE:

2005 COMPARISON OF TOTAL VS. AMENABLE CYANIDE DISTRIBUTION IN GROUND-WATER

(BASED ON 0.2 mg/l CONCENTRATION CONTOURS)

ORMET CORPORATION

HANNIBAL OHIO

FIGURE 8

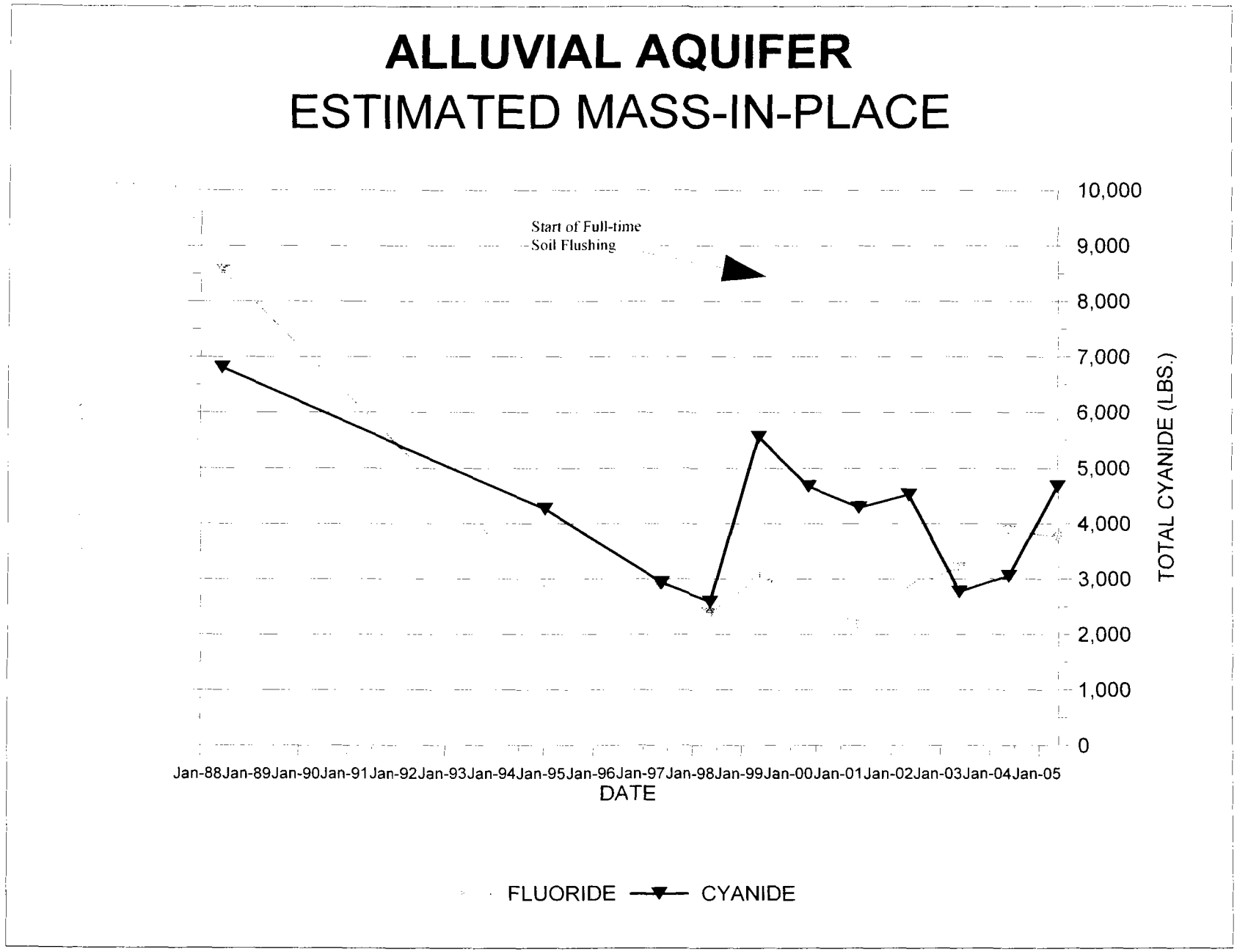

ALLUVIAL AQUIFER
ESTIMATED MASS-IN-PLACE
Start of Full-time
Soil Flushing
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
TOTAL CYANIDE (LBS.)
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
DATE
FLUORIDE
CYANIDE

FIGURE 9

APPENDIX A

APPENDIX A

WATER SAMPLING LOG FORMS

Appendix A-1	Water Sampling Log Forms for January 2005 Monitoring Event
Appendix A-2	Water Sampling Log Forms for May 2005 Monitoring Event
Appendix A-3	Water Sampling Log Forms for October 2005 Monitoring Event

APPENDIX A-1

WATER SAMPLING LOG FORMS FOR JANUARY 2005 MONITORING EVENT

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 1/19/05 Weather: 15° SNOW

Sample ID: MW-2
Replicate ID: ~
Time Sampling Began: 1:40
Time Sampling Completed: 2:10

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 82.25
Depth to Water Below MP (DTW): 48.35
Water Column (WC) in Well [TD-DTW]: 33.90
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 5.4

Diameter of Well Casing: 2.0"
Gallons to be Purged: 16.2
(3 WCVs, 5 WCVs, etc.)
= Well Casing Volume (WCV)

GALLONS PER FOOT (gpf)			
1¼" = 0.08	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: DR. BROWN Odor: NONE Turbidity: STAINED

Well Volumes (gal.):	5.4	10.8	16.2	FINAL				
pH (s.u.):	9.83	9.77	9.73	9.74				
Sp. Cond. (µmhos/cm):	1360	1360	1346	1340				
Temperature (°C):	14.6	14.6	14.4	14.5				
Turbidity (N.T.U):								

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description From Lab ✓ or HMI ___	Preservative preserved by: Lab ✓ or HMI ___
pH, Spec. Cond., F	500ml. PLASTIC	4°C
DISS. AS, BA, MN, Na, V	250ml. PLASTIC	HNO_3- FIELD FILTERED (1 MICRON)
TOTAL + AMENABLE CN	250ml. PLASTIC	NAOH
PCE	3 x 40ml. GLASS	HCL

Sampling Personnel: S. MENOSKY, J. KELLER

Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 1/19/05 Weather: 15° SNOW

Sample ID: MW-5
Replicate ID: ~
Time Sampling Began: 12:30
Time Sampling Completed: 1:10

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 92.00
Depth to Water Below MP (DTW): 51.28
Water Column (WC) in Well [TD-DTW]: 40.72
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 6.51 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 19.53
(3 WCVs, 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: TINTED Odor: NONE Turbidity: CLEAR

Well Volumes (gal.):	6.51	13.02	19.53	FINAL				
pH (s.u.):	8.00	8.07	8.12	8.13				
Sp. Cond. (µmhos/cm):	1105	1097	1094	1093				
Temperature (°C):	14.5	14.5	14.5	14.4				
Turbidity (N.T.U):								

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description From Lab ✓ or HMI ___	Preservative preserved by: Lab ✓ or HMI ___
pH, Spec. Cond., F	500ml. PLASTIC	4°C
DISS. AS, BA, MN, Na, V	250ml. PLASTIC	HNO_3- FIELD FILTERED (1 MICRON)
TOTAL + AMENABLE CN	250ml. PLASTIC	NAOH
PCE	3 x 40ml. GLASS	HCL

Sampling Personnel: S. MENOSKY, J. KELLER

Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 1/18/05 Weather: 5° SUNNY

Sample ID: MW-12
Replicate ID: MW-12D
Time Sampling Began: 3:15
Time Sampling Completed: 4:00

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Diameter of Well Casing: 2.0"
Total Sounded Depth of Well Below MP (TD): 68.42
Gallons to be Purged:
Depth to Water Below MP (DTW): 15.02
(3 WCVs, 5 WCVs, etc.)
Water Column (WC) in Well [TD-DTW]: 53.40
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 8.54 = Well Casing Volume (WCV)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: CLEAR Odor: NONE Turbidity: CLEAR

Well Volumes (gal.):	8.54	17.08	25.62	FINAL				
pH (s.u.):	7.27	7.34	7.35	7.40				
Sp. Cond. (µmhos/cm):	462	465	465	466				
Temperature (°C):	14.5	14.8	14.8	14.1				
Turbidity (N.T.U):								

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description From Lab ✓ or HMI ___	Preservative preserved by: Lab ✓ or HMI ___
pH, Spec. Cond., F	500ml. PLASTIC	4°C
DISS. AS, BA, MN, Na, V	250ml. PLASTIC	HNO_3- FIELD FILTERED (1 MICRON)
TOTAL + AMENABLE CN	250ml. PLASTIC	NAOH
PCBs	1 LITER AMBER GLASS	4°C

Sampling Personnel: S. MENOSKY, J. KELLER

Comments:

HMI Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 1/19/05 Weather: 15° SNOW

Sample ID: MW-16
Replicate ID: ~
Time Sampling Began: 9:15
Time Sampling Completed: 10:05

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 83.12
Depth to Water Below MP (DTW): 40.64
Water Column (WC) in Well [TD-DTW]: 45.48
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 7.28 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 21.84
(3 WCVs, 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1½" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: TINTED BROWN Odor: NONE Turbidity: STAINED

Well Volumes (gal.):	7.28	14.56	21.84	FINAL				
pH (s.u.):	8.16	8.32	8.34	8.38				
Sp. Cond. (µmhos/cm):	1060	1038	1038	1048				
Temperature (°C):	13.9	13.8	13.8	13.5				
Turbidity (N.T.U):								

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
pH, Spec. Cond., F	500ml. PLASTIC	4°C
DISS. AS, BA, MN, NA, V	250ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL & AMENABLE CN	250ml. PLASTIC	NAOH

Sampling Personnel: S. MENOSKY, J. KELLER

Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 1/19/05 Weather: 15° SNOW

Sample ID: MW-18
Replicate ID: ~
Time Sampling Began: 10:10
Time Sampling Completed: 10:55

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 61.16
Depth to Water Below MP (DTW): 36.73
Water Column (WC) in Well [TD-DTW]: 24.43
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 3.91

Diameter of Well Casing: 2.0"
Gallons to be Purged: 11.73
(3 WCVs, 5 WCVs, etc.)
= Well Casing Volume (WCV)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: DR. BROWN Odor: NONE Turbidity: SILTY/ STAINED

Well Volumes (gal.):	3.91	7.82	11.73	FINAL				
pH (s.u.):	9.43	9.39	9.40	9.45				
Sp. Cond. (µmhos/cm):	2990	2826	2600	2920				
Temperature (°C):	14.4	14.0	13.8	13.5				
Turbidity (N.T.U):								

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description From Lab ✓ or HMI ___	Preservative preserved by: Lab ✓ or HMI ___
pH, Spec. COND., F	500ml. PLASTIC	4°C
DISS. AS, BA, MN, Na, V	250ml. PLASTIC	HNO_3- FIELD FILTERED (1 MICRON)
TOTAL + AMENABLE CN	250ml. PLASTIC	NAOH
PCE	3 x 40ml. GLASS	HCL

Sampling Personnel: S. MENOSKY, J. KELLER

Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 1/19/05 Weather: 15° SNOW

Sample ID: MW-28
Replicate ID: ~
Time Sampling Began: 11:00
Time Sampling Completed: 11:30

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 46.20
Depth to Water Below MP (DTW): 20.78
Water Column (WC) in Well [TD-DTW]: 25.42
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 4.07

Diameter of Well Casing: 2.0"
Gallons to be Purged: 12.21
(3 WCVs, 5 WCVs, etc.)
= Well Casing Volume (WCV)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: TINT TAN Odor: NONE Turbidity: CLEAR/SL. CLOUDY

Well Volumes (gal.):	4.07	8.14	12.21	FINAL				
pH (s.u.):	5.73	5.62	5.50	5.47				
Sp. Cond. (µmhos/cm):	318	318	300	293				
Temperature (°C):	14.8	15.0	13.9	13.7				
Turbidity (N.T.U):								

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description From Lab ✓ or HMI ___	Preservative preserved by: Lab ✓ or HMI ___
pH, Spec. Cond., F	500ml. PLASTIC	4°C
DISS. AS, BA, MN, Na, V	250ml. PLASTIC	HNO_3- FIELD FILTERED (1 MICRON)
TOTAL + AMENABLE CN	250ml. PLASTIC	NAOH

Sampling Personnel: S. MENOSKY, J. KELLER

Comments:

HMI Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 1/19/05 Weather: 15° SNOW

Sample ID: MW-31
Replicate ID: MW-31D
Time Sampling Began: 2:15
Time Sampling Completed: 3:00

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 67.58
Depth to Water Below MP (DTW): 38.31
Water Column (WC) in Well [TD-DTW]: 29.27
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 4.68 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 14.04
(3 WCVs, 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1½" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: DR. BROWN Odor: NONE Turbidity: STAINED

Well Volumes (gal.):	4.68	9.36	14.04	FINAL				
pH (s.u.):	9.22	9.77	9.78	9.79				
Sp. Cond. (µmhos/cm):	1029	1370	1380	1383				
Temperature (°C):	14.7	14.5	13.9	13.8				
Turbidity (N.T.U):								

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
pH, Spec. Cond., F	500ml. PLASTIC	4°C
DISS. AS, BA, MN, NA, V	250ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL & AMENABLE CN	250ml. PLASTIC	NAOH
PCE	3 x 40ml. GLASS	HCL

Sampling Personnel: S. MENOSKY, J. KELLER

Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 1/19/05 Weather: 15° SNOW

Sample ID: MW-32
Replicate ID: ~
Time Sampling Began: 3:30
Time Sampling Completed: 4:00

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 57.36
Depth to Water Below MP (DTW): 32.62
Water Column (WC) in Well [TD-DTW]: 24.74
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 3.96 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged:
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: DR. BROWN Odor: NONE Turbidity: STAINED

Well Volumes (gal.):	3.96	7.92	11.88	FINAL				
pH (s.u.):	9.94	9.95	9.97	9.96				
Sp. Cond. (µmhos/cm):	1406	1405	1390	1372				
Temperature (°C):	18.1	17.7	16.5	16.3				
Turbidity (N.T.U):								

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
pH, Spec. Cond., F	500ml. PLASTIC	4°C
DISS. AS, BA, MN, Na, V	250ml. PLASTIC	HNO_3- FIELD FILTERED (1 MICRON)
TOTAL + AMENABLE CN	250ml. PLASTIC	NAOH

Sampling Personnel: S. MENOSKY, J. KELLER

Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 1/18/05 Weather: 5° SUNNY

Sample ID: MW-35
Replicate ID: ~
Time Sampling Began: 4:40
Time Sampling Completed: 5:10

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 46.94
Depth to Water Below MP (DTW): 35.14
Water Column (WC) in Well [TD-DTW]: 11.80
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 1.89 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged:
(3 WCVs, 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: Odor: Turbidity:

Well Volumes (gal.):	1.89	3.78	5.67	FINAL				
pH (s.u.):	8.20	8.35		8.65				
Sp. Cond. (µmhos/cm):	395	433		529				
Temperature (°C):	14.2	14.0		14.2				
Turbidity (N.T.U):								

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
pH, Spec. COND., F	500ml. PLASTIC	4°C
DISS. AS, BA, MN, Na, V	250ml. PLASTIC	HNO_3- FIELD FILTERED (1 MICRON)
TOTAL + AMENABLE CN	250ml. PLASTIC	NAOH

Sampling Personnel: S. MENOSKY, J. KELLER
Comments: COLOR DOES NOT FILTER OUT.

HMI Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 1/19/05 Weather: 15° SNOW

Sample ID: MW-36
Replicate ID: ~
Time Sampling Began: 3:05
Time Sampling Completed: 3:25

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 52.08
Depth to Water Below MP (DTW): 31.62
Water Column (WC) in Well [TD-DTW]: 20.46
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 3.27

Diameter of Well Casing: 2.0"
Gallons to be Purged: 9.81
(3 WCVs, 5 WCVs, etc.)
= Well Casing Volume (WCV)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: DR. BROWN Odor: NONE Turbidity: STAINED

Well Volumes (gal.):	3.27	6.54	9.81	FINAL				
pH (s.u.):	9.61	9.63	9.60	9.61				
Sp. Cond. (µmhos/cm):	741	747	750	750				
Temperature (°C):	18.6	18.5	18.3	18.1				
Turbidity (N.T.U):								

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
pH, Spec. Cond., F	500ml. PLASTIC	4°C
DISS. AS, BA, MN, Na, V	250ml. PLASTIC	HNO_3- FIELD FILTERED (1 MICRON)
TOTAL + AMENABLE CN	250ml. PLASTIC	NAOH

Sampling Personnel: S. MENOSKY, J. KELLER

Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 1/18/05 Weather: 5° SUNNY

Sample ID: MW-37
Replicate ID: ~
Time Sampling Began: 4:10
Time Sampling Completed: 4:35

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 36.90
Depth to Water Below MP (DTW): 20.72
Water Column (WC) in Well [TD-DTW]: 16.18
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 2.59

Diameter of Well Casing: 2.0"
Gallons to be Purged: 7.77
(3 WCVs, 5 WCVs, etc.)
= Well Casing Volume (WCV)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: TAN Odor: NONE Turbidity: CLOUDY

Well Volumes (gal.):	2.59	5.18	7.77	FINAL				
pH (s.u.):	6.47	6.50	6.52	6.39				
Sp. Cond. (µmhos/cm):	371	381	382	370				
Temperature (°C):	14.6	14.8	15.2	14.7				
Turbidity (N.T.U):								

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description From Lab ✓ or HMI ___	Preservative preserved by: Lab ✓ or HMI ___
pH, Spec. Cond., F	500ml. PLASTIC	4°C
DISS. AS, BA, MN, Na, V	250ml. PLASTIC	HNO_3- FIELD FILTERED (1 MICRON)
TOTAL + AMENABLE CN	250ml. PLASTIC	NAOH

Sampling Personnel: S. MENOSKY, J. KELLER

Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 1/18/05 Weather: 5° SUNNY

Sample ID: MW-44S
Replicate ID: ~
Time Sampling Began: 2:20
Time Sampling Completed: 3:00

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 69.05
Depth to Water Below MP (DTW): 42.09
Water Column (WC) in Well [TD-DTW]: 26.96
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 4.31 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 12.93
(3 WCVs, 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: CLEAR Odor: NONE Turbidity: CLEAR

Well Volumes (gal.):	4.31	8.62	12.93	FINAL				
pH (s.u.):	6.68	6.66	6.70					
Sp. Cond. (µmhos/cm):	525	527	522					
Temperature (°C):	14.0	14.1	14.0					
Turbidity (N.T.U):								

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
PCBs	1 LITER AMBER GLASS	4°C

Sampling Personnel: S. MENOSKY, J. KELLER
Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 1/18/05 Weather: 5° SUNNY

Sample ID: MW-44D
Replicate ID: ~
Time Sampling Began: 2:00
Time Sampling Completed: 2:50

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 93.97
Depth to Water Below MP (DTW): 42.56
Water Column (WC) in Well [TD-DTW]: 51.41
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 8.23

Diameter of Well Casing: 2.0"
Gallons to be Purged: 24.69
(3 WCVs, 5 WCVs, etc.)
= Well Casing Volume (WCV)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: CLEAR Odor: NONE Turbidity: CLEAR

Well Volumes (gal.):	8.23	16.46	24.69	FINAL				
pH (s.u.):	7.20	7.36	7.31	7.40				
Sp. Cond. (µmhos/cm):	399	402	397	404				
Temperature (°C):	13.6	14.0	13.8	13.1				
Turbidity (N.T.U):								

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
PCBs	1 LITER AMBER GLASS	4°C

Sampling Personnel: S. MENOSKY, J. KELLER

Comments:

APPENDIX A-2

WATER SAMPLING LOG FORMS FOR MAY 2005 MONITORING EVENT

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/17/05 Weather: SUNNY 60°

Sample ID: MW-1
Replicate ID: ~
Time Sampling Began: 12:30
Time Sampling Completed: 1:10

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 71.11
Depth to Water Below MP (DTW): 46.85
Water Column (WC) in Well [TD-DTW]: 24.26
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 3.88 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 11.645
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: TAN/ BUGS Odor: NONE Turbidity: CLOUDY

Well Volumes (gal.):	11.645							
pH (s.u.):	6.46							
Sp. Cond. (µmhos/cm):	591							
Temperature (°C):	15.6							
Turbidity (N.T.U):	CLOUDY							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD
Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/17/05 Weather: SUNNY 60°

Sample ID: MW-2
Replicate ID: MW-2D
Time Sampling Began: 1:10
Time Sampling Completed: 1:50

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 85.23
Depth to Water Below MP (DTW): 47.40
Water Column (WC) in Well [TD-DTW]: 37.83
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 6.053 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 18.158
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN Odor: NONE Turbidity: STAINED

Well Volumes (gal.):	18.158							
pH (s.u.):	9.64							
Sp. Cond. (µmhos/cm):	1387							
Temperature (°C):	15.9							
Turbidity (N.T.U):	STAINED							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C
TETRACHLOROETHENE	3x40ml. GLASS	HCL

Sampling Personnel: S. MENOSKY, C. STANDARD
Comments: COLOR DOES NOT FILTER OUT

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/17/05 Weather: SUNNY 60°

Sample ID: MW-5
Replicate ID: ~
Time Sampling Began: 9:30
Time Sampling Completed: 10:15

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 91.88
Depth to Water Below MP (DTW): 49.87
Water Column (WC) in Well [TD-DTW]: 42.01
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 6.7216 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 20.165
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1½" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: TINT YELLOW Odor: NONE Turbidity: NONE

Well Volumes (gal.):	20.165							
pH (s.u.):	7.79							
Sp. Cond. (µmhos/cm):	1070							
Temperature (°C):	15.3							
Turbidity (N.T.U):	NONE							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C
TETRACHLOROETHENE	3x40ml. GLASS	HCL

Sampling Personnel: S. MENOSKY, C. STANDARD
Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/17/05 Weather: SUNNY 60°

Sample ID: MW-7
Replicate ID: ~
Time Sampling Began: 10:15
Time Sampling Completed: 10:45

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 79.70
Depth to Water Below MP (DTW): 48.86
Water Column (WC) in Well [TD-DTW]: 30.84
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 4.934

Diameter of Well Casing: 2.0"
Gallons to be Purged: 14.803
(3 WCVs) 5 WCVs, etc.)
= Well Casing Volume (WCV)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN Odor: NONE Turbidity: SILTY

Well Volumes (gal.):	14.8							
pH (s.u.):	5.64							
Sp. Cond. (µmhos/cm):	718							
Temperature (°C):	38.2							
Turbidity (N.T.U):	SILTY							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD

Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/17/05 Weather: CLOUDY 60°

Sample ID: MW-8
Replicate ID: ~
Time Sampling Began: 10:55
Time Sampling Completed: 11:30

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 99.78
Depth to Water Below MP (DTW): 51.54
Water Column (WC) in Well [TD-DTW]: 48.24
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 7.718

Diameter of Well Casing: 2.0"
Gallons to be Purged: 23.155
(3 WCVs) 5 WCVs, etc.)
= Well Casing Volume (WCV)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: CLEAR Odor: NONE Turbidity: CLEAR

Well Volumes (gal.):	23.15							
pH (s.u.):	7.28							
Sp. Cond. (µmhos/cm):	607							
Temperature (°C):	16.7							
Turbidity (N.T.U):	CLEAR							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD

Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/17/05 Weather: SUNNY 60°

Sample ID: MW-10
Replicate ID: ~
Time Sampling Began: 11:30
Time Sampling Completed: 12:20

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 100.72
Depth to Water Below MP (DTW): 50.72
Water Column (WC) in Well [TD-DTW]: 50.00
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 8.0 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 24.0
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: LT. BROWN Odor: NONE Turbidity: CLOUDY

Well Volumes (gal.):	24.0							
pH (s.u.):	7.28							
Sp. Cond. (µmhos/cm):	607							
Temperature (°C):	16.7							
Turbidity (N.T.U):	CLOUDY							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD

Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/17/05 Weather: SUNNY 55°

Sample ID: MW-11
Replicate ID: ~
Time Sampling Began: 8:45
Time Sampling Completed: 9:30

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 97.35
Depth to Water Below MP (DTW): 49.28
Water Column (WC) in Well [TD-DTW]: 48.07
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 7.6912 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 23.0736
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: CLEAR Odor: NONE Turbidity: CLEAR

Well Volumes (gal.):	23.07							
pH (s.u.):	7.64							
Sp. Cond. (µmhos/cm):	439							
Temperature (°C):	15.6							
Turbidity (N.T.U):	CLEAR							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD
Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/19/05 Weather: SUNNY 65°

Sample ID: MW-12
Replicate ID: ~
Time Sampling Began: 9:30
Time Sampling Completed: 10:40

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 68.24
Depth to Water Below MP (DTW): 14.74
Water Column (WC) in Well [TD-DTW]: 53.50
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 8.56 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 25.68
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: CLEAR Odor: NONE Turbidity: CLEAR

Well Volumes (gal.):	25.68							
pH (s.u.):	7.30							
Sp. Cond. (µmhos/cm):	443							
Temperature (°C):	15.3							
Turbidity (N.T.U):	CLEAR							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C
PCB'S	1 LITER GLASS	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD

Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/17/05 Weather: SUNNY 70°

Sample ID: MW-14
Replicate ID: ~
Time Sampling Began: 5:25
Time Sampling Completed: 6:15

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 86.90
Depth to Water Below MP (DTW): 30.73
Water Column (WC) in Well [TD-DTW]: 56.17
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 8.987 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 26.96
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: CLEAR Odor: NONE Turbidity: CLEAR

Well Volumes (gal.):	27.0							
pH (s.u.):	7.50							
Sp. Cond. (µmhos/cm):	469							
Temperature (°C):	15.4							
Turbidity (N.T.U):	CLEAR							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO3 - FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD

Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/16/05 Weather: CLOUDY 60°

Sample ID: MW-15
Replicate ID: ~
Time Sampling Began: 3:40
Time Sampling Completed: 4:00

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 57.86
Depth to Water Below MP (DTW): 32.68
Water Column (WC) in Well [TD-DTW]: 25.18
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 4.028 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 12.086
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1½" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN/STAINED Odor: NONE Turbidity: SILTY/STAINED

Well Volumes (gal.):	12.086							
pH (s.u.):	8.01							
Sp. Cond. (µmhos/cm):	1105							
Temperature (°C):	15.2							
Turbidity (N.T.U):	STAINED							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD
Comments: COLOR DOES NOT FILTER OUT.

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/18/05 Weather: SUNNY 65°

Sample ID: MW-16
Replicate ID: MW-16D
Time Sampling Began: 11:00
Time Sampling Completed: 11:40

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 83.11
Depth to Water Below MP (DTW): 40.40
Water Column (WC) in Well [TD-DTW]: 42.71
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 6.834 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 20.51
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1½" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN Odor: NONE Turbidity: STAINED

Well Volumes (gal.):	20.51							
pH (s.u.):	8.57							
Sp. Cond. (µmhos/cm):	998							
Temperature (°C):	15.0							
Turbidity (N.T.U):	STAINED							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description From Lab ✓ or HMI ___	Preservative preserved by: Lab ✓ or HMI ___
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD

Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET- REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/17/05 Weather: SUNNY 70°

Sample ID: MW-17
Replicate ID: ~
Time Sampling Began: 4:50
Time Sampling Completed: 5:25

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 77.91
Depth to Water Below MP (DTW): 31.32
Water Column (WC) in Well [TD-DTW]: 46.59
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 7.45 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 22.35
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: TAN Odor: NONE Turbidity: CLOUDY/SILTY

Well Volumes (gal.):	22.35							
pH (s.u.):	7.55							
Sp. Cond. (µmhos/cm):	819							
Temperature (°C):	15.9							
Turbidity (N.T.U):	SILTY							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3- FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD
Comments:

HMI Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/17/05 Weather: SUNNY 70°

Sample ID: MW-18
Replicate ID: MW-18D
Time Sampling Began: 2:45
Time Sampling Completed: 3:25

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 57.00
Depth to Water Below MP (DTW): 36.45
Water Column (WC) in Well [TD-DTW]: 20.55
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 3.288 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 9.864
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN Odor: NONE Turbidity: TURBID

Well Volumes (gal.):	9.864							
pH (s.u.):	9.45							
Sp. Cond. (µmhos/cm):	1056							
Temperature (°C):	16.4							
Turbidity (N.T.U):	TURBID							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C
TETRACHLOROETHENE	3x40ml. GLASS	HCL

Sampling Personnel: S. MENOSKY, C. STANDARD
Comments: Color Does Not FILTER OUT.

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/16/05 Weather: CLOUDY 60°

Sample ID: MW-19
Replicate ID: ~
Time Sampling Began: 3:00
Time Sampling Completed: 3:40

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 65.20
Depth to Water Below MP (DTW): 37.59
Water Column (WC) in Well [TD-DTW]: 27.61
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 4.4176

Diameter of Well Casing: 2.0"
Gallons to be Purged: 13.25
(3 WCVs) 5 WCVs, etc.)
= Well Casing Volume (WCV)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN Odor: NONE Turbidity: CLOUDY

Well Volumes (gal.):	13.25							
pH (s.u.):	7.10							
Sp. Cond. (µmhos/cm):	700							
Temperature (°C):	14.2							
Turbidity (N.T.U):	CLOUDY							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD

Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/17/05 Weather: SUNNY 70°

Sample ID: MW-28
Replicate ID: ~
Time Sampling Began: 2:20
Time Sampling Completed: 2:45

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 46.06
Depth to Water Below MP (DTW): 20.23
Water Column (WC) in Well [TD-DTW]: 25.83
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 4.133

Diameter of Well Casing: 2.0"
Gallons to be Purged: 12.399
(3 WCVs) 5 WCVs, etc.)
= Well Casing Volume (WCV)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: CLEAR / TINT Odor: NONE Turbidity: CLEAR

Well Volumes (gal.):	12.399							
pH (s.u.):	5.54							
Sp. Cond. (µmhos/cm):	336							
Temperature (°C):	14.3							
Turbidity (N.T.U):	CLEAR							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD

Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET- REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/18/05 Weather: SUNNY 70°

Sample ID: MW-29S
Replicate ID: ~
Time Sampling Began: 12:00
Time Sampling Completed: 12:35

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 61.35
Depth to Water Below MP (DTW): 31.34
Water Column (WC) in Well [TD-DTW]: 30.01
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 4.802 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 14.405
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1½" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: CLEAR Odor: NONE Turbidity: CLEAR

Well Volumes (gal.):	14.405							
pH (s.u.):	7.37							
Sp. Cond. (µmhos/cm):	950							
Temperature (°C):	14.4							
Turbidity (N.T.U):	CLEAR							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3- FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD
Comments:

HMI Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/18/05 Weather: SUNNY 70°

Sample ID: MW-29D
Replicate ID: ~
Time Sampling Began: 11:45
Time Sampling Completed: 12:30

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 81.98
Depth to Water Below MP (DTW): 31.00
Water Column (WC) in Well [TD-DTW]: 50.98
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 8.157

Diameter of Well Casing: 2.0"
Gallons to be Purged: 24.47
(3 WCVs) 5 WCVs, etc.)
= Well Casing Volume (WCV)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: CLEAR Odor: NONE Turbidity: CLEAR

Well Volumes (gal.):	24.47							
pH (s.u.):	7.47							
Sp. Cond. (µmhos/cm):	530							
Temperature (°C):	14.6							
Turbidity (N.T.U):	CLEAR							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD

Comments:

HMI Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/17/05 Weather: SUNNY 70°

Sample ID: MW-30
Replicate ID: ~
Time Sampling Began: 1:55
Time Sampling Completed: 2:20

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Diameter of Well Casing: 2.0"
Total Sounded Depth of Well Below MP (TD): 60.41
Gallons to be Purged: 7.901
Depth to Water Below MP (DTW): 43.95
(3 WCVs) 5 WCVs, etc.)
Water Column (WC) in Well [TD-DTW]: 16.46
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 2.6336 = Well Casing Volume (WCV)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN Odor: NONE Turbidity: SILTY

Well Volumes (gal.):	7.9							
pH (s.u.):	6.16							
Sp. Cond. (µmhos/cm):	427							
Temperature (°C):	14.8							
Turbidity (N.T.U):	SILTY							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C
TETRACHLOROETHENE	3x40ml. GLASS	HCL

Sampling Personnel: S. MENOSKY, C. STANDARD

Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/17/05 Weather: SUNNY 70°

Sample ID: MW-31
Replicate ID: ~
Time Sampling Began: 4:00
Time Sampling Completed: 4:30

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 67.51
Depth to Water Below MP (DTW): 38.66
Water Column (WC) in Well [TD-DTW]: 28.85
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 4.62 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 13.848
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN/STAINED Odor: NONE Turbidity: STAINED/SILTY

Well Volumes (gal.):	13.848							
pH (s.u.):	9.68							
Sp. Cond. (µmhos/cm):	1519							
Temperature (°C):	15.9							
Turbidity (N.T.U):	STAINED							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C
TETRACHLOROETHENE	3x40ml. GLASS	HCL

Sampling Personnel: S. MENOSKY, C. STANDARD

Comments: COLOR DOES NOT FILTER OUT.
COLLECT FIELD BLANK AT THIS LOCATION.

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/16/05 Weather: CLOUDY 60°

Sample ID: MW-32
Replicate ID: ~
Time Sampling Began: 4:30
Time Sampling Completed: 4:55

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 57.18
Depth to Water Below MP (DTW): 32.88
Water Column (WC) in Well [TD-DTW]: 24.30
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 3.888 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 11.664
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN Odor: NONE Turbidity: STAINED

Well Volumes (gal.):	11.664							
pH (s.u.):	9.76							
Sp. Cond. (µmhos/cm):	1474							
Temperature (°C):	16.9							
Turbidity (N.T.U):	STAINED							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD
Comments: COLOR DOES NOT FILTER OUT.

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET- REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/18/05 Weather: SUNNY 70°

Sample ID: MW-34S
Replicate ID: ~
Time Sampling Began: 1:00
Time Sampling Completed: 1:35

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 49.35
Depth to Water Below MP (DTW): 32.24
Water Column (WC) in Well [TD-DTW]: 17.11
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 2.738 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 8.213
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN/ STAINED Odor: NONE Turbidity: STAINED/ SILTY

Well Volumes (gal.):	8.213							
pH (s.u.):	8.51							
Sp. Cond. (µmhos/cm):	1673							
Temperature (°C):	15.7							
Turbidity (N.T.U):	STAINED							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3- FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD
Comments:

HMI Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/18/05 Weather: SUNNY 70°

Sample ID: MW-34D
Replicate ID: ~
Time Sampling Began: 12:40
Time Sampling Completed: 1:30

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 68.24
Depth to Water Below MP (DTW): 30.48
Water Column (WC) in Well [TD-DTW]: 37.76
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 6.042 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 18.125
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: CLEAR Odor: NONE Turbidity: CLEAR

Well Volumes (gal.):	18.125							
pH (s.u.):	7.36							
Sp. Cond. (µmhos/cm):	853							
Temperature (°C):	15.0							
Turbidity (N.T.U):	CLEAR							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD

Comments:

HMI Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/16/05 Weather: CLOUDY 60°

Sample ID: MW-35
Replicate ID: ~
Time Sampling Began: 5:00
Time Sampling Completed: 5:30

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 46.70
Depth to Water Below MP (DTW): 34.54
Water Column (WC) in Well [TD-DTW]: 12.16
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 1.9456 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 5.8368
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1½" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN Odor: NONE Turbidity: STAINED

Well Volumes (gal.):	5.836							
pH (s.u.):	8.08							
Sp. Cond. (µmhos/cm):	467							
Temperature (°C):	15.3							
Turbidity (N.T.U):	STAINED							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD
Comments: COLOR FILTERED (NOT)

HMI Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/16/05 Weather: CLOUDY 60°

Sample ID: MW-36
Replicate ID: ~
Time Sampling Began: 4:05
Time Sampling Completed: 4:30

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 52.08
Depth to Water Below MP (DTW): 32.23
Water Column (WC) in Well [TD-DTW]: 19.85
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 3.176 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 9.528
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN Odor: NONE Turbidity: STAINED

Well Volumes (gal.):	9.3							
pH (s.u.):	9.44							
Sp. Cond. (µmhos/cm):	774							
Temperature (°C):	14.9							
Turbidity (N.T.U):	STAINED							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD

Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/17/05 Weather: SUNNY 70°

Sample ID: MW-37
Replicate ID: ~
Time Sampling Began: 3:30
Time Sampling Completed: 3:50

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 36.98
Depth to Water Below MP (DTW): 18.99
Water Column (WC) in Well [TD-DTW]: 17.99
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 2.878 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 8.635
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN Odor: NONE Turbidity: SILTY

Well Volumes (gal.):	8.635							
pH (s.u.):	6.51							
Sp. Cond. (µmhos/cm):	374							
Temperature (°C):	13.9							
Turbidity (N.T.U):	SILTY							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD
Comments: COLOR DOES NOT FILTER OUT.

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/19/05 Weather: CLOUDY 65°

Sample ID: MW-39S
Replicate ID: ~
Time Sampling Began: 12:40
Time Sampling Completed: 1:05

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 60.23
Depth to Water Below MP (DTW): 34.04
Water Column (WC) in Well [TD-DTW]: 26.19
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 4.19 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 12.57
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: TINT Odor: NONE Turbidity: CLEAR

Well Volumes (gal.):	12.57							
pH (s.u.):	9.14							
Sp. Cond. (µmhos/cm):	4,440							
Temperature (°C):	15.2							
Turbidity (N.T.U):	CLEAR							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD

Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/19/05 Weather: CLOUDY 65°

Sample ID: MW-39D
Replicate ID: ~
Time Sampling Began: 12:25
Time Sampling Completed: 1:00

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 80.21
Depth to Water Below MP (DTW): 33.90
Water Column (WC) in Well [TD-DTW]: 46.31
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 7.41 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 22.23
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: CLEAR / SL. TINT Odor: NONE Turbidity: CLEAR

Well Volumes (gal.):	22.23							
pH (s.u.):	7.25							
Sp. Cond. (µmhos/cm):	2,510							
Temperature (°C):	14.8							
Turbidity (N.T.U):	CLEAR							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD

Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/18/05 Weather: SUNNY

Sample ID: MW-40S
Replicate ID: ~
Time Sampling Began: 10:00
Time Sampling Completed: 10:35

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 70.40
Depth to Water Below MP (DTW): 41.48
Water Column (WC) in Well [TD-DTW]: 28.92
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 4.627 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 13.882
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: CLEAR Odor: NONE Turbidity: CLEAR

Well Volumes (gal.):	13.88							
pH (s.u.):	7.51							
Sp. Cond. (µmhos/cm):	804							
Temperature (°C):	15.0							
Turbidity (N.T.U):	CLEAR							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD

Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/18/05 Weather: SUNNY 60°

Sample ID: MW-40D
Replicate ID: ~
Time Sampling Began: 9:50
Time Sampling Completed: 10:30

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 90.40
Depth to Water Below MP (DTW): 41.20
Water Column (WC) in Well [TD-DTW]: 49.20
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 7.872 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 23.616
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: TINT Odor: NONE Turbidity: CLEAR

Well Volumes (gal.):	23.6							
pH (s.u.):	7.56							
Sp. Cond. (µmhos/cm):	849							
Temperature (°C):	14.7							
Turbidity (N.T.U):	CLEAR							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD

Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/19/05 Weather: CLOUDY 65°

Sample ID: MW-41
Replicate ID: ~
Time Sampling Began: ~~0880~~ NOT SAMPLED
Time Sampling Completed:

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 62.26
Depth to Water Below MP (DTW):
Water Column (WC) in Well [TD-DTW]:
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]:

Diameter of Well Casing: 2.0"
Gallons to be Purged:
(3 WCVs) 5 WCVs, etc.)
= Well Casing Volume (WCV)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: Odor: Turbidity:

Well Volumes (gal.):								
pH (s.u.):								
Sp. Cond. (µmhos/cm):								
Temperature (°C):								
Turbidity (N.T.U):								

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD
Comments: NOT SAMPLED

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/19/05 Weather: SUNNY 65°

Sample ID: MW-42S
Replicate ID: ~
Time Sampling Began: 11:00
Time Sampling Completed: 11:35

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 52.30
Depth to Water Below MP (DTW): 32.15
Water Column (WC) in Well [TD-DTW]: 20.15
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 3.224 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 9.672
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1½" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: TAN/ STAINED Odor: NONE Turbidity: CLOUDY

Well Volumes (gal.):	9.672							
pH (s.u.):	8.10							
Sp. Cond. (µmhos/cm):	3,110							
Temperature (°C):	15.1							
Turbidity (N.T.U):	CLOUDY							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description From Lab ✓ or HMI ___	Preservative preserved by: Lab ✓ or HMI ___
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD
Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/19/05 Weather: SUNNY 65°

Sample ID: MW-42D
Replicate ID: ~
Time Sampling Began: 10:45
Time Sampling Completed: 11:30

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 85.10
Depth to Water Below MP (DTW): 32.08
Water Column (WC) in Well [TD-DTW]: 53.02
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 8.483 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 25.45
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: CLEAR Odor: NONE Turbidity: CLEAR

Well Volumes (gal.):	25.45							
pH (s.u.):	7.53							
Sp. Cond. (µmhos/cm):	1,844							
Temperature (°C):	15.1							
Turbidity (N.T.U):	CLEAR							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500ml. PLASTIC	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD

Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/18/05 Weather: SUNNY 60°

Sample ID: MW-44S
Replicate ID: ~
Time Sampling Began: 9:10
Time Sampling Completed: 9:30

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 69.05
Depth to Water Below MP (DTW): 41.26
Water Column (WC) in Well [TD-DTW]: 27.79
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 4.446 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 13.339
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: CLEAR Odor: NONE Turbidity: CLEAR

Well Volumes (gal.):	13.34							
pH (s.u.):	6.69							
Sp. Cond. (µmhos/cm):	525							
Temperature (°C):	15.1							
Turbidity (N.T.U):	CLEAR							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description From Lab ✓ or HMI ___	Preservative preserved by: Lab ✓ or HMI ___
PCB'S	1 LITER GLASS	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD

Comments:

HMI Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 5/18/05 Weather: SUNNY 60°

Sample ID: MW-44D
Replicate ID: ~
Time Sampling Began: 8:45
Time Sampling Completed: 9:40

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 93.97
Depth to Water Below MP (DTW): 41.80
Water Column (WC) in Well [TD-DTW]: 52.17
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 8.347 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 25.04
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: CLEAR Odor: NONE Turbidity: CLEAR

Well Volumes (gal.):	25.04							
pH (s.u.):	7.40							
Sp. Cond. (µmhos/cm):	433							
Temperature (°C):	15.0							
Turbidity (N.T.U):	CLEAR							

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
PCB's	1 LITER GLASS	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD

Comments:

APPENDIX A-3

WATER SAMPLING LOG FORMS FOR OCTOBER 2005
MONITORING EVENT

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 10/6/05 Weather: SUNNY 65°

Sample ID: MW-2
Replicate ID: ~
Time Sampling Began: 9:35
Time Sampling Completed: 10:15

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 82.25
Depth to Water Below MP (DTW): 49.30
Water Column (WC) in Well [TD-DTW]: 32.95
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 5.272 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 15.816
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN/STAINED Odor: NONE Turbidity: STAINED

Well Volumes (gal.):	5.3	10.6	15.8	FINAL				
pH (s.u.):	9.67	9.65	9.64	9.63				
Sp. Cond. (µmhos/cm):	1453	1444	1431	1414				
Temperature (°C):	15.7	15.6	15.5	16.0				
Turbidity (N.T.U):	STAINED	STAINED	STAINED	STAINED				

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
pH, Spec. Cond., F	500 ml. PLASTIC	4°C
DISS. As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL & AMENABLE CN	250 ml. PLASTIC	NAOH
PCE	3x 40ml. GLASS	HCL

Sampling Personnel: S. MENOSKY, C. STANDARD

Comments:

HMI Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 10/6/05 Weather: FOG 60°

Sample ID: MW-5
Replicate ID: ~
Time Sampling Began: 8:45
Time Sampling Completed: 9:30

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 92.00
Depth to Water Below MP (DTW): 52.96
Water Column (WC) in Well [TD-DTW]: 39.04
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 6.246 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 18.739
(3 WCVs, 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: TINT TAN Odor: NONE Turbidity: CLEAR/TINTED

Well Volumes (gal.):	6.3	12.6	18.8	FINAL				
pH (s.u.):	7.78	7.78	7.79	7.79				
Sp. Cond. (µmhos/cm):	1291	1206	1207	1211				
Temperature (°C):	15.5	15.2	15.4	15.3				
Turbidity (N.T.U):	TINTED	TINTED	TINTED	TINTED				

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
pH, SPEC. COND., F	500 ml. PLASTIC	4°C
DISS. AS, BE, MN, NA, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL & AMENABLE CN	250 ml. PLASTIC	NAOH
PCE	3 x 40 ml. GLASS	HCL

Sampling Personnel: S. MENOSKY, C. STANDARD

Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 10/6/05 Weather: SUNNY 80°

Sample ID: MW-12
Replicate ID: MW-12D
Time Sampling Began: 12:10
Time Sampling Completed: 12:45

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 68.42
Depth to Water Below MP (DTW): 16.00
Water Column (WC) in Well [TD-DTW]: 52.42
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 8.387 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 25.16
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: CLEAR Odor: NONE Turbidity: CLEAR

Well Volumes (gal.):	8.4	16.8	25.2	FINAL				
pH (s.u.):	7.47	7.48	7.50	7.49				
Sp. Cond. (µmhos/cm):	501	497	497	491				
Temperature (°C):	16.1	15.9	16.1	15.8				
Turbidity (N.T.U):	CLEAR	CLEAR	CLEAR	CLEAR				

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
pH, SPEC. COND., F	500 ml. PLASTIC	4°C
DISS. AS, BE, MN, NA, V	250 ml. PLASTIC	HNO_3-FIELD FILTERED (1 MICRON)
TOTAL & AMENABLE CN	250 ml. PLASTIC	NAOH
PCBs	1 LITER AMBER GLASS	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD

Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 10/5/05 Weather: SUNNY 80°

Sample ID: MW-16
Replicate ID: ~
Time Sampling Began: 2:25
Time Sampling Completed: 3:00

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 83.12
Depth to Water Below MP (DTW): 41.60
Water Column (WC) in Well [TD-DTW]: 41.52
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 6.643 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 19.929
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN Odor: NONE Turbidity: STAINED

Well Volumes (gal.):	6.64	13.28	19.93	FINAL				
pH (s.u.):	9.21	9.16	9.18	9.18				
Sp. Cond. (µmhos/cm):	1151	1113	1103	1095				
Temperature (°C):	15.7	15.4	15.3	15.9				
Turbidity (N.T.U):	STAINED	STAINED	STAINED	STAINED				

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
pH, SPEC. COND., F	500 ml. PLASTIC	4°C
DISS. As, Be, MN, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL & AMENABLE CN	250 ml. PLASTIC	NAOH

Sampling Personnel: S. MENOSKY, C. STANDARD
Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 10/6/05 Weather: SUNNY 70°

Sample ID: MW-18
Replicate ID: ~
Time Sampling Began: 10:15
Time Sampling Completed: 11:00

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 61.16
Depth to Water Below MP (DTW): 37.29
Water Column (WC) in Well [TD-DTW]: 23.87
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 3.819

Diameter of Well Casing: 2.0"
Gallons to be Purged: 11.46
(3 WCVs) 5 WCVs, etc.)
= Well Casing Volume (WCV)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN Odor: NONE Turbidity: TURBID

Well Volumes (gal.):	3.8	7.6	11.5	FINAL				
pH (s.u.):	9.50	9.50	9.46	9.47				
Sp. Cond. (µmhos/cm):	2,270	2,230	1997	1,937				
Temperature (°C):	15.2	15.1	15.4	16.0				
Turbidity (N.T.U):	TURBID	TURBID	TURBID	TURBID				

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
pH, Spec. Cond., F	500 ml. PLASTIC	4°C
DISS. As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL & AMENABLE CN	250 ml. PLASTIC	NAOH
PCE	3 x 40 ml. GLASS	HCL

Sampling Personnel: S. MENOSKY, C. STANDARD

Comments:

HMI Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 10/ 5 /05 Weather: SUNNY 80°

Sample ID: MW-28
Replicate ID: ~
Time Sampling Began: 3:10
Time Sampling Completed: 3:40

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 46.20
Depth to Water Below MP (DTW): 20.58
Water Column (WC) in Well [TD-DTW]: 25.62
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 4.099 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 12.30
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: TAN Odor: NONE Turbidity: SL. CLOUDY

Well Volumes (gal.):	4.1	8.2	12.3	FINAL				
pH (s.u.):	5.59	5.67	5.70	5.58				
Sp. Cond. (µmhos/cm):	320	332	336	289				
Temperature (°C):	15.0	15.1	15.2	15.8				
Turbidity (N.T.U):	SL. CLOUDY	SL. CLOUDY	SL. CLOUDY	SL. CLOUDY				

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
pH, Spec. Cond., F	500 ml. PLASTIC	4°C
DISS. As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL & AMENABLE CN	250 ml. PLASTIC	NAOH

Sampling Personnel: S. MENOSKY, C. STANDARD

Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 10/6/05 Weather: SUNNY 70°

Sample ID: MW-31
Replicate ID: MW-31 D
Time Sampling Began: 11:00
Time Sampling Completed: 11:45

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 67.58
Depth to Water Below MP (DTW): 39.83
Water Column (WC) in Well [TD-DTW]: 27.75
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 4.44 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 13.32
(3 WCVs, 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN Odor: NONE Turbidity: STAINED

Well Volumes (gal.):	4.44	8.88	13.32	FINAL				
pH (s.u.):	9.74	9.78	9.79	9.78				
Sp. Cond. (µmhos/cm):	1683	1682	1687	1674				
Temperature (°C):	15.5	15.6	15.5	16.5				
Turbidity (N.T.U):	STAINED	STAINED	STAINED	STAINED				

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description From Lab ✓ or HMI ___	Preservative preserved by: Lab ✓ or HMI ___
pH, Spec. Cond., F	500 ml. PLASTIC	4°C
DISS. As, BE, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL & AMENABLE CN	250 ml. PLASTIC	NAOH
PCE	3 x 40 ml. GLASS	HCL

Sampling Personnel: S. MENOSKY, C. STANDARD

Comments:

HMI Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 10/6/05 Weather: SUNNY 70°

Sample ID: MW-32
Replicate ID: ~
Time Sampling Began: 11:45
Time Sampling Completed: 12:10

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 57.36
Depth to Water Below MP (DTW): 33.66
Water Column (WC) in Well [TD-DTW]: 23.70
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 3.79 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 11.376
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN Odor: NONE Turbidity: SILTY/STAINED

Well Volumes (gal.):	3.79	7.58	11.376	FINAL				
pH (s.u.):	10.08	10.08	10.06	10.05				
Sp. Cond. (µmhos/cm):	1477	1473	1458	1444				
Temperature (°C):	17.6	17.4	17.7	17.9				
Turbidity (N.T.U):	STAINED	STAINED	STAINED	STAINED				

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
pH, Spec. Cond., F	500 ml. PLASTIC	4°C
DISS. As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL & AMENABLE CN	250 ml. PLASTIC	NAOH

Sampling Personnel: S. MENOSKY, C. STANDARD

Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 10/ 5 /05 Weather: SUNNY 80°

Sample ID: MW-35
Replicate ID: ~
Time Sampling Began: 3:40
Time Sampling Completed: 4:10

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 46.94
Depth to Water Below MP (DTW): 34.95
Water Column (WC) in Well [TD-DTW]: 11.99
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 1.918 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 5.755
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN Odor: NONE Turbidity: SL. CLOUDY/STAINED

Well Volumes (gal.):	1.918	3.836	5.755	FINAL				
pH (s.u.):	8.79	8.11	8.38	8.62				
Sp. Cond. (µmhos/cm):	423	410	450	514				
Temperature (°C):	17.3	16.1	16.2	16.5				
Turbidity (N.T.U):	SL. CLOUDY	SL. CLOUDY	SL. CLOUDY	SL. CLOUDY				

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description From Lab ✓ or HMI ___	Preservative preserved by: Lab ✓ or HMI ___
pH, Spec. Cond., F	500 ml. PLASTIC	4°C
DISS. As, BE, Mn, Na, V	250 ml. PLASTIC	HNO_3-FIELD FILTERED (1 MICRON)
TOTAL & AMENABLE CN	250 ml. PLASTIC	NAOH

Sampling Personnel: S. MENOSKY, C. STANDARD

Comments:

HMI Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 10/5/05 Weather: SUNNY 80°

Sample ID: MW-36
Replicate ID: ~
Time Sampling Began: 4:35
Time Sampling Completed: 5:00

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 52.08
Depth to Water Below MP (DTW): 33.06
Water Column (WC) in Well [TD-DTW]: 19.02
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 3.043 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 9.129
(3 WCVs) 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN Odor: NONE Turbidity: SILTY/CLOUDY

Well Volumes (gal.):	3.04	6.08	9.12	FINAL				
pH (s.u.):	9.51	9.51	9.52	9.50				
Sp. Cond. (µmhos/cm):	756	766	769	764				
Temperature (°C):	19.4	19.4	19.3	20.0				
Turbidity (N.T.U):	SILTY	CLOUDY	CLOUDY	CLOUDY				

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
pH, Spec. Cond., F	500 ml. PLASTIC	4°C
DISS. As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL & AMENABLE CN	250 ml. PLASTIC	NAOH

Sampling Personnel: S. MENOSKY, C. STANDARD

Comments:

HM07-07WS-LOG.WK3

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Sample ID: MW-37
Project Number: HM00319
Replicate ID: ~
Site Location: HANNIBAL, OHIO
Time Sampling Began: 4:10
Sampling Date: 10/5/05 Weather: SUNNY 80°
Time Sampling Completed: 4:35

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Diameter of Well Casing: 2.0"
Total Sounded Depth of Well Below MP (TD): 36.90
Gallons to be Purged (3 WCVs, 5 WCVs, etc.): 8.352
Depth to Water Below MP (DTW): 19.50
Water Column (WC) in Well [TD-DTW]: 17.40
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 2.784 = Well Casing Volume (WCV)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN Odor: NONE Turbidity: CLOUDY

Well Volumes (gal.):	3	6	9	FINAL				
pH (s.u.):	6.61	6.60	6.60	6.60				
Sp. Cond. (µmhos/cm):	513	516	517	512				
Temperature (°C):	16.4	16.2	16.4	16.6				
Turbidity (N.T.U):								

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
pH, SPEC. COND., F	500 ml. PLASTIC	4°C
DISS. AS, BA, MN, NA, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MIC)
TOTAL + AMENABLE CN	250 ml. PLASTIC	NAOH

Sampling Personnel: S. MENOSKY, C. STANDARD

Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 10/5/05 Weather: SUNNY 80°

Sample ID: MW-44S
Replicate ID: ~
Time Sampling Began: 1:30
Time Sampling Completed: 2:20

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 69.05
Depth to Water Below MP (DTW): 43.09
Water Column (WC) in Well [TD-DTW]: 25.96
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 4.154 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 12.461
(3 WCVs, 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: CLEAR Odor: NONE Turbidity: CLEAR

Well Volumes (gal.):	4	8	12.461	FINAL				
pH (s.u.):	6.75	6.78	6.77	6.81				
Sp. Cond. (µmhos/cm):	549	548	550	548				
Temperature (°C):	15.7	15.5	15.2	15.6				
Turbidity (N.T.U):	CLEAR	CLEAR	CLEAR	CLEAR				

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description (From Lab ✓ or HMI ___)	Preservative (preserved by: Lab ✓ or HMI ___)
PCBs	1 LITER AMBER GLASS	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD
Comments:

HMI
Environmental Consulting Services

WATER SAMPLING LOG

Project Name: ORMET - REDUCTION MILL
Project Number: HM00319
Site Location: HANNIBAL, OHIO
Sampling Date: 10/ 5 /05 Weather: SUNNY 80°

Sample ID: MW-44D
Replicate ID: ~
Time Sampling Began: 1:15
Time Sampling Completed: 2:05

EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Total Sounded Depth of Well Below MP (TD): 93.97
Depth to Water Below MP (DTW): 43.55
Water Column (WC) in Well [TD-DTW]: 50.42
Gallons per foot (GPF); from chart: 0.16
Gallons in Well [WC x GPF]: 8.067 = Well Casing Volume (WCV)

Diameter of Well Casing: 2.0"
Gallons to be Purged: 24.202
(3 WCVs, 5 WCVs, etc.)

GALLONS PER FOOT (gpf)			
1¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1½" = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

Evacuation Method and Material: DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

SAMPLING DATA AND FIELD PARAMETERS

Color: CLEAR Odor: NONE Turbidity: CLEAR

Well Volumes (gal.):	8	16	24.2	FINAL				
pH (s.u.):	7.43	7.46	7.47	7.51				
Sp. Cond. (µmhos/cm):	443	444	444	441				
Temperature (°C):	15.8	15.8	15.7	15.9				
Turbidity (N.T.U):	CLEAR	CLEAR	CLEAR					

Sampling Method and Material(s): DISPOSABLE BAILER WITH POLYPROPYLENE ROPE

Parameters to be Analyzed	Container Description From Lab ✓ or HMI ___	Preservative preserved by: Lab ✓ or HMI ___
PCBs	1 LITER AMBER GLASS	4°C

Sampling Personnel: S. MENOSKY, C. STANDARD

Comments:

APPENDIX B

LABORATORY ANALYTICAL REPORTS

Appendix B-1 Laboratory Analytical Report for January 2005 Monitoring Event

Appendix B-2 Laboratory Analytical Report for May 2005 Monitoring Event

Appendix B-3 Laboratory Analytical Report for October 2005 Monitoring Event

APPENDIX B-1

LABORATORY ANALYTICAL REPORT FOR JANUARY 2005 MONITORING EVENT

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

February 8, 2005

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Dear Mr. Fargo:

Enclosed are analytical results for samples submitted to Pace Analytical by Hydro Systems Management, Inc.. The samples were received on January 20, 2005. The results reported in this project meet the requirements as specified in Chapter 5 of the NELAC Standards. Any deviations or discrepancies from the NELAC standards are documented in the case narrative(s) of this report. Please reference Pace project number 05-0413 when inquiring about this report.

Client Site: Reduction Mill
Client Ref.: HM00319

Pace Sample Identification	Client Sample Identification
0501-1656	MW-2
0501-1657	MW-5
0501-1658	MW-12
0501-1659	MW-12D
0501-1660	MW-16
0501-1661	MW-18
0501-1662	MW-28
0501-1663	MW-31
0501-1664	MW-31D

Pace Sample Identification	Client Sample Identification
0501-1665	MW-32
0501-1666	MW-35
0501-1667	MW-36
0501-1668	MW-37
0501-1669	MW-44S
0501-1670	MW-44D
0501-1671	Field Blank
0501-1672	Trip Blank

General Comments: Cooler temperature 2 ° C upon receipt. Ice was present.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Please call me if you have any questions regarding the information contained within this report.

Sincerely,

Rachel D. Christner
Project Coordinator

RDC: jld

Enclosures

Page 1 of 52

cc: John Reggi, Ormet Primary Aluminum Corporation

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-0413**
Lab Sample ID: **0501-1656**
Client Sample ID: MW-2
Sample Matrix: Aqueous

Date Sampled: 01/19/2005
Date Received: 01/20/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	4.0	0.010	mg/l	TAT	01/31/2005	0036812-1	<0.010
Cyanide (Total)	335.2(1)	10	0.010	mg/l	TAT	01/25/2005	0036665-1	<0.010
Fluoride	340.2(1)	73	0.10	mg/l	CK0	02/01/2005	0036800-1	<0.10
pH	150.1(1)	9.74	1.00	pH	MMG	01/20/2005	0036593-1	5.71
Specific Conductance	120.1(1)	1500	1.0	umhos/cm	MMG	01/20/2005	0036594-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.066	0.0040	mg/l	CS0	01/24/2005	0036586-1	<0.0040
Beryllium	6010B(2)	0.0011	0.00050	mg/l	CS0	01/24/2005	0036586-1	<0.00050
Manganese	6010B(2)	1.1	0.010	mg/l	CS0	01/24/2005	0036586-1	<0.010
Sodium	6010B(2)	330	0.50	mg/l	CS0	01/24/2005	0036586-1	<0.50
Vanadium	6010B(2)	0.053	0.010	mg/l	CS0	01/24/2005	0036586-1	<0.010

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Tetrachloroethene	8260B(2)	0.023	0.0050	mg/l	JEC	01/27/2005	0036726-1	<0.0050

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-0413**
Lab Sample ID: **0501-1657**
Client Sample ID: MW-5
Sample Matrix: Aqueous

Date Sampled: 01/19/2005
Date Received: 01/20/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.67	0.010	mg/l	TAT	01/31/2005	0036812-1	<0.010
Cyanide (Total)	335.2(1)	3.6	0.010	mg/l	TAT	01/25/2005	0036665-1	<0.010
Fluoride	340.2(1)	16	0.10	mg/l	CK0	02/01/2005	0036800-1	<0.10
pH	150.1(1)	8.19	1.00	pH	MMG	01/20/2005	0036593-1	5.71
Specific Conductance	120.1(1)	1200	1.0	umhos/cm	MMG	01/20/2005	0036594-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.0046	0.0040	mg/l	CS0	01/24/2005	0036586-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	01/24/2005	0036586-1	<0.00050
Manganese	6010B(2)	0.82	0.010	mg/l	CS0	01/24/2005	0036586-1	<0.010
Sodium	6010B(2)	220	0.50	mg/l	CS0	01/24/2005	0036586-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	01/24/2005	0036586-1	<0.010

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Tetrachloroethene	8260B(2)	<0.0050	0.0050	mg/l	JEC	01/27/2005	0036726-1	<0.0050

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-0413**
Lab Sample ID: **0501-1658**
Client Sample ID: MW-12
Sample Matrix: Aqueous

Date Sampled: 01/19/2005
Date Received: 01/20/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Total)	335.2(1)	<0.010	0.010	mg/l	TAT	01/25/2005	0036665-1	<0.010
Fluoride	340.2(1)	0.51	0.10	mg/l	CK0	02/01/2005	0036800-1	<0.10
pH	150.1(1)	7.67	1.00	pH	MMG	01/20/2005	0036593-1	5.71
Specific Conductance	120.1(1)	520	1.0	umhos/cm	MMG	01/20/2005	0036594-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.0042	0.0040	mg/l	CS0	01/24/2005	0036586-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	01/24/2005	0036586-1	<0.00050
Manganese	6010B(2)	1.9	0.010	mg/l	CS0	01/24/2005	0036586-1	<0.010
Sodium	6010B(2)	29	0.50	mg/l	CS0	01/24/2005	0036586-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	01/24/2005	0036586-1	<0.010

Pesticides/PCB

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Polychlorinated Biphenyls, ECD								
Aroclor-1016	8082(2)	<0.51	0.51	ug/l	RDJ	01/31/2005	0036673-1	<0.50
Aroclor-1221	8082(2)	<0.51	0.51	ug/l	RDJ	01/31/2005	0036673-1	<0.50
Aroclor-1232	8082(2)	<0.51	0.51	ug/l	RDJ	01/31/2005	0036673-1	<0.50
Aroclor-1242	8082(2)	<0.51	0.51	ug/l	RDJ	01/31/2005	0036673-1	<0.50
Aroclor-1248	8082(2)	<0.51	0.51	ug/l	RDJ	01/31/2005	0036673-1	<0.50
Aroclor-1254	8082(2)	<0.51	0.51	ug/l	RDJ	01/31/2005	0036673-1	<0.50
Aroclor-1260	8082(2)	<0.51	0.51	ug/l	RDJ	01/31/2005	0036673-1	<0.50
PCB Total-TCL	8082(2)	<0.51	0.51	ug/l	RDJ	01/31/2005	0036673-1	<0.50

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-0413**
Lab Sample ID: **0501-1659**
Client Sample ID: MW-12D
Sample Matrix: Aqueous

Date Sampled: 01/19/2005
Date Received: 01/20/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Total)	335.2(1)	<0.010	0.010	mg/l	TAT	01/25/2005	0036665-1	<0.010
Fluoride	340.2(1)	0.50	0.10	mg/l	CK0	02/01/2005	0036800-1	<0.10
pH	150.1(1)	7.60	1.00	pH	MMG	01/20/2005	0036593-1	5.71
Specific Conductance	120.1(1)	520	1.0	umhos/cm	MMG	01/20/2005	0036594-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	<0.0040	0.0040	mg/l	CS0	01/24/2005	0036586-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	01/24/2005	0036586-1	<0.00050
Manganese	6010B(2)	2.0	0.010	mg/l	CS0	01/24/2005	0036586-1	<0.010
Sodium	6010B(2)	29	0.50	mg/l	CS0	01/24/2005	0036586-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	01/24/2005	0036586-1	<0.010

Pesticides/PCB

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Polychlorinated Biphenyls, ECD								
Aroclor-1016	8082(2)	<0.50	0.50	ug/l	RDJ	01/31/2005	0036673-1	<0.50
Aroclor-1221	8082(2)	<0.50	0.50	ug/l	RDJ	01/31/2005	0036673-1	<0.50
Aroclor-1232	8082(2)	<0.50	0.50	ug/l	RDJ	01/31/2005	0036673-1	<0.50
Aroclor-1242	8082(2)	<0.50	0.50	ug/l	RDJ	01/31/2005	0036673-1	<0.50
Aroclor-1248	8082(2)	<0.50	0.50	ug/l	RDJ	01/31/2005	0036673-1	<0.50
Aroclor-1254	8082(2)	<0.50	0.50	ug/l	RDJ	01/31/2005	0036673-1	<0.50
Aroclor-1260	8082(2)	<0.50	0.50	ug/l	RDJ	01/31/2005	0036673-1	<0.50
PCB Total-TCL	8082(2)	<0.50	0.50	ug/l	RDJ	01/31/2005	0036673-1	<0.50

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-0413**
Lab Sample ID: **0501-1660**
Client Sample ID: MW-16
Sample Matrix: Aqueous

Date Sampled: 01/19/2005
Date Received: 01/20/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.67	0.010	mg/l	TAT	01/31/2005	0036812-1	<0.010
Cyanide (Total)	335.2(1)	5.2	0.010	mg/l	TAT	01/25/2005	0036665-1	<0.010
Fluoride	340.2(1)	65	0.10	mg/l	CK0	02/01/2005	0036800-1	<0.10
pH	150.1(1)	8.46	1.00	pH	MMG	01/20/2005	0036593-1	5.71
Specific Conductance	120.1(1)	1200	1.0	umhos/cm	MMG	01/20/2005	0036594-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.0085	0.0040	mg/l	CS0	01/24/2005	0036586-1	<0.0040
Beryllium	6010B(2)	0.00089	0.00050	mg/l	CS0	01/24/2005	0036586-1	<0.00050
Manganese	6010B(2)	0.86	0.010	mg/l	CS0	01/24/2005	0036586-1	<0.010
Sodium	6010B(2)	250	0.50	mg/l	CS0	01/24/2005	0036586-1	<0.50
Vanadium	6010B(2)	0.021	0.010	mg/l	CS0	01/24/2005	0036586-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Accredited in accordance with nelac

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-0413**
Lab Sample ID: **0501-1661**
Client Sample ID: MW-18
Sample Matrix: Aqueous

Date Sampled: 01/19/2005
Date Received: 01/20/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	4.7	0.010	mg/l	TAT	01/31/2005	0036812-1	<0.010
Cyanide (Total)	335.2(1)	81	0.010	mg/l	TAT	01/25/2005	0036665-1	<0.010
Fluoride	340.2(1)	130	0.10	mg/l	CK0	02/01/2005	0036800-1	<0.10
pH	150.1(1)	9.40	1.00	pH	MMG	01/20/2005	0036593-1	5.71
Specific Conductance	120.1(1)	3000	1.0	umhos/cm	MMG	01/20/2005	0036594-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.056	0.0040	mg/l	CS0	01/24/2005	0036586-1	<0.0040
Beryllium	6010B(2)	0.0014	0.00050	mg/l	CS0	01/24/2005	0036586-1	<0.00050
Manganese	6010B(2)	0.55	0.010	mg/l	CS0	01/24/2005	0036586-1	<0.010
Sodium	6010B(2)	570	0.50	mg/l	CS0	01/24/2005	0036586-1	<0.50
Vanadium	6010B(2)	0.021	0.010	mg/l	CS0	01/24/2005	0036586-1	<0.010

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Tetrachloroethene	8260B(2)	0.0071	0.0050	mg/l	JEC	01/27/2005	0036726-1	<0.0050

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-0413**
Lab Sample ID: **0501-1662**
Client Sample ID: MW-28
Sample Matrix: Aqueous

Date Sampled: 01/19/2005
Date Received: 01/20/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.010	0.010	mg/l	TAT	01/31/2005	0036812-1	<0.010
Cyanide (Total)	335.2(1)	0.29	0.010	mg/l	TAT	01/25/2005	0036665-1	<0.010
Fluoride	340.2(1)	0.19	0.10	mg/l	CK0	02/01/2005	0036800-1	<0.10
pH	150.1(1)	6.23	1.00	pH	MMG	01/20/2005	0036593-1	5.71
Specific Conductance	120.1(1)	360	1.0	umhos/cm	MMG	01/20/2005	0036594-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	<0.0040	0.0040	mg/l	CS0	01/24/2005	0036586-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	01/24/2005	0036586-1	<0.00050
Manganese	6010B(2)	0.018	0.010	mg/l	CS0	01/24/2005	0036586-1	<0.010
Sodium	6010B(2)	51	0.50	mg/l	CS0	01/24/2005	0036586-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	01/24/2005	0036586-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-0413**
Lab Sample ID: **0501-1663**
Client Sample ID: MW-31
Sample Matrix: Aqueous

Date Sampled: 01/19/2005
Date Received: 01/20/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	1.7	0.010	mg/l	TAT	01/31/2005	0036812-1	<0.010
Cyanide (Total)	335.2(1)	12	0.010	mg/l	TAT	01/25/2005	0036665-1	<0.010
Fluoride	340.2(1)	88	0.10	mg/l	CK0	02/01/2005	0036800-1	<0.10
pH	150.1(1)	9.73	1.00	pH	MMG	01/20/2005	0036593-1	5.71
Specific Conductance	120.1(1)	1600	1.0	umhos/cm	MMG	01/20/2005	0036594-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.054	0.0040	mg/l	CS0	01/24/2005	0036586-1	<0.0040
Beryllium	6010B(2)	0.0018	0.00050	mg/l	CS0	01/24/2005	0036586-1	<0.00050
Manganese	6010B(2)	1.8	0.010	mg/l	CS0	01/24/2005	0036586-1	<0.010
Sodium	6010B(2)	350	0.50	mg/l	CS0	01/24/2005	0036586-1	<0.50
Vanadium	6010B(2)	0.099	0.010	mg/l	CS0	01/24/2005	0036586-1	<0.010

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Tetrachloroethene	8260B(2)	0.034	0.0050	mg/l	JEC	01/27/2005	0036726-1	<0.0050

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-0413**
Lab Sample ID: **0501-1664**
Client Sample ID: MW-31D
Sample Matrix: Aqueous

Date Sampled: 01/19/2005
Date Received: 01/20/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	1.8	0.010	mg/l	TAT	01/31/2005	0036812-1	<0.010
Cyanide (Total)	335.2(1)	13	0.010	mg/l	TAT	01/25/2005	0036665-1	<0.010
Fluoride	340.2(1)	82	0.10	mg/l	CK0	02/01/2005	0036800-1	<0.10
pH	150.1(1)	9.76	1.00	pH	MMG	01/20/2005	0036593-1	5.71
Specific Conductance	120.1(1)	1600	1.0	umhos/cm	MMG	01/20/2005	0036594-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.054	0.0040	mg/l	CS0	01/24/2005	0036586-1	<0.0040
Beryllium	6010B(2)	0.0017	0.00050	mg/l	CS0	01/24/2005	0036586-1	<0.00050
Manganese	6010B(2)	1.8	0.010	mg/l	CS0	01/24/2005	0036586-1	<0.010
Sodium	6010B(2)	340	0.50	mg/l	CS0	01/24/2005	0036586-1	<0.50
Vanadium	6010B(2)	0.096	0.010	mg/l	CS0	01/24/2005	0036586-1	<0.010

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Tetrachloroethene	8260B(2)	0.029	0.0050	mg/l	JEC	01/27/2005	0036726-1	<0.0050

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-0413**
Lab Sample ID: **0501-1665**
Client Sample ID: MW-32
Sample Matrix: Aqueous

Date Sampled: 01/19/2005
Date Received: 01/20/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	2.1	0.010	mg/l	TAT	01/31/2005	0036812-1	<0.010
Cyanide (Total)	335.2(1)	17	0.010	mg/l	TAT	01/25/2005	0036665-1	<0.010
Fluoride	340.2(1)	70	0.10	mg/l	CK0	02/01/2005	0036800-1	<0.10
pH	150.1(1)	9.96	1.00	pH	MMG	01/20/2005	0036593-1	5.71
Specific Conductance	120.1(1)	1600	1.0	umhos/cm	MMG	01/20/2005	0036594-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.10	0.0040	mg/l	CS0	01/24/2005	0036586-1	<0.0040
Beryllium	6010B(2)	0.0028	0.00050	mg/l	CS0	01/24/2005	0036586-1	<0.00050
Manganese	6010B(2)	3.8	0.010	mg/l	CS0	01/24/2005	0036586-1	<0.010
Sodium	6010B(2)	330	0.50	mg/l	CS0	01/24/2005	0036586-1	<0.50
Vanadium	6010B(2)	0.17	0.010	mg/l	CS0	01/24/2005	0036586-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-0413**
Lab Sample ID: **0501-1666**
Client Sample ID: MW-35
Sample Matrix: Aqueous

Date Sampled: 01/19/2005
Date Received: 01/20/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	2.3	0.010	mg/l	TAT	01/31/2005	0036812-1	<0.010
Cyanide (Total)	335.2(1)	12	0.010	mg/l	TAT	01/31/2005	0036776-1	<0.010
Fluoride	340.2(1)	18	0.10	mg/l	CK0	02/01/2005	0036800-1	<0.10
pH	150.1(1)	8.66	1.00	pH	MMG	01/20/2005	0036593-1	5.71
Specific Conductance	120.1(1)	540	1.0	umhos/cm	MMG	01/20/2005	0036594-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.011	0.0040	mg/l	CS0	01/24/2005	0036586-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	01/24/2005	0036586-1	<0.00050
Manganese	6010B(2)	0.72	0.010	mg/l	CS0	01/24/2005	0036586-1	<0.010
Sodium	6010B(2)	76	0.50	mg/l	CS0	01/24/2005	0036586-1	<0.50
Vanadium	6010B(2)	0.011	0.010	mg/l	CS0	01/24/2005	0036586-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-0413**
Lab Sample ID: **0501-1667**
Client Sample ID: MW-36
Sample Matrix: Aqueous

Date Sampled: 01/19/2005
Date Received: 01/20/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.69	0.010	mg/l	TAT	01/31/2005	0036812-1	<0.010
Cyanide (Total)	335.2(1)	3.4	0.010	mg/l	TAT	01/31/2005	0036776-1	<0.010
Fluoride	340.2(1)	33	0.10	mg/l	CK0	02/01/2005	0036800-1	<0.10
pH	150.1(1)	9.69	1.00	pH	MMG	01/20/2005	0036593-1	5.71
Specific Conductance	120.1(1)	860	1.0	umhos/cm	MMG	01/20/2005	0036594-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.026	0.0040	mg/l	CS0	01/24/2005	0036586-1	<0.0040
Beryllium	6010B(2)	0.00066	0.00050	mg/l	CS0	01/24/2005	0036586-1	<0.00050
Manganese	6010B(2)	0.44	0.010	mg/l	CS0	01/24/2005	0036586-1	<0.010
Sodium	6010B(2)	170	0.50	mg/l	CS0	01/24/2005	0036586-1	<0.50
Vanadium	6010B(2)	0.030	0.010	mg/l	CS0	01/24/2005	0036586-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-0413**
Lab Sample ID: **0501-1668**
Client Sample ID: MW-37
Sample Matrix: Aqueous

Date Sampled: 01/19/2005
Date Received: 01/20/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	1.0	0.010	mg/l	TAT	01/31/2005	0036812-1	<0.010
Cyanide (Total)	335.2(1)	2.6	0.010	mg/l	TAT	01/31/2005	0036776-1	<0.010
Fluoride	340.2(1)	8.7	0.10	mg/l	CK0	02/01/2005	0036800-1	<0.10
pH	150.1(1)	6.90	1.00	pH	MMG	01/20/2005	0036593-1	5.71
Specific Conductance	120.1(1)	420	1.0	umhos/cm	MMG	01/20/2005	0036594-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	<0.0040	0.0040	mg/l	CS0	01/24/2005	0036586-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	01/24/2005	0036586-1	<0.00050
Manganese	6010B(2)	1.9	0.010	mg/l	CS0	01/24/2005	0036586-1	<0.010
Sodium	6010B(2)	59	0.50	mg/l	CS0	01/24/2005	0036586-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	01/24/2005	0036586-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-0413**
Lab Sample ID: **0501-1669**
Client Sample ID: MW-44S
Sample Matrix: Aqueous

Date Sampled: 01/19/2005
Date Received: 01/20/2005

Pesticides/PCB

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Polychlorinated Biphenyls, ECD								
Aroclor-1016	8082(1)	<0.51	0.51	ug/l	RDJ	01/31/2005	0036673-1	<0.50
Aroclor-1221	8082(1)	<0.51	0.51	ug/l	RDJ	01/31/2005	0036673-1	<0.50
Aroclor-1232	8082(1)	<0.51	0.51	ug/l	RDJ	01/31/2005	0036673-1	<0.50
Aroclor-1242	8082(1)	<0.51	0.51	ug/l	RDJ	01/31/2005	0036673-1	<0.50
Aroclor-1248	8082(1)	<0.51	0.51	ug/l	RDJ	01/31/2005	0036673-1	<0.50
Aroclor-1254	8082(1)	<0.51	0.51	ug/l	RDJ	01/31/2005	0036673-1	<0.50
Aroclor-1260	8082(1)	<0.51	0.51	ug/l	RDJ	01/31/2005	0036673-1	<0.50
PCB Total-TCL	8082(1)	<0.51	0.51	ug/l	RDJ	01/31/2005	0036673-1	<0.50

(1) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-0413**
Lab Sample ID: **0501-1670**
Client Sample ID: MW-44D
Sample Matrix: Aqueous

Date Sampled: 01/19/2005
Date Received: 01/20/2005

Pesticides/PCB

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Polychlorinated Biphenyls, ECD								
Aroclor-1016	8082(1)	<0.51	0.51	ug/l	RDJ	01/31/2005	0036673-1	<0.50
Aroclor-1221	8082(1)	<0.51	0.51	ug/l	RDJ	01/31/2005	0036673-1	<0.50
Aroclor-1232	8082(1)	<0.51	0.51	ug/l	RDJ	01/31/2005	0036673-1	<0.50
Aroclor-1242	8082(1)	<0.51	0.51	ug/l	RDJ	01/31/2005	0036673-1	<0.50
Aroclor-1248	8082(1)	<0.51	0.51	ug/l	RDJ	01/31/2005	0036673-1	<0.50
Aroclor-1254	8082(1)	<0.51	0.51	ug/l	RDJ	01/31/2005	0036673-1	<0.50
Aroclor-1260	8082(1)	<0.51	0.51	ug/l	RDJ	01/31/2005	0036673-1	<0.50
PCB Total-TCL	8082(1)	<0.51	0.51	ug/l	RDJ	01/31/2005	0036673-1	<0.50

(1) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-0413**
Lab Sample ID: **0501-1671**
Client Sample ID: Field Blank
Sample Matrix: Aqueous

Date Sampled: 01/19/2005
Date Received: 01/20/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Total)	335.2(1)	<0.010	0.010	mg/l	TAT	01/31/2005	0036776-1	<0.010
Fluoride	340.2(1)	<0.10	0.10	mg/l	CKO	02/01/2005	0036800-1	<0.10
pH	150.1(1)	5.60	1.00	pH	MMG	01/20/2005	0036593-1	5.71
Specific Conductance	120.1(1)	1.5	1.0	umhos/cm	MMG	01/20/2005	0036594-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.0042	0.0040	mg/l	CS0	01/24/2005	0036586-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	01/24/2005	0036586-1	<0.00050
Manganese	6010B(2)	<0.010	0.010	mg/l	CS0	01/24/2005	0036586-1	<0.010
Sodium	6010B(2)	<0.50	0.50	mg/l	CS0	01/24/2005	0036586-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	01/24/2005	0036586-1	<0.010

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Tetrachloroethene	8260B(2)	<0.0050	0.0050	mg/l	JEC	01/27/2005	0036726-1	<0.0050

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

CERTIFIED IN ACCORDANCE WITH nelac

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-0413**
Lab Sample ID: **0501-1672**
Client Sample ID: Trip Blank
Sample Matrix: Aqueous

Date Sampled: 01/19/2005
Date Received: 01/20/2005

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Tetrachloroethene	8260B[1]	<0.0050	0.0050	mg/l	JEC	01/27/2005	0036726-1	<0.0050

[1] U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical

Metals Data Reporting Form

Initial Calibration Verification Standard

Instrument: ICP **Units:** ug/L

Chart Number: E0124A.ARC **Acceptable Range:** 95% - 105%

Standard Source: High-Purity **Standard ID:**

Element	WL/ Mass	True Conc	ICV 1/24/2005 9:02 AM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Arsenic	189.042	2000.0	2041.72	**102.1**								
Beryllium	313.042	2000.0	1992.83	**99.6**								
Manganese	257.61	2000.0	2018.38	**100.9**								
Sodium	330.232	10000.0	10292.63	**102.9**								
Vanadium	292.402	2000.0	1971.08	**98.6**								

Pace Analytical

Metals Data Reporting Form

Continuing Calibration Verification

Instrument: ICP **Units:** ug/L

Chart Number: E0124A.ARC **Acceptable Range:** 90% - 110%

Standard Source: Inorganic Ventures **Standard ID:**

Element	WL/ Mass	True Conc	CCV 1/24/2005 9:19 AM		CCV 1/24/2005 12:20 PM		CCV 1/24/2005 1:15 PM		CCV 1/24/2005 2:22 PM		CCV 1/24/2005 3:13 PM	
			Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Arsenic	189.042	1000.0	993.30	**99.3**	1021.33	**102.1**	1018.05	**101.8**	1017.39	**101.7**	999.98	**100.0**
Beryllium	313.042	1000.0	994.43	**99.4**	1016.55	**101.7**	1012.51	**101.3**	1012.43	**101.2**	989.70	**99.0**
Manganese	257.61	1000.0	996.99	**99.7**	1011.71	**101.2**	1000.55	**100.1**	1006.32	**100.6**	986.37	**98.6**
Sodium	330.232	5000.0	4698.20	**94.0**	5119.12	**102.4**	5034.53	**100.7**	4909.48	**98.2**	4951.06	**99.0**
Vanadium	292.402	1000.0	989.68	**99.0**	1016.41	**101.6**	1007.93	**100.8**	1007.67	**100.8**	978.53	**97.9**

Pace Analytical

Metals Data Reporting Form

Continuing Calibration Verification

Instrument: ICP **Units:** ug/L

Chart Number: E0124A.ARC **Acceptable Range:** 90% - 110%

Standard Source: Inorganic Ventures **Standard ID:**

Element	WL/ Mass	True Conc	CCV 1/24/2005 4:45 PM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Arsenic	189.042	1000.0	1010.24	**101.0**								
Beryllium	313.042	1000.0	997.49	**99.7**								
Manganese	257.61	1000.0	986.50	**98.7**								
Sodium	330.232	5000.0	5105.76	**102.1**								
Vanadium	292.402	1000.0	994.05	**99.4**								

Pace Analytical

Metals Data Reporting Form

Initial Calibration Blank Results

Instrument: ICP **Units:** ug/L

Chart Number: E0124A.ARC

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	Blank 1/24/2005 10:05 AM Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Arsenic	189.042	4	3.0	B								
Beryllium	313.042	0.5	0.1	U								
Manganese	257.61	10	0.2	U								
Sodium	330.232	500	170.0	U								
Vanadium	292.402	10	0.4	U								

U Result is less than the MDL
B Result is between MDL and RL

Form 3 Equivalent

Pace Analytical

Metals Data Reporting Form

Continuing Calibration Blank Results

Instrument: ICP **Units:** ug/L

Chart Number: E0124A.ARC

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	Blank 1/24/2005 12:38 PM		Blank 1/24/2005 1:29 PM		Blank 1/24/2005 2:35 PM		Blank 1/24/2005 3:27 PM		Blank 1/24/2005 4:59 PM	
			Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Arsenic	189.042	4	**2.9**	**B**	**2.1**	**B**	**3.1**	**B**	1.7	U	1.7	U
Beryllium	313.042	0.5	0.1	U	0.1	U	0.1	U	0.1	U	**0.1**	**B**
Manganese	257.61	10	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Sodium	330.232	500	170.0	U	170.0	U	170.0	U	170.0	U	**177.0**	**B**
Vanadium	292.402	10	-0.4	B	0.4	U	0.4	U	0.4	U	**0.5**	**B**

U Result is less than the MDL

B Result is between MDL and RL

Form 3 Equivalent

Pace Analytical

Metals Data Reporting Form

Preparation Blank Results

Lab Sample ID: QC36586MB

Matrix: Water **Units:** ug/L **Prep Date:** 1/21/2005 **Prep Batch:** 36586

Weight: NA **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	**189.042**	**1.7**	**4.0**	**1.8**	**B**	**1**	**ICP**	**1/24/2005**	**10:29**
Beryllium	313.042	0.070	0.50	0.070	U	1	ICP	1/24/2005	10:29
Manganese	257.61	0.20	10.0	0.20	U	1	ICP	1/24/2005	10:29
Sodium	330.232	170	500	170	U	1	ICP	1/24/2005	10:29
Vanadium	292.402	0.40	10.0	0.40	U	1	ICP	1/24/2005	10:29

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 3 Equivalent

Pace Analytical

Metals Data Reporting Form

Interference Check Standard A

Instrument: ICP **Units:** ug/L

Chart Number: E0124A.ARC **Acceptable Range:** 0% - 0%

Standard Source: Inorganic Ventures **Standard ID:**

Element	WL/ Mass	Reporting Limit	True Conc	ICSA 1/24/2005 10:08 AM Found	ICSA 1/24/2005 5:02 PM Found	Found	Found	Found
Arsenic	189.042	4		1	5			
Beryllium	313.042	0.5		0	0			
Manganese	257.61	10		1	1			
Sodium	330.232	500		55	213			
Vanadium	292.402	10		0	0			

U Result is less than the MDL
B Result is between MDL and RL

Pace Analytical

Metals Data Reporting Form

Interference Check Standard AB

Instrument: ICP **Units:** ug/L

Chart Number: E0124A.ARC **Acceptable Range:** 0% - 0%

Standard Source: Inorganic Ventures **Standard ID:**

Element	WL/ Mass	True Conc	ICSAB 1/24/2005 10:11 AM Found	% Rec	ICSAB 1/24/2005 5:05 PM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Arsenic	189.042	0	2.6	**0.0**	-0.3	**0.0**						
Beryllium	313.042	500	535.0	**107.0**	540.6	**108.1**						
Manganese	257.61	500	521.1	**104.2**	522.9	**104.6**						
Sodium	330.232	0	138.8	**0.0**	141.7	**0.0**						
Vanadium	292.402	500	521.5	**104.3**	519.1	**103.8**						

U Result is less than the MDL
B Result is between MDL and RL
N Spike recovery failed

Form 4 Equivalent

Pace Analytical

Metals Data Reporting Form

Matrix Spike Sample Results

Spike Sample ID: 0413-0501-1666 MS D

Original Sample ID: 0413-0501-1666 D **Client ID:** MW-35

Matrix: Water **Units:** ug/L **Prep Date:** 1/21/2005 **Prep Batch:** 36586

Weight: NA **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	OS Conc	Q	MS Conc	Q	Spike Level	% Rec	OS DF	MS DF	Instr	OS Anal Date	OS Anal Time	MS Anal Date	MS Anal Time
Arsenic	189.0	10.7		526		500	103.1	1	1	ICP	1/24/2005	13:04	1/24/2005	13:10
Beryllium	313.0	0.090	B	512		500	102.4	1	1	ICP	1/24/2005	13:04	1/24/2005	13:10
Manganese	257.6	722		1220		500	100.2	1	1	ICP	1/24/2005	13:04	1/24/2005	13:10
Sodium	330.2	75900		78600	NC	2500		1	1	ICP	1/24/2005	13:04	1/24/2005	13:10
Vanadium	292.4	10.5		515		500	100.8	1	1	ICP	1/24/2005	13:04	1/24/2005	13:10

Comments: Acceptable Range 90% - 110%

Version 4.80.0

U Result is less than the MDL
B Result is between MDL and RL
N Spike recovery failed
NC Percent recovery was not calculated
R Duplicate analysis RPD was not within limits

Form 5A Equivalent

Pace Analytical

Metals Data Reporting Form

Matrix Spike Sample Results

Spike Sample ID: QC36586MS D

Original Sample ID: 0413-0501-1657 D **Client ID:** MW-5

Matrix: Water **Units:** ug/L **Prep Date:** 1/21/2005 **Prep Batch:** 36586

Weight: NA **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	OS Conc	Q	MS Conc	Q	Spike Level	% Rec	OS DF	MS DF	Instr	OS Anal Date	OS Anal Time	MS Anal Date	MS Anal Time
Arsenic	189.0	4.6		527		500	104.6	1	1	ICP	1/24/2005	11:56	1/24/2005	12:02
Beryllium	313.0	0.070	U	516		500	103.2	1	1	ICP	1/24/2005	11:56	1/24/2005	12:02
Manganese	257.6	823		1340		500	103.2	1	1	ICP	1/24/2005	11:56	1/24/2005	12:02
Sodium	330.2	218000		221000	NC	2500		1	1	ICP	1/24/2005	11:56	1/24/2005	12:02
Vanadium	292.4	1.7	B	510		500	101.7	1	1	ICP	1/24/2005	11:56	1/24/2005	12:02

Comments: Acceptable Range 90% - 110%

Version 4.80.0

U Result is less than the MDL
B Result is between MDL and RL
N Spike recovery failed
NC Percent recovery was not calculated
R Duplicate analysis RPD was not within limits

Form 5A Equivalent

Pace Analytical

Metals Data Reporting Form

Matrix Spike Duplicate Sample Results

Spike Sample ID: QC36586MSD D

Original Sample ID: 0413-0501-1657 D **Client ID:** MW-5

Matrix: Water **Units:** ug/L **Prep Date:** 1/21/2005 **Prep Batch:** 36586

Weight: NA **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	OS Conc	Q	MSD Conc	Q	Spike Level	% Rec	OS DF	MSD DF	Instr	OS Anal Date	OS Anal Time	MSD Anal Date	MSD Anal Time
Arsenic	189.0	4.6		540		500	107.1	1	1	ICP	1/24/2005	11:56	1/24/2005	12:05
Beryllium	313.0	0.070	U	517		500	103.5	1	1	ICP	1/24/2005	11:56	1/24/2005	12:05
Manganese	257.6	823		1330		500	101.6	1	1	ICP	1/24/2005	11:56	1/24/2005	12:05
Sodium	330.2	218000		221000	NC R	2500		1	1	ICP	1/24/2005	11:56	1/24/2005	12:05
Vanadium	292.4	1.7	B	513		500	102.2	1	1	ICP	1/24/2005	11:56	1/24/2005	12:05

Comments: Acceptable Range 90% - 110%

Version 4.80.0

U Result is less than the MDL
B Result is between MDL and RL
N Spike recovery failed
NC Percent recovery was not calculated
R Duplicate analysis RPD was not within limits

Form 5A Equivalent

Pace Analytical

Metals Data Reporting Form

Matrix Spike Duplicate RPD Report

Matrix Spike Duplicate Sample ID: QC36586MSD D

Matrix Spike Sample ID: 0413-0501-1666 MS D **Client ID:** MW-5

Matrix: Water **Units:** ug/L **Prep Date:** 1/21/2005 **Prep Batch:** 36586

Weight: NA **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	MS Conc	Q	MSD Conc	Q	% RPD	MS DF	MSD DF	Instr	MS Anal Date	MS Anal Time	MSD Anal Date	MSD Anal Time
Arsenic	189.042	526		540		2.6	1	1	ICP	1/24/2005	13:10	1/24/2005	12:05
Beryllium	313.042	512		517		1.0	1	1	ICP	1/24/2005	13:10	1/24/2005	12:05
Manganese	257.61	1220		1330		8.5	1	1	ICP	1/24/2005	13:10	1/24/2005	12:05
Sodium	330.232	78600	NC	221000	NC R	95.0	1	1	ICP	1/24/2005	13:10	1/24/2005	12:05
Vanadium	292.402	515		513		0.4	1	1	ICP	1/24/2005	13:10	1/24/2005	12:05

Comments: Acceptable Range +/- 20%

Version 4.80.0

U Result is less than the MDL
B Result is between MDL and RL
N Spike recovery failed
NC Percent recovery was not calculated
R Duplicate analysis RPD was not within limits

Form 6 Equivalent

Pace Analytical

Metals Data Reporting Form

Laboratory Control Sample Results

Lab Sample ID: QC36586LCS

Matrix: Water **Units:** ug/L **Prep Date:** 1/21/2005 **Prep Batch:** 36586

Weight: NA **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	Spike Level	Conc	Percent Recovery	Q	Range	DF	Instr	Anal Date	Anal Time
Arsenic	189.042	500	513	102.7		80-120	1	ICP	1/24/2005	11:08
Beryllium	313.042	500	511	102.2		80-120	1	ICP	1/24/2005	11:08
Manganese	257.61	500	516	103.3		80-120	1	ICP	1/24/2005	11:08
Sodium	330.232	2500	2570	102.9		80-120	1	ICP	1/24/2005	11:08
Vanadium	292.402	500	506	101.3		80-120	1	ICP	1/24/2005	11:08

Comments: Acceptable Range 90% - 110%

U Result is less than the MDL

B Result is between MDL and RL

Form 7 Equivalent

Pace Analytical

Metals Data Reporting Form

Duplicate Sample Results

Lab Sample ID: 0413-0501-1666 MD D **Client ID:** MW-35

Matrix: Water **Units:** ug/L **Prep Date:** 1/21/2005 **Prep Batch:** 36586

Weight: NA **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.042	1.7	4.0	11.9		1	ICP	1/24/2005	13:07
Beryllium	313.042	0.070	0.50	0.13	B	1	ICP	1/24/2005	13:07
Manganese	257.61	0.20	10.0	730		1	ICP	1/24/2005	13:07
Sodium	330.232	170	500	76800		1	ICP	1/24/2005	13:07
Vanadium	292.402	0.40	10.0	10.3		1	ICP	1/24/2005	13:07

Comments:

Pace Analytical

Metals Data Reporting Form

Duplicate Sample Results

Lab Sample ID: QC36586DUP **Client ID:** MW-5

Matrix: Water **Units:** ug/L **Prep Date:** 1/21/2005 **Prep Batch:** 36586

Weight: NA **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	**189.042**	**1.7**	**4.0**	**5.0**		**1**	**ICP**	**1/24/2005**	**11:59**
Beryllium	313.042	0.070	0.50	0.070	U	1	ICP	1/24/2005	11:59
Manganese	**257.61**	**0.20**	**10.0**	**823**		**1**	**ICP**	**1/24/2005**	**11:59**
Sodium	**330.232**	**170**	**500**	**219000**		**1**	**ICP**	**1/24/2005**	**11:59**
Vanadium	**292.402**	**0.40**	**10.0**	**1.8**	**B**	**1**	**ICP**	**1/24/2005**	**11:59**

Comments:

Version 4.80.0

U Result is less than the MDL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Duplicate RPD Report

Duplicate Sample ID: 0413-0501-1666 MD D

Original Sample ID: 0413-0501-1666 D **Client ID:** MW-35

Matrix: Water **Units:** ug/L **Prep Date:** 1/21/2005 **Prep Batch:** 36586

Weight: NA **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	OS Conc	Q	Dupe Conc	Q	% RPD	OS DF	Dupe DF	Instr	OS Anal Date	OS Anal Time	Dupe Anal Date	Dupe Anal Time
Arsenic	189.042	10.7		11.9		1.2	1	1	ICP	1/24/2005	13:04	1/24/2005	13:07
Beryllium	313.042	0.090	B	0.13	B	0.0	1	1	ICP	1/24/2005	13:04	1/24/2005	13:07
Manganese	257.61	722		730		1.2	1	1	ICP	1/24/2005	13:04	1/24/2005	13:07
Sodium	330.232	75900	R	76800		1.1	1	1	ICP	1/24/2005	13:04	1/24/2005	13:07
Vanadium	292.402	10.5		10.3		0.2	1	1	ICP	1/24/2005	13:04	1/24/2005	13:07

Acceptable Range +/- 20%

U Result is less than the MDL
B Result is between MDL and RL
R Duplicate analysis RPD was not within limits

Form 6 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Duplicate RPD Report

Duplicate Sample ID: QC36586DUP

Original Sample ID: 0413-0501-1657 D **Client ID:** MW-5

Matrix: Water **Units:** ug/L **Prep Date:** 1/21/2005 **Prep Batch:** 36586

Weight: NA **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	OS Conc	Q	Dupe Conc	Q	% RPD	OS DF	Dupe DF	Instr	OS Anal Date	OS Anal Time	Dupe Anal Date	Dupe Anal Time
Arsenic	189.042	4.6		5.0		0.4	1	1	ICP	1/24/2005	11:56	1/24/2005	11:59
Beryllium	313.042	0.070	U	0.070	U		1	1	ICP	1/24/2005	11:56	1/24/2005	11:59
Manganese	257.61	823		823		0.0	1	1	ICP	1/24/2005	11:56	1/24/2005	11:59
Sodium	330.232	218000		219000		0.7	1	1	ICP	1/24/2005	11:56	1/24/2005	11:59
Vanadium	292.402	1.7	B	1.8	B	0.1	1	1	ICP	1/24/2005	11:56	1/24/2005	11:59

Acceptable Range +/- 20%

U Result is less than the MDL
B Result is between MDL and RL
R Duplicate analysis RPD was not within limits

Form 6 Equivalent

2A
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name : Pace Analytical Services Contract :
Project : 05-0413 Site : Location : Group :
Lab File ID (Standard): 30127002.D Date Analyzed : 27 Jan 2005
Instrument ID : GC/MS Ins Time Analyzed : 10:22 am
GC Column : DB624 ID : 0.20 (mm) Heated Purge (Y:N) : N
Level :

File	Sample	SMC1 (DCE) #	SMC2 (TOL) #	SMC3 (BFB) #	SMC4 #	SMC5 #	SMC6 #	TOTAL OUT
30127003	LCS [20] 5ML	78	101	100	0	0	0	0
30127004	VBLK 5ML	82	101	98	0	0	0	0
30127005	05-0479 01-1958	83	100	97	0	0	0	0
30127006	05-0479 01-1958MS	78	102	100	0	0	0	0
30127007	05-0479 01-1958MSD	81	99	100	0	0	0	0
30127010	Trip Blank	85	101	98	0	0	0	0
30127011	Field Blank	85	101	98	0	0	0	0
30127015	MW-2	83	100	96	0	0	0	0
30127016	MW-5	84	98	97	0	0	0	0
30127017	MW-18	86	100	101	0	0	0	0
30127018	MW-31	87	100	100	0	0	0	0
30127019	MW-31D	86	99	100	0	0	0	0

		QC Limits
SMC1 (DCE)	= 1,2-Dichloroethane-d4	(70 -130)
SMC2 (TOL)	= Toluene-d8	(70 -130)
SMC3 (BFB)	= Bromofluorobenzene	(70 -130)
SMC4	=	(0 -0)
SMC5	=	(0 -0)
SMC6	=	(0 -0)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name : Pace Analytical Services Contract :
Project : 05-0413 Site : Location : Group :
Lab File ID (Standard): 30127002.D Date Analyzed : 27 Jan 2005
Instrument ID : GC/MS Ins Time Analyzed : 10:22 am
GC Column : DB624 ID : 0.20 (mm) Heated Purge (Y:N) : N

	IS1 (BCM)			IS2 (DFB)			IS3 (CBZ)		
	Area	#	RT	Area	#	RT	Area	#	RT
12 HOUR STD	347681		2.75	207258		4.27	86449		5.51
UPPER LIMIT	695362		3.25	414516		4.77	172898		6.01
LOWER LIMIT	173841		2.25	103629		3.77	43225		5.01
File ID Sample									
30127003 LCS [20]	348023		2.74	212537		4.26	88388		5.51
30127004 VBLK 5ML	316718		2.75	182869		4.27	70504		5.51
30127005 0501-1958	315253		2.74	182167		4.26	70256		5.51
30127006 0501-1958MS	356037		2.75	211617		4.27	88460		5.51
30127007 0501-1958MSD	378813		2.75	226504		4.27	91412		5.51
30127010 Trip Blank	292741		2.75	165500		4.26	63463		5.51
30127011 Field Blank	283191		2.74	163182		4.26	62072		5.51
30127015 MW-2	304161		2.74	171715		4.27	64822		5.51
30127016 MW-5	297480		2.75	170831		4.26	62714		5.51
30127017 MW-18	285225		2.75	164689		4.26	58745		5.51
30127018 MW-31	284823		2.74	162651		4.26	58349		5.50
30127019 MW-31D	283109		2.75	163061		4.27	58009		5.51

IS1 (BCM) = Fluorobenzene
IS2 (DFB) = Chlorobenzene-d5
IS3 (CBZ) = 1,4-Dichlorobenzene-d4
AREA UPPER LIMIT = 200% of internal standard area
AREA LOWER LIMIT = 50% of internal standard area
RT UPPER LIMIT = 0.5 minutes of internal standard RT
RT LOWER LIMIT = -0.5 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk
* Values outside of contract required QC limits

LCS Blank Summary Report

Data File : D:\DATA\305JA27\30127003.D
Acq On : 27 Jan 2005 10:39 am
Sample : LCS [20] 5ML
Misc :
Integration Params: rteint.p

Vial: 3
Operator: JEW
Inst : GC/MS Ins
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\STR0104W.M (RTE Integrator)
Title : 8260 WATER
Last Update : Wed Feb 02 10:43:15 2005
Response via : Multiple Level Calibration

		Compound Name	Conc	Added	Recv(%)	QC Range	Q
2)	T	tert-butyl Methyleth	19.35	20.00	96.73	70 to 130%	[ ]
3)	T	1,1,1-Trichloroethan	20.84	20.00	104.21	70 to 130%	[ ]
5)	T	Benzene	23.92	20.00	119.61	70 to 130%	[ ]
6)	T	1,2-Dichloroethane	18.87	20.00	94.33	70 to 130%	[ ]
7)	T	Trichloroethene	23.58	20.00	117.92	70 to 130%	[ ]
10)	T	Toluene	24.42	20.00	122.11	70 to 130%	[ ]
11)	T	Tetrachloroethene	22.47	20.00	112.36	70 to 130%	[ ]
12)	T	1,2-Dibromoethane,ED	23.72	20.00	118.61	70 to 130%	[ ]
13)	T	Ethylbenzene	22.92	20.00	114.62	70 to 130%	[ ]
14)	T	m,p-Xylene	48.25	40.00	120.64	70 to 130%	[ ]
15)	T	o-Xylene	22.89	20.00	114.44	70 to 130%	[ ]
16)	G	Xylenes (Total)	71.17	60.00	118.61	70 to 130%	[ ]
18)	T	1,3,5-Trimethylbenze	24.71	20.00	123.53	70 to 130%	[ ]
19)	T	Isopropylbenzene,Cum	24.54	20.00	122.71	70 to 130%	[ ]
21)	T	n-propylbenzene	25.90	20.00	129.50	70 to 130%	[ ]
22)	T	tert-butylbenzene	28.61	20.00	143.03	70 to 130%	[*]
23)	T	1,2,4-Trimethylbenze	24.95	20.00	124.75	70 to 130%	[ ]
24)	T	sec-butyl benzene	24.16	20.00	120.80	70 to 130%	[ ]
25)	T	4-isopropyl toluene	24.01	20.00	120.03	70 to 130%	[ ]
26)	T	n-butylbenzene	24.10	20.00	120.49	70 to 130%	[ ]
27)	T	1,2,4-Trichlorobenze	20.79	20.00	103.96	70 to 130%	[ ]
28)	T	Naphthalene	20.49	20.00	102.47	70 to 130%	[ ]
29)	T	1,2,3-Trichlorobenze	21.28	20.00	106.42	70 to 130%	[ ]

* = out of control limits

Spike Recovery and RPD Summary Report - WATER

Method : C:\HPCHEM\1\METHODS\STR0104W.M (RTE Integrator)
Title : 8260 WATER
Last Update : Wed Feb 02 10:43:15 2005
Response via : Initial Calibration

Non-Spiked Sample: 30127005.D

	Spike Sample	Spike Duplicate Sample
File ID :	30127006.D	30127007.D
Sample :	05-0479 01-1958MS [20]	05-0479 01-1958MSD [20]
Acq Time:	27 Jan 2005 11:30 am	27 Jan 2005 11:48 am

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
tert-butyl Me	1.5	20	19	20	88.2	90.5	2.6	30	70-130
1,1,1-Trichlo	0.0	20	20	20	100.8	101.9	1.1	30	70-130
Benzene	0.0	20	22	22	111.5	111.5	0.0	30	70-130
1,2-Dichloroe	0.0	20	18	18	88.8	89.2	0.5	30	70-130
Trichloroethe	0.0	20	22	22	108.0	108.9	0.9	30	70-130
Toluene	0.1	20	23	23	114.3	112.8	1.3	30	70-130
Tetrachloroet	0.0	20	23	22	113.4	110.2	2.9	30	70-130
1,2-Dibromoet	0.0	20	22	23	112.4	112.6	0.2	30	70-130
Ethylbenzene	0.0	20	21	21	106.5	103.9	2.5	30	70-130
m,p-Xylene	0.2	40	45	44	111.9	109.6	2.0	30	70-130
o-Xylene	0.0	20	21	20	105.1	102.5	2.6	30	70-130
1,3,5-Trimeth	0.2	20	22	22	108.0	109.1	1.0	30	70-130
Isopropylbenz	0.0	20	22	23	110.7	112.7	1.8	30	70-130
n-propylbenze	0.0	20	23	24	116.7	119.2	2.1	30	70-130
tert-butylben	0.0	20	26	25	129.2	127.0	1.7	30	70-130
1,2,4-Trimeth	0.2	20	22	22	107.9	109.1	1.1	30	70-130
sec-butyl ben	0.2	20	21	22	106.3	110.7	4.1	30	70-130
4-isopropyl t	0.0	20	21	22	106.5	108.3	1.7	30	70-130
n-butylbenzen	0.0	20	21	21	106.8	106.3	0.5	30	70-130
1,2,4-Trichlo	0.0	20	17	18	86.1	90.7	5.2	30	70-130
Naphthalene	0.0	20	17	18	84.9	87.8	3.3	30	70-130
1,2,3-Trichlo	0.0	20	18	19	89.0	93.1	4.5	30	70-130

- Fails Limit Check

STR0104W.M Wed Feb 02 15:11:50 2005 HP3

Quantitation Report

Data File : D:\DATA\305JA27\30127004.D
Acq On : 27 Jan 2005 10:56 am
Sample : VBLK 5ML
Misc :
MS Integration Params: rteint.p
Quant Time: Jan 27 11:05 2005

Vial: 4
Operator: JEW
Inst : GC/MS Ins
Multiplr: 1.00

JEW 1-27-05

Quant Results File: STR0104W.RES

Quant Method : C:\HPCHEM\1\METHODS\STR0104W.M (RTE Integrator)
Title : 8260 WATER
Last Update : Thu Jan 27 10:32:47 2005
Response via : Initial Calibration
DataAcq Meth : STR0104W
IS QA File : D:\DATA\305JA27\30127002.D (27 Jan 2005 10:22 am)

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min) Rcv(Ar)
1) Fluorobenzene	2.75	96	316718	50.00 ug/l	0.00 91.09%
8) Chlorobenzene-d5	4.27	117	182869	50.00 ug/l	0.00 88.23%
17) 1,4-Dichlorobenzene-d4	5.51	152	70504	50.00 ug/l	0.00 81.56%

System Monitoring Compounds

4) 1,2-Dichloroethane-d4	2.59	65	120157	40.98 ug/l	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 81.96%		
9) Toluene-d8	3.51	98	282004	50.63 ug/l	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 101.26%		
20) Bromofluorobenzene	4.88	95	91682	49.10 ug/l	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 98.20%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

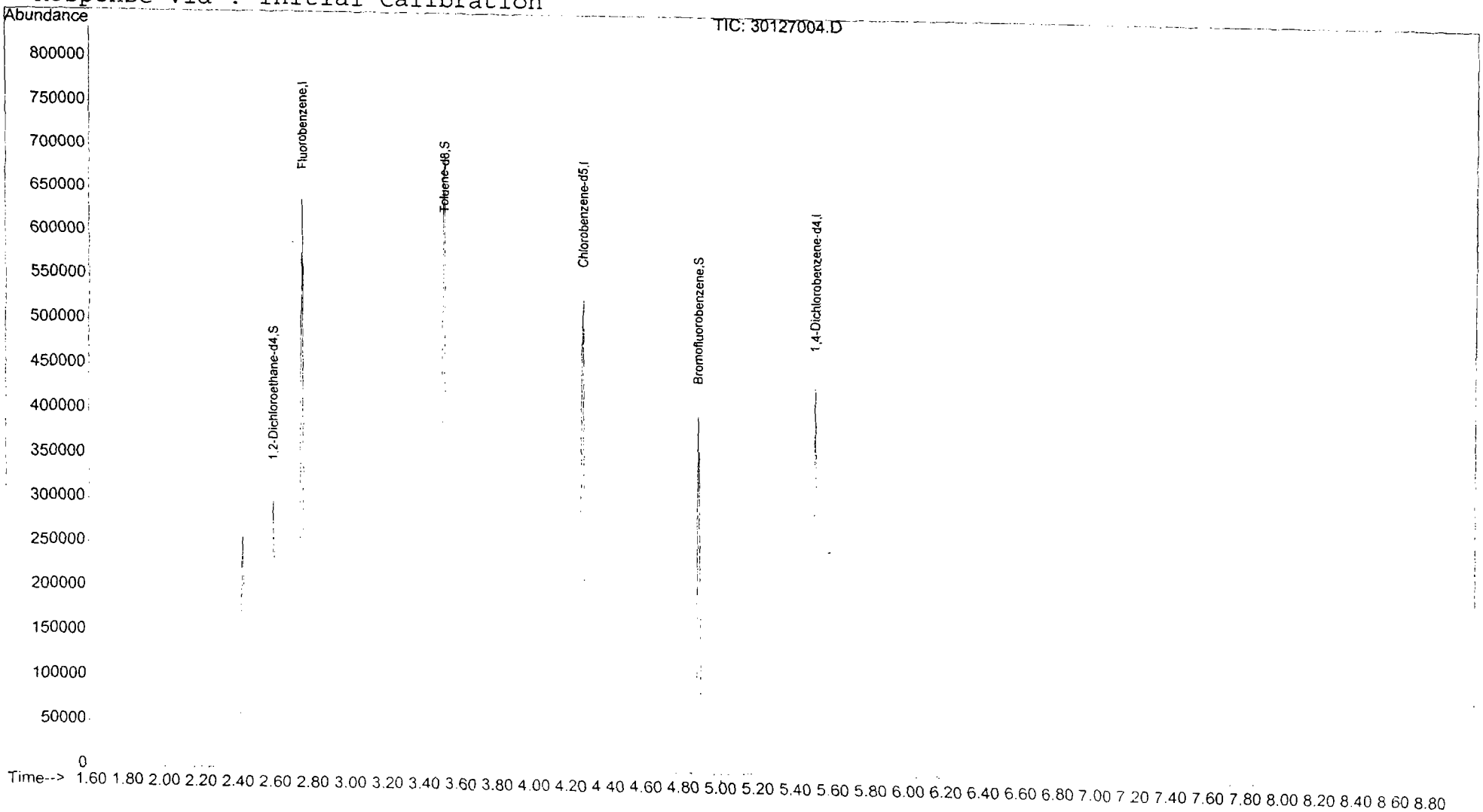
Quantitation Report

Data File : D:\DATA\305JA27\30127004.D
Acq On : 27 Jan 2005 10:56 am
Sample : VBLK 5ML
Misc :
MS Integration Params: rteint.p
Quant Time: Jan 27 11:05 2005

Vial: 4
Operator: JEW
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: STR0104W.RES

Method : C:\HPCHEM\1\METHODS\STR0104W.M (RTE Integrator)
Title : 8260 WATER
Last Update : Wed Feb 02 10:43:15 2005
Response via : Initial Calibration



Project Number 05-0413

Polychlorinated Biphenyls

FORM 3
WATER AROCLOR LAB CONTROL SAMPLE

Lab Name: PACE ANALYTICAL SERVICES, Contract:

Lab Code: Case No.: 050413 SAS No.: SDG No.: 050413

Matrix Spike - Sample No.: LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Aroclor-1248	2.50		1.52	61	55-145

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Aroclor-1248	2.50	1.64	66	8	25	55-145

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits
Spike Recovery: 0 out of 2 outside limits

COMMENTS:

2E
WATER AROCLOR SURROGATE RECOVERY

Lab Name: PACE ANALYTICAL SERVICES, Contract:

Lab Code: Case No.: 050413 SAS No.: SDG No.: 050413

GC Column(1): RTX-5 ID: 0.53 (mm)

	EPA SAMPLE NO.	TCX %REC #	DCB %REC #	S3 %REC #	S4 %REC #	S5 %REC #	S6 %REC #	TOT OUT
01	MW-12	62	41					0
02	MW-12D	70	51					0
03	MW-44S	73	47					0
04	MW-44D	65	63					0
05								
06								
07								
08								
09								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

ADVISORY
QC LIMITS

S1 (TCX) = Tetrachloro-m-xylene (30-150)
S2 (DCB) = Decachlorobiphenyl (30-150)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

Pace Analytical
Laboratory Control Sample Summary

Pace Project Number 05-0413

Pace Sample Number

				QC Limits
Compound	True value	QC Concentration	% Recovery	Recovery
		mg/L	%	%
Fluoride	2mg/L	1.76	88	85-115
Cyanide, total	0.1mg/L	0.0938	94.00	85-115
Cyanide, ammenable	0.1mg/L	0.1025	103	85-115
pH	NA	NA	NA	NA
Specific Conductance	NA	NA	NA	NA

Pace Analytical
Matrix Spike/Matrix Spike Duplicate Summary

Pace Project Number 05-0413
Pace Sample Number

Compound	sample ID	Spike Added mg/L	Sample Concentration mg/L	Matrix Spike Concentration mg/L	Matrix Spike % Recovery %	Spike Added mg/L	Matrix Spike Duplicate Concentation mg/L	Matrix Spike Duplicate % Recovery %	% RPD %	QC Limits RPD %	QC Limits Recovery %
Fluoride	*05-0470	4	0.549	4.66	96	NA	NA	NA	NA	20	85-115
Cyanide, total	*05-0470	0.1	0.0074	0.0925	95.10	NA	NA	NA	#VALUE!	20	85-115
Cyanide, ammenable	NA	NA	NA	NA	NA	NA	NA	NA	0.37	20	85-115
pH	NA	NA	NA	NA	NA	NA	NA	NA	#VALUE!	20	85-115
Specific Conductance	NA	NA	NA	NA	NA	NA	NA	NA	#VALUE!	20	85-115
									#DIV/0!	20	85-115

Note: Spiked sample was a project other than 05-0413

HMI
Environmental Consulting Services

CHAIN-OF-CUSTODY RECORD

05-0413

Project Number	Project Name/Location	Laboratory	Sampling Personnel
HM00319	ORMET/HANNIBAL OHIO	PACE ANALYTICAL	S. MENOSKY/ C. STANDARD

Sample ID	Date/Time	Sample Code	500 ml. PLASTIC pH, Spec. Cond., F (4°C)	250 ml. PLASTIC Diss. As, Ba, Mn, Na, V FIELD FILTERED (HNO_3)	250 ml. PLASTIC TOTAL/AMENABLE CYANIDE * (NAOH)	40ml GLASS TETRACHLOROETHENE (HCL)	1 LITER AMBER GLASS PCB'S (4°C)					TOTAL
MW-2	1/ /05	L	1	1	1	3			01-1656			6
MW-5			1	1	1	3			1657			6
MW-12			1	1	1		1		1658			4
MW-12D			1	1	1		1		1659			4
MW-16			1	1	1				1660			3
MW-18			1	1	1	3			1661			6
MW-28			1	1	1				1662			3
MW-31			1	1	1	3			1663			6
MW-31D			1	1	1	3			1664			6
MW-32			1	1	1				1665			3
MW-35			1	1	1				1666			3
MW-36			1	1	1				1667			3
MW-37			1	1	1				1668			3
MW-44S							1		1669			1
MW-44D							1		1670			1

Sample Code: L = Liquid; S = Solid; A = Air

Total Number of Containers: 58

Relinquished by: Steve C. Menosky	Organization: HMI	Date: 1-20-05	Time: 7:20	Seal Intact? Yes No (NA)
Received by: [illegible]	Organization:	Date: 1-20-05	Time: [illegible]	
Relinquished by: [illegible]	Organization:	Date: 1-20-05	Time: [illegible]	Seal Intact? Yes No (NA)
Received by: C. Urbowicz	Organization: Pace	Date: 1-20-05	Time: 3:10	

REMARKS: * ANALYZE FOR AMENABLE CYANIDE ONLY IF TOTAL CYANIDE IS DETECTED.

DELIVERY METHOD: In Person [ ] Common Carrier [ ] 2° Lab Courier [PACE] Other [ ]

HMI
Environmental Consulting Services

CHAIN-OF-CUSTODY RECORD

05-0413

Project Number	Project Name/Location	Laboratory	Sampling Personnel
HM00319	ORMET/HANNIBAL OHIO	PACE ANALYTICA	S. MENOSKY/ C. STANDARD

Sample ID	Date/Time	Sample Code	500 ml. PLASTIC pH, Spc. Cond, F (4°C)	250 ml. PLASTIC Diss. Ag, Ba, Mn, Na, V FIELD FILTERED (HNO3)	250 ml. PLASTIC TOTAL/AMENABLE CYANIDE * (NAOH)	GLASS TETRACHLOROETHENE (HCL)						TOTAL
FIELD BLANK	1/ /05	L	1	1	1	3		1-1671				6
TRIP BLANK	1/ /05	↓				3		-1672				3

Sample Code: L = Liquid; S = Solid; A = Air

Total Number of Containers: 9

Relinquished by: Steve Menosky	Organization: HMI	Date: 1-20-05	Time: 7:20	Seal Intact? Yes No NA
Received by: [illegible]	Organization:	Date: 1-20-05	Time: 12:10	
Relinquished by: [illegible]	Organization:	Date: 1-20-05	Time: [illegible]	Seal Intact? Yes No NA
Received by: C. Urbowicz	Organization: Pace	Date: 1-20-05	Time: 3:10	

REMARKS:

DELIVERY METHOD: In Person [ ] Common Carrier [ ] 2° Co PA [ ] Other [ ]

APPENDIX B-2

LABORATORY ANALYTICAL REPORT FOR MAY 2005 MONITORING EVENT

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

June 16, 2005

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Dear Mr. Fargo:

Enclosed are analytical results for samples submitted to Pace Analytical by Hydro Systems Management, Inc.. The samples were received on May 20, 2005. The results reported in this project meet the requirements as specified in Chapter 5 of the NELAC Standards. Any deviations or discrepancies from the NELAC standards are documented in the case narrative(s) of this report. Please reference Pace project number 05-2835 when inquiring about this report.

Client Site: Reduction Mill
Client Ref.: HM00319

Pace Sample Identification	Client Sample Identification
0505-2289	MW-16
0505-2290	MW-16D
0505-2291	MW-29S
0505-2292	MW-29D
0505-2293	MW-34S
0505-2294	MW-34D
0505-2295	MW-40S
0505-2296	MW-40D

Pace Sample Identification	Client Sample Identification
0505-2297	MW-44S
0505-2298	MW-44D
0505-2299	MW-12
0505-2300	MW-39S
0505-2301	MW-39D
0505-2302	MW-42S
0505-2303	MW-42D

General Comments: Cooler temperature 5 ° C upon receipt. Ice was present.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Please call me if you have any questions regarding the information contained within this report.

Sincerely,

Rachel D. Christner

Rachel D. Christner
Project Manager

RDC: jld

Enclosures

Page 1 of 74

cc: John Reggi, Ormet Primary Aluminum Corporation

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2835**
Lab Sample ID: **0505-2289**
Client Sample ID: MW-16
Sample Matrix: Aqueous

Date Sampled: 05/18/2005
Date Received: 05/20/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.14	0.010	mg/l	BLC	06/01/2005	0039964-1	<0.010
Cyanide (Total)	335.2(1)	6.7	0.010	mg/l	BLC	05/27/2005	0039826-1	<0.010
Fluoride	340.2(1)	64	0.50	mg/l	CK0	06/07/2005	0040019-1	<0.10
pH	150.1(1)	8.46	1.00	pH	KAC	05/20/2005	0039606-1	5.70
Specific Conductance	120.1(1)	1200	1.0	umhos/cm	KAC	05/20/2005	0039573-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.023	0.0040	mg/l	CS0	06/14/2005	0039667-1	<0.0040
Beryllium	6010B(2)	0.0018	0.00050	mg/l	CS0	06/14/2005	0039667-1	<0.00050
Manganese	6010B(2)	1.7	0.010	mg/l	CS0	06/14/2005	0039667-1	<0.010
Sodium	6010B(2)	260	0.50	mg/l	CS0	06/14/2005	0039667-1	<0.50
Vanadium	6010B(2)	0.061	0.010	mg/l	CS0	06/14/2005	0039667-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis. A 5x dilution was done on the sample for fluoride analysis due to high analyte concentrations.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2835**
Lab Sample ID: **0505-2290**
Client Sample ID: MW-16D
Sample Matrix: Aqueous

Date Sampled: 05/18/2005
Date Received: 05/20/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.14	0.010	mg/l	BLC	06/01/2005	0039964-1	<0.010
Cyanide (Total)	335.2(1)	7.3	0.010	mg/l	BLC	05/27/2005	0039826-1	<0.010
Fluoride	340.2(1)	55	0.50	mg/l	CK0	06/07/2005	0040019-1	<0.10
pH	150.1(1)	8.61	1.00	pH	KAC	05/20/2005	0039606-1	5.70
Specific Conductance	120.1(1)	1200	1.0	umhos/cm	KAC	05/20/2005	0039573-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.025	0.0040	mg/l	CS0	06/14/2005	0039667-1	<0.0040
Beryllium	6010B(2)	0.0018	0.00050	mg/l	CS0	06/14/2005	0039667-1	<0.00050
Manganese	6010B(2)	1.7	0.010	mg/l	CS0	06/14/2005	0039667-1	<0.010
Sodium	6010B(2)	280	0.50	mg/l	CS0	06/14/2005	0039667-1	<0.50
Vanadium	6010B(2)	0.064	0.010	mg/l	CS0	06/14/2005	0039667-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis. A 5x dilution was done on the sample for fluoride analysis due to high analyte concentrations.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2835**
Lab Sample ID: **0505-2291**
Client Sample ID: MW-29S
Sample Matrix: Aqueous

Date Sampled: 05/18/2005
Date Received: 05/20/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	<0.010	0.010	mg/l	BLC	06/01/2005	0039964-1	<0.010
Cyanide (Total)	335.2(1)	1.3	0.010	mg/l	BLC	05/27/2005	0039826-1	<0.010
Fluoride	340.2(1)	9.7	0.10	mg/l	CK0	06/07/2005	0040019-1	<0.10
pH	150.1(1)	7.82	1.00	pH	KAC	05/20/2005	0039606-1	5.70
Specific Conductance	120.1(1)	1200	1.0	umhos/cm	KAC	05/20/2005	0039573-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	<0.0040	0.0040	mg/l	CS0	06/14/2005	0039667-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/14/2005	0039667-1	<0.00050
Manganese	6010B(2)	0.78	0.010	mg/l	CS0	06/14/2005	0039667-1	<0.010
Sodium	6010B(2)	170	0.50	mg/l	CS0	06/14/2005	0039667-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/14/2005	0039667-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2835**
Lab Sample ID: **0505-2292**
Client Sample ID: MW-29D
Sample Matrix: Aqueous

Date Sampled: 05/18/2005
Date Received: 05/20/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.14	0.010	mg/l	BLC	06/01/2005	0039964-1	<0.010
Cyanide (Total)	335.2(1)	0.15	0.010	mg/l	BLC	05/27/2005	0039826-1	<0.010
Fluoride	340.2(1)	3.9	0.10	mg/l	CK0	06/07/2005	0040019-1	<0.10
pH	150.1(1)	7.77	1.00	pH	KAC	05/20/2005	0039606-1	5.70
Specific Conductance	120.1(1)	600	1.0	umhos/cm	KAC	05/20/2005	0039573-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	<0.0040	0.0040	mg/l	CS0	06/14/2005	0039667-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/14/2005	0039667-1	<0.00050
Manganese	6010B(2)	2.1	0.010	mg/l	CS0	06/14/2005	0039667-1	<0.010
Sodium	6010B(2)	38	0.50	mg/l	CS0	06/14/2005	0039667-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/14/2005	0039667-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2835**
Lab Sample ID: **0505-2293**
Client Sample ID: MW-34S
Sample Matrix: Aqueous

Date Sampled: 05/18/2005
Date Received: 05/20/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.21	0.010	mg/l	BLC	06/01/2005	0039964-1	<0.010
Cyanide (Total)	335.2(1)	9.1	0.010	mg/l	BLC	05/27/2005	0039826-1	<0.010
Fluoride	340.2(1)	130	0.50	mg/l	CK0	06/07/2005	0040019-1	<0.10
pH	150.1(1)	8.63	1.00	pH	KAC	05/20/2005	0039606-1	5.70
Specific Conductance	120.1(1)	1700	1.0	umhos/cm	KAC	05/23/2005	0039637-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.028	0.0040	mg/l	CS0	06/14/2005	0039667-1	<0.0040
Beryllium	6010B(2)	0.0038	0.00050	mg/l	CS0	06/14/2005	0039667-1	<0.00050
Manganese	6010B(2)	0.80	0.010	mg/l	CS0	06/14/2005	0039667-1	<0.010
Sodium	6010B(2)	520	0.50	mg/l	CS0	06/14/2005	0039667-1	<0.50
Vanadium	6010B(2)	0.074	0.010	mg/l	CS0	06/14/2005	0039667-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis. A 5x dilution was done on the sample for fluoride analysis due to high analyte concentrations.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2835**
Lab Sample ID: **0505-2294**
Client Sample ID: MW-34D
Sample Matrix: Aqueous

Date Sampled: 05/18/2005
Date Received: 05/20/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.14	0.010	mg/l	BLC	06/01/2005	0039964-1	<0.010
Cyanide (Total)	335.2(1)	10	0.010	mg/l	BLC	05/27/2005	0039826-1	<0.010
Fluoride	340.2(1)	24	0.10	mg/l	CK0	06/07/2005	0040019-1	<0.10
pH	150.1(1)	7.83	1.00	pH	KAC	05/20/2005	0039606-1	5.70
Specific Conductance	120.1(1)	1000	1.0	umhos/cm	KAC	05/20/2005	0039573-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	<0.0040	0.0040	mg/l	CS0	06/14/2005	0039667-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/14/2005	0039667-1	<0.00050
Manganese	6010B(2)	0.12	0.010	mg/l	CS0	06/14/2005	0039667-1	<0.010
Sodium	6010B(2)	190	0.50	mg/l	CS0	06/14/2005	0039667-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/14/2005	0039667-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2835**
Lab Sample ID: **0505-2295**
Client Sample ID: MW-40S
Sample Matrix: Aqueous

Date Sampled: 05/18/2005
Date Received: 05/20/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	<0.010	0.010	mg/l	BLC	06/01/2005	0039964-1	<0.010
Cyanide (Total)	335.2(1)	0.24	0.010	mg/l	BLC	05/27/2005	0039826-1	<0.010
Fluoride	340.2(1)	7.3	0.10	mg/l	CK0	06/07/2005	0040019-1	<0.10
pH	150.1(1)	7.76	1.00	pH	KAC	05/20/2005	0039606-1	5.70
Specific Conductance	120.1(1)	960	1.0	umhos/cm	KAC	05/20/2005	0039573-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	<0.0040	0.0040	mg/l	CS0	06/14/2005	0039667-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/14/2005	0039667-1	<0.00050
Manganese	6010B(2)	1.1	0.010	mg/l	CS0	06/14/2005	0039667-1	<0.010
Sodium	6010B(2)	160	0.50	mg/l	CS0	06/14/2005	0039667-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/14/2005	0039667-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2835**
Lab Sample ID: **0505-2296**
Client Sample ID: MW-40D
Sample Matrix: Aqueous

Date Sampled: 05/18/2005
Date Received: 05/20/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.034	0.010	mg/l	BLC	06/01/2005	0039964-1	<0.010
Cyanide (Total)	335.2(1)	0.68	0.010	mg/l	BLC	05/27/2005	0039826-1	<0.010
Fluoride	340.2(1)	4.9	0.10	mg/l	CK0	06/07/2005	0040019-1	<0.10
pH	150.1(1)	7.89	1.00	pH	KAC	05/20/2005	0039606-1	5.70
Specific Conductance	120.1(1)	1000	1.0	umhos/cm	KAC	05/20/2005	0039573-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	<0.0040	0.0040	mg/l	CS0	06/14/2005	0039667-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/14/2005	0039667-1	<0.00050
Manganese	6010B(2)	0.73	0.010	mg/l	CS0	06/14/2005	0039667-1	<0.010
Sodium	6010B(2)	140	0.50	mg/l	CS0	06/14/2005	0039667-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/14/2005	0039667-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2835**
Lab Sample ID: **0505-2297**
Client Sample ID: MW-44S
Sample Matrix: Aqueous

Date Sampled: 05/18/2005
Date Received: 05/20/2005

Pesticides/PCB

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Polychlorinated Biphenyls, ECD								
Aroclor-1016	8082(1)	<0.50	0.50	ug/l	RDJ	06/01/2005	0039686-1	<0.50
Aroclor-1221	8082(1)	<0.50	0.50	ug/l	RDJ	06/01/2005	0039686-1	<0.50
Aroclor-1232	8082(1)	<0.50	0.50	ug/l	RDJ	06/01/2005	0039686-1	<0.50
Aroclor-1242	8082(1)	<0.50	0.50	ug/l	RDJ	06/01/2005	0039686-1	<0.50
Aroclor-1248	8082(1)	<0.50	0.50	ug/l	RDJ	06/01/2005	0039686-1	<0.50
Aroclor-1254	8082(1)	<0.50	0.50	ug/l	RDJ	06/01/2005	0039686-1	<0.50
Aroclor-1260	8082(1)	<0.50	0.50	ug/l	RDJ	06/01/2005	0039686-1	<0.50
PCB Total-TCL	8082(1)	<0.50	0.50	ug/l	RDJ	06/01/2005	0039686-1	<0.50

(1) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2835**
Lab Sample ID: **0505-2298**
Client Sample ID: MW-44D
Sample Matrix: Aqueous

Date Sampled: 05/18/2005
Date Received: 05/20/2005

Pesticides/PCB

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Polychlorinated Biphenyls, ECD								
Aroclor-1016	8082(1)	<0.50	0.50	ug/l	RDJ	06/01/2005	0039686-1	<0.50
Aroclor-1221	8082(1)	<0.50	0.50	ug/l	RDJ	06/01/2005	0039686-1	<0.50
Aroclor-1232	8082(1)	<0.50	0.50	ug/l	RDJ	06/01/2005	0039686-1	<0.50
Aroclor-1242	8082(1)	<0.50	0.50	ug/l	RDJ	06/01/2005	0039686-1	<0.50
Aroclor-1248	8082(1)	<0.50	0.50	ug/l	RDJ	06/01/2005	0039686-1	<0.50
Aroclor-1254	8082(1)	<0.50	0.50	ug/l	RDJ	06/01/2005	0039686-1	<0.50
Aroclor-1260	8082(1)	<0.50	0.50	ug/l	RDJ	06/01/2005	0039686-1	<0.50
PCB Total-TCL	8082(1)	<0.50	0.50	ug/l	RDJ	06/01/2005	0039686-1	<0.50

(1) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2835**
Lab Sample ID: **0505-2299**
Client Sample ID: MW-12
Sample Matrix: Aqueous

Date Sampled: 05/19/2005
Date Received: 05/20/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Total)	335.2(1)	<0.010	0.010	mg/l	BLC	05/27/2005	0039826-1	<0.010
Fluoride	340.2(1)	0.87	0.10	mg/l	CK0	06/07/2005	0040019-1	<0.10
pH	150.1(1)	7.71	1.00	pH	KAC	05/20/2005	0039606-1	5.70
Specific Conductance	120.1(1)	520	1.0	umhos/cm	KAC	05/20/2005	0039573-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	<0.0040	0.0040	mg/l	CS0	06/14/2005	0039738-1	0.0047
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/14/2005	0039738-1	<0.00050
Manganese	6010B(2)	2.0	0.010	mg/l	CS0	06/14/2005	0039738-1	<0.010
Sodium	6010B(2)	32	0.50	mg/l	CS0	06/14/2005	0039738-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/14/2005	0039738-1	<0.010

Pesticides/PCB

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Polychlorinated Biphenyls, ECD								
Aroclor-1016	8082(2)	<0.50	0.50	ug/l	RDJ	06/01/2005	0039686-1	<0.50
Aroclor-1221	8082(2)	<0.50	0.50	ug/l	RDJ	06/01/2005	0039686-1	<0.50
Aroclor-1232	8082(2)	<0.50	0.50	ug/l	RDJ	06/01/2005	0039686-1	<0.50
Aroclor-1242	8082(2)	<0.50	0.50	ug/l	RDJ	06/01/2005	0039686-1	<0.50
Aroclor-1248	8082(2)	<0.50	0.50	ug/l	RDJ	06/01/2005	0039686-1	<0.50
Aroclor-1254	8082(2)	<0.50	0.50	ug/l	RDJ	06/01/2005	0039686-1	<0.50
Aroclor-1260	8082(2)	<0.50	0.50	ug/l	RDJ	06/01/2005	0039686-1	<0.50
PCB Total-TCL	8082(2)	<0.50	0.50	ug/l	RDJ	06/01/2005	0039686-1	<0.50

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2835**
Lab Sample ID: **0505-2300**
Client Sample ID: MW-39S
Sample Matrix: Aqueous

Date Sampled: 05/19/2005
Date Received: 05/20/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.025	0.010	mg/l	BLC	06/01/2005	0039964-1	<0.010
Cyanide (Total)	335.2(1)	7.9	0.010	mg/l	BLC	05/27/2005	0039826-1	<0.010
Fluoride	340.2(1)	190	0.50	mg/l	CK0	06/07/2005	0040019-1	<0.10
pH	150.1(1)	9.24	1.00	pH	KAC	05/20/2005	0039606-1	5.70
Specific Conductance	120.1(1)	4800	1.0	umhos/cm	KAC	05/23/2005	0039637-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.014	0.0040	mg/l	CS0	06/14/2005	0039738-1	0.0047
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/14/2005	0039738-1	<0.00050
Manganese	6010B(2)	0.15	0.010	mg/l	CS0	06/14/2005	0039738-1	<0.010
Sodium	6010B(2)	1200	0.50	mg/l	CS0	06/14/2005	0039738-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/14/2005	0039738-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis. A 5x dilution was done on the sample for fluoride analysis due to high analyte concentrations.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2835**
Lab Sample ID: **0505-2301**
Client Sample ID: MW-39D
Sample Matrix: Aqueous

Date Sampled: 05/19/2005
Date Received: 05/20/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.017	0.010	mg/l	BLC	06/01/2005	0039964-1	<0.010
Cyanide (Total)	335.2(1)	4.2	0.010	mg/l	BLC	05/31/2005	0039901-1	<0.010
Fluoride	340.2(1)	15	0.10	mg/l	CK0	06/07/2005	0040019-1	<0.10
pH	150.1(1)	7.63	1.00	pH	KAC	05/20/2005	0039606-1	5.70
Specific Conductance	120.1(1)	2600	1.0	umhos/cm	KAC	05/23/2005	0039637-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	<0.0040	0.0040	mg/l	CS0	06/14/2005	0039738-1	0.0047
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/14/2005	0039738-1	<0.00050
Manganese	6010B(2)	2.6	0.010	mg/l	CS0	06/14/2005	0039738-1	<0.010
Sodium	6010B(2)	650	0.50	mg/l	CS0	06/14/2005	0039738-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/14/2005	0039738-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2835**
Lab Sample ID: **0505-2302**
Client Sample ID: MW-42S
Sample Matrix: Aqueous

Date Sampled: 05/19/2005
Date Received: 05/20/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.068	0.010	mg/l	BLC	06/01/2005	0039964-1	<0.010
Cyanide (Total)	335.2(1)	4.0	0.010	mg/l	BLC	05/31/2005	0039901-1	<0.010
Fluoride	340.2(1)	69	0.50	mg/l	CK0	06/07/2005	0040019-1	<0.10
pH	150.1(1)	8.30	1.00	pH	KAC	05/20/2005	0039606-1	5.70
Specific Conductance	120.1(1)	2700	1.0	umhos/cm	KAC	05/23/2005	0039637-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	<0.0040	0.0040	mg/l	CS0	06/14/2005	0039738-1	0.0047
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/14/2005	0039738-1	<0.00050
Manganese	6010B(2)	1.2	0.010	mg/l	CS0	06/14/2005	0039738-1	<0.010
Sodium	6010B(2)	580	0.50	mg/l	CS0	06/14/2005	0039738-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/14/2005	0039738-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis. A 5x dilution was done on the sample for fluoride analysis due to high analyte concentrations.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2835**
Lab Sample ID: **0505-2303**
Client Sample ID: MW-42D
Sample Matrix: Aqueous

Date Sampled: 05/19/2005
Date Received: 05/20/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.017	0.010	mg/l	BLC	06/01/2005	0039964-1	<0.010
Cyanide (Total)	335.2(1)	1.6	0.010	mg/l	BLC	05/31/2005	0039901-1	<0.010
Fluoride	340.2(1)	11	0.10	mg/l	CK0	06/07/2005	0040019-1	<0.10
pH	150.1(1)	7.87	1.00	pH	KAC	05/20/2005	0039608-1	5.70
Specific Conductance	120.1(1)	2100	1.0	umhos/cm	KAC	05/23/2005	0039637-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.0073	0.0040	mg/l	CS0	06/14/2005	0039738-1	0.0047
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/14/2005	0039738-1	<0.00050
Manganese	6010B(2)	0.35	0.010	mg/l	CS0	06/14/2005	0039738-1	<0.010
Sodium	6010B(2)	810	0.50	mg/l	CS0	06/14/2005	0039738-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/14/2005	0039738-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical

Cover Page - Inorganic Analysis Data Package

Client ID	Lab Sample ID:
MW-12	2385-0505-2299
MW-16	2385-0505-2289
MW-16D	2385-0505-2290
MW-29D	2385-0505-2292
MW-29S	2385-0505-2291
MW-34D	2385-0505-2294
MW-34S	2385-0505-2293
MW-39D	2385-0505-2301
MW-39S	2385-0505-2300
MW-40D	2385-0505-2296
MW-40S	2385-0505-2295
MW-42D	2385-0505-2303
MW-42S	2385-0505-2302
ZZZZZZ	2203-0505-0322
ZZZZZZ	2205-0505-0329
ZZZZZZ	QC39337DUP
ZZZZZZ	QC39337MS D
ZZZZZZ	QC39337MSD D
ZZZZZZ	QC39738DUP
ZZZZZZ	QC39738MS D
ZZZZZZ	QC39738MSD D

Comments: ~~#Error~~ Dissolved Metals

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than conditions detailed above. Release of the data combined in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Paul M Mocek

Date: 6/15/05

Name: Paul M. Mocek

Title: Metals Gr Leader

Version 4.80.0

Cover Page Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2203-0505-0322 **Client ID:** ZZZZZZ

Matrix: Water **Units:** ug/L **Prep Date:** 5/24/2005 **Prep Batch:** 39667

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	**189.04**	**1.7**	**4.0**	**3.8**	**BR**	**1**	**ICP**	**5/25/2005**	**14:03**
Beryllium	313.04	0.070	0.50	0.070	U	1	ICP	5/25/2005	14:03
Manganese	**257.61**	**0.20**	**10.0**	**5.4**	**B**	**1**	**ICP**	**5/25/2005**	**14:03**
Sodium	**330.23**	**170**	**500**	**66500**		**1**	**ICP**	**5/25/2005**	**14:03**
Vanadium	**292.40**	**0.40**	**10.0**	**0.41**	**B**	**1**	**ICP**	**5/25/2005**	**14:03**

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2385-0505-2289 **Client ID:** MW-16

Matrix: Water **Units:** ug/L **Prep Date:** 5/24/2005 **Prep Batch:** 39667

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	23.2	R	1	ICP	6/14/2005	19:42
Beryllium	313.04	0.070	0.50	1.8		1	ICP	6/14/2005	19:42
Manganese	257.61	0.20	10.0	1710		1	ICP	6/14/2005	19:42
Sodium	330.23	170	500	261000		1	ICP	6/14/2005	19:42
Vanadium	292.40	0.40	10.0	61.1		1	ICP	6/14/2005	19:42

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2385-0505-2290 **Client ID:** MW-16D

Matrix: Water **Units:** ug/L **Prep Date:** 5/24/2005 **Prep Batch:** 39667

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	25.4	R	1	ICP	6/14/2005	19:45
Beryllium	313.04	0.070	0.50	1.8		1	ICP	6/14/2005	19:45
Manganese	257.61	0.20	10.0	1730		1	ICP	6/14/2005	19:45
Sodium	330.23	170	500	277000		1	ICP	6/14/2005	19:45
Vanadium	292.40	0.40	10.0	64.5		1	ICP	6/14/2005	19:45

Comments:

U Result is less than the MDL

B Result is between MDL and RL

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2385-0505-2291 **Client ID:** MW-29S

Matrix: Water **Units:** ug/L **Prep Date:** 5/24/2005 **Prep Batch:** 39667

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	1.7	UR	1	ICP	6/14/2005	19:47
Beryllium	313.04	0.070	0.50	0.070	U	1	ICP	6/14/2005	19:47
Manganese	**257.61**	**0.20**	**10.0**	**775**		**1**	**ICP**	**6/14/2005**	**19:47**
Sodium	**330.23**	**170**	**500**	**172000**		**1**	**ICP**	**6/14/2005**	**19:47**
Vanadium	292.40	0.40	10.0	0.40	U	1	ICP	6/14/2005	19:47

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2385-0505-2292 **Client ID:** MW-29D

Matrix: Water **Units:** ug/L **Prep Date:** 5/24/2005 **Prep Batch:** 39667

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	1.7	UR	1	ICP	6/14/2005	19:50
Beryllium	313.04	0.070	0.50	0.070	U	1	ICP	6/14/2005	19:50
Manganese	**257.61**	**0.20**	**10.0**	**2110**		**1**	**ICP**	**6/14/2005**	**19:50**
Sodium	**330.23**	**170**	**500**	**38200**		**1**	**ICP**	**6/14/2005**	**19:50**
Vanadium	292.40	0.40	10.0	0.40	U	1	ICP	6/14/2005	19:50

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2385-0505-2293 **Client ID:** MW-34S

Matrix: Water **Units:** ug/L **Prep Date:** 5/24/2005 **Prep Batch:** 39667

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	28.5	R	1	ICP	6/14/2005	19:53
Beryllium	313.04	0.070	0.50	3.8		1	ICP	6/14/2005	19:53
Manganese	257.61	0.20	10.0	801		1	ICP	6/14/2005	19:53
Sodium	330.23	170	500	521000		1	ICP	6/14/2005	19:53
Vanadium	292.40	0.40	10.0	74.3		1	ICP	6/14/2005	19:53

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2385-0505-2294 **Client ID:** MW-34D

Matrix: Water **Units:** ug/L **Prep Date:** 5/24/2005 **Prep Batch:** 39667

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	**189.04**	**1.7**	**4.0**	**3.0**	**BR**	**1**	**ICP**	**6/14/2005**	**19:56**
Beryllium	313.04	0.070	0.50	0.070	U	1	ICP	6/14/2005	19:56
Manganese	**257.61**	**0.20**	**10.0**	**124**		**1**	**ICP**	**6/14/2005**	**19:56**
Sodium	**330.23**	**170**	**500**	**192000**		**1**	**ICP**	**6/14/2005**	**19:56**
Vanadium	**292.40**	**0.40**	**10.0**	**2.8**	**B**	**1**	**ICP**	**6/14/2005**	**19:56**

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2385-0505-2295 **Client ID:** MW-40S

Matrix: Water **Units:** ug/L **Prep Date:** 5/24/2005 **Prep Batch:** 39667

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	1.7	UR	1	ICP	6/14/2005	19:59
Beryllium	313.04	0.070	0.50	0.070	U	1	ICP	6/14/2005	19:59
Manganese	**257.61**	**0.20**	**10.0**	**1120**		**1**	**ICP**	**6/14/2005**	**19:59**
Sodium	**330.23**	**170**	**500**	**161000**		**1**	**ICP**	**6/14/2005**	**19:59**
Vanadium	292.40	0.40	10.0	0.40	U	1	ICP	6/14/2005	19:59

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2385-0505-2296 **Client ID:** MW-40D

Matrix: Water **Units:** ug/L **Prep Date:** 5/24/2005 **Prep Batch:** 39667

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	1.7	UR	1	ICP	6/14/2005	20:01
Beryllium	313.04	0.070	0.50	0.070	U	1	ICP	6/14/2005	20:01
Manganese	**257.61**	**0.20**	**10.0**	**733**		**1**	**ICP**	**6/14/2005**	**20:01**
Sodium	**330.23**	**170**	**500**	**143000**		**1**	**ICP**	**6/14/2005**	**20:01**
Vanadium	292.40	0.40	10.0	0.40	U	1	ICP	6/14/2005	20:01

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2205-0505-0329 **Client ID:** ZZZZZZ

Matrix: Water **Units:** ug/L **Prep Date:** 5/25/2005 **Prep Batch:** 39738

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	**189.04**	**1.7**	**4.0**	**3.9**	**B**	**1**	**ICP**	**5/27/2005**	**14:53**
Beryllium	313.04	0.070	0.50	0.070	U	1	ICP	5/27/2005	14:53
Manganese	**257.61**	**0.20**	**10.0**	**149**		**1**	**ICP**	**5/27/2005**	**14:53**
Sodium	**330.23**	**170**	**500**	**127000**		**1**	**ICP**	**5/27/2005**	**14:53**
Vanadium	292.40	0.40	10.0	0.40	U	1	ICP	5/27/2005	14:53

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2385-0505-2299 **Client ID:** MW-12

Matrix: Water **Units:** ug/L **Prep Date:** 5/25/2005 **Prep Batch:** 39738

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	1.7	U	1	ICP	6/14/2005	20:04
Beryllium	313.04	0.070	0.50	0.070	U	1	ICP	6/14/2005	20:04
Manganese	**257.61**	**0.20**	**10.0**	**2050**		**1**	**ICP**	**6/14/2005**	**20:04**
Sodium	**330.23**	**170**	**500**	**31600**		**1**	**ICP**	**6/14/2005**	**20:04**
Vanadium	292.40	0.40	10.0	0.40	U	1	ICP	6/14/2005	20:04

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2385-0505-2300 **Client ID:** MW-39S

Matrix: Water **Units:** ug/L **Prep Date:** 5/25/2005 **Prep Batch:** 39738

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	**189.04**	**1.7**	**4.0**	**14.0**		**1**	**ICP**	**6/14/2005**	**20:07**
Beryllium	313.04	0.070	0.50	0.070	U	1	ICP	6/14/2005	20:07
Manganese	**257.61**	**0.20**	**10.0**	**153**		**1**	**ICP**	**6/14/2005**	**20:07**
Sodium	**330.23**	**170**	**500**	**1180000**		**1**	**ICP**	**6/14/2005**	**20:07**
Vanadium	**292.40**	**0.40**	**10.0**	**9.7**	**B**	**1**	**ICP**	**6/14/2005**	**20:07**

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2385-0505-2301 **Client ID:** MW-39D

Matrix: Water **Units:** ug/L **Prep Date:** 5/25/2005 **Prep Batch:** 39738

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	**189.04**	**1.7**	**4.0**	**2.4**	**B**	**1**	**ICP**	**6/14/2005**	**20:32**
Beryllium	313.04	0.070	0.50	0.070	U	1	ICP	6/14/2005	20:32
Manganese	**257.61**	**0.20**	**10.0**	**2590**		**1**	**ICP**	**6/14/2005**	**20:32**
Sodium	**330.23**	**170**	**500**	**646000**		**1**	**ICP**	**6/14/2005**	**20:32**
Vanadium	**292.40**	**0.40**	**10.0**	**6.5**	**B**	**1**	**ICP**	**6/14/2005**	**20:32**

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2385-0505-2302 **Client ID:** MW-42S

Matrix: Water **Units:** ug/L **Prep Date:** 5/25/2005 **Prep Batch:** 39738

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	1.7	U	1	ICP	6/14/2005	20:35
Beryllium	313.04	0.070	0.50	0.070	U	1	ICP	6/14/2005	20:35
Manganese	**257.61**	**0.20**	**10.0**	**1200**		**1**	**ICP**	**6/14/2005**	**20:35**
Sodium	**330.23**	**170**	**500**	**579000**		**1**	**ICP**	**6/14/2005**	**20:35**
Vanadium	**292.40**	**0.40**	**10.0**	**0.87**	**B**	**1**	**ICP**	**6/14/2005**	**20:35**

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2385-0505-2303 **Client ID:** MW-42D

Matrix: Water **Units:** ug/L **Prep Date:** 5/25/2005 **Prep Batch:** 39738

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	**189.04**	**1.7**	**4.0**	**7.3**		**1**	**ICP**	**6/14/2005**	**20:38**
Beryllium	313.04	0.070	0.50	0.070	U	1	ICP	6/14/2005	20:38
Manganese	**257.61**	**0.20**	**10.0**	**354**		**1**	**ICP**	**6/14/2005**	**20:38**
Sodium	**330.23**	**170**	**500**	**807000**		**1**	**ICP**	**6/14/2005**	**20:38**
Vanadium	**292.40**	**0.40**	**10.0**	**3.5**	**B**	**1**	**ICP**	**6/14/2005**	**20:38**

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Initial Calibration Verification Standar

Instrument: ICP **Units:** ug/L

Chart Number: E0525A.ARC **Acceptable Range:** 95% - 105%

Standard Source: High-Purity **Standard ID:** M1-120-1

Element	WL/ Mass	True Conc	ICV 5/25/2005 9:55 AM									
			Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Arsenic	189.042	2000.0	2012.31	**100.6**								
Beryllium	313.042	2000.0	1969.14	**98.5**								
Manganese	257.61	2000.0	1994.35	**99.7**								
Sodium	330.232	10000.0	10233.84	**102.3**								
Vanadium	292.402	2000.0	1972.86	**98.6**								

Pace Analytical

Metals Data Reporting Form

Initial Calibration Verification Standar

Instrument: ICP **Units:** ug/L

Chart Number: E0527A.ARC **Acceptable Range:** 95% - 105%

Standard Source: High-Purity **Standard ID:** M1-120-1

Element	WL/ Mass	True Conc	ICV 5/27/2005 1:07 PM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Arsenic	189.042	2000.0	2013.20	**100.7**								
Beryllium	313.042	2000.0	2000.43	**100.0**								
Manganese	257.61	2000.0	2006.55	**100.3**								
Sodium	330.232	10000.0	10394.69	**103.9**								
Vanadium	292.402	2000.0	1994.50	**99.7**								

Pace Analytical

Metals Data Reporting Form

Initial Calibration Verification Standar

Instrument: ICP **Units:** ug/L

Chart Number: E0614A.ARC **Acceptable Range:** 95% - 105%

Standard Source: High-Purity **Standard ID:** M1-120-1

Element	WL/ Mass	True Conc	ICV 6/14/2005 9:46 AM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Arsenic	189.042	2000.0	1974.35	**98.7**								
Beryllium	313.042	2000.0	1994.67	**99.7**								
Manganese	257.61	2000.0	2002.03	**100.1**								
Sodium	330.232	10000.0	9923.70	**99.2**								
Vanadium	292.402	2000.0	1970.42	**98.5**								

Pace Analytical

Metals Data Reporting Form

Continuing Calibration Verification

Instrument: ICP **Units:** ug/L

Chart Number: E0525A.ARC **Acceptable Range:** 90% - 110%

Standard Source: Inorganic Ventures **Standard ID:** M1-124-2

Element	WL/ Mass	True Conc	CCV 5/25/2005 10:02 AM		CCV 5/25/2005 12:24 PM		CCV 5/25/2005 1:16 PM		CCV 5/25/2005 2:40 PM		CCV 5/25/2005 3:33 PM	
			Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Arsenic	189.042	1000.0	1007.49	**100.7**	997.66	**99.8**	1001.62	**100.2**	1015.27	**101.5**	994.02	**99.4**
Beryllium	313.042	1000.0	1009.23	**100.9**	1009.15	**100.9**	1019.45	**101.9**	1032.53	**103.3**	1014.83	**101.5**
Manganese	257.61	1000.0	1018.29	**101.8**	1010.70	**101.1**	1010.26	**101.0**	1032.74	**103.3**	1020.96	**102.1**
Sodium	330.232	5000.0	4892.75	**97.9**	4842.21	**96.8**	5063.74	**101.3**	5219.08	**104.4**	5007.17	**100.1**
Vanadium	292.402	1000.0	1005.12	**100.5**	1006.49	**100.6**	1014.11	**101.4**	1027.98	**102.8**	1006.82	**100.7**

Pace Analytical

Metals Data Reporting Form

Continuing Calibration Verification

Instrument: ICP **Units:** ug/L

Chart Number: E0525A.ARC **Acceptable Range:** 90% - 110%

Standard Source: Inorganic Ventures **Standard ID:** M1-124-2

Element	WL/ Mass	True Conc	CCV 5/25/2005 6:20 PM		CCV 5/25/2005 7:13 PM		CCV 5/25/2005 8:01 PM		CCV 5/25/2005 9:32 PM		CCV 5/25/2005 10:42 PM	
			Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Arsenic	189.042	1000.0	1019.70	**102.0**	1004.21	**100.4**	972.36	**97.2**	1001.95	**100.2**	989.68	**99.0**
Beryllium	313.042	1000.0	1019.50	**102.0**	1008.71	**100.9**	987.95	**98.8**	1027.65	**102.8**	1003.65	**100.4**
Manganese	257.61	1000.0	1025.18	**102.5**	1013.99	**101.4**	984.39	**98.4**	1023.47	**102.3**	1002.79	**100.3**
Sodium	330.232	5000.0	4888.66	**97.8**	4709.65	**94.2**	4802.43	**96.0**	5024.85	**100.5**	4730.27	**94.6**
Vanadium	292.402	1000.0	1018.35	**101.8**	1006.96	**100.7**	981.33	**98.1**	1012.81	**101.3**	1004.78	**100.5**

Pace Analytical

Metals Data Reporting Form

Continuing Calibration Verification

Instrument: ICP **Units:** ug/L

Chart Number: E0525A.ARC **Acceptable Range:** 90% - 110%

Standard Source: Inorganic Ventures **Standard ID:** M1-124-2

Element	WL/ Mass	True Conc	CCV 5/25/2005 11:58 PM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Arsenic	189.042	1000.0	1004.14	**100.4**								
Beryllium	313.042	1000.0	1018.64	**101.9**								
Manganese	257.61	1000.0	1011.30	**101.1**								
Sodium	330.232	5000.0	4855.10	**97.1**								
Vanadium	292.402	1000.0	1015.41	**101.5**								

Pace Analytical

Metals Data Reporting Form

Continuing Calibration Verification

Instrument: ICP **Units:** ug/L

Chart Number: E0527A.ARC **Acceptable Range:** 90% - 110%

Standard Source: Inorganic Ventures **Standard ID:** M1-124-2

Element	WL/ Mass	True Conc	CCV 5/27/2005 1:15 PM		CCV 5/27/2005 3:23 PM		CCV 5/27/2005 4:14 PM		CCV 5/27/2005 5:02 PM			
			Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Arsenic	189.042	1000.0	1006.60	**100.7**	1022.95	**102.3**	1000.33	**100.0**	1019.06	**101.9**		
Beryllium	313.042	1000.0	1004.74	**100.5**	1025.77	**102.6**	1009.53	**101.0**	1026.52	**102.7**		
Manganese	257.61	1000.0	1000.31	**100.0**	1020.23	**102.0**	996.07	**99.6**	1014.54	**101.5**		
Sodium	330.232	5000.0	4913.61	**98.3**	5043.41	**100.9**	4952.04	**99.0**	4968.84	**99.4**		
Vanadium	292.402	1000.0	997.48	**99.7**	1016.06	**101.6**	1006.18	**100.6**	1020.88	**102.1**		

Pace Analytical

Metals Data Reporting Form

Continuing Calibration Verification

Instrument: ICP **Units:** ug/L

Chart Number: E0614A.ARC **Acceptable Range:** 90% - 110%

Standard Source: Inorganic Ventures **Standard ID:** M1-124-2

Element	WL/ Mass	True Conc	CCV 6/14/2005 9:54 AM		CCV 6/14/2005 11:12 AM		CCV 6/14/2005 12:01 PM		CCV 6/14/2005 1:01 PM		CCV 6/14/2005 2:11 PM	
			Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Arsenic	189.042	1000.0	1019.11	**101.9**	1023.02	**102.3**	1029.55	**103.0**	1007.52	**100.8**	1009.67	**101.0**
Beryllium	313.042	1000.0	1033.51	**103.4**	1027.88	**102.8**	1036.09	**103.6**	1032.93	**103.3**	1037.21	**103.7**
Manganese	257.61	1000.0	1028.20	**102.8**	1018.02	**101.8**	1021.48	**102.1**	1019.69	**102.0**	1019.62	**102.0**
Sodium	330.232	5000.0	4865.86	**97.3**	5349.26	**107.0**	5250.85	**105.0**	4945.46	**98.9**	5021.63	**100.4**
Vanadium	292.402	1000.0	1019.48	**101.9**	1014.94	**101.5**	1017.68	**101.8**	1008.87	**100.9**	1015.07	**101.5**

Pace Analytical

Metals Data Reporting Form

Continuing Calibration Verification

Instrument: ICP **Units:** ug/L

Chart Number: E0614A.ARC **Acceptable Range:** 90% - 110%

Standard Source: Inorganic Ventures **Standard ID:** M1-124-2

Element	WL/ Mass	True Conc	CCV 6/14/2005 3:13 PM		CCV 6/14/2005 4:27 PM		CCV 6/14/2005 5:40 PM		CCV 6/14/2005 6:33 PM		CCV 6/14/2005 7:12 PM	
			Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Arsenic	189.042	1000.0	1014.17	**101.4**	1033.45	**103.3**	1005.16	**100.5**	990.34	**99.0**	993.00	**99.3**
Beryllium	313.042	1000.0	1045.43	**104.5**	1057.32	**105.7**	1037.35	**103.7**	1030.84	**103.1**	1026.58	**102.7**
Manganese	257.61	1000.0	1024.95	**102.5**	1036.69	**103.7**	1021.44	**102.1**	1014.99	**101.5**	1007.77	**100.8**
Sodium	330.232	5000.0	4921.86	**98.4**	4960.13	**99.2**	4951.53	**99.0**	4957.02	**99.1**	4865.83	**97.3**
Vanadium	292.402	1000.0	1018.88	**101.9**	1031.18	**103.1**	1013.12	**101.3**	1009.13	**100.9**	1002.47	**100.2**

Pace Analytical

Metals Data Reporting Form

Continuing Calibration Verification

Instrument: ICP **Units:** ug/L

Chart Number: E0614A.ARC **Acceptable Range:** 90% - 110%

Standard Source: Inorganic Ventures **Standard ID:** M1-124-2

Element	WL/ Mass	True Conc	CCV 6/14/2005 8:12 PM Found	% Rec	CCV 6/14/2005 8:50 PM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Arsenic	189.042	1000.0	997.19	**99.7**	1008.78	**100.9**						
Beryllium	313.042	1000.0	1039.38	**103.9**	1041.32	**104.1**						
Manganese	257.61	1000.0	1022.05	**102.2**	1023.40	**102.3**						
Sodium	330.232	5000.0	5156.39	**103.1**	4945.38	**98.9**						
Vanadium	292.402	1000.0	1012.95	**101.3**	1013.50	**101.4**						

Pace Analytical

Metals Data Reporting Form

Initial Calibration Blank Results

Instrument: ICP **Units:** ug/L

Chart Number: E0525A.ARC

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	Blank 5/25/2005 10:45 AM Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Arsenic	189.042	4	**2.7**	**B**								
Beryllium	313.042	0.5	0.1	U								
Manganese	257.61	10	0.2	U								
Sodium	330.232	500	170.0	U								
Vanadium	292.402	10	**0.6**	**B**								

U Result is less than the MDL

B Result is between MDL and RL

Pace Analytical

Metals Data Reporting Form

Initial Calibration Blank Results

Instrument: ICP **Units:** ug/L

Chart Number: E0527A.ARC

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	Blank 5/27/2005 2:28 PM Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Arsenic	189.042	4	**4.7**									
Beryllium	313.042	0.5	0.1	U								
Manganese	257.61	10	**0.2**	**B**								
Sodium	330.232	500	170.0	U								
Vanadium	292.402	10	0.4	U								

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 3 Equivalent

Pace Analytical

Metals Data Reporting Form

Initial Calibration Blank Results

Instrument: ICP **Units:** ug/L

Chart Number: E0614A.ARC

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	Blank 6/14/2005 10:09 AM Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Arsenic	189.042	4	3.3	B								
Beryllium	313.042	0.5	0.1	U								
Manganese	257.61	10	0.2	U								
Sodium	330.232	500	170.0	U								
Vanadium	292.402	10	0.4	U								

U Result is less than the MDL

B Result is between MDL and RL

Pace Analytical

Metals Data Reporting Form

Continuing Calibration Blank Result

Instrument: ICP **Units:** ug/L

Chart Number: E0525A.ARC

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	Blank 5/25/2005 12:36 PM		Blank 5/25/2005 1:31 PM		Blank 5/25/2005 2:53 PM		Blank 5/25/2005 3:52 PM		Blank 5/25/2005 6:39 PM	
			Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Arsenic	189.042	4	1.7	U	**1.9**	**B**	1.7	U	**3.0**	**B**	**3.2**	**B**
Beryllium	313.042	0.5	0.1	U	0.1	U	0.1	U	0.1	U	-0.1	B
Manganese	257.61	10	0.2	U	**0.2**	**B**	0.2	U	0.2	U	-0.3	B
Sodium	330.232	500	170.0	U	170.0	U	170.0	U	170.0	U	170.0	U
Vanadium	292.402	10	0.4	U	0.4	U	0.4	U	0.4	U	**0.6**	**B**

U Result is less than the MDL
B Result is between MDL and RL

Pace Analytical

Metals Data Reporting Form

Continuing Calibration Blank Result

Instrument: ICP **Units:** ug/L

Chart Number: E0525A.ARC

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	Blank 5/25/2005 7:34 PM		Blank 5/25/2005 8:52 PM		Blank 5/25/2005 9:58 PM		Blank 5/25/2005 11:10 PM		Blank 5/26/2005 12:27 AM	
			Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Arsenic	189.042	4	-1.7	B	**1.9**	**B**	1.7	U	**2.1**	**B**	1.7	U
Beryllium	313.042	0.5	-0.1	B	0.1	U	0.1	U	0.1	U	0.1	U
Manganese	257.61	10	0.2	U	0.2	U	-0.3	B	0.2	U	0.2	U
Sodium	330.232	500	170.0	U	170.0	U	170.0	U	170.0	U	170.0	U
Vanadium	292.402	10	0.4	U	**0.6**	**B**	0.4	U	**0.6**	**B**	**0.5**	**B**

U Result is less than the MDL

B Result is between MDL and RL

Form 3 Equivalent

Pace Analytical

Metals Data Reporting Form

Continuing Calibration Blank Result

Instrument: ICP **Units:** ug/L

Chart Number: E0527A.ARC

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	Blank 5/27/2005 3:35 PM		Blank 5/27/2005 4:27 PM		Blank 5/27/2005 5:28 PM					
			Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Arsenic	189.042	4	**3.4**	**B**	**4.8**		**6.7**					
Beryllium	313.042	0.5	0.1	U	0.1	U	0.1	U				
Manganese	257.61	10	0.2	U	0.2	B	0.2	U				
Sodium	330.232	500	170.0	U	170.0	U	**527.0**					
Vanadium	292.402	10	0.4	U	0.4	U	-0.6	B				

U Result is less than the MDL
B Result is between MDL and RL

Form 3 Equivalent

Pace Analytical

Metals Data Reporting Form

Continuing Calibration Blank Result

Instrument: ICP **Units:** ug/L

Chart Number: E0614A.ARC

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	Blank 6/14/2005 11:27 AM		Blank 6/14/2005 12:14 PM		Blank 6/14/2005 1:22 PM		Blank 6/14/2005 2:27 PM		Blank 6/14/2005 3:27 PM	
			Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Arsenic	189.042	4	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U
Beryllium	313.042	0.5	0.1	U	0.1	U	**0.1**	**B**	0.1	U	0.1	U
Manganese	257.61	10	**0.3**	**B**	**0.3**	**B**	0.2	U	**0.4**	**B**	**0.2**	**B**
Sodium	330.232	500	170.0	U	170.0	U	170.0	U	170.0	U	170.0	U
Vanadium	292.402	10	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U

U Result is less than the MDL

B Result is between MDL and RL

Form 3 Equivalent

Pace Analytical

Metals Data Reporting Form

Continuing Calibration Blank Result

Instrument: ICP **Units:** ug/L

Chart Number: E0614A.ARC

Standard Source: **Standard ID:**

Element	WL/ Mass	Report Limit	Blank 6/14/2005 4:45 PM		Blank 6/14/2005 5:57 PM		Blank 6/14/2005 6:44 PM		Blank 6/14/2005 7:25 PM		Blank 6/14/2005 8:29 PM	
			Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Arsenic	189.042	4	1.7	U	1.7	U	**2.8**	**B**	1.7	U	**2.3**	**B**
Beryllium	313.042	0.5	0.1	U	0.1	U	0.1	U	0.1	U	-0.2	B
Manganese	257.61	10	**0.2**	**B**	0.2	U	0.2	U	0.2	U	-0.3	B
Sodium	330.232	500	170.0	U	170.0	U	170.0	U	**208.0**	**B**	170.0	U
Vanadium	292.402	10	0.4	U	0.4	U	**0.5**	**B**	0.4	U	-0.6	B

U Result is less than the MDL

B Result is between MDL and RL

Pace Analytical

Metals Data Reporting Form

Continuing Calibration Blank Result

Instrument: ICP **Units:** ug/L

Chart Number: E0614A.ARC

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	Blank 6/14/2005 9:03 PM Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Arsenic	189.042	4	1.7	U								
Beryllium	313.042	0.5	0.1	U								
Manganese	257.61	10	0.2	U								
Sodium	330.232	500	170.0	U								
Vanadium	292.402	10	0.4	U								

U Result is less than the MDL

B Result is between MDL and RL

Pace Analytical

Metals Data Reporting Form

Preparation Blank Results

Lab Sample ID: QC39667MB

Matrix: Water **Units:** ug/L **Prep Date:** 5/24/2005 **Prep Batch:** 39667

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.042	1.7	4.0	1.7	U	1	ICP	5/25/2005	13:51
Beryllium	313.042	0.070	0.50	0.070	U	1	ICP	5/25/2005	13:51
Manganese	**257.61**	**0.20**	**10.0**	**0.26**	**B**	**1**	**ICP**	**5/25/2005**	**13:51**
Sodium	330.232	170	500	170	U	1	ICP	5/25/2005	13:51
Vanadium	**292.402**	**0.40**	**10.0**	**0.46**	**B**	**1**	**ICP**	**5/25/2005**	**13:51**

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 3 Equivalent

Pace Analytical

Metals Data Reporting Form

Preparation Blank Results

Lab Sample ID: QC39738MB

Matrix: Water **Units:** ug/L **Prep Date:** 5/25/2005 **Prep Batch:** 39738

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.042	1.7	4.0	1.7	U	1	ICP	6/14/2005	20:41
Beryllium	313.042	0.070	0.50	-0.13	B	1	ICP	6/14/2005	20:41
Manganese	257.61	0.20	10.0	-0.21	B	1	ICP	6/14/2005	20:41
Sodium	**330.232**	**170**	**500**	**178**	**B**	**1**	**ICP**	**6/14/2005**	**20:41**
Vanadium	292.402	0.40	10.0	0.40	U	1	ICP	6/14/2005	20:41

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 3 Equivalent

Pace Analytical

Metals Data Reporting Form

Matrix Spike Sample Results

Spike Sample ID: QC39337MS D

Original Sample ID: 2203-0505-0322 **Client ID:** ZZZZZZ

Matrix: Water **Units:** ug/L **Prep Date:** 5/24/2005 **Prep Batch:** 39667

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	OS Conc	Q	MS Conc	Q	Spike Level	% Rec	OS DF	MS DF	Instr	OS Anal Date	OS Anal Time	MS Anal Date	MS Anal Time
Arsenic	189.0	3.8	B	527		500	104.6	1	1	ICP	5/25/2005	14:03	5/25/2005	14:16
Beryllium	313.0	0.070	U	509		500	101.7	1	1	ICP	5/25/2005	14:03	5/25/2005	14:16
Manganese	257.6	5.4	B	521		500	103.1	1	1	ICP	5/25/2005	14:03	5/25/2005	14:16
Sodium	330.2	66500		68700	NC	2500		1	1	ICP	5/25/2005	14:03	5/25/2005	14:16
Vanadium	292.4	0.41	B	508		500	101.5	1	1	ICP	5/25/2005	14:03	5/25/2005	14:16

Comments: Acceptable Range 90% - 110%

Version 4.80.0

U Result is less than the MDL
B Result is between MDL and RL
N Spike recovery failed
NC Percent recovery was not calculated
R Duplicate analysis RPD was not within limits

Form 5A Equivalent

Pace Analytical

Metals Data Reporting Form

Matrix Spike Sample Results

Spike Sample ID: QC39738MS D

Original Sample ID: 2205-0505-0329 **Client ID:** ZZZZZZ

Matrix: Water **Units:** ug/L **Prep Date:** 5/25/2005 **Prep Batch:** 39738

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	OS Conc	Q	MS Conc	Q	Spike Level	% Rec	OS DF	MS DF	Instr	OS Anal Date	OS Anal Time	MS Anal Date	MS Anal Time
Arsenic	189.0	3.9	B	548		500	108.8	1	1	ICP	5/27/2005	14:53	5/27/2005	14:59
Beryllium	313.0	0.070	U	525		500	105.0	1	1	ICP	5/27/2005	14:53	5/27/2005	14:59
Manganese	257.6	149		664		500	102.9	1	1	ICP	5/27/2005	14:53	5/27/2005	14:59
Sodium	330.2	127000		125000	NC	2500		1	1	ICP	5/27/2005	14:53	5/27/2005	14:59
Vanadium	292.4	0.40	U	517		500	103.4	1	1	ICP	5/27/2005	14:53	5/27/2005	14:59

Comments: Acceptable Range 90% - 110%

Version 4.80.0

U Result is less than the MDL
B Result is between MDL and RL
N Spike recovery failed
NC Percent recovery was not calculated
R Duplicate analysis RPD was not within limits

Form 5A Equivalent

Pace Analytical

Metals Data Reporting Form

Matrix Spike Duplicate Sample Results

Spike Sample ID: QC39337MSD D

Original Sample ID: 2203-0505-0322 **Client ID:** ZZZZZZ

Matrix: Water **Units:** ug/L **Prep Date:** 5/24/2005 **Prep Batch:** 39667

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	OS Conc	Q	MSD Conc	Q	Spike Level	% Rec	OS DF	MSD DF	Instr	OS Anal Date	OS Anal Time	MSD Anal Date	MSD Anal Time
Arsenic	189.0	3.8	B	555		500	110.1	1	1	ICP	5/25/2005	14:03	5/25/2005	14:19
Beryllium	313.0	0.070	U	529		500	105.7	1	1	ICP	5/25/2005	14:03	5/25/2005	14:19
Manganese	257.6	5.4	B	538		500	106.6	1	1	ICP	5/25/2005	14:03	5/25/2005	14:19
Sodium	330.2	66500		70100	NC	2500		1	1	ICP	5/25/2005	14:03	5/25/2005	14:19
Vanadium	292.4	0.41	B	527		500	105.3	1	1	ICP	5/25/2005	14:03	5/25/2005	14:19

Comments: Acceptable Range 90% - 110%

Version 4.80.0

U Result is less than the MDL
B Result is between MDL and RL
N Spike recovery failed
NC Percent recovery was not calculated
R Duplicate analysis RPD was not within limits

Form 5A Equivalent

Pace Analytical

Metals Data Reporting Form

Matrix Spike Duplicate Sample Results

Spike Sample ID: QC39738MSD D

Original Sample ID: 2205-0505-0329 **Client ID:** ZZZZZZ

Matrix: Water **Units:** ug/L **Prep Date:** 5/25/2005 **Prep Batch:** 39738

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	OS Conc	Q	MSD Conc	Q	Spike Level	% Rec	OS DF	MSD DF	Instr	OS Anal Date	OS Anal Time	MSD Anal Date	MSD Anal Time
Arsenic	189.0	3.9	B	550		500	109.2	1	1	ICP	5/27/2005	14:53	5/27/2005	15:03
Beryllium	313.0	0.070	U	521		500	104.1	1	1	ICP	5/27/2005	14:53	5/27/2005	15:03
Manganese	257.6	149		662		500	102.4	1	1	ICP	5/27/2005	14:53	5/27/2005	15:03
Sodium	330.2	127000		128000	NC	2500		1	1	ICP	5/27/2005	14:53	5/27/2005	15:03
Vanadium	292.4	0.40	U	514		500	102.7	1	1	ICP	5/27/2005	14:53	5/27/2005	15:03

Comments: Acceptable Range 90% - 110%

Version 4.80.0

U Result is less than the MDL
B Result is between MDL and RL
N Spike recovery failed
NC Percent recovery was not calculated
R Duplicate analysis RPD was not within limits

Form 5A Equivalent

Pace Analytical

Metals Data Reporting Form

Matrix Spike Duplicate RPD Report

Matrix Spike Duplicate Sample ID: QC39337MSD D

Matrix Spike Sample ID: QC39337MS D **Client ID:** ZZZZZZ

Matrix: Water **Units:** ug/L **Prep Date:** 5/24/2005 **Prep Batch:** 39667

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	MS Conc	Q	MSD Conc	Q	% RPD	MS DF	MSD DF	Instr	MS Anal Date	MS Anal Time	MSD Anal Date	MSD Anal Time
Arsenic	189.042	527		555		5.1	1	1	ICP	5/25/2005	14:16	5/25/2005	14:19
Beryllium	313.042	509		529		3.9	1	1	ICP	5/25/2005	14:16	5/25/2005	14:19
Manganese	257.61	521		538		3.3	1	1	ICP	5/25/2005	14:16	5/25/2005	14:19
Sodium	330.232	68700	NC	70100	NC	2.0	1	1	ICP	5/25/2005	14:16	5/25/2005	14:19
Vanadium	292.402	508		527		3.6	1	1	ICP	5/25/2005	14:16	5/25/2005	14:19

Comments:

Version 4.80.0

U Result is less than the MDL
B Result is between MDL and RL
N Spike recovery failed
NC Percent recovery was not calculated
R Duplicate analysis RPD was not within limits

Form 6 Equivalent

Pace Analytical

Metals Data Reporting Form

Matrix Spike Duplicate RPD Report

Matrix Spike Duplicate Sample ID: QC39738MSD D

Matrix Spike Sample ID: QC39738MS D **Client ID:** ZZZZZZ

Matrix: Water **Units:** ug/L **Prep Date:** 5/25/2005 **Prep Batch:** 39738

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	MS Conc	Q	MSD Conc	Q	% RPD	MS DF	MSD DF	Instr	MS Anal Date	MS Anal Time	MSD Anal Date	MSD Anal Time
Arsenic	189.042	548		550		0.3	1	1	ICP	5/27/2005	14:59	5/27/2005	15:03
Beryllium	313.042	525		521		0.8	1	1	ICP	5/27/2005	14:59	5/27/2005	15:03
Manganese	257.61	664		662		0.4	1	1	ICP	5/27/2005	14:59	5/27/2005	15:03
Sodium	330.232	125000	NC	128000	NC	2.6	1	1	ICP	5/27/2005	14:59	5/27/2005	15:03
Vanadium	292.402	517		514		0.7	1	1	ICP	5/27/2005	14:59	5/27/2005	15:03

Comments:

Version 4.80.0

U Result is less than the MDL
B Result is between MDL and RL
N Spike recovery failed
NC Percent recovery was not calculated
R Duplicate analysis RPD was not within limits

Form 6 Equivalent

Pace Analytical

Metals Data Reporting Form

Laboratory Control Sample Results

Lab Sample ID: QC39337LCS

Matrix: Water **Units:** ug/L **Prep Date:** 5/24/2005 **Prep Batch:** 39667

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	Spike Level	Conc	Percent Recovery	Q	Range	DF	Instr	Anal Date	Anal Time
Arsenic	189.042	500	523	104.6		80-120	1	ICP	5/25/2005	13:54
Beryllium	313.042	500	534	106.9		80-120	1	ICP	5/25/2005	13:54
Manganese	257.61	500	538	107.6		80-120	1	ICP	5/25/2005	13:54
Sodium	330.232	2500	2720	108.8		80-120	1	ICP	5/25/2005	13:54
Vanadium	292.402	500	524	104.7		80-120	1	ICP	5/25/2005	13:54

Comments: Acceptable Range 90% - 110%

U Result is less than the MDL

B Result is between MDL and RL

Pace Analytical

Metals Data Reporting Form

Laboratory Control Sample Results

Lab Sample ID: QC39738LCS

Matrix: Water **Units:** ug/L **Prep Date:** 5/25/2005 **Prep Batch:** 39738

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	Spike Level	Conc	Percent Recovery	Q	Range	DF	Instr	Anal Date	Anal Time
Arsenic	189.042	500	511	102.1		80-120	1	ICP	6/14/2005	20:43
Beryllium	313.042	500	521	104.1		80-120	1	ICP	6/14/2005	20:43
Manganese	257.61	500	542	108.4		80-120	1	ICP	6/14/2005	20:43
Sodium	330.232	2500	2860	114.2		80-120	1	ICP	6/14/2005	20:43
Vanadium	292.402	500	522	104.5		80-120	1	ICP	6/14/2005	20:43

Comments: Acceptable Range 90% - 110%

U Result is less than the MDL

B Result is between MDL and RL

Pace Analytical

Metals Data Reporting Form

Duplicate Sample Results

Lab Sample ID: QC39337DUP **Client ID:** ZZZZZZ

Matrix: Water **Units:** ug/L **Prep Date:** 5/24/2005 **Prep Batch:** 39667

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.042	1.7	4.0	1.7	U R	1	ICP	5/25/2005	14:12
Beryllium	313.042	0.070	0.50	0.070	U	1	ICP	5/25/2005	14:12
Manganese	**257.61**	**0.20**	**10.0**	**5.4**	**B**	**1**	**ICP**	**5/25/2005**	**14:12**
Sodium	**330.232**	**170**	**500**	**66400**		**1**	**ICP**	**5/25/2005**	**14:12**
Vanadium	292.402	0.40	10.0	0.40	B	1	ICP	5/25/2005	14:12

Comments:

Pace Analytical

Metals Data Reporting Form

Duplicate Sample Results

Lab Sample ID: QC39738DUP **Client ID:** ZZZZZZ

Matrix: Water **Units:** ug/L **Prep Date:** 5/25/2005 **Prep Batch:** 39738

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	**189.042**	**1.7**	**4.0**	**4.2**		**1**	**ICP**	**5/27/2005**	**14:56**
Beryllium	313.042	0.070	0.50	0.070	U	1	ICP	5/27/2005	14:56
Manganese	**257.61**	**0.20**	**10.0**	**152**		**1**	**ICP**	**5/27/2005**	**14:56**
Sodium	**330.232**	**170**	**500**	**130000**		**1**	**ICP**	**5/27/2005**	**14:56**
Vanadium	292.402	0.40	10.0	0.40	U	1	ICP	5/27/2005	14:56

Comments:

Version 4.80.0

U Result is less than the MDL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Duplicate RPD Report

Duplicate Sample ID: QC39337DUP

Original Sample ID: 2203-0505-0322 **Client ID:** ZZZZZZ

Matrix: Water **Units:** ug/L **Prep Date:** 5/24/2005 **Prep Batch:** 39667

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	OS Conc	Q	Dupe Conc	Q	% RPD	OS DF	Dupe DF	Instr	OS Anal Date	OS Anal Time	Dupe Anal Date	Dupe Anal Time
Arsenic	189.042	3.8	B	1.7	U R	4.2	1	1	ICP	5/25/2005	14:03	5/25/2005	14:12
Beryllium	313.042	0.070	U	0.070	U		1	1	ICP	5/25/2005	14:03	5/25/2005	14:12
Manganese	257.61	5.4	B	5.4	B	0.0	1	1	ICP	5/25/2005	14:03	5/25/2005	14:12
Sodium	330.232	66500		66400		0.1	1	1	ICP	5/25/2005	14:03	5/25/2005	14:12
Vanadium	292.402	0.41	B	0.40	B	0.0	1	1	ICP	5/25/2005	14:03	5/25/2005	14:12

U Result is less than the MDL
B Result is between MDL and RL
R Duplicate analysis RPD was not within limits

Pace Analytical

Metals Data Reporting Form

Sample Duplicate RPD Report

Duplicate Sample ID: QC39738DUP

Original Sample ID: 2205-0505-0329 **Client ID:** ZZZZZZ

Matrix: Water **Units:** ug/L **Prep Date:** 5/25/2005 **Prep Batch:** 39738

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	OS Conc	Q	Dupe Conc	Q	% RPD	OS DF	Dupe DF	Instr	OS Anal Date	OS Anal Time	Dupe Anal Date	Dupe Anal Time
Arsenic	189.042	3.9	B	4.2		0.3	1	1	ICP	5/27/2005	14:53	5/27/2005	14:56
Beryllium	313.042	0.070	U	0.070	U		1	1	ICP	5/27/2005	14:53	5/27/2005	14:56
Manganese	257.61	149		152		1.9	1	1	ICP	5/27/2005	14:53	5/27/2005	14:56
Sodium	330.232	127000		130000		2.8	1	1	ICP	5/27/2005	14:53	5/27/2005	14:56
Vanadium	292.402	0.40	U	0.40	U		1	1	ICP	5/27/2005	14:53	5/27/2005	14:56

Version 4.80.0

U Result is less than the MDL
B Result is between MDL and RL
R Duplicate analysis RPD was not within limits

Form 6 Equivalent

2E
WATER AROCLOR SURROGATE RECOVERY

Lab Name: PACE ANALYTICAL SERVICES, Contract:

Lab Code: Case No.: 052835 SAS No.: SDG No.: 052835

GC Column(1): RTX-5 ID: 0.53 (mm)

	EPA SAMPLE NO.	TCX %REC #	DCB %REC #	S3 %REC #	S4 %REC #	S5 %REC #	S6 %REC #	TOT OUT
01	MW-44S	86	69					0
02	MW-44D	84	67					0
03	MW-12	82	89					0
04	LCS	93	98					0
05	LCSD	92	90					0
06	PBLK1	91	100					0
07								
08								
09								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

ADVISORY
QC LIMITS

S1 (TCX) = Tetrachloro-m-xylene (30-150)
S2 (DCB) = Decachlorobiphenyl (30-150)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

FORM 3
WATER AROCLOR LAB CONTROL SAMPLE

Lab Name: PACE ANALYTICAL SERVICES, Contract:

Lab Code: Case No.: 052835 SAS No.: SDG No.: 052835

Matrix Spike - Sample No.: LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Aroclor-1248	2.50		2.14	86	55-145

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Aroclor-1248	2.50	2.18	87	1	25	55-145

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits
Spike Recovery: 0 out of 2 outside limits

COMMENTS:

Project Number 05-2835

General Chemistry

Pace Analytical
Matrix Spike/Matrix Spike Duplicate Summary

Pace Project Number 05-2835
Pace Sample Number 05-2289 through 05-2303

				QC Limits
Analysis	True value	QC Concentration mg/L	% Recovery %	Recovery %
Fluoride Batch 40019	2mg/L	2.01	101	85-115
Cyanide, total Batch 39826	0.1mg/L	0.0944	94.00	85-115
Cyanide, total Batch 39901	0.1mg/L	0.0917	92.00	85-116
Cyanide, ammenable Batch 39964	0.1mg/L	0.093	93	85-115
pH	NA	NA	NA	NA
Specific Conductance	NA	NA	NA	NA

Pace Analytical
Matrix Spike/Matrix Spike Duplicate Summary

Pace Project Number 05-2835
Pace Sample Number 05-2289 through 05-2303

Analysis	sample ID	Spike Added mg/L	Sample Concentration mg/L	Matrix Spike Concentration mg/L	Matrix Spike % Recovery %	Spike Added mg/L	Matrix Spike Duplicate Concentation mg/L	Matrix Spike Duplicate % Recovery %	% RPD %	QC Limits RPD %	QC Limits Recovery %
Fluoride Batch 40019	#05-2291	4	9.73	17.98	162	NA	NA	NA	NA	20	85-115
Cyanide, total Batch 39826	*05-2804	0.1	0	0.0917	91.70	NA	NA	NA	NA	20	85-115
Cyanide, total Batch 39901	*#05-2857	0.1	0.0055	0.0828	77.30	NA	NA	NA	NA	20	85-115
Cyanide, ammenable Batch 39964	NA	NA	NA	NA	NA	NA	NA	NA	NA	20	85-115
pH	NA	NA	NA	NA	NA	NA	NA	NA	NA	20	85-115
Specific Conductance	NA	NA	NA	NA	NA	NA	NA	NA	NA	20	85-115
										20	85-115

Note: *Spiked sample was a project other than 05-2758
Note: #Spiked sample showed matrix interference.

HMI
Environmental Consulting Services

CHAIN-OF-CUSTODY RECORD

05 2835

Project Number	Project Name/Location	Laboratory	Sampling Personnel
HM00319	ORMET/REDUCTION MILL	PACE ANALYTICAL	S. MENOSKY / C. STANDARD

Container Description/ Number of Containers

Sample ID	Date/Time	Sample Code	Dissolved As, Be, Mn, Na, V 250 ml. Plastic Field Filtered (HNO3)	Cyanide (Total/Amenable) 250 ml. Plastic (NaOH)	pH, Sp. Cond., F 500 ml. Plastic (4°C)	PCB's 1 Liter Glass (4°C)						TOTAL
MW-16	5-18-05	L	1	1	1						05 2289	3
MW-16D	↓	↓	1	1	1						90	3
MW-29S	↓	↓	1	1	1						91	3
MW-29D	↓	↓	1	1	1						92	3
MW-34S	↓	↓	1	1	1						93	3
MW-34D	↓	↓	1	1	1						94	3
MW-40S	↓	↓	1	1	1						95	3
MW-40D	↓	↓	1	1	1						96	3
MW-44S	↓	↓				1					97	1
MW-44D	↓	↓				1					98	1
MW-12	5-19-05	↓	1	1	1	1					99	4
MW-39S	↓	↓	1	1	1						2300	3
MW-39D	↓	↓	1	1	1						2301	3
MW-42S	↓	↓	1	1	1						2302	3
MW-42D	↓	↓	1	1	1						2303	3

Sample Code: L = Liquid; S = Solid; A = Air

Total Number of Containers: 42

Relinquished by: Stephen C. Menosky	Organization: HMI	Date: 5-20-05	Time: 9:00 AM	Seal Intact?	
Received by: [signature]	Organization:	Date: 5·20·05	Time: 11·15	Yes No NA	
Relinquished by: [signature]	Organization:	Date: 5·20·05	Time: 350	Seal Intact?	
Received by: [signature]	Organization:	Date: 5·20·05	Time: 350	Yes No NA	

REMARKS: SAMPLES ARE IN 2 COOLERS/ ANALYZE AMENABLE

50

ELIV... METH... Pers... mon... er ... Lab Courier PACE Other

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

June 8, 2005

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Dear Mr. Fargo:

Enclosed are analytical results for samples submitted to Pace Analytical by Hydro Systems Management, Inc.. The samples were received on May 18, 2005. The results reported in this project meet the requirements as specified in Chapter 5 of the NELAC Standards. Any deviations or discrepancies from the NELAC standards are documented in the case narrative(s) of this report. Please reference Pace project number 05-2758 when inquiring about this report.

Client Site: Reduction Mill
Client Ref.: HM00319

Pace Sample Identification	Client Sample Identification
0505-1913	MW-15
0505-1914	MW-19
0505-1915	MW-32
0505-1916	MW-35
0505-1917	MW-36
0505-1918	MW-1
0505-1919	MW-2
0505-1920	MW-2D
0505-1921	MW-5
0505-1922	MW-7
0505-1923	MW-8
0505-1924	MW-10

Pace Sample Identification	Client Sample Identification
0505-1925	MW-11
0505-1926	MW-17
0505-1927	MW-18
0505-1928	MW-18D
0505-1929	MW-28
0505-1930	MW-30
0505-1931	MW-31
0505-1932	MW-37
0505-1933	MW-14
0505-1934	Field Blank - 1
0505-1935	Trip Blank

General Comments: Cooler temperature 2 ° C upon receipt. Ice was present. This project is being reissued due to an error in the dilution factor for fluoride on Sample 0505-1913.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Please call me if you have any questions regarding the information contained within this report.

Sincerely,

Rachel D. Christner

Rachel D. Christner
Project Manager

RDC: jld

Enclosures

Page 1 of 96

cc: John Reggi, Ormet Primary Aluminum Corporation

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2758**
Lab Sample ID: **0505-1913**
Client Sample ID: MW-15
Sample Matrix: Aqueous

Date Sampled: 05/16/2005
Date Received: 05/18/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	6.6	0.010	mg/l	BLC	05/23/2005	0039719-1	<0.010
Cyanide (Total)	335.2(1)	8.2	0.010	mg/l	BLC	05/19/2005	0039533-1	<0.010
Fluoride	340.2(1)	49	0.10	mg/l	CK0	06/01/2005	0039876-1	<0.10
pH	150.1(1)	8.17	1.00	pH	KAC	05/18/2005	0039521-1	5.69
Specific Conductance	120.1(1)	1200	1.0	umhos/cm	KAC	05/19/2005	0039595-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.023	0.0040	mg/l	CS0	06/01/2005	0039519-1	<0.0040
Beryllium	6010B(2)	0.0024	0.00050	mg/l	CS0	06/01/2005	0039519-1	<0.00050
Manganese	6010B(2)	0.69	0.010	mg/l	CS0	06/01/2005	0039519-1	<0.010
Sodium	6010B(2)	290	0.50	mg/l	CS0	06/01/2005	0039519-1	<0.50
Vanadium	6010B(2)	0.074	0.010	mg/l	CS0	06/01/2005	0039519-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2758**
Lab Sample ID: **0505-1914**
Client Sample ID: MW-19
Sample Matrix: Aqueous

Date Sampled: 05/16/2005
Date Received: 05/18/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	<0.010	0.010	mg/l	BLC	05/23/2005	0039719-1	<0.010
Cyanide (Total)	335.2(1)	0.012	0.010	mg/l	BLC	05/19/2005	0039533-1	<0.010
Fluoride	340.2(1)	2.8	0.10	mg/l	CK0	06/01/2005	0039876-1	<0.10
pH	150.1(1)	7.27	1.00	pH	KAC	05/18/2005	0039521-1	5.69
Specific Conductance	120.1(1)	780	1.0	umhos/cm	KAC	05/19/2005	0039595-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	<0.0040	0.0040	mg/l	CS0	06/01/2005	0039519-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/01/2005	0039519-1	<0.00050
Manganese	6010B(2)	<0.010	0.010	mg/l	CS0	06/01/2005	0039519-1	<0.010
Sodium	6010B(2)	38	0.50	mg/l	CS0	06/01/2005	0039519-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/01/2005	0039519-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2758**
Lab Sample ID: **0505-1915**
Client Sample ID: MW-32
Sample Matrix: Aqueous

Date Sampled: 05/16/2005
Date Received: 05/18/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	1.0	0.010	mg/l	BLC	05/24/2005	0039692-1	<0.010
Cyanide (Total)	335.2(1)	15	0.010	mg/l	BLC	05/19/2005	0039533-1	<0.010
Fluoride	340.2(1)	95	0.10	mg/l	CKO	06/01/2005	0039876-1	<0.10
pH	150.1(1)	9.98	1.00	pH	KAC	05/18/2005	0039521-1	5.69
Specific Conductance	120.1(1)	1600	1.0	umhos/cm	KAC	05/19/2005	0039595-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.11	0.0040	mg/l	CS0	06/01/2005	0039519-1	<0.0040
Beryllium	6010B(2)	0.0027	0.00050	mg/l	CS0	06/01/2005	0039519-1	<0.00050
Manganese	6010B(2)	4.3	0.010	mg/l	CS0	06/01/2005	0039519-1	<0.010
Sodium	6010B(2)	370	0.50	mg/l	CS0	06/01/2005	0039519-1	<0.50
Vanadium	6010B(2)	0.19	0.010	mg/l	CS0	06/01/2005	0039519-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2758**
Lab Sample ID: **0505-1916**
Client Sample ID: MW-35
Sample Matrix: Aqueous

Date Sampled: 05/16/2005
Date Received: 05/18/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	4.1	0.010	mg/l	BLC	05/24/2005	0039692-1	<0.010
Cyanide (Total)	335.2(1)	7.9	0.010	mg/l	BLC	05/19/2005	0039533-1	<0.010
Fluoride	340.2(1)	15	0.10	mg/l	CK0	06/01/2005	0039876-1	<0.10
pH	150.1(1)	8.45	1.00	pH	KAC	05/18/2005	0039521-1	5.69
Specific Conductance	120.1(1)	480	1.0	umhos/cm	KAC	05/19/2005	0039595-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.012	0.0040	mg/l	CS0	06/01/2005	0039519-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/01/2005	0039519-1	<0.00050
Manganese	6010B(2)	0.86	0.010	mg/l	CS0	06/01/2005	0039519-1	<0.010
Sodium	6010B(2)	75	0.50	mg/l	CS0	06/01/2005	0039519-1	<0.50
Vanadium	6010B(2)	0.014	0.010	mg/l	CS0	06/01/2005	0039519-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2758**
Lab Sample ID: **0505-1917**
Client Sample ID: MW-36
Sample Matrix: Aqueous

Date Sampled: 05/16/2005
Date Received: 05/18/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.53	0.010	mg/l	BLC	05/24/2005	0039692-1	<0.010
Cyanide (Total)	335.2(1)	1.8	0.010	mg/l	BLC	05/19/2005	0039533-1	<0.010
Fluoride	340.2(1)	30	0.10	mg/l	CK0	06/01/2005	0039876-1	<0.10
pH	150.1(1)	9.66	1.00	pH	KAC	05/18/2005	0039521-1	5.69
Specific Conductance	120.1(1)	800	1.0	umhos/cm	KAC	05/19/2005	0039595-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.020	0.0040	mg/l	CS0	06/01/2005	0039519-1	<0.0040
Beryllium	6010B(2)	0.00070	0.00050	mg/l	CS0	06/01/2005	0039519-1	<0.00050
Manganese	6010B(2)	0.41	0.010	mg/l	CS0	06/01/2005	0039519-1	<0.010
Sodium	6010B(2)	180	0.50	mg/l	CS0	06/01/2005	0039519-1	<0.50
Vanadium	6010B(2)	0.029	0.010	mg/l	CS0	06/01/2005	0039519-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 1563
Phone: 724.733.116
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2758**
Lab Sample ID: **0505-1918**
Client Sample ID: MW-1
Sample Matrix: Aqueous

Date Sampled: 05/17/2005
Date Received: 05/18/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Total)	335.2(1)	<0.010	0.010	mg/l	BLC	05/19/2005	0039533-1	<0.010
Fluoride	340.2(1)	1.8	0.10	mg/l	CK0	06/01/2005	0039876-1	<0.10
pH	150.1(1)	6.66	1.00	pH	KAC	05/18/2005	0039521-1	5.69
Specific Conductance	120.1(1)	660	1.0	umhos/cm	KAC	05/19/2005	0039595-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	<0.0040	0.0040	mg/l	CS0	06/01/2005	0039519-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/01/2005	0039519-1	<0.00050
Manganese	6010B(2)	0.40	0.010	mg/l	CS0	06/01/2005	0039519-1	<0.010
Sodium	6010B(2)	47	0.50	mg/l	CS0	06/01/2005	0039519-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/01/2005	0039519-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2758**
Lab Sample ID: **0505-1919**
Client Sample ID: MW-2
Sample Matrix: Aqueous

Date Sampled: 05/17/2005
Date Received: 05/18/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	7.1	0.010	mg/l	BLC	05/24/2005	0039692-1	<0.010
Cyanide (Total)	335.2(1)	14	0.010	mg/l	BLC	05/19/2005	0039533-1	<0.010
Fluoride	340.2(1)	44	0.10	mg/l	CK0	06/01/2005	0039876-1	<0.10
pH	150.1(1)	6.66	1.00	pH	KAC	05/18/2005	0039521-1	5.69
Specific Conductance	120.1(1)	1500	1.0	umhos/cm	KAC	05/19/2005	0039595-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.066	0.0040	mg/l	CS0	06/01/2005	0039519-1	<0.0040
Beryllium	6010B(2)	0.00081	0.00050	mg/l	CS0	06/01/2005	0039519-1	<0.00050
Manganese	6010B(2)	0.96	0.010	mg/l	CS0	06/01/2005	0039519-1	<0.010
Sodium	6010B(2)	360	0.50	mg/l	CS0	06/01/2005	0039519-1	<0.50
Vanadium	6010B(2)	0.050	0.010	mg/l	CS0	06/01/2005	0039519-1	<0.010

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Tetrachloroethene	8260B(2)	0.024	0.0050	mg/l	MAK	05/25/2005	0039714-1	<0.0050

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2758**
Lab Sample ID: **0505-1920**
Client Sample ID: MW-2D
Sample Matrix: Aqueous

Date Sampled: 05/17/2005
Date Received: 05/18/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	2.1	0.010	mg/l	BLC	05/24/2005	0039692-1	<0.010
Cyanide (Total)	335.2(1)	15	0.010	mg/l	BLC	05/19/2005	0039533-1	<0.010
Fluoride	340.2(1)	35	0.10	mg/l	CK0	06/01/2005	0039876-1	<0.10
pH	150.1(1)	9.61	1.00	pH	KAC	05/18/2005	0039521-1	5.69
Specific Conductance	120.1(1)	1500	1.0	umhos/cm	KAC	05/19/2005	0039595-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.066	0.0040	mg/l	CS0	06/01/2005	0039519-1	<0.0040
Beryllium	6010B(2)	0.00093	0.00050	mg/l	CS0	06/01/2005	0039519-1	<0.00050
Manganese	6010B(2)	0.98	0.010	mg/l	CS0	06/01/2005	0039519-1	<0.010
Sodium	6010B(2)	370	0.50	mg/l	CS0	06/01/2005	0039519-1	<0.50
Vanadium	6010B(2)	0.051	0.010	mg/l	CS0	06/01/2005	0039519-1	<0.010

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Tetrachloroethene	8260B(2)	0.024	0.0050	mg/l	MAK	05/25/2005	0039714-1	<0.0050

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2758**
Lab Sample ID: **0505-1921**
Client Sample ID: MW-5
Sample Matrix: Aqueous

Date Sampled: 05/17/2005
Date Received: 05/18/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.55	0.010	mg/l	BLC	05/24/2005	0039692-1	<0.010
Cyanide (Total)	335.2(1)	4.7	0.010	mg/l	BLC	05/19/2005	0039533-1	<0.010
Fluoride	340.2(1)	20	0.10	mg/l	CK0	06/01/2005	0039876-1	<0.10
pH	150.1(1)	7.87	1.00	pH	KAC	05/18/2005	0039521-1	5.69
Specific Conductance	120.1(1)	1200	1.0	umhos/cm	KAC	05/19/2005	0039595-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	<0.0040	0.0040	mg/l	CS0	06/01/2005	0039519-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/01/2005	0039519-1	<0.00050
Manganese	6010B(2)	0.57	0.010	mg/l	CS0	06/01/2005	0039519-1	<0.010
Sodium	6010B(2)	250	0.50	mg/l	CS0	06/01/2005	0039519-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/01/2005	0039519-1	<0.010

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Tetrachloroethene	8260B(2)	<0.0050	0.0050	mg/l	MAK	05/25/2005	0039714-1	<0.0050

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2758**
Lab Sample ID: **0505-1922**
Client Sample ID: MW-7
Sample Matrix: Aqueous

Date Sampled: 05/17/2005
Date Received: 05/18/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Total)	335.2(1)	<0.010	0.010	mg/l	BLC	05/19/2005	0039533-1	<0.010
Fluoride	340.2(1)	1.6	0.10	mg/l	CK0	06/01/2005	0039876-1	<0.10
pH	150.1(1)	5.87	1.00	pH	KAC	05/18/2005	0039521-1	5.69
Specific Conductance	120.1(1)	770	1.0	umhos/cm	KAC	05/19/2005	0039595-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.051	0.0040	mg/l	CS0	06/01/2005	0039519-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/01/2005	0039519-1	<0.00050
Manganese	6010B(2)	2.4	0.010	mg/l	CS0	06/01/2005	0039519-1	<0.010
Sodium	6010B(2)	86	0.50	mg/l	CS0	06/01/2005	0039519-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/01/2005	0039519-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2758**
Lab Sample ID: **0505-1923**
Client Sample ID: MW-8
Sample Matrix: Aqueous

Date Sampled: 05/17/2005
Date Received: 05/18/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	<0.010	0.010	mg/l	BLC	05/24/2005	0039692-1	<0.010
Cyanide (Total)	335.2(1)	0.034	0.010	mg/l	BLC	05/19/2005	0039533-1	<0.010
Fluoride	340.2(1)	2.5	0.10	mg/l	CK0	06/01/2005	0039876-1	<0.10
pH	150.1(1)	7.40	1.00	pH	KAC	05/18/2005	0039521-1	5.69
Specific Conductance	120.1(1)	680	1.0	umhos/cm	KAC	05/19/2005	0039595-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	<0.0040	0.0040	mg/l	CS0	06/01/2005	0039519-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/01/2005	0039519-1	<0.00050
Manganese	6010B(2)	0.16	0.010	mg/l	CS0	06/01/2005	0039519-1	<0.010
Sodium	6010B(2)	61	0.50	mg/l	CS0	06/01/2005	0039519-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/01/2005	0039519-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2758**
Lab Sample ID: **0505-1924**
Client Sample ID: MW-10
Sample Matrix: Aqueous

Date Sampled: 05/17/2005
Date Received: 05/18/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Total)	335.2(1)	<0.010	0.010	mg/l	BLC	05/19/2005	0039533-1	<0.010
Fluoride	340.2(1)	0.51	0.10	mg/l	CK0	06/01/2005	0039876-1	<0.10
pH	150.1(1)	7.27	1.00	pH	KAC	05/19/2005	0039633-1	5.75
Specific Conductance	120.1(1)	520	1.0	umhos/cm	KAC	05/19/2005	0039595-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	<0.0040	0.0040	mg/l	CS0	06/01/2005	0039519-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/01/2005	0039519-1	<0.00050
Manganese	6010B(2)	0.011	0.010	mg/l	CS0	06/01/2005	0039519-1	<0.010
Sodium	6010B(2)	24	0.50	mg/l	CS0	06/01/2005	0039519-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/01/2005	0039519-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2758**
Lab Sample ID: **0505-1925**
Client Sample ID: MW-11
Sample Matrix: Aqueous

Date Sampled: 05/17/2005
Date Received: 05/18/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Total)	335.2(1)	<0.010	0.010	mg/l	BLC	05/19/2005	0039533-1	<0.010
Fluoride	340.2(1)	1.7	0.10	mg/l	CK0	06/01/2005	0039876-1	<0.10
pH	150.1(1)	7.79	1.00	pH	KAC	05/19/2005	0039633-1	5.75
Specific Conductance	120.1(1)	480	1.0	umhos/cm	KAC	05/19/2005	0039595-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	<0.0040	0.0040	mg/l	CS0	06/01/2005	0039519-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/01/2005	0039519-1	<0.00050
Manganese	6010B(2)	0.52	0.010	mg/l	CS0	06/01/2005	0039519-1	<0.010
Sodium	6010B(2)	36	0.50	mg/l	CS0	06/01/2005	0039519-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/01/2005	0039519-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2758**
Lab Sample ID: **0505-1926**
Client Sample ID: MW-17
Sample Matrix: Aqueous

Date Sampled: 05/17/2005
Date Received: 05/18/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	3.1	0.010	mg/l	BLC	05/24/2005	0039692-1	<0.010
Cyanide (Total)	335.2(1)	6.2	0.010	mg/l	BLC	05/19/2005	0039533-1	<0.010
Fluoride	340.2(1)	17	0.10	mg/l	CK0	06/01/2005	0039876-1	<0.10
pH	150.1(1)	7.66	1.00	pH	KAC	05/19/2005	0039633-1	5.75
Specific Conductance	120.1(1)	910	1.0	umhos/cm	KAC	05/19/2005	0039595-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.0044	0.0040	mg/l	CS0	06/01/2005	0039519-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/01/2005	0039519-1	<0.00050
Manganese	6010B(2)	1.1	0.010	mg/l	CS0	06/01/2005	0039519-1	<0.010
Sodium	6010B(2)	170	0.50	mg/l	CS0	06/01/2005	0039519-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/01/2005	0039519-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2758**
Lab Sample ID: **0505-1927**
Client Sample ID: MW-18
Sample Matrix: Aqueous

Date Sampled: 05/17/2005
Date Received: 05/18/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.34	0.010	mg/l	BLC	05/24/2005	0039692-1	<0.010
Cyanide (Total)	335.2(1)	12.997.	0.010	mg/l	BLC	05/19/2005	0039533-1	<0.010
Fluoride	340.2(1)	97	0.10	mg/l	CK0	06/01/2005	0039876-1	<0.10
pH	150.1(1)	9.44	1.00	pH	KAC	05/19/2005	0039633-1	5.75
Specific Conductance	120.1(1)	1700	1.0	umhos/cm	KAC	05/19/2005	0039595-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.070	0.0040	mg/l	CS0	06/01/2005	0039520-1	<0.0040
Beryllium	6010B(2)	0.0014	0.00050	mg/l	CS0	06/01/2005	0039520-1	<0.00050
Manganese	6010B(2)	0.78	0.010	mg/l	CS0	06/01/2005	0039520-1	<0.010
Sodium	6010B(2)	430	0.50	mg/l	CS0	06/01/2005	0039520-1	<0.50
Vanadium	6010B(2)	0.049	0.010	mg/l	CS0	06/01/2005	0039520-1	<0.010

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Tetrachloroethene	8260B(2)	0.0057	0.0050	mg/l	MAK	05/25/2005	0039714-1	<0.0050

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2758**
Lab Sample ID: **0505-1928**
Client Sample ID: MW-18D
Sample Matrix: Aqueous

Date Sampled: 05/17/2005
Date Received: 05/18/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.14	0.010	mg/l	BLC	05/27/2005	0039819-1	<0.010
Cyanide (Total)	335.2(1)	8.2	0.010	mg/l	BLC	05/24/2005	0039674-1	<0.010
Fluoride	340.2(1)	94	0.10	mg/l	CK0	06/01/2005	0039876-1	<0.10
pH	150.1(1)	9.49	1.00	pH	KAC	05/19/2005	0039633-1	5.75
Specific Conductance	120.1(1)	1600	1.0	umhos/cm	KAC	05/19/2005	0039595-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.073	0.0040	mg/l	CS0	06/01/2005	0039520-1	<0.0040
Beryllium	6010B(2)	0.0012	0.00050	mg/l	CS0	06/01/2005	0039520-1	<0.00050
Manganese	6010B(2)	0.75	0.010	mg/l	CS0	06/01/2005	0039520-1	<0.010
Sodium	6010B(2)	440	0.50	mg/l	CS0	06/01/2005	0039520-1	<0.50
Vanadium	6010B(2)	0.037	0.010	mg/l	CS0	06/01/2005	0039520-1	<0.010

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Tetrachloroethene	8260B(2)	0.0056	0.0050	mg/l	MAK	05/25/2005	0039714-1	<0.0050

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2758**
Lab Sample ID: **0505-1929**
Client Sample ID: MW-28
Sample Matrix: Aqueous

Date Sampled: 05/17/2005
Date Received: 05/18/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.14	0.010	mg/l	BLC	05/27/2005	0039819-1	<0.010
Cyanide (Total)	335.2(1)	0.15	0.010	mg/l	BLC	05/24/2005	0039674-1	<0.010
Fluoride	340.2(1)	0.27	0.10	mg/l	CK0	06/01/2005	0039876-1	<0.10
pH	150.1(1)	6.06	1.00	pH	KAC	05/19/2005	0039633-1	5.75
Specific Conductance	120.1(1)	380	1.0	umhos/cm	KAC	05/19/2005	0039595-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	<0.0040	0.0040	mg/l	CS0	06/01/2005	0039520-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/01/2005	0039520-1	<0.00050
Manganese	6010B(2)	0.023	0.010	mg/l	CS0	06/01/2005	0039520-1	<0.010
Sodium	6010B(2)	56	0.50	mg/l	CS0	06/01/2005	0039520-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/01/2005	0039520-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2758**
Lab Sample ID: **0505-1930**
Client Sample ID: MW-30
Sample Matrix: Aqueous

Date Sampled: 05/17/2005
Date Received: 05/18/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.96	0.010	mg/l	BLC	05/27/2005	0039819-1	<0.010
Cyanide (Total)	335.2(1)	4.5	0.010	mg/l	BLC	05/24/2005	0039674-1	<0.010
Fluoride	340.2(1)	3.1	0.10	mg/l	CK0	06/01/2005	0039876-1	<0.10
pH	150.1(1)	7.16	1.00	pH	KAC	05/19/2005	0039633-1	5.75
Specific Conductance	120.1(1)	470	1.0	umhos/cm	KAC	05/19/2005	0039595-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	<0.0040	0.0040	mg/l	CS0	06/01/2005	0039520-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/01/2005	0039520-1	<0.00050
Manganese	6010B(2)	0.90	0.010	mg/l	CS0	06/01/2005	0039520-1	<0.010
Sodium	6010B(2)	37	0.50	mg/l	CS0	06/01/2005	0039520-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/01/2005	0039520-1	<0.010

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Tetrachloroethene	8260B(2)	0.012	0.0050	mg/l	MAK	05/25/2005	0039714-1	<0.0050

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: 05-2758
Lab Sample ID: 0505-1931
Client Sample ID: MW-31
Sample Matrix: Aqueous

Date Sampled: 05/17/2005
Date Received: 05/18/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.21	0.010	mg/l	BLC	05/27/2005	0039819-1	<0.010
Cyanide (Total)	335.2(1)	16	0.010	mg/l	BLC	05/24/2005	0039674-1	<0.010
Fluoride	340.2(1)	86	0.10	mg/l	CK0	06/01/2005	0039876-1	<0.10
pH	150.1(1)	9.65	1.00	pH	KAC	05/19/2005	0039633-1	5.75
Specific Conductance	120.1(1)	1700	1.0	umhos/cm	KAC	05/19/2005	0039595-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.057	0.0040	mg/l	CS0	06/01/2005	0039520-1	<0.0040
Beryllium	6010B(2)	0.0024	0.00050	mg/l	CS0	06/01/2005	0039520-1	<0.00050
Manganese	6010B(2)	2.3	0.010	mg/l	CS0	06/01/2005	0039520-1	<0.010
Sodium	6010B(2)	430	0.50	mg/l	CS0	06/01/2005	0039520-1	<0.50
Vanadium	6010B(2)	0.12	0.010	mg/l	CS0	06/01/2005	0039520-1	<0.010

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Tetrachloroethene	8260B(2)	0.036	0.0050	mg/l	MAK	05/25/2005	0039714-1	<0.0050

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2758**
Lab Sample ID: **0505-1932**
Client Sample ID: MW-37
Sample Matrix: Aqueous

Date Sampled: 05/17/2005
Date Received: 05/18/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.068	0.010	mg/l	BLC	05/27/2005	0039819-1	<0.010
Cyanide (Total)	335.2(1)	3.0	0.010	mg/l	BLC	05/24/2005	0039674-1	<0.010
Fluoride	340.2(1)	9.5	0.10	mg/l	CK0	06/01/2005	0039876-1	<0.10
pH	150.1(1)	6.92	1.00	pH	KAC	05/19/2005	0039633-1	5.75
Specific Conductance	120.1(1)	420	1.0	umhos/cm	KAC	05/19/2005	0039595-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.012	0.0040	mg/l	CS0	06/01/2005	0039520-1	<0.0040
Beryllium	6010B(2)	0.0016	0.00050	mg/l	CS0	06/01/2005	0039520-1	<0.00050
Manganese	6010B(2)	1.7	0.010	mg/l	CS0	06/01/2005	0039520-1	<0.010
Sodium	6010B(2)	72	0.50	mg/l	CS0	06/01/2005	0039520-1	<0.50
Vanadium	6010B(2)	0.045	0.010	mg/l	CS0	06/01/2005	0039520-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2758**
Lab Sample ID: **0505-1933**
Client Sample ID: MW-14
Sample Matrix: Aqueous

Date Sampled: 05/17/2005
Date Received: 05/18/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	<0.010	0.010	mg/l	BLC	05/27/2005	0039819-1	<0.010
Cyanide (Total)	335.2(1)	0.025	0.010	mg/l	BLC	05/24/2005	0039674-1	<0.010
Fluoride	340.2(1)	2.5	0.10	mg/l	CK0	06/01/2005	0039877-1	<0.10
pH	150.1(1)	7.75	1.00	pH	KAC	05/19/2005	0039633-1	5.75
Specific Conductance	120.1(1)	520	1.0	umhos/cm	KAC	05/19/2005	0039634-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	<0.0040	0.0040	mg/l	CS0	06/01/2005	0039520-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/01/2005	0039520-1	<0.00050
Manganese	6010B(2)	1.2	0.010	mg/l	CS0	06/01/2005	0039520-1	<0.010
Sodium	6010B(2)	44	0.50	mg/l	CS0	06/01/2005	0039520-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/01/2005	0039520-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7795

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2758**
Lab Sample ID: **0505-1934**
Client Sample ID: Field Blank - 1
Sample Matrix: Aqueous

Date Sampled: 05/17/2005
Date Received: 05/18/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Total)	335.2(1)	<0.010	0.010	mg/l	BLC	05/24/2005	0039689-1	<0.010
Fluoride	340.2(1)	0.14	0.10	mg/l	CK0	06/01/2005	0039877-1	<0.10
pH	150.1(1)	5.93	1.00	pH	KAC	05/19/2005	0039633-1	5.75
Specific Conductance	120.1(1)	4.2	1.0	umhos/cm	KAC	05/19/2005	0039634-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	<0.0040	0.0040	mg/l	CS0	06/01/2005	0039520-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/01/2005	0039520-1	<0.00050
Manganese	6010B(2)	<0.010	0.010	mg/l	CS0	06/01/2005	0039520-1	<0.010
Sodium	6010B(2)	0.89	0.50	mg/l	CS0	06/01/2005	0039520-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/01/2005	0039520-1	<0.010

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Tetrachloroethene	8260B(2)	<0.0050	0.0050	mg/l	MAK	05/25/2005	0039714-1	<0.0050

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-2758**
Lab Sample ID: **0505-1935**
Client Sample ID: Trip Blank
Sample Matrix: Aqueous

Date Sampled: 05/17/2005
Date Received: 05/18/2005

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Tetrachloroethene	8260B[1]	<0.0050	0.0050	mg/l	MAK	05/25/2005	0039714-1	<0.0050

[1] U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical

Cover Page - Inorganic Analysis Data Package

Client ID	Lab Sample ID:
Field Blank - 1	2758-0505-1934 D
MW-1	2758-0505-1918 D
MW-10	2758-0505-1924 D
MW-11	2758-0505-1925 D
MW-14	2758-0505-1933 D
MW-15	2758-0505-1913 D
MW-17	2758-0505-1926 D
MW-18	2758-0505-1927 D
MW-18D	2758-0505-1928 D
MW-19	2758-0505-1914 D
MW-2	2758-0505-1919 D
MW-28	2758-0505-1929 D
MW-2D	2758-0505-1920 D
MW-30	2758-0505-1930 D
MW-31	2758-0505-1931 D
MW-32	2758-0505-1915 D
MW-35	2758-0505-1916 D
MW-36	2758-0505-1917 D
MW-37	2758-0505-1932 D
MW-5	2758-0505-1921 D
MW-7	2758-0505-1922 D
MW-8	2758-0505-1923 D
ZZZZZZ	2751-0505-1898 D
ZZZZZZ	2777-0505-2044
ZZZZZZ	QC39519DUP
ZZZZZZ	QC39519MS D
ZZZZZZ	QC39519MSD D
ZZZZZZ	QC39520DUP
ZZZZZZ	QC39520MS D

Version 4.80.0

Cover Page Equivalent

Pace Analytical

Cover Page - Inorganic Analysis Data Package

Client ID	Lab Sample ID:
ZZZZZZ	QC39520MSD D

Comments: Dissolved Metals

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than conditions detailed above. Release of the data combined in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Paul M. Mock Name: Paul M. Mock

Date: 6/9/05 Title: Metals Gr Leader

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2751-0505-1898 D **Client ID:** ZZZZZZ

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39519

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	3.6	B	1	ICP	6/1/2005	14:39
Beryllium	313.04	0.070	0.50	0.11	B	1	ICP	6/1/2005	14:39
Manganese	257.61	0.20	10.0	18.3		1	ICP	6/1/2005	14:39
Sodium	330.23	170	500	468000		1	ICP	6/1/2005	14:39
Vanadium	292.40	0.40	10.0	1.2	B	1	ICP	6/1/2005	14:39

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2758-0505-1913 D **Client ID:** MW-15

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39519

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	22.6		1	ICP	6/1/2005	15:29
Beryllium	313.04	0.070	0.50	2.4		1	ICP	6/1/2005	15:29
Manganese	257.61	0.20	10.0	690		1	ICP	6/1/2005	15:29
Sodium	330.23	170	500	293000		1	ICP	6/1/2005	15:29
Vanadium	292.40	0.40	10.0	73.6		1	ICP	6/1/2005	15:29

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2758-0505-1914 D **Client ID:** MW-19

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39519

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	1.7	U	1	ICP	6/1/2005	15:32
Beryllium	**313.04**	**0.070**	**0.50**	**0.14**	**B**	**1**	**ICP**	**6/1/2005**	**15:32**
Manganese	**257.61**	**0.20**	**10.0**	**9.9**	**B**	**1**	**ICP**	**6/1/2005**	**15:32**
Sodium	**330.23**	**170**	**500**	**37800**		**1**	**ICP**	**6/1/2005**	**15:32**
Vanadium	**292.40**	**0.40**	**10.0**	**1.7**	**B**	**1**	**ICP**	**6/1/2005**	**15:32**

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2758-0505-1915 D **Client ID:** MW-32

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39519

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	106		1	ICP	6/1/2005	15:35
Beryllium	313.04	0.070	0.50	2.7		1	ICP	6/1/2005	15:35
Manganese	257.61	0.20	10.0	4300		1	ICP	6/1/2005	15:35
Sodium	330.23	170	500	369000		1	ICP	6/1/2005	15:35
Vanadium	292.40	0.40	10.0	190		1	ICP	6/1/2005	15:35

Comments:

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2758-0505-1916 D **Client ID:** MW-35

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39519

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	12.1		1	ICP	6/1/2005	15:38
Beryllium	313.04	0.070	0.50	0.27	B	1	ICP	6/1/2005	15:38
Manganese	257.61	0.20	10.0	863		1	ICP	6/1/2005	15:38
Sodium	330.23	170	500	75200		1	ICP	6/1/2005	15:38
Vanadium	292.40	0.40	10.0	13.5		1	ICP	6/1/2005	15:38

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2758-0505-1917 D **Client ID:** MW-36

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39519

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	19.9		1	ICP	6/1/2005	15:41
Beryllium	313.04	0.070	0.50	0.70		1	ICP	6/1/2005	15:41
Manganese	257.61	0.20	10.0	413		1	ICP	6/1/2005	15:41
Sodium	330.23	170	500	182000		1	ICP	6/1/2005	15:41
Vanadium	292.40	0.40	10.0	29.3		1	ICP	6/1/2005	15:41

Comments:

U Result is less than the MDL

B Result is between MDL and RL

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2758-0505-1918 D **Client ID:** MW-1

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39519

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	1.7	U	1	ICP	6/1/2005	15:53
Beryllium	**313.04**	**0.070**	**0.50**	**0.12**	**B**	**1**	**ICP**	**6/1/2005**	**15:53**
Manganese	**257.61**	**0.20**	**10.0**	**398**		**1**	**ICP**	**6/1/2005**	**15:53**
Sodium	**330.23**	**170**	**500**	**46800**		**1**	**ICP**	**6/1/2005**	**15:53**
Vanadium	292.40	0.40	10.0	0.40	U	1	ICP	6/1/2005	15:53

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

0035

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2758-0505-1919 D **Client ID:** MW-2

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39519

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	66.1		1	ICP	6/1/2005	15:56
Beryllium	313.04	0.070	0.50	0.81		1	ICP	6/1/2005	15:56
Manganese	257.61	0.20	10.0	957		1	ICP	6/1/2005	15:56
Sodium	330.23	170	500	356000		1	ICP	6/1/2005	15:56
Vanadium	292.40	0.40	10.0	50.1		1	ICP	6/1/2005	15:56

Comments:

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2758-0505-1920 D **Client ID:** MW-2D

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39519

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	66.3		1	ICP	6/1/2005	16:57
Beryllium	313.04	0.070	0.50	0.93		1	ICP	6/1/2005	16:57
Manganese	257.61	0.20	10.0	980		1	ICP	6/1/2005	16:57
Sodium	330.23	170	500	368000		1	ICP	6/1/2005	16:57
Vanadium	292.40	0.40	10.0	51.5		1	ICP	6/1/2005	16:57

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2758-0505-1921 D **Client ID:** MW-5

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39519

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	3.0	B	1	ICP	6/1/2005	17:00
Beryllium	313.04	0.070	0.50	0.080	B	1	ICP	6/1/2005	17:00
Manganese	257.61	0.20	10.0	575		1	ICP	6/1/2005	17:00
Sodium	330.23	170	500	250000		1	ICP	6/1/2005	17:00
Vanadium	292.40	0.40	10.0	1.8	B	1	ICP	6/1/2005	17:00

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2758-0505-1922 D **Client ID:** MW-7

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39519

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	51.3		1	ICP	6/1/2005	17:03
Beryllium	313.04	0.070	0.50	0.14	B	1	ICP	6/1/2005	17:03
Manganese	257.61	0.20	10.0	2390		1	ICP	6/1/2005	17:03
Sodium	330.23	170	500	85800		1	ICP	6/1/2005	17:03
Vanadium	292.40	0.40	10.0	1.3	B	1	ICP	6/1/2005	17:03

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2758-0505-1923 D **Client ID:** MW-8

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39519

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	1.7	U	1	ICP	6/1/2005	17:06
Beryllium	313.04	0.070	0.50	0.070	U	1	ICP	6/1/2005	17:06
Manganese	**257.61**	**0.20**	**10.0**	**164**		**1**	**ICP**	**6/1/2005**	**17:06**
Sodium	**330.23**	**170**	**500**	**60600**		**1**	**ICP**	**6/1/2005**	**17:06**
Vanadium	292.40	0.40	10.0	0.40	U	1	ICP	6/1/2005	17:06

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2758-0505-1924 D **Client ID:** MW-10

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39519

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	1.7	U	1	ICP	6/1/2005	17:10
Beryllium	**313.04**	**0.070**	**0.50**	**0.080**	**B**	**1**	**ICP**	**6/1/2005**	**17:10**
Manganese	**257.61**	**0.20**	**10.0**	**11.1**		**1**	**ICP**	**6/1/2005**	**17:10**
Sodium	**330.23**	**170**	**500**	**23700**		**1**	**ICP**	**6/1/2005**	**17:10**
Vanadium	**292.40**	**0.40**	**10.0**	**0.78**	**B**	**1**	**ICP**	**6/1/2005**	**17:10**

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2758-0505-1925 D **Client ID:** MW-11

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39519

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	1.7	U	1	ICP	6/1/2005	17:13
Beryllium	313.04	0.070	0.50	0.070	U	1	ICP	6/1/2005	17:13
Manganese	**257.61**	**0.20**	**10.0**	**520**		**1**	**ICP**	**6/1/2005**	**17:13**
Sodium	**330.23**	**170**	**500**	**36300**		**1**	**ICP**	**6/1/2005**	**17:13**
Vanadium	292.40	0.40	10.0	0.40	U	1	ICP	6/1/2005	17:13

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2758-0505-1926 D **Client ID:** MW-17

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39519

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	4.4		1	ICP	6/1/2005	17:16
Beryllium	313.04	0.070	0.50	0.21	B	1	ICP	6/1/2005	17:16
Manganese	257.61	0.20	10.0	1050		1	ICP	6/1/2005	17:16
Sodium	330.23	170	500	171000		1	ICP	6/1/2005	17:16
Vanadium	292.40	0.40	10.0	7.5	B	1	ICP	6/1/2005	17:16

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form I Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2758-0505-1927 D **Client ID:** MW-18

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39520

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	69.7		1	ICP	6/1/2005	18:43
Beryllium	313.04	0.070	0.50	1.4		1	ICP	6/1/2005	18:43
Manganese	257.61	0.20	10.0	779		1	ICP	6/1/2005	18:43
Sodium	330.23	170	500	432000		1	ICP	6/1/2005	18:43
Vanadium	292.40	0.40	10.0	48.6		1	ICP	6/1/2005	18:43

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2758-0505-1928 D **Client ID:** MW-18D

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39520

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	72.7		1	ICP	6/1/2005	18:47
Beryllium	313.04	0.070	0.50	1.2		1	ICP	6/1/2005	18:47
Manganese	257.61	0.20	10.0	752		1	ICP	6/1/2005	18:47
Sodium	330.23	170	500	444000		1	ICP	6/1/2005	18:47
Vanadium	292.40	0.40	10.0	37.2		1	ICP	6/1/2005	18:47

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2758-0505-1929 D **Client ID:** MW-28

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39520

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	1.7	U	1	ICP	6/1/2005	19:20
Beryllium	**313.04**	**0.070**	**0.50**	**0.090**	**B**	**1**	**ICP**	**6/1/2005**	**19:20**
Manganese	**257.61**	**0.20**	**10.0**	**23.4**		**1**	**ICP**	**6/1/2005**	**19:20**
Sodium	**330.23**	**170**	**500**	**56400**		**1**	**ICP**	**6/1/2005**	**19:20**
Vanadium	**292.40**	**0.40**	**10.0**	**2.0**	**B**	**1**	**ICP**	**6/1/2005**	**19:20**

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form I Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2758-0505-1930 D **Client ID:** MW-30

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39520

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	3.8	B	1	ICP	6/1/2005	19:23
Beryllium	313.04	0.070	0.50	0.18	B	1	ICP	6/1/2005	19:23
Manganese	257.61	0.20	10.0	899		1	ICP	6/1/2005	19:23
Sodium	330.23	170	500	36600		1	ICP	6/1/2005	19:23
Vanadium	292.40	0.40	10.0	4.2	B	1	ICP	6/1/2005	19:23

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2758-0505-1931 D **Client ID:** MW-31

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39520

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	57.2		1	ICP	6/1/2005	19:52
Beryllium	313.04	0.070	0.50	2.5		1	ICP	6/1/2005	19:52
Manganese	257.61	0.20	10.0	2340		1	ICP	6/1/2005	19:52
Sodium	330.23	170	500	427000		1	ICP	6/1/2005	19:52
Vanadium	292.40	0.40	10.0	121		1	ICP	6/1/2005	19:52

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form I Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2758-0505-1932 D **Client ID:** MW-37

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39520

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	12.1		1	ICP	6/1/2005	19:56
Beryllium	313.04	0.070	0.50	1.6		1	ICP	6/1/2005	19:56
Manganese	257.61	0.20	10.0	1690		1	ICP	6/1/2005	19:56
Sodium	330.23	170	500	71800		1	ICP	6/1/2005	19:56
Vanadium	292.40	0.40	10.0	45.1		1	ICP	6/1/2005	19:56

Comments:

Version 4.80.0

U Result is less than the MDL
B Result is between MDL and RL

Form I Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2758-0505-1933 D **Client ID:** MW-14

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39520

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	2.9	B	1	ICP	6/1/2005	19:59
Beryllium	313.04	0.070	0.50	0.070	U	1	ICP	6/1/2005	19:59
Manganese	257.61	0.20	10.0	1200		1	ICP	6/1/2005	19:59
Sodium	330.23	170	500	43900		1	ICP	6/1/2005	19:59
Vanadium	292.40	0.40	10.0	0.53	B	1	ICP	6/1/2005	19:59

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2758-0505-1934 D **Client ID:** Field Blank - 1

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39520

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.04	1.7	4.0	1.7	U	1	ICP	6/1/2005	20:02
Beryllium	313.04	0.070	0.50	0.070	U	1	ICP	6/1/2005	20:02
Manganese	**257.61**	**0.20**	**10.0**	**0.66**	**B**	**1**	**ICP**	**6/1/2005**	**20:02**
Sodium	**330.23**	**170**	**500**	**886**		**1**	**ICP**	**6/1/2005**	**20:02**
Vanadium	292.40	0.40	10.0	0.40	U	1	ICP	6/1/2005	20:02

Comments:

Version 4.80.0

U *Result is less than the MDL*

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Sample Results

Lab Sample ID: 2777-0505-2044 **Client ID:** ZZZZZZ

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39520

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	**189.04**	**1.7**	**4.0**	**3.5**	**B**	**1**	**ICP**	**6/1/2005**	**18:28**
Beryllium	313.04	0.070	0.50	0.070	U	1	ICP	6/1/2005	18:28
Manganese	**257.61**	**0.20**	**10.0**	**587**		**1**	**ICP**	**6/1/2005**	**18:28**
Sodium	**330.23**	**170**	**500**	**214000**		**1**	**ICP**	**6/1/2005**	**18:28**
Vanadium	292.40	0.40	10.0	0.40	U	1	ICP	6/1/2005	18:28

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Initial Calibration Verification Standar

Instrument: ICP **Units:** ug/L

Chart Number: E0601A.ARC **Acceptable Range:** 95% - 105%

Standard Source: High-Purity **Standard ID:** M1-120-1

Element	WL/ Mass	True Conc	ICV 6/1/2005 8:04 AM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Arsenic	189.042	2000.0	2022.17	**101.1**								
Beryllium	313.042	2000.0	1999.37	**100.0**								
Manganese	257.61	2000.0	2026.28	**101.3**								
Sodium	330.232	10000.0	10008.51	**100.1**								
Vanadium	292.402	2000.0	1989.89	**99.5**								

Pace Analytical

Metals Data Reporting Form

Continuing Calibration Verification

Instrument: ICP **Units:** ug/L

Chart Number: E0601A.ARC **Acceptable Range:** 90% - 110%

Standard Source: Inorganic Ventures **Standard ID:** M1-124-2

Element	WL/ Mass	True Conc	CCV 6/1/2005 8:11 AM		CCV 6/1/2005 9:33 AM		CCV 6/1/2005 10:39 AM		CCV 6/1/2005 11:31 AM		CCV 6/1/2005 12:14 PM	
			Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Arsenic	189.042	1000.0	1012.95	**101.3**	1036.78	**103.7**	1017.88	**101.8**	1037.61	**103.8**	1019.82	**102.0**
Beryllium	313.042	1000.0	1015.76	**101.6**	1043.06	**104.3**	1024.11	**102.4**	1050.32	**105.0**	1016.57	**101.7**
Manganese	257.61	1000.0	1012.73	**101.3**	1051.41	**105.1**	1020.24	**102.0**	1047.96	**104.8**	1018.54	**101.9**
Sodium	330.232	5000.0	4833.20	**96.7**	4860.42	**97.2**	4806.37	**96.1**	4829.55	**96.6**	5071.62	**101.4**
Vanadium	292.402	1000.0	1008.31	**100.8**	1037.04	**103.7**	1018.87	**101.9**	1040.15	**104.0**	1019.05	**101.9**

Pace Analytical

Metals Data Reporting Form

Continuing Calibration Verification

Instrument: ICP **Units:** ug/L

Chart Number: E0601A.ARC **Acceptable Range:** 90% - 110%

Standard Source: Inorganic Ventures **Standard ID:** M1-124-2

Element	WL/ Mass	True Conc	CCV 6/1/2005 1:17 PM		CCV 6/1/2005 2:01 PM		CCV 6/1/2005 3:08 PM		CCV 6/1/2005 4:38 PM		CCV 6/1/2005 5:21 PM	
			Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Arsenic	189.042	1000.0	1015.98	**101.6**	1003.53	**100.4**	1014.40	**101.4**	1023.01	**102.3**	1005.41	**100.5**
Beryllium	313.042	1000.0	1013.88	**101.4**	1011.10	**101.1**	1016.32	**101.6**	1031.08	**103.1**	1008.57	**100.9**
Manganese	257.61	1000.0	1013.04	**101.3**	1006.63	**100.7**	1018.98	**101.9**	1041.39	**104.1**	1020.39	**102.0**
Sodium	330.232	5000.0	4661.77	**93.2**	4712.50	**94.3**	4601.65	**92.0**	5231.85	**104.6**	5211.97	**104.2**
Vanadium	292.402	1000.0	1012.20	**101.2**	1009.95	**101.0**	1015.07	**101.5**	1019.77	**102.0**	999.88	**100.0**

Pace Analytical

Metals Data Reporting Form

Continuing Calibration Verification

Instrument: ICP **Units:** ug/L

Chart Number: E0601A.ARC **Acceptable Range:** 90% - 110%

Standard Source: Inorganic Ventures **Standard ID:** M1-124-2

Element	WL/ Mass	True Conc	CCV 6/1/2005 7:30 PM Found	% Rec	CCV 6/1/2005 8:18 PM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Arsenic	189.042	1000.0	1005.55	**100.6**	1015.52	**101.6**						
Beryllium	313.042	1000.0	1011.58	**101.2**	987.97	**98.8**						
Manganese	257.61	1000.0	1017.50	**101.8**	994.41	**99.4**						
Sodium	330.232	5000.0	4779.26	**95.6**	5252.17	**105.0**						
Vanadium	292.402	1000.0	1002.26	**100.2**	1000.57	**100.1**						

Pace Analytical

Metals Data Reporting Form

Initial Calibration Blank Results

Instrument: ICP **Units:** ug/L

Chart Number: E0601A.ARC

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	Blank 6/1/2005 8:37 AM Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Arsenic	189.042	4	2.1	B								
Beryllium	313.042	0.5	0.1	U								
Manganese	257.61	10	0.2	U								
Sodium	330.232	500	170.0	U								
Vanadium	292.402	10	0.4	U								

U Result is less than the MDL
B Result is between MDL and RL

Form 3 Equivalent

Pace Analytical

Metals Data Reporting Form

Continuing Calibration Blank Result

Instrument: ICP **Units:** ug/L

Chart Number: E0601A.ARC

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	Blank 6/1/2005 8:37 AM		Blank 6/1/2005 9:47 AM		Blank 6/1/2005 10:54 AM		Blank 6/1/2005 11:45 AM		Blank 6/1/2005 12:28 PM	
			Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Arsenic	189.042	4	**2.1**	**B**	**4.7**		**4.1**		1.7	U	1.7	U
Beryllium	313.042	0.5	0.1	U	0.1	U	0.1	U	**0.1**	**B**	0.1	U
Manganese	257.61	10	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Sodium	330.232	500	170.0	U	170.0	U	170.0	U	170.0	U	170.0	U
Vanadium	292.402	10	0.4	U	**0.5**	**B**	**0.5**	**B**	**0.4**	**B**	**0.6**	**B**

U Result is less than the MDL
B Result is between MDL and RL

Pace Analytical

Metals Data Reporting Form

Continuing Calibration Blank Result

Instrument: ICP **Units:** ug/L

Chart Number: E0601A.ARC

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	Blank 6/1/2005 1:31 PM		Blank 6/1/2005 2:15 PM		Blank 6/1/2005 3:23 PM		Blank 6/1/2005 4:54 PM		Blank 6/1/2005 5:55 PM	
			Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Arsenic	189.042	4	1.7	U	1.7	U	**2.2**	**B**	1.7	U	**2.5**	**B**
Beryllium	313.042	0.5	0.1	U	0.1	U	0.1	U	**0.1**	**B**	0.1	U
Manganese	257.61	10	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Sodium	330.232	500	170.0	U	170.0	U	170.0	U	170.0	U	170.0	U
Vanadium	292.402	10	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U

Version 4.80.0

U Result is less than the MDL
B Result is between MDL and RL

Form 3 Equivalent

Pace Analytical

Metals Data Reporting Form

Continuing Calibration Blank Result

Instrument: ICP **Units:** ug/L

Chart Number: E0601A.ARC

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	Blank 6/1/2005 7:44 PM		Blank 6/1/2005 8:28 PM							
			Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Arsenic	189.042	4	1.7	U	1.7	U						
Beryllium	313.042	0.5	**0.1**	**B**	**0.1**	**B**						
Manganese	257.61	10	0.2	U	0.2	U						
Sodium	330.232	500	170.0	U	170.0	U						
Vanadium	292.402	10	0.4	U	**0.6**	**B**						

U Result is less than the MDL
B Result is between MDL and RL

Form 3 Equivalent

Pace Analytical

Metals Data Reporting Form

Preparation Blank Results

Lab Sample ID: QC39519MB

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39519

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.042	1.7	4.0	1.7	U	1	ICP	6/1/2005	14:30
Beryllium	313.042	0.070	0.50	0.070	U	1	ICP	6/1/2005	14:30
Manganese	257.61	0.20	10.0	0.20	U	1	ICP	6/1/2005	14:30
Sodium	330.232	170	500	170	U	1	ICP	6/1/2005	14:30
Vanadium	292.402	0.40	10.0	0.40	U	1	ICP	6/1/2005	14:30

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 3 Equivalent

Pace Analytical

Metals Data Reporting Form

Preparation Blank Results

Lab Sample ID: QC39520MB

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39520

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.042	1.7	4.0	1.7	U	1	ICP	6/1/2005	18:18
Beryllium	313.042	0.070	0.50	0.070	U	1	ICP	6/1/2005	18:18
Manganese	257.61	0.20	10.0	0.20	U	1	ICP	6/1/2005	18:18
Sodium	330.232	170	500	170	U	1	ICP	6/1/2005	18:18
Vanadium	292.402	0.40	10.0	0.40	U	1	ICP	6/1/2005	18:18

Comments:

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 3 Equivalent

Pace Analytical

Metals Data Reporting Form

Matrix Spike Sample Results

Spike Sample ID: 2758-0505-1917 D

Original Sample ID: 2758-0505-1917 D **Client ID:** MW-36

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39519

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	OS Conc	Q	MS Conc	Q	Spike Level	% Rec	OS DF	MS DF	Instr	OS Anal Date	OS Anal Time	MS Anal Date	MS Anal Time
Arsenic	189.0	19.9		548		500	105.7	1	1	ICP	6/1/2005	15:41	6/1/2005	15:48
Beryllium	313.0	0.70		521		500	104.0	1	1	ICP	6/1/2005	15:41	6/1/2005	15:48
Manganese	257.6	413		929		500	103.2	1	1	ICP	6/1/2005	15:41	6/1/2005	15:48
Sodium	330.2	182000		185000	NC	2500		1	1	ICP	6/1/2005	15:41	6/1/2005	15:48
Vanadium	292.4	29.3		540		500	102.0	1	1	ICP	6/1/2005	15:41	6/1/2005	15:48

Comments: Acceptable Range 90% - 110%

rsion 4.80.0

U Result is less than the MDL
B Result is between MDL and RL
N Spike recovery failed
NC Percent recovery was not calculated
R Duplicate analysis RPD was not within limits

Form 5A Equivalent

Pace Analytical

Metals Data Reporting Form

Matrix Spike Sample Results

Spike Sample ID: QC39519MS D

Original Sample ID: 2751-0505-1898 D **Client ID:** ZZZZZZ

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39519

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	OS Conc	Q	MS Conc	Q	Spike Level	% Rec	OS DF	MS DF	Instr	OS Anal Date	OS Anal Time	MS Anal Date	MS Anal Time
Arsenic	189.0	3.6	B	550		500	109.2	1	1	ICP	6/1/2005	14:39	6/1/2005	14:45
Beryllium	313.0	0.11	B	524		500	104.7	1	1	ICP	6/1/2005	14:39	6/1/2005	14:45
Manganese	257.6	18.3		535		500	103.3	1	1	ICP	6/1/2005	14:39	6/1/2005	14:45
Sodium	330.2	468000		482000	NC	2500		1	1	ICP	6/1/2005	14:39	6/1/2005	14:45
Vanadium	292.4	1.2	B	518		500	103.3	1	1	ICP	6/1/2005	14:39	6/1/2005	14:45

Comments: Acceptable Range 90% - 110%

Version 4.80.0

U Result is less than the MDL
B Result is between MDL and RL
N Spike recovery failed
NC Percent recovery was not calculated
R Duplicate analysis RPD was not within limits

Form 5A Equivalent

Pace Analytical

Metals Data Reporting Form

Matrix Spike Sample Results

Spike Sample ID: QC39520MS D

Original Sample ID: 2777-0505-2044 **Client ID:** ZZZZZZ

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39520

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	OS Conc	Q	MS Conc	Q	Spike Level	% Rec	OS DF	MS DF	Instr	OS Anal Date	OS Anal Time	MS Anal Date	MS Anal Time
Arsenic	189.0	3.5	B	539		500	107.1	1	1	ICP	6/1/2005	18:28	6/1/2005	18:35
Beryllium	313.0	0.070	U	526		500	105.2	1	1	ICP	6/1/2005	18:28	6/1/2005	18:35
Manganese	257.6	587		1100		500	103.4	1	1	ICP	6/1/2005	18:28	6/1/2005	18:35
Sodium	330.2	214000		214000	NC	2500		1	1	ICP	6/1/2005	18:28	6/1/2005	18:35
Vanadium	292.4	0.40	U	513		500	102.6	1	1	ICP	6/1/2005	18:28	6/1/2005	18:35

Comments: Acceptable Range 90% - 110%

Version 4.80.0

U Result is less than the MDL
B Result is between MDL and RL
N Spike recovery failed
NC Percent recovery was not calculated
R Duplicate analysis RPD was not within limits

Form 5A Equivalent

Pace Analytical

Metals Data Reporting Form

Matrix Spike Duplicate Sample Results

Spike Sample ID: QC39519MSD D

Original Sample ID: 2751-0505-1898 D **Client ID:** ZZZZZZ

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39519

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	OS Conc	Q	MSD Conc	Q	Spike Level	% Rec	OS DF	MSD DF	Instr	OS Anal Date	OS Anal Time	MSD Anal Date	MSD Anal Time
Arsenic	189.0	3.6	B	561		500	111.4	1	1	ICP	6/1/2005	14:39	6/1/2005	14:48
Beryllium	313.0	0.11	B	521		500	104.3	1	1	ICP	6/1/2005	14:39	6/1/2005	14:48
Manganese	257.6	18.3		532		500	102.8	1	1	ICP	6/1/2005	14:39	6/1/2005	14:48
Sodium	330.2	468000		484000	NC	2500		1	1	ICP	6/1/2005	14:39	6/1/2005	14:48
Vanadium	292.4	1.2	B	517		500	103.1	1	1	ICP	6/1/2005	14:39	6/1/2005	14:48

Comments: Acceptable Range 90% - 110%

Version 4.80.0

U Result is less than the MDL
B Result is between MDL and RL
N Spike recovery failed
NC Percent recovery was not calculated
R Duplicate analysis RPD was not within limits

Form 5A Equivalent

Pace Analytical

Metals Data Reporting Form

Matrix Spike Duplicate Sample Results

Spike Sample ID: QC39520MSD D

Original Sample ID: 2777-0505-2044 **Client ID:** ZZZZZZ

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39520

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	OS Conc	Q	MSD Conc	Q	Spike Level	% Rec	OS DF	MSD DF	Instr	OS Anal Date	OS Anal Time	MSD Anal Date	MSD Anal Time
Arsenic	189.0	3.5	B	551		500	109.5	1	1	ICP	6/1/2005	18:28	6/1/2005	18:38
Beryllium	313.0	0.070	U	534		500	106.7	1	1	ICP	6/1/2005	18:28	6/1/2005	18:38
Manganese	257.6	587		1100		500	102.5	1	1	ICP	6/1/2005	18:28	6/1/2005	18:38
Sodium	330.2	214000		215000	NC	2500		1	1	ICP	6/1/2005	18:28	6/1/2005	18:38
Vanadium	292.4	0.40	U	523		500	104.6	1	1	ICP	6/1/2005	18:28	6/1/2005	18:38

Comments: Acceptable Range 90% - 110%

ersion 4.80.0

U Result is less than the MDL
B Result is between MDL and RL
N Spike recovery failed
NC Percent recovery was not calculated
R Duplicate analysis RPD was not within limits

Form 5A Equivalent

Pace Analytical

Metals Data Reporting Form

Matrix Spike Duplicate RPD Report

Matrix Spike Duplicate Sample ID: QC39519MSD D

Matrix Spike Sample ID: QC39519MS D **Client ID:** ZZZZZZ

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39519

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	MS Conc	Q	MSD Conc	Q	% RPD	MS DF	MSD DF	Instr	MS Anal Date	MS Anal Time	MSD Anal Date	MSD Anal Time
Arsenic	189.042	550		561		2.0	1	1	ICP	6/1/2005	14:45	6/1/2005	14:48
Beryllium	313.042	524		521		0.4	1	1	ICP	6/1/2005	14:45	6/1/2005	14:48
Manganese	257.61	535		532		0.5	1	1	ICP	6/1/2005	14:45	6/1/2005	14:48
Sodium	330.232	482000	NC	484000	NC	0.3	1	1	ICP	6/1/2005	14:45	6/1/2005	14:48
Vanadium	292.402	518		517		0.1	1	1	ICP	6/1/2005	14:45	6/1/2005	14:48

Comments:

Version 4.80.0

U Result is less than the MDL
B Result is between MDL and RL
N Spike recovery failed
NC Percent recovery was not calculated
R Duplicate analysis RPD was not within limits

Form 6 Equivalent

Pace Analytical

Metals Data Reporting Form

Matrix Spike Duplicate RPD Report

Matrix Spike Duplicate Sample ID: QC39520MSD D

Matrix Spike Sample ID: QC39520MS D **Client ID:** ZZZZZZ

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39520

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	MS Conc	Q	MSD Conc	Q	% RPD	MS DF	MSD DF	Instr	MS Anal Date	MS Anal Time	MSD Anal Date	MSD Anal Time
Arsenic	189.042	539		551		2.2	1	1	ICP	6/1/2005	18:35	6/1/2005	18:38
Beryllium	313.042	526		534		1.4	1	1	ICP	6/1/2005	18:35	6/1/2005	18:38
Manganese	257.61	1100		1100		0.4	1	1	ICP	6/1/2005	18:35	6/1/2005	18:38
Sodium	330.232	214000	NC	215000	NC	0.0	1	1	ICP	6/1/2005	18:35	6/1/2005	18:38
Vanadium	292.402	513		523		2.0	1	1	ICP	6/1/2005	18:35	6/1/2005	18:38

Comments:

Version 4.80.0

U Result is less than the MDL
B Result is between MDL and RL
N Spike recovery failed
NC Percent recovery was not calculated
R Duplicate analysis RPD was not within limits

Form 6 Equivalent

Pace Analytical

Metals Data Reporting Form

Laboratory Control Sample Results

Lab Sample ID: QC39519LCS

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39519

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	Spike Level	Conc	Percent Recovery	Q	Range	DF	Instr	Anal Date	Anal Time
Arsenic	189.042	500	513	102.7		80-120	1	ICP	6/1/2005	14:33
Beryllium	313.042	500	517	103.4		80-120	1	ICP	6/1/2005	14:33
Manganese	257.61	500	519	103.8		80-120	1	ICP	6/1/2005	14:33
Sodium	330.232	2500	2340	93.5		80-120	1	ICP	6/1/2005	14:33
Vanadium	292.402	500	508	101.5		80-120	1	ICP	6/1/2005	14:33

Comments: Acceptable Range 90% - 110%

U Result is less than the MDL

B Result is between MDL and RL

Pace Analytical

Metals Data Reporting Form

Laboratory Control Sample Results

Lab Sample ID: QC39520LCS

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39520

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	Spike Level	Conc	Percent Recovery	Q	Range	DF	Instr	Anal Date	Anal Time
Arsenic	189.042	500	514	102.7		80-120	1	ICP	6/1/2005	18:21
Beryllium	313.042	500	526	105.2		80-120	1	ICP	6/1/2005	18:21
Manganese	257.61	500	532	106.3		80-120	1	ICP	6/1/2005	18:21
Sodium	330.232	2500	2550	102.0		80-120	1	ICP	6/1/2005	18:21
Vanadium	292.402	500	513	102.5		80-120	1	ICP	6/1/2005	18:21

Comments: Acceptable Range 90% - 110%

Version 4.80.0

U Result is less than the MDL

B Result is between MDL and RL

Form 7 Equivalent

Pace Analytical

Metals Data Reporting Form

Duplicate Sample Results

Lab Sample ID: 2758-0505-1917 D **Client ID:** MW-36

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39519

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.042	1.7	4.0	18.5		1	ICP	6/1/2005	15:44
Beryllium	313.042	0.070	0.50	0.59		1	ICP	6/1/2005	15:44
Manganese	257.61	0.20	10.0	414		1	ICP	6/1/2005	15:44
Sodium	330.232	170	500	185000		1	ICP	6/1/2005	15:44
Vanadium	292.402	0.40	10.0	29.2		1	ICP	6/1/2005	15:44

Comments:

Pace Analytical

Metals Data Reporting Form

Duplicate Sample Results

Lab Sample ID: QC39519DUP **Client ID:** ZZZZZZ

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39519

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.042	1.7	4.0	4.9		1	ICP	6/1/2005	14:42
Beryllium	313.042	0.070	0.50	0.070	U	1	ICP	6/1/2005	14:42
Manganese	257.61	0.20	10.0	18.6		1	ICP	6/1/2005	14:42
Sodium	330.232	170	500	481000		1	ICP	6/1/2005	14:42
Vanadium	292.402	0.40	10.0	1.2	B	1	ICP	6/1/2005	14:42

Comments:

Version 4.80.0

U Result is less than the MDL

Form 1 Equivalent

Pace Analytical

Metals Data Reporting Form

Duplicate Sample Results

Lab Sample ID: QC39520DUP **Client ID:** ZZZZZZ

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39520

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	IDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Arsenic	189.042	1.7	4.0	3.0	B	1	ICP	6/1/2005	18:32
Beryllium	313.042	0.070	0.50	0.11	B	1	ICP	6/1/2005	18:32
Manganese	257.61	0.20	10.0	575		1	ICP	6/1/2005	18:32
Sodium	330.232	170	500	213000		1	ICP	6/1/2005	18:32
Vanadium	292.402	0.40	10.0	0.40	U	1	ICP	6/1/2005	18:32

Comments:

Pace Analytical

Metals Data Reporting Form

Sample Duplicate RPD Report

Duplicate Sample ID: 2758-0505-1917 D

Original Sample ID: 2758-0505-1917 D **Client ID:** MW-36

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39519

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	OS Conc	Q	Dupe Conc	Q	% RPD	OS DF	Dupe DF	Instr	OS Anal Date	OS Anal Time	Dupe Anal Date	Dupe Anal Time
Arsenic	189.042	19.9		18.5		1.4	1	1	ICP	6/1/2005	15:41	6/1/2005	15:44
Beryllium	313.042	0.70		0.59		0.1	1	1	ICP	6/1/2005	15:41	6/1/2005	15:44
Manganese	257.61	413		414		0.3	1	1	ICP	6/1/2005	15:41	6/1/2005	15:44
Sodium	330.232	182000		185000		1.7	1	1	ICP	6/1/2005	15:41	6/1/2005	15:44
Vanadium	292.402	29.3		29.2		0.1	1	1	ICP	6/1/2005	15:41	6/1/2005	15:44

U Result is less than the MDL
B Result is between MDL and RL
R Duplicate analysis RPD was not within limits

Pace Analytical

Metals Data Reporting Form

Sample Duplicate RPD Report

Duplicate Sample ID: QC39519DUP

Original Sample ID: 2751-0505-1898 D **Client ID:** ZZZZZZ

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39519

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	OS Conc	Q	Dupe Conc	Q	% RPD	OS DF	Dupe DF	Instr	OS Anal Date	OS Anal Time	Dupe Anal Date	Dupe Anal Time
Arsenic	189.042	3.6	B	4.9		1.3	1	1	ICP	6/1/2005	14:39	6/1/2005	14:42
Beryllium	313.042	0.11	B	0.070	U	0.0	1	1	ICP	6/1/2005	14:39	6/1/2005	14:42
Manganese	257.61	18.3		18.6		0.3	1	1	ICP	6/1/2005	14:39	6/1/2005	14:42
Sodium	330.232	468000		481000		2.8	1	1	ICP	6/1/2005	14:39	6/1/2005	14:42
Vanadium	292.402	1.2	B	1.2	B	0.0	1	1	ICP	6/1/2005	14:39	6/1/2005	14:42

U Result is less than the MDL
B Result is between MDL and RL
R Duplicate analysis RPD was not within limits

Pace Analytical

Metals Data Reporting Form

Sample Duplicate RPD Report

Duplicate Sample ID: QC39520DUP

Original Sample ID: 2777-0505-2044 **Client ID:** ZZZZZZ

Matrix: Water **Units:** ug/L **Prep Date:** 5/19/2005 **Prep Batch:** 39520

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	OS Conc	Q	Dupe Conc	Q	% RPD	OS DF	Dupe DF	Instr	OS Anal Date	OS Anal Time	Dupe Anal Date	Dupe Anal Time
Arsenic	189.042	3.5	B	3.0	B	0.6	1	1	ICP	6/1/2005	18:28	6/1/2005	18:32
Beryllium	313.042	0.070	U	0.11	B	0.1	1	1	ICP	6/1/2005	18:28	6/1/2005	18:32
Manganese	257.61	587		575		2.1	1	1	ICP	6/1/2005	18:28	6/1/2005	18:32
Sodium	330.232	214000		213000		0.3	1	1	ICP	6/1/2005	18:28	6/1/2005	18:32
Vanadium	292.402	0.40	U	0.40	U		1	1	ICP	6/1/2005	18:28	6/1/2005	18:32

Version 4.80.0

U Result is less than the MDL
B Result is between MDL and RL
R Duplicate analysis RPD was not within limits

Form 6 Equivalent

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name : Pace Analytical
Project : 05-2758 Site :
Lab File ID (Standard): 20525055.D
Instrument ID : GC/MS Ins
GC Column : Rtx-VMS ID : .18
Level :

Contract :
Location : Group :
Date Analyzed : 25 May 2005
Time Analyzed : 21:18
Heated Purge (Y:N) : N

File	Sample	SMC1 (DCE) #	SMC2 (TOL) #	SMC3 (BFB) #	SMC4 #	SMC5 #	SMC6 #	TOTAL OUT
20525057	LCS[20]	82	92	90	0	0	0	0
20525061	VBLK	81	89	90	0	0	0	0
20525069	MW-2	76	89	90	0	0	0	0
20525071	MW-2D	75	89	88	0	0	0	0
20525073	MW-5	74	89	88	0	0	0	0
20525075	MW-18	77	89	91	0	0	0	0
20525077	MW-18D	74	86	89	0	0	0	0
20525079	MW-30	82	88	89	0	0	0	0
20525081	MW-31	75	88	89	0	0	0	0
20525083	Field Blank - 1	75	88	90	0	0	0	0
20525085	Trip Blank	75	88	90	0	0	0	0

		QC Limits
SMC1 (DCE)	= 1,2-Dichloroethane-d4	(70 -130)
SMC2 (TOL)	= Toluene-d8	(70 -130)
SMC3 (BFB)	= Bromofluorobenzene	(70 -130)
SMC4	=	(0 -0)
SMC5	=	(0 -0)
SMC6	=	(0 -0)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

LCS Blank Summary Report

Data File : D:\DATA\205MY25\1A\20525057.D
Acq On : 25 May 2005 21:45
Sample : LCS[20]
Misc : V1-159-2
Matrix : WATERrams: LSCINT.P

Vial: 47
Operator: MAK
Inst : GC/MS Ins
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\2AL05241.M (RTE Integrator)
Title : 8260 Water Concentrator #1
Last Update : Wed May 25 09:15:51 2005
Response via : Single (D:\DATA\205MY25\1A\20525055.D 25 May 2005 21:18)

		Compound Name	Conc	Added	Recv(%)	QC Range	Q
42)	S	1,2-Dichloroethane-d	24.65	30.00	82.18	70 to 130%	[ ]
58)	S	Toluene-d8	27.64	30.00	92.12	70 to 130%	[ ]
83)	S	Bromofluorobenzene	27.12	30.00	90.39	70 to 130%	[ ]
2)	T	Dichlorodifluorometh	16.14	20.00	80.69	70 to 130%	[ ]
3)	T	Chloromethane	18.14	20.00	90.69	70 to 130%	[ ]
4)	T	Vinyl Chloride	16.74	20.00	83.69	70 to 130%	[ ]
5)	T	Bromomethane	14.24	20.00	71.22	70 to 130%	[ ]
6)	M	Chloroethane	17.05	20.00	85.26	70 to 130%	[ ]
7)	T	Trichlorofluorometha	25.19	20.00	125.96	70 to 130%	[ ]
8)	T	Ethyl Ether	17.46	20.00	87.31	70 to 130%	[ ]
9)	T	Acrolein	24.51	20.00	122.57	70 to 130%	[ ]
10)	T	1,1-Dichloroethene	19.26	20.00	96.32	70 to 130%	[ ]
11)	T	112Trichloro122trifl	19.73	20.00	98.66	70 to 130%	[ ]
12)	T	Acetone	15.46	20.00	77.31	70 to 130%	[ ]
13)	M	Iodomethane	81.68	100.00	81.68	70 to 130%	[ ]
14)	T	Carbon Disulfide	17.29	20.00	86.46	70 to 130%	[ ]
15)	M	Acetonitrile	93.34	100.00	93.34	70 to 130%	[ ]
16)	T	Methyl acetate	7.84	20.00	39.18	70 to 130%	[*]
17)	T	Methylene Chloride	18.80	20.00	94.02	70 to 130%	[ ]
18)	T	TBA, tertButylalcoho	102.52	100.00	102.52	70 to 130%	[ ]
19)	T	Acrylonitrile	18.98	20.00	94.91	70 to 130%	[ ]
20)	T	trans-1,2-Dichloroet	18.48	20.00	92.38	70 to 130%	[ ]
21)	T	Allyl chloride	84.34	100.00	84.34	70 to 130%	[ ]
22)	T	tert-butyl Methyleth	17.39	20.00	86.93	70 to 130%	[ ]
23)	T	Vinyl acetate	0.00	20.00	0.00	70 to 130%	[*]
24)	T	Hexane	31.77	20.00	158.84	70 to 130%	[*]
25)	T	1,1-Dichloroethane	19.06	20.00	95.32	70 to 130%	[ ]
26)	M	Chloroprene	20.09	20.00	100.43	70 to 130%	[ ]
27)	M	t-Butyl ethyl ether	18.95	20.00	94.73	70 to 130%	[ ]
28)	M	2,2-Dichloropropane	23.72	20.00	118.60	70 to 130%	[ ]
29)	T	cis-1,2-Dichloroethe	19.60	20.00	98.01	70 to 130%	[ ]
30)	T	2-Butanone	15.91	20.00	79.57	70 to 130%	[ ]
31)	T	Propionitrile	16.89	20.00	84.44	70 to 130%	[ ]
32)	T	Ethyl acetate	24.29	20.00	121.43	70 to 130%	[ ]
33)	T	Diisopropylether	19.06	20.00	95.30	70 to 130%	[ ]
34)	T	Bromochloromethane	16.84	20.00	84.22	70 to 130%	[ ]
35)	M	Methacrylonitrile	18.78	20.00	93.92	70 to 130%	[ ]
36)	T	Tetrahydrofuran	16.93	20.00	84.64	70 to 130%	[ ]
37)	T	Chloroform	18.94	20.00	94.71	70 to 130%	[ ]
38)	T	1,1,1-Trichloroethan	23.24	20.00	116.20	70 to 130%	[ ]
39)	T	Cyclohexane	24.38	20.00	121.88	70 to 130%	[ ]

* = out of control limits

LCS Blank Summary Report

Data File : D:\DATA\205MY25\1A\20525057.D
Acq On : 25 May 2005 21:45
Sample : LCS[20]
Misc : V1-159-2
Matrix : WATERrams: LSCINT.P

Vial: 47
Operator: MAK
Inst : GC/MS Ins
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\2AL05241.M (RTE Integrator)
Title : 8260 Water Concentrator #1
Last Update : Wed May 25 09:15:51 2005
Response via : Single (D:\DATA\205MY25\1A\20525055.D 25 May 2005 21:18)

		Compound Name	Conc	Added	Recv(%)	QC Range	Q
40)	T	Carbon Tetrachloride	26.38	20.00	131.89	70 to 130%	[*]
41)	T	1,1-Dichloropropene	19.69	20.00	98.44	70 to 130%	[ ]
43)	T	Benzene	19.74	20.00	98.70	70 to 130%	[ ]
44)	T	1,2-Dichloroethane	17.86	20.00	89.30	70 to 130%	[ ]
45)	M	Isobutanol	63.42	100.00	63.42	70 to 130%	[*]
46)	M	t-Amyl methyl ether	20.05	20.00	100.23	70 to 130%	[ ]
47)	T	Trichloroethene	20.49	20.00	102.43	70 to 130%	[ ]
48)	T	Methylcyclohexane	20.28	20.00	101.39	70 to 130%	[ ]
49)	T	1,2-Dichloropropane	19.64	20.00	98.18	70 to 130%	[ ]
50)	T	Dibromomethane	20.68	20.00	103.38	70 to 130%	[ ]
51)	M	Methyl methacrylate	25.10	20.00	125.52	70 to 130%	[ ]
52)	T	Bromodichloromethane	22.91	20.00	114.54	70 to 130%	[ ]
53)	M	2-Nitropropane	88.76	100.00	88.76	70 to 130%	[ ]
54)	T	2-Chloroethylvinylet	10.32	20.00	51.59	70 to 130%	[*]
55)	T	cis-1,3-Dichloroprop	22.09	20.00	110.44	70 to 130%	[ ]
56)	T	4-Methyl-2-Pentanone	19.15	20.00	95.73	70 to 130%	[ ]
60)	T	Toluene	20.31	20.00	101.56	70 to 130%	[ ]
61)	T	trans-1,3-Dichloropr	24.13	20.00	120.66	70 to 130%	[ ]
62)	M	Ethyl methacrylate	26.26	20.00	131.28	70 to 130%	[*]
63)	T	1,1,2-Trichloroethan	20.92	20.00	104.60	70 to 130%	[ ]
64)	T	Tetrachloroethene	21.26	20.00	106.30	70 to 130%	[ ]
65)	T	1,3-Dichloropropane	20.87	20.00	104.37	70 to 130%	[ ]
66)	T	2-Hexanone	19.35	20.00	96.76	70 to 130%	[ ]
67)	T	Dibromochloromethane	24.44	20.00	122.20	70 to 130%	[ ]
68)	T	1,2-Dibromoethane,ED	22.51	20.00	112.57	70 to 130%	[ ]
69)	T	Chlorobenzene	20.61	20.00	103.04	70 to 130%	[ ]
70)	T	1,1,1,2-Tetrachloroe	25.24	20.00	126.22	70 to 130%	[ ]
71)	T	Ethylbenzene	20.04	20.00	100.20	70 to 130%	[ ]
72)	T	m,p-Xylene	41.10	40.00	102.75	70 to 130%	[ ]
73)	T	o-Xylene	19.98	20.00	99.89	70 to 130%	[ ]
74)	MG	Xylenes (Total)	61.09	60.00	101.82	70 to 130%	[ ]
75)	T	Styrene	20.87	20.00	104.33	70 to 130%	[ ]
77)	T	Bromoform	26.11	20.00	130.54	70 to 130%	[*]
78)	M	Cyclohexanone	50.28	100.00	50.28	70 to 130%	[*]
79)	T	n-Propylbenzene	19.63	20.00	98.16	70 to 130%	[ ]
80)	M	2-Chlorotoluene	20.46	20.00	102.29	70 to 130%	[ ]
81)	T	1,3,5-Trimethylbenze	19.24	20.00	96.18	70 to 130%	[ ]
82)	T	Isopropylbenzene,Cum	20.51	20.00	102.53	70 to 130%	[ ]
84)	M	Bromobenzene	20.93	20.00	104.67	70 to 130%	[ ]
85)	T	1,1,2,2-Tetrachloroe	23.39	20.00	116.94	70 to 130%	[ ]
86)	T	1,2,3-Trichloropropa	20.47	20.00	102.35	70 to 130%	[ ]

* = out of control limits

LCS Blank Summary Report

Data File : D:\DATA\205MY25\1A\20525057.D
Acq On : 25 May 2005 21:45
Sample : LCS[20]
Misc : V1-159-2
Matrix : WATERrams: LSCINT.P

Vial: 47
Operator: MAK
Inst : GC/MS Ins
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\2AL05241.M (RTE Integrator)
Title : 8260 Water Concentrator #1
Last Update : Wed May 25 09:15:51 2005
Response via : Single (D:\DATA\205MY25\1A\20525055.D 25 May 2005 21:18)

		Compound Name	Conc	Added	Recv(%)	QC Range	Q
87)	M	trans-1,4-Dichloro-2	17.81	20.00	89.05	70 to 130%	[ ]
88)	M	4-Chlorotoluene	19.54	20.00	97.68	70 to 130%	[ ]
89)	M	tert-Butyl benzene	17.91	20.00	89.54	70 to 130%	[ ]
90)	T	1,2,4-Trimethylbenze	18.85	20.00	94.25	70 to 130%	[ ]
91)	M	sec-Butyl benzene	18.72	20.00	93.61	70 to 130%	[ ]
92)	T	1,3-Dichlorobenzene	20.41	20.00	102.05	70 to 130%	[ ]
93)	M	4-Isopropyl toluene	18.48	20.00	92.38	70 to 130%	[ ]
94)	T	1,4-Dichlorobenzene	19.17	20.00	95.86	70 to 130%	[ ]
95)	T	1,2-Dichlorobenzene	19.37	20.00	96.84	70 to 130%	[ ]
96)	M	n-Butyl benzene	17.72	20.00	88.61	70 to 130%	[ ]
97)	M	bis(2-Chloro-1-methy	21.73	20.00	108.65	70 to 130%	[ ]
98)	T	1,2-Dibromo-3-chloro	24.74	20.00	123.68	70 to 130%	[ ]
99)	T	1,2,4-Trichlorobenze	19.25	20.00	96.27	70 to 130%	[ ]
100)	M	Hexachlorobutadiene	17.59	20.00	87.96	70 to 130%	[ ]
101)	T	Naphthalene	21.71	20.00	108.54	70 to 130%	[ ]
102)	M	1,2,3-Trichlorobenze	18.47	20.00	92.33	70 to 130%	[ ]

* = out of control limits

Quantitation Report (QT Reviewed)

Data File : D:\DATA\205MY25\1A\20525057.D
Acq On : 25 May 2005 21:45
Sample : LCS[20]
Misc : V1-159-2
MS Integration Params: LSCINT.P
Quant Time: May 26 12:05 19105

Vial: 47
Operator: MAK
Inst : GC/MS Ins
Multiplr: 1.00
Quant Results File: 2AL05241.RES

Quant Method : C:\HPCHEM\1\METHODS\2AL05241.M (RTE Integrator)
Title : 8260 Water Concentrator #1
Last Update : Thu May 26 11:23:59 2005
Response via : Initial Calibration
DataAcq Meth : 28260
IS QA File : D:\DATA\205MY25\1A\20525055.D (25 May 2005 21:18)

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min) Rcv(Ar)
1) Fluorobenzene	4.42	96	258370	30.00 ug/l	0.00 95.33%
57) Chlorobenzene-d5	6.94	117	210748	30.00 ug/l	0.00 96.36%
76) 1,4-Dichlorobenzene-d4	8.14	152	117002	30.00 ug/l	0.00 97.09%

System Monitoring Compounds

42) 1,2-Dichloroethane-d4	4.06	65	79713	24.65 ug/l	0.00
Spiked Amount 30.000	Range 70 - 130		Recovery = 82.17%		
58) Toluene-d8	5.89	98	269778	27.64 ug/l	0.00
Spiked Amount 30.000	Range 70 - 130		Recovery = 92.13%		
83) Bromofluorobenzene	7.60	95	106840	27.12 ug/l	0.00
Spiked Amount 30.000	Range 70 - 130		Recovery = 90.40%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.92	85	52204	16.14 ug/l	100
3) Chloromethane	1.01	50	100804	18.14 ug/l	99
4) Vinyl Chloride	1.06	62	57045	16.74 ug/l	99
5) Bromomethane	1.20	94	17371	14.24 ug/l	100
6) Chloroethane	1.26	64	11318	17.05 ug/l #	79
7) Trichlorofluoromethane	1.32	101	49559	25.19 ug/l #	81
8) Ethyl Ether	1.50	59	37114	17.46 ug/l	96
9) Acrolein	1.80	56	6519	24.51 ug/l	100
10) 1,1-Dichloroethene	1.60	96	45368	19.26 ug/l	100
11) 112Trichloro122trifluoroet	1.62	101	45624	19.73 ug/l	97
12) Acetone	1.98	43	21984m	15.46 ug/l #	96
13) Iodomethane	1.68	142	244585	81.68 ug/l	96
14) Carbon Disulfide	1.62	76	99106	17.29 ug/l	99
15) Acetonitrile	2.30	41	49441	93.34 ug/l	98
16) Methyl acetate	2.05	43	34774	7.84 ug/l	99
17) Methylene Chloride	1.93	84	47422	18.80 ug/l	98
18) TBA, tertButylalcohol	2.21	59	24200	102.52 ug/l	98
19) Acrylonitrile	2.54	53	24762	18.98 ug/l	96
20) trans-1,2-Dichloroethene	2.03	96	48520	18.48 ug/l	99
21) Allyl chloride	1.87	41	301886	84.34 ug/l	98
22) tert-butyl Methylether,MtB	2.12	73	124417	17.39 ug/l	93
24) Hexane	2.10	57	98662	31.77 ug/l #	79
25) 1,1-Dichloroethane	2.47	63	105880	19.06 ug/l	100
26) Chloroprene	2.46	88	41275	20.09 ug/l	98
27) t-Butyl ethyl ether	2.69	59	168208	18.95 ug/l	99
28) 2,2-Dichloropropane	3.03	77	71099	23.72 ug/l #	98
29) cis-1,2-Dichloroethene	2.93	96	58522	19.60 ug/l	98
30) 2-Butanone	3.59	43	28195	15.91 ug/l	94
31) Propionitrile	3.96	54	8749	16.89 ug/l	96
32) Ethyl acetate	3.39	43	57660	24.29 ug/l	97
33) Diisopropylether	2.40	45	202387	19.06 ug/l	97
34) Bromochloromethane	3.12	128	23693	16.84 ug/l	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\DATA\205MY25\1A\20525057.D
Acq On : 25 May 2005 21:45
Sample : LCS[20]
Misc : V1-159-2
MS Integration Params: LSCINT.P
Quant Time: May 26 12:05 19105

Vial: 47
Operator: MAK
Inst : GC/MS Ins
Multiplr: 1.00
Quant Results File: 2AL05241.RES

Quant Method : C:\HPCHEM\1\METHODS\2AL05241.M (RTE Integrator)
Title : 8260 Water Concentrator #1
Last Update : Thu May 26 11:23:59 2005
Response via : Initial Calibration
DataAcq Meth : 28260

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
35) Methacrylonitrile	3.97	41	40398	18.78 ug/l	98
36) Tetrahydrofuran	3.39	42	20956	16.93 ug/l	99
37) Chloroform	3.20	83	92272	18.94 ug/l	100
38) 1,1,1-Trichloroethane	3.41	97	68715	23.24 ug/l	99
39) Cyclohexane	3.11	56	109227	24.38 ug/l	100
40) Carbon Tetrachloride	3.33	117	38956	26.38 ug/l	99
41) 1,1-Dichloropropene	3.56	75	73915	19.69 ug/l	98
43) Benzene	3.87	78	211858	19.74 ug/l	100
44) 1,2-Dichloroethane	4.14	62	77848	17.86 ug/l	98
45) Isobutanol	4.32	41	2476	63.42 ug/l #	1
46) t-Amyl methyl ether	4.09	73	137578	20.05 ug/l	98
47) Trichloroethene	4.59	95	59335	20.49 ug/l	98
48) Methylcyclohexane	4.57	83	89945	20.28 ug/l	99
49) 1,2-Dichloropropane	5.11	63	53330	19.64 ug/l	99
50) Dibromomethane	5.01	93	31285	20.68 ug/l	97
51) Methyl methacrylate	5.38	41	54172	25.10 ug/l #	100
52) Bromodichloromethane	5.18	83	45109	22.91 ug/l	99
53) 2-Nitropropane	6.12	43	9368	88.76 ug/l #	91
54) 2-Chloroethylvinylether	5.72	63	9624	10.32 ug/l	97
55) cis-1,3-Dichloropropene	5.74	75	64770	22.09 ug/l	99
56) 4-Methyl-2-Pentanone	6.25	43	61912	19.15 ug/l	98
59) 1,4-Dioxane	5.39	88	5064	164.27 ug/l	98
60) Toluene	5.92	91	249008	20.31 ug/l	98
61) trans-1,3-Dichloropropene	6.26	75	61731	24.13 ug/l	99
62) Ethyl methacrylate	6.40	69	59008	26.26 ug/l	95
63) 1,1,2-Trichloroethane	6.37	97	45084	20.92 ug/l	98
64) Tetrachloroethene	6.20	164	56226	21.26 ug/l	97
65) 1,3-Dichloropropane	6.54	76	81016	20.87 ug/l	99
66) 2-Hexanone	6.81	43	44401	19.35 ug/l	98
67) Dibromochloromethane	6.48	129	27674	24.44 ug/l	97
68) 1,2-Dibromoethane,EDB	6.62	107	48966	22.51 ug/l	98
69) Chlorobenzene	6.95	112	172267	20.61 ug/l	98
70) 1,1,1,2-Tetrachloroethane	6.99	131	36733	25.24 ug/l	97
71) Ethylbenzene	6.98	106	94932	20.04 ug/l	96
72) m,p-Xylene	7.07	106	244191	41.10 ug/l	97
73) o-Xylene	7.30	106	113286	19.98 ug/l	97
74) Xylenes (Total)	7.07	106	357434m	61.09 ug/l	100
75) Styrene	7.33	104	192086	20.87 ug/l	100
77) Bromoform	7.33	173	12543	26.11 ug/l	98
78) Cyclohexanone	7.79	55	22471	50.28 ug/l	97
79) n-Propylbenzene	7.67	91	334166	19.63 ug/l	99
80) 2-Chlorotoluene	7.74	126	75041	20.46 ug/l	100
81) 1,3,5-Trimethylbenzene	7.77	105	250997	19.24 ug/l	99
82) Isopropylbenzene,Cumene	7.46	105	289757	20.51 ug/l	98
84) Bromobenzene	7.65	158	70029	20.93 ug/l	97
85) 1,1,2,2-Tetrachloroethane	7.71	83	55557	23.39 ug/l	99
86) 1,2,3-Trichloropropane	7.77	75	53473	20.47 ug/l	99
87) trans-1,4-Dichloro-2-buten	7.80	53	11100	17.81 ug/l #	77
88) 4-Chlorotoluene	7.83	91	203100	19.54 ug/l	98
89) tert-Butyl benzene	7.92	91	130690	17.91 ug/l	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\DATA\205MY25\1A\20525057.D
Acq On : 25 May 2005 21:45
Sample : LCS[20]
Misc : V1-159-2
MS Integration Params: LSCINT.P
Quant Time: May 26 12:05 19105

Vial: 47
Operator: MAK
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: 2AL05241.RES

Quant Method : C:\HPCHEM\1\METHODS\2AL05241.M (RTE Integrator)
Title : 8260 Water Concentrator #1
Last Update : Thu May 26 11:23:59 2005
Response via : Initial Calibration
DataAcq Meth : 28260

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
90)	1,2,4-Trimethylbenzene	7.96	105	245385	18.85 ug/l	100
91)	sec-Butyl benzene	8.00	105	297080	18.72 ug/l	100
92)	1,3-Dichlorobenzene	8.10	146	146899	20.41 ug/l	99
93)	4-Isopropyl toluene	8.07	119	264643	18.48 ug/l	99
94)	1,4-Dichlorobenzene	8.14	146	139287	19.17 ug/l	100
95)	1,2-Dichlorobenzene	8.33	146	128523	19.37 ug/l	99
96)	n-Butyl benzene	8.26	91	208173	17.72 ug/l	98
97)	bis(2-Chloro-1-methyl ethy	8.51	45	30667	21.73 ug/l	99
98)	1,2-Dibromo-3-chloropropan	8.69	75	7350	24.74 ug/l	93
99)	1,2,4-Trichlorobenzene	8.98	180	73798	19.25 ug/l	99
100)	Hexachlorobutadiene	8.97	225	30018	17.59 ug/l	99
101)	Naphthalene	9.12	128	235903	21.71 ug/l	100
102)	1,2,3-Trichlorobenzene	9.21	180	67198	18.47 ug/l	98

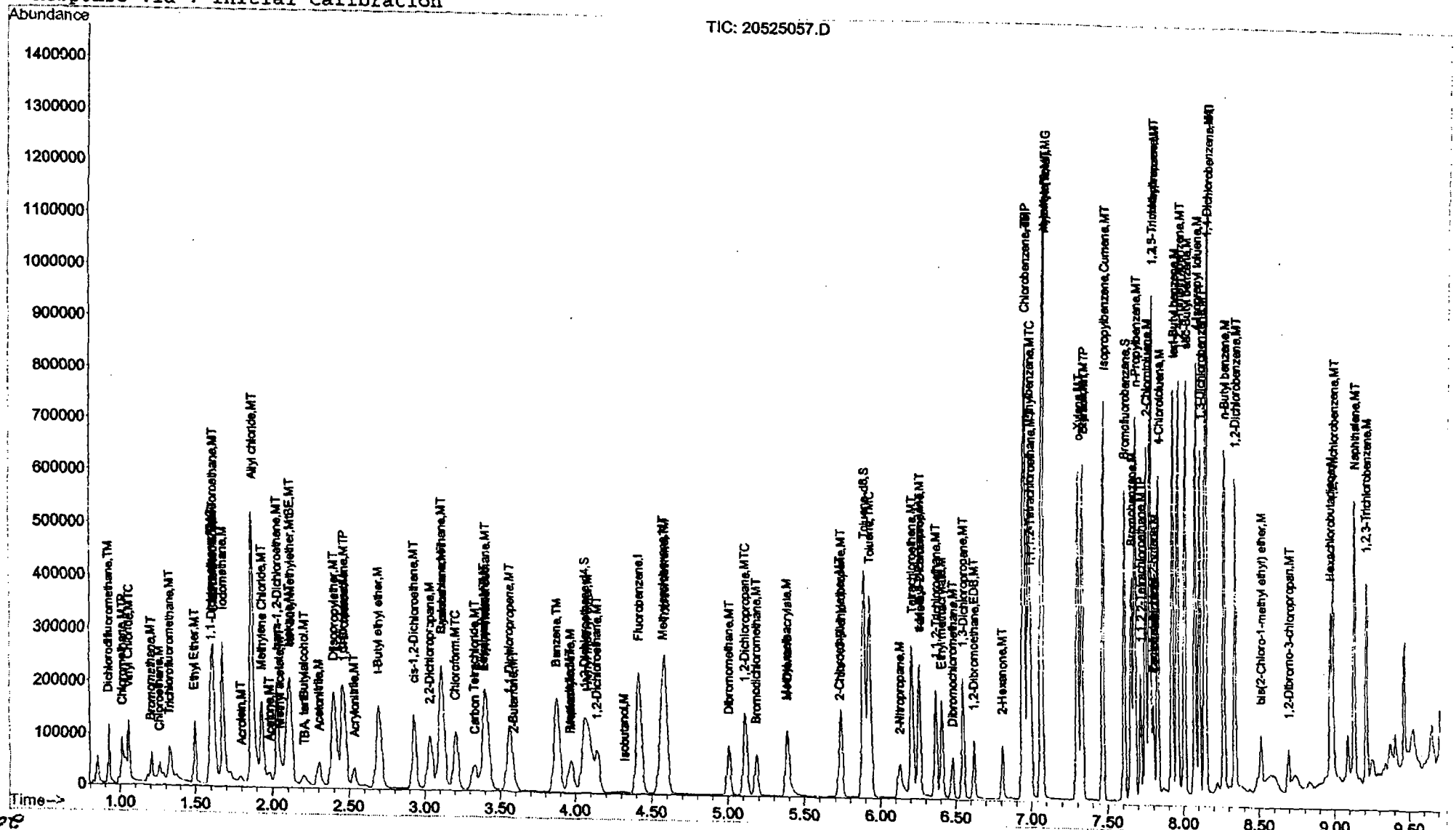
(#) = qualifier out of range (m) = manual integration

Data File : D:\DATA\205MY25\1A\20525057.D
Acq On : 25 May 2005 21:45
Sample : LCS[20]
Misc : V1-159-2
MS Integration Params: LSCINT.P
Quant Time: May 26 12:05 19105

Vial: 47
Operator: MAK
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: 2AL05241.RES

Method : C:\HPCHEM\1\METHODS\2AL05241.M (RTE Integrator)
Title : 8260 Water Concentrator #1
Last Update : Wed May 25 09:15:51 2005
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\DATA\205MY25\1A\20525061.D
Acq On : 25 May 2005 22:38
Sample : VBLK
Misc :
MS Integration Params: LSCINT.P
Quant Time: May 26 12:08 19105

Vial: 51
Operator: MAK
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: 2AL05241.RES

Quant Method : C:\HPCHEM\1\METHODS\2AL05241.M (RTE Integrator)
Title : 8260 Water Concentrator #1
Last Update : Thu May 26 11:24:02 2005
Response via : Initial Calibration
DataAcq Meth : 28260
IS QA File : D:\DATA\205MY25\1A\20525055.D (25 May 2005 21:18)

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min) Rcv(Ar)
1) Fluorobenzene	4.42	96	263448	30.00 ug/l	0.00 97.21%
57) Chlorobenzene-d5	6.94	117	218371	30.00 ug/l	0.00 99.84%
76) 1,4-Dichlorobenzene-d4	8.14	152	119382	30.00 ug/l	0.00 99.06%

System Monitoring Compounds					
42) 1,2-Dichloroethane-d4	4.06	65	79740	24.19 ug/l	0.00
Spiked Amount 30.000	Range 70 - 130		Recovery = 80.63%		
58) Toluene-d8	5.89	98	269311	26.63 ug/l	0.00
Spiked Amount 30.000	Range 70 - 130		Recovery = 88.77%		
83) Bromofluorobenzene	7.60	95	108142	26.90 ug/l	0.00
Spiked Amount 30.000	Range 70 - 130		Recovery = 89.67%		

Target Compounds					Qvalue
15) Acetonitrile	2.30	41	1686	3.12 ug/l #	25

(#) = qualifier out of range (m) = manual integration

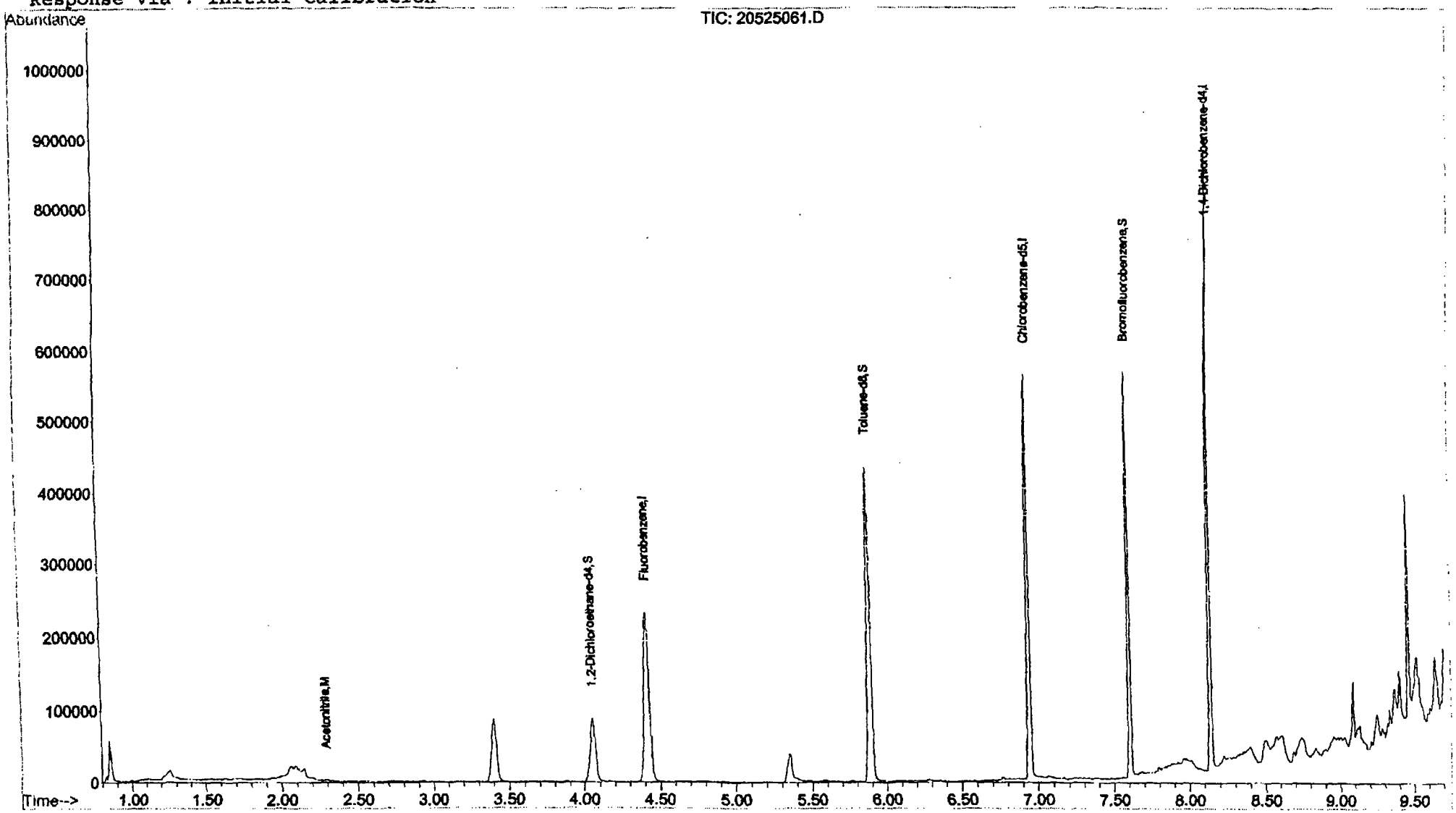
Quantitation Report

Data File : D:\DATA\205MY25\1A\20525061.D
Acq On : 25 May 2005 22:38
Sample : VBLK
Misc :
MS Integration Params: LSCINT.P
Quant Time: May 26 12:08 19105

Vial: 51
Operator: MAK
Inst : GC/MS Ins
Multiplr: 1.00

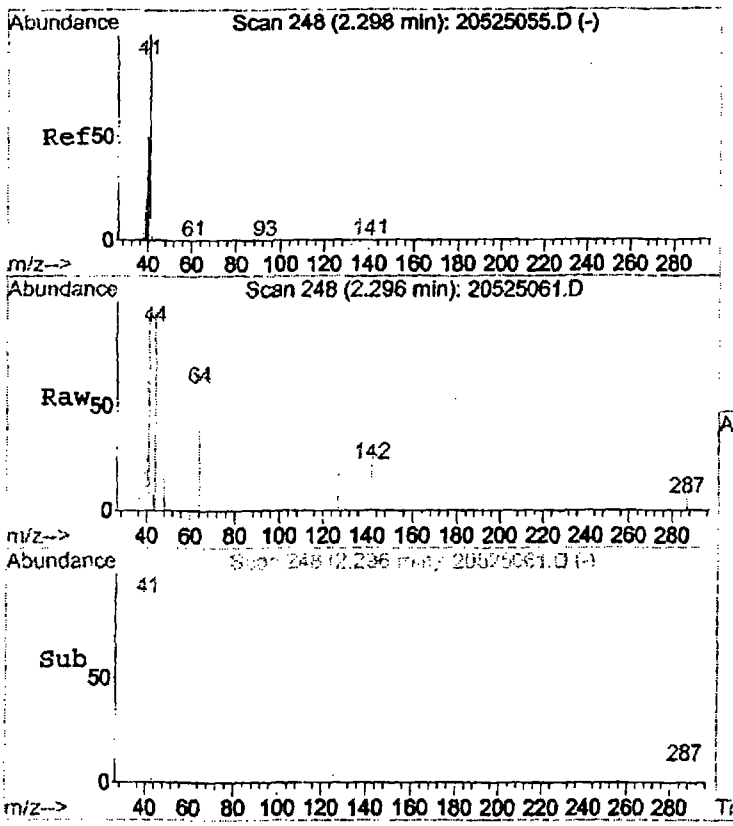
Quant Results File: 2AL05241.RES

Method : C:\HPCHEM\1\METHODS\2AL05241.M (RTE Integrator)
Title : 8260 Water Concentrator #1
Last Update : Wed May 25 09:15:51 2005
Response via : Initial Calibration



20525061.D 2AL05241.M Thu May 26 12:20:53 2005 HP2

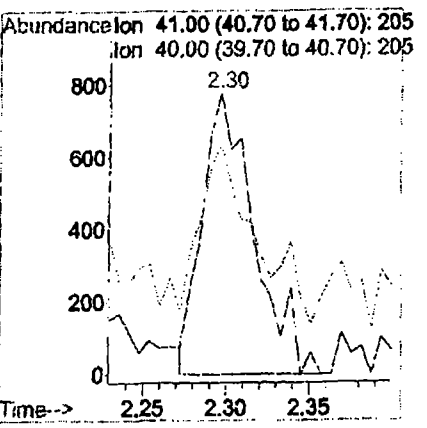
Page



#15
Acetonitrile
Concen: 3.12 ug/l
RT: 2.30 min Scan# 248
Delta R.T. -0.00 min
Lab File: 20525061.D
Acq: 25 May 2005 22:38

Tgt Ion: 41 Resp: 1686

Ion	Ratio	Lower	Upper
41	100		
40	0.0	43.2	64.8#



Spike Recovery and RPD Summary Report - WATER

Method : C:\HPCHEM\1\METHODS\2AL05241.M (RTE Integrator)
Title : 8260 Water Concentrator #1
Last Update : Wed May 25 09:15:51 2005
Response via : Initial Calibration

Non-Spiked Sample: 20525063.D

	Spike Sample	Spike Duplicate Sample
File ID :	20525065.D	20525067.D
Sample :	05-2775 05-2025MS	05-2775 05-2025MSD
Acq Time:	25 May 2005 23:32	25 May 2005 23:59

Surrogate	Sample Conc	Amnt Added	Sampl %Rec	Spike Conc	Spike %Rec	Dup Conc	Dup %Rec	QC Limits % Rec
1,2-Dichloroethane-d	25.7	30	86	22.1	74	21.6	72	70-130
Toluene-d8	26.8	30	89	26.3	88	26.8	89	70-130
Bromofluorobenzene	26.6	30	89	26.9	90	27.2	91	70-130

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
Dichlorodiflu	0.0	20	18	20	92.4	100.0	7.9	30	70-130
Chloromethane	0.0	20	19	21	93.5	107.2	13.7	30	70-130
Vinyl Chlorid	0.0	20	18	20	89.7	99.1	10.0	30	70-130
Bromomethane	0.0	20	12	13	59.7#	66.9#	11.4	30	70-130
Chloroethane	0.0	20	29	23	145.9#	114.2	24.3	30	70-130
Trichlorofluo	0.0	20	36	40	182.4#	201.2#	9.8	30	70-130
Ethyl Ether	0.0	20	16	16	77.9	81.1	4.0	30	70-130
Acrolein	0.0	20	20	21	97.6	105.3	7.5	30	70-130
1,1-Dichloroe	0.0	20	19	19	96.6	97.0	0.4	30	70-130
112Trichloro1	0.0	20	20	20	98.5	100.8	2.4	30	70-130
Acetone	0.0	20	9	10	43.8#	48.2#	9.6	30	70-130
Iodomethane	0.5	100	56	64	55.9#	63.6#	12.7	30	70-130
Carbon Disulf	0.0	20	17	18	84.5	88.2	4.2	30	70-130
Acetonitrile	2.2	100	63	70	60.9#	68.3#	11.5	30	70-130
Methyl acetat	1.9	20	10	13	40.7#	53.3#	26.9	30	70-130
Methylene Chl	0.0	20	17	18	84.1	87.6	4.1	30	70-130
TBA, tertButy	0.0	100	54	70	54.0#	70.3	26.2	30	70-130
Acrylonitrile	0.0	20	16	18	81.2	87.9	7.9	30	70-130
trans-1,2-Dic	0.0	20	17	21	85.8	103.0	18.2	30	70-130
Allyl chlorid	0.0	100	79	80	79.1	79.6	0.6	30	70-130
tert-butyl Me	0.0	20	18	19	90.1	94.1	4.3	30	70-130
Vinyl acetate	0.0	20	27	30	134.9#	151.5#	11.6	30	70-130
Hexane	0.0	20	39	41	192.9#	205.3#	6.3	30	70-130
1,1-Dichloroe	0.0	20	18	18	88.4	91.4	3.4	30	70-130
Chloroprene	0.0	20	20	20	97.7	101.5	3.9	30	70-130
t-Butyl ethyl	0.0	20	18	19	89.3	94.5	5.7	30	70-130
2,2-Dichlorop	0.0	20	24	25	119.5	123.3	3.2	30	70-130
cis-1,2-Dichl	0.0	20	18	18	89.0	92.1	3.4	30	70-130
2-Butanone	0.0	20	13	14	67.4#	69.9#	3.7	30	70-130
Propionitrile	0.0	20	13	14	65.5#	69.0#	5.1	30	70-130
Ethyl acetate	0.0	20	22	22	108.0	111.1	2.8	30	70-130
Diisopropylet	0.0	20	18	19	89.2	94.5	5.8	30	70-130
Bromochlorome	0.0	20	15	15	73.8	73.5	0.4	30	70-130
Methacrylonit	0.0	20	16	17	82.3	83.7	1.8	30	70-130
Tetrahydrofur	0.0	20	14	14	68.7#	72.1	4.9	30	70-130
Chloroform	0.0	20	17	17	84.8	87.4	3.0	30	70-130
1,1,1-Trichlo	0.0	20	24	26	121.7	128.1	5.1	30	70-130
Cyclohexane	0.0	20	26	27	128.2	134.7#	5.0	30	70-130
Carbon Tetrac	0.0	20	29	32	145.2#	160.5#	10.0	30	70-130
1,1-Dichlorop	0.0	20	20	21	98.4	104.0	5.5	30	70-130
Benzene	0.0	20	19	20	96.5	101.6	5.1	30	70-130
1,2-Dichloroe	0.0	20	16	17	79.8	83.4	4.4	30	70-130
Isobutanol	0.0	100	0	70	0.0#	70.4	200.0#	30	70-130
t-Amyl methyl	0.0	20	18	20	92.2	98.7	6.9	30	70-130

Trichloroethe	0.0	20	19	20	97.3	100.5	3.2	30	70-130
Methylcyclohe	0.0	20	22	23	107.6	114.2	5.9	30	70-130
1,2-Dichlorop	0.0	20	19	20	97.3	101.2	3.9	30	70-130
Dibromomethan	0.0	20	18	20	91.4	99.0	8.0	30	70-130
Methyl methac	0.0	20	26	27	128.5	135.8#	5.5	30	70-130
Bromodichloro	0.0	20	23	25	114.6	124.2	8.1	30	70-130
2-Nitropropan	0.0	100	146	150	146.3#	149.5#	2.2	30	70-130
2-Chloroethyl	0.0	20	0	0	0.0#	0.0#	99.0#	30	70-130
cis-1,3-Dichl	0.0	20	26	27	127.8	134.5#	5.1	30	70-130
4-Methyl-2-Pe	0.0	20	18	19	90.8	93.2	2.6	30	70-130
Toluene	0.0	20	20	21	98.7	103.3	4.5	30	70-130
trans-1,3-Dic	0.0	20	28	30	140.8#	148.3#	5.2	30	70-130
Ethyl methacr	0.0	20	29	30	145.6#	152.0#	4.3	30	70-130
1,1,2-Trichlo	0.0	20	20	21	100.2	107.2	6.8	30	70-130
Tetrachloroet	0.0	20	22	22	108.1	111.4	2.9	30	70-130
1,3-Dichlorop	0.0	20	20	21	100.8	105.6	4.7	30	70-130
2-Hexanone	0.0	20	17	19	86.9	93.1	6.8	30	70-130
Dibromochloro	0.0	20	35	37	176.8#	184.9#	4.5	30	70-130
1,2-Dibromoet	0.0	20	22	23	108.8	114.2	4.9	30	70-130
Chlorobenzene	0.0	20	20	21	98.6	103.2	4.5	30	70-130
1,1,1,2-Tetra	0.0	20	33	35	166.5#	173.4#	4.0	30	70-130
Ethylbenzene	0.0	20	20	20	98.0	101.8	3.8	30	70-130
m,p-Xylene	0.0	40	40	41	99.5	102.5	3.0	30	70-130
o-Xylene	0.0	20	19	20	95.6	99.4	3.9	30	70-130
Xylenes (Tota	0.0	60	59	61	98.2	101.5	3.3	30	70-130
Styrene	0.0	20	20	21	99.0	104.7	5.6	30	70-130
Bromoform	0.0	20	43	45	214.6#	227.0#	5.6	30	70-130
Cyclohexanone	0.0	100	13	17	12.8#	16.8#	26.5	30	70-130
n-Propylbenze	0.0	20	19	21	96.9	102.8	6.0	30	70-130
2-Chlorotolue	0.0	20	20	21	99.0	104.0	4.9	30	70-130
1,3,5-Trimeth	0.0	20	19	19	92.8	97.2	4.6	30	70-130
Isopropylbenz	0.0	20	20	21	101.8	105.7	3.7	30	70-130
Bromobenzene	0.0	20	20	21	100.6	105.1	4.4	30	70-130
1,1,2,2-Tetra	0.0	20	23	24	115.5	119.1	3.1	30	70-130
1,2,3-Trichlo	0.0	20	19	20	96.5	99.0	2.5	30	70-130
trans-1,4-Dic	0.0	20	22	23	112.1	116.7	4.0	30	70-130
4-Chlorotolue	0.0	20	19	20	93.9	98.2	4.5	30	70-130
tert-Butyl be	0.0	20	18	19	88.4	92.5	4.6	30	70-130
1,2,4-Trimeth	0.0	20	18	19	90.6	95.5	5.3	30	70-130
sec-Butyl ben	0.0	20	19	20	92.6	97.7	5.4	30	70-130
1,3-Dichlorob	0.0	20	20	20	98.0	101.9	3.9	30	70-130
4-Isopropyl t	0.0	20	18	19	90.5	95.2	5.0	30	70-130
1,4-Dichlorob	0.0	20	18	19	90.0	96.4	6.8	30	70-130
1,2-Dichlorob	0.0	20	19	19	93.0	97.0	4.2	30	70-130
n-Butyl benze	0.0	20	17	19	86.3	92.8	7.3	30	70-130
bis(2-Chloro-	0.0	20	19	21	96.4	104.4	8.0	30	70-130
1,2-Dibromo-3	0.0	20	30	31	148.2#	155.1#	4.6	30	70-130
1,2,4-Trichlo	0.0	20	17	19	86.7	93.3	7.4	30	70-130
Hexachlorobut	0.0	20	17	18	86.0	90.8	5.4	30	70-130
Naphthalene	0.3	20	17	19	84.0	93.9	11.2	30	70-130
1,2,3-Trichlo	2.2	20	15	17	62.6#	72.9	15.1	30	70-130

- Fails Limit Check

2AL05241.M Thu May 26 12:19:08 2005 HP2

Pace Analytical
Matrix Spike/Matrix Spike Duplicate Summary

Pace Project Number 05-2758
Pace Sample Number 05-1913 through 05-1934

				QC Limits
Analysis	True value	QC Concentration mg/L	% Recovery %	Recovery %
Fluoride Batch 38976	2mg/L	1.7	85	85-115
Fluoride Batch 38977	2mg/L	1.98	99	85-116
Cyanide, total Batch 39533	0.1mg/L	0.0923	92.00	85-115
Cyanide, total Batch 39674	0.1mg/L	0.0923	92.00	85-116
Cyanide, total Batch 39689	0.1mg/L	0.0923	92.00	85-117
Cyanide, ammenable Batch 39719	0.1mg/L	0.0923	92	85-115
Cyanide, ammenable Batch 39692	0.1mg/L	0.0923	92	85-115
Cyanide, ammenable Batch 39819	0.1mg/L	0.0978	98	85-115
pH	NA	NA	NA	NA
Specific Conductance	NA	NA	NA	NA

Pace Analytical
Matrix Spike/Matrix Spike Duplicate Summary

Pace Project Number 05-2758
Pace Sample Number 05-1913 through 05-1934

Analysis	sample ID	Spike Added mg/L	Sample Concentration mg/L	Matrix Spike Concentration mg/L	Matrix Spike % Recovery %	Spike Added mg/L	Matrix Spike Duplicate Concentation mg/L	Matrix Spike Duplicate % Recovery %	% RPD %	QC Limits RPD %	QC Limits Recovery %
Fluoride Batch 38976	#05-1923	4	2.52	10.78	127	NA	NA	NA	NA	20	85-115
Fluoride Batch 38977	*05-2751	4	0.317	4.5	108	NA	NA	NA	NA	20	85-115
Cyanide, total Batch 39533	*05-2192	0.1	0	0.0848	84.80	NA	NA	NA	NA	20	85-115
Cyanide, total Batch 39674	*#05-2563	0.1	0	0.0835	83.50	NA	NA	NA	NA	20	85-115
Cyanide, total Batch 39689	*05-2866	0.1	0	0.0923	92.30	NA	NA	NA	NA	20	85-115
Cyanide, ammenable	NA	NA	NA	NA	NA	NA	NA	NA	NA	20	85-115
pH	NA	NA	NA	NA	NA	NA	NA	NA	NA	20	85-115
Specific Conductance	NA	NA	NA	NA	NA	NA	NA	NA	NA	20	85-115
										20	85-115

Note: *Spiked sample was a project other than 05-2758

Note: #Spiked sample showed matrix interference.

HMI
Environmental Consulting Services

05-2758

CHAIN-OF-CUSTODY RECORD

Project Number	Project Name/Location	Laboratory	Sampling Personnel
HM00319	ORMET/REDUCTION MILL	PACE ANALYTICAL	S. MENOSKY, C. STANDARD

Container Description/ Number of Containers

Sample ID	Date/Time	Sample Code	DISSOLVED As, Be, Mn, Na, V 250ml. PLASTIC FIELD FILTERED (HNO3)	CYANIDE (TOTAL/AMENABLE) 250ml. PLASTIC (NaOH)	pH, Sp. Cond., F 500ml. PLASTIC (4°C)	TETRACHLOROETHENE 40ml. GLASS (HCL)						TOTAL
MW-15	5-16-05	L	1	1	1		05-1913					3
MW-19			1	1	1			14				3
MW-32			1	1	1			15				3
MW-35			1	1	1			16				3
MW-36			1	1	1			17				3
MW-1	5-17-05		1	1	1			18				3
MW-2			1	1	1	3		19				6
MW-2D			1	1	1	3		20				6
MW-5			1	1	1	3		21				6
MW-7			1	1	1			22				3
MW-8			1	1	1			23				3
MW-10			1	1	1			24				3
MW-11			1	1	1			25				3
MW-17			1	1	1			26				3
MW-18			1	1	1	3		27				6

Sample Code: L = Liquid; S = Solid; A = Air

Total Number of Containers: 57

Relinquished by: Stephen C. Menosky	Organization: HMI	Date: 5-17-05	Time: 8:00 PM	Seal Intact? Yes No NA
Received by: [illegible]	Organization: Pace	Date: 5-18-05	Time: 13:45	
Relinquished by: [illegible]	Organization: Pace	Date: 5-18-05	Time: 3:30	Seal Intact? Yes No NA
Received by: [illegible]	Organization: Pace	Date: 5-18-05	Time: 3:30	

REMARKS:

2°

1600

DELIVERY METHOD: In Person [ ] Common Carrier [ ] Lab Courier [PACE] Other [ ]

HMI
Environmental Consulting Services

CHAIN-OF-CUSTODY RECORD

05-2758

Project Number	Project Name/Location	Laboratory	Sampling Personnel
HM00319	ORMET/REDUCTION MILL	PACE ANALYTICAL	S. MENOSKY / C. STANDARD

Sample ID	Date/Time	Sample Code	Dissolved As, Ba, Mn, Na, V 250ml. Plastic Field Filtered (HNO3)	Cyanide (Total/Amenable) 250ml. Plastic (NaOH)	pH, Sp. Cond., F 500ml. Plastic (4°C)	Tetrachloroethene 40ml. Glass (HCL)						TOTAL
MW-18D	5-17-05	L	1	1	1	3	05-1928					6
MW-28			1	1	1		29					3
MW-30			1	1	1	3	30					6
MW-31			1	1	1	3	31					6
MW-37			1	1	1		32					3
MW-14			1	1	1		33					3
FIELD BLANK-1			1	1	1	3	34					6
TRIP BLANK						3	35					3

Sample Code: L = Liquid; S = Solid; A = Air

Total Number of Containers: 36

Relinquished by: Stephen C Menosky	Organization: HMI	Date: 5-17-05	Time: 8:00 PM	Seal Intact?	
Received by: [illegible]	Organization: Pace	Date: 5-18-05	Time: 13:45	Yes No NA	
Relinquished by: [illegible]	Organization: Pace	Date: 5-18-05	Time: 3:30	Seal Intact?	
Received by: C Zurbowitz	Organization: Pace	Date: 5-18-05	Time: 3:30	Yes No NA	

REMARKS:

2°

2600

DELIVERY METHOD: In Person [ ] Common Carrier [ ] Lab Courier [PACE] Other [ ]

APPENDIX B-3

LABORATORY ANALYTICAL REPORT FOR
OCTOBER 2005 MONITORING EVENT

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

October 26, 2005

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Dear Mr. Fargo:

Enclosed are analytical results for samples submitted to Pace Analytical by Hydro Systems Management, Inc.. The samples were received on October 7, 2005. The results reported in this project meet the requirements as specified in Chapter 5 of the NELAC Standards. Any deviations or discrepancies from the NELAC standards are documented in the case narrative(s) of this report. Please reference Pace project number 05-5818 when inquiring about this report.

Client Site: Reduction Mill
Client Ref.: HM00319

Pace Sample Identification	Client Sample Identification
0510-1127	MW-2
0510-1128	MW-5
0510-1129	MW-12
0510-1130	MW-12D
0510-1131	MW-16
0510-1132	MW-18
0510-1133	MW-28
0510-1134	MW-31
0510-1135	MW-31D

Pace Sample Identification	Client Sample Identification
0510-1136	MW-32
0510-1137	MW-35
0510-1138	MW-36
0510-1139	MW-37
0510-1140	MW-44S
0510-1141	MW-44D
0510-1142	Field Blank
0510-1143	Trip Blank

General Comments: Cooler temperature 5 ° C upon receipt. Ice was present. This report has been revised to include reporting limits specific to the project. Please replace the original report with the revised report enclosed. Insufficient sample volume has been provided for the performance of a sample matrix spike/matrix spike duplicate, therefore extraction of a blank (reagent water) spike and spike duplicate have been performed.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Please call me if you have any questions regarding the information contained within this report.

Sincerely,

Penelope J. Westrick

Penelope J. Westrick
Project Manager

PJG: jld

Enclosures

Page 1 of 19

cc: John Reggi, Ormet Primary Aluminum Corporation

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: 05-5818
Lab Sample ID: 0510-1127
Client Sample ID: MW-2
Sample Matrix: Aqueous

Date Sampled: 10/06/2005
Date Received: 10/07/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	<0.010	0.010	mg/l	BLC	10/18/2005	0043737-1	<0.010
Cyanide (Total)	335.2(1)	16	0.010	mg/l	BLC	10/10/2005	0043500-1	<0.010
Fluoride	340.2(1)	43	0.50	mg/l	CK0	10/17/2005	0043837-1	<0.50
pH	150.1(1)	9.57	1.00	pH	CAD	10/07/2005	0043472-1	5.42
Specific Conductance	120.1(1)	1500	1.0	umhos/cm	CAD	10/07/2005	0043475-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.067	0.0040	mg/l	CS0	10/12/2005	0043429-1	<0.0040
Beryllium	6010B(2)	0.00061	0.00050	mg/l	CS0	10/12/2005	0043429-1	<0.00050
Manganese	6010B(2)	0.95	0.010	mg/l	CS0	10/12/2005	0043429-1	<0.010
Sodium	6010B(2)	370	0.50	mg/l	CS0	10/12/2005	0043429-1	<0.50
Vanadium	6010B(2)	0.046	0.010	mg/l	CS0	10/12/2005	0043429-1	<0.010

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Tetrachloroethene	8260B(2)	0.026	0.0050	mg/l	MAK	10/13/2005	0043596-1	<0.0050

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-5818**
Lab Sample ID: **0510-1128**
Client Sample ID: MW-5
Sample Matrix: Aqueous

Date Sampled: 10/06/2005
Date Received: 10/07/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.51	0.010	mg/l	BLC	10/18/2005	0043737-1	<0.010
Cyanide (Total)	335.2(1)	6.4	0.010	mg/l	BLC	10/10/2005	0043500-1	<0.010
Fluoride	340.2(1)	17	0.50	mg/l	CK0	10/17/2005	0043837-1	<0.50
pH	150.1(1)	7.83	1.00	pH	CAD	10/07/2005	0043472-1	5.42
Specific Conductance	120.1(1)	1400	1.0	umhos/cm	CAD	10/07/2005	0043475-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	<0.0040	0.0040	mg/l	CS0	10/12/2005	0043429-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	10/12/2005	0043429-1	<0.00050
Manganese	6010B(2)	0.61	0.010	mg/l	CS0	10/12/2005	0043429-1	<0.010
Sodium	6010B(2)	250	0.50	mg/l	CS0	10/12/2005	0043429-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	10/12/2005	0043429-1	<0.010

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Tetrachloroethene	8260B(2)	<0.0050	0.0050	mg/l	MAK	10/13/2005	0043596-1	<0.0050

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: 05-5818
Lab Sample ID: 0510-1129
Client Sample ID: MW-12
Sample Matrix: Aqueous

Date Sampled: 10/06/2005
Date Received: 10/07/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Total)	335.2(1)	<0.010	0.010	mg/l	BLC	10/10/2005	0043500-1	<0.010
Fluoride	340.2(1)	2.3	0.50	mg/l	CK0	10/17/2005	0043837-1	<0.50
pH	150.1(1)	7.55	1.00	pH	CAD	10/07/2005	0043472-1	5.42
Specific Conductance	120.1(1)	520	1.0	umhos/cm	CAD	10/07/2005	0043475-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	<0.0040	0.0040	mg/l	CS0	10/12/2005	0043429-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	10/12/2005	0043429-1	<0.00050
Manganese	6010B(2)	1.9	0.010	mg/l	CS0	10/12/2005	0043429-1	<0.010
Sodium	6010B(2)	27	0.50	mg/l	CS0	10/12/2005	0043429-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	10/12/2005	0043429-1	<0.010

Pesticides/PCB

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Polychlorinated Biphenyls, ECD								
Aroclor-1016	8082(2)	<0.50	0.50	mg/l	RDJ	10/14/2005	0043545-1	<0.50
Aroclor-1221	8082(2)	<0.50	0.50	mg/l	RDJ	10/14/2005	0043545-1	<0.50
Aroclor-1232	8082(2)	<0.50	0.50	mg/l	RDJ	10/14/2005	0043545-1	<0.50
Aroclor-1242	8082(2)	<0.50	0.50	mg/l	RDJ	10/14/2005	0043545-1	<0.50
Aroclor-1248	8082(2)	<0.50	0.50	mg/l	RDJ	10/14/2005	0043545-1	<0.50
Aroclor-1254	8082(2)	<0.50	0.50	mg/l	RDJ	10/14/2005	0043545-1	<0.50
Aroclor-1260	8082(2)	<0.50	0.50	mg/l	RDJ	10/14/2005	0043545-1	<0.50
PCB Total-TCL	8082(2)	<0.54	0.54	ug/l	RDJ	10/14/2005	0043545-1	<0.50

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-5818**
Lab Sample ID: **0510-1130**
Client Sample ID: MW-12D
Sample Matrix: Aqueous

Date Sampled: 10/06/2005
Date Received: 10/07/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Total)	335.2(1)	<0.010	0.010	mg/l	BLC	10/10/2005	0043500-1	<0.010
Fluoride	340.2(1)	1.4	0.50	mg/l	CK0	10/17/2005	0043837-1	<0.50
pH	150.1(1)	7.59	1.00	pH	CAD	10/07/2005	0043472-1	5.42
Specific Conductance	120.1(1)	540	1.0	umhos/cm	CAD	10/07/2005	0043475-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	<0.0040	0.0040	mg/l	CS0	10/12/2005	0043429-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	10/12/2005	0043429-1	<0.00050
Manganese	6010B(2)	1.9	0.010	mg/l	CS0	10/12/2005	0043429-1	<0.010
Sodium	6010B(2)	27	0.50	mg/l	CS0	10/12/2005	0043429-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	10/12/2005	0043429-1	<0.010

Pesticides/PCB

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Polychlorinated Biphenyls, ECD								
Aroclor-1016	8082(2)	<0.50	0.50	mg/l	RDJ	10/14/2005	0043545-1	<0.50
Aroclor-1221	8082(2)	<0.50	0.50	mg/l	RDJ	10/14/2005	0043545-1	<0.50
Aroclor-1232	8082(2)	<0.50	0.50	mg/l	RDJ	10/14/2005	0043545-1	<0.50
Aroclor-1242	8082(2)	<0.50	0.50	mg/l	RDJ	10/14/2005	0043545-1	<0.50
Aroclor-1248	8082(2)	<0.50	0.50	mg/l	RDJ	10/14/2005	0043545-1	<0.50
Aroclor-1254	8082(2)	<0.50	0.50	mg/l	RDJ	10/14/2005	0043545-1	<0.50
Aroclor-1260	8082(2)	<0.50	0.50	mg/l	RDJ	10/14/2005	0043545-1	<0.50
PCB Total-TCL	8082(2)	<0.52	0.52	ug/l	RDJ	10/14/2005	0043545-1	<0.50

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-5818**
Lab Sample ID: **0510-1131**
Client Sample ID: MW-16
Sample Matrix: Aqueous

Date Sampled: 10/05/2005
Date Received: 10/07/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.88	0.010	mg/l	BLC	10/18/2005	0043737-1	<0.010
Cyanide (Total)	335.2(1)	12	0.010	mg/l	BLC	10/10/2005	0043500-1	<0.010
Fluoride	340.2(1)	29	0.50	mg/l	CK0	10/17/2005	0043837-1	<0.50
pH	150.1(1)	9.05	1.00	pH	CAD	10/07/2005	0043472-1	5.42
Specific Conductance	120.1(1)	1200	1.0	umhos/cm	CAD	10/07/2005	0043475-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.057	0.0040	mg/l	CS0	10/12/2005	0043429-1	<0.0040
Beryllium	6010B(2)	0.0029	0.00050	mg/l	CS0	10/12/2005	0043429-1	<0.00050
Manganese	6010B(2)	2.7	0.010	mg/l	CS0	10/12/2005	0043429-1	<0.010
Sodium	6010B(2)	280	0.50	mg/l	CS0	10/12/2005	0043429-1	<0.50
Vanadium	6010B(2)	0.12	0.010	mg/l	CS0	10/12/2005	0043429-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-5818**
Lab Sample ID: **0510-1132**
Client Sample ID: MW-18
Sample Matrix: Aqueous

Date Sampled: 10/06/2005
Date Received: 10/07/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.24	0.010	mg/l	BLC	10/18/2005	0043737-1	<0.010
Cyanide (Total)	335.2(1)	6.6	0.010	mg/l	BLC	10/11/2005	0043536-1	<0.010
Fluoride	340.2(1)	52	0.50	mg/l	CK0	10/17/2005	0043837-1	<0.50
pH	150.1(1)	9.35	1.00	pH	CAD	10/07/2005	0043472-1	5.42
Specific Conductance	120.1(1)	2300	1.0	umhos/cm	CAD	10/07/2005	0043475-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.050	0.0040	mg/l	CS0	10/12/2005	0043429-1	<0.0040
Beryllium	6010B(2)	0.0015	0.00050	mg/l	CS0	10/12/2005	0043429-1	<0.00050
Manganese	6010B(2)	0.68	0.010	mg/l	CS0	10/12/2005	0043429-1	<0.010
Sodium	6010B(2)	510	0.50	mg/l	CS0	10/12/2005	0043429-1	<0.50
Vanadium	6010B(2)	0.033	0.010	mg/l	CS0	10/12/2005	0043429-1	<0.010

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Tetrachloroethene	8260B(2)	0.0071	0.0050	mg/l	MAK	10/13/2005	0043596-1	<0.0050

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: *Results reported on an as received basis.*

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-5818**
Lab Sample ID: **0510-1133**
Client Sample ID: MW-28
Sample Matrix: Aqueous

Date Sampled: 10/05/2005
Date Received: 10/07/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.017	0.010	mg/l	BLC	10/18/2005	0043737-1	<0.010
Cyanide (Total)	335.2(1)	0.54	0.010	mg/l	BLC	10/12/2005	0043538-1	<0.010
Fluoride	340.2(1)	2.1	0.50	mg/l	CK0	10/17/2005	0043837-1	<0.50
pH	150.1(1)	6.08	1.00	pH	CAD	10/07/2005	0043472-1	5.42
Specific Conductance	120.1(1)	380	1.0	umhos/cm	CAD	10/07/2005	0043475-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	<0.0040	0.0040	mg/l	CS0	10/12/2005	0043429-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	10/12/2005	0043429-1	<0.00050
Manganese	6010B(2)	0.024	0.010	mg/l	CS0	10/12/2005	0043429-1	<0.010
Sodium	6010B(2)	47	0.50	mg/l	CS0	10/12/2005	0043429-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	10/12/2005	0043429-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-5818**
Lab Sample ID: **0510-1134**
Client Sample ID: MW-31
Sample Matrix: Aqueous

Date Sampled: 10/06/2005
Date Received: 10/07/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	3.9	0.010	mg/l	BLC	10/19/2005	0043748-1	<0.010
Cyanide (Total)	335.2(1)	22	0.010	mg/l	BLC	10/12/2005	0043538-1	<0.010
Fluoride	340.2(1)	86	0.50	mg/l	CK0	10/17/2005	0043837-1	<0.50
pH	150.1(1)	9.68	1.00	pH	CAD	10/07/2005	0043472-1	5.42
Specific Conductance	120.1(1)	2100	1.0	umhos/cm	CAD	10/07/2005	0043475-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.070	0.0040	mg/l	CS0	10/12/2005	0043429-1	<0.0040
Beryllium	6010B(2)	0.0031	0.00050	mg/l	CS0	10/12/2005	0043429-1	<0.00050
Manganese	6010B(2)	3.1	0.010	mg/l	CS0	10/12/2005	0043429-1	<0.010
Sodium	6010B(2)	440	0.50	mg/l	CS0	10/12/2005	0043429-1	<0.50
Vanadium	6010B(2)	0.16	0.010	mg/l	CS0	10/12/2005	0043429-1	<0.010

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Tetrachloroethene	8260B(2)	0.038	0.0050	mg/l	MAK	10/13/2005	0043596-1	<0.0050

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

ACCREDITED IN ACCORDANCE WITH nelac

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-5818**
Lab Sample ID: **0510-1135**
Client Sample ID: MW-31D
Sample Matrix: Aqueous

Date Sampled: 10/06/2005
Date Received: 10/07/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	8.6	0.010	mg/l	BLC	10/19/2005	0043748-1	<0.010
Cyanide (Total)	335.2(1)	23	0.010	mg/l	BLC	10/12/2005	0043538-1	<0.010
Fluoride	340.2(1)	90	0.50	mg/l	CK0	10/17/2005	0043837-1	<0.50
pH	150.1(1)	9.68	1.00	pH	CAD	10/07/2005	0043472-1	5.42
Specific Conductance	120.1(1)	1900	1.0	umhos/cm	CAD	10/07/2005	0043475-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.066	0.0040	mg/l	CS0	10/12/2005	0043429-1	<0.0040
Beryllium	6010B(2)	0.0030	0.00050	mg/l	CS0	10/12/2005	0043429-1	<0.00050
Manganese	6010B(2)	3.0	0.010	mg/l	CS0	10/12/2005	0043429-1	<0.010
Sodium	6010B(2)	440	0.50	mg/l	CS0	10/12/2005	0043429-1	<0.50
Vanadium	6010B(2)	0.16	0.010	mg/l	CS0	10/12/2005	0043429-1	<0.010

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Tetrachloroethene	8260B(2)	0.039	0.0050	mg/l	MAK	10/13/2005	0043596-1	<0.0050

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-5818**
Lab Sample ID: **0510-1136**
Client Sample ID: MW-32
Sample Matrix: Aqueous

Date Sampled: 10/06/2005
Date Received: 10/07/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	1.1	0.010	mg/l	BLC	10/19/2005	0043748-1	<0.010
Cyanide (Total)	335.2(1)	14	0.010	mg/l	BLC	10/12/2005	0043538-1	<0.010
Fluoride	340.2(1)	83	0.50	mg/l	CK0	10/17/2005	0043837-1	<0.50
pH	150.1(1)	9.99	1.00	pH	CAD	10/07/2005	0043472-1	5.42
Specific Conductance	120.1(1)	1600	1.0	umhos/cm	CAD	10/07/2005	0043475-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.10	0.0040	mg/l	CS0	10/12/2005	0043429-1	<0.0040
Beryllium	6010B(2)	0.0042	0.00050	mg/l	CS0	10/12/2005	0043429-1	<0.00050
Manganese	6010B(2)	4.9	0.010	mg/l	CS0	10/12/2005	0043429-1	<0.010
Sodium	6010B(2)	380	0.50	mg/l	CS0	10/12/2005	0043429-1	<0.50
Vanadium	6010B(2)	0.24	0.010	mg/l	CS0	10/12/2005	0043429-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

CREDITED IN ACCORDANCE WITH nelac

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-5818**
Lab Sample ID: **0510-1137**
Client Sample ID: MW-35
Sample Matrix: Aqueous

Date Sampled: 10/05/2005
Date Received: 10/07/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	2.4	0.010	mg/l	BLC	10/19/2005	0043748-1	<0.010
Cyanide (Total)	335.2(1)	15	0.010	mg/l	BLC	10/12/2005	0043538-1	<0.010
Fluoride	340.2(1)	33	0.50	mg/l	CK0	10/17/2005	0043837-1	<0.50
pH	150.1(1)	8.54	1.00	pH	CAD	10/07/2005	0043472-1	5.42
Specific Conductance	120.1(1)	610	1.0	umhos/cm	CAD	10/07/2005	0043475-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.011	0.0040	mg/l	CS0	10/12/2005	0043429-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	10/12/2005	0043429-1	<0.00050
Manganese	6010B(2)	0.88	0.010	mg/l	CS0	10/12/2005	0043429-1	<0.010
Sodium	6010B(2)	81	0.50	mg/l	CS0	10/12/2005	0043429-1	<0.50
Vanadium	6010B(2)	0.015	0.010	mg/l	CS0	10/12/2005	0043429-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-5818**
Lab Sample ID: **0510-1138**
Client Sample ID: MW-36
Sample Matrix: Aqueous

Date Sampled: 10/05/2005
Date Received: 10/07/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	2.3	0.010	mg/l	BLC	10/19/2005	0043748-1	<0.010
Cyanide (Total)	335.2(1)	12	0.010	mg/l	BLC	10/12/2005	0043538-1	<0.010
Fluoride	340.2(1)	28	0.50	mg/l	CK0	10/17/2005	0043837-1	<0.50
pH	150.1(1)	9.44	1.00	pH	CAD	10/07/2005	0043472-1	5.42
Specific Conductance	120.1(1)	1000	1.0	umhos/cm	CAD	10/07/2005	0043475-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.020	0.0040	mg/l	CS0	10/12/2005	0043429-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	10/12/2005	0043429-1	<0.00050
Manganese	6010B(2)	0.28	0.010	mg/l	CS0	10/12/2005	0043429-1	<0.010
Sodium	6010B(2)	180	0.50	mg/l	CS0	10/12/2005	0043429-1	<0.50
Vanadium	6010B(2)	0.020	0.010	mg/l	CS0	10/12/2005	0043429-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-5818**
Lab Sample ID: **0510-1139**
Client Sample ID: MW-37
Sample Matrix: Aqueous

Date Sampled: 10/05/2005
Date Received: 10/07/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.58	0.010	mg/l	BLC	10/20/2005	0043781-1	<0.010
Cyanide (Total)	335.2(1)	5.8	0.010	mg/l	BLC	10/12/2005	0043538-1	<0.010
Fluoride	340.2(1)	17	0.50	mg/l	CK0	10/17/2005	0043837-1	<0.50
pH	150.1(1)	6.82	1.00	pH	CAD	10/07/2005	0043472-1	5.42
Specific Conductance	120.1(1)	630	1.0	umhos/cm	CAD	10/07/2005	0043475-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.013	0.0040	mg/l	CS0	10/12/2005	0043429-1	<0.0040
Beryllium	6010B(2)	0.0014	0.00050	mg/l	CS0	10/12/2005	0043429-1	<0.00050
Manganese	6010B(2)	0.88	0.010	mg/l	CS0	10/12/2005	0043429-1	<0.010
Sodium	6010B(2)	100	0.50	mg/l	CS0	10/12/2005	0043429-1	<0.50
Vanadium	6010B(2)	0.042	0.010	mg/l	CS0	10/12/2005	0043429-1	<0.010

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

CERTIFIED IN ACCORDANCE WITH nelac

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-5818**
Lab Sample ID: **0510-1140**
Client Sample ID: MW-44S
Sample Matrix: Aqueous

Date Sampled: 10/05/2005
Date Received: 10/07/2005

Pesticides/PCB

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Polychlorinated Biphenyls, ECD								
Aroclor-1016	8082(1)	<0.50	0.50	mg/l	RDJ	10/14/2005	0043545-1	<0.50
Aroclor-1221	8082(1)	<0.50	0.50	mg/l	RDJ	10/14/2005	0043545-1	<0.50
Aroclor-1232	8082(1)	<0.50	0.50	mg/l	RDJ	10/14/2005	0043545-1	<0.50
Aroclor-1242	8082(1)	<0.50	0.50	mg/l	RDJ	10/14/2005	0043545-1	<0.50
Aroclor-1248	8082(1)	<0.50	0.50	mg/l	RDJ	10/14/2005	0043545-1	<0.50
Aroclor-1254	8082(1)	<0.50	0.50	mg/l	RDJ	10/14/2005	0043545-1	<0.50
Aroclor-1260	8082(1)	<0.50	0.50	mg/l	RDJ	10/14/2005	0043545-1	<0.50
PCB Total-TCL	8082(1)	<0.52	0.52	ug/l	RDJ	10/14/2005	0043545-1	<0.50

(1) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: 05-5818
Lab Sample ID: 0510-1141
Client Sample ID: MW-44D
Sample Matrix: Aqueous

Date Sampled: 10/05/2005
Date Received: 10/07/2005

Pesticides/PCB

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Polychlorinated Biphenyls, ECD								
Aroclor-1016	8082(1)	<0.50	0.50	mg/l	RDJ	10/14/2005	0043545-1	<0.50
Aroclor-1221	8082(1)	<0.50	0.50	mg/l	RDJ	10/14/2005	0043545-1	<0.50
Aroclor-1232	8082(1)	<0.50	0.50	mg/l	RDJ	10/14/2005	0043545-1	<0.50
Aroclor-1242	8082(1)	<0.50	0.50	mg/l	RDJ	10/14/2005	0043545-1	<0.50
Aroclor-1248	8082(1)	<0.50	0.50	mg/l	RDJ	10/14/2005	0043545-1	<0.50
Aroclor-1254	8082(1)	<0.50	0.50	mg/l	RDJ	10/14/2005	0043545-1	<0.50
Aroclor-1260	8082(1)	<0.50	0.50	mg/l	RDJ	10/14/2005	0043545-1	<0.50
PCB Total-TCL	8082(1)	<0.52	0.52	ug/l	RDJ	10/14/2005	0043545-1	<0.50

(1) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

CERTIFIED IN ACCORDANCE WITH nelac

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-5818**
Lab Sample ID: **0510-1142**
Client Sample ID: Field Blank
Sample Matrix: Aqueous

Date Sampled: 10/06/2005
Date Received: 10/07/2005

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	<0.010	0.010	mg/l	BLC	10/18/2005	0043737-1	<0.010
Cyanide (Total)	335.2(1)	<0.010	0.010	mg/l	BLC	10/13/2005	0043633-1	<0.010
Fluoride	340.2(1)	0.92	0.50	mg/l	CK0	10/17/2005	0043837-1	<0.50
pH	150.1(1)	6.54	1.00	pH	CAD	10/07/2005	0043472-1	5.42
Specific Conductance	120.1(1)	3.7	1.0	umhos/cm	CAD	10/07/2005	0043475-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	<0.0040	0.0040	mg/l	CS0	10/12/2005	0043429-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	10/12/2005	0043429-1	<0.00050
Manganese	6010B(2)	<0.010	0.010	mg/l	CS0	10/12/2005	0043429-1	<0.010
Sodium	6010B(2)	1.3	0.50	mg/l	CS0	10/12/2005	0043429-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	10/12/2005	0043429-1	<0.010

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Tetrachloroethene	8260B(2)	<0.0050	0.0050	mg/l	MAK	10/13/2005	0043596-1	<0.0050

(1) U.S. Environmental Protection Agency, 1983, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.
(2) U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
5203 Triangle Lane
Export, PA 15632
Phone: 724.733.1161
Fax: 724.327.7793

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
331 South Main St.
Suite 109
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00319

Lab Project ID: **05-5818**
Lab Sample ID: **0510-1143**
Client Sample ID: Trip Blank
Sample Matrix: Aqueous

Date Sampled: 10/06/2005
Date Received: 10/07/2005

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Tetrachloroethene	8260B[1]	<0.0050	0.0050	mg/l	MAK	10/13/2005	0043596-1	<0.0050

[1] U.S. Environmental Protection Agency, 1996, Test Methods for Evaluating Solid Waste, SW-846, 3rd ed., Office of Solid Waste and Emergency Response, Washington, DC.

Sample Comments: Results reported on an as received basis.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

HMI
Environmental Consulting Services

CHAIN-OF-CUSTODY RECORD

Project Number	Project Name/Location	Laboratory	Sampling Personnel
HM00319	ORMET/HANNIBAL OHIO	PACE ANALYTICAL	S. MENOSKY / C. STANDARD

Sample ID	Date/Time		Sample Code	500 ml. PLASTIC pH, Spec. Cond., F (4°C)	250 ml. PLASTIC Diss. As, B, Mn, Na, V FIELD FILTERED (HNO3)	250 ml. PLASTIC TOTAL/AMENABLE CYANIDE * (NAOH)	40 ml. GLASS TETRACHLOROETHENE (HCL)	1 LITER AMBER GLASS PCBS (4°C)					TOTAL
MW-2	10/6/05	10:00	L	1	1	1	3						6
MW-5		9:30		1	1	1	3						6
MW-12		12:30		1	1	1		1					4
MW-12D		12:45		1	1	1		1					4
MW-16	10/5/05	3:00		1	1	1							3
MW-18	10/6/05	10:45		1	1	1	3						6
MW-28	10/5/05	3:40		1	1	1							3
MW-31	10/6/05	11:30		1	1	1	3						6
MW-31D		11:15		1	1	1	3						6
MW-32		12:10		1	1	1							3
MW-35	10/5/05	4:00		1	1	1							3
MW-36		5:00		1	1	1							3
MW-37		4:30		1	1	1							3
MW-44S		2:15						1					1
MW-44D		1:50						1					1

Sample Code: L = Liquid; S = Solid; A = Air

Total Number of Containers: 58

Relinquished by: Steve Menosky	Organization: HMI	Date: 10/7/05	Time:	Seal Intact? Yes No NA
Received by: [illegible]	Organization: Pace Labs	Date: 10/7/05	Time: 8:35	
Relinquished by:	Organization:	Date:	Time:	Seal Intact? Yes No NA
Received by:	Organization:	Date:	Time:	

REMARKS: * ANALYZE FOR AMENABLE CYANIDE ONLY IF TOTAL CYANIDE IS DETECTED.
* SAMPLES ARE IN 2 COOLERS.

DELIVERY METHOD: In Person [ ] Common Carrier [ ] Lab Courier [PACE] Other [ ]

HMI
Environmental Consulting Services

CHAIN-OF-CUSTODY RECORD

Project Number	Project Name/Location	Laboratory	Sampling Personnel
HM00319	ORMET/HANNIBAL OHIO	PACE ANALYTICAL	S. MENOSKY, C. STANDARD

Sample ID	Date/Time		Sample Code	500 ml. PLASTIC pH, Spec. Cond, F (4°C)	250ml. PLASTIC DISS. As, B, Mn, Na, V FIELD FILTERED (HNO3)	250ml. PLASTIC TOTAL/AMENABLE CYANIDE * (NAOH)	40ml. GLASS TETRACHLOROETHENE (HCL)						TOTAL
FIELD BLANK	10/6/05	1:00	L	1	1	1	3						6
TRIP BLANK	↓	—	L				3						3

Sample Code: L = Liquid; S = Solid; A = Air

Total Number of Containers: 9

Relinquished by: Steven C. Menosky	Organization: HMI	Date: 10/7/05	Time: 8:35	Seal Intact? Yes No (NA)
Received by:	Organization:	Date:	Time:	
Relinquished by: Susan Boyd	Organization: Pace Labs	Date: 10/7/05	Time:	Seal Intact? Yes No NA
Received by:	Organization:	Date:	Time:	

REMARKS: SEE PAGE 1 OF 2.

DELIVERY METHOD: In Person [ ] Common Carrier [ ] Lab Courier [PACE] Other [ ]

APPENDIX C

DATA VALIDATION SUMMARY REPORT FOR 2005 MONITORING EVENTS

APPENDIX C
DATA VALIDATION SUMMARY REPORT
2005 REMEDIAL ACTION GROUND-WATER MONITORING

Under the Remedial Action Ground-Water Monitoring Plan for the Ormet Corporation site, ground-water samples were collected in January, May and October. The samples were analyzed by Pace Analytical Services, Inc. of Export, Pennsylvania. Using SW-846 and EPA protocols. Validation of the analytical result was conducted by applying principals and concepts of the USEPA National Functional Guidelines. The validation process included review of holding times, blank results, surrogate and matrix spike recoveries, and laboratory control sample results. A summary of the validation results for each of the monitoring events conducted during 2005 is provided below.

January 2005 Monitoring Event

- RPD for laboratory duplicate sample result for beryllium (36.4%) exceeds control range of +/-20%. This is not considered significant and the associated results were not qualified.

- Laboratory control sample result for tert-butylbenzene (143.04%) exceeds control range of 70-130%. This is not considered significant and the associated results were not qualified.

May 2005 Monitoring Event

- Fluoride matrix spike recovery for batch #40019 (206.25%) exceeds control range of 85-115%. All associated fluoride results were qualified with a "J" as estimated values.

- Fluoride matrix spike recovery for batch #39876 (206.5%) exceeds control range of 85-115%. All associated fluoride results were qualified with a "J" as estimated values.

- Laboratory control sample results and/or matrix spike results for certain VOCs (not including tetrachloroethene) were not within control limits. These results are not regarded to effect the PCE results.

October 2005 Monitoring Event

- Matrix spike recovery results for total cyanide (84.2%) was slightly below control range of 85-115%. This is not considered significant and the associated results were not qualified.

- Laboratory control sample result and/or matrix spike results for certain VOCs (not including Tetrachloroethene) were not with in control limits these results are not regarded to effect the PCE results.

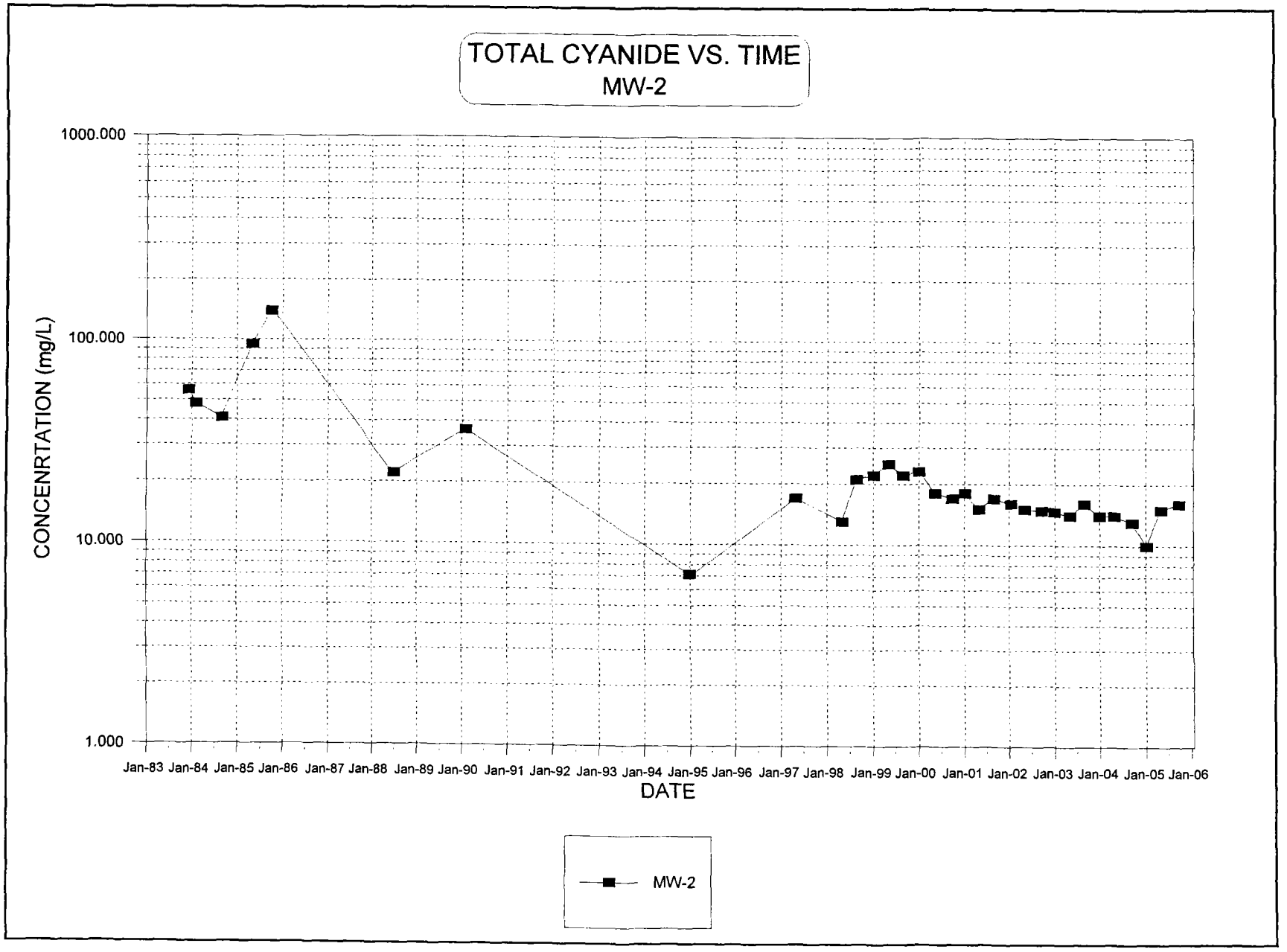
APPENDIX D

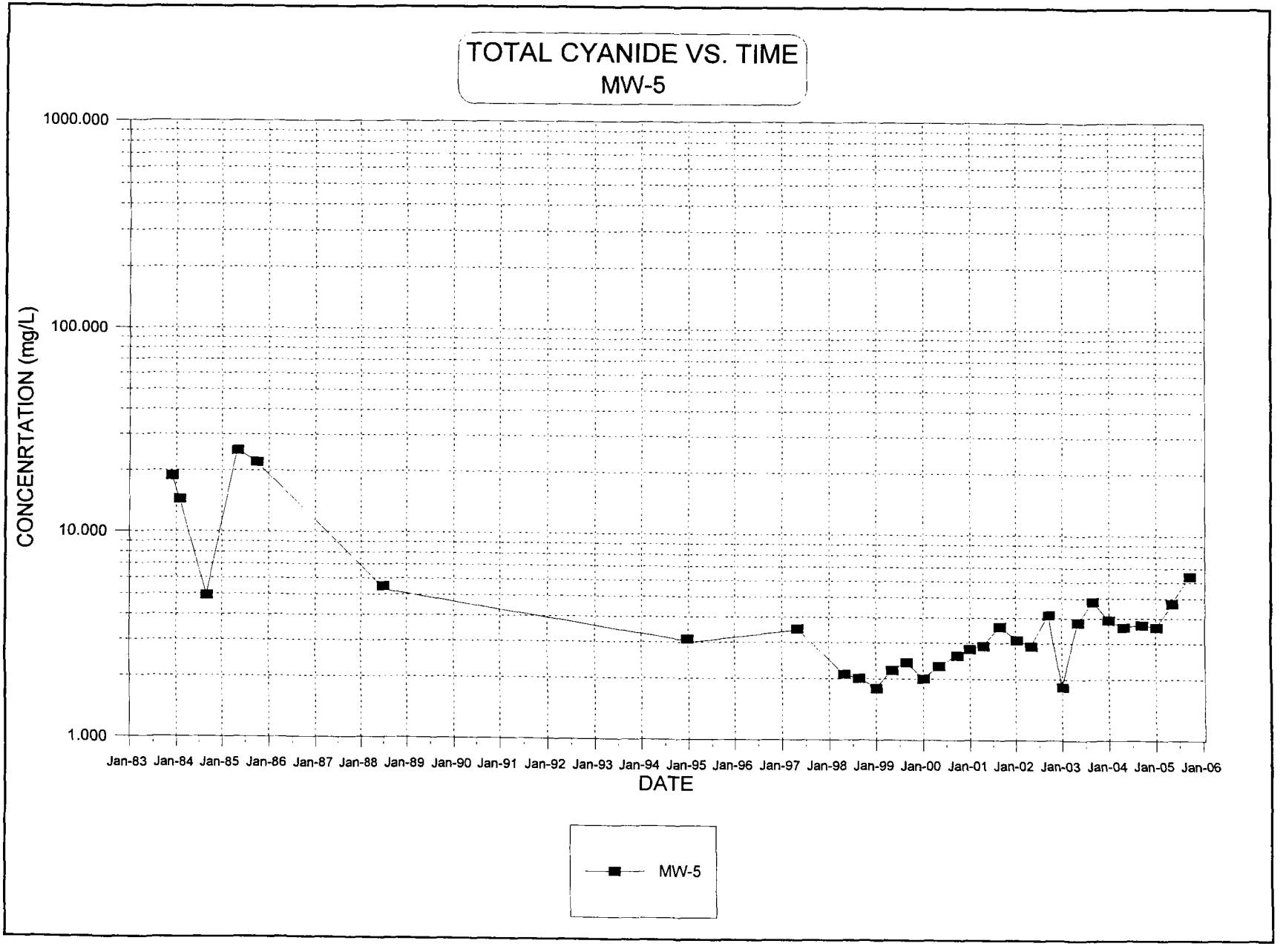
CONCENTRATION VS. TIME GRAPHS FOR REMEDIAL ACTION MONITORING PARAMETERS

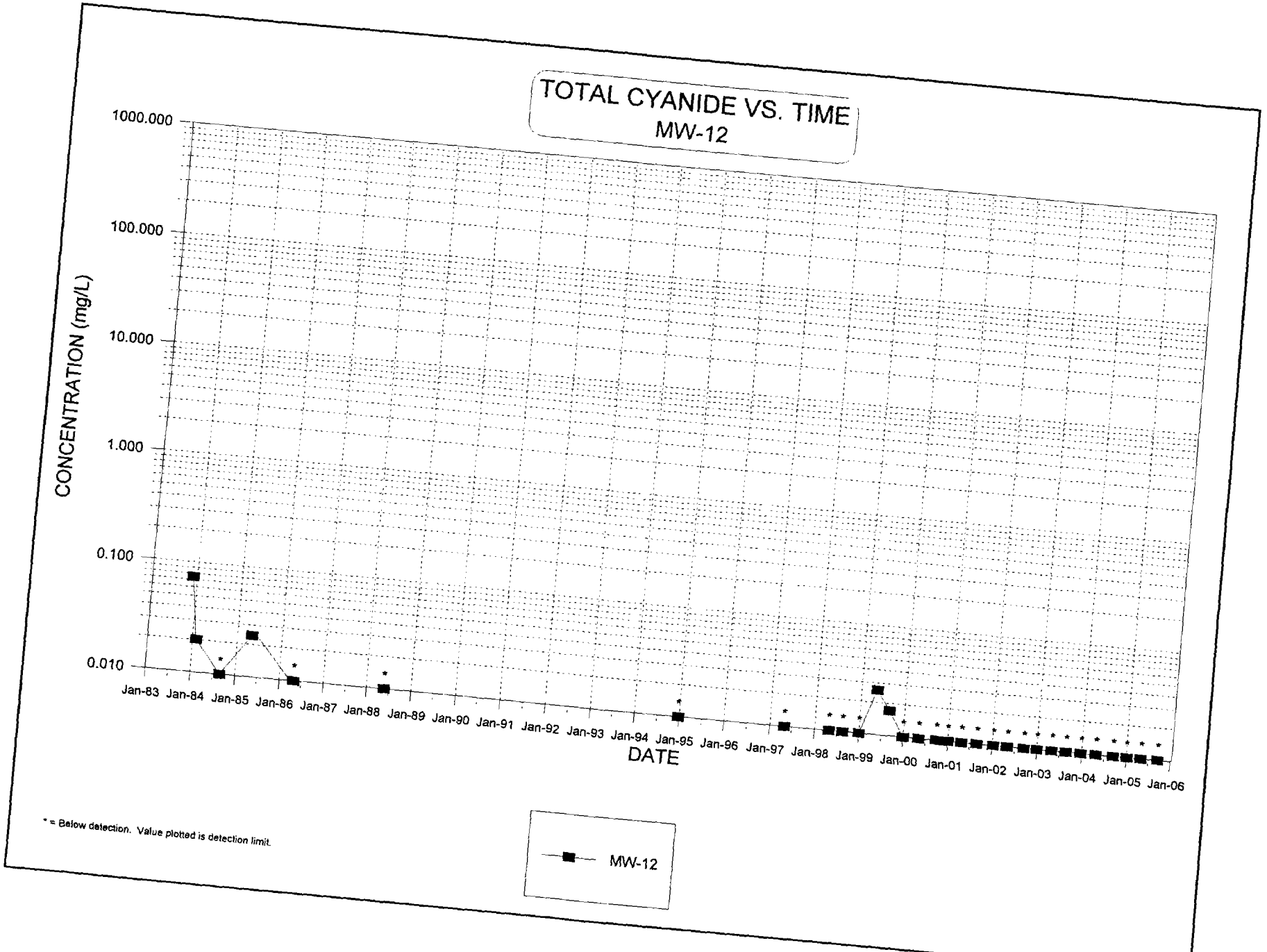
Appendix D-1	Total Cyanide
Appendix D-2	Cyanide Amenable to Chlorination
Appendix D-3	Fluoride
Appendix D-4	Arsenic
Appendix D-5	Beryllium
Appendix D-6	Manganese
Appendix D-7	Vanadium
Appendix D-8	Tetrachloroethene
Appendix D-9	Sodium

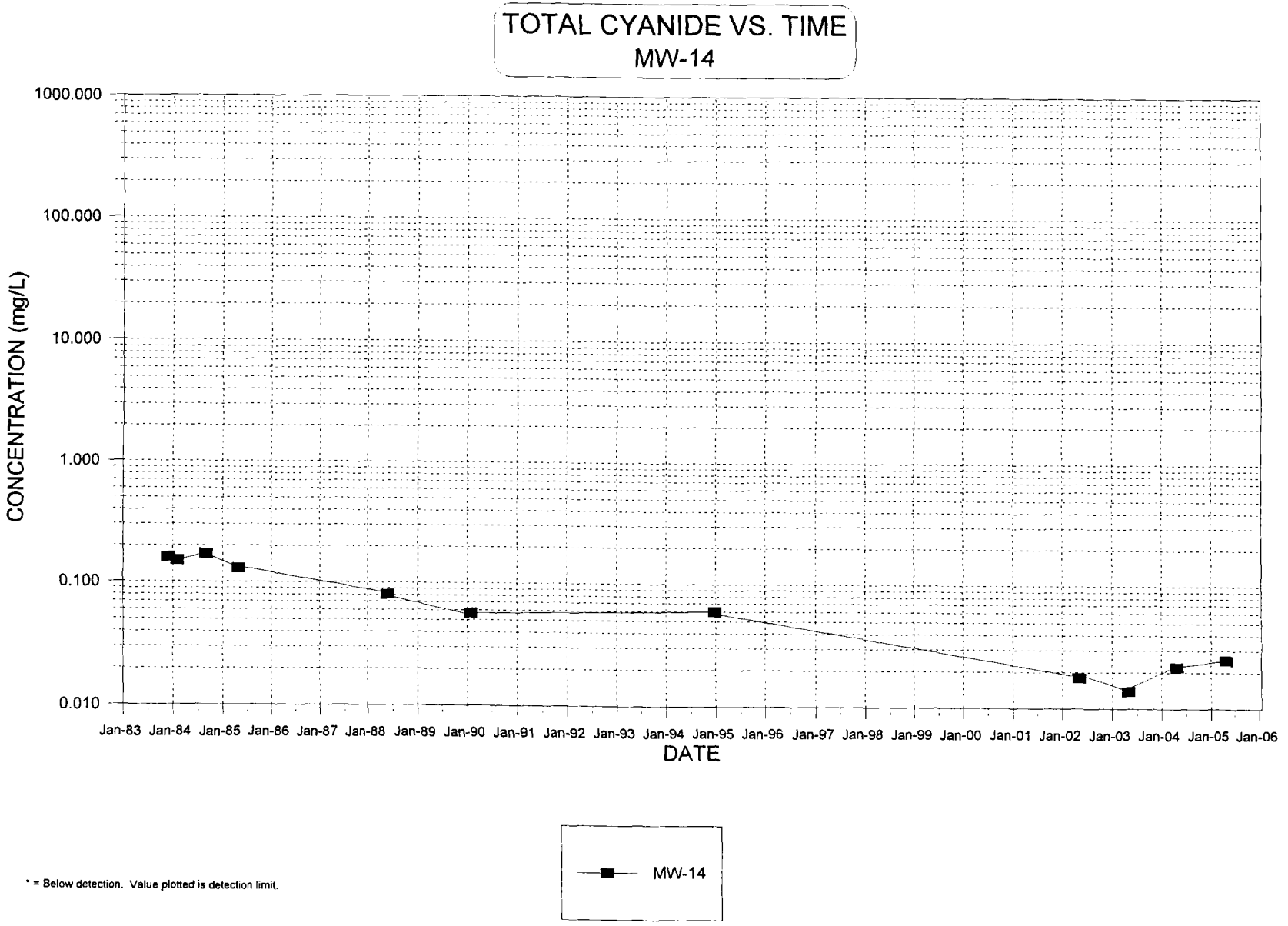
APPENDIX D-1

TOTAL CYANIDE

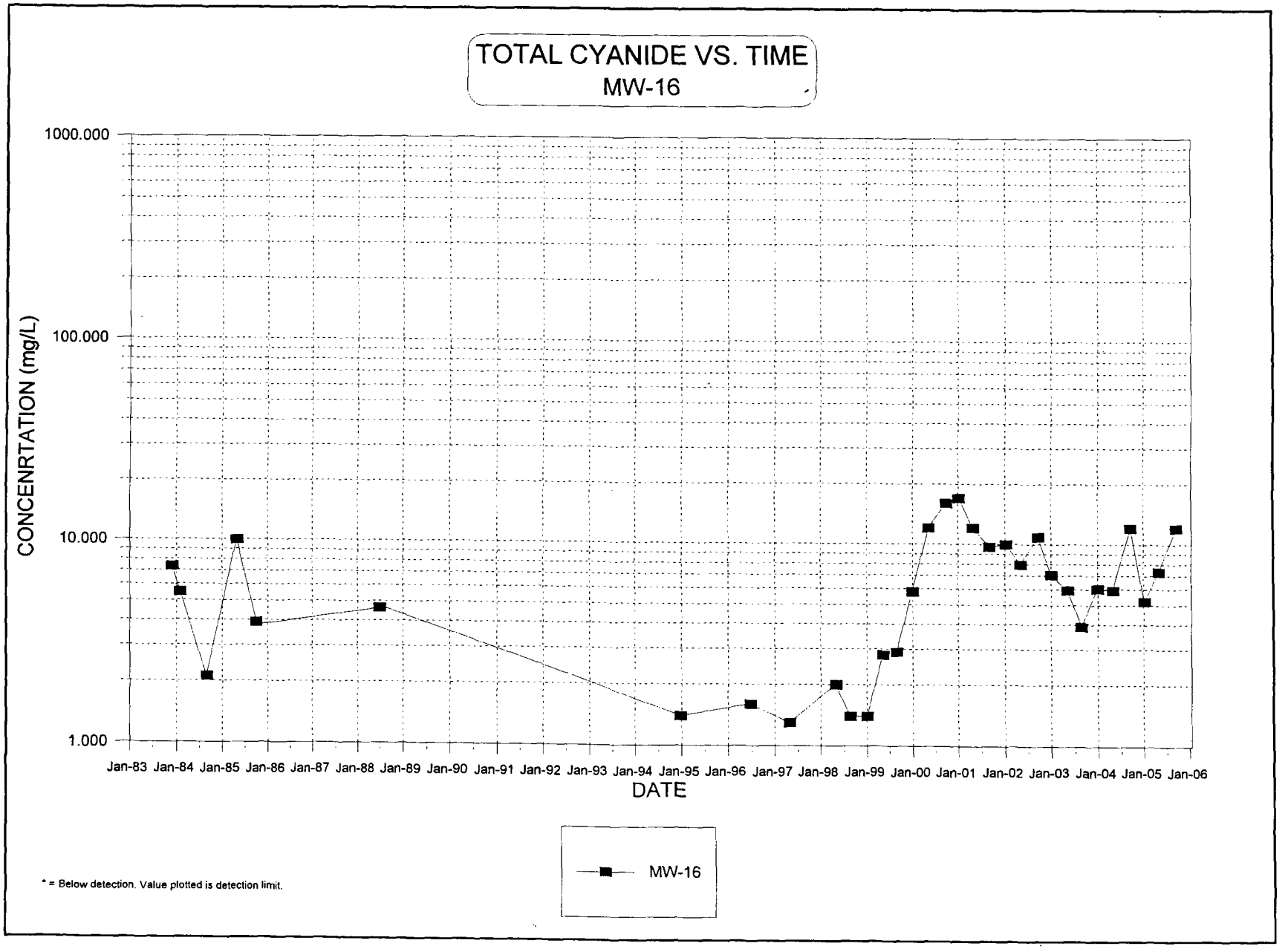

TOTAL CYANIDE VS. TIME
MW-2
1000.000
100.000
10.000
1.000
CONCENRTATION (mg/L)
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-2


TOTAL CYANIDE VS. TIME
MW-5
CONCENRTATION (mg/L)
1000.000
100.000
10.000
1.000
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-5

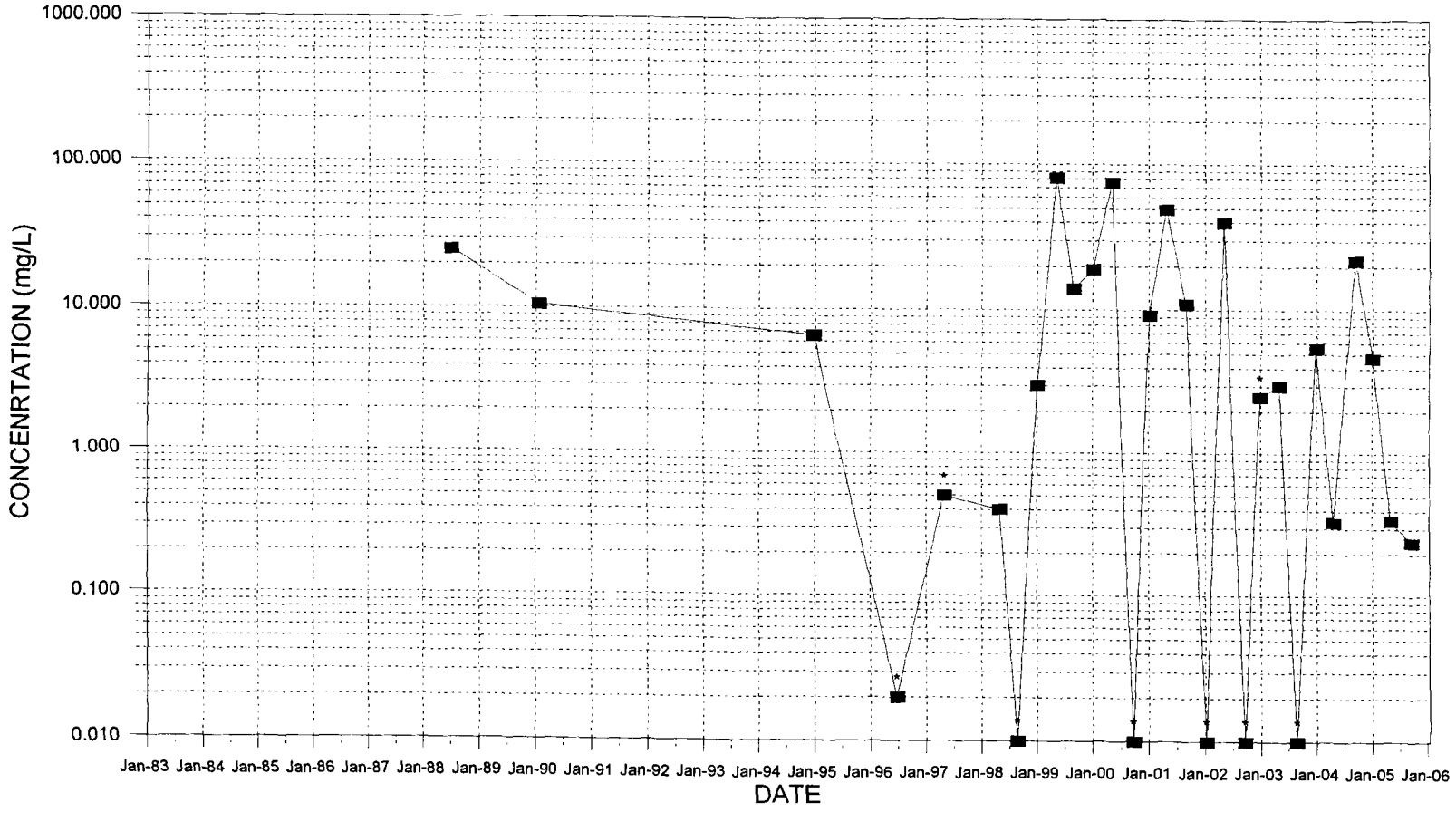

TOTAL CYANIDE VS. TIME
MW-12
CONCENTRATION (mg/L)
1000.000
100.000
10.000
1.000
0.100
0.010
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
* = Below detection. Value plotted is detection limit.
MW-12



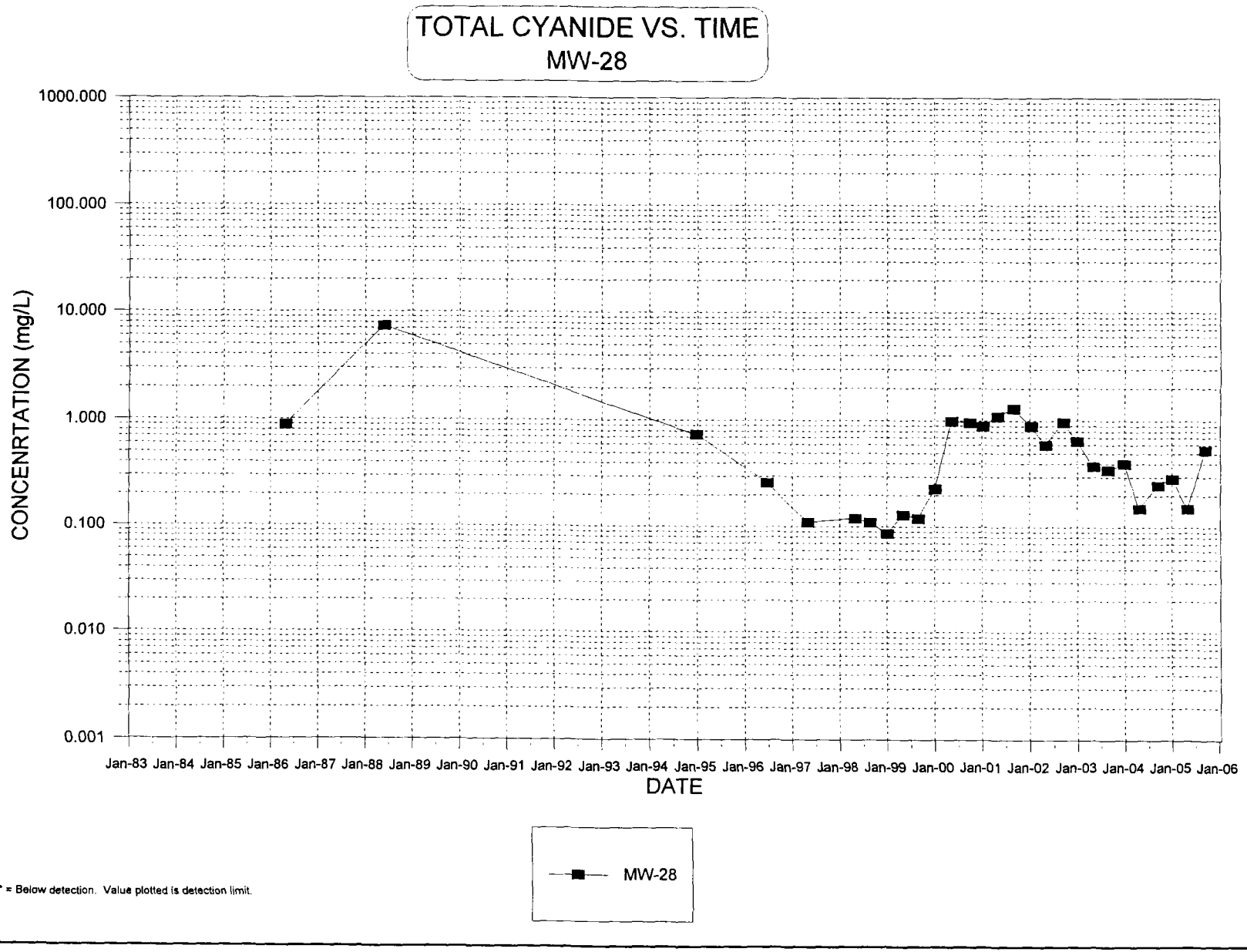
* = Below detection. Value plotted is detection limit.


TOTAL CYANIDE VS. TIME
MW-16
1000.000
100.000
10.000
1.000
CONCENRTATION (mg/L)
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-16
* = Below detection. Value plotted is detection limit.

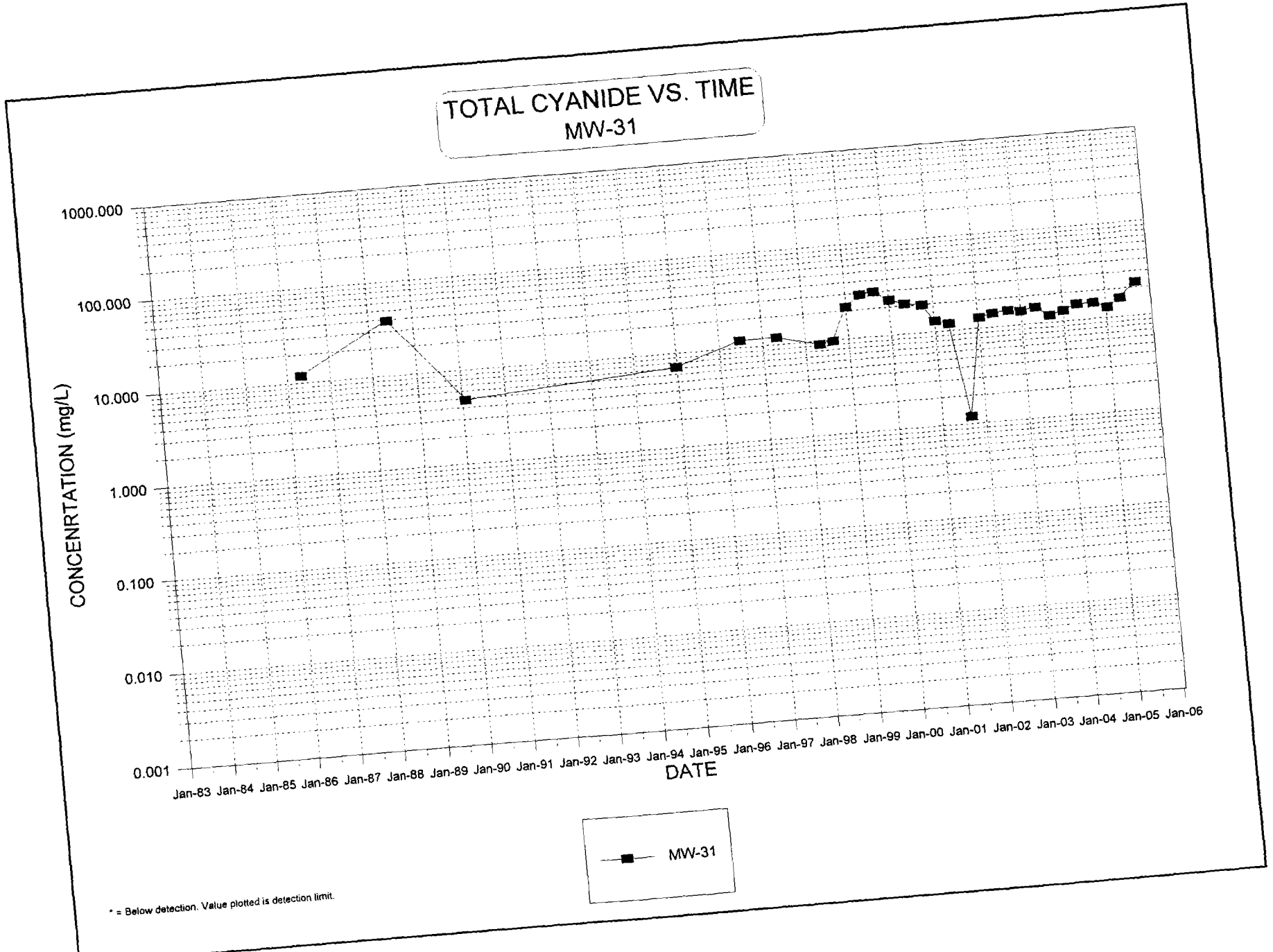
TOTAL CYANIDE VS. TIME
MW-18

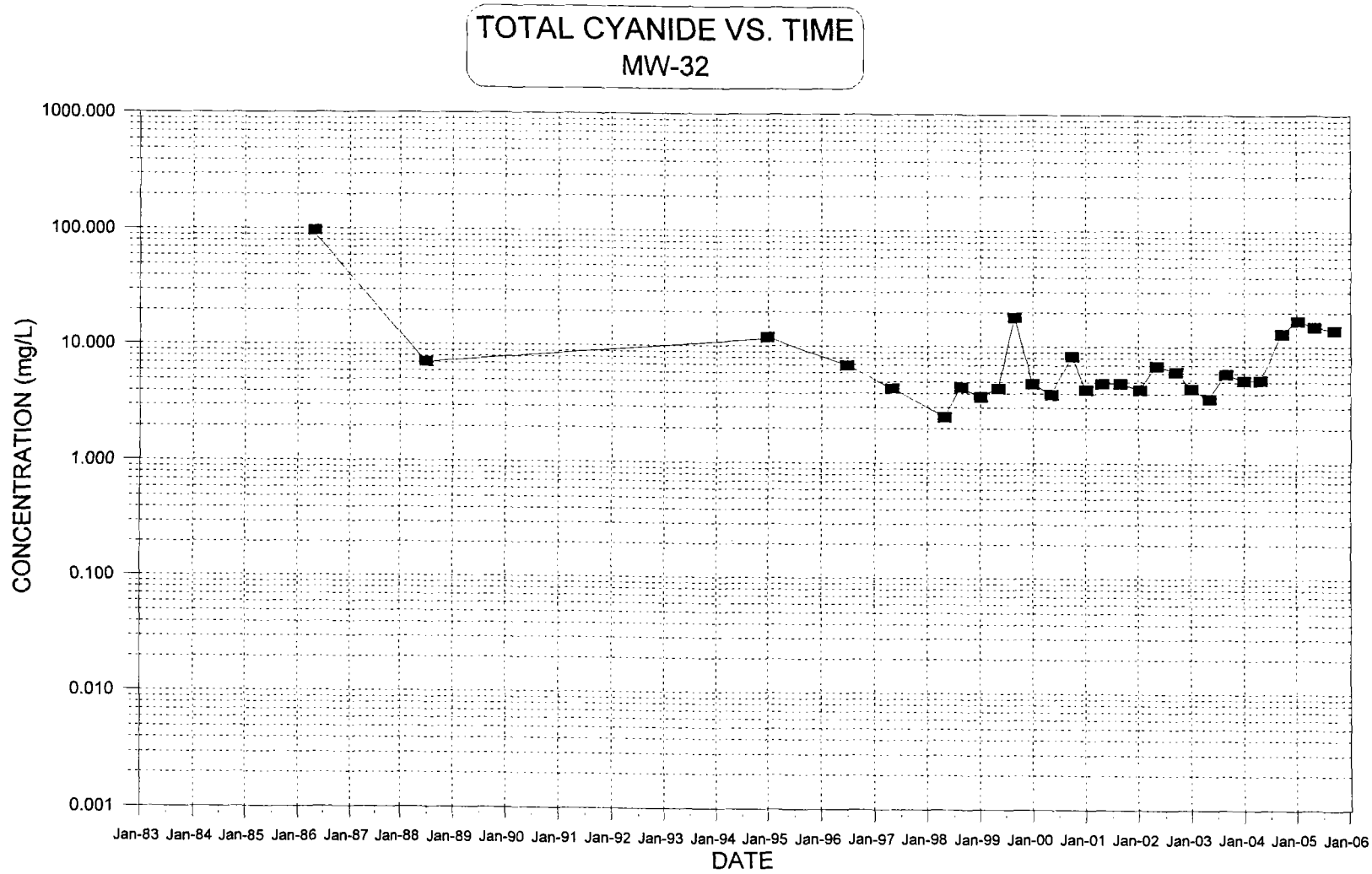


* = Below detection. Value plotted is detection limit.

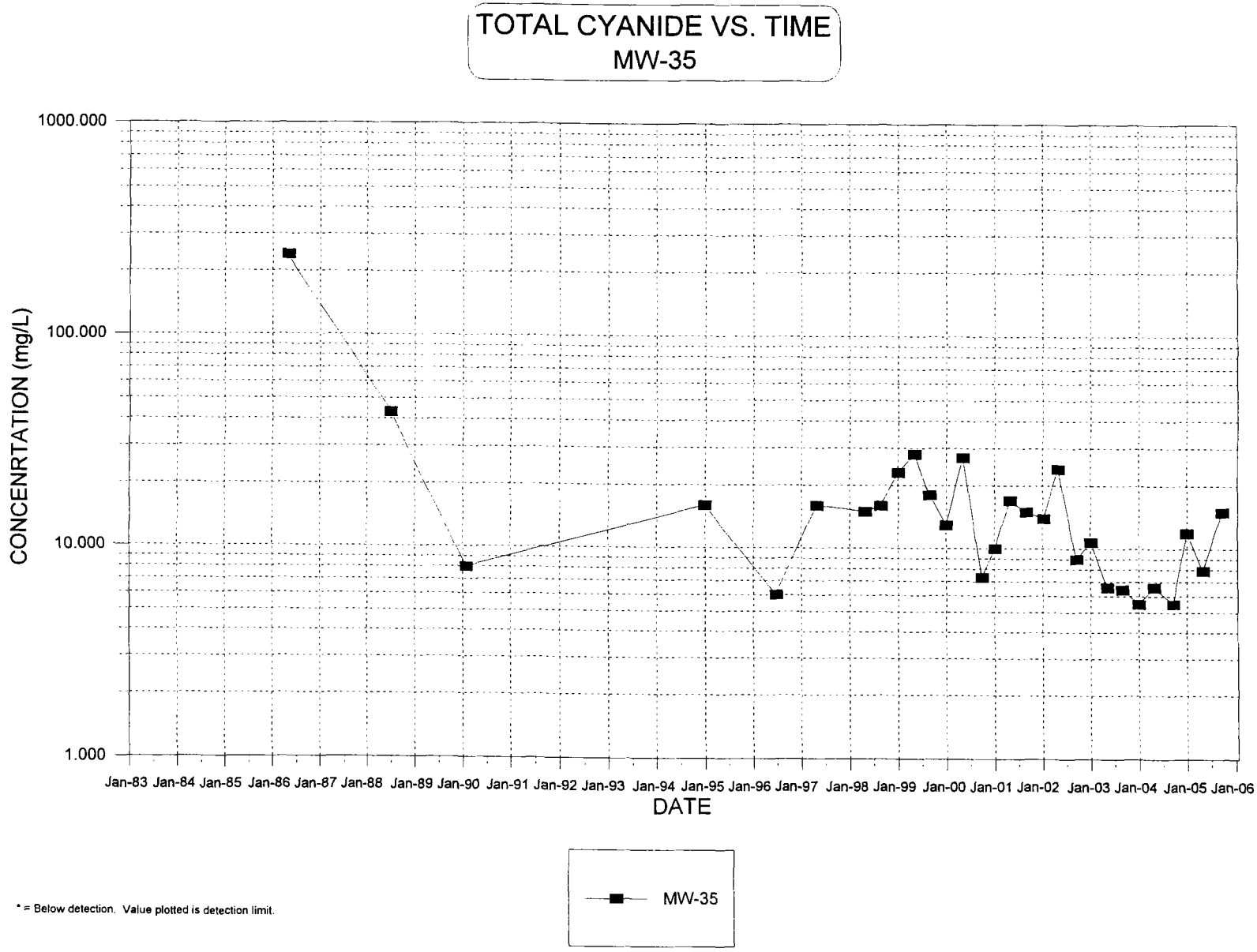


* = Below detection. Value plotted is detection limit.

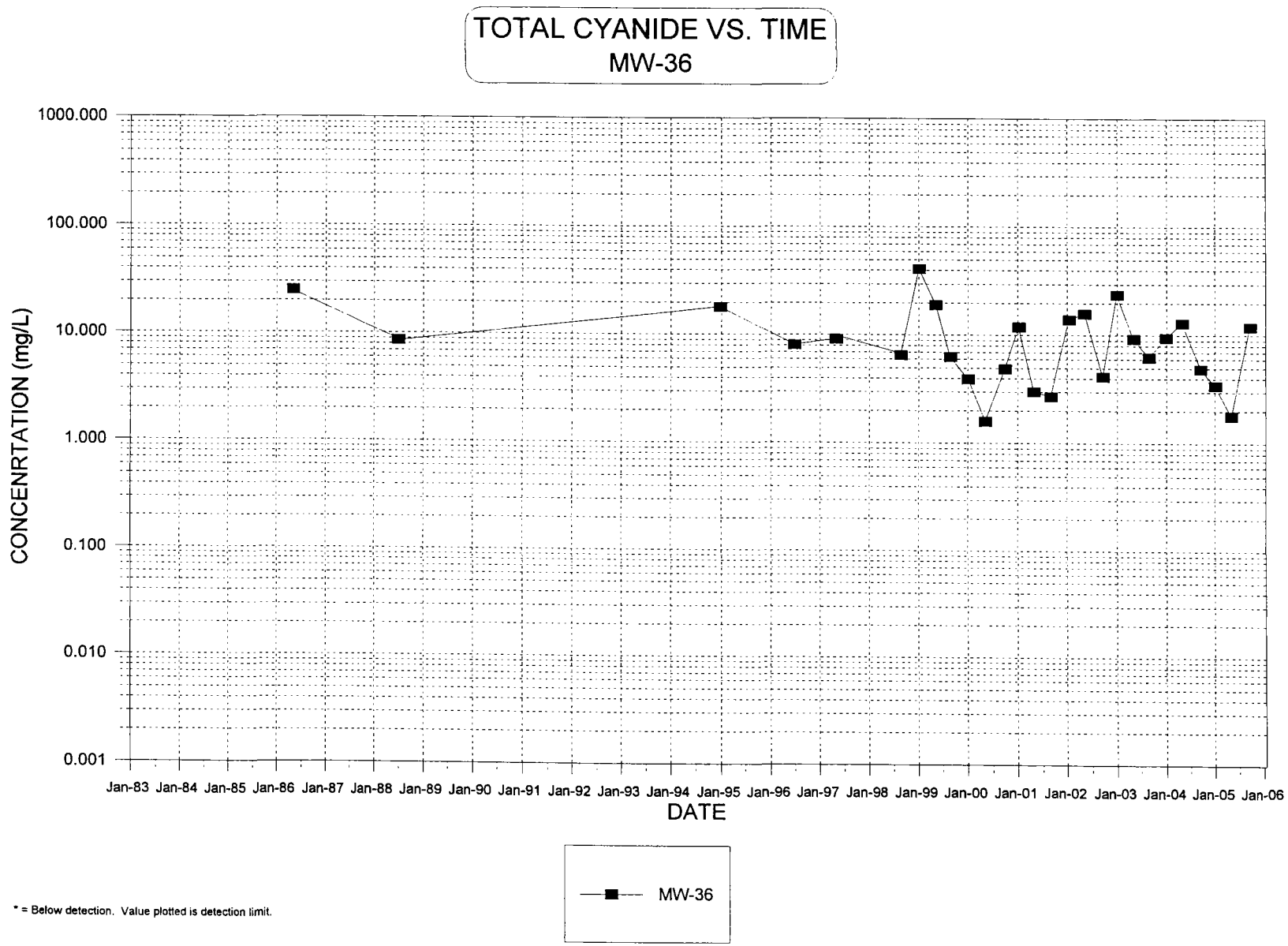

TOTAL CYANIDE VS. TIME
MW-31
CONCENRTATION (mg/L)
1000.000
100.000
10.000
1.000
0.100
0.010
0.001
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-31
* = Below detection. Value plotted is detection limit.



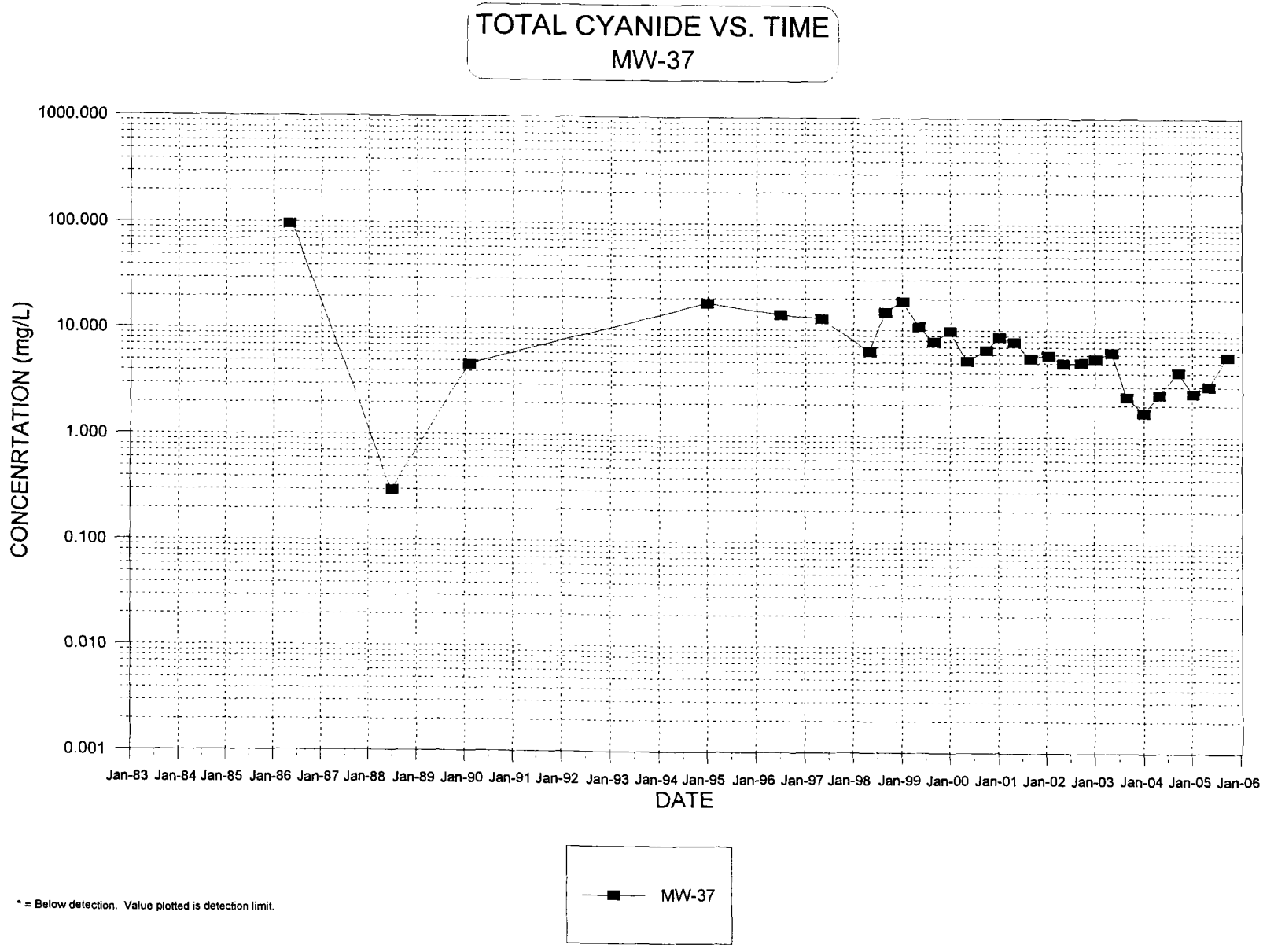
* = Below detection. Value plotted is detection limit.



* = Below detection. Value plotted is detection limit.



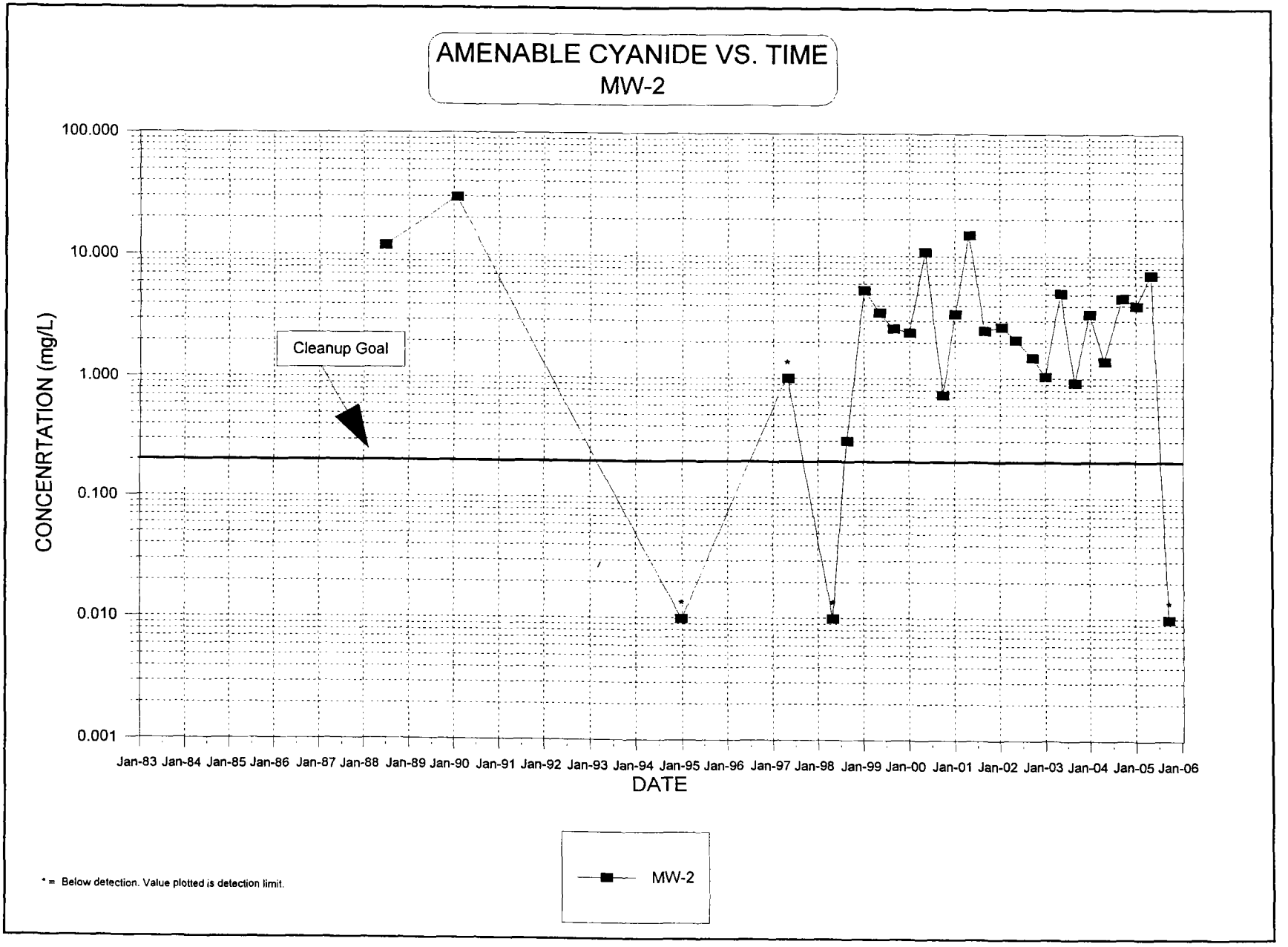
* = Below detection. Value plotted is detection limit.

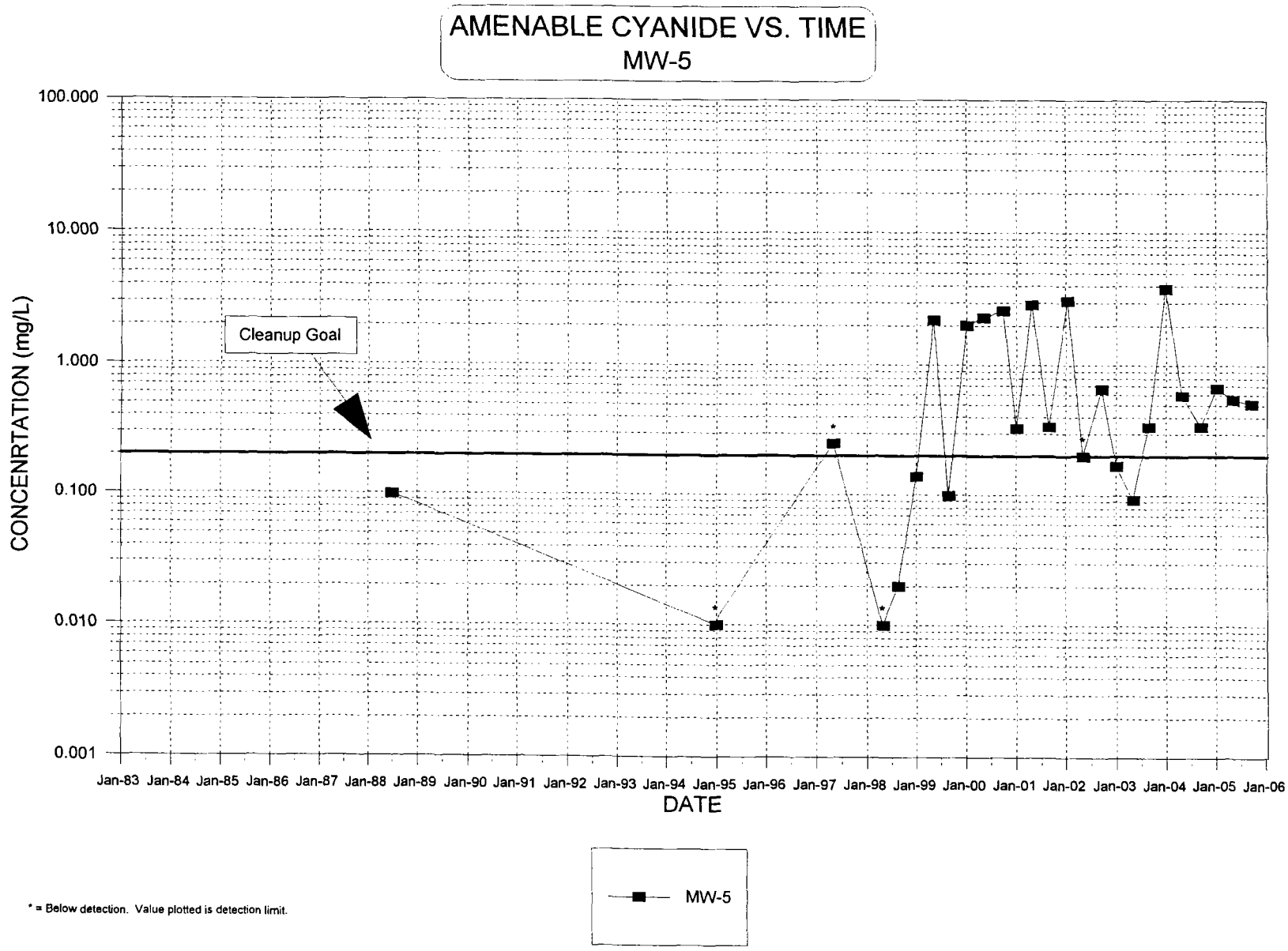


* = Below detection. Value plotted is detection limit.

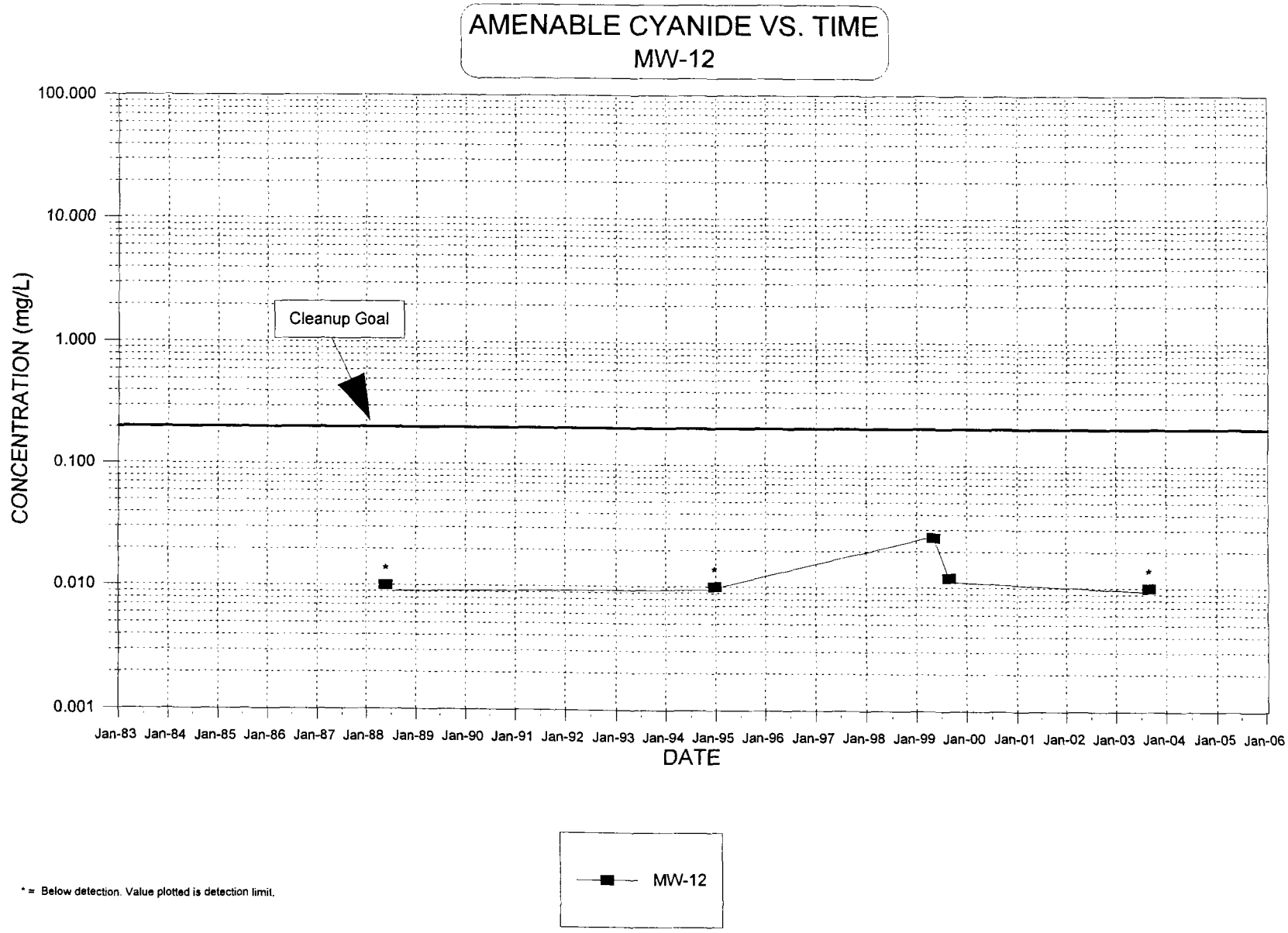
APPENDIX D-2

CYANIDE AMENABLE TO CHLORINATION

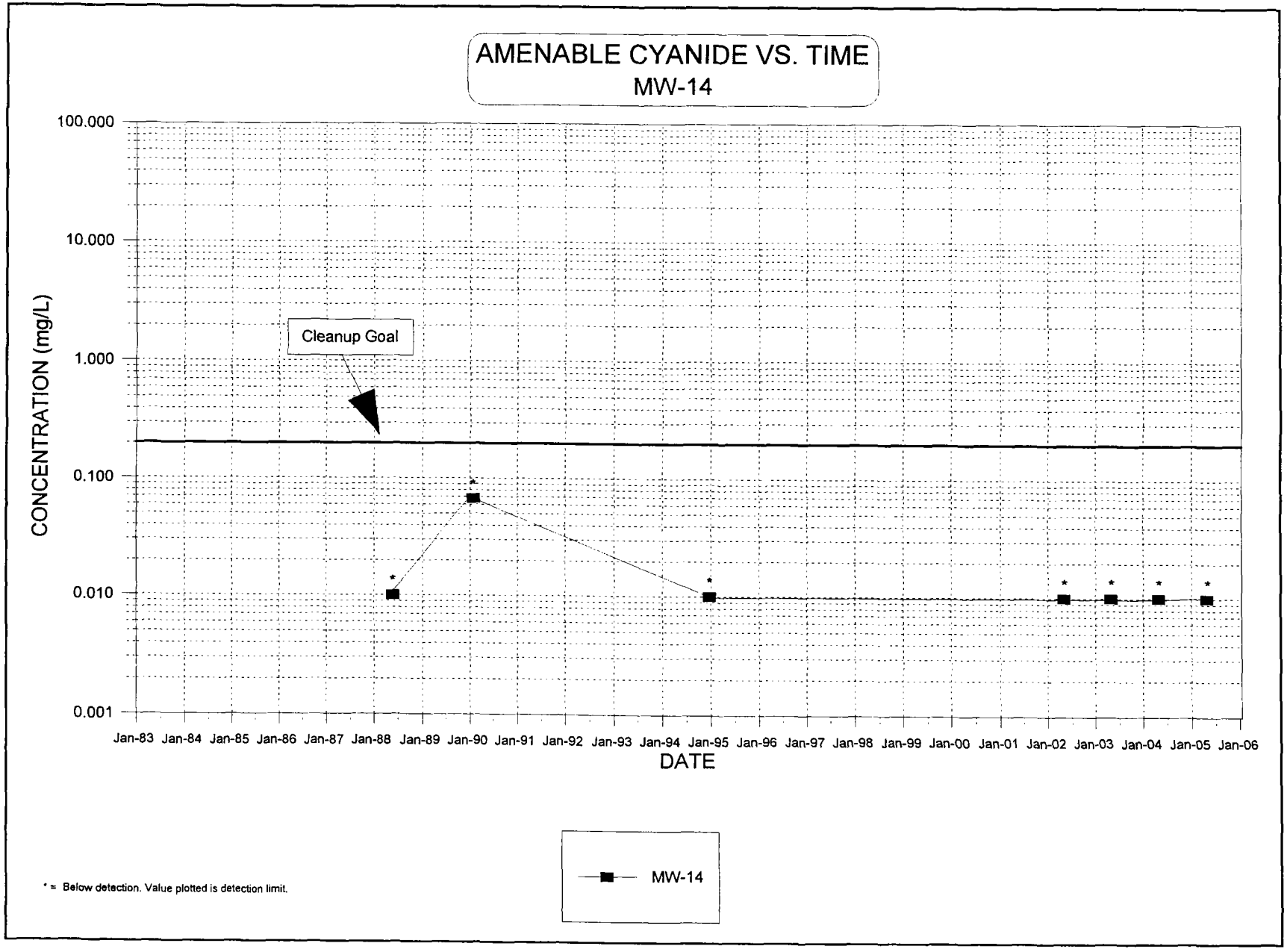

AMENABLE CYANIDE VS. TIME
MW-2
100.000
10.000
1.000
0.100
0.010
0.001
CONCENRTATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-2
* = Below detection. Value plotted is detection limit.

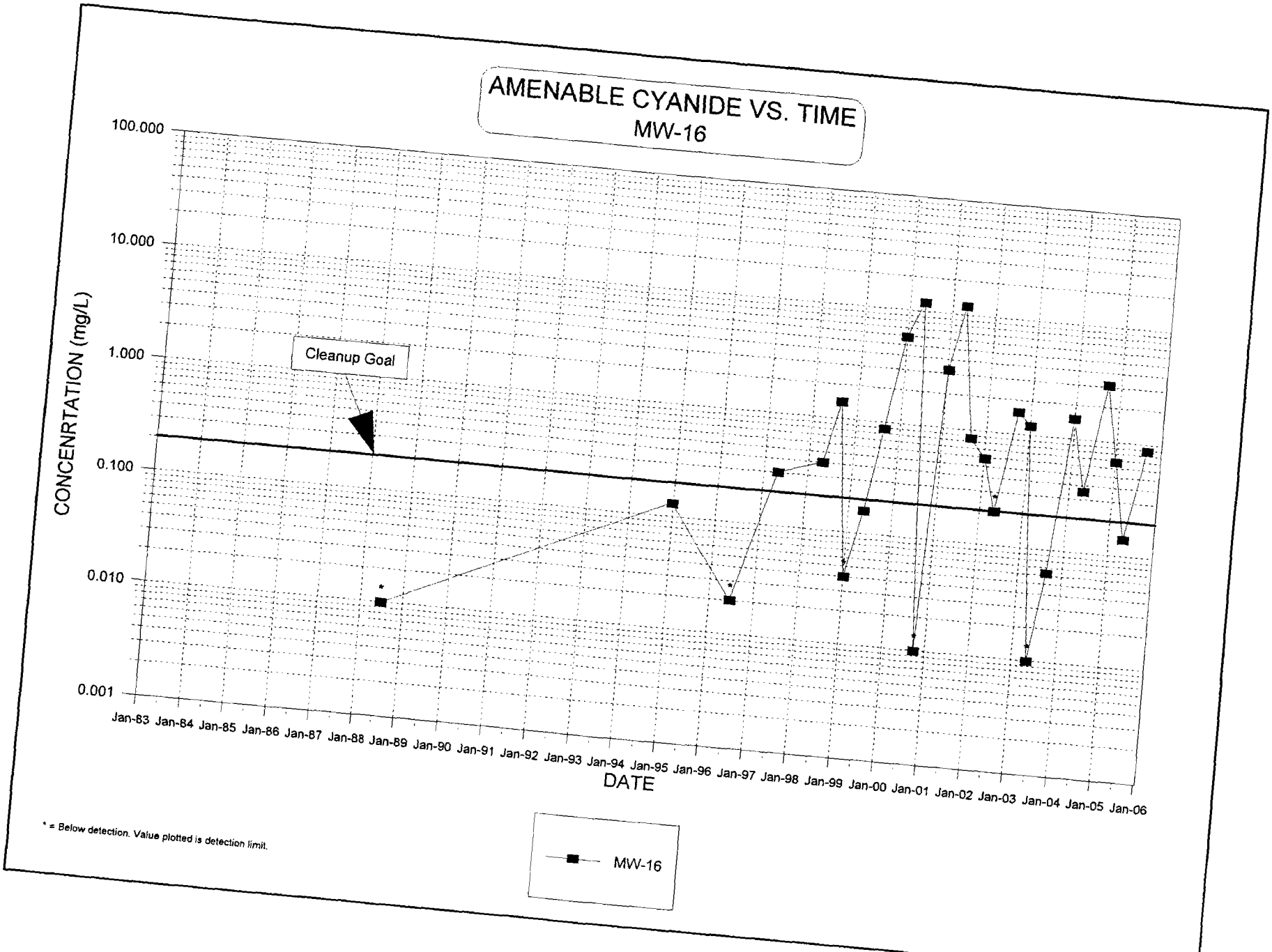


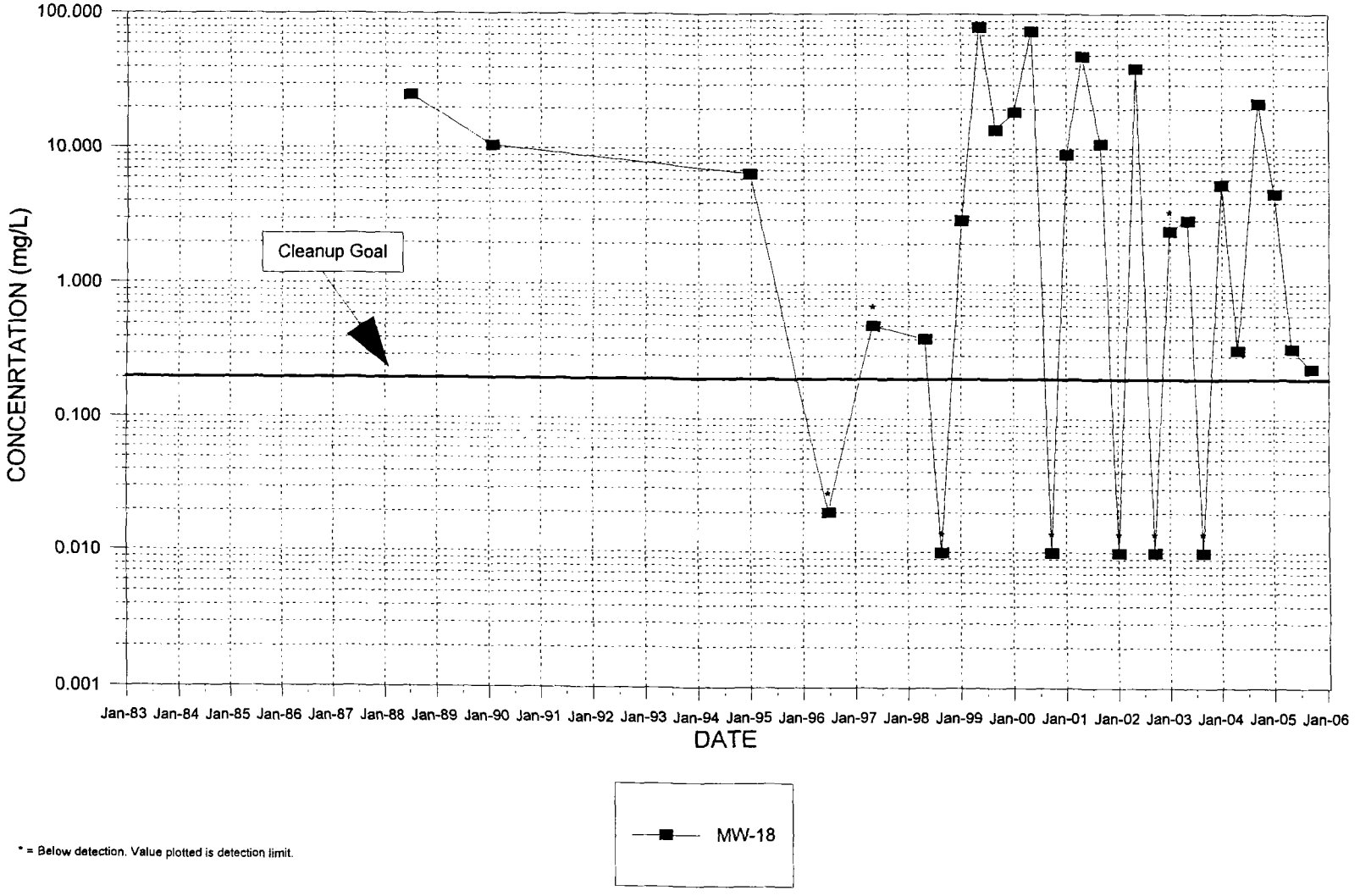
* = Below detection. Value plotted is detection limit.

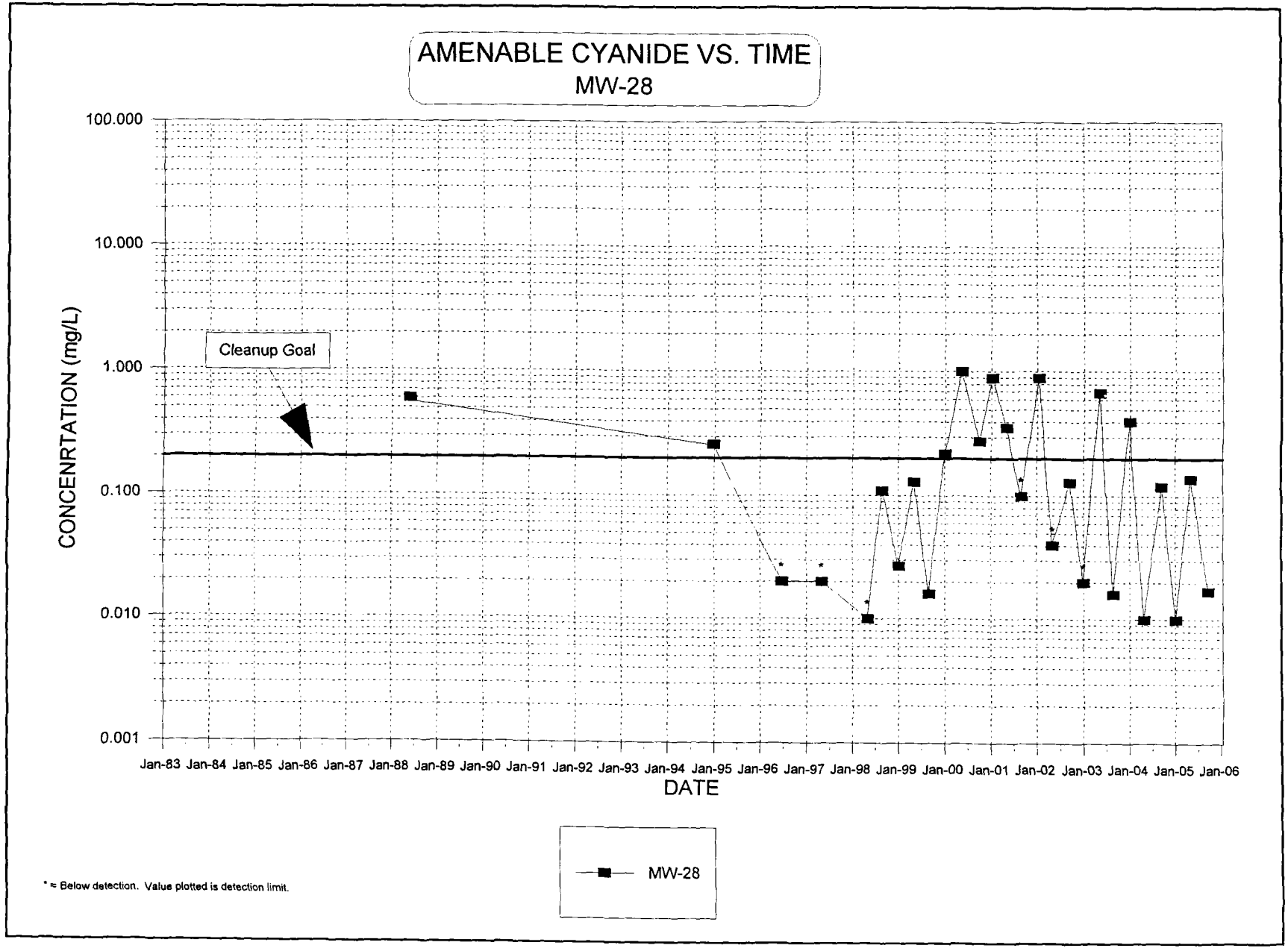


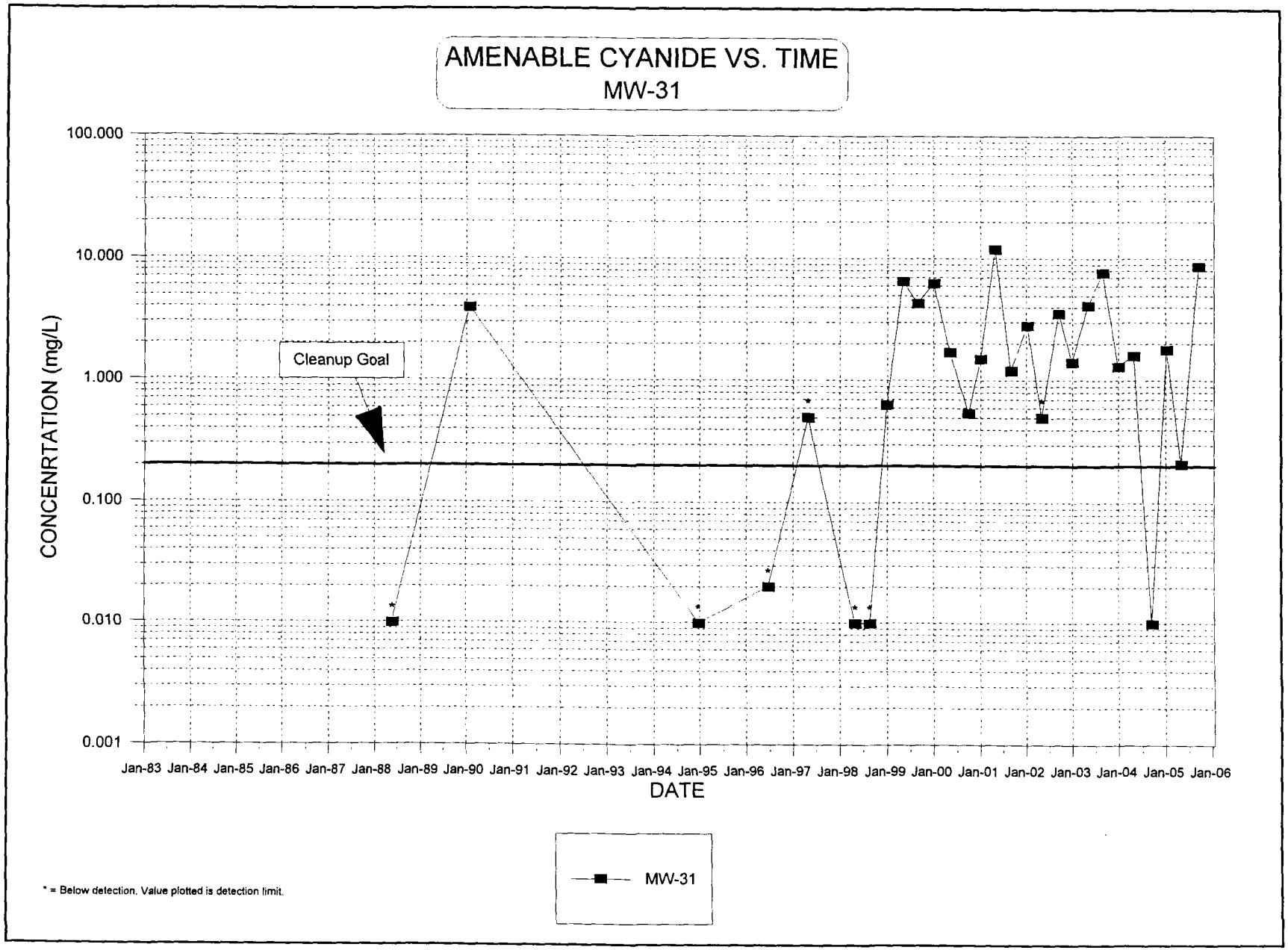
* = Below detection. Value plotted is detection limit.

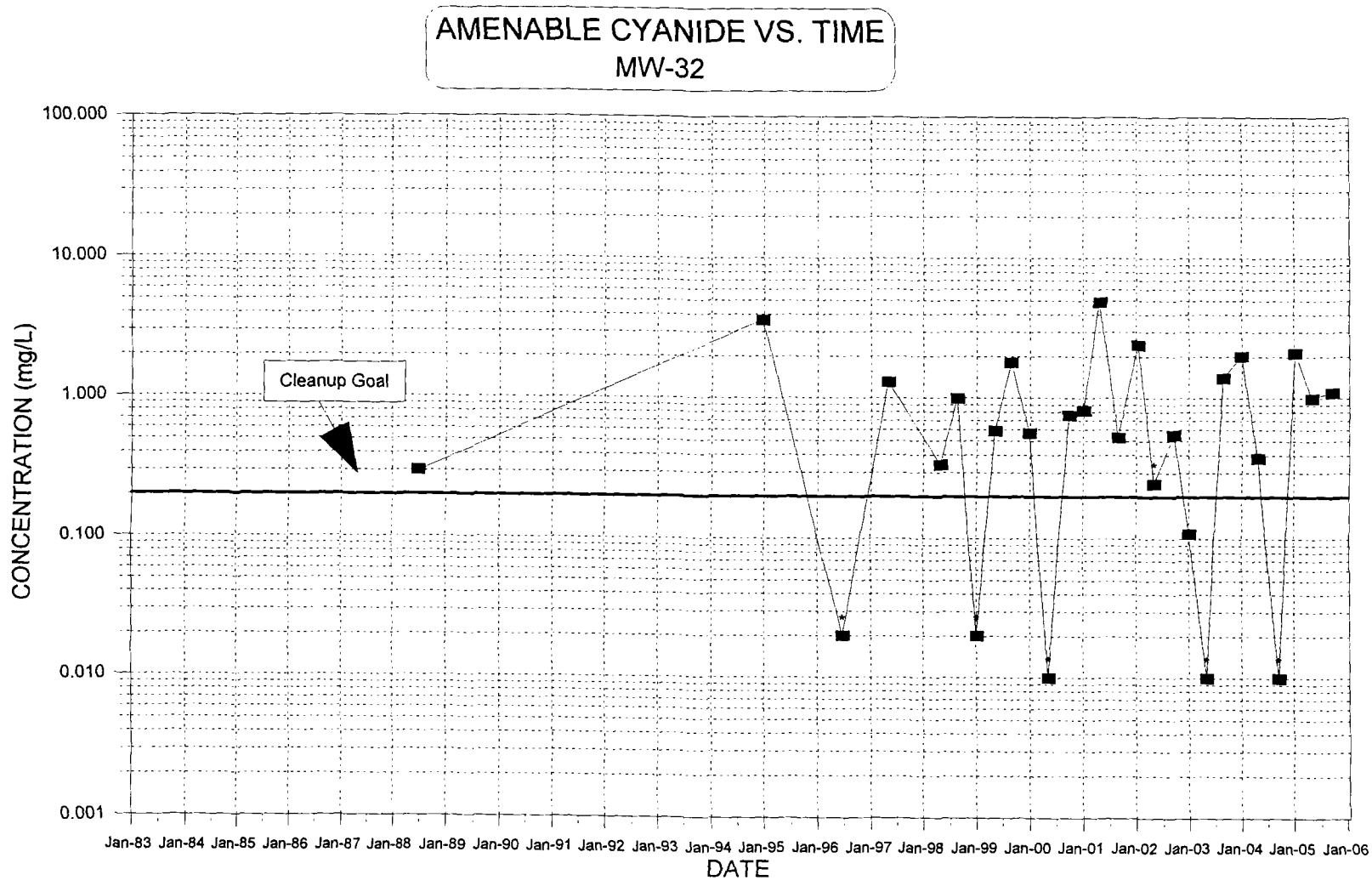

AMENABLE CYANIDE VS. TIME
MW-14
100.000
10.000
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-14
* = Below detection. Value plotted is detection limit.


AMENABLE CYANIDE VS. TIME
MW-16
CONCENRTATION (mg/L)
100.000
10.000
1.000
0.100
0.010
0.001
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
* = Below detection. Value plotted is detection limit.
MW-16

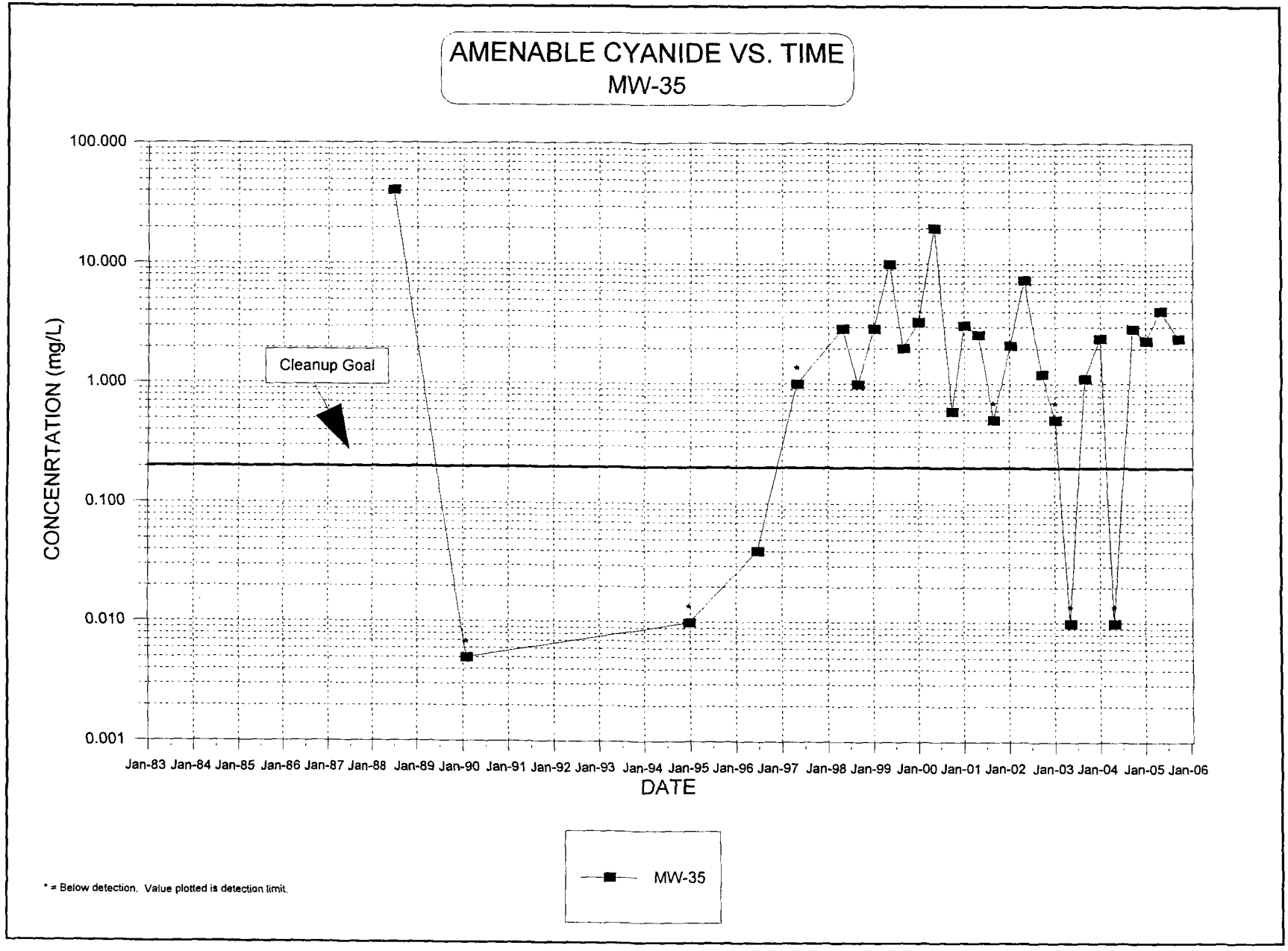

AMENABLE CYANIDE VS. TIME
MW-18
100.000
10.000
1.000
0.100
0.010
0.001
CONCENRTATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-18
* = Below detection. Value plotted is detection limit.

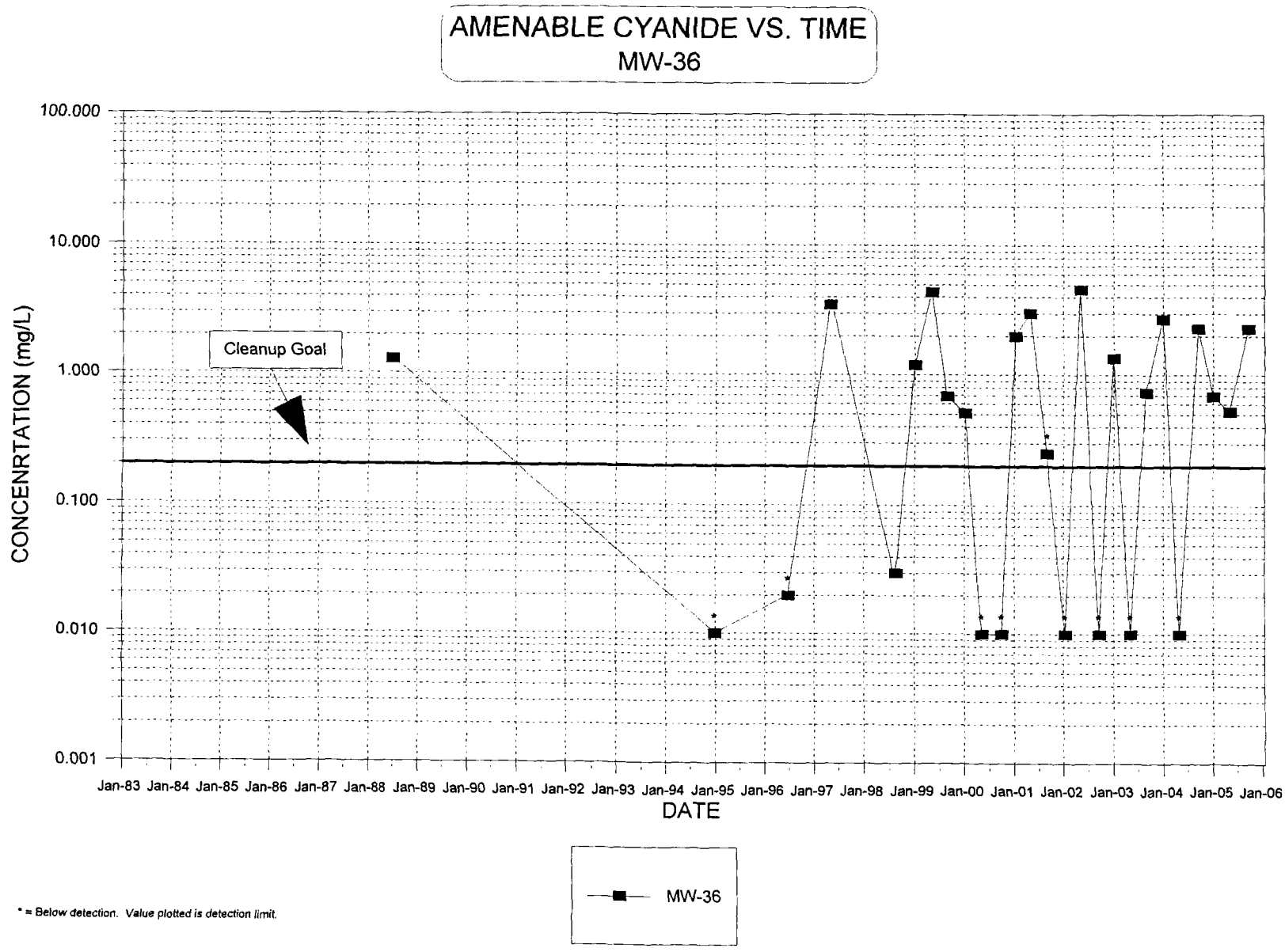

AMENABLE CYANIDE VS. TIME
MW-28
100.000
10.000
1.000
0.100
0.010
0.001
CONCENRTATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-28
* = Below detection. Value plotted is detection limit.


AMENABLE CYANIDE VS. TIME
MW-31
100.000
10.000
1.000
0.100
0.010
0.001
CONCENRTATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-31
* = Below detection. Value plotted is detection limit.

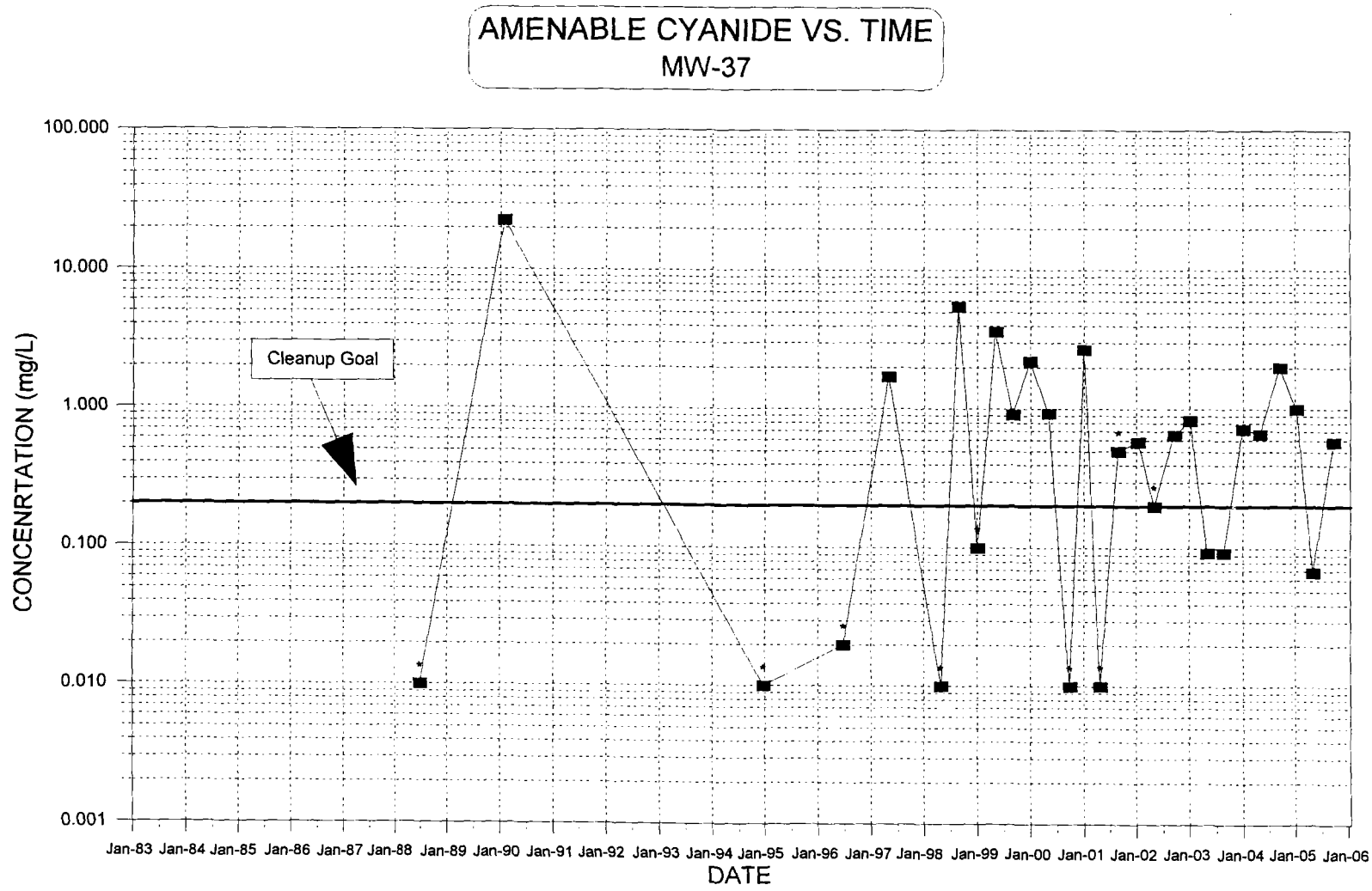


* = Below detection. *Value plotted is detection limit.*


AMENABLE CYANIDE VS. TIME
MW-35
100.000
10.000
1.000
0.100
0.010
0.001
CONCENRTATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-35
* = Below detection. Value plotted is detection limit.



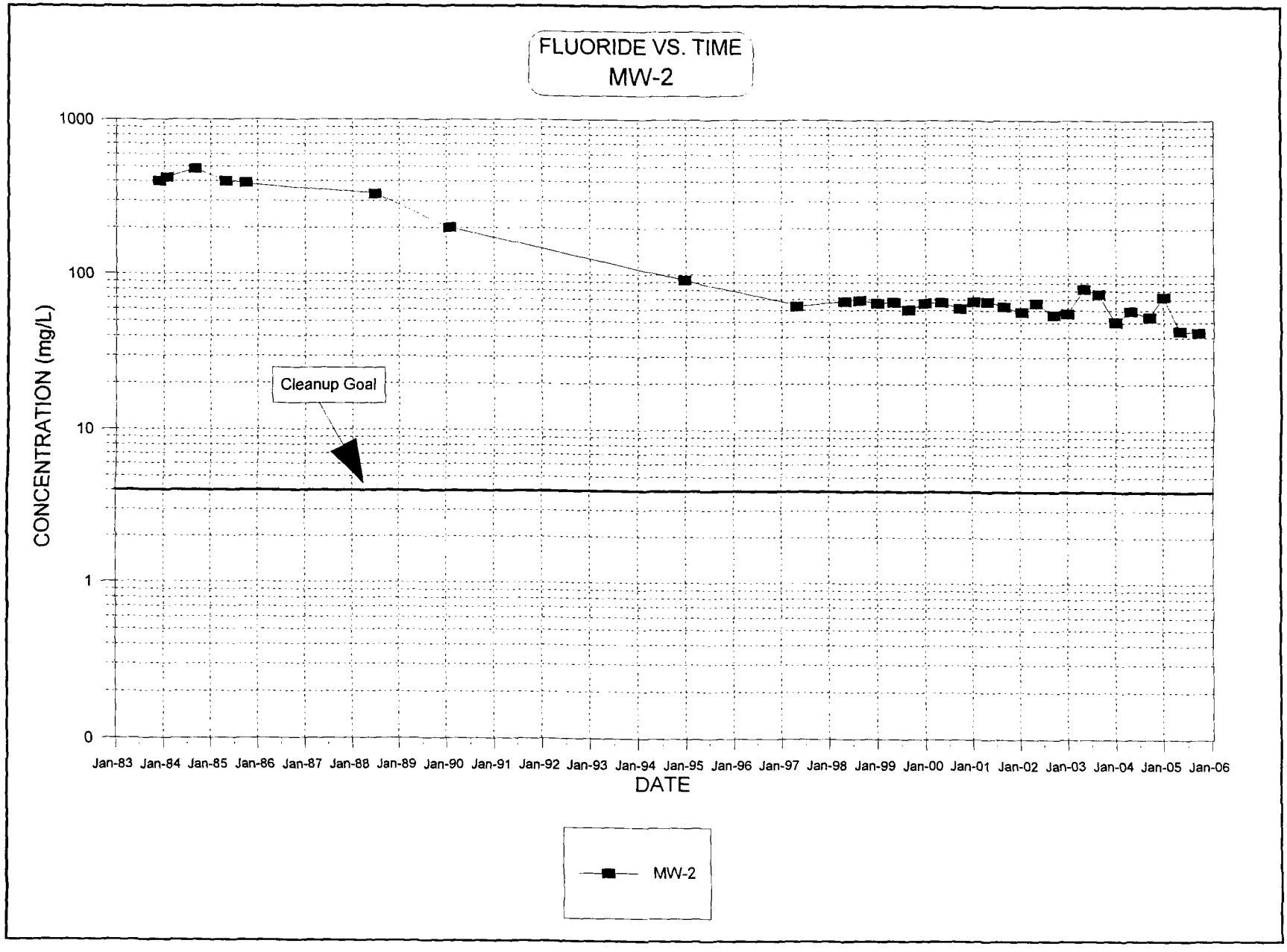
* = Below detection. Value plotted is detection limit.

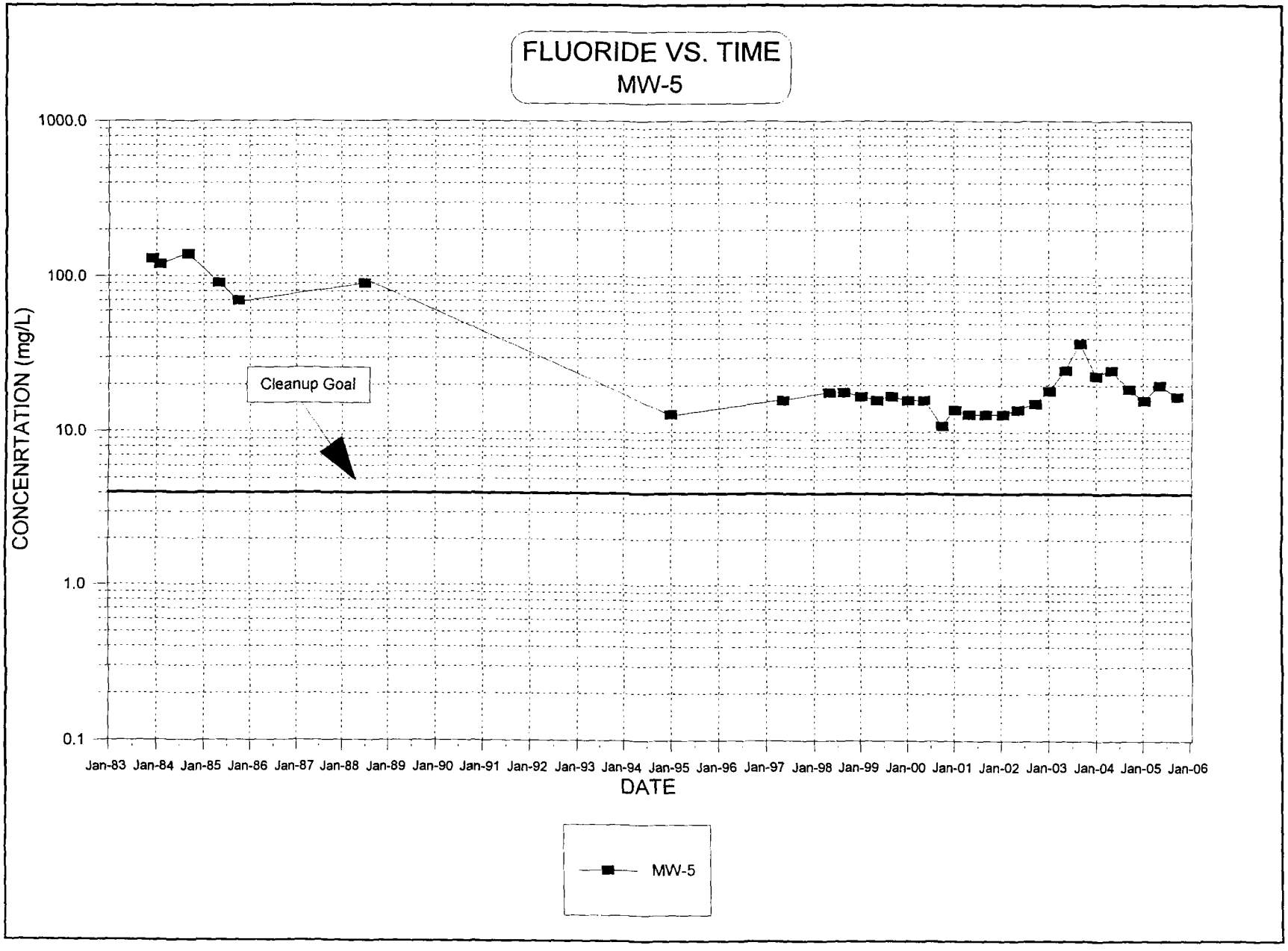


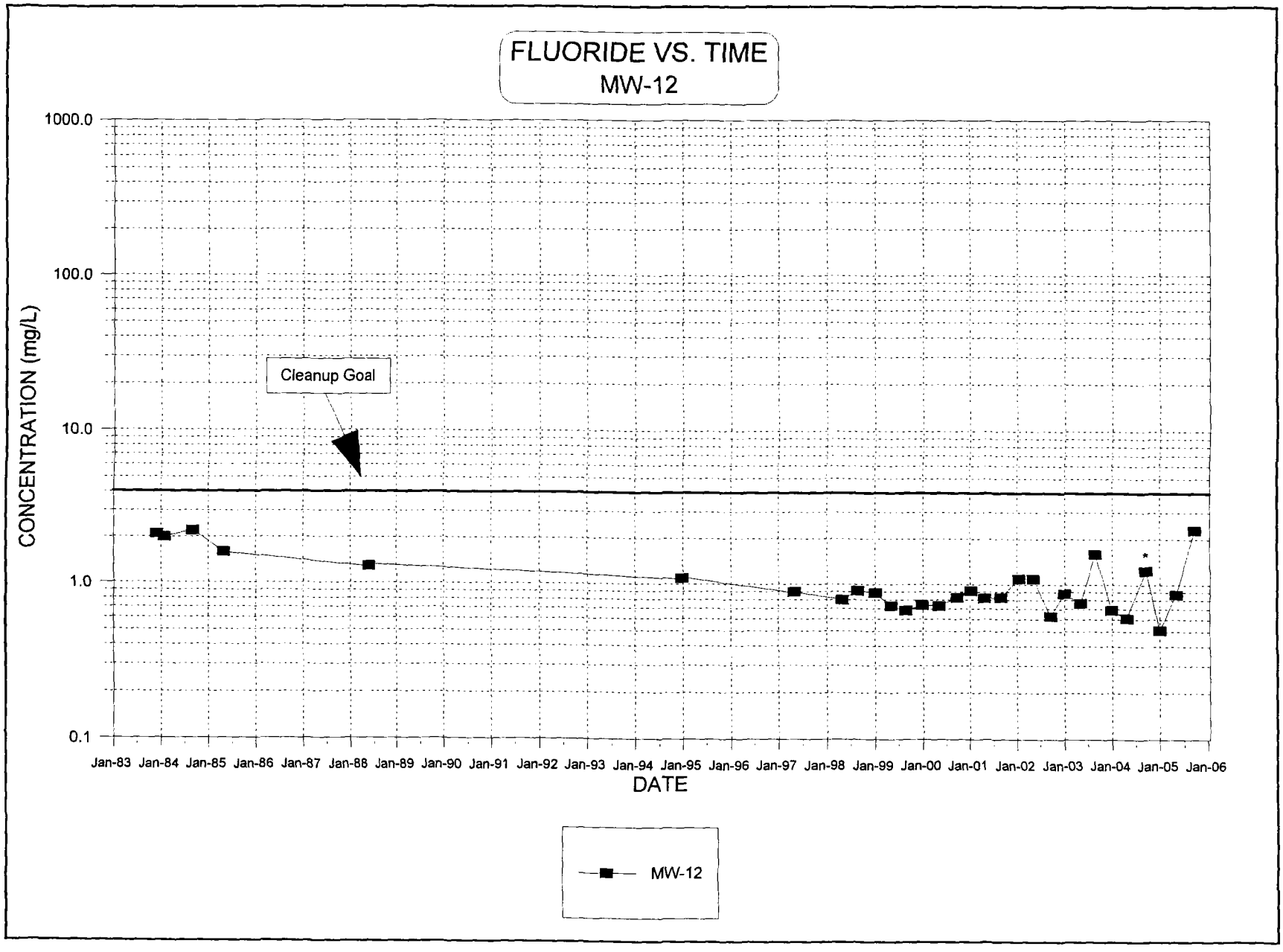
* = Below detection. Value plotted is detection limit.

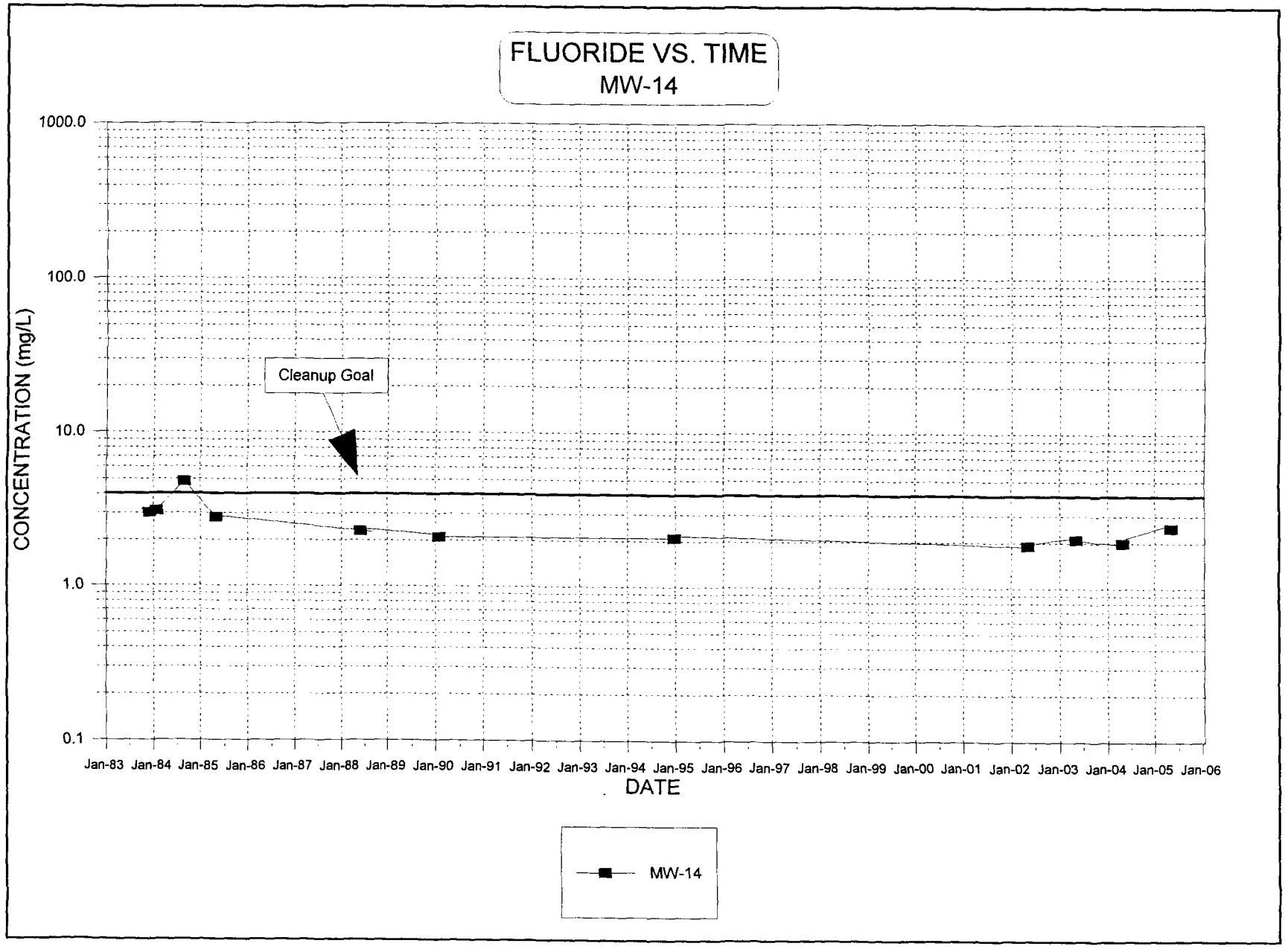
APPENDIX D-3

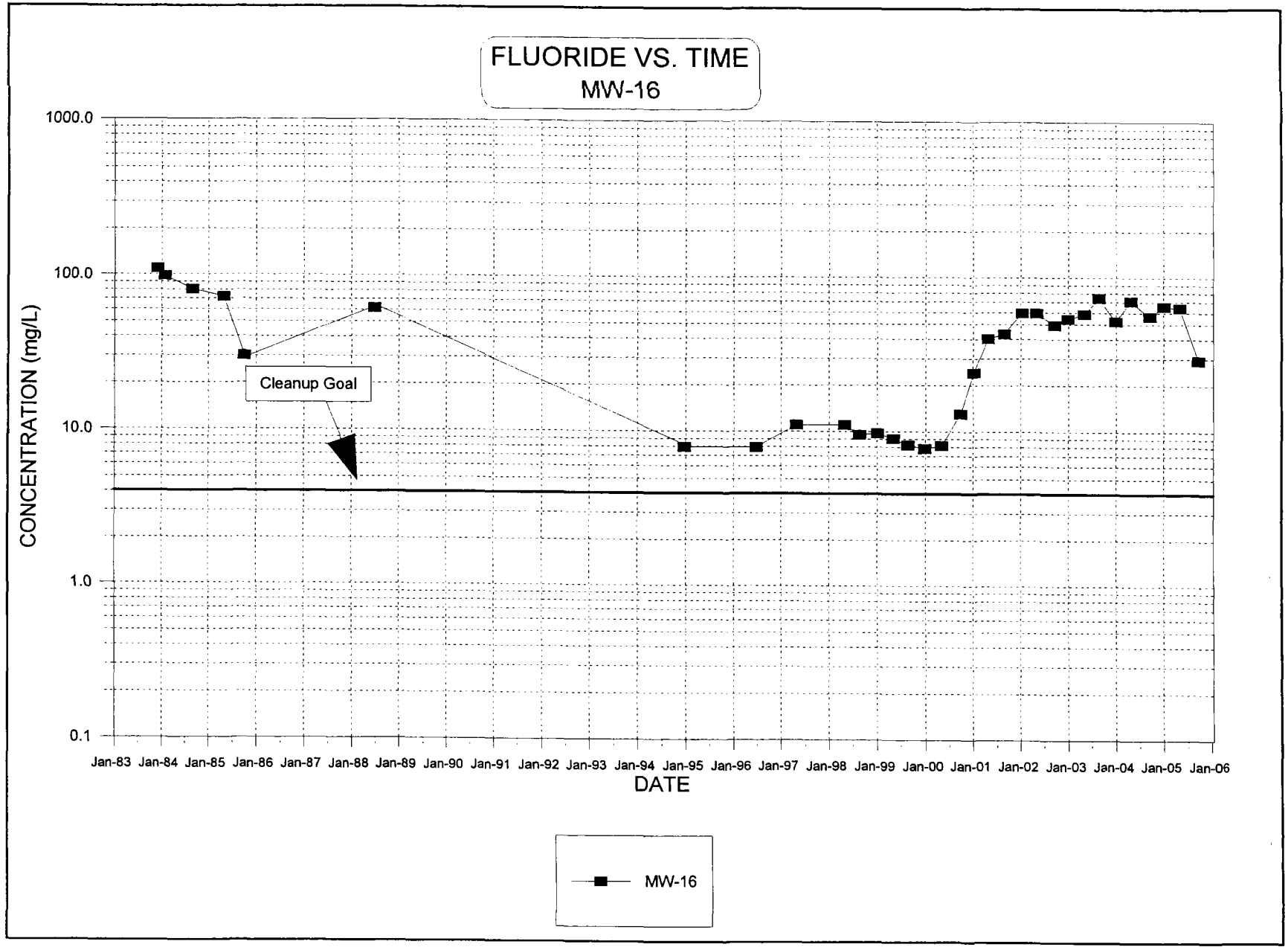
FLUORIDE

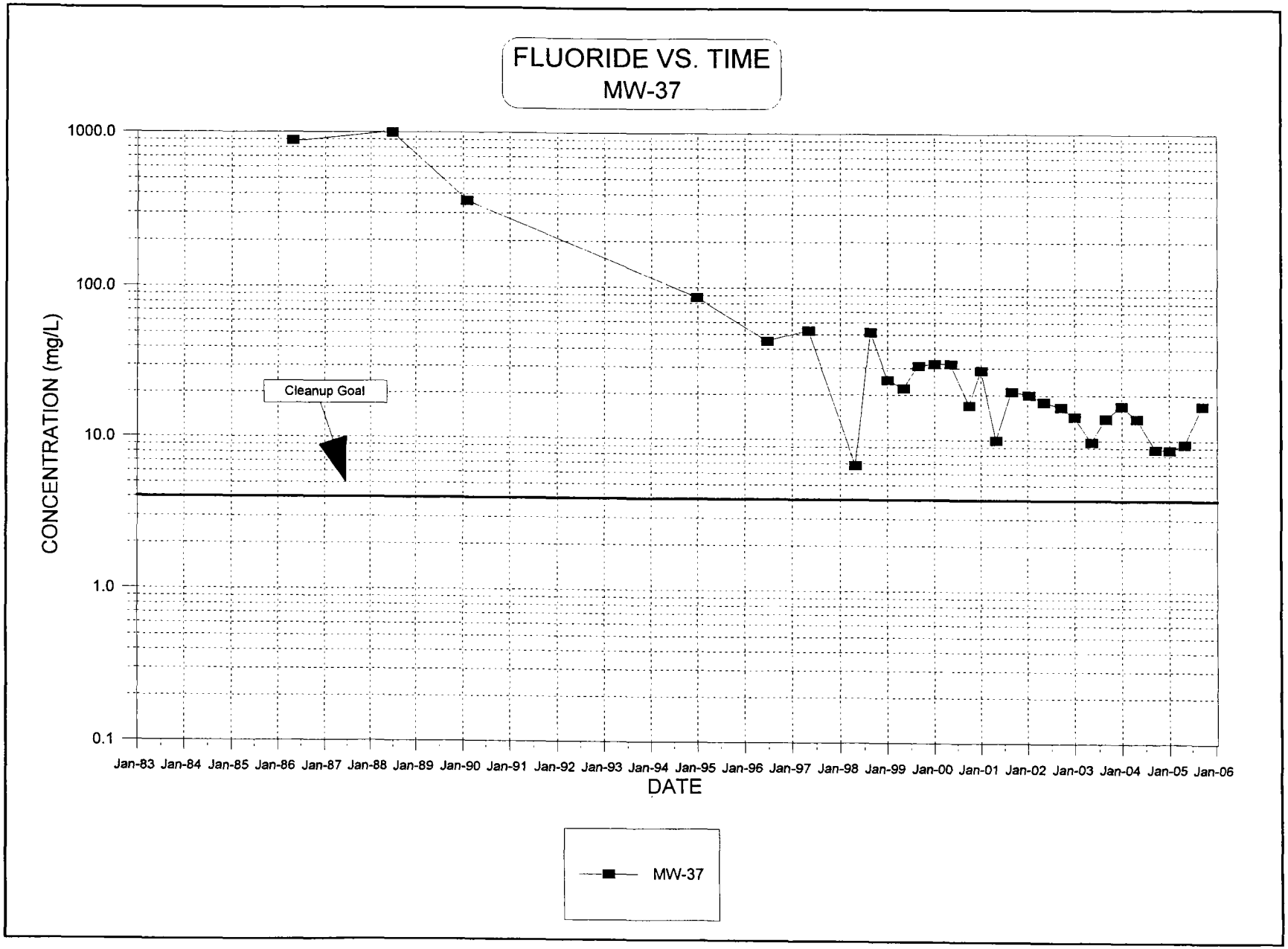

FLUORIDE VS. TIME
MW-2
1000
100
10
1
0
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-2


FLUORIDE VS. TIME
MW-5
1000.0
100.0
10.0
1.0
0.1
CONCENRTATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-5


FLUORIDE VS. TIME
MW-12
1000.0
100.0
10.0
1.0
0.1
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-12

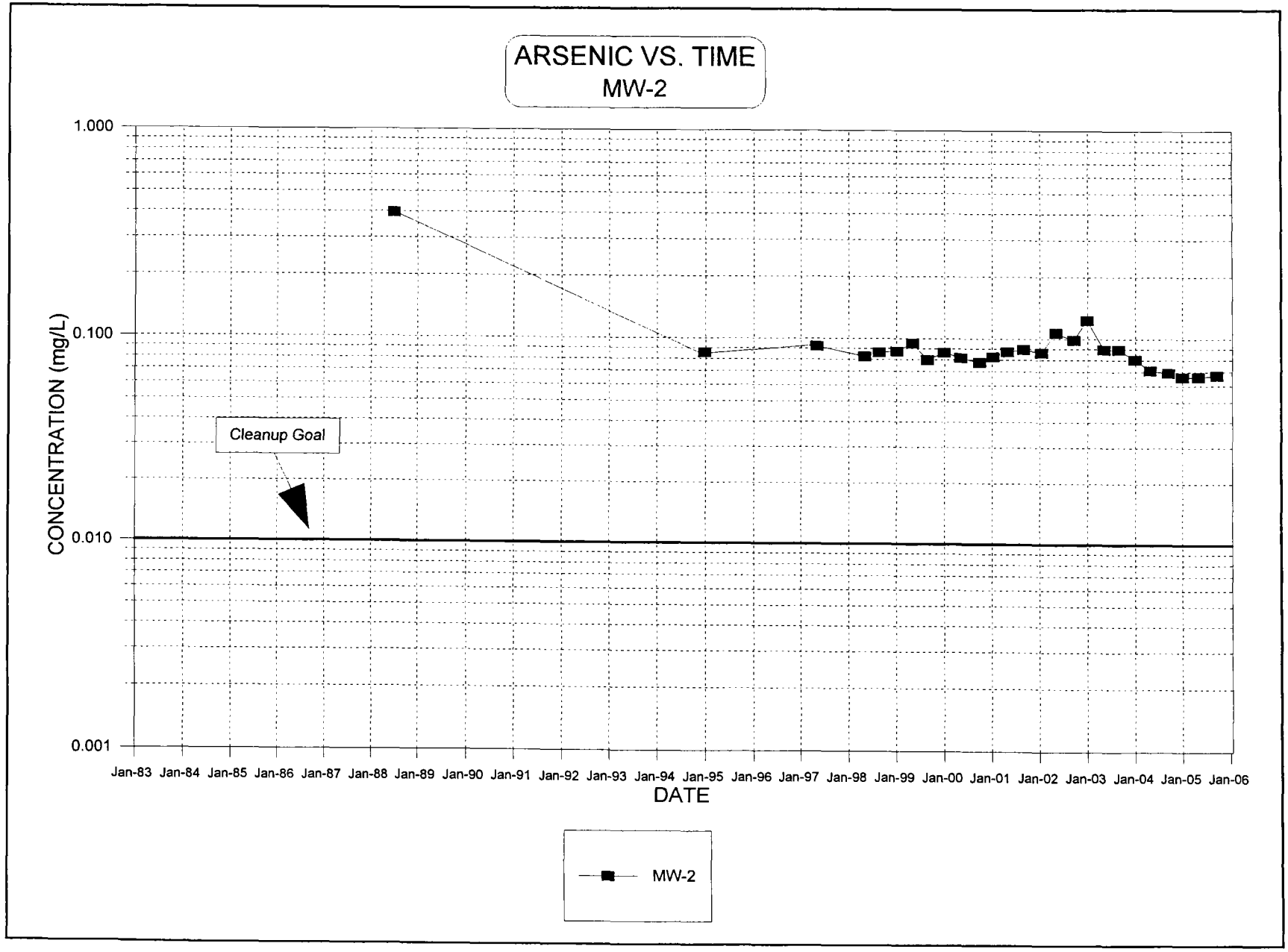

FLUORIDE VS. TIME
MW-14
1000.0
100.0
10.0
1.0
0.1
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-14

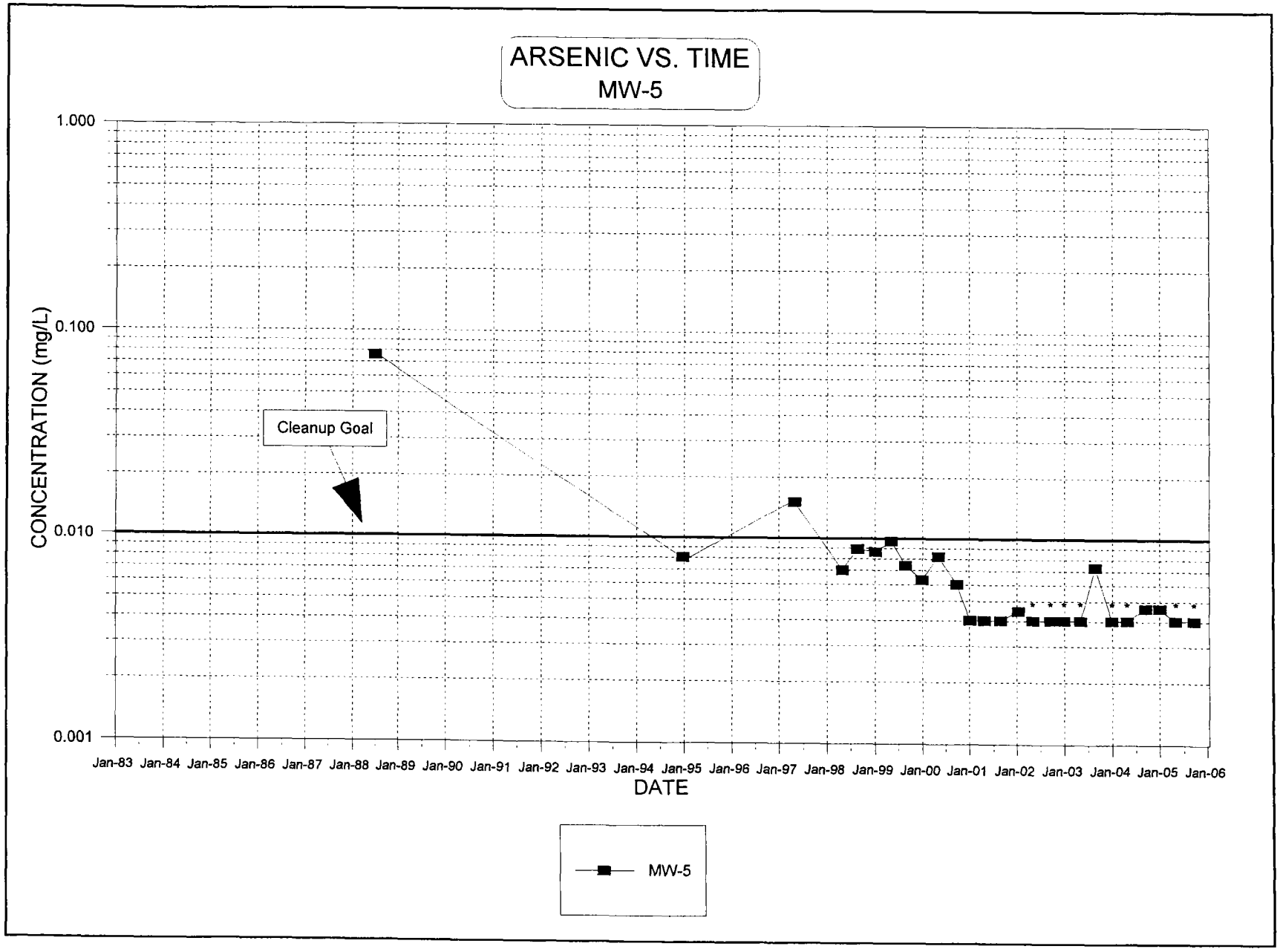

FLUORIDE VS. TIME
MW-16
CONCENTRATION (mg/L)
1000.0
100.0
10.0
1.0
0.1
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-16

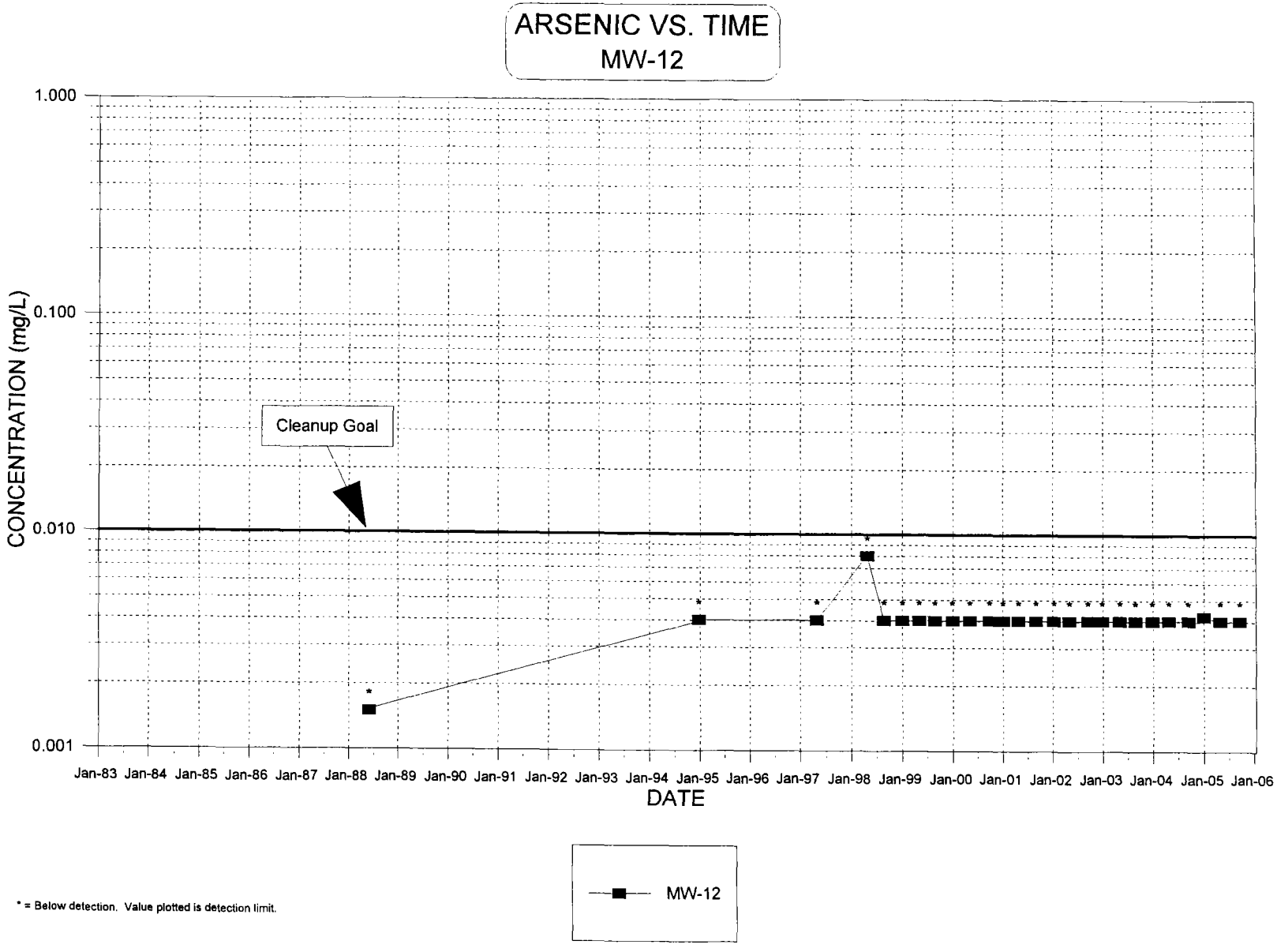

FLUORIDE VS. TIME
MW-37
CONCENTRATION (mg/L)
1000.0
100.0
10.0
1.0
0.1
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-37

APPENDIX D-4

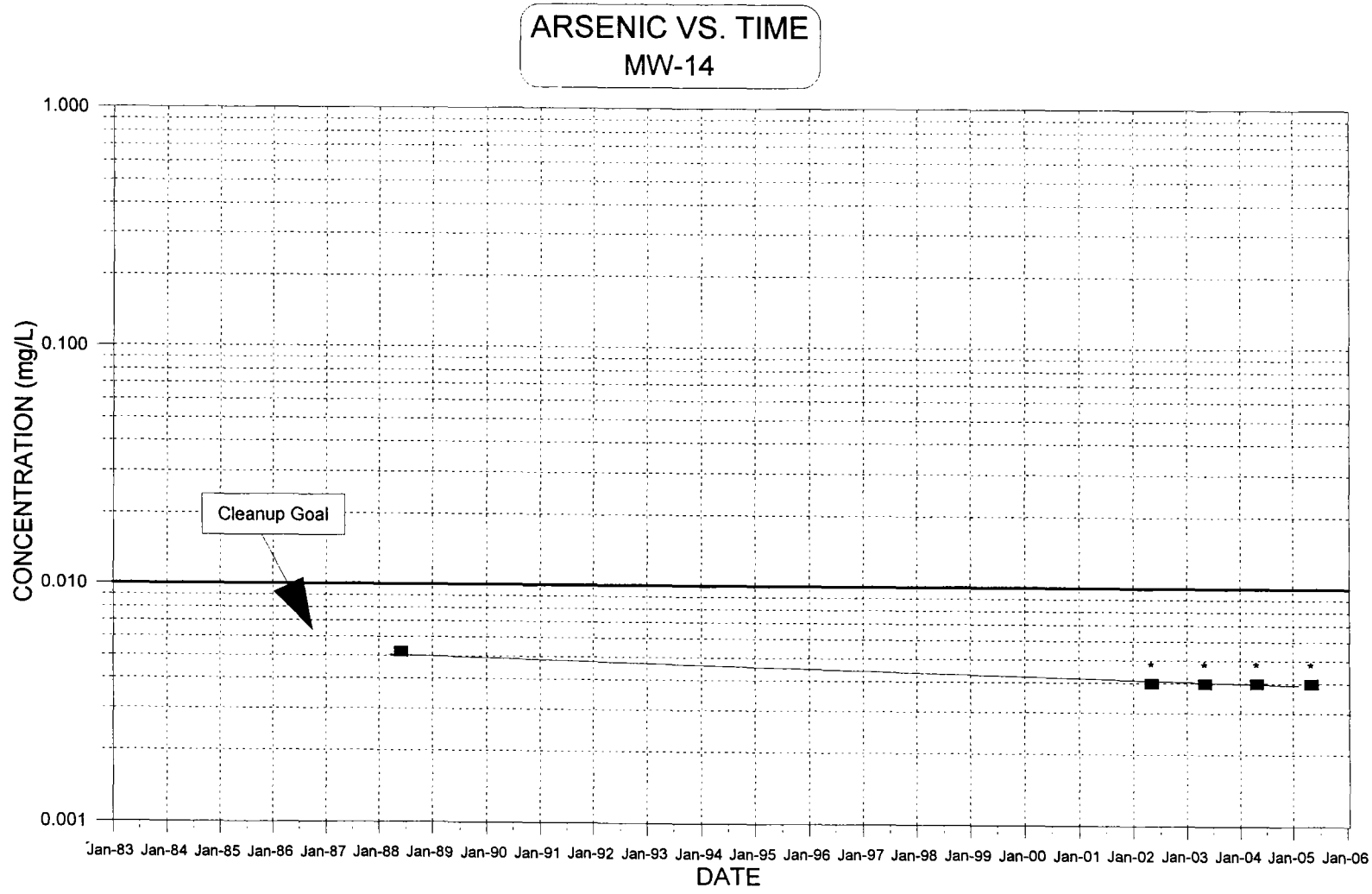
ARSENIC


ARSENIC VS. TIME
MW-2
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-2

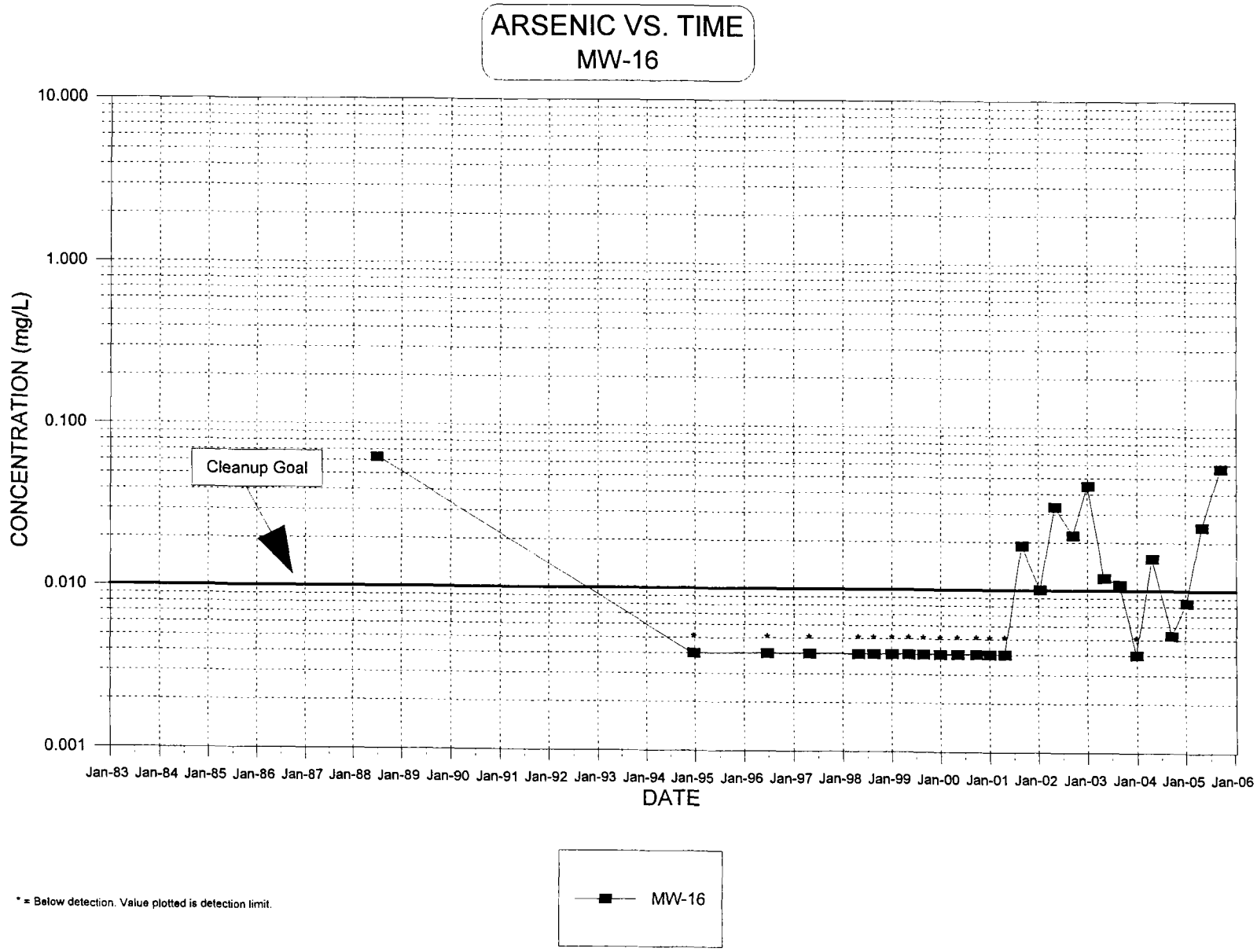

ARSENIC VS. TIME
MW-5
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-5



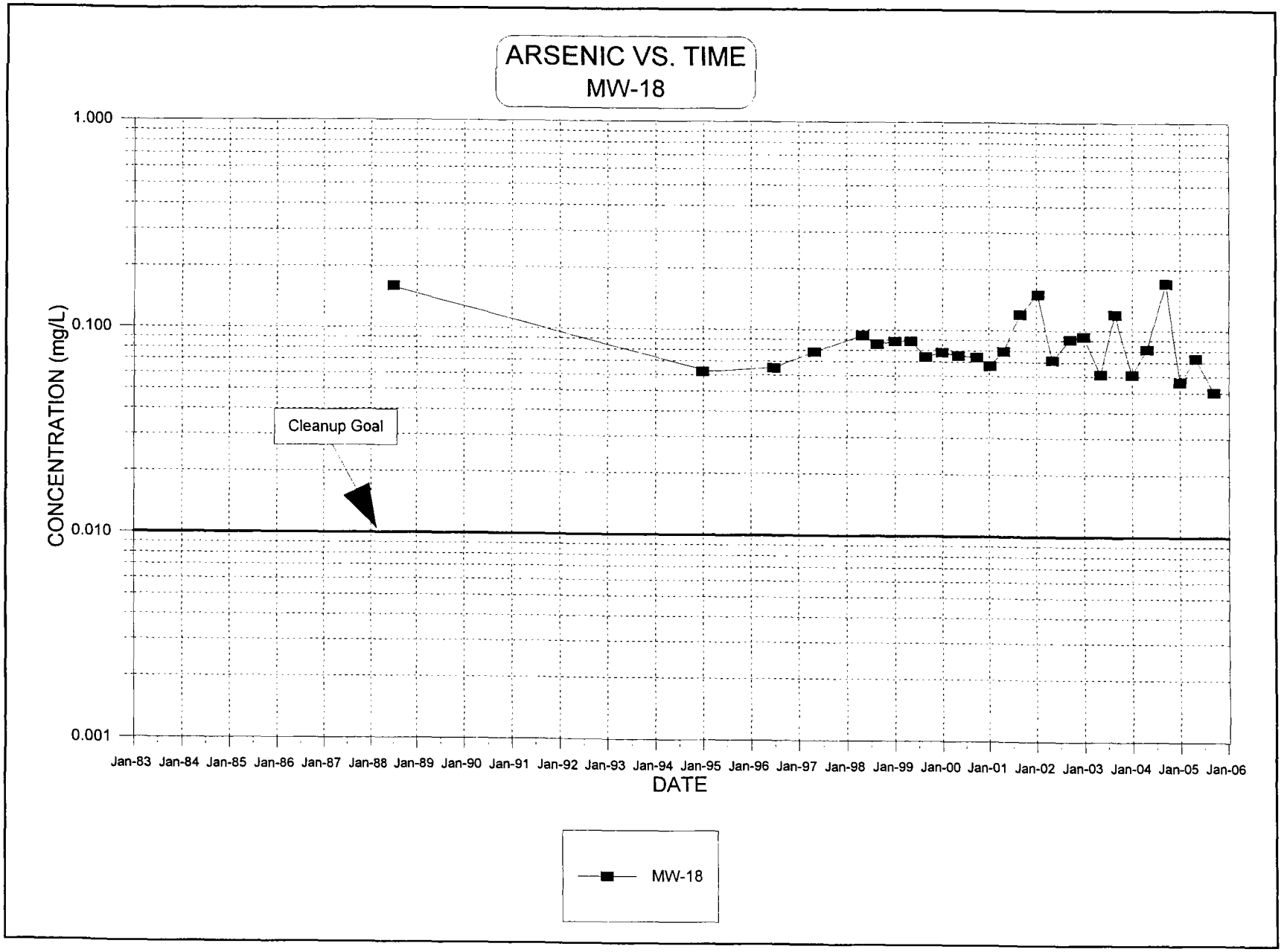
* = Below detection. Value plotted is detection limit.

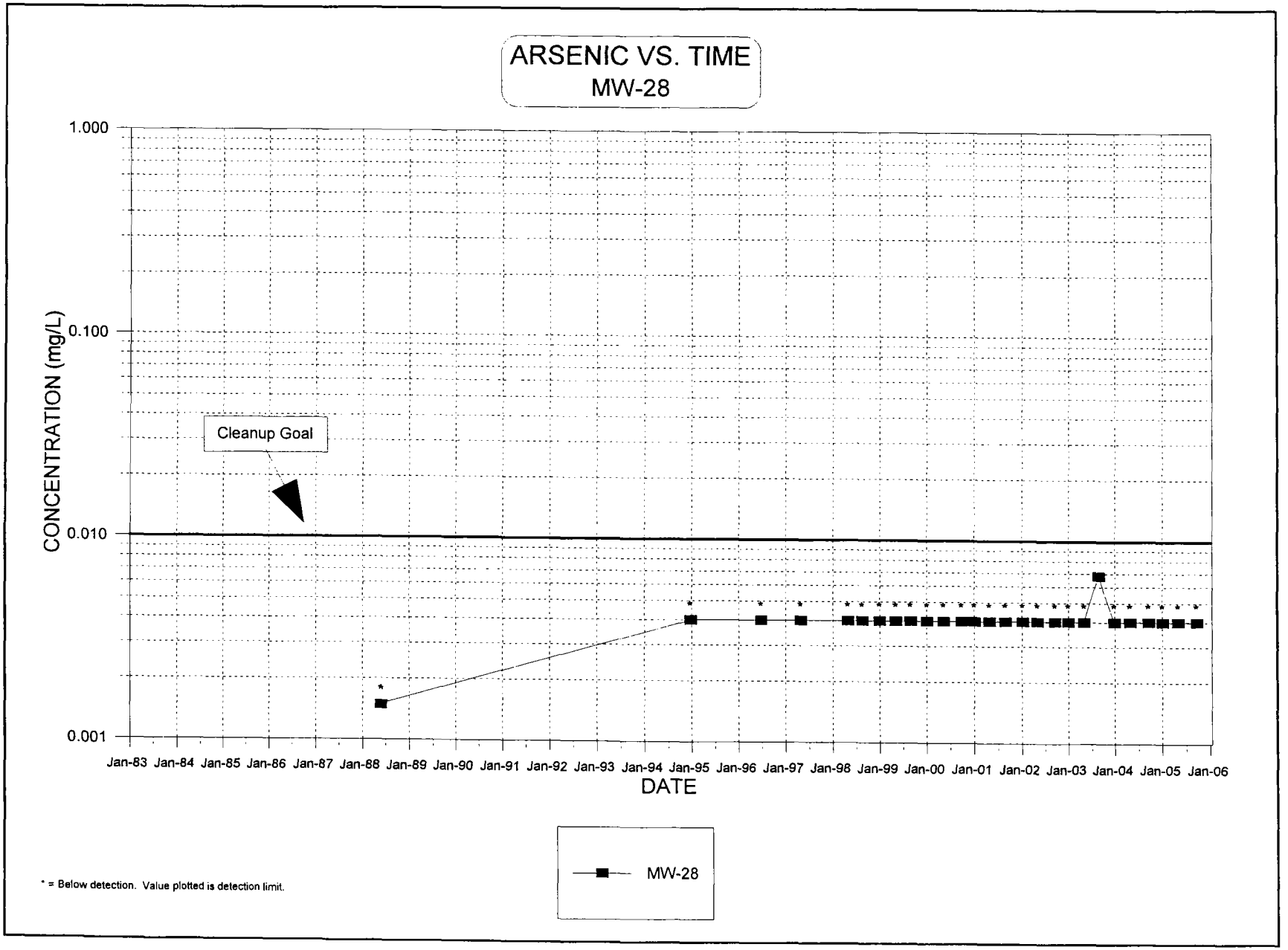


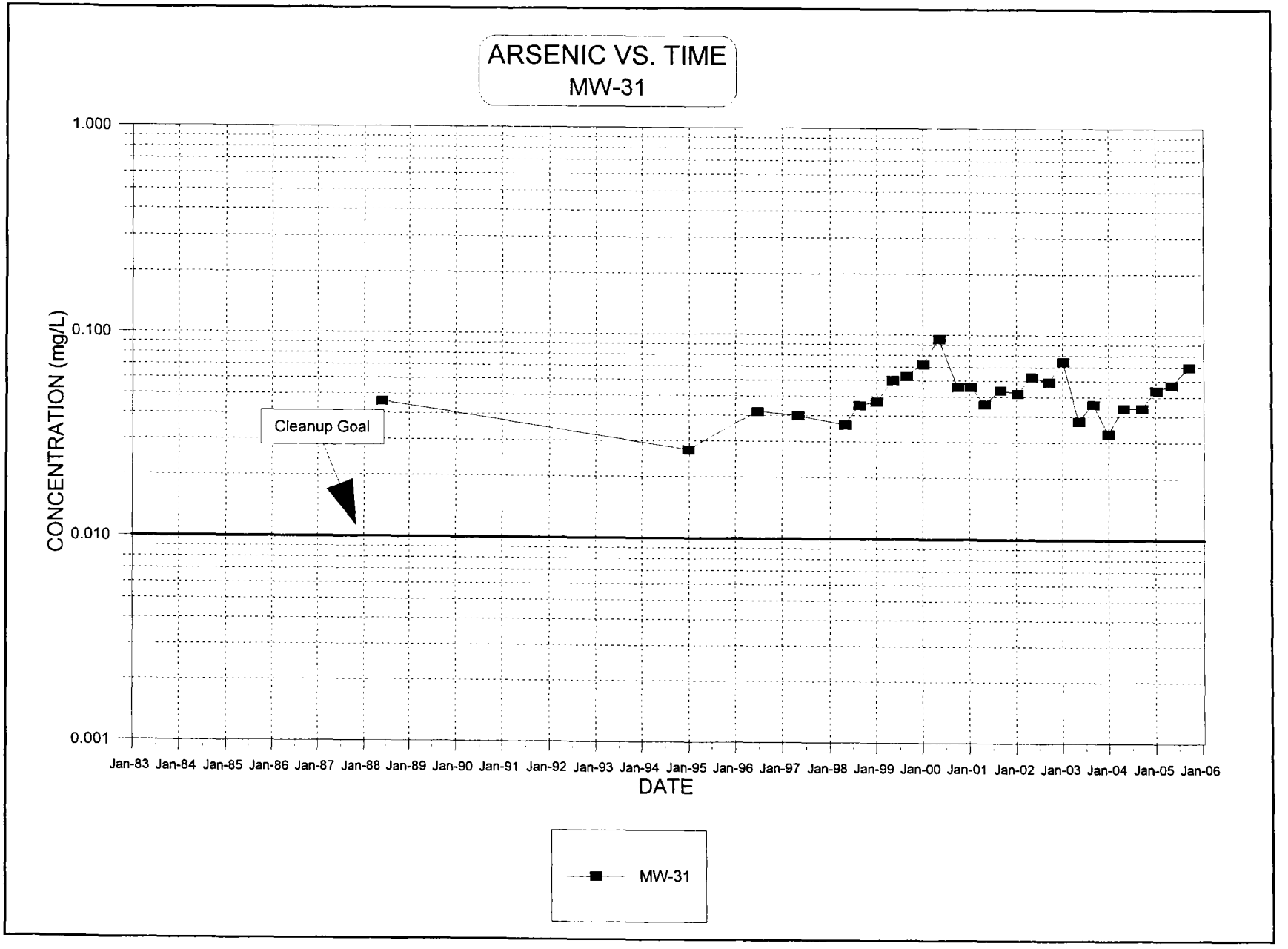
* = Below detection. Value plotted is detection limit.

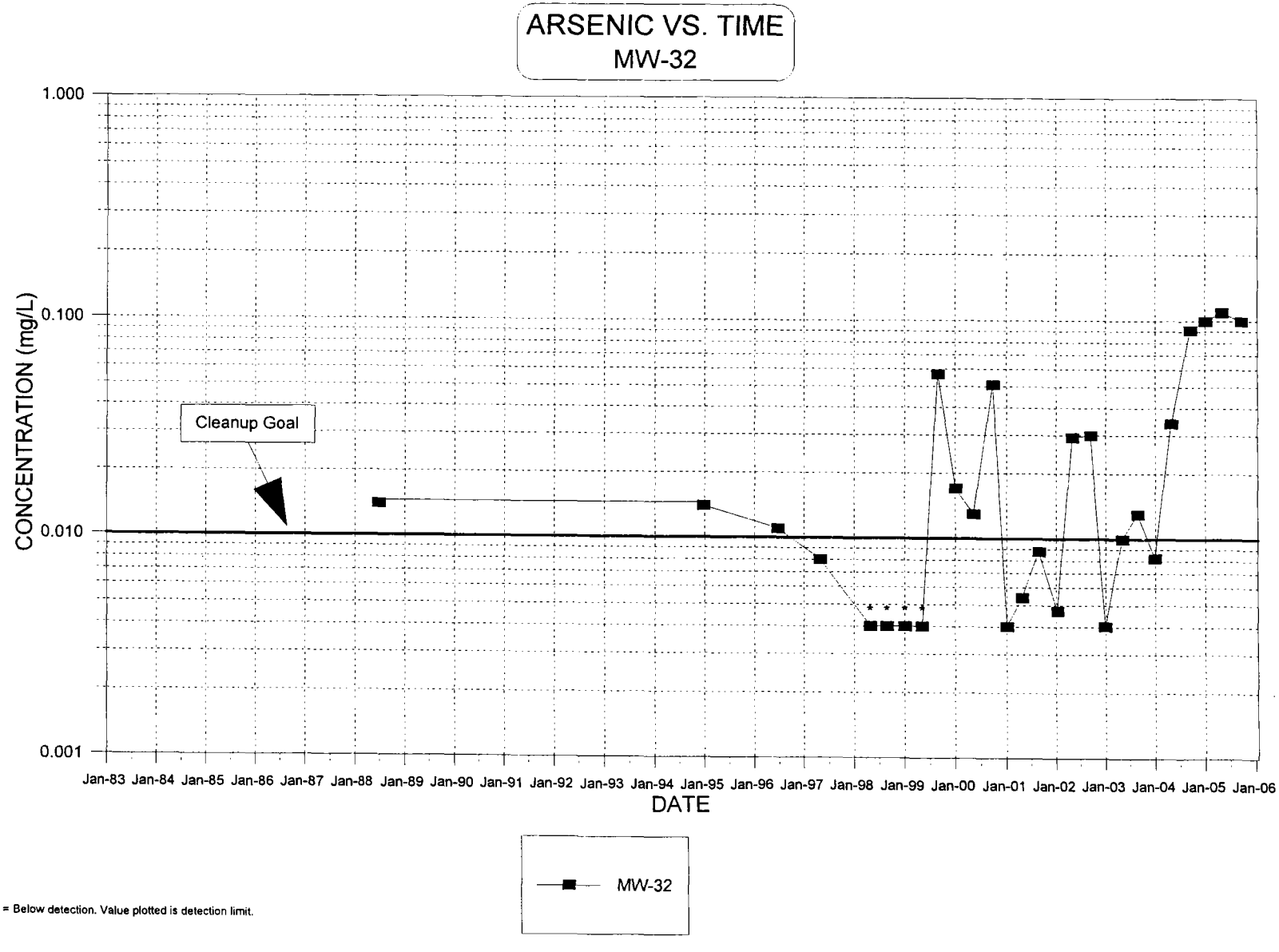


* = Below detection. Value plotted is detection limit.

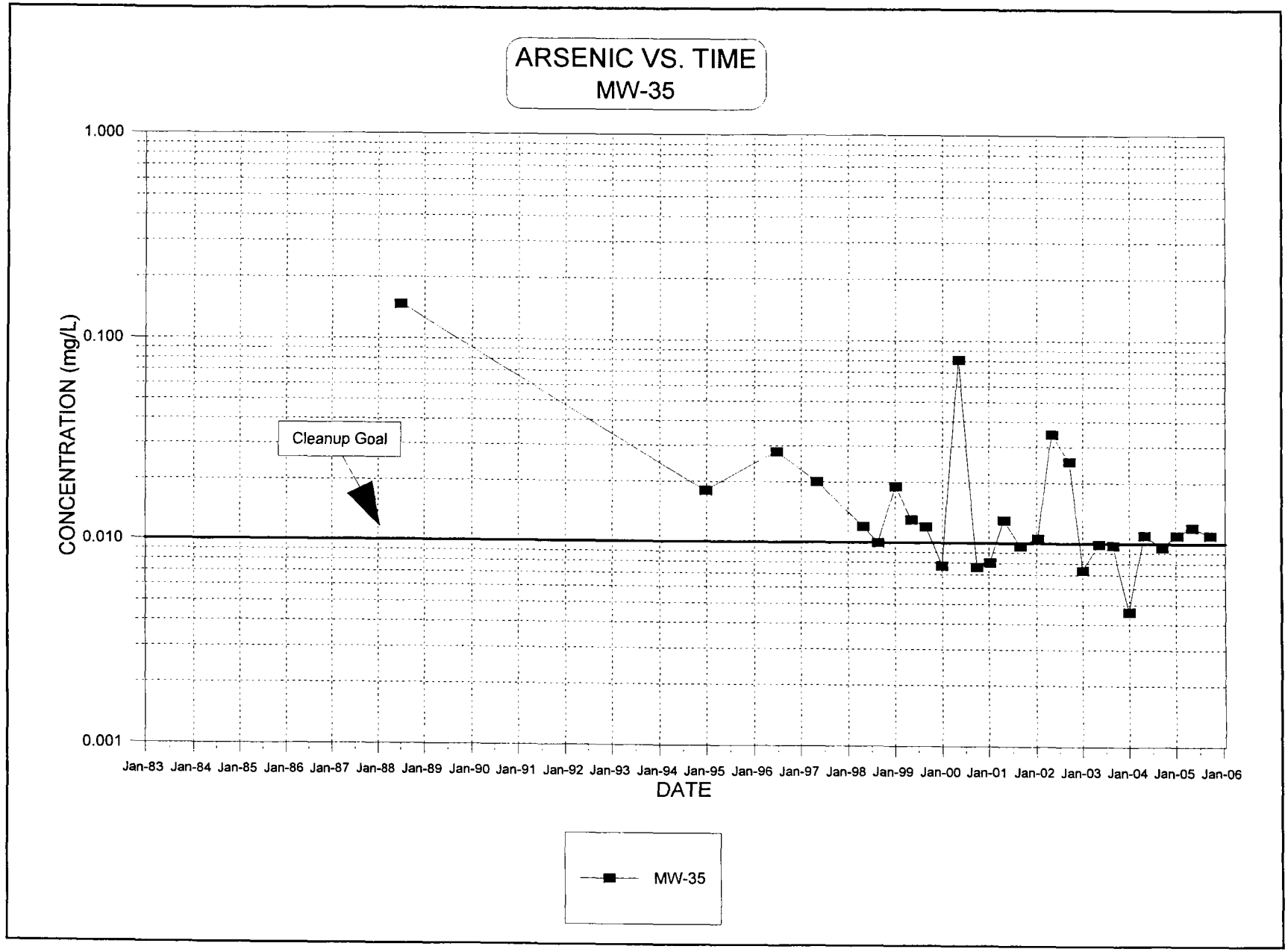

ARSENIC VS. TIME
MW-18
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-18

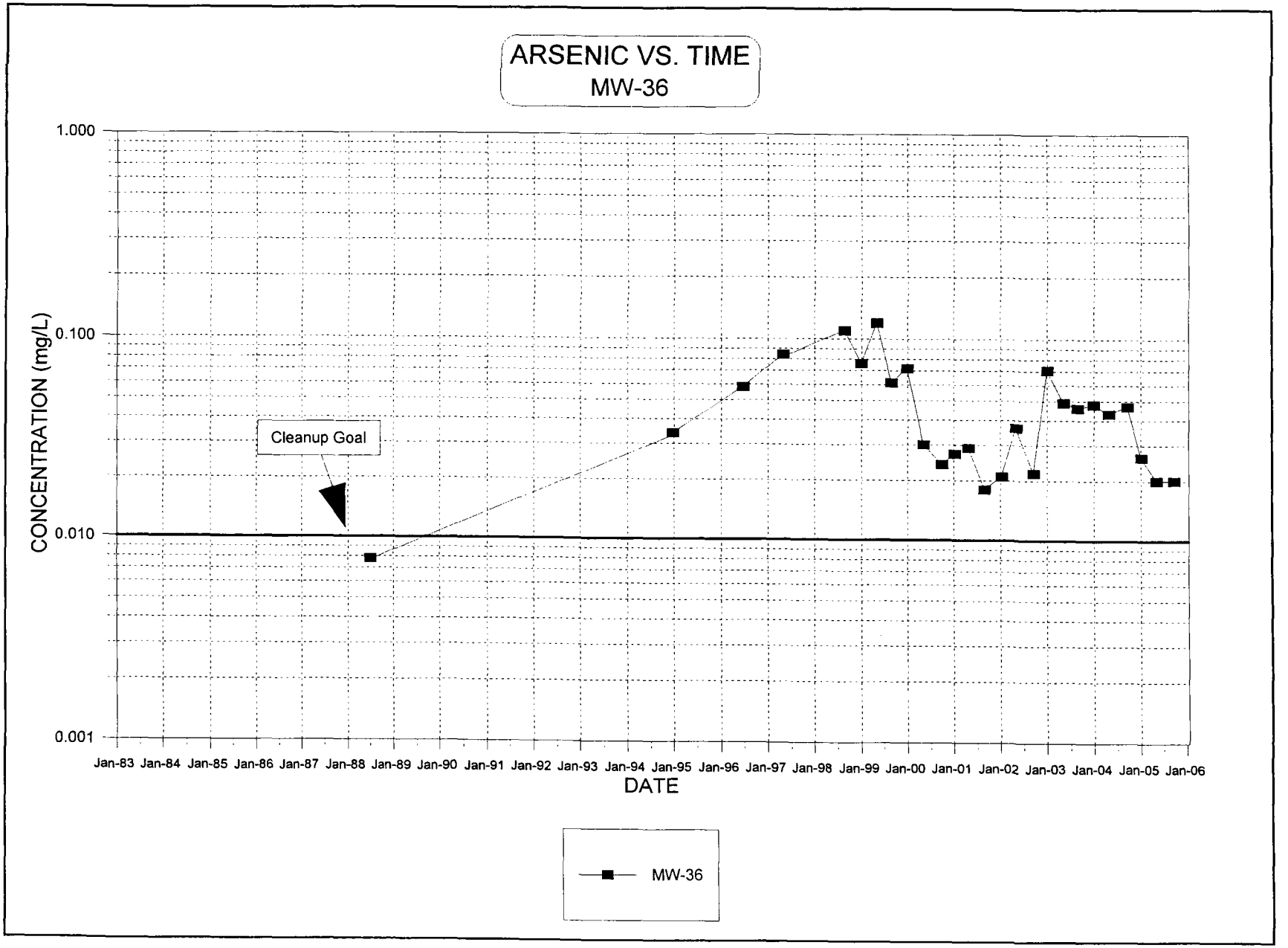

ARSENIC VS. TIME
MW-28
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-28
* = Below detection. Value plotted is detection limit.

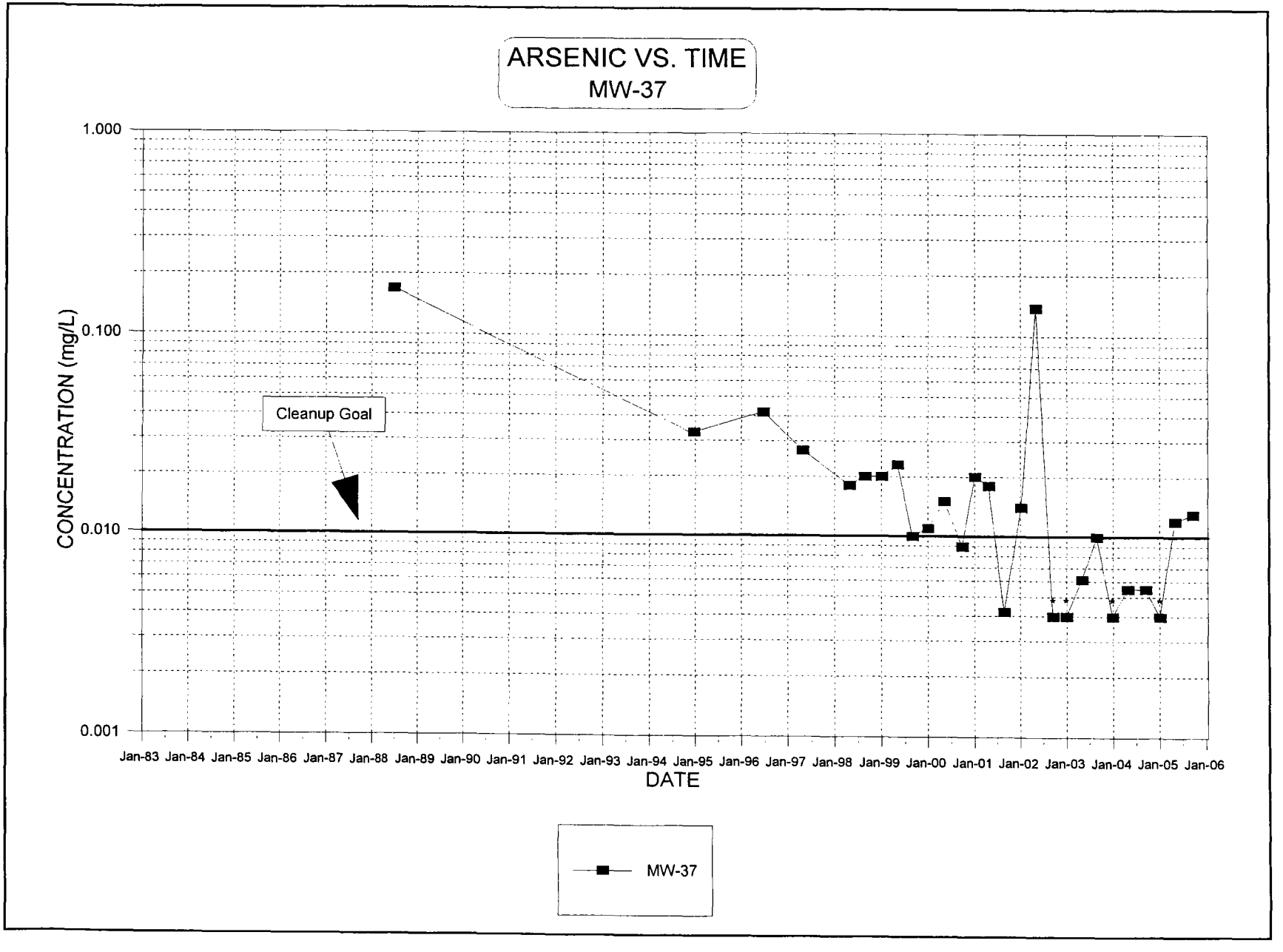

ARSENIC VS. TIME
MW-31
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-31



* = Below detection. Value plotted is detection limit.

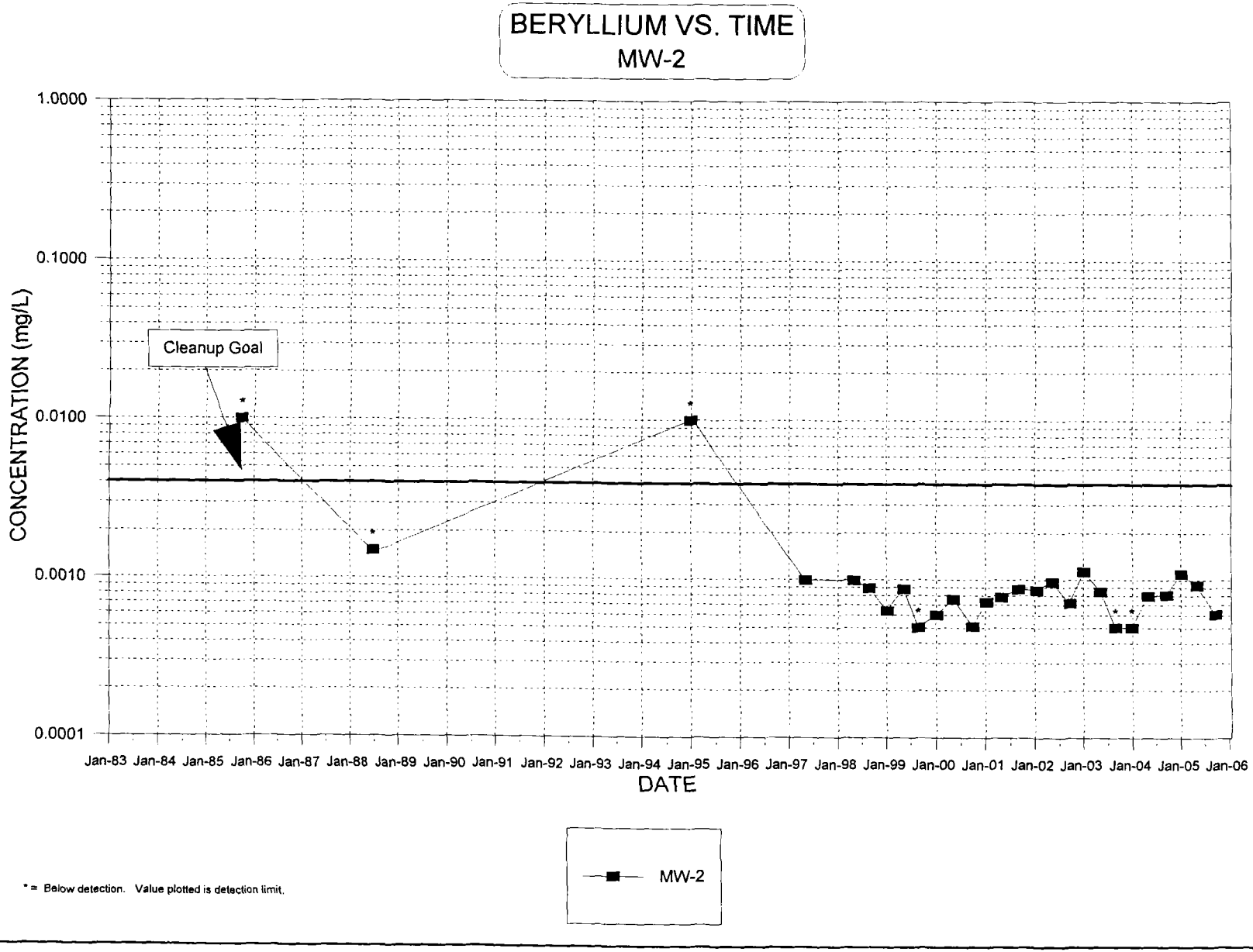

ARSENIC VS. TIME
MW-35
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-35


ARSENIC VS. TIME
MW-36
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-36

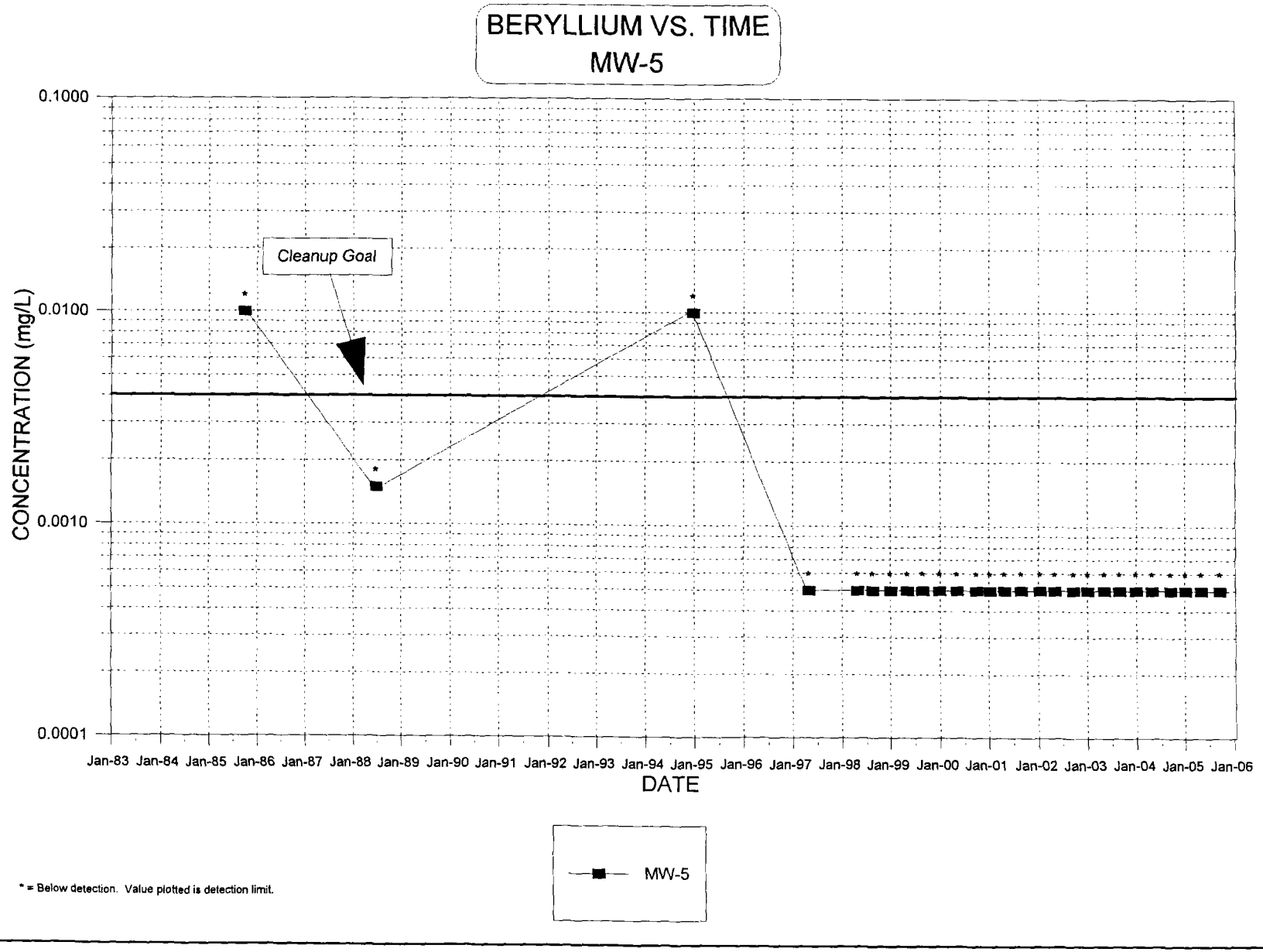

ARSENIC VS. TIME
MW-37
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-37

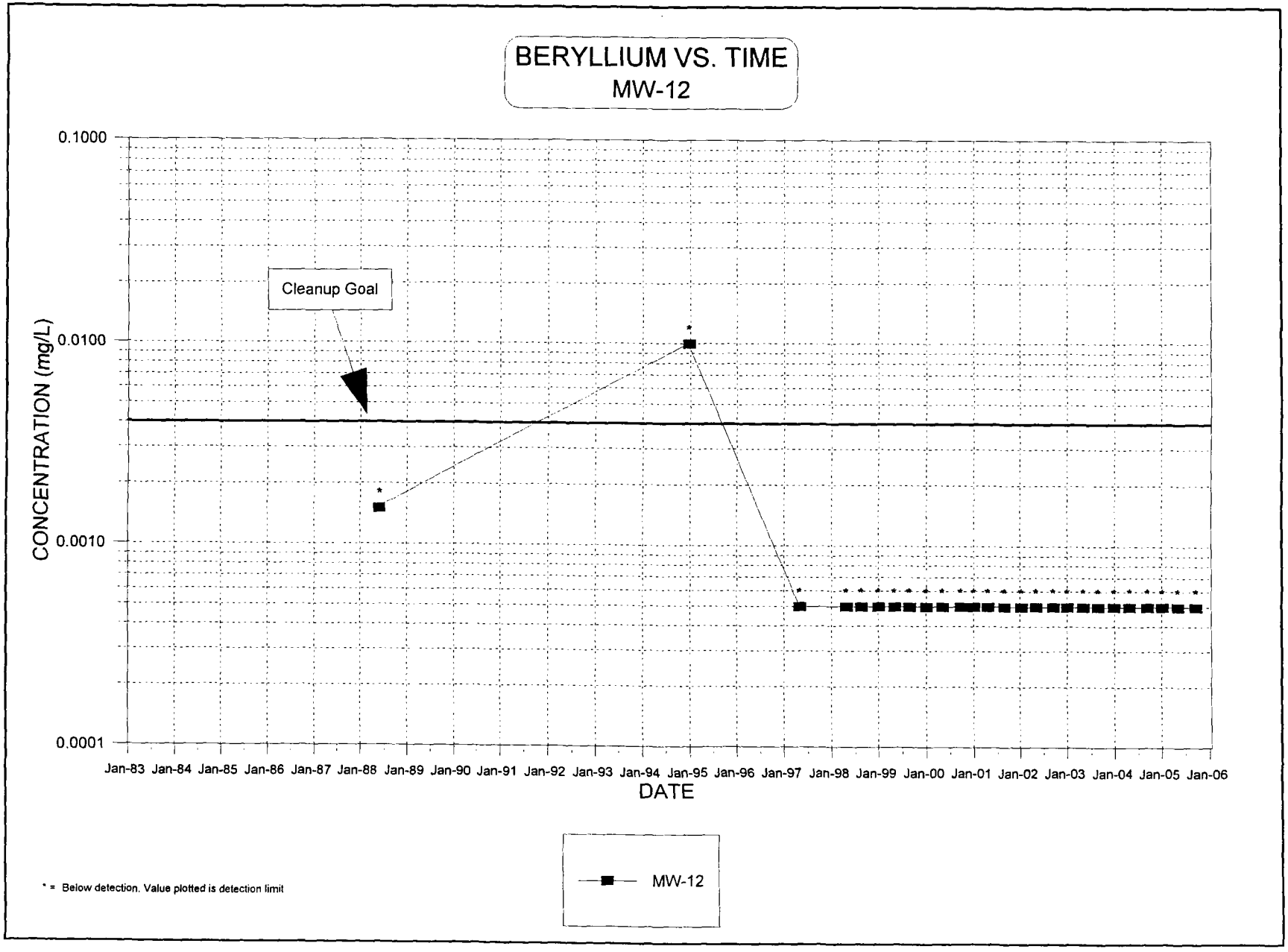
APPENDIX D-5

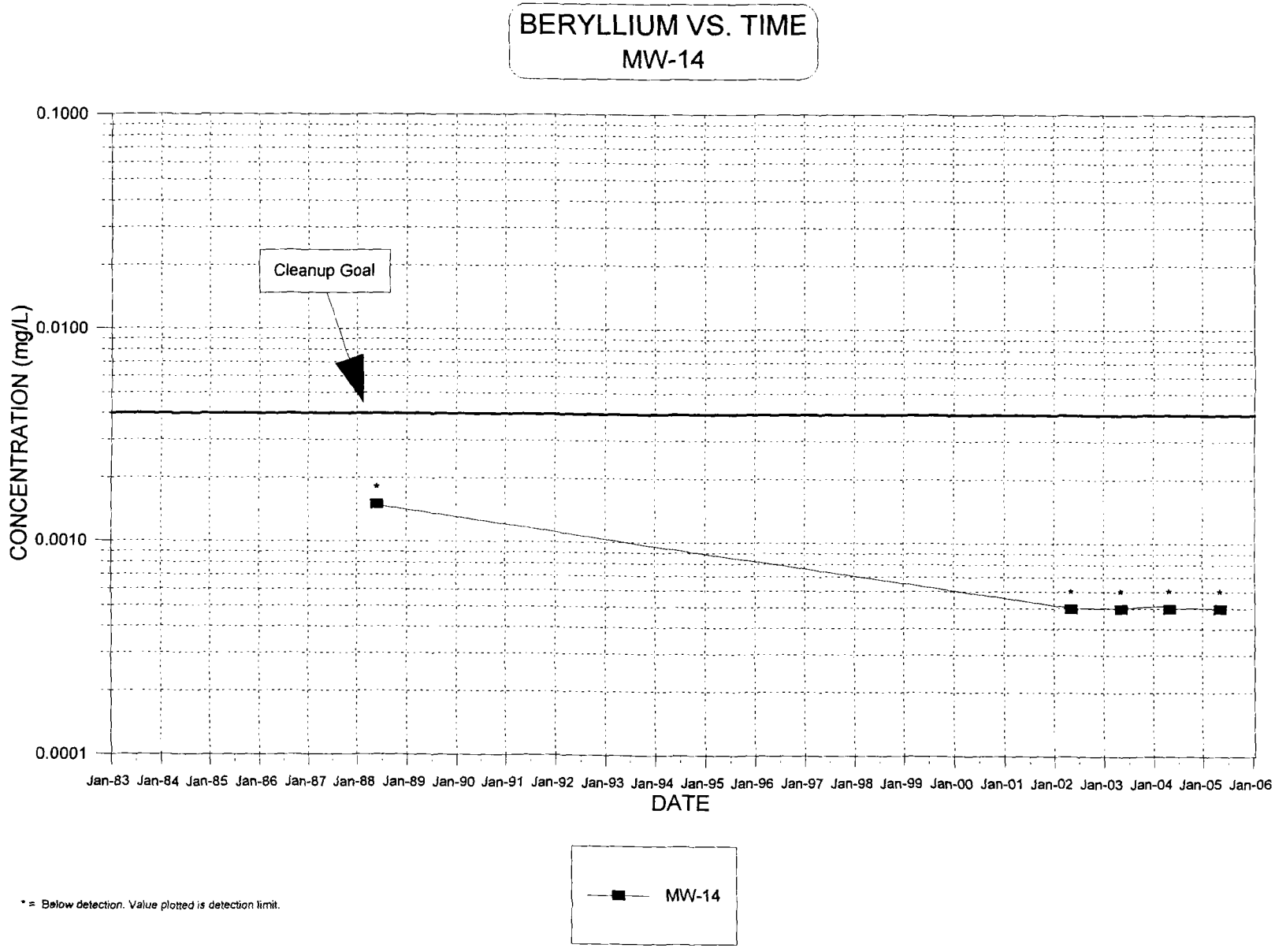
BERYLLIUM



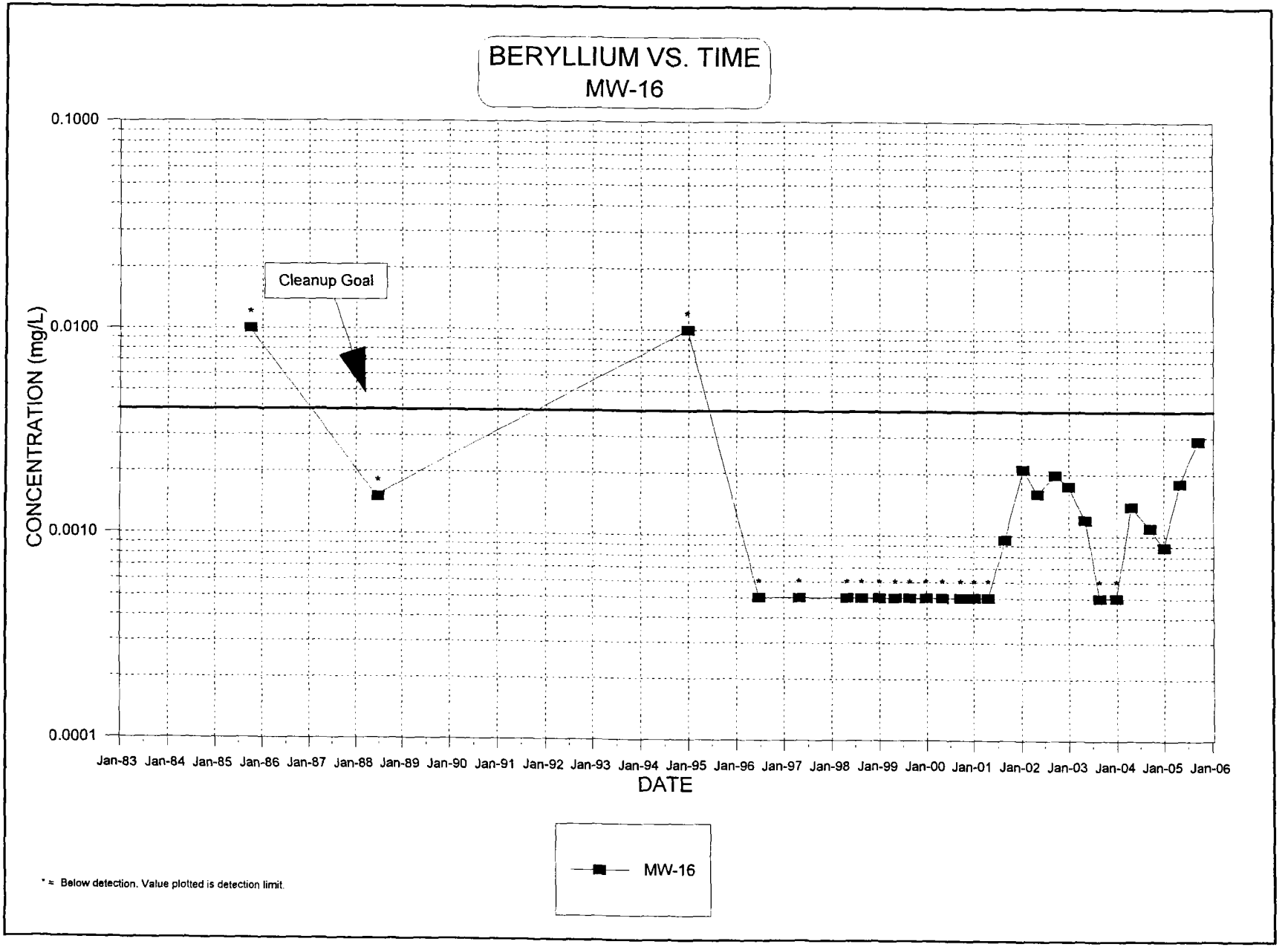
* = Below detection. Value plotted is detection limit.

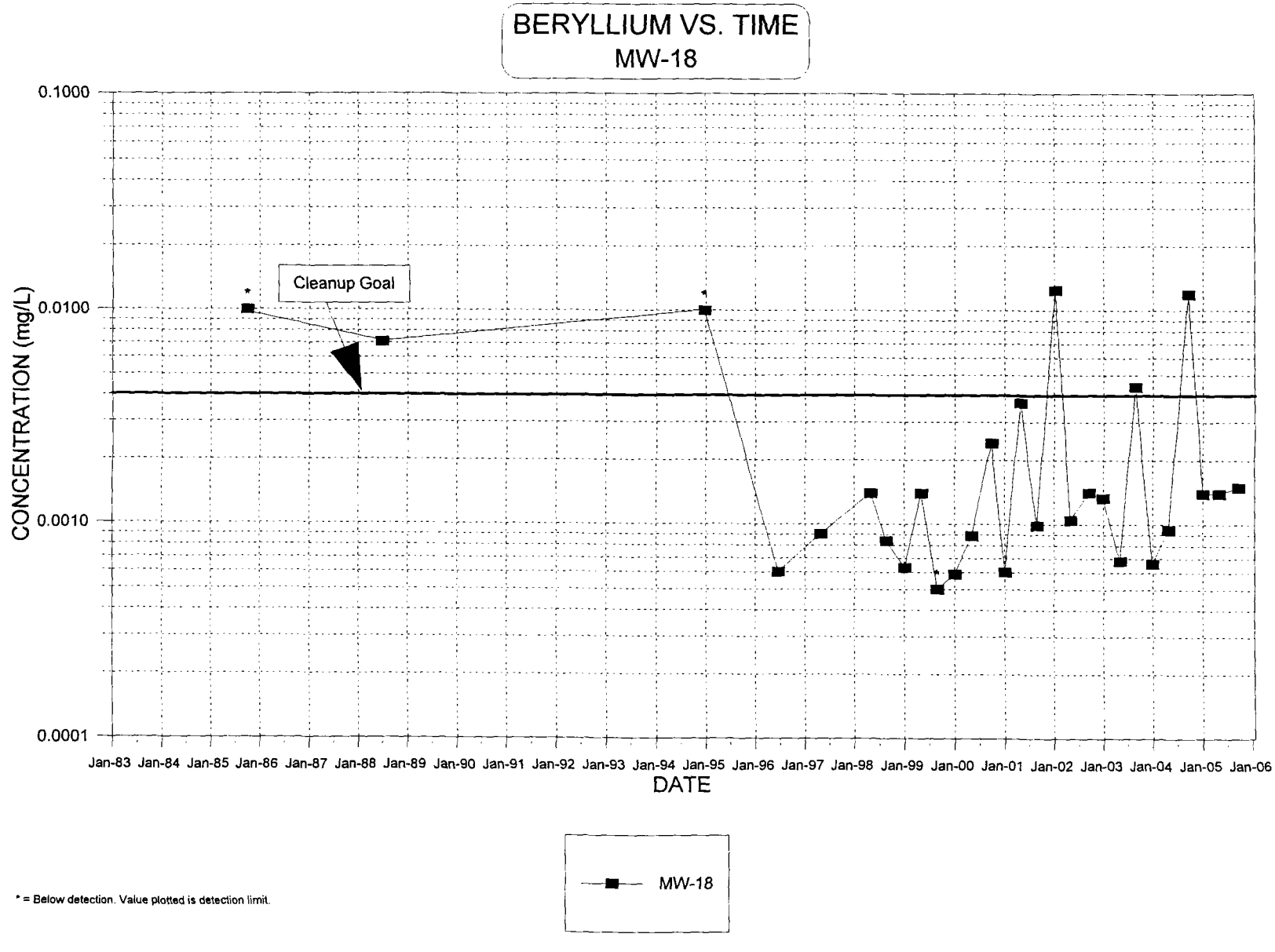

BERYLLIUM VS. TIME
MW-5
0.1000
0.0100
0.0010
0.0001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-5
* = Below detection. Value plotted is detection limit.


BERYLLIUM VS. TIME
MW-12
0.1000
0.0100
0.0010
0.0001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-12
* = Below detection. Value plotted is detection limit

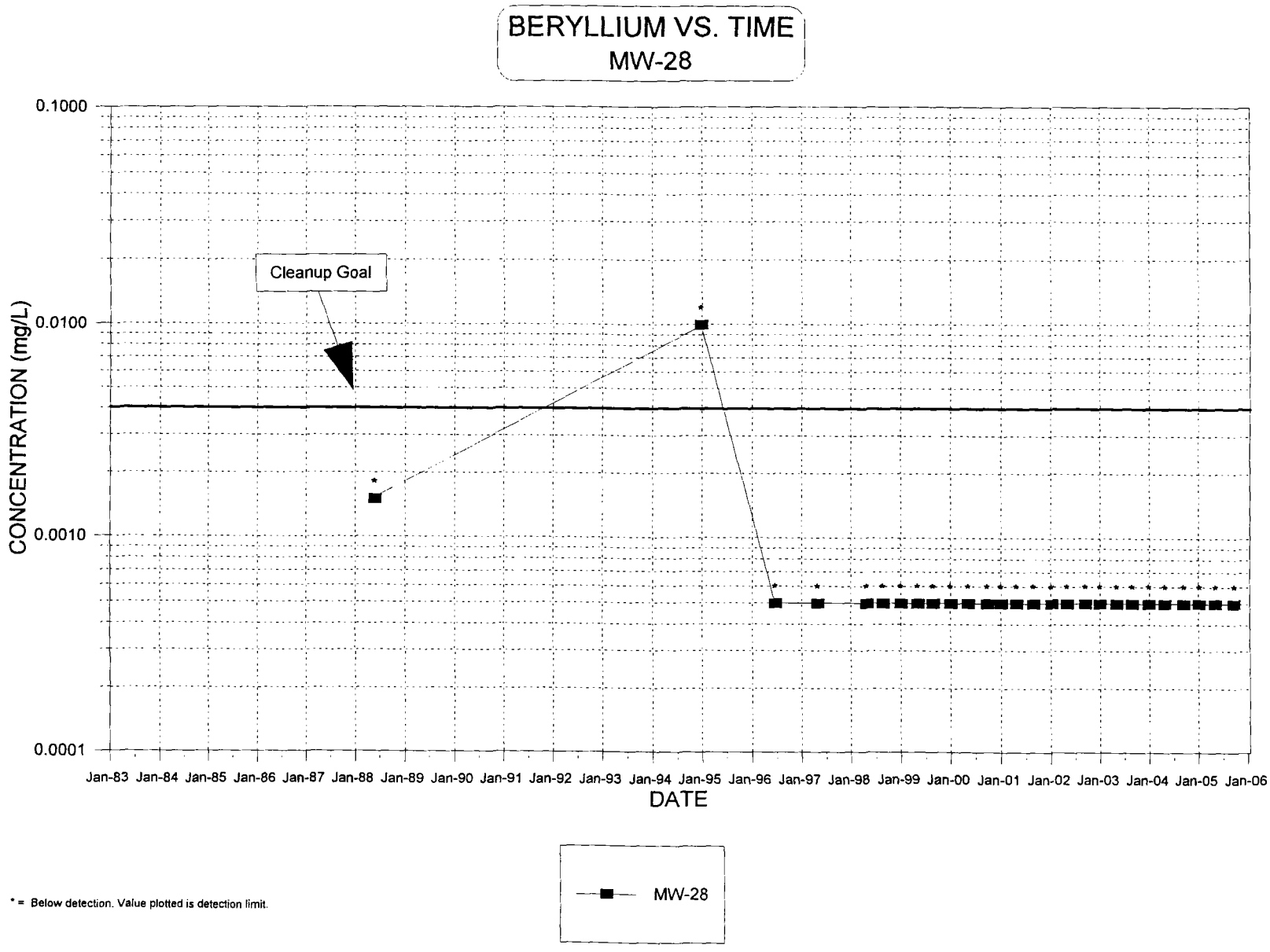


* = Below detection. Value plotted is detection limit.

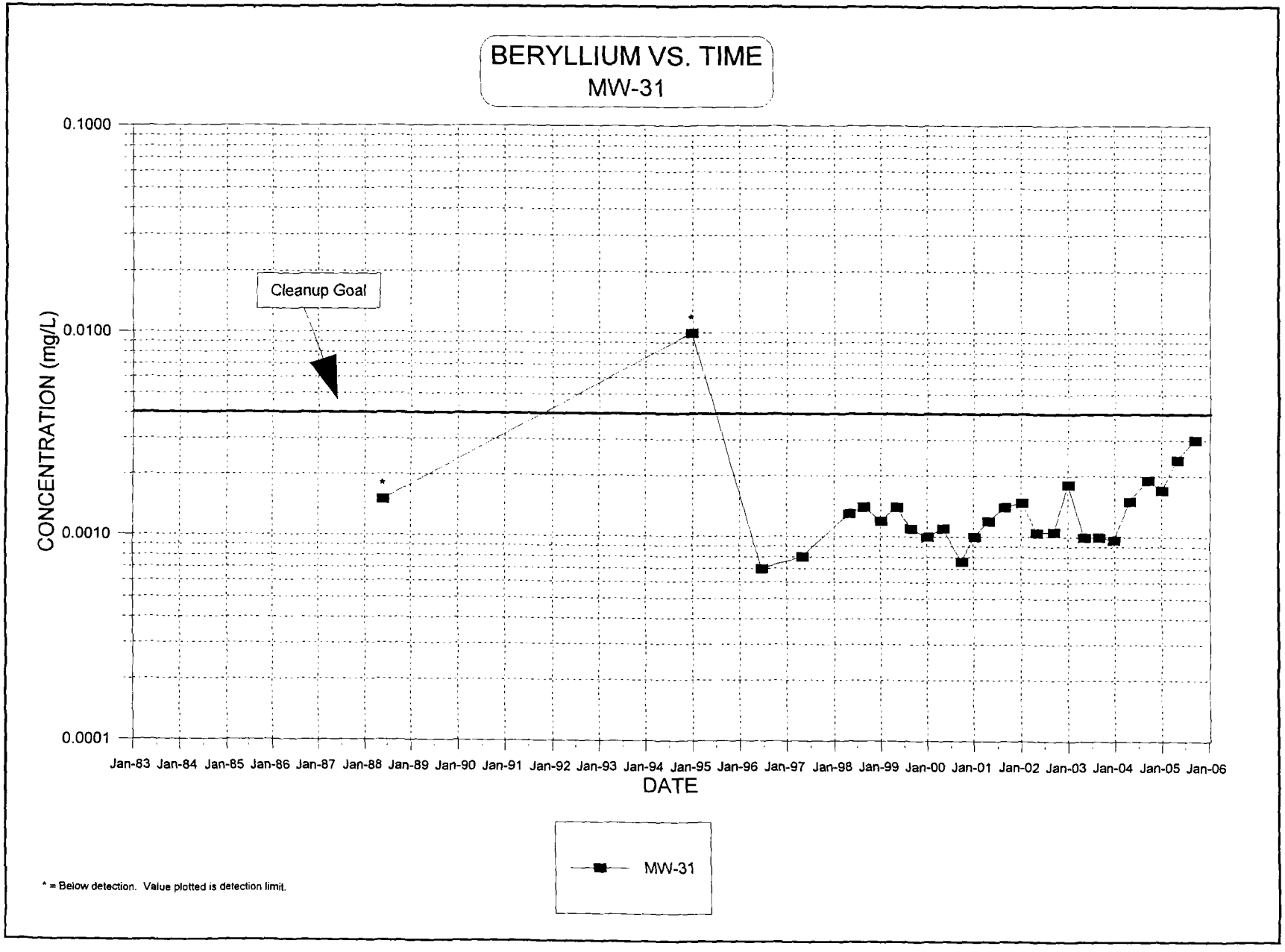

BERYLLIUM VS. TIME
MW-16
0.1000
0.0100
0.0010
0.0001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-16
* = Below detection. Value plotted is detection limit.

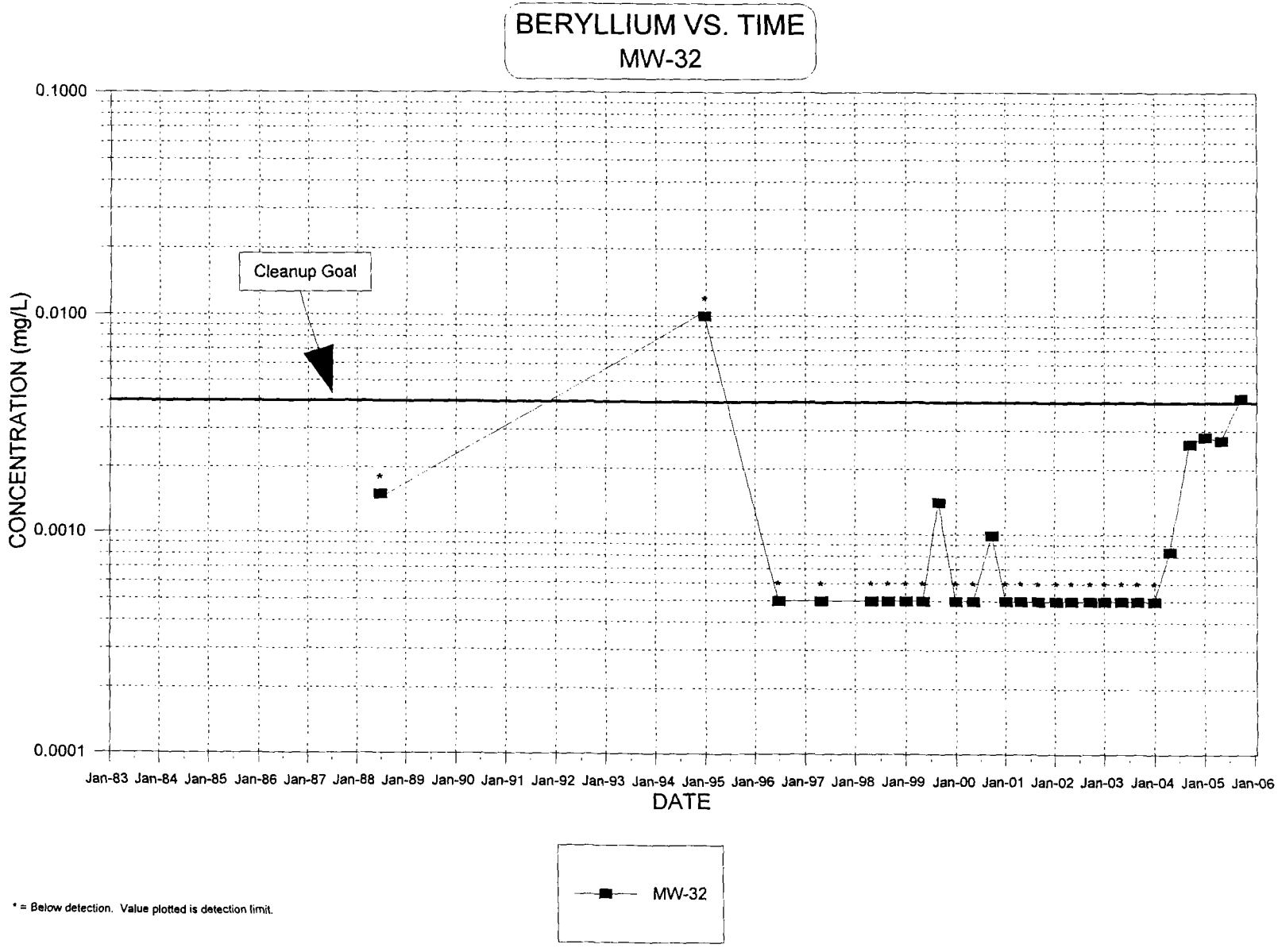


* = Below detection. Value plotted is detection limit.

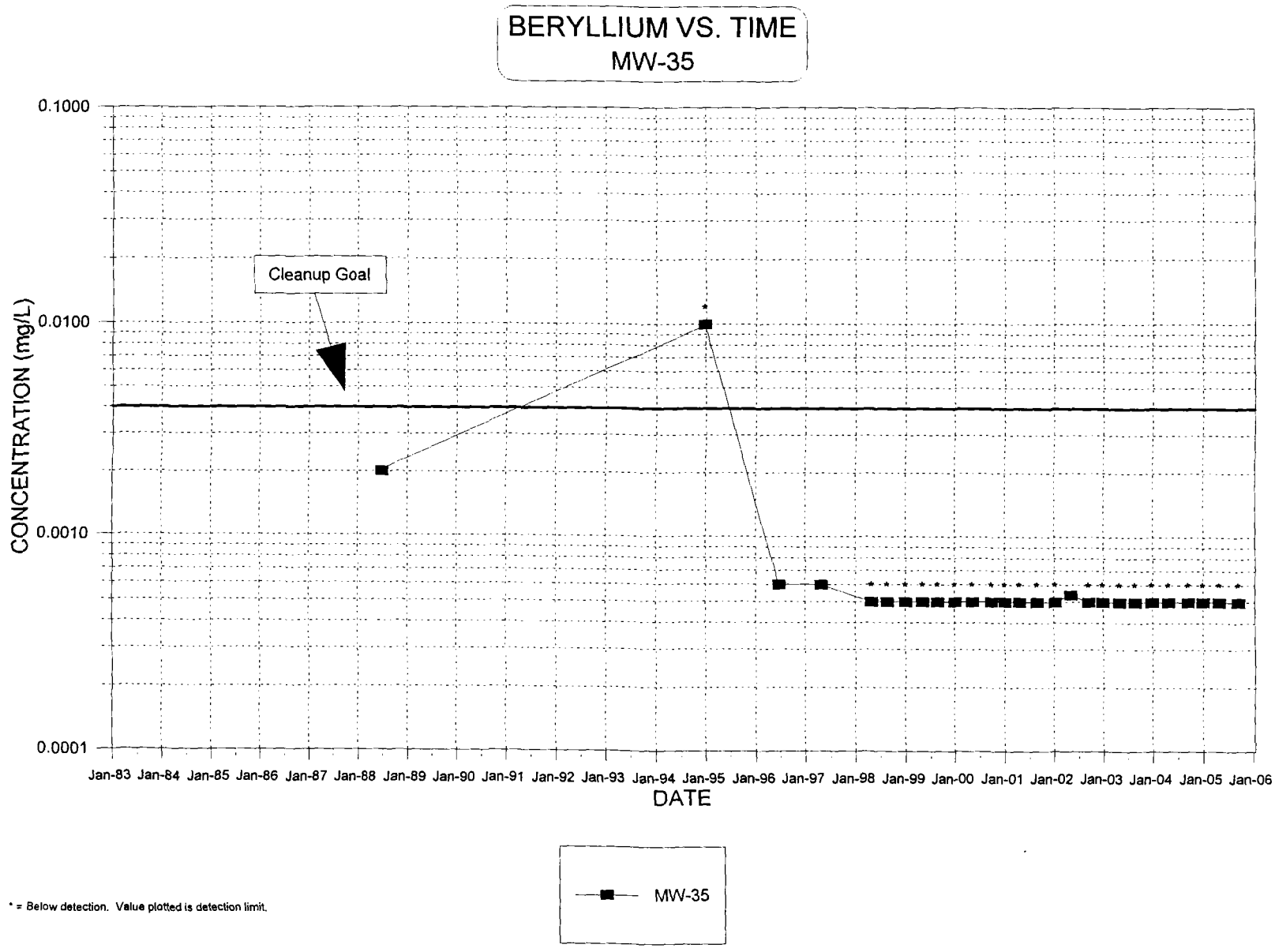


* = Below detection. Value plotted is detection limit.

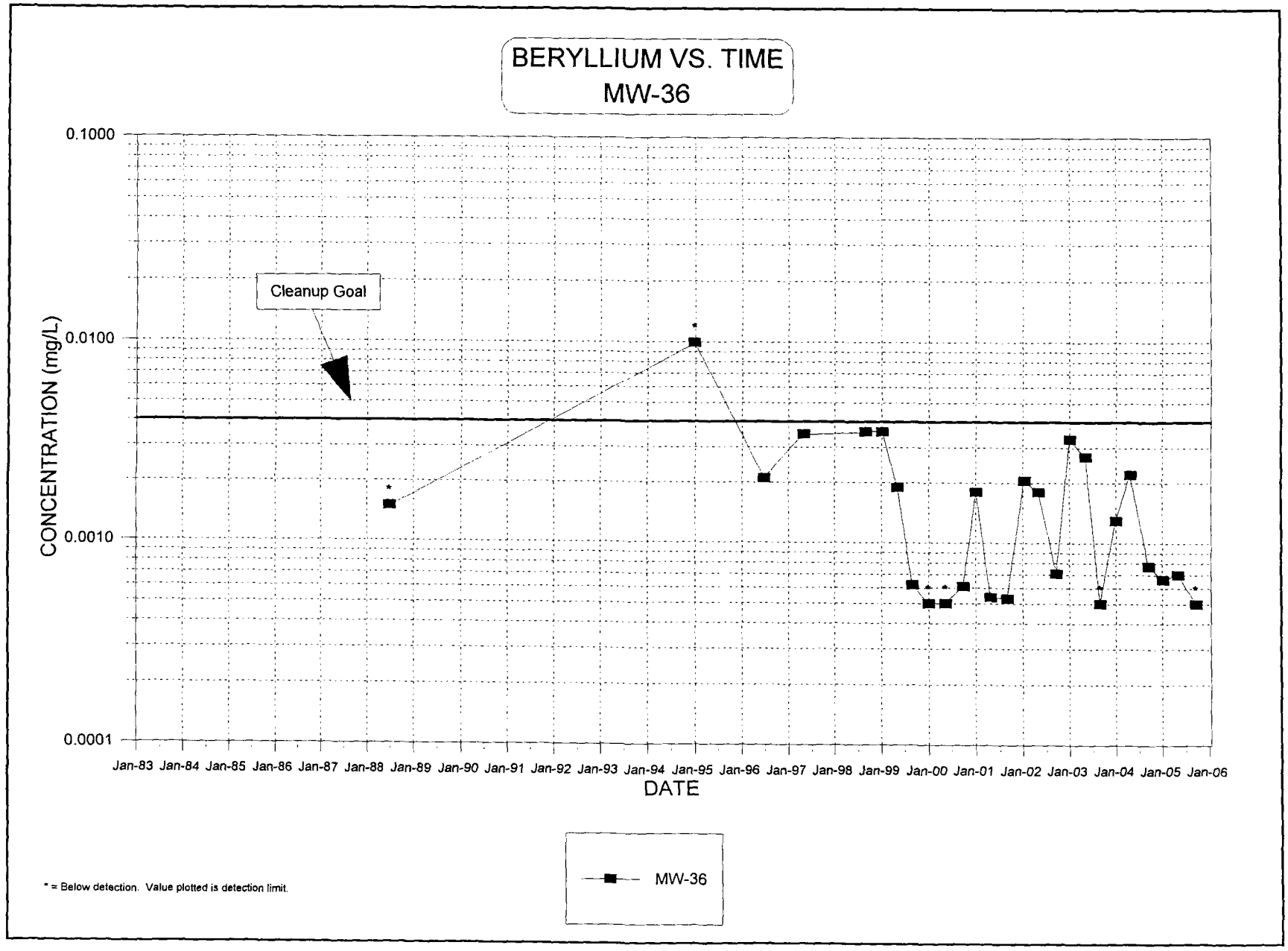

BERYLLIUM VS. TIME
MW-31
0.1000
0.0100
0.0010
0.0001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-31
* = Below detection. Value plotted is detection limit.

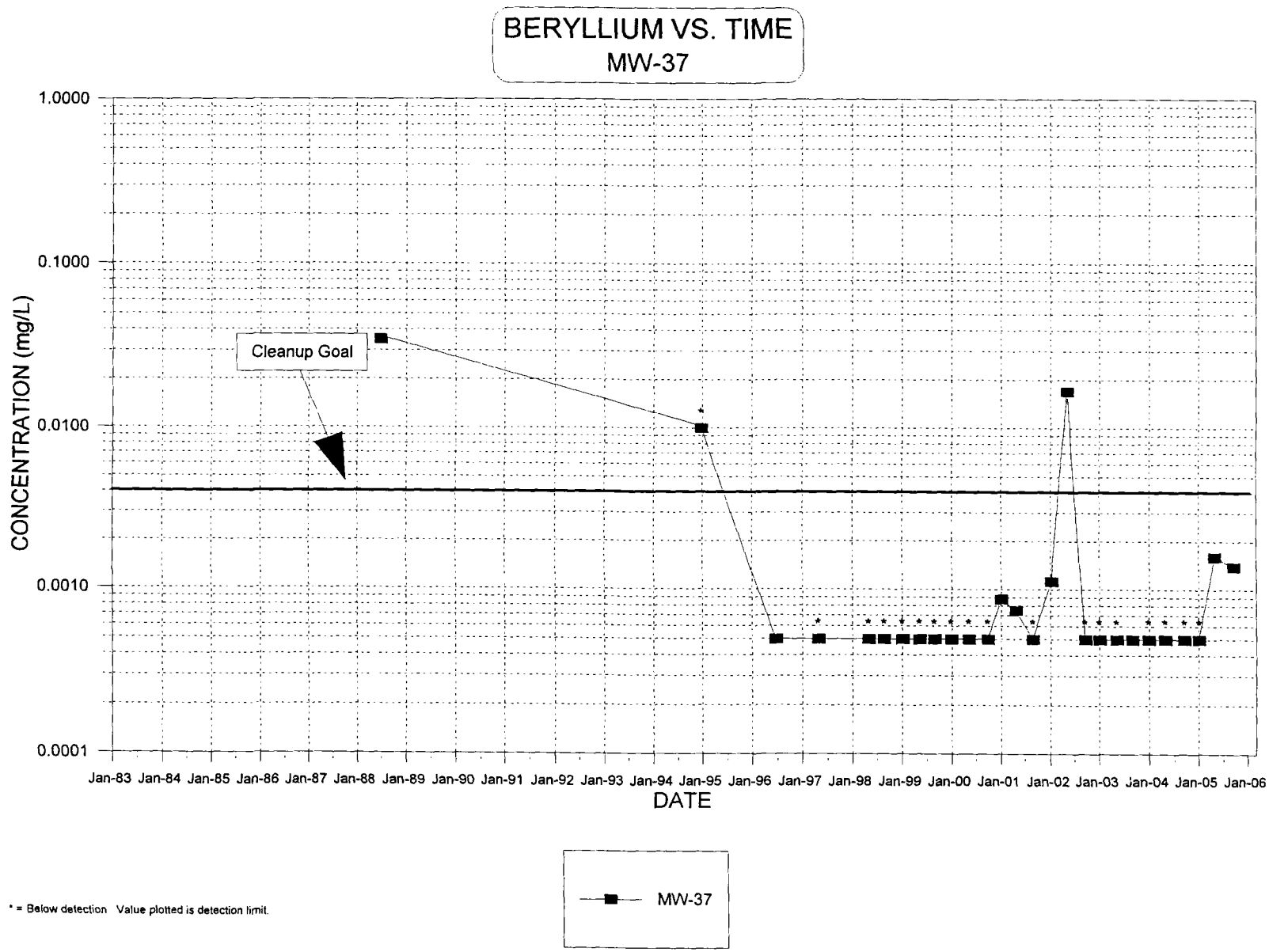


* = Below detection. Value plotted is detection limit.



* = Below detection. Value plotted is detection limit.

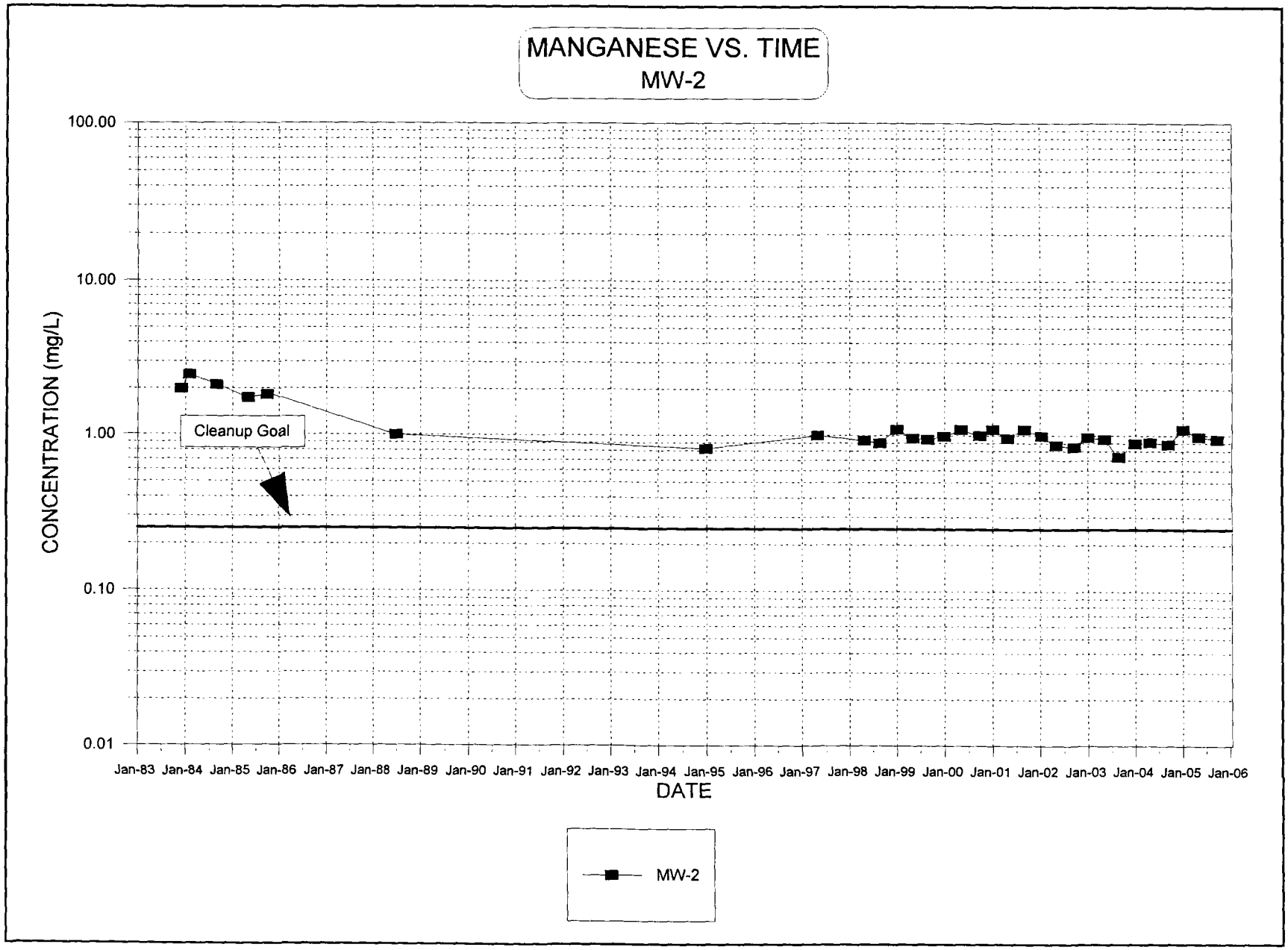

BERYLLIUM VS. TIME
MW-36
0.1000
0.0100
0.0010
0.0001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-36
* = Below detection. Value plotted is detection limit.

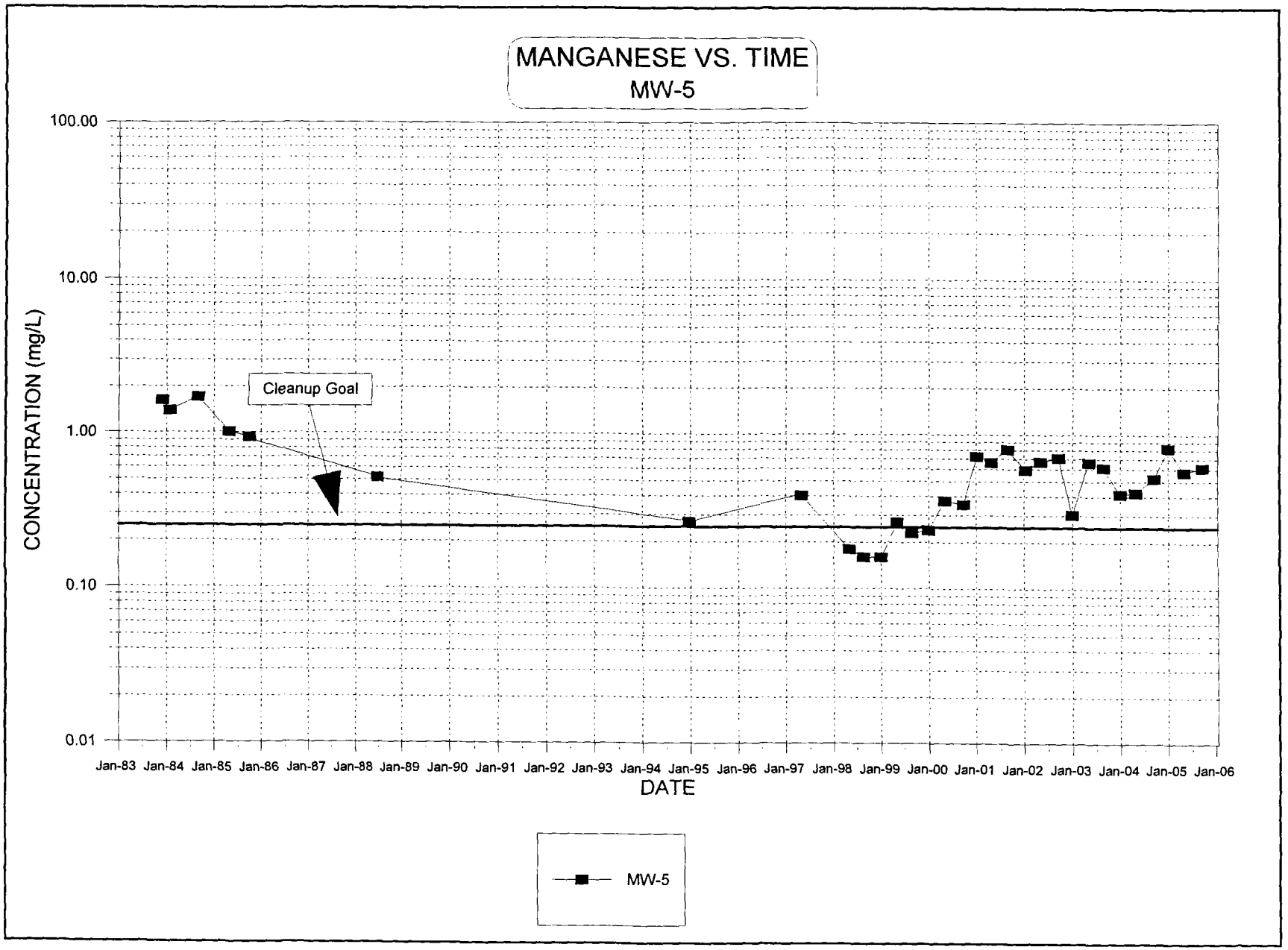


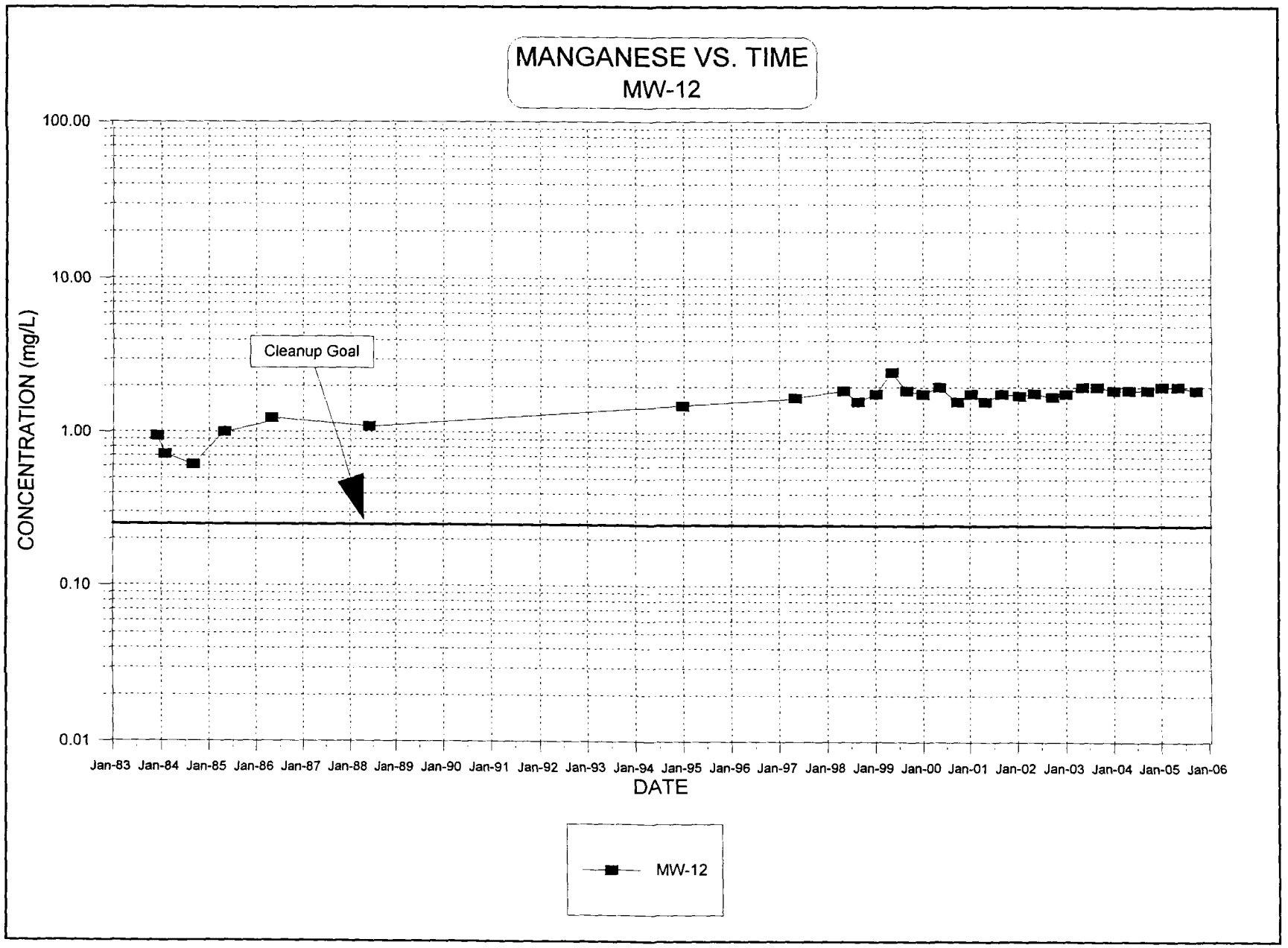
* = Below detection Value plotted is detection limit.

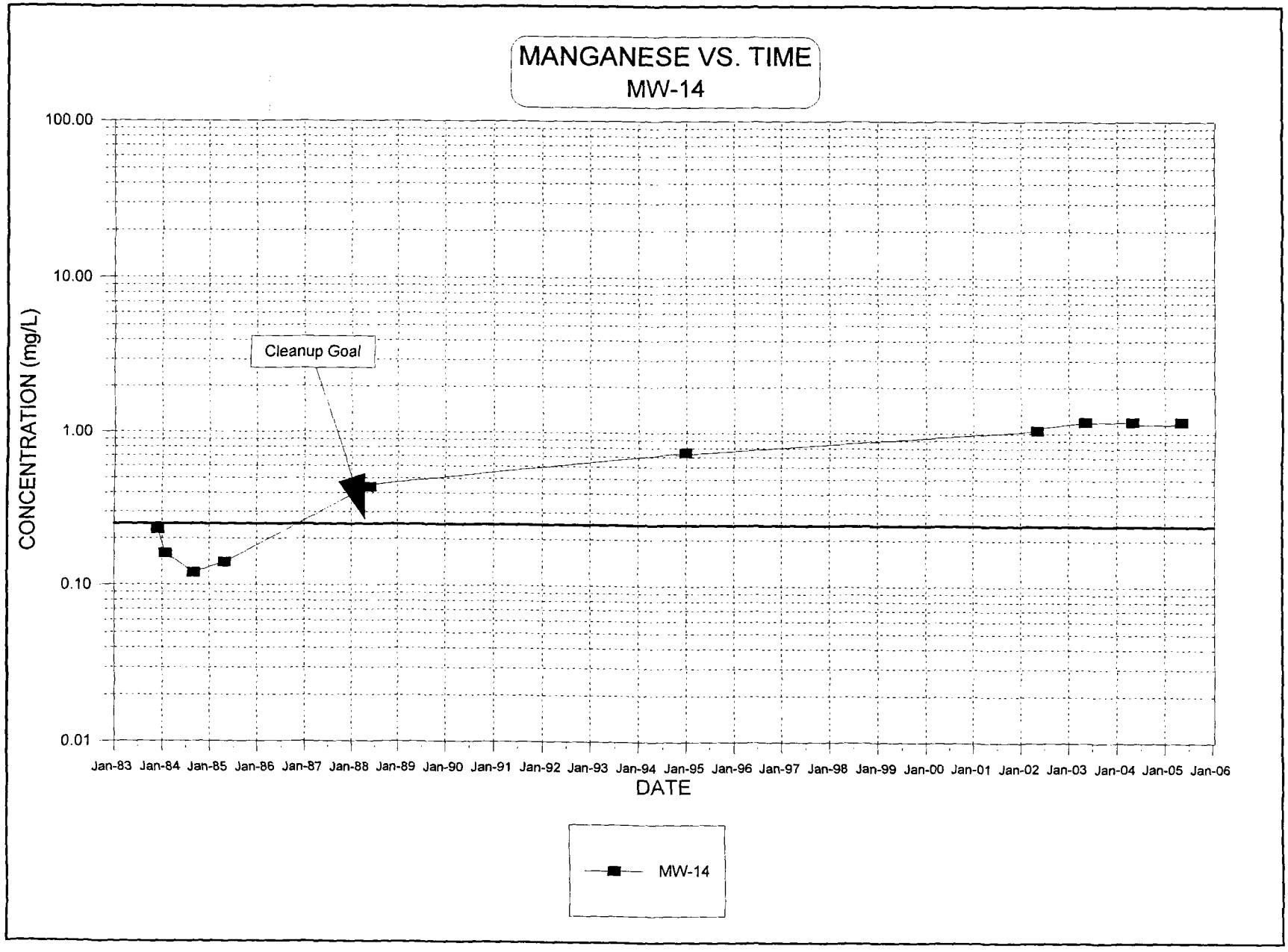
APPENDIX D-6

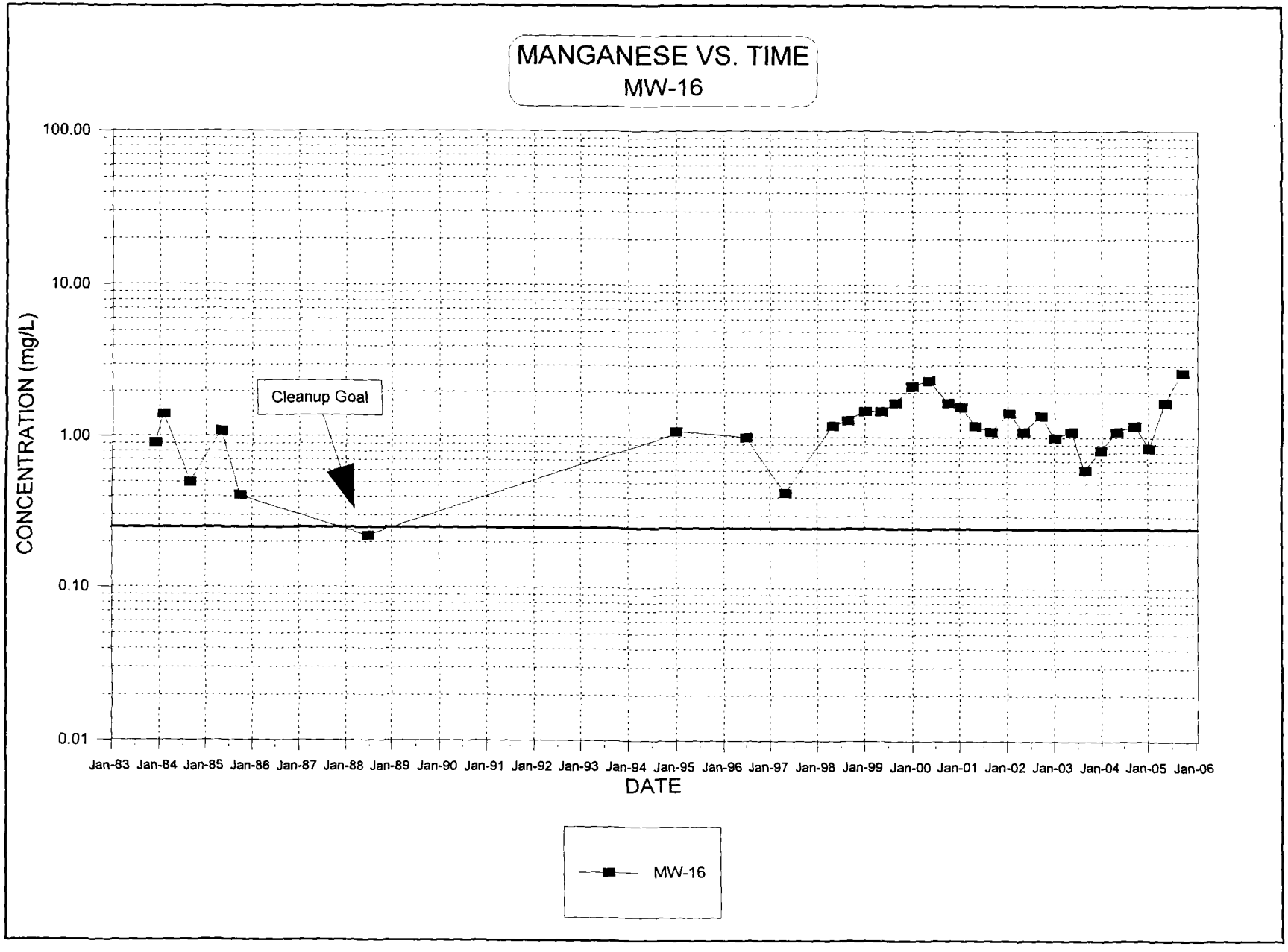
MANGANESE

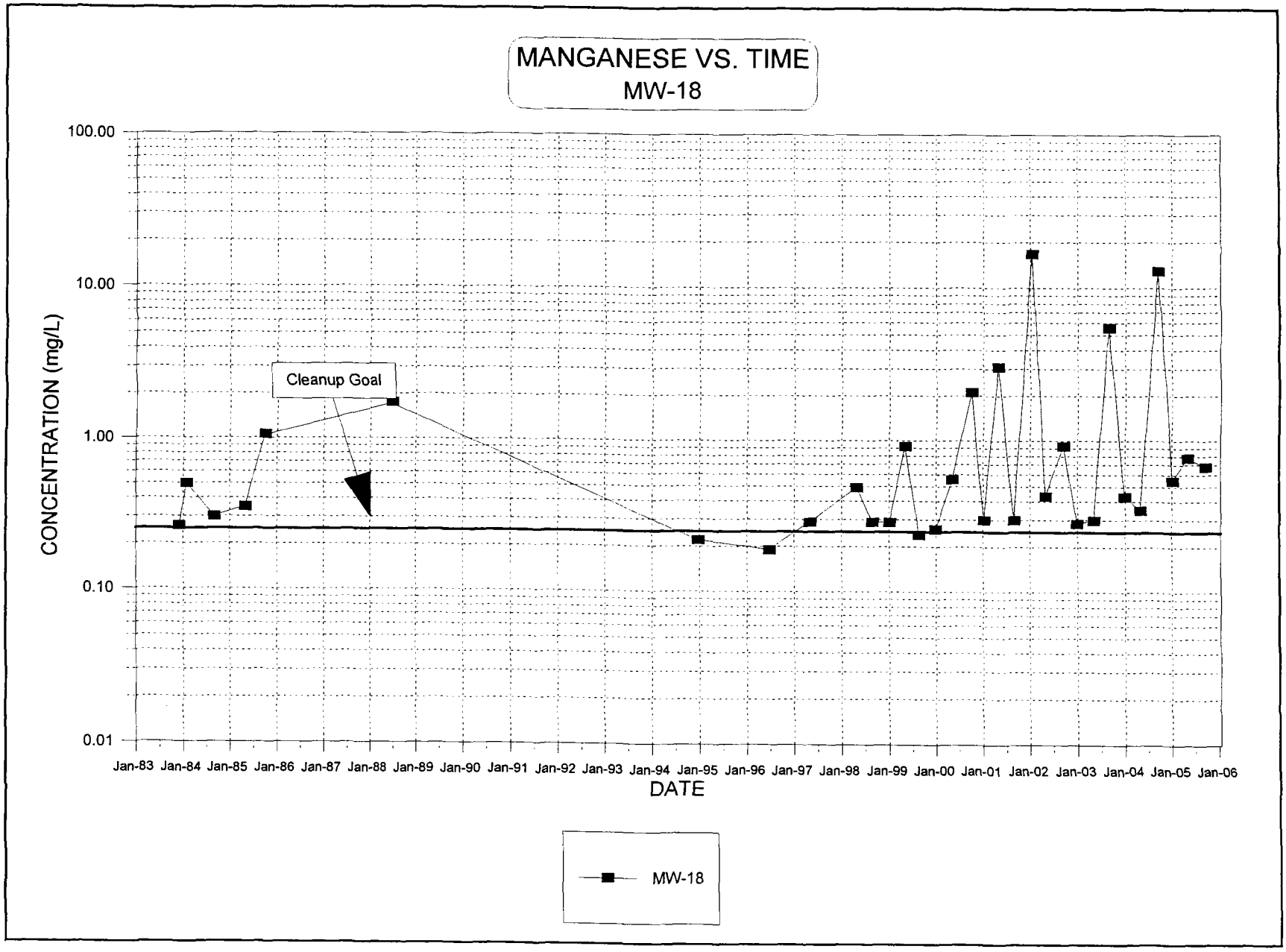

MANGANESE VS. TIME
MW-2
100.00
10.00
1.00
0.10
0.01
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-2

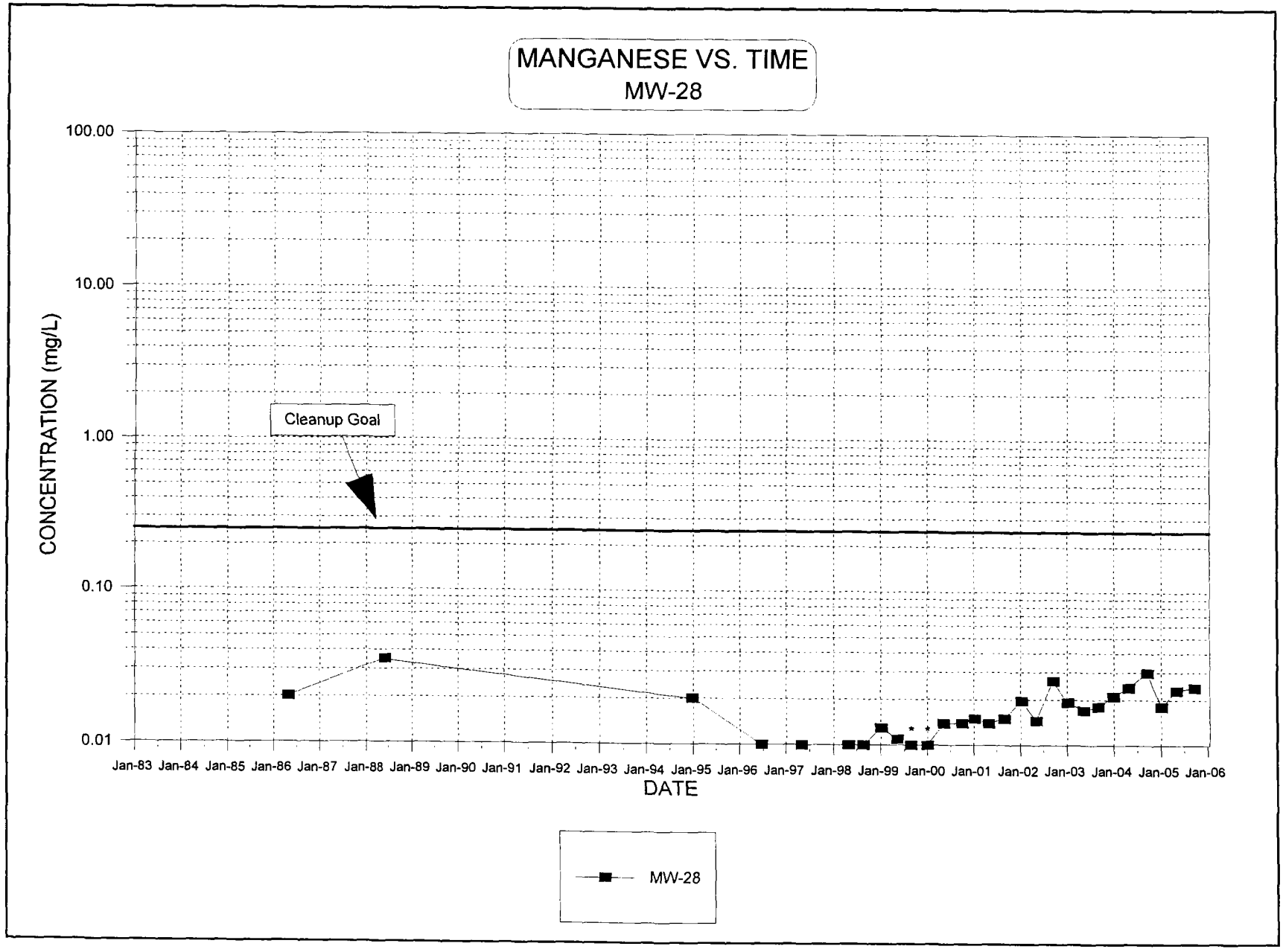

MANGANESE VS. TIME
MW-5
100.00
10.00
1.00
0.10
0.01
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-5

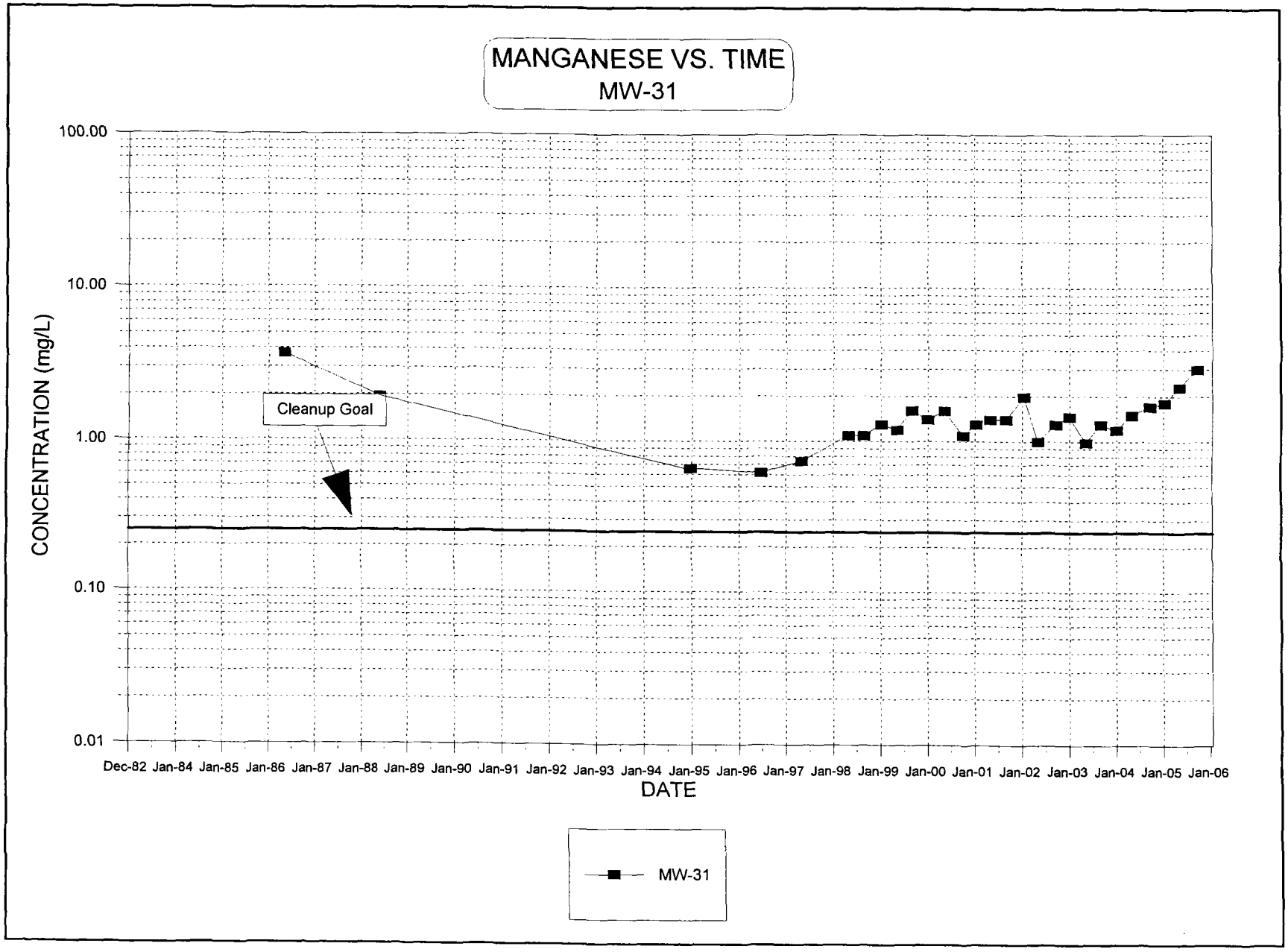

MANGANESE VS. TIME
MW-12
100.00
10.00
1.00
0.10
0.01
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-12

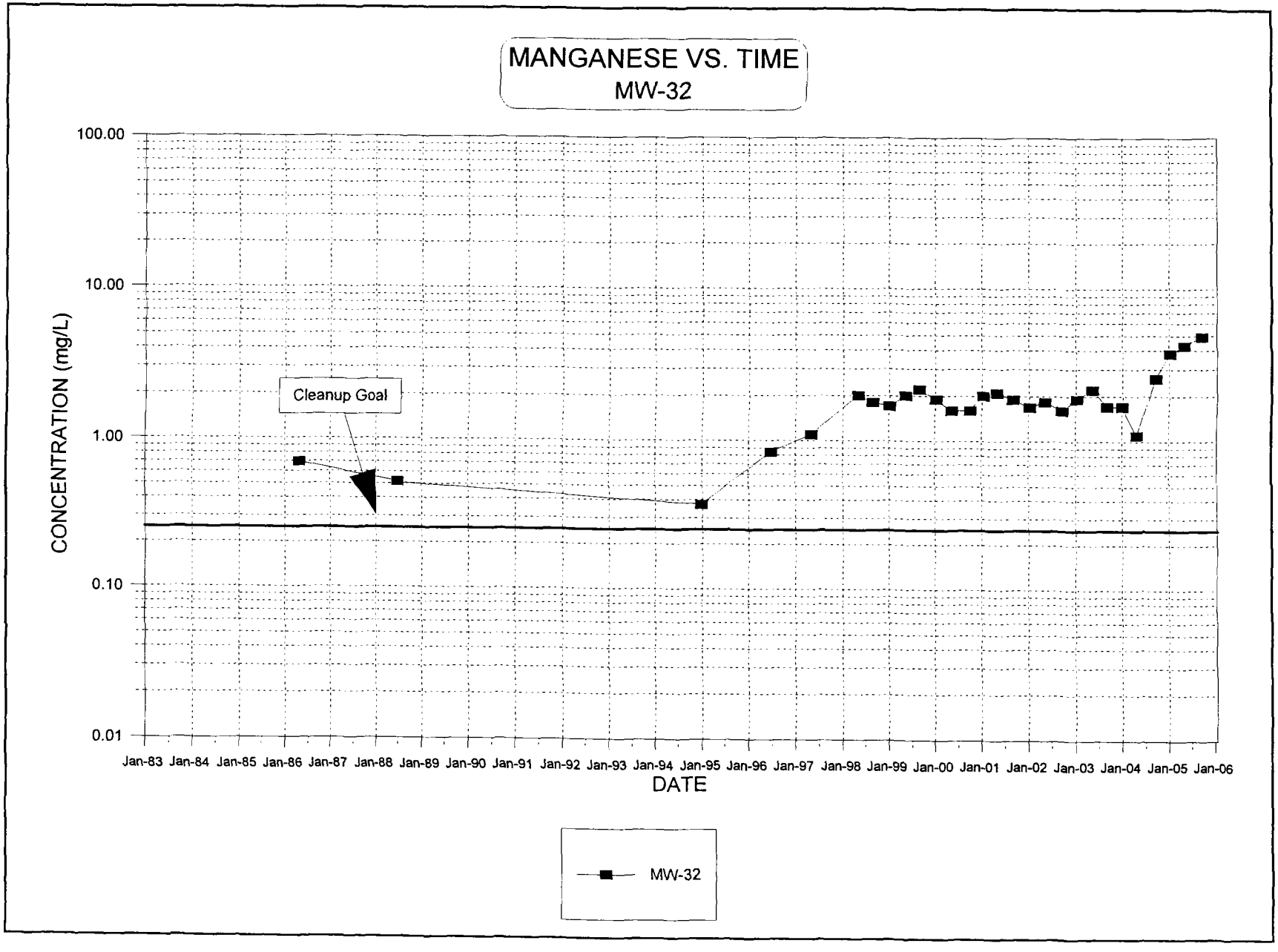

MANGANESE VS. TIME
MW-14
100.00
10.00
1.00
0.10
0.01
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-14

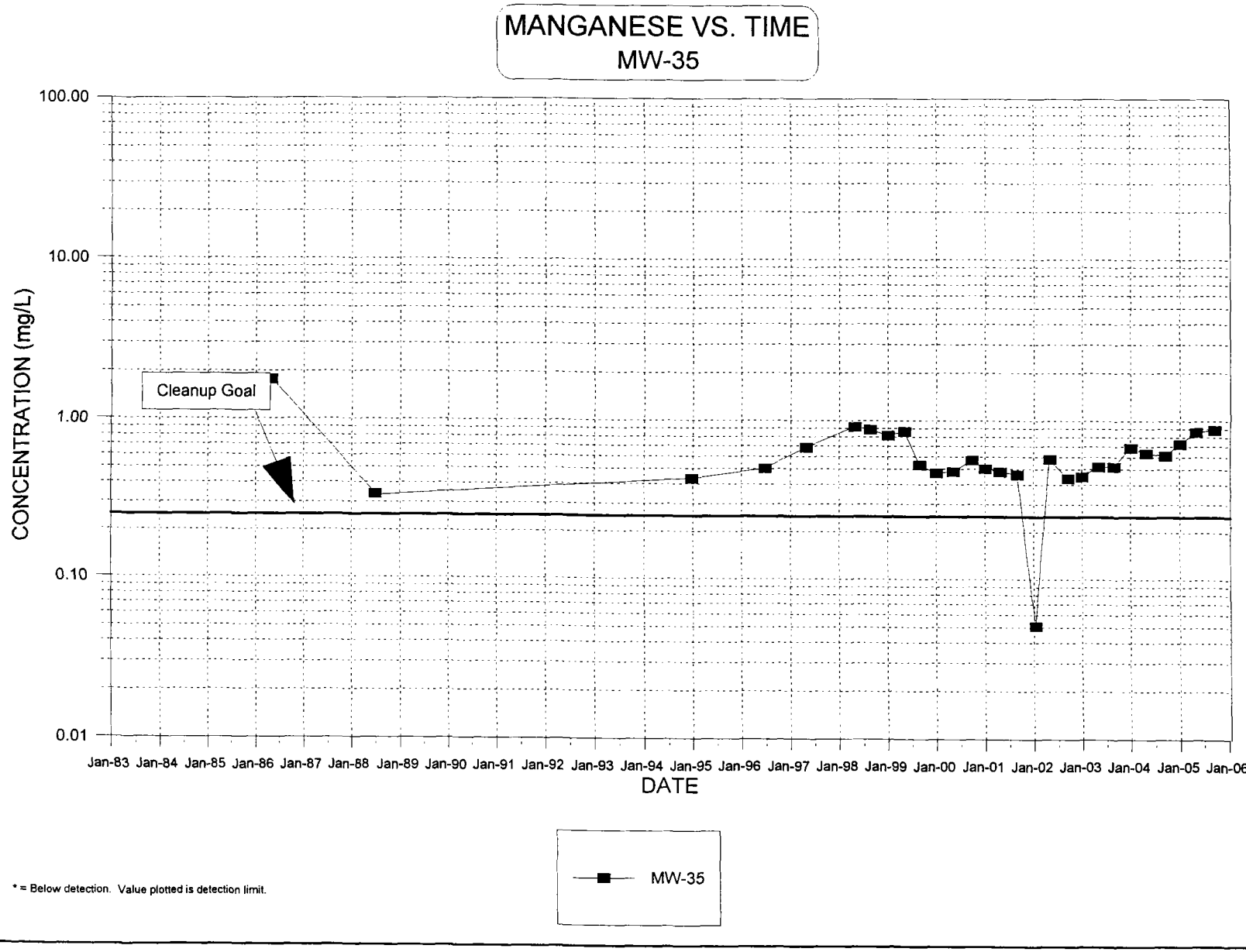

MANGANESE VS. TIME
MW-16
100.00
10.00
1.00
0.10
0.01
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-16


MANGANESE VS. TIME
MW-18
100.00
10.00
1.00
0.10
0.01
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-18

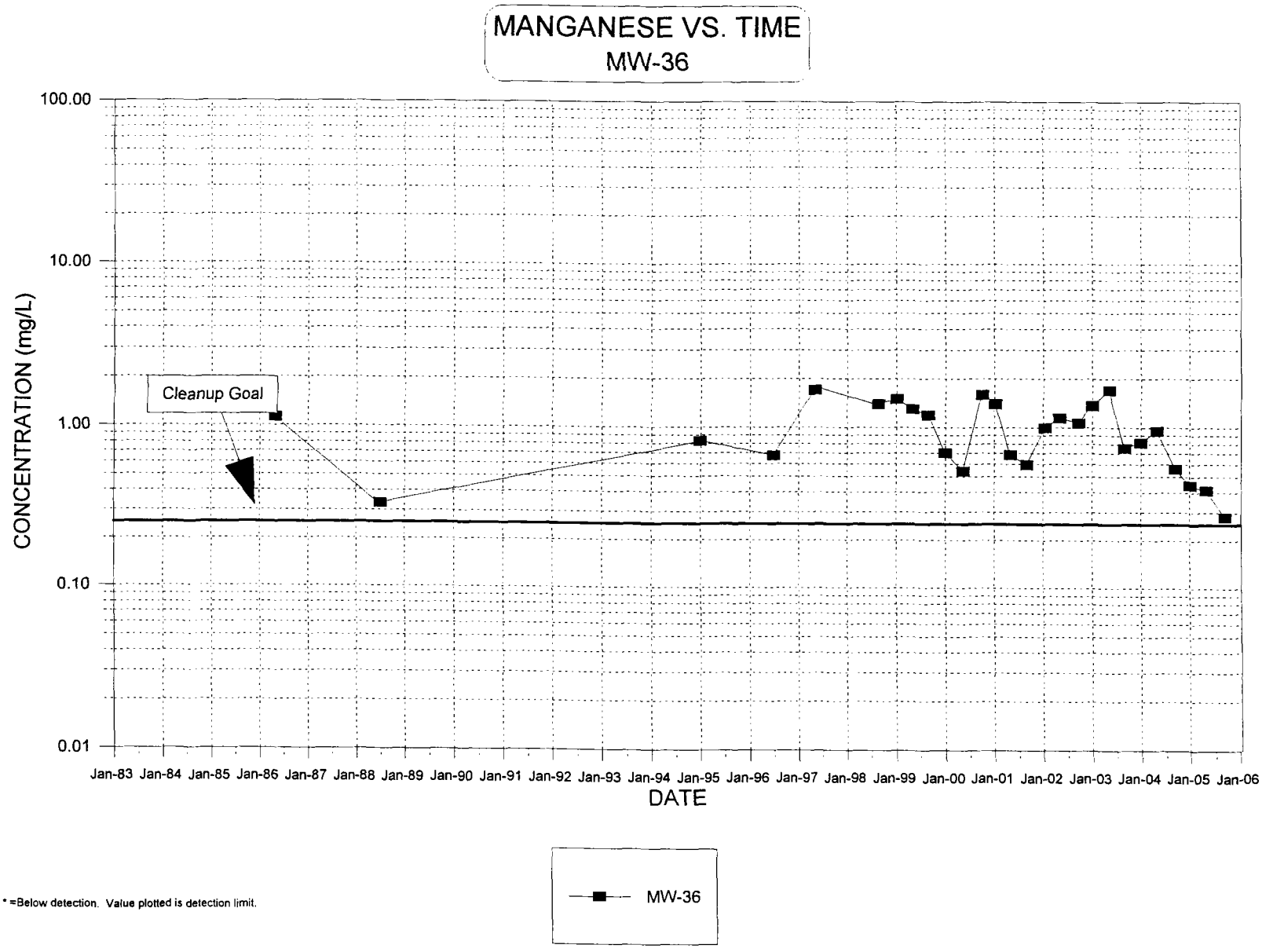

MANGANESE VS. TIME
MW-28
100.00
10.00
1.00
0.10
0.01
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-28


MANGANESE VS. TIME
MW-31
100.00
10.00
1.00
0.10
0.01
CONCENTRATION (mg/L)
Cleanup Goal
Dec-82 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-31

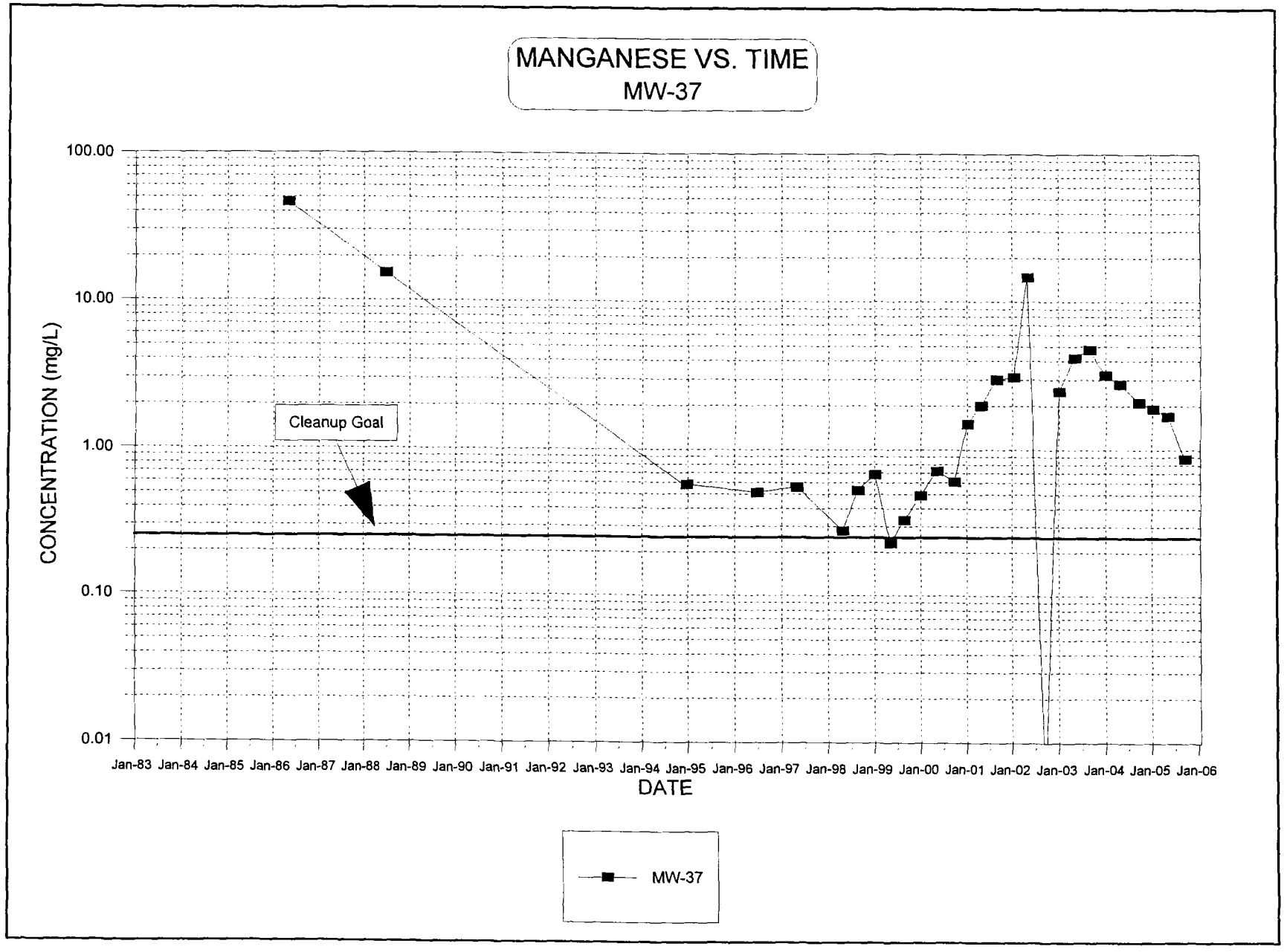

MANGANESE VS. TIME
MW-32
100.00
10.00
1.00
0.10
0.01
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-32



* = Below detection. Value plotted is detection limit.

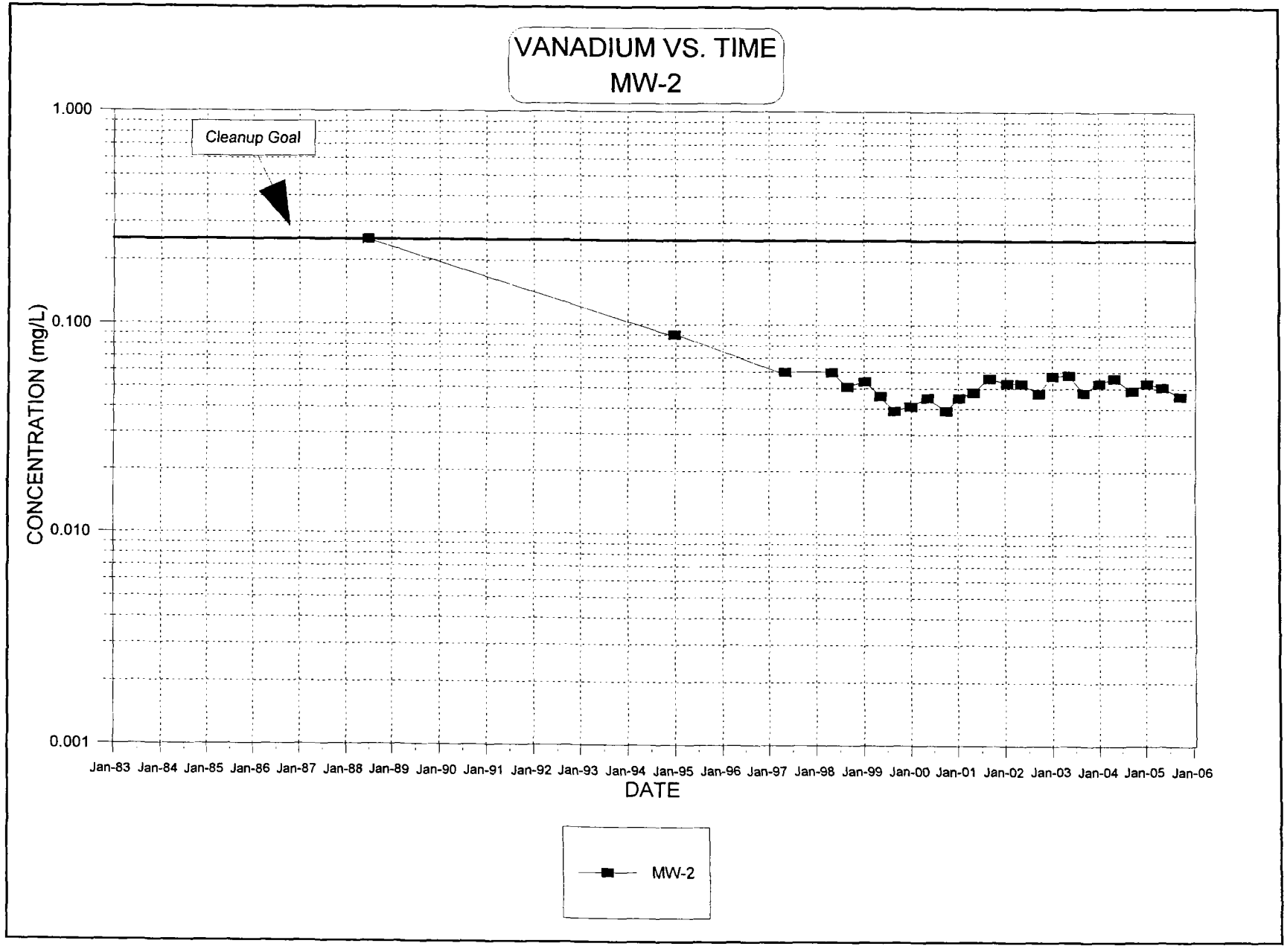


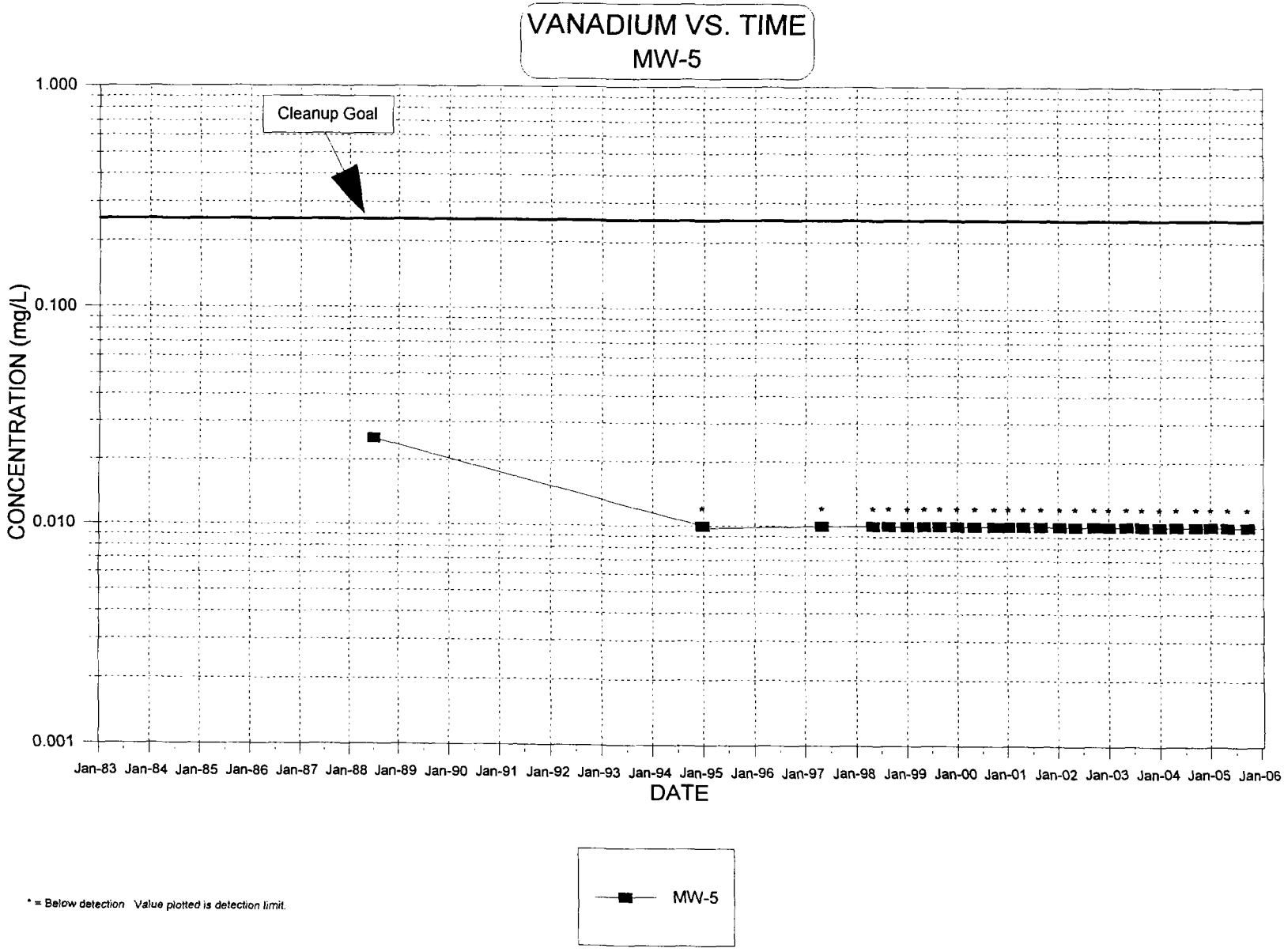
* =Below detection. Value plotted is detection limit.


MANGANESE VS. TIME
MW-37
100.00
10.00
1.00
0.10
0.01
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-37

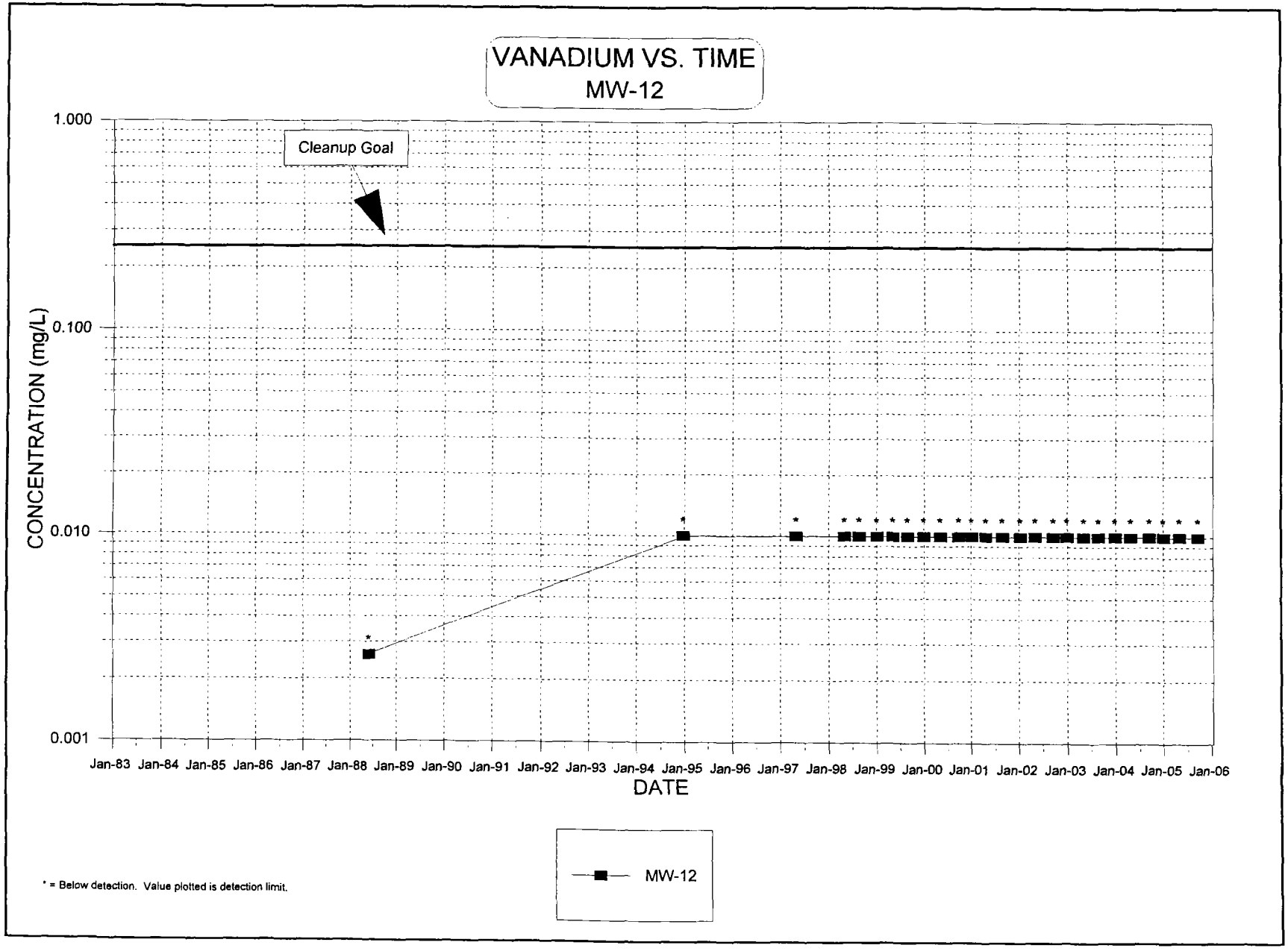
APPENDIX D-7

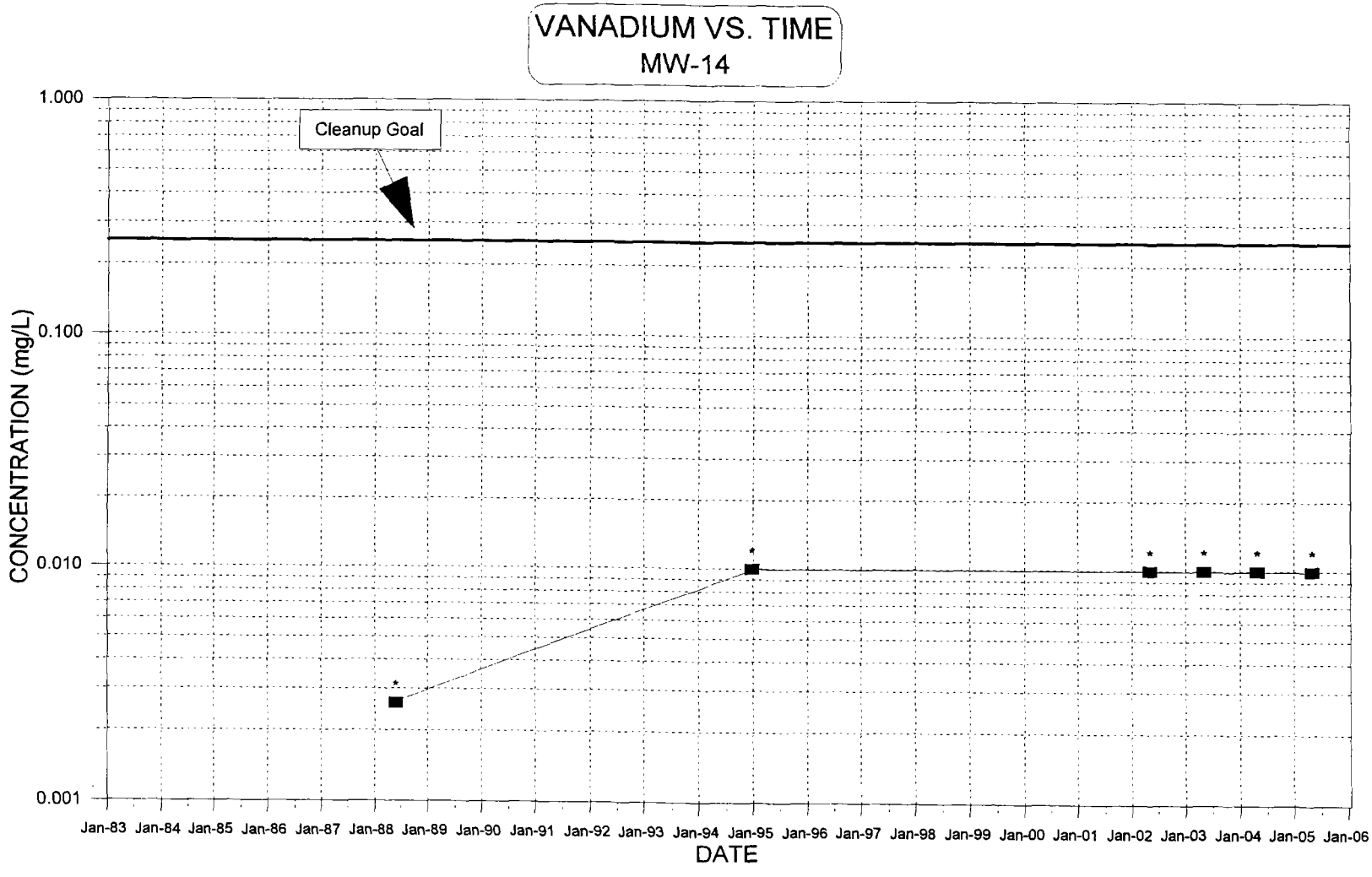
VANADIUM


VANADIUM VS. TIME
MW-2
Cleanup Goal
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-2

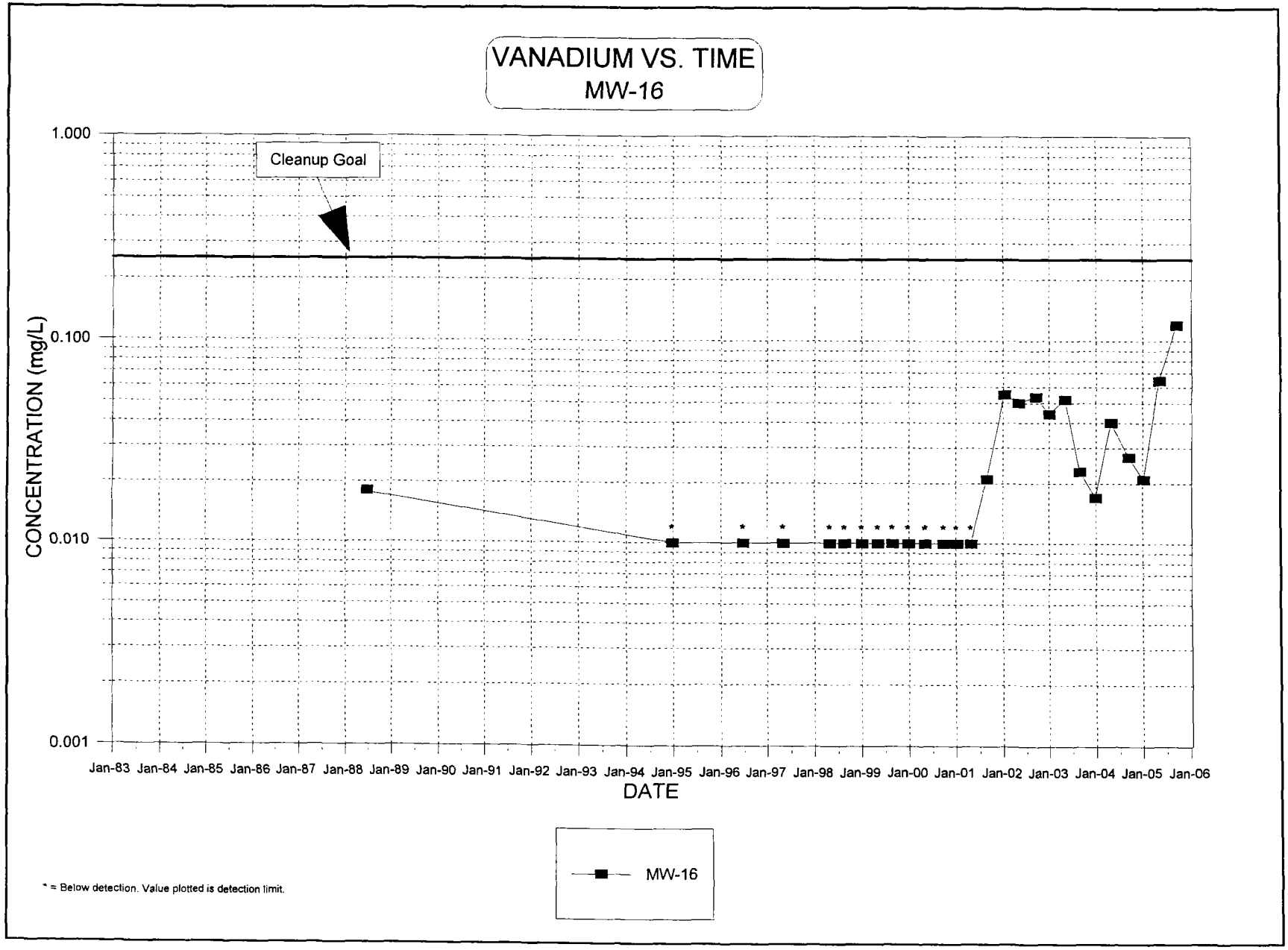


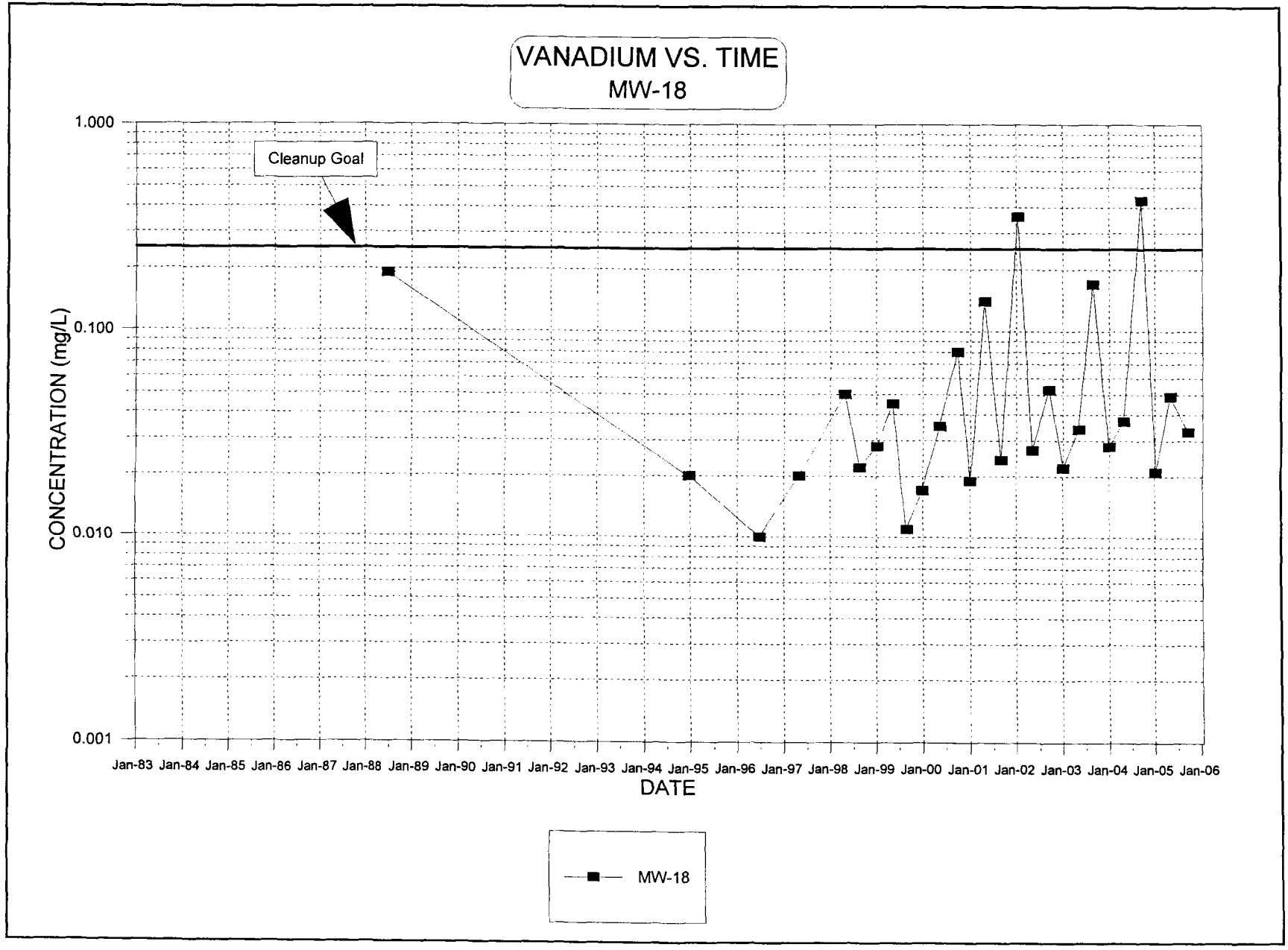
* = Below detection Value plotted is detection limit.

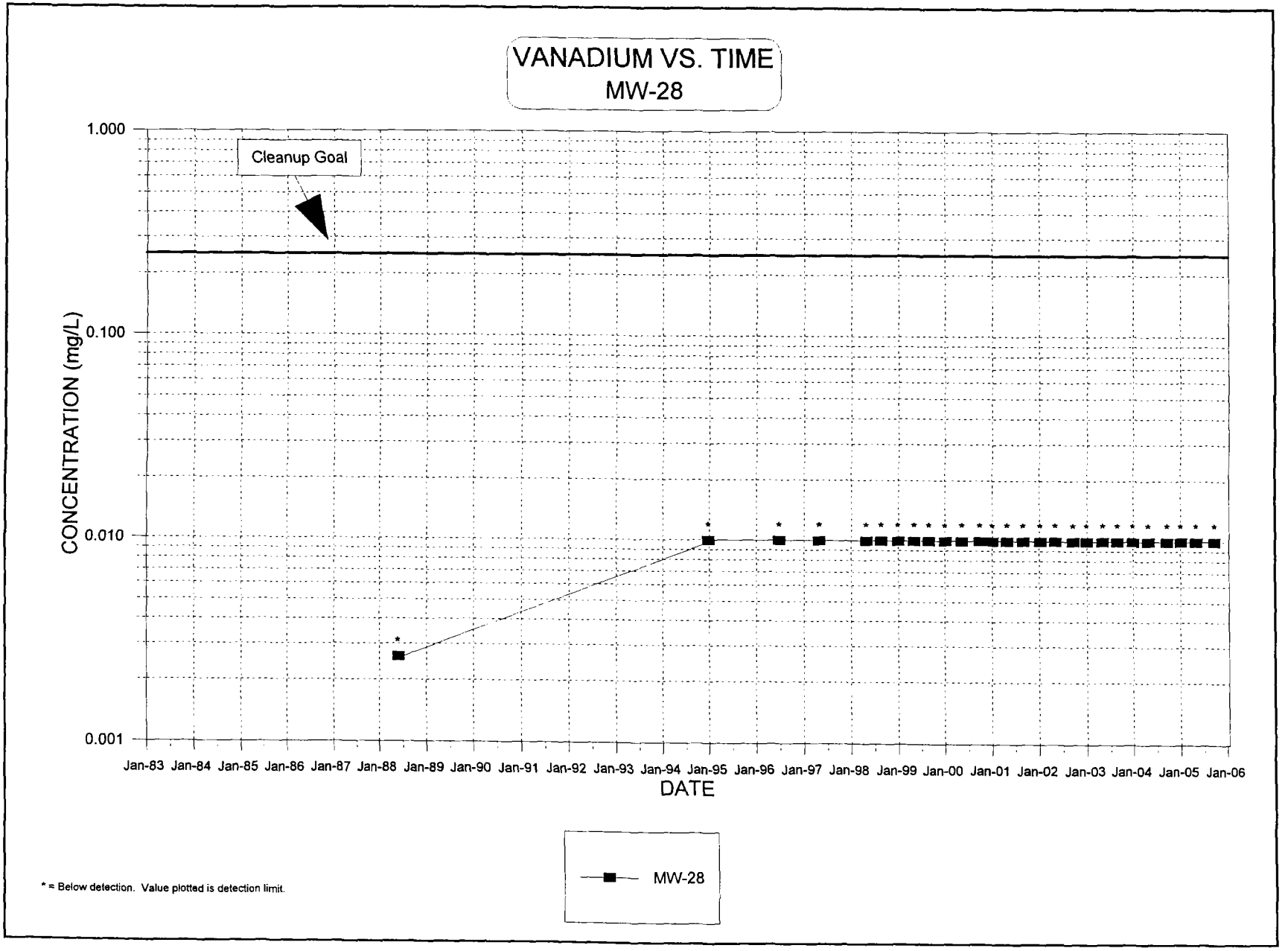

VANADIUM VS. TIME
MW-12
Cleanup Goal
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-12
* = Below detection. Value plotted is detection limit.

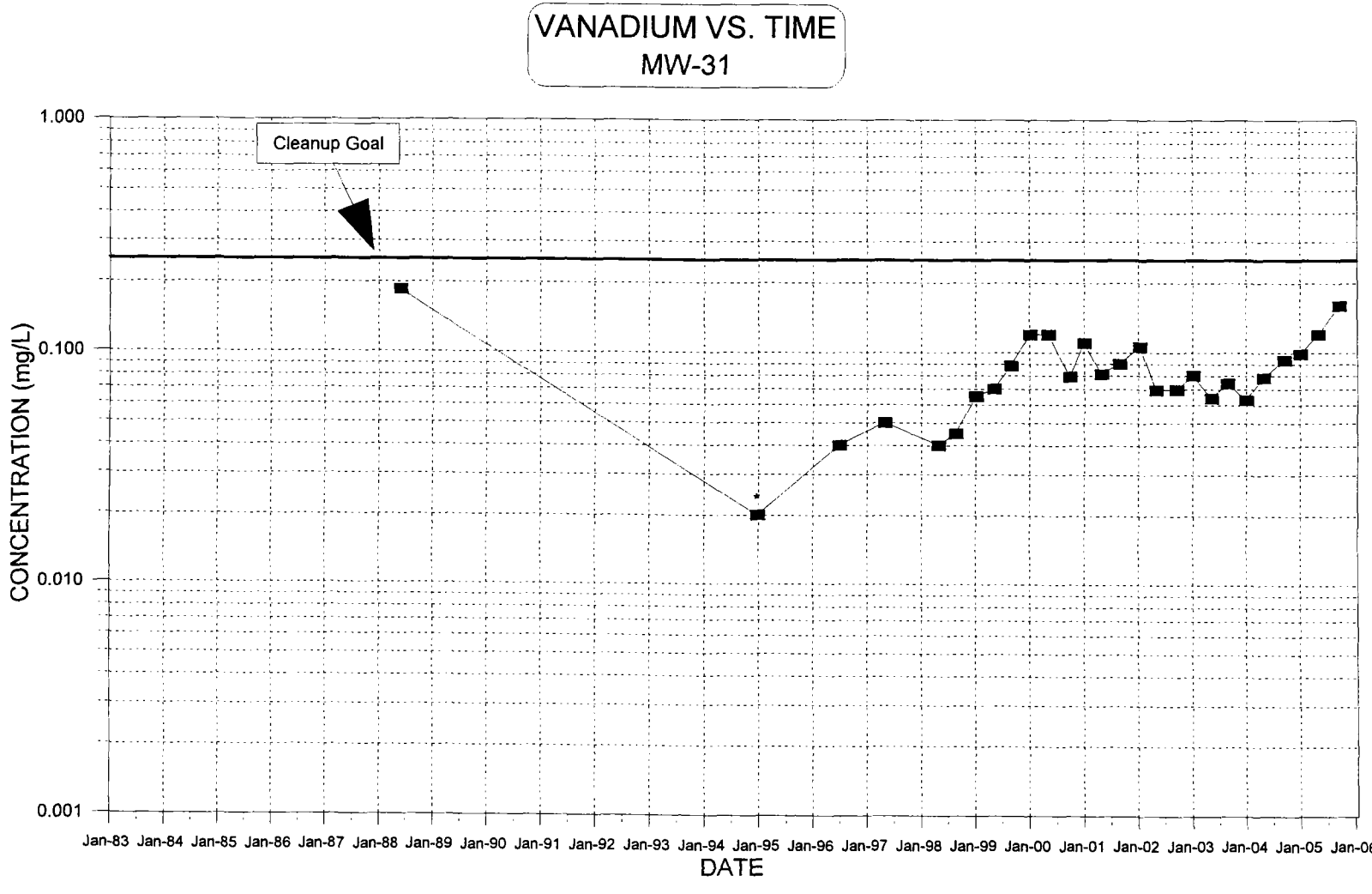


* = Below detection. Value plotted is detection limit.

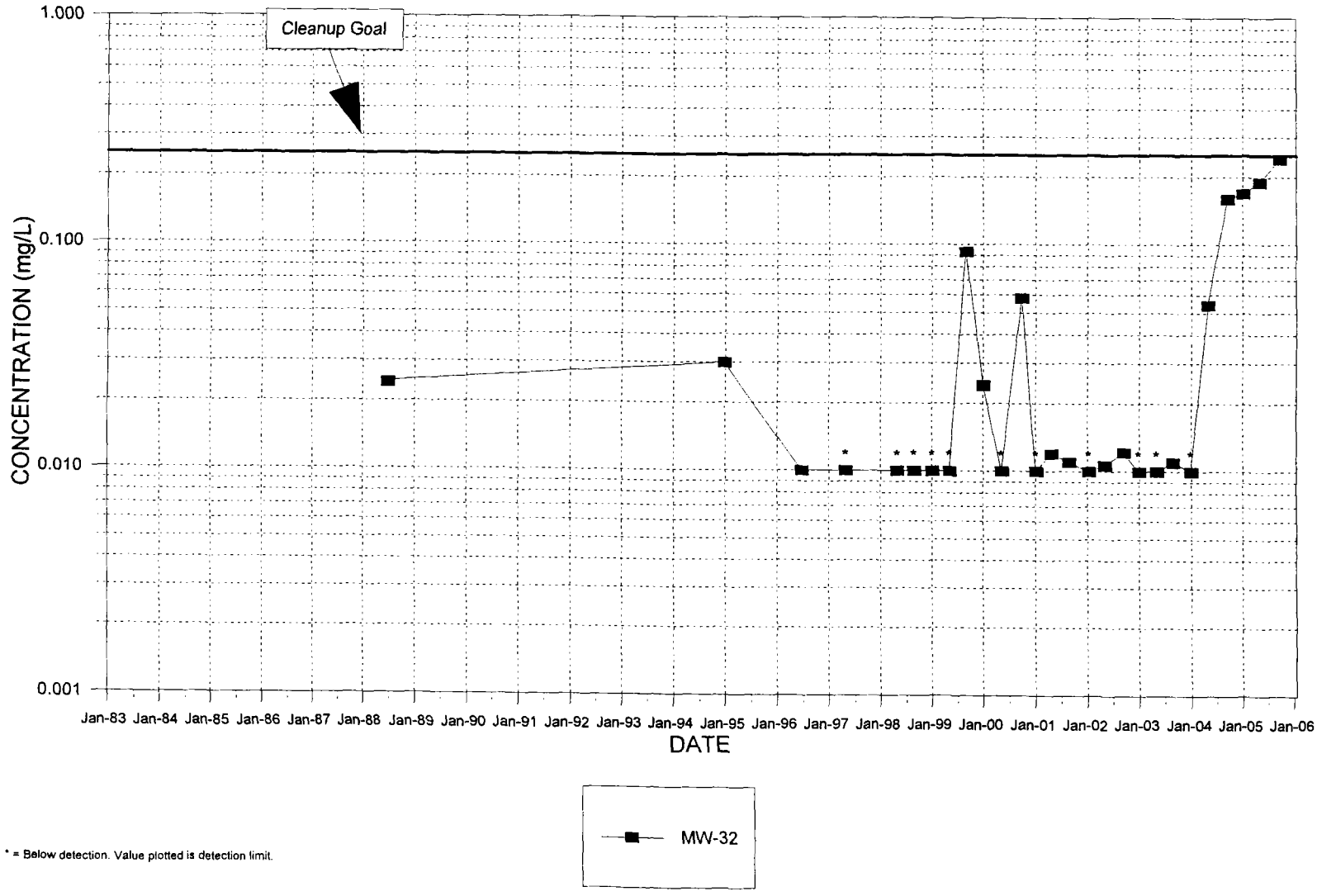

VANADIUM VS. TIME
MW-16
Cleanup Goal
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-16
* = Below detection. Value plotted is detection limit.


VANADIUM VS. TIME
MW-18
Cleanup Goal
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-18

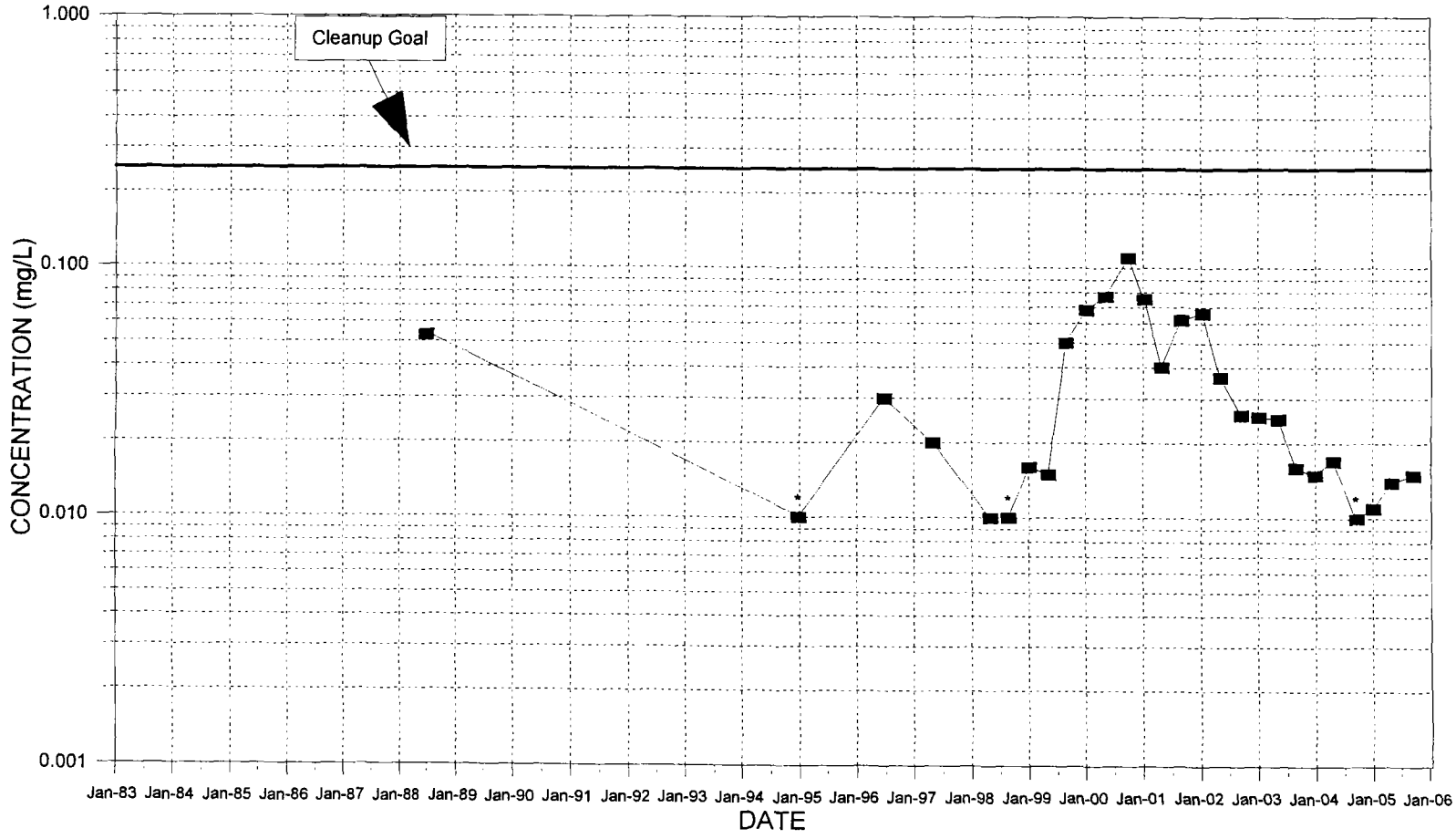

VANADIUM VS. TIME
MW-28
Cleanup Goal
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-28
* = Below detection. Value plotted is detection limit.



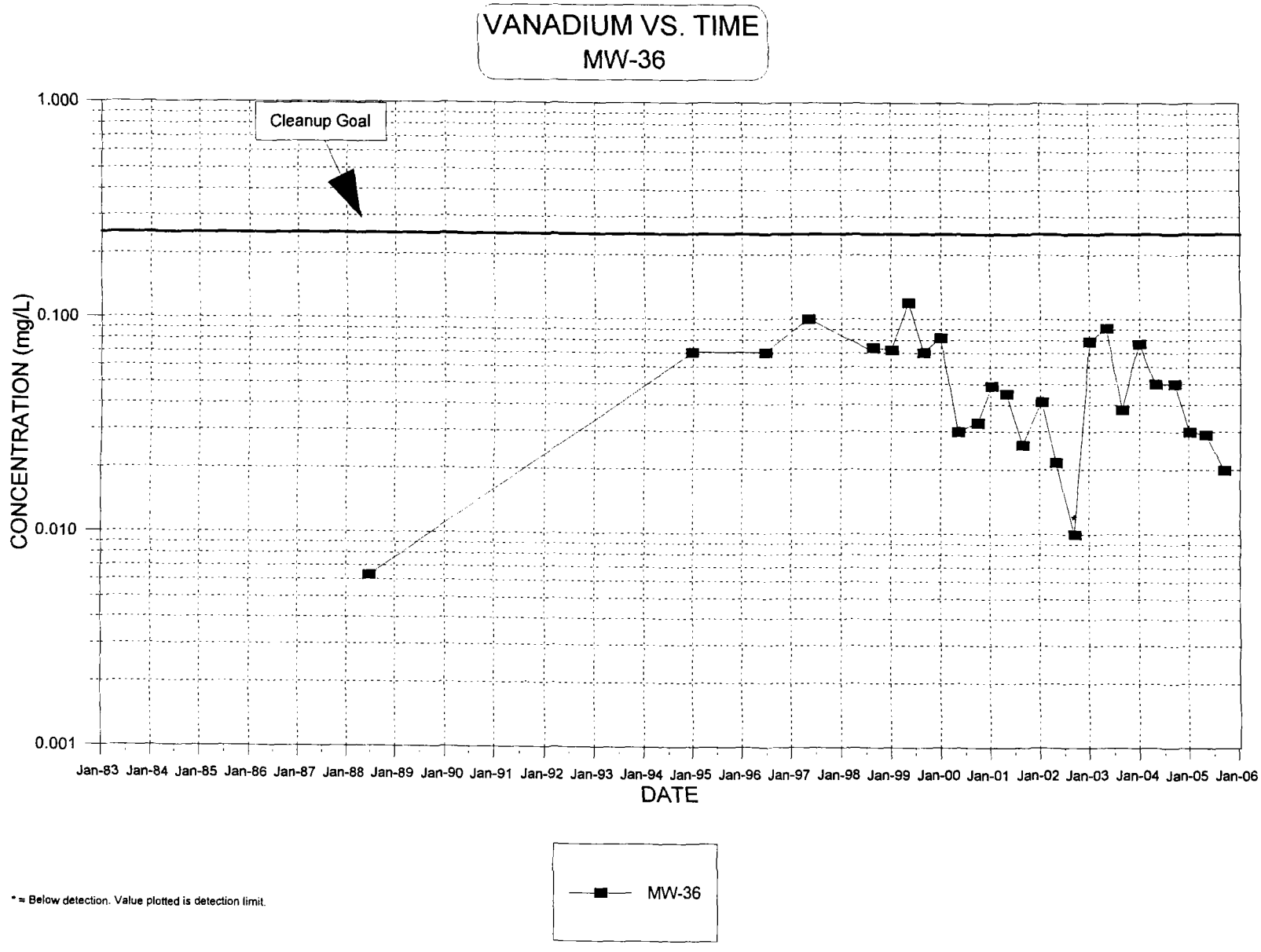
* = Below detection. Value plotted is detection limit.



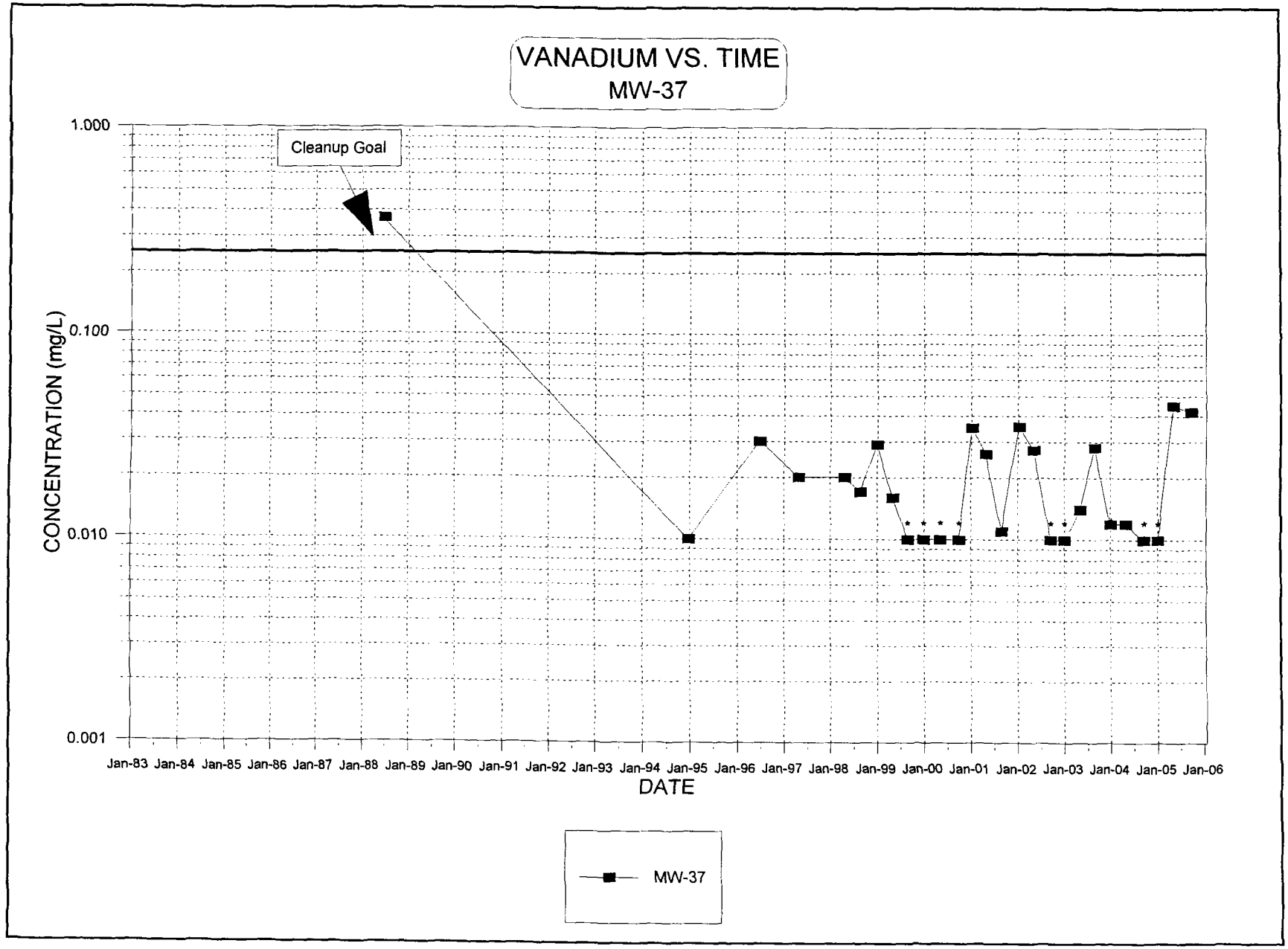
* = Below detection. Value plotted is detection limit.



* = Below detection. Value plotted is detection limit.

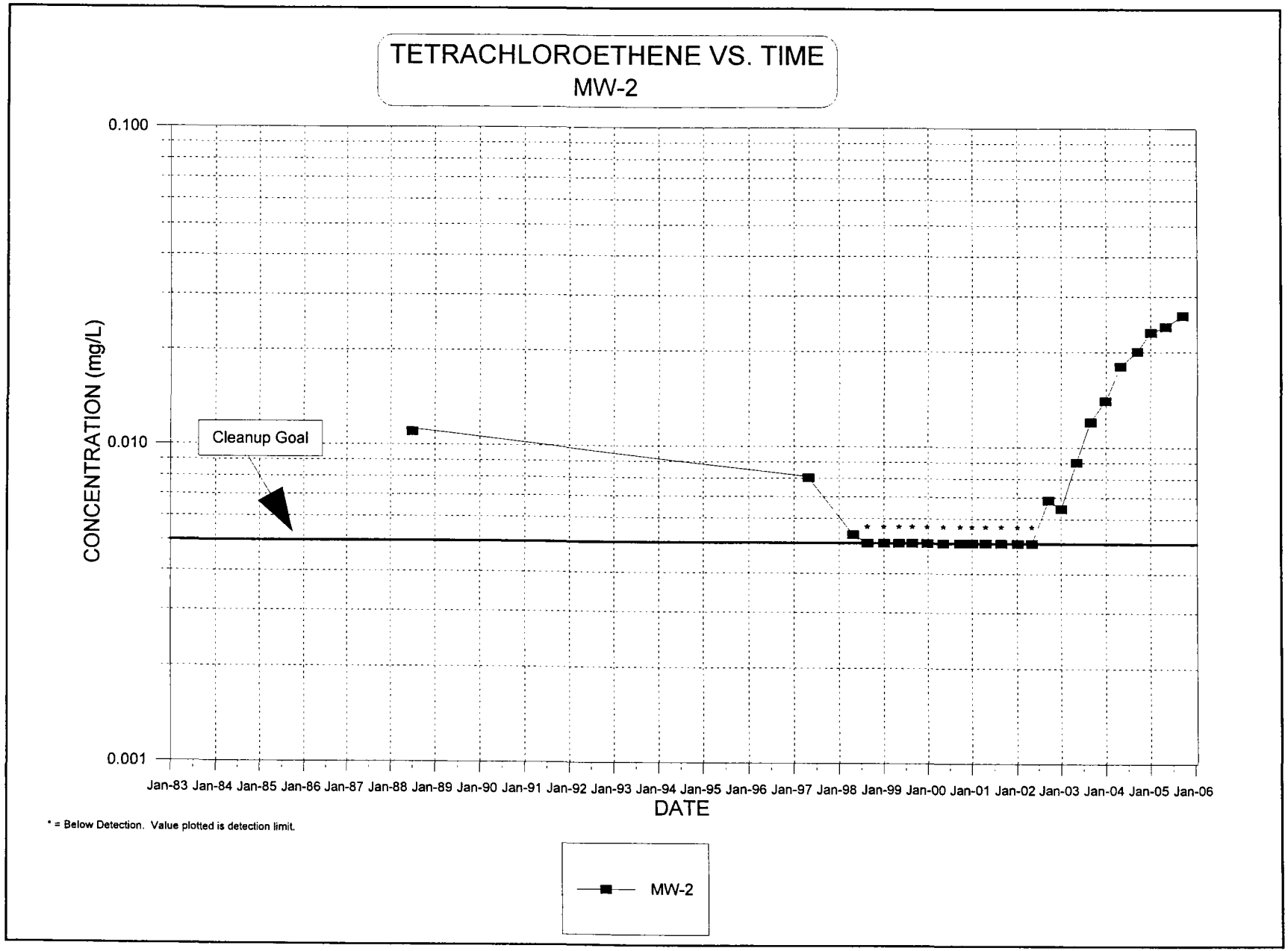


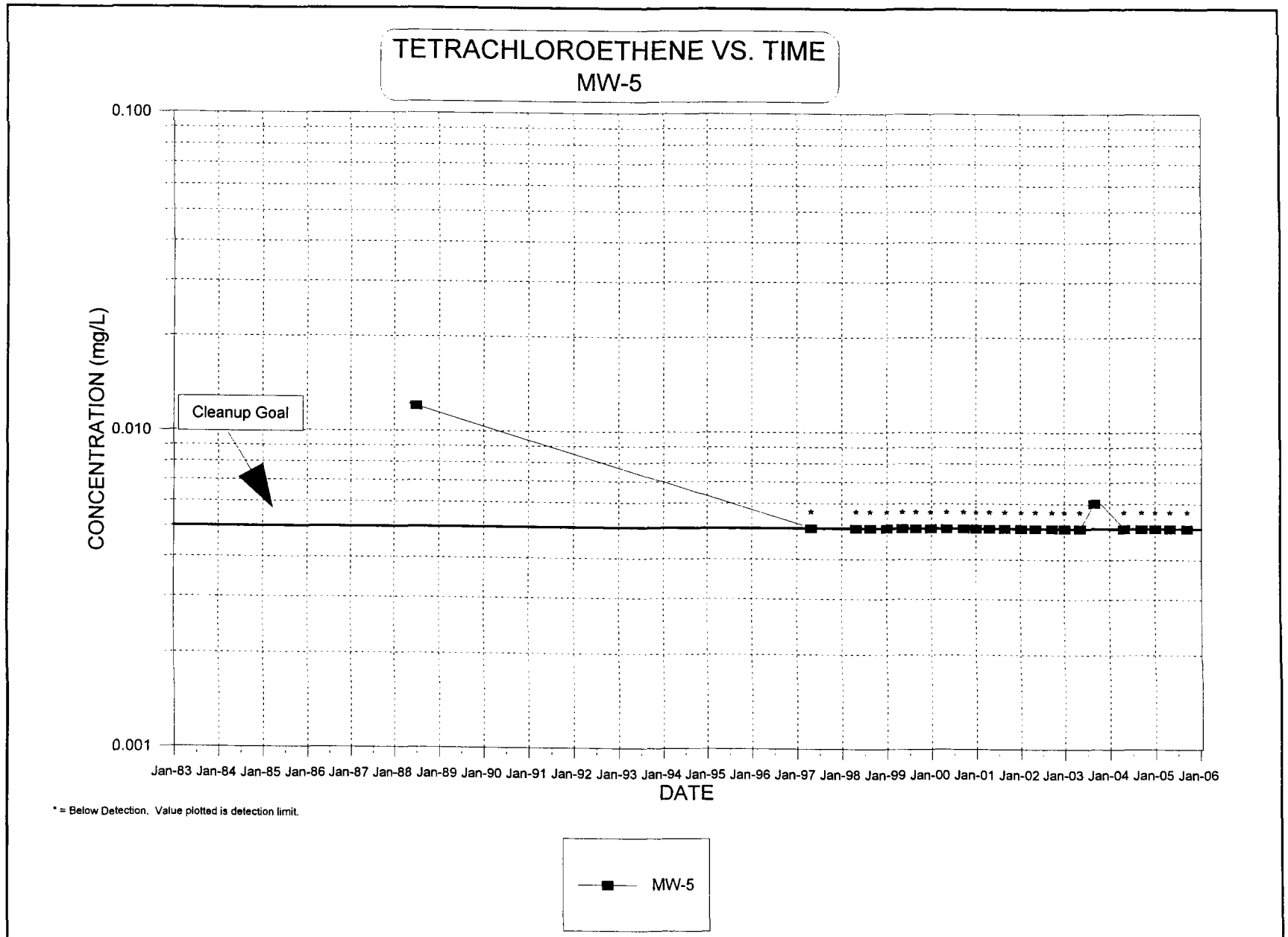
* = Below detection. Value plotted is detection limit.

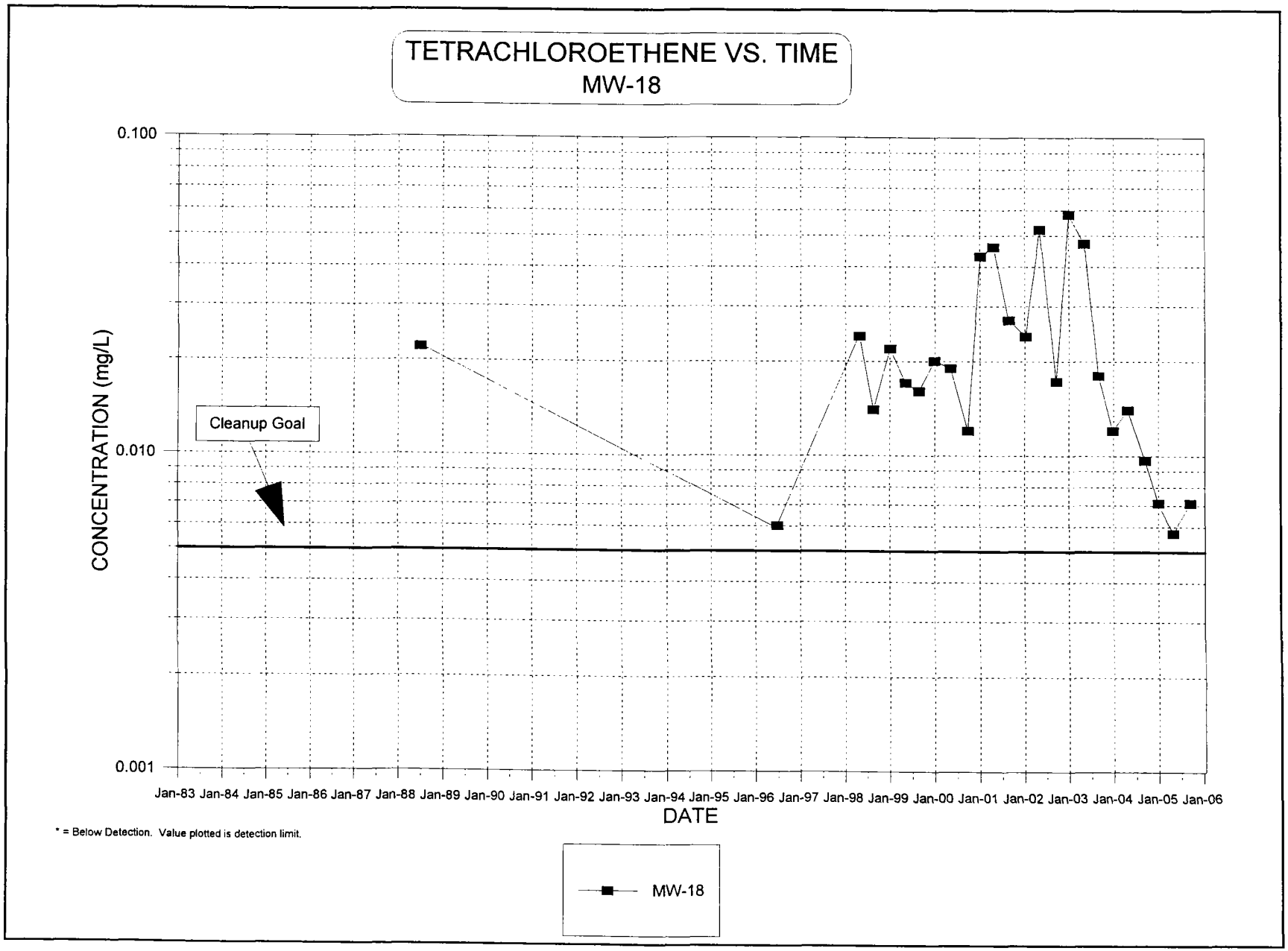

VANADIUM VS. TIME
MW-37
Cleanup Goal
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-37

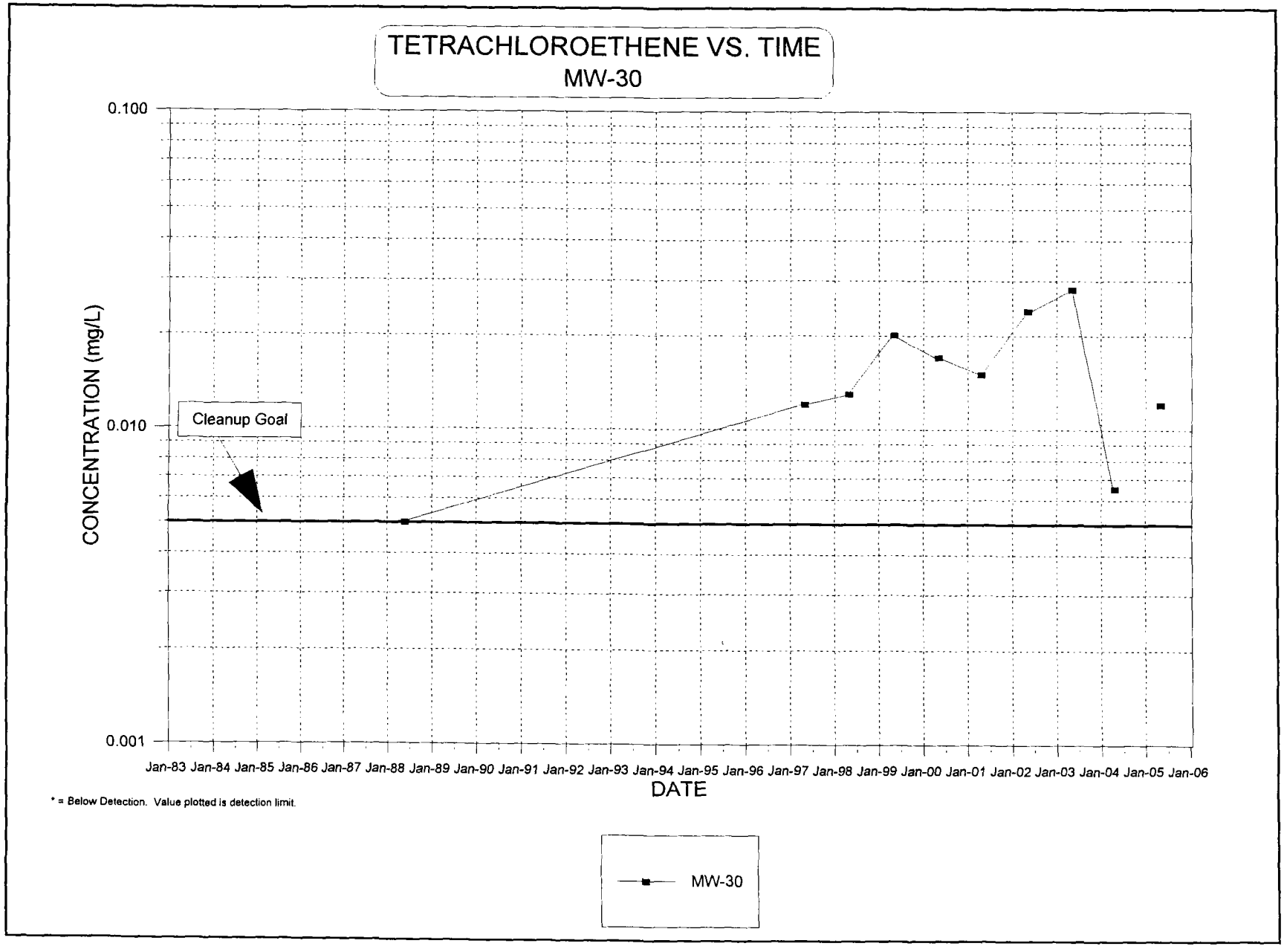
APPENDIX D-8

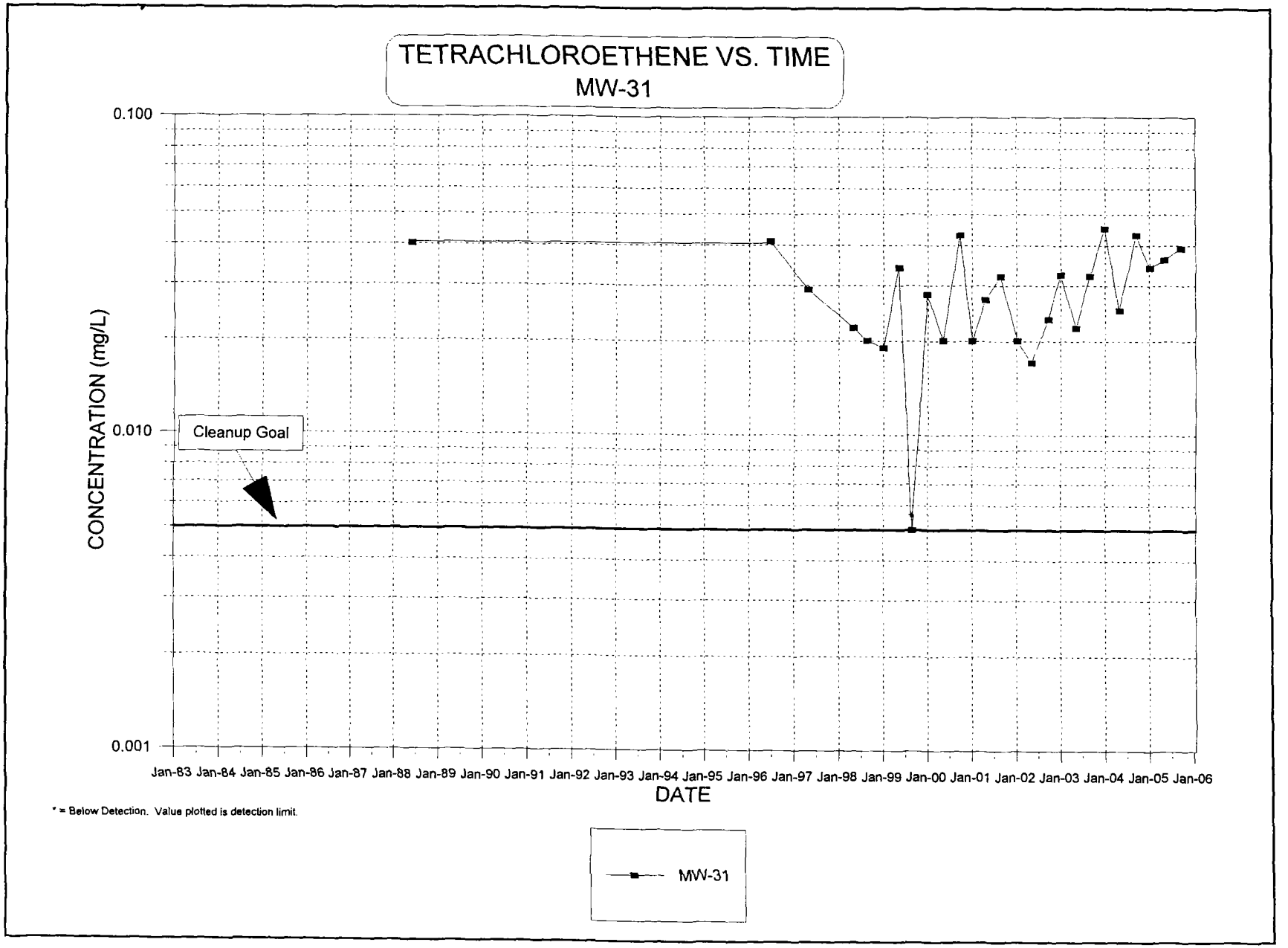
TETRACHLOROETHENE


TETRACHLOROETHENE VS. TIME
MW-2
0.100
0.010
0.001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
* = Below Detection. Value plotted is detection limit.
MW-2


TETRACHLOROETHENE VS. TIME
MW-5
0.100
0.010
0.001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
* = Below Detection. Value plotted is detection limit.
MW-5

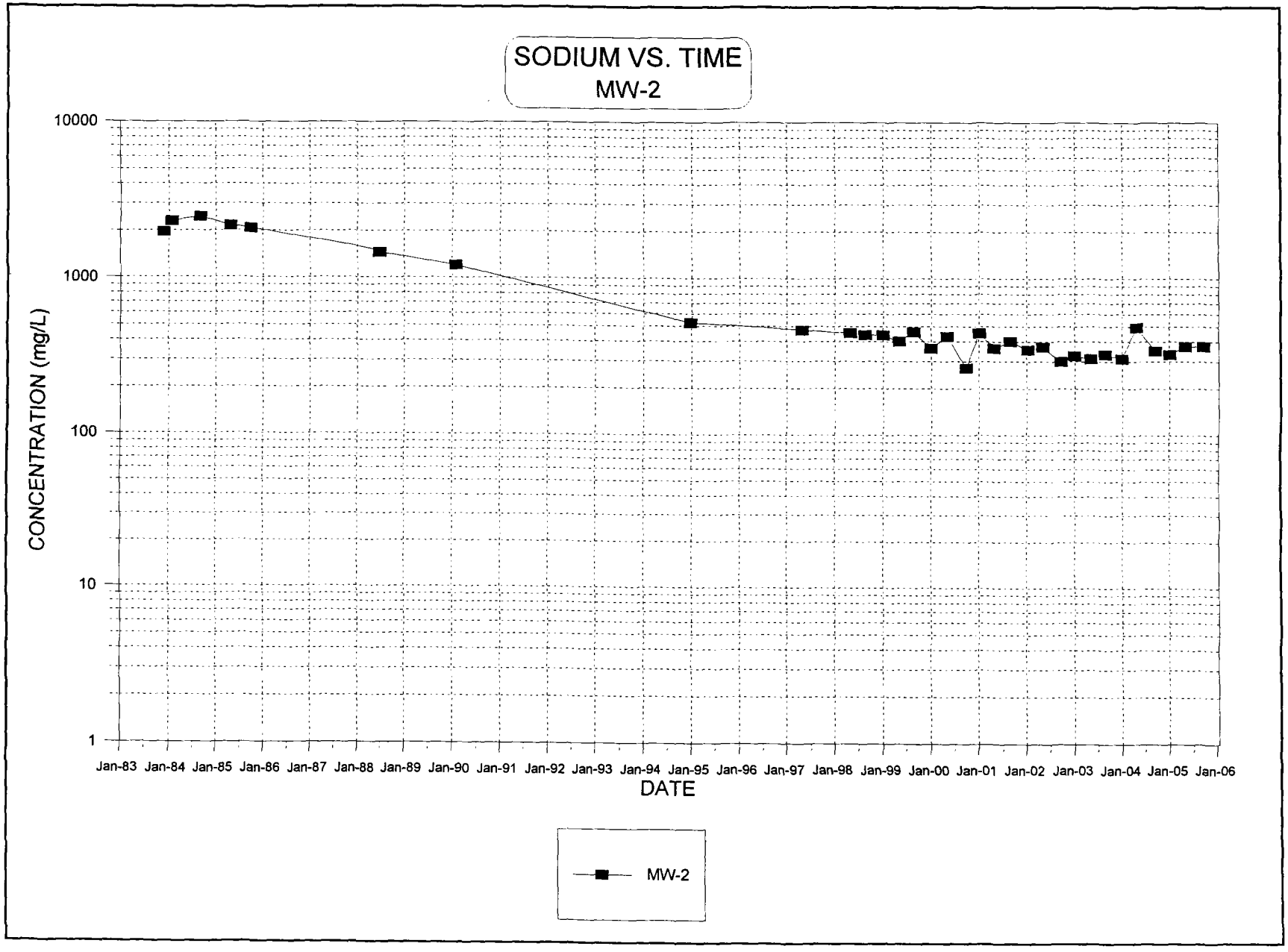

TETRACHLOROETHENE VS. TIME
MW-18
0.100
0.010
0.001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
* = Below Detection. Value plotted is detection limit.
MW-18

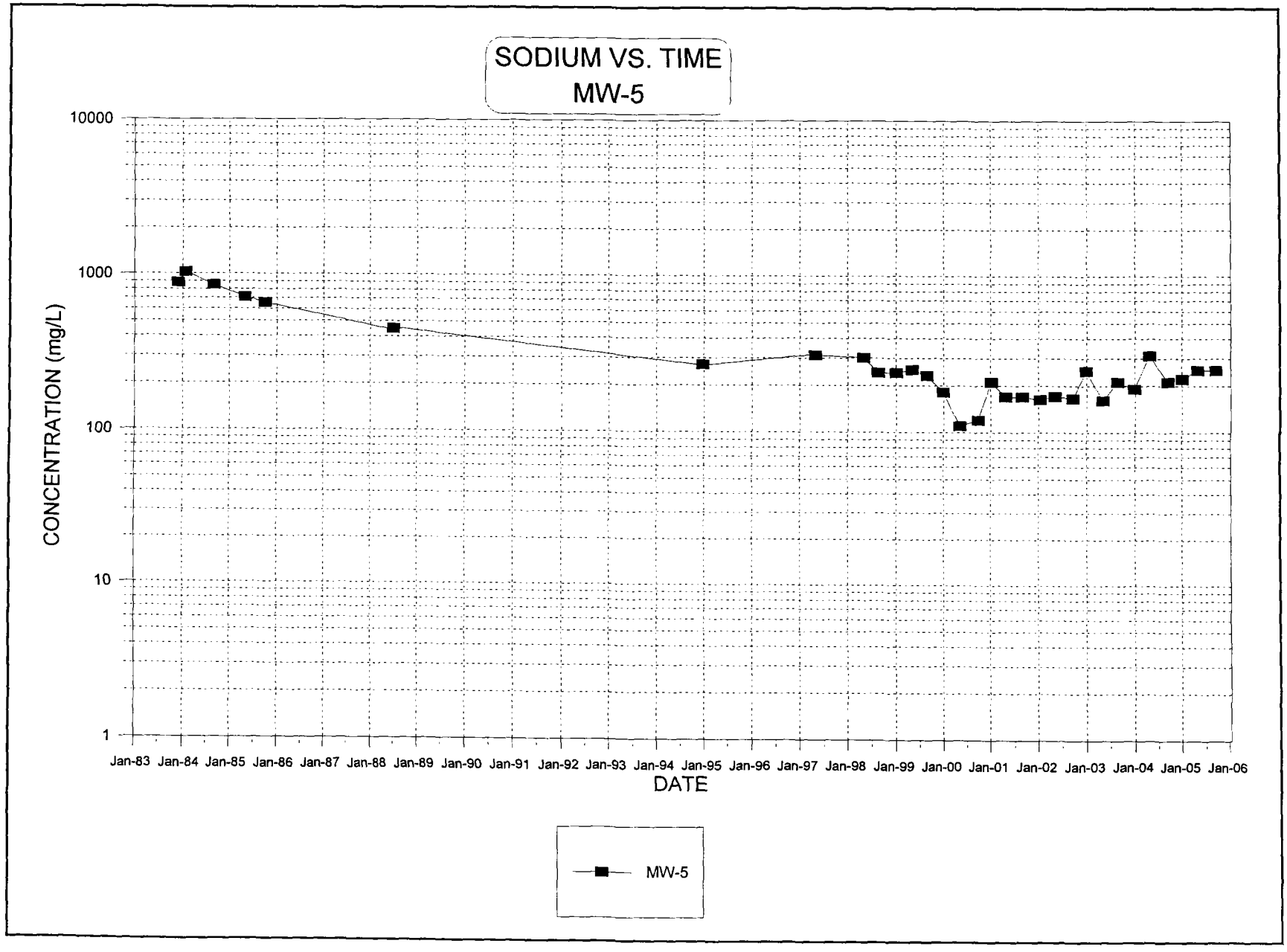

TETRACHLOROETHENE VS. TIME
MW-30
0.100
0.010
0.001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
* = Below Detection. Value plotted is detection limit.
MW-30

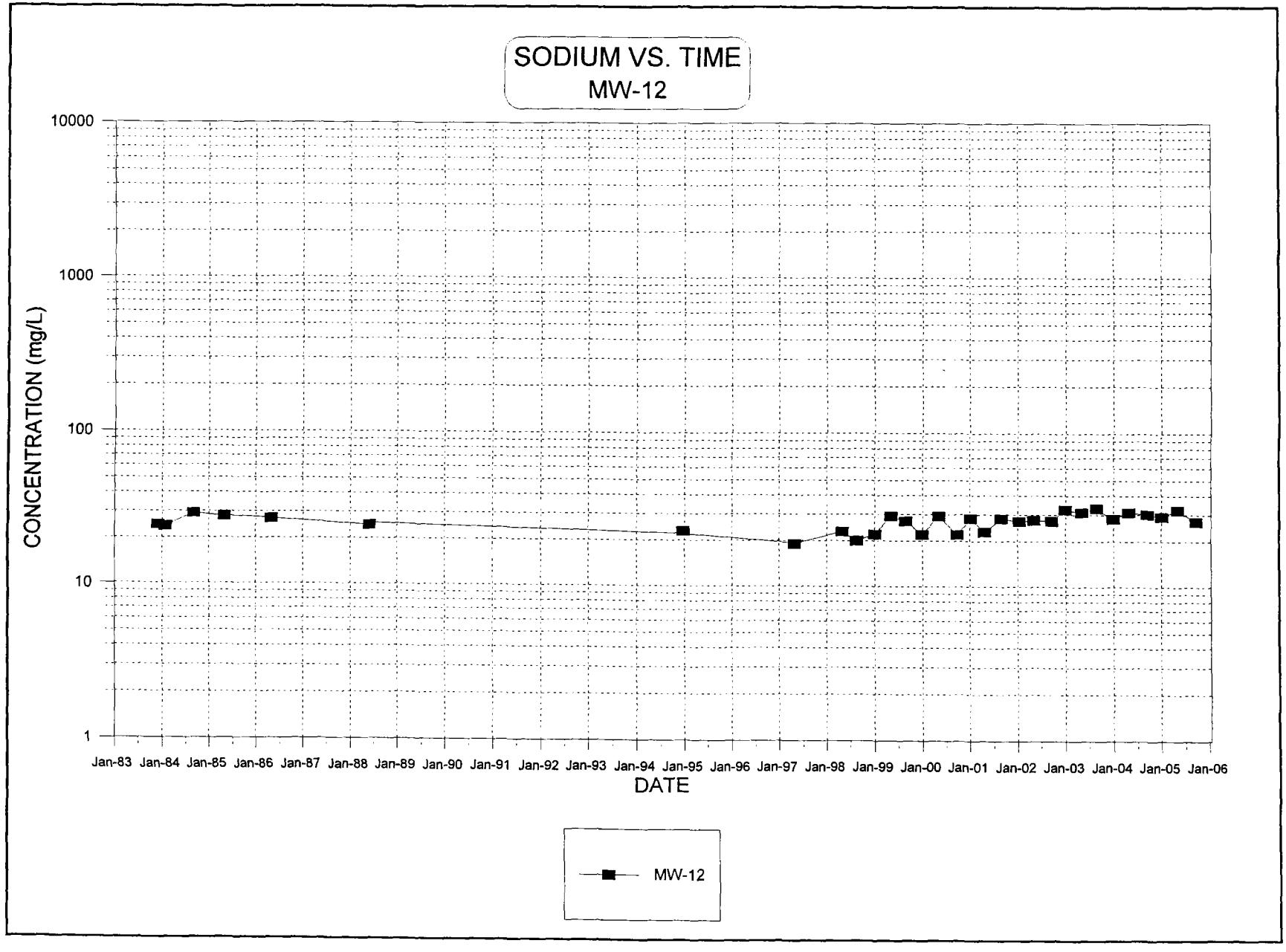

TETRACHLOROETHENE VS. TIME
MW-31
0.100
0.010
0.001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
* = Below Detection. Value plotted is detection limit.
MW-31

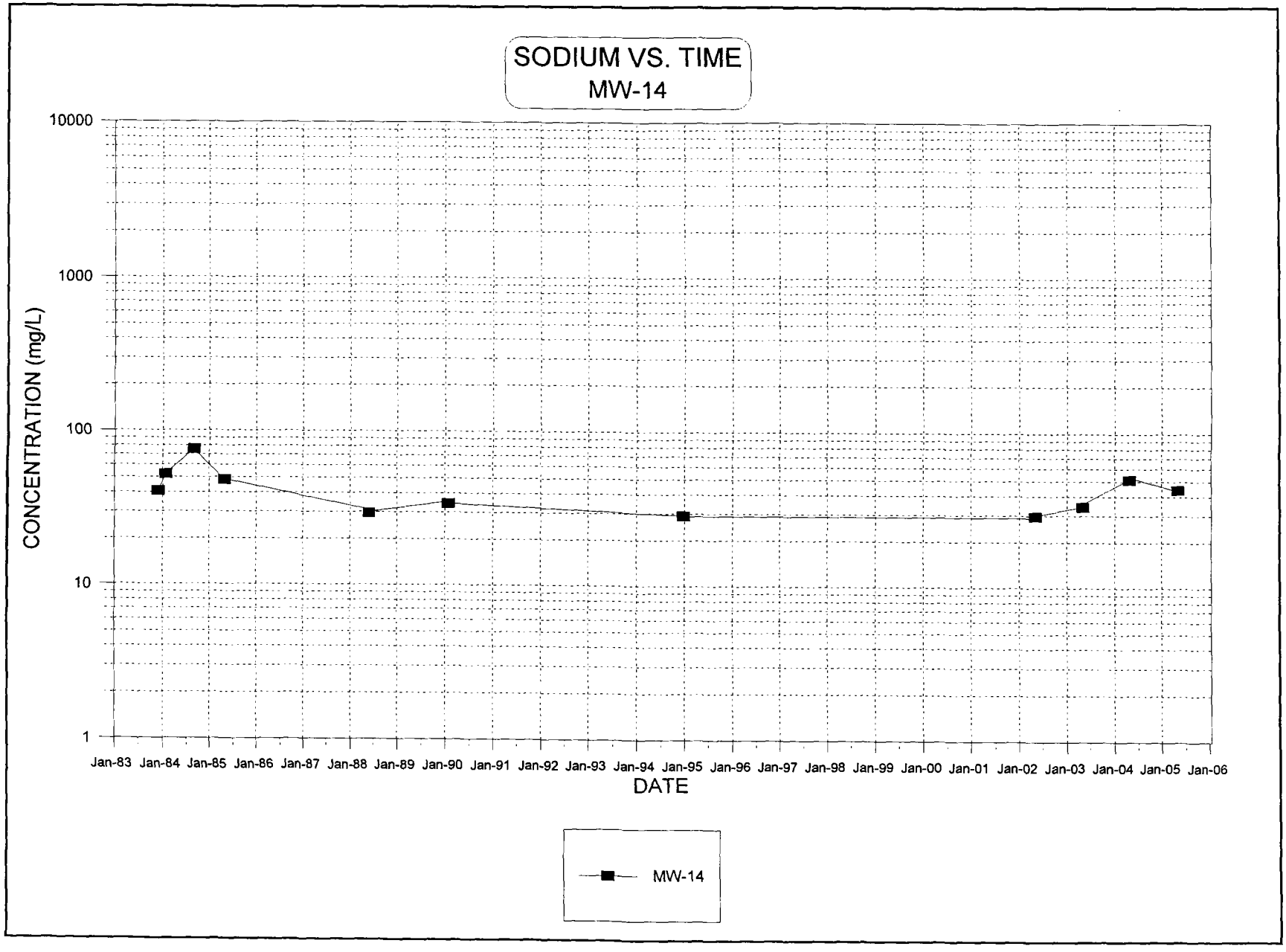
APPENDIX D-9

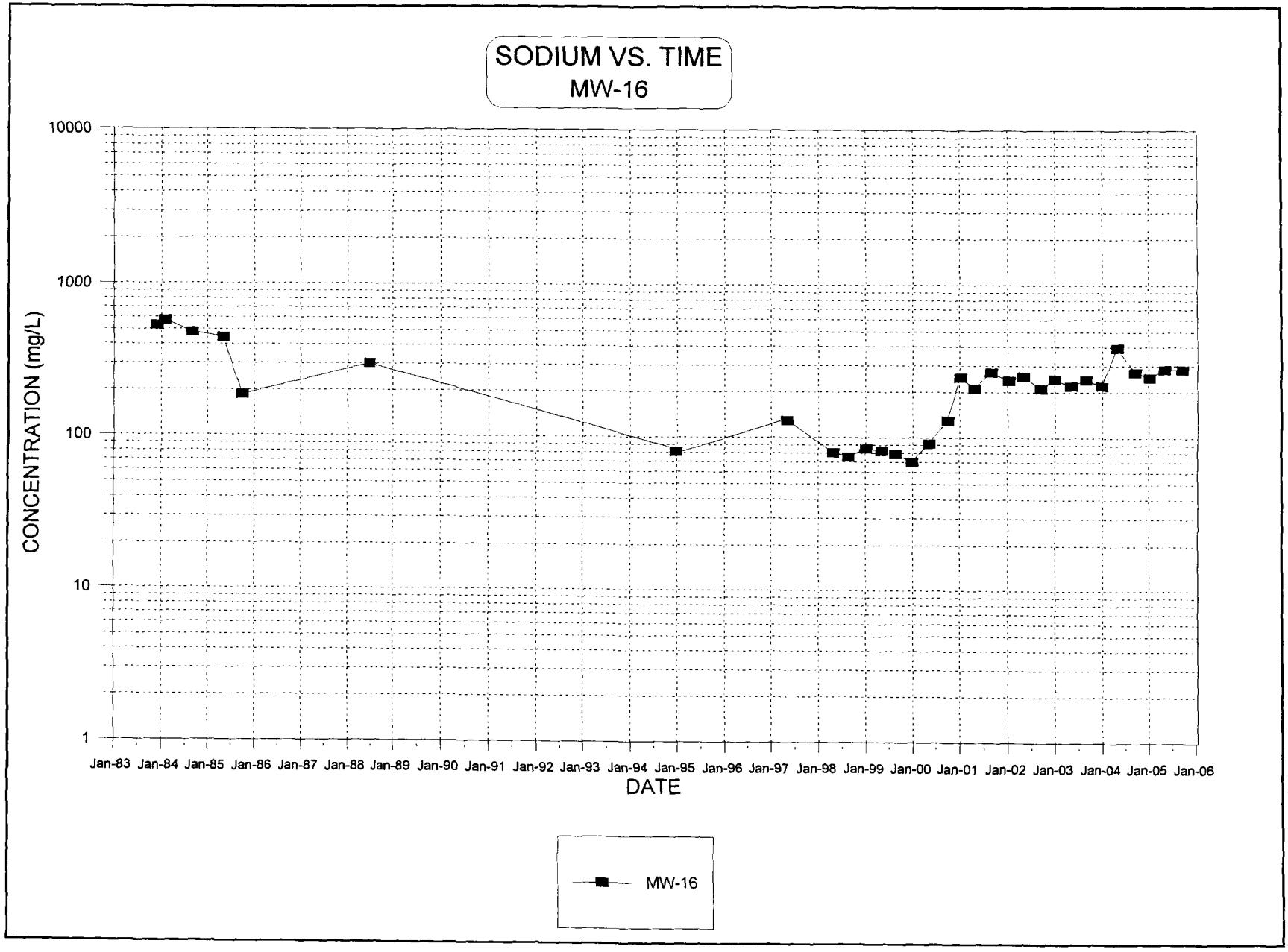
SODIUM

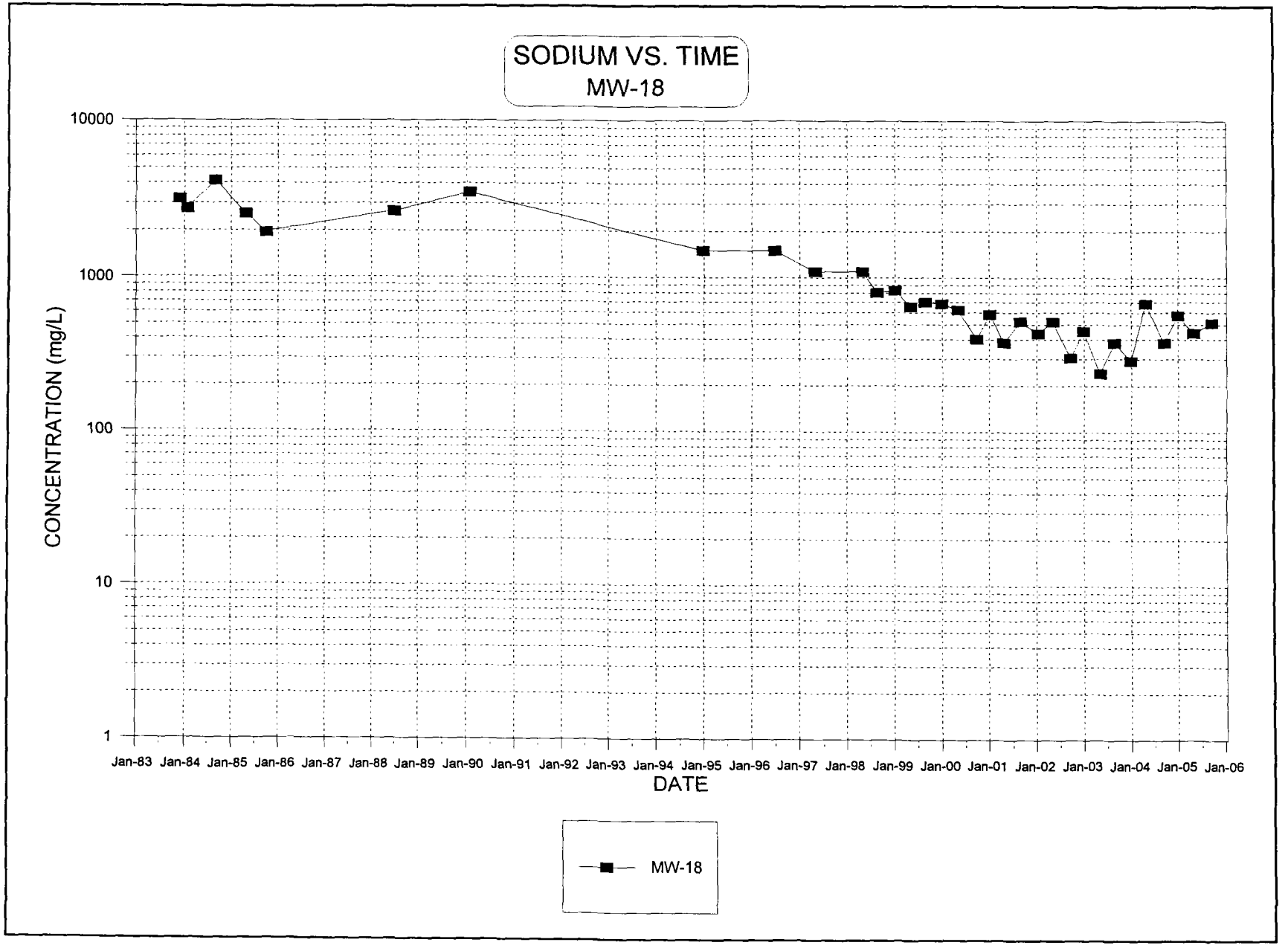

SODIUM VS. TIME
MW-2
CONCENTRATION (mg/L)
10000
1000
100
10
1
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-2

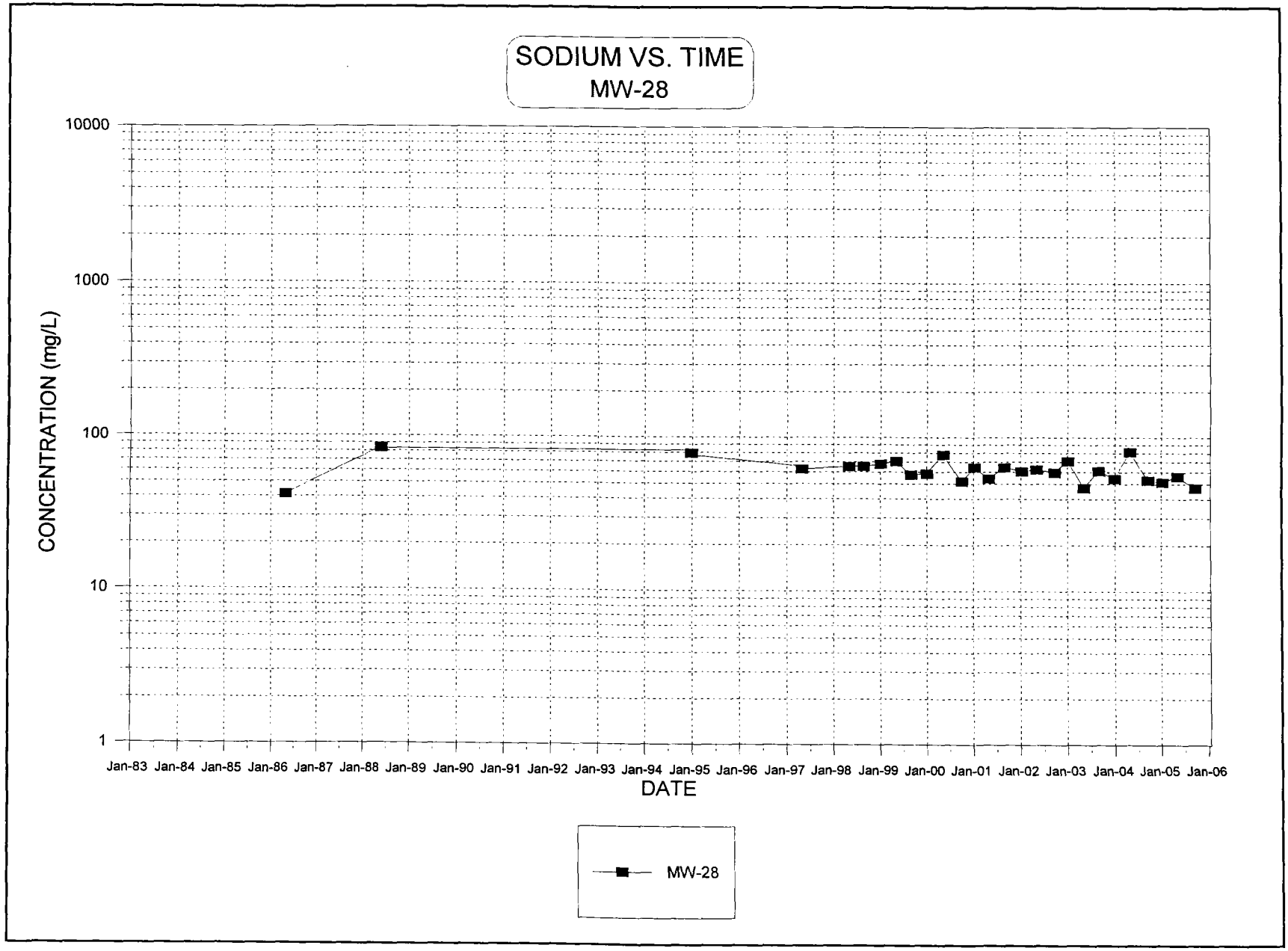

SODIUM VS. TIME
MW-5
CONCENTRATION (mg/L)
10000
1000
100
10
1
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-5

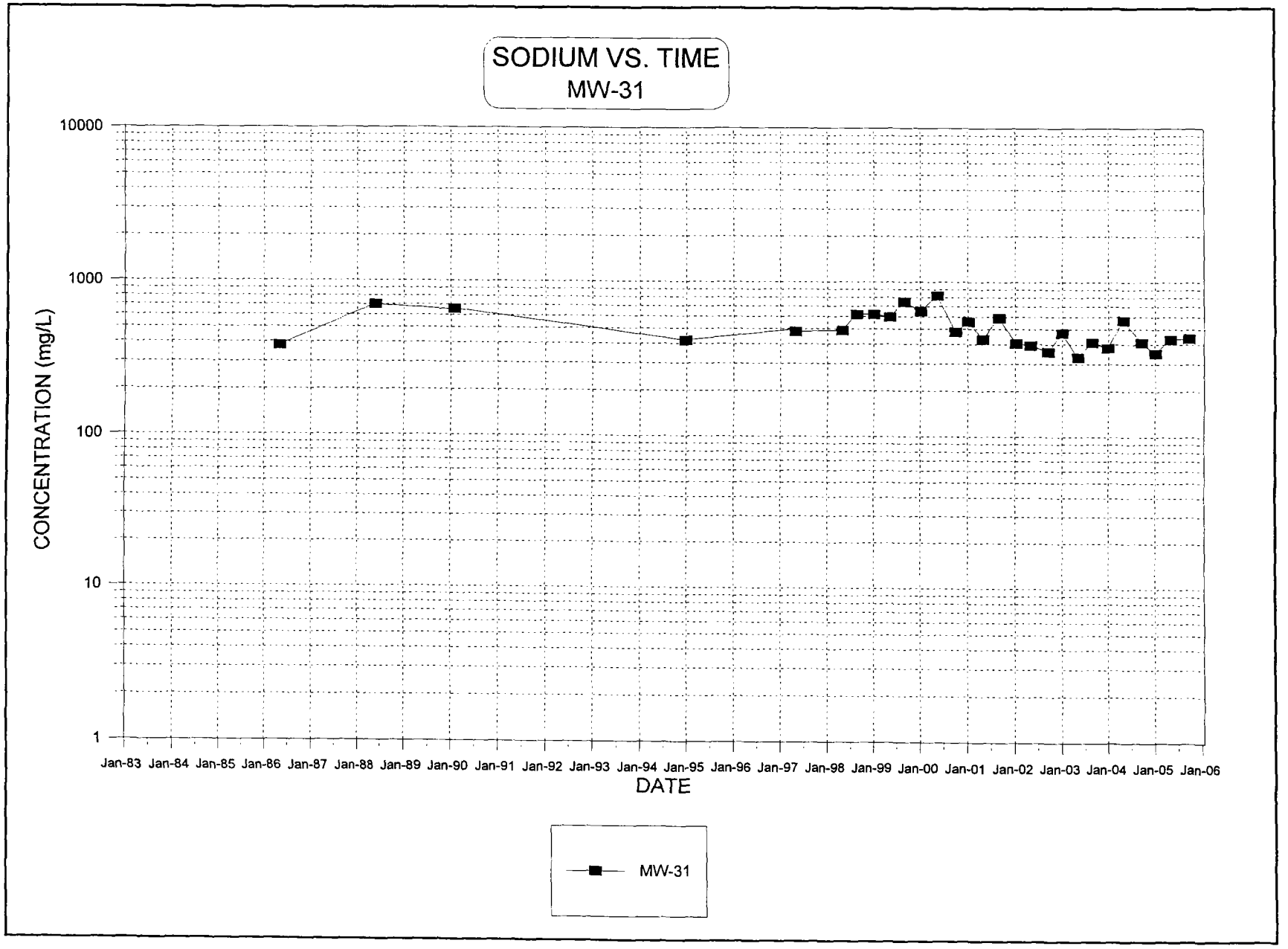

SODIUM VS. TIME
MW-12
CONCENTRATION (mg/L)
10000
1000
100
10
1
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-12

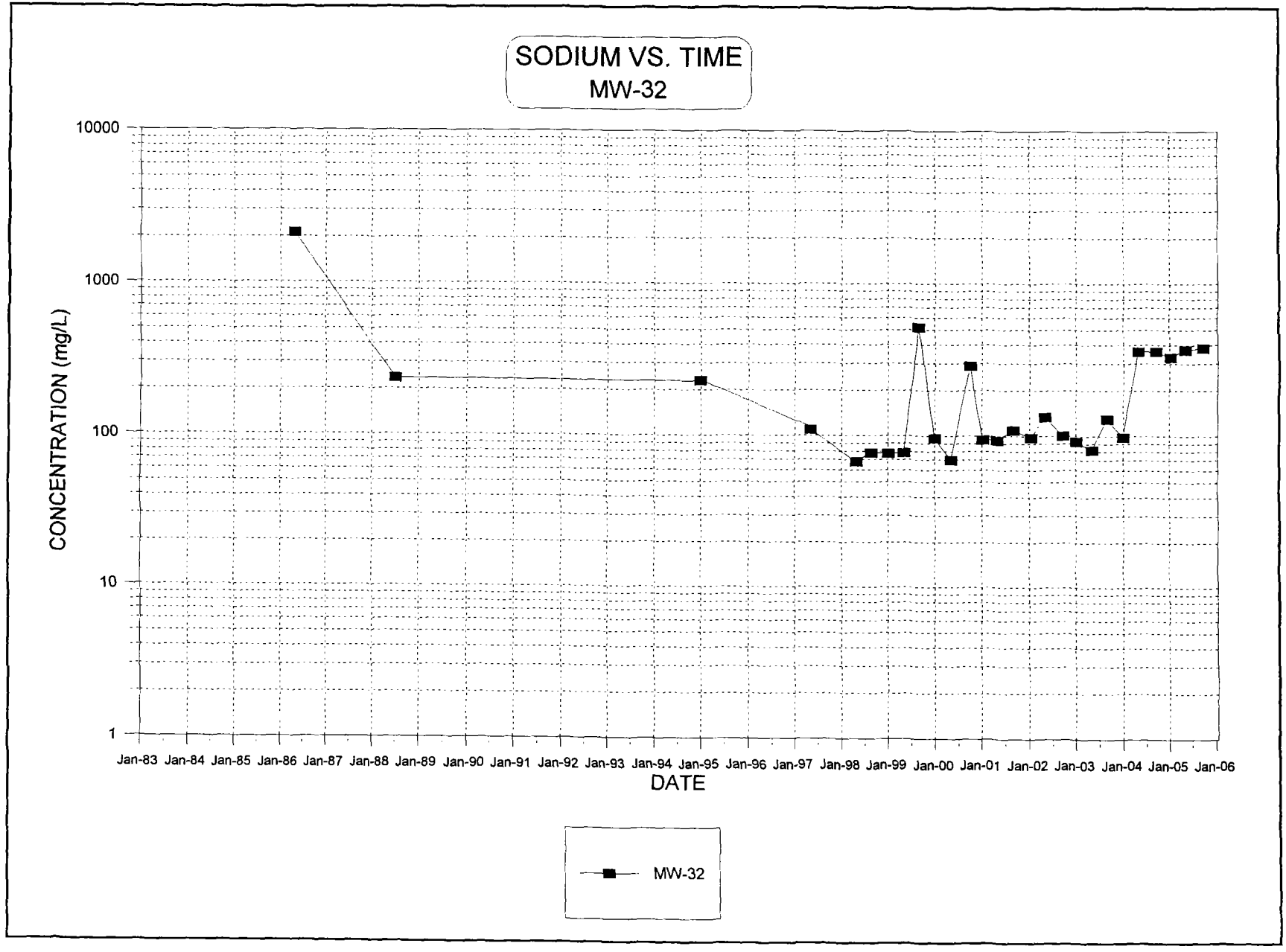

SODIUM VS. TIME
MW-14
CONCENTRATION (mg/L)
10000
1000
100
10
1
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-14

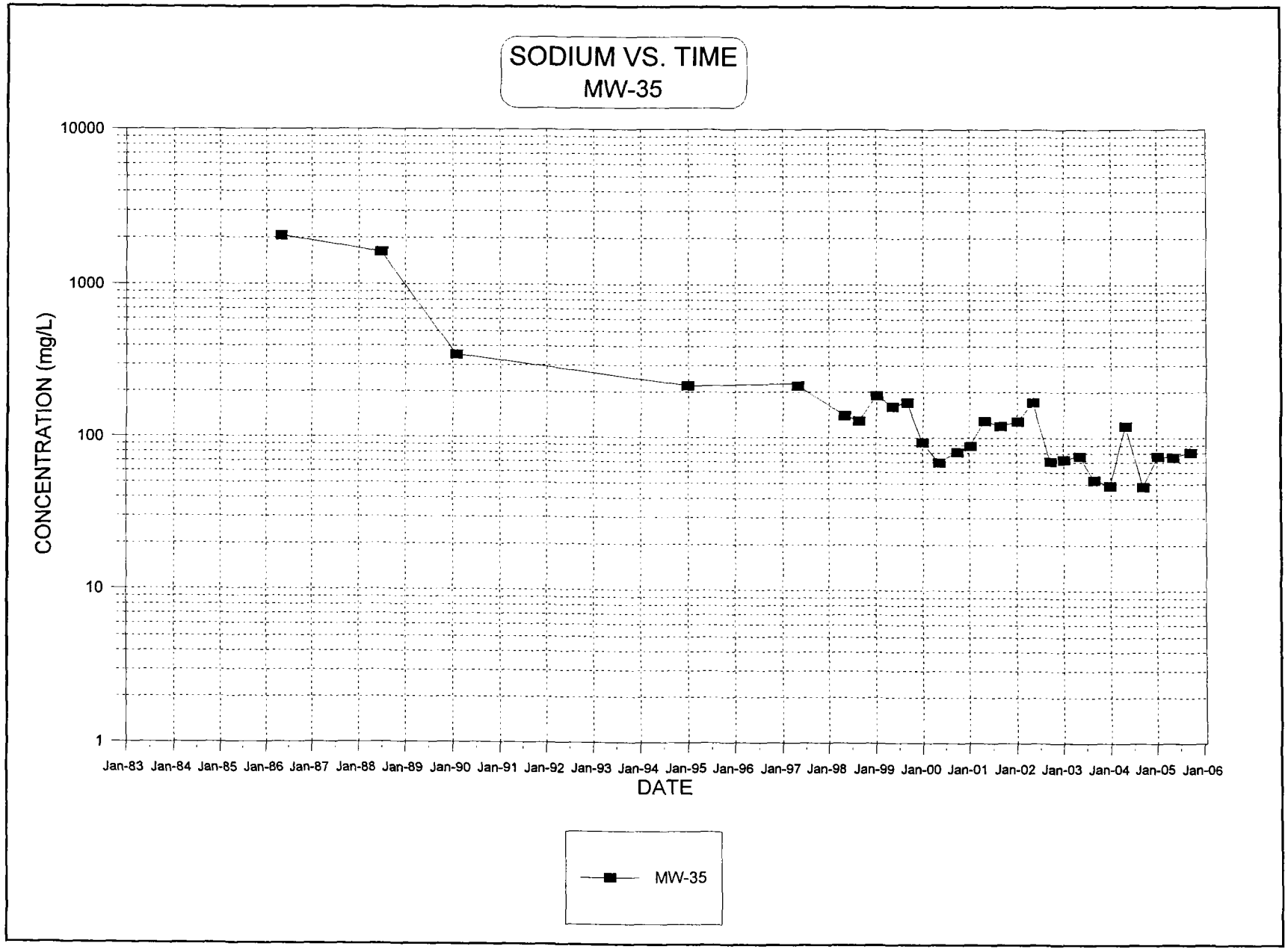

SODIUM VS. TIME
MW-16
CONCENTRATION (mg/L)
10000
1000
100
10
1
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-16

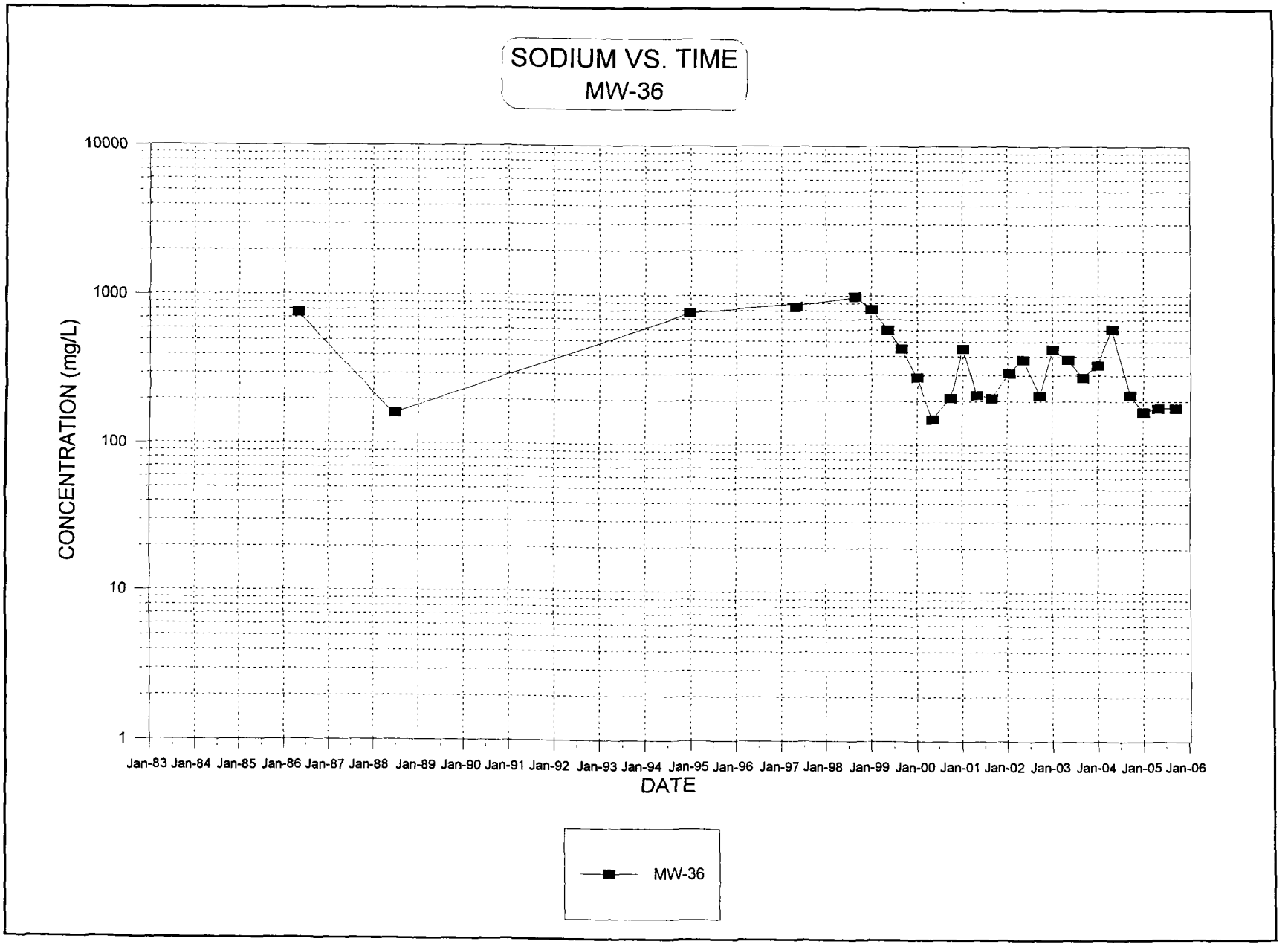

SODIUM VS. TIME
MW-18
CONCENTRATION (mg/L)
10000
1000
100
10
1
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-18

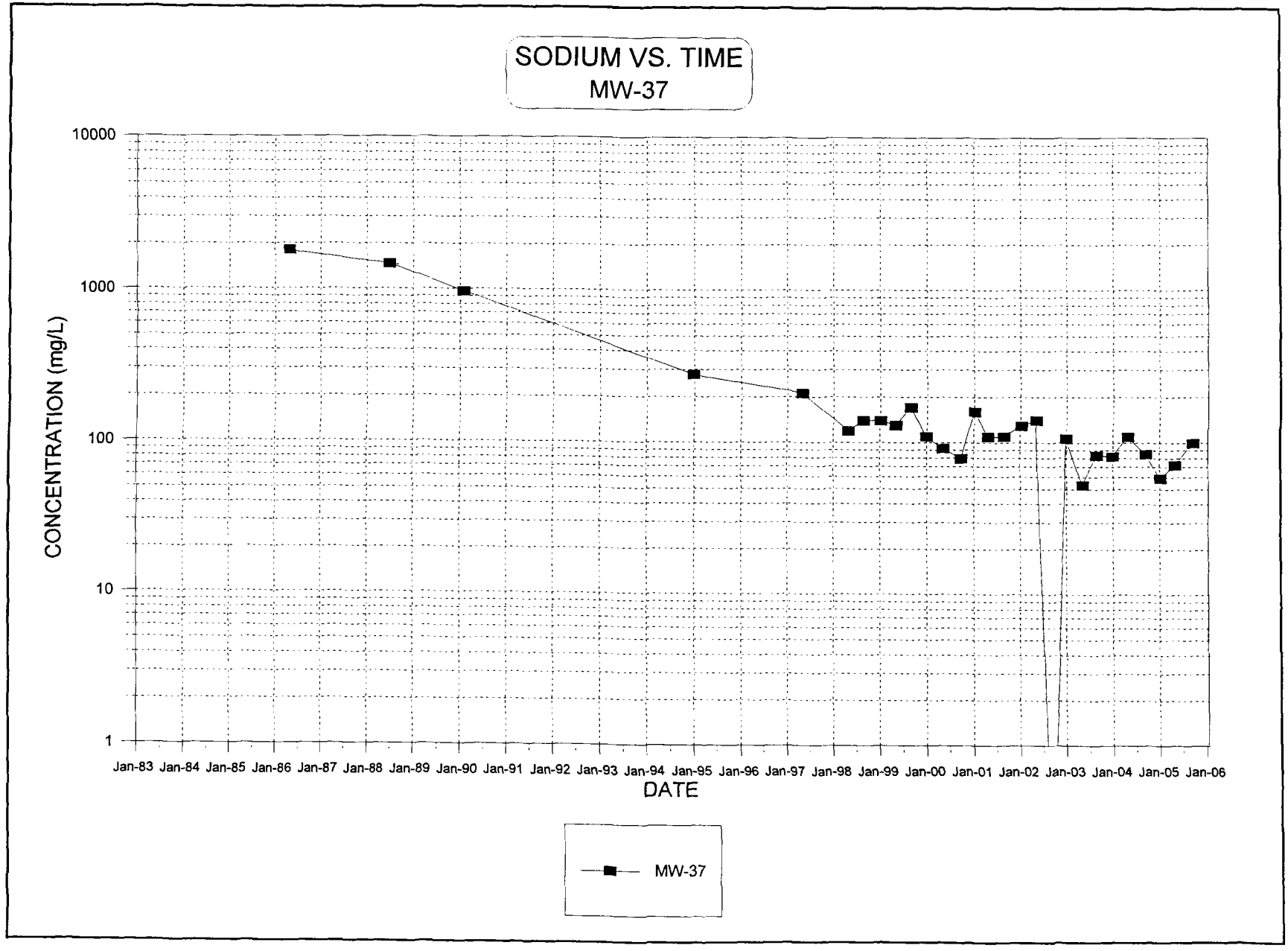

SODIUM VS. TIME
MW-28
CONCENTRATION (mg/L)
10000
1000
100
10
1
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-28


SODIUM VS. TIME
MW-31
CONCENTRATION (mg/L)
10000
1000
100
10
1
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-31


SODIUM VS. TIME
MW-32
CONCENTRATION (mg/L)
10000
1000
100
10
1
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-32


SODIUM VS. TIME
MW-35
CONCENTRATION (mg/L)
10000
1000
100
10
1
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-35


SODIUM VS. TIME
MW-36
CONCENTRATION (mg/L)
10000
1000
100
10
1
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-36


SODIUM VS. TIME
MW-37
CONCENTRATION (mg/L)
10000
1000
100
10
1
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06
DATE
MW-37

APPENDIX E

CONTAMINANT MASS-IN-PLACE ESTIMATION SUPPORTING DATA

MAY 2005 MONITORING EVENT

APPENDIX E-1
ANALYTICAL RESULTS FOR GROUND-WATER SAMPLES
COLLECTED MAY 2005

ORMET CORPORATION
HANNIBAL, OHIO

SAMPLE I.D.:	MW-1	MW-2	MW-5	MW-7	MW-8	MW-10	MW-11	MW-12	MW-14	MW-15	MW-16	MW-17
Cyanide, Total	<0.01	14/15	4.7	<0.01	0.034	<0.01	<0.01	<0.01	0.025	8.2	6.7/7.3	6.2
Fluoride	1.8	44/35	20	1.6	2.5	0.51	1.7	0.87	2.5	49	64/55	17

SAMPLE I.D.:	MW-18	MW-19	MW-28	MW-29S	MW-29D	MW-30	MW-31	MW-32	MW-34S	MW-34D	MW-35	MW-36
Cyanide, Total	13/8.2	0.012	0.15	1.3	0.15	4.5	16	15	9.1	10	7.9	1.8
Fluoride	97/94	2.8	0.27	9.7	3.9	3.1	86	95	130	24	15	30

SAMPLE I.D.:	MW-37	MW-39S	MW-39D	MW-40S	MW-40D	MW-41	MW-42S	MW-42D
Cyanide, Total	3.0	7.9	4.2	0.24	0.68	NS	4.0	1.6
Fluoride	9.5	190	15	7.3	4.9	NS	69	11

NOTE: All results in mg/L.
NS = Not Sampled

APPENDIX E-1 (CONT.)
PLUME CONTOUR AREA CALCULATIONS
FOR TOTAL CYANIDE AND FLUORIDE
BASED ON RESULTS OF SAMPLING CONDUCTED MAY 2005

ORMET CORPORATION
HANNIBAL, OHIO

TOTAL CYANIDE	CONTOUR INTERVAL (from Figure 6)	CONTOUR AREA in sqare feet (estimated using CAD* software)
	>10 mg/L	385,691
	10 mg/L	3,739
	1-10 mg/L	964,233
	0.2-1 mg/L	550,994

TOTAL FLUORIDE	CONTOUR INTERVAL (from Figure 5)	CONTOUR AREA in sqare feet (estimated using CAD* software)
	>150 mg/L	7,267
	100-150 mg/L	15,068
	>100 mg/L	20,975
	50-100 mg/L	475,820
	17-50 mg/L**	20,975
	10-50 mg/L	944,766
	4-10 mg/L	233,655

* CAD - Computer Aided Drafting

** MW-17 Area.

APPENDIX E-1 (CONT.)
AVERAGE AQUIFER THICKNESS CALCULATIONS
WITHIN EACH PLUME CONTOUR INTERVAL
BASED ON RESULTS OF SAMPLING CONDUCTED MAY 2005

ORMET CORPORATION
HANNIBAL, OHIO

TOTAL CYANIDE

CONTOUR INTERVAL (from Figure 6)	MONITORING WELL ID	AQUIFER THICKNESS (in feet)	AVERAGE AQUIFER THICKNESS (b, in feet)
>10 mg/L	MW-2	39	29
	MW-18	25	
	MW-31	28	
	MW-32	24	
10 mg/L	MW-34D	37	37
1-10 mg/L	MW-5	42	30
	MW-15	25	
	MW-16	43	
	MW-17	47	
	MW-18	25	
	MW-30	18	
	MW-35	12	
	MW-36	20	
	MW-37	18	
	MW-42	53	
0.2-1 mg/L	MW-14	57	38
	MW-17	47	
	MW-28	27	
	MW-29D	50	
	MW-30	18	
	MW-37	18	
	MW-40D	49	

APPENDIX E-1 (CONT.)
AVERAGE AQUIFER THICKNESS CALCULATIONS
WITHIN EACH PLUME CONTOUR INTERVAL
BASED ON RESULTS OF SAMPLING CONDUCTED MAY 2005

ORMET CORPORATION
HANNIBAL, OHIO

FLUORIDE

CONTOUR INTERVAL (from Figure 5)	MONITORING WELL ID	AQUIFER THICKNESS (in feet)	AVERAGE AQUIFER THICKNESS (b, in feet)
>150 mg/L	MW-39D	48	48
100-150 mg/L	MW-39D	48	48
>100 mg/L	MW-34D	37	37
50-100 mg/L	MW-2 MW-16 MW-18 MW-31 MW-32 MW-42D	39 43 25 28 24 53	35
17-50 mg/L**	MW-17	47	47
10-50 mg/L	MW-2 MW-5 MW-15 MW-35 MW-36 MW-37 MW-40D	39 42 25 12 20 18 49	29
4-10 mg/L	MW-8 MW-14 MW-28 MW-29D MW-37 MW-40D	48 57 27 50 18 49	42

0319-ANN-E1d.123

** MW-17 Area

APPENDIX E-1 (CONT.)
TOTAL CYANIDE AND FLUORIDE MASS-IN-PLACE CALCULATION WORKSHEET
BASED ON RESULTS OF SAMPLING CONDUCTED MAY 2005

ORMET CORPORATION
HANNIBAL, OHIO

	Contour Interval (from Figure 6)	Contour Interval Area (in square feet) A	Average Aquifer Thickness (in feet) b	1. Aquifer Volume (in cubic feet) VA	Aquifer Porosity n	2. Volume of Ground Water (in cubic feet) Vgw	3. Volume of Ground Water (in Liters) Vgw	Average Concentration (mg/L) Cwi	4. Mass-in-Place for each interval (in mg) Mi	5. Mass-in-Place for each interval (in lbs) Mi
TOTAL CYANIDE	>10 mg/L	385,691	29	11,185,039	0.25	2,796,260	79,190,083	10	791,900,830	1,746
	10 mg/L	3,739	37	138,343	0.25	34,586	979,476	14	13,292,664	29
	1-10 mg/L	964,233	30	28,926,990	0.25	7,231,748	204,803,103	6	1,228,818,618	2,710
	0.2-1 mg/L	550,994	38	20,937,772	0.25	5,234,443	148,239,426	0.6	88,943,656	196
									Total Cyanide Mw:	4,681
FLUORIDE	(From Figure 5)									
	>150 mg/L	7,267	48	348,816	0.25	87,204	2,469,617	170	419,834,890	926
	100-150 mg/L	15,068	48	723,264	0.25	180,816	5,120,709	125	640,088,625	1,411
	>100 mg/L	20,975	37	776,075	0.25	194,019	5,494,618	115	631,881,070	1,393
	50-100 mg/L	475,820	35	16,653,700	0.25	4,163,425	117,908,196	75	8,843,114,700	19,499
	17-50 mg/L	20,975	47	985,825	0.25	246,456	6,979,634	34	237,307,556	523
	10-50 mg/L	944,766	29	27,398,214	0.25	6,849,554	193,979,369	30	5,819,381,070	12,832
	4-10 mg/L	233,655	42	9,813,510	0.25	2,453,378	69,479,665	7	486,357,655	1,072
									Total Fluoride Mw:	37,656

1. VA = A x b
2. Vgw = VA x n
3. Vgw in ft3 multiplied by 28.32 L/ft3 = Vgw in Liters
4. Mi = Vgw x Cwi
5. Mi in mg divided by 1000 mg/g multiplied by 2.205x10-3 lb/g = Mi in pounds