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2008 ANNUAL REMEDIAL ACTION GROUND-WATER MONITORING REPORT ORMET CORPORATION SUPERFUND SITE

MARCH 30, 2009

Prepared for:

Ormet Primary Aluminum Corporation
Hannibal, Ohio

Prepared by:

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ORMET
PRIMARY ALUMINUM CORPORATION

April 3, 2009

Mr. Bernie Schorle
Remedial Project Manager
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USEPA Region V
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Dear Mr. Schorle:

Enclosed are two copies of the 2008 Annual Ground-Water Monitoring Report for the Ormet Superfund site. The report has been prepared in accordance with the Remedial Action Ground-Water Monitoring Plan (Revision 1 – April 28, 1997), which was submitted to the USEPA during Remedial Design.

Respectfully,

John Reggi
Director Corporate Env. Services

Enclosures

cc: Mike Griffin
Brian Blair OEPASEDO

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2008 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 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 that 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 and evaluate changes in the ground-water condition 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 conducted three times per year (approximately once every four months). During 2008, water-level measurements associated with the first monitoring event were recorded on January 17 and ground-water samples were collected on March 12; the second monitoring event was conducted during the period June 10 to 12; and, water-level measurements associated with the third event were recorded on September 8 and ground-water samples were collected on September 11.

Each monitoring event included measurement of water-level elevations at MW- and TH-series monitoring wells, PPB-series piezometers monitoring the alluvial aquifer, and at Ohio River pool measuring points RP-1 and RP-2. Water-level elevation data collected in conjunction with the 2008 monitoring events are provided in Tables 1, 2, and 3, respectively, and a ground-water contour map based on June 2008 data is provided as Figure 2.

During each monitoring event, ground-water samples were collected from the following wells located within and downgradient of the FSPSA, and immediately downgradient of the CMSD (the latter wells are denoted by "*"):

MW - 2	MW - 31
MW - 5	MW - 32
MW - 12*	MW - 35
MW - 16	MW - 36
MW - 18	MW - 37
MW - 28	MW - 44S*
	MW - 44D*

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 the potential source areas at the site (i.e., background wells) and additional wells located within the plume. 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 three monitoring events conducted during 2008 are provided in Appendix A.

The primary purpose of the annual expanded monitoring event is to collect data to prepare plume isopleth maps. The isopleth maps are then used to estimate contaminant mass-in-place and the total area of the aquifer having fluoride concentrations greater than 4.0 mg/L and total cyanide concentrations greater than 0.2 mg/L. These estimates are then compared to previous year's estimates to document changes in ground-water quality during the remediation program. The expanded monitoring event to document baseline conditions at the start of remedial construction in 1997 was conducted in May, and subsequent expanded monitoring events have been conducted in May or June.

Ground-water samples from all monitoring wells except MW-44S and MW-44D are 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 are also analyzed for pH, specific conductance, and sodium, which are additional indicators of the plume in the alluvial aquifer. Samples from MW-12 are also analyzed for PCBs. Samples from wells MW-44S and MW-44D are analyzed for PCBs only. Tetrachloroethene (PCE) is 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). Ground-water analyses for samples collected during the 2008 monitoring events were performed

by Pace Analytical Services, Inc. (Pace) of Export, PA. Methods used by Pace to analyze ground-water samples from the 2008 RA monitoring events are shown below.

Analytical Parameter	Analytical Method	Ground-Water Clean-Up Goal (mg/L)	Reporting Limit (mg/L)
Arsenic	SW846/6010B	0.01*	0.004
Beryllium	SW846/6010B	0.004	0.0005
Manganese	SW846/6010B	0.23*	0.01
Vanadium	SW846/6010B	0.26	0.01
Cyanide (total)	EPA 335.2	N/A	0.01
Cyanide (amenable)	EPA 335.1	0.2	0.01
Fluoride	EPA 340.2	4	0.1
PCBs	SW846/8082	N/A	0.0005
Tetrachloroethene	SW846/8260B	0.005	0.005
pH	EPA 150.1	N/A	N/A
Specific Conductance	EPA 120.1	N/A	N/A
Sodium	SW846/6010B	N/A	0.050

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 2008 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 2008 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 2008 REMEDIAL ACTION GROUND-WATER MONITORING

GROUND-WATER FLOW

Water-level elevation data collected during the June 2008 monitoring event (Table 2) were used to construct the ground-water contour map presented as Figure 2. The ground-water elevation contours and associated ground-water flow patterns shown in Figure 2 are consistent with those previously mapped. As shown, the ground-water pumping component of the site remedy is effective in containing the plume in the alluvial aquifer beneath the Ormet Reduction Plant property. Ground-water flow in the alluvial aquifer is generally from northeast to southwest, toward the Ormet Reduction Plant Ranney well and interceptor well. Pumping maintained the water table at an elevation below the pool of the Ohio River, and the hydraulic potential along the river/plant boundary indicates recharge of the alluvial aquifer from the Ohio River. The ground-water elevation contour map shows a slight mounding effect by the FSPSA soil flushing system, but not to the extent that it alters the overall ground-water flow pattern beneath that area of the site; i.e., soil flushing 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 Plant Ranney well during 2008 created a large cone of influence around this pumping center. Pumping of the Ormet Rolling Mill Ranney well (located about 2000 feet west of the Reduction Plant Ranney well) was discontinued in late 2005. By this change, the ground-water divide that in previous years existed roughly parallel to and west of the fenceline separating the two plants, was not present in 2008. Ground-water flow beneath the former Rolling Mill property during 2008 was toward the Reduction Plant Ranney well (see Figure 2), and a hydraulic potential did not exist for ground water beneath the Reduction Plant to flow toward the former Rolling Mill.

GROUND-WATER QUALITY

Concentration vs. Time Trends

To evaluate changes in plume concentrations within the alluvial aquifer beneath the Ormet site, recent and historical results were used to prepare concentration versus time graphs 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 are also graphed, because it is an additional indicator of the plume.

Discussions in the following text regarding concentration versus time trends focus mainly on the period since pre-remediation baseline data were collected at the site (i.e., since 1997). If one compares historical (1983 to 1985) and recent ground-water data for wells defining the portion of the plume extending downgradient from the source areas toward the Ranney well and interceptor well (i.e., MW-2, MW-5, MW-8, MW-11, MW-16), improvements in ground-water quality are indicated at most of the wells, as shown on the following table.

Date	MW-2	MW-5	MW-8	MW-11	MW-16
	Total Cyanide				
12/83	56	18.8	0.32	0.52	7.35
02/84	48	14.5	0.14	0.25	5.5
09/84	41	4.9	0.35	0.2	2.1
05/85	95	25	0.11	0.3	10
10/85	140	22			3.9
03/08	9	4.5			3.4
06/08	12/12	4.9	0.73	0.19	3.3
09/08	7	4.7			3.5
	Fluoride				
12/83	400	130	18	33	110
02/84	420	120	18	27	98
09/84	480	140	22	22	80
05/85	400	91	7.9	13	72
10/85	390	70			30
03/08	42	27			39
06/08	37/41	27	6.1	1.1	33
09/09	36	24			26
	Sodium				
12/83	1,950	880	202	238	530
02/84	2,290	1,030	199	232	570
09/84	2,460	850	216	213	475
05/85	2,150	710	151	181	443
10/85	2,060	650			186
03/08	310	250			220
06/08	280/290	230	140	100	200
09/08	290	240			210

Note: All results given in mg/L.

The decreases in downgradient concentrations of indicator parameters in ground water are attributed to an overall decrease in the concentrations and amounts of leachate introduced to the ground-water system beneath the source areas (primarily the FSPSA). They are credited to the passage of time and leaching/depletion of source materials by infiltrating precipitation, and operational procedures/changes effected by Ormet prior to initiation of RA activities (e.g., pumping of the Ranney well and interceptor wells, discontinued use of disposal ponds, discontinued storage of spent potliner at the FSPSA). Soil flushing within the FSPSA, which became fully operational in 1999, is to accelerate the leaching/depletion process.

With regard to the cleanup goals specified in the ROD and, in the case of arsenic and manganese, the background values calculated by HMI, the most recent (i.e., September) reported

concentrations for samples collected from the compliance wells are compared with the cleanup goals on the following table.

COMPARISON OF LATEST REPORTED CONCENTRATION TO CLEANUP GOALS/BACKGROUND(1)

	Amenable Cyanide	Arsenic	Beryllium	Manganese	Vanadium	Fluoride
Cleanup Goal/Background (mg/L)	0.2	0.01/ 0.04(1)	0.004	0.23/ 9.8(1)	0.26	4.0
Wells within FSPSA						
MW - 32	*	x	*	o	*	+
MW - 35	+	o	*	o	*	+
MW - 36	+	*	*	*	*	+
MW - 37	*	*	*	*	*	*
Downgradient Edge of FSPSA						
MW - 16	*	o	*	o	*	+
MW - 18	*	x	*	*	*	+
MW - 28	*	*	*	*	*	*
MW - 31	*	x	*	o	*	+
Mid-Plant Area						
MW - 2	*	x	*	o	*	+
MW - 5	+	*	*	o	*	+
Downgradient of CMSD						
MW - 12	*	*	*	o	*	*

* - Latest result at or below ROD cleanup goal.

0 - Latest result is above ROD cleanup goal, but below calculated background (arsenic and manganese only).

+ - Latest result is above ROD cleanup goal.

X – Latest result is above calculated background (arsenic and manganese only).

(1) Background values calculated by HMI (August, 1996). Arsenic background = 0.04 mg/L; manganese background = 9.78 mg/L.

Discussions of the time versus concentration trends for each parameter for which a cleanup goal has been established are provided in the following sections. As noted earlier, this evaluation focuses mainly on data collected since the pre-remediation monitoring event performed in 1997.

Cyanide

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 cyanide or cyanide salts. 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 cyanide complexes. This interpretation is supported by the relative concentrations of total versus amenable or free cyanide typically reported for ground-water samples collected at the site; i.e., for a given sample, the concentration of amenable or free cyanide is typically much lower than the total cyanide concentration. Also, the area of the alluvial aquifer containing concentrations of amenable cyanide above its 0.2 mg/L cleanup goal is smaller than the area of aquifer containing total cyanide above 0.2 mg/L (see Figure 6).

Concentration versus time graphs for total cyanide and amenable cyanide are presented in Appendix D-1 and D-2, respectively. Concentrations reported for amenable cyanide at a given well exhibit a higher degree of analytical variability (i.e., fluctuations in reported concentrations from one monitoring event to the next) than for other plume indicators, (e.g., total cyanide, fluoride, sodium). Consequently, concentration versus time graphs for amenable cyanide tend to be erratic, and are of limited usefulness for identifying time-related trends. The cleanup goal for amenable cyanide of 0.2 mg/L has consistently been achieved at MW-12 and, during the last (September) 2008 monitoring event, also achieved at MW-2, MW-16, MW-18, MW-28, MW-31, MW-32, and MW-37.

For total cyanide, the concentration versus time graphs show either a downward trend or no clear trend at most of the compliance point wells. At several of the wells (e.g., MW-2, MW-16, MW-18, MW-28, MW-31), concentration increases during or shortly following 1999 (when soil flushing began) have been followed by decreases. The latter four of these wells are located immediately downgradient of the FSPSA, and MW-2 is further downgradient (see Figure 2). At MW-5 and, to a lesser extent MW-32, increases in total cyanide concentrations following the start of soil flushing persisted for a longer period of time, but in recent years appear to have stabilized. Overall, the total cyanide concentration data indicate that soil flushing within the FSPSA, and/or the excavation/rearrangement of shallow soil during installation of the soil-flushing system, caused initial increases in leachate generation and ground-water concentrations, but, at most of the wells exhibiting these effects, there has been a subsequent decline.

Fluoride

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

Fluoride concentrations have consistently been below the cleanup goal of 4 mg/L at two of the eleven compliance wells, MW-12 and MW-28. Recently, fluoride concentrations have also been below the cleanup goal at MW-37. A general downward concentration trend was observed at six of the compliance wells (MW-2, MW-18, MW-31, MW-35, MW-36, and MW-37). At MW-5, analyses of samples collected since 1997 have reported relatively consistent concentrations, with slight increases apparent since 2006. At compliance wells MW-16 and MW-32, concentrations of fluoride increased following the start of soil flushing, leveled off, and, at MW-16, have shown decreases in recent years.

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 wells, MW-5, MW-12, and MW-28, concentrations of arsenic reported since 1997 have consistently been below the clean-up goal of 0.01 mg/L listed in the ROD, and at MW-36 and MW-37 recently reported concentrations (i.e., since mid 2006) were also below the 0.01 mg/L clean-up goal. At MW-35, reported arsenic concentrations, though sporadically exceeding the ROD-specified cleanup goal, have consistently been below the calculated background value (i.e., $\leq$ 0.04 mg/L) during recent years. Data for MW-2, MW-5, MW-36, and MW-37 wells show a general trend of decreasing concentrations, and data for MW-18, MW-31, and MW-35 exhibit no consistent trend. At MW-16 and MW-32, concentrations increased relative to historical values, but in recent years have shown a downward trend and, at MW-16, were below the background value during all three 2008 monitoring events.

As discussed earlier, the final cleanup goal for arsenic is pending. In the ROD, the cleanup goal for arsenic was set at 0.01 mg/L. However, 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 0.04 mg/L for arsenic. At seven of the eleven compliance wells (MW-5, MW-12, MW-16, MW-28, MW-35, MW-36, and MW-37), the recent results are below the 0.04 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. In all but three of the compliance wells (MW-18, MW-32, MW-37), there has never been a reported detection of beryllium that exceeded the cleanup goal; in some of the earlier samples, the analytical detection limit was higher than 0.004 mg/L. At MW-18, MW-32, and MW-37, detections of beryllium exceeding the cleanup goal have been few and isolated, giving no indication of ground-water quality impacts by this constituent. Beryllium concentrations were consistently below the cleanup goal in all samples from all of the compliance point monitoring wells analyzed during each of the 2008 monitoring events.

Manganese

Concentration versus time graphs for manganese are provided in Appendix D-6. Manganese results for MW-28 have consistently been below the ROD-specified cleanup goal of 0.23 mg/L and, in recent samples, also below the cleanup goal at MW-36 and MW-37. At MW-2 and MW-12, the data give no clear indication of either increasing or decreasing concentrations. At MW-5, MW-16, MW-18, MW-31, MW-32, MW-35, MW-36, and MW-37, increased manganese concentrations that roughly coincided with soil flushing activities appear to have peaked and, in the case of MW-18, MW-36, and MW-37, have decreased to near or below the ROD-specified cleanup goal in recent years.

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 9.78 mg/L for manganese. Except for a few isolated detections, manganese concentrations have been below the background level at all of the compliance wells during recent and historical 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 0.26 mg/L. With the exception of MW-18 and MW-37, vanadium concentrations have been below the cleanup goal at all compliance wells during all recent and historical monitoring events. For MW-37, only a single reported value (in 1988) exceeded the cleanup goal, and for MW-18, only two reported values (January 2002 and September 2004) exceeded the cleanup goal. These data do not indicate any substantive ground-water quality impacts by vanadium.

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 typically been below detection at MW-5 and, in recent samples, also below detection at MW-18. PCE concentrations have shown increases at MW-2 and, to a lesser degree, at MW-31. At MW-18 and MW-30, increases have been followed by decreases. The cleanup goal for PCE is the MCL of 0.005 mg/L. In the 2008 samples from the five wells, the reported concentrations of PCE consistently met the cleanup goal at MW-5 and MW-18.

Sodium

Sodium is not a constituent for which a cleanup goal was specified in the ROD, but has been graphed (Appendix D-9) and is discussed because it is a good indicator of changes in

the overall condition of the plume. At compliance wells MW-2, MW-18, MW-31, MW-36, and MW-37, data collected since 1997 show decreases in sodium concentrations, and at MW-5, MW-12, MW-28, and MW-35 no clear trend of increasing or decreasing concentrations. At MW-16 and MW-32, sodium concentrations increased in 2001 and 2004, respectively, and have been stable since.

Contaminant Mass-in-Place

In accordance with Section II.3.C. of the Consent Decree SOW, data from the June 2008 expanded routine monitoring event were used to estimate the masses of fluoride and total cyanide (primary plume indicators) in the alluvial aquifer as a means of documenting changes in the overall ground-water quality during 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 presented as Figures 3 and 4, respectively. Data and supporting calculations for the June 2008 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 annual reports.

Based on the estimates presented in Table 6, the mass of fluoride in the alluvial aquifer calculated for 1999 (about 30,416 pounds), after the start of full-time soil flushing in the FSPSA, increased by about 6,528 pounds relative to the 1998 value of 23,888 pounds. Between May 1999 and May 2001, the fluoride mass-in-place 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, and in

2006 decreased further to about 32,725 pounds. For 2007, the estimated fluoride mass-in-place increased to about 35,219 pounds, and for 2008 decreased to about 33,638 pounds.

Similar to fluoride, the estimated total cyanide mass-in-place calculated for 1999, following the start of full-time soil flushing, increased by about 2,969 pounds relative to 1998 estimates (i.e., 2,597 pounds in 1998 vs. 5,566 pounds in 1999). Between 1999 and 2003, the estimated cyanide mass-in-place showed an overall decreasing trend, to a low of about 2,773 pounds. In 2004, the estimated cyanide mass-in-place increased to about 3,062 pounds, and continued to increase in 2005 (about 4,681 pounds) and 2006 (about 6,615 pounds). For 2007, the estimated total cyanide mass-in-place decreased slightly to about 6,438 pounds, and for 2008 again decreased to about 5,997 pounds.

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. Overall, the mass-in-place estimates suggest that soil flushing has had a discernable effect, though it is unclear why the initial increases observed in 1999 were followed by several years of decreased values, which were then followed by several years of increased values.

To assess the removal of cyanide and fluoride from the alluvial aquifer by pumping of the interceptor well and Ranney well, the mass removals achieved during the period between the two most recent expanded monitoring events (i.e., May 2007 through June 2008) were calculated and compared to changes in the estimated masses in the aquifer over the same period (see Table 7). The masses of cyanide and fluoride removed by pumping of the interceptor well were calculated using analytical and flow data for the influent to Ormet's ground-water treatment plant, which receives the water pumped by the interceptor well, and the masses removed by pumping of the Reduction Plant Ranney well were calculated using analytical data and flow data collected by Ormet for routine monitoring purposes.

During the period from May 2007 to June 2008, approximately 6,320 pounds of fluoride and approximately 1,000 pounds of cyanide were removed from the alluvial aquifer by the

interceptor well and the Ranney well. During the same period, the estimated mass of fluoride in the aquifer decreased by approximately 1,581 pounds and the estimated mass of cyanide decreased by approximately 441 pounds. That changes (typically decreases) in each year's mass removal by ground-water pumping are not mirrored by similar changes in the calculated mass-in-place may be due to one or more of the following types of factors:

- Localized differences in the alluvial aquifer matrix (affecting hydraulic conductivity) and/or differences in hydraulic gradients from one location to the next result in a range of flow velocities (and travel times), that potentially allow certain parts of the plume to travel to the pumping centers more quickly than other parts of the plume (i.e., the aquifer is not being uniformly flushed).

- Certain areas of the plume that are accounted for in the mass-in-place estimates may be subject to relatively limited mobility (for the reasons given above), and do not contribute proportionally to the flux of fluoride and cyanide moving toward the pumping centers.

- Concentration contour area estimates made from the isopleth maps and used in the mass-in-place calculations are strongly influenced by the placement of the contour lines, which is interpretative and will vary from year to year depending on the individual preparing the isopleth maps, analytical variability in the data, and the selection of contour intervals used to map a given data set.

- Natural attenuation of plume constituents within the aquifer matrix, which is likely variable and would be difficult to accurately quantify, may immobilize a portion of the constituent mass accounted for in the mass-in-place calculations.

- Variations in the soil flushing operation (e.g., duration of flushing, volumes of water applied, extent/duration frozen ground), variations in natural precipitation patterns, and differences in infiltration rates from one location to the next may result in relatively complex, non-uniform contaminant distributions that have more effect on the

preparation of isopleth maps and calculation of mass-in-place, than on the actual flux of contaminants toward the pumping centers (for all of the reasons listed above).

For these reasons, long-term trends in the calculated mass-in-place and mass removals are more meaningful than year to year variations. Figure 7 presents graphs of the estimated masses of fluoride and cyanide in the alluvial aquifer versus time.

Effected Aquifer Areas

As a further check on changes in ground-water quality during the remediation, the approximate areas of the aquifer containing fluoride and total cyanide at concentrations above 4.0 mg/L and 0.2 mg/L, respectively, were estimated using analytical results from the June 2008 sampling event. The results are summarized in Table 6. The estimates of aquifer areas are based on the fluoride and total cyanide isopleth maps shown as Figures 3 and 4, respectively. For comparison, Table 6 also includes previous year's estimates of the aquifer areas containing fluoride and total cyanide concentrations above 4.0 mg/L and 0.2 mg/L, respectively.

As shown in Table 6, the area of the alluvial aquifer containing fluoride above 4.0 mg/L has been relatively consistent since 1997, ranging from 36.9 acres to 45.4 acres. For 2008, the aquifer area with fluoride concentrations above 4.0 mg/L was about 44.0 acres.

A gradual increase in the area of the aquifer with concentrations of total cyanide above 0.2 mg/L has been apparent since 1999, ranging from 27.5 acres in 1999 to 49.9 acres in 2008. Soil flushing in the FSPSA is a possible cause of the increased area of aquifer containing total cyanide above 0.2 mg/L.

As discussed previously, 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 on

Figure 6, the area of the aquifer with amenable cyanide above 0.2 mg/L is smaller than the area with total cyanide above 0.2 mg/L.

Analytical Results for PCBs

During each of the three 2008 sampling events, ground-water samples from monitoring wells MW-12, MW-44S, and MW-44D were analyzed for PCBs. Analytical results for these samples, and all previous samples (i.e., since 2002) reported no detections of PCBs (see Table 5). These data give no indication of ground-water quality impacts by PCBs.

SUMMARY/CONCLUSIONS

- Pumping of the Ranney well and interceptor well at the Ormet Reduction Plant 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 during the summer of 2008 appears to have had a slight effect on ground-water flow patterns beneath the FSPSA (i.e., slight mounding of the ground-water table). Along the river/plant boundary, the flow of ground water continues to be from the river to the aquifer.

- Pumping of the interceptor well and Ranney well removed approximately 6,320 pounds of fluoride and approximately 1,000 pounds of cyanide from the alluvial aquifer during the period May 2007 to June 2008. During the same period, the estimated mass of fluoride in the aquifer decreased by about 1,581 pounds and the estimated mass of cyanide in the aquifer decreased by about 441 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 well 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 4.0 mg/L increased by about 4.5% between 2007 and 2008, and the estimated area of the aquifer with total cyanide concentrations above the 0.2 mg/L increased by about 7.1% between 2007 and 2008.

- Reductions in 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 attributed to the passage of time and natural flushing by infiltrating

precipitation, and 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 spent potliner storage area. Increases in the fluoride and cyanide mass-in-place since initiation of soil flushing may be due to the flushing itself, and/or the excavation/ rearrangement of shallow soil during the installation of the flushing system.

- Analyses of ground water samples for PCBs during 2008 and previous monitoring events reported no detections of PCBs. These data give no indication of ground-water quality impacts by PCBs.

TABLE 1
WATER-LEVEL ELEVATION DATA
ORMET CORPORATION
HANNIBAL, OHIO
DATE: JANUARY 17, 2008

WATER-LEVEL MEASURING POINT	MEASURING POINT ELEVATION (ft. MSL)	DEPTH TO WATER (feet)	GROUND-WATER ELEVATION (ft. MSL)
MW-1	668.07	47.64	620.43
MW-2	668.12	48.33	619.79
MW-3	645.17	23.13	622.04
MW-4	661.07	44.59	616.48
MW-5	668.16	51.16	617.00
MW-7	667.94	50.16	617.78
MW-8	667.71	53.10	614.61
MW-9	666.59	50.95	615.64
MW-10	667.16	52.38	614.78
MW-11	667.31	50.67	616.64
MW-12	636.73	15.18	621.55
MW-13	661.44	37.95	623.49
MW-14	653.59	31.47	622.12
MW-15	657.31	33.71	623.60
MW-16	662.72	41.21	621.51
MW-17	655.03	32.14	—
MW-18	660.91	37.35	623.56
MW-19	662.03	38.19	623.84
MW-20	632.33	9.39	622.94
MW-21s	664.02	47.96	616.06
MW-21d	663.60	47.60	616.00
MW-22s	667.47	51.70	615.77
MW-22d	667.21	51.50	615.71
MW-23s	663.18	46.90	616.28
MW-23d	663.41	47.24	616.17
MW-24s	667.88	52.73	615.15
MW-24d	667.75	52.61	615.14
MW-25	667.73	51.50	616.23
MW-26s	665.54	NM	—
MW-26d	665.59	NM	—
MW-27	667.86	51.60	616.26
MW-28	663.27	21.41	641.86
MW-29s	653.40	32.13	621.27
MW-29d	653.07	31.81	621.26
MW-30	667.58	44.75	622.83
MW-31	661.59	39.50	622.09
MW-32	656.66	33.93	622.73
MW-34s	655.67	33.21	622.46
MW-34d	654.67	31.29	623.38
MW-35	661.90	35.35	626.55
MW-36	655.14	33.52	621.62
MW-37	661.14	22.20	638.94
MW-38	666.64	20.18	646.46
MW-39s	657.30	34.84	622.46
MW-39d	657.18	34.68	622.50
MW-40s	662.22	42.44	619.78
MW-40d	661.95	42.19	619.76
MW-41	637.67	NM	–
MW-42s	654.37	32.94	621.43
MW-42d	654.34	32.86	621.48
MW-44s	662.01	42.30	619.71
MW-44d	661.76	42.82	618.94

TABLE 1 (cont.)
WATER-LEVEL ELEVATION DATA
ORMET CORPORATION
HANNIBAL, OHIO
DATE: JANUARY 17, 2008

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	NM	--
PPB-02d+	662.78	39.57	623.21
PPB-04+	661.57	39.42	622.15
PPB-05*	661.62	NM	--
PPB-06+	663.04	42.53	620.51
PPB-07*	661.71	NM	--
PPB-09+	664.30	40.68	623.62
PPB-10*	663.45	NM	--
PPB-14*	660.64	NM	--
TH-3	667.81	48.66	619.15
TH-10	658.17	33.93	624.24
TH-11	659.08	34.80	624.28
TH-15	663.62	48.30	615.32
TH-16	664.62	48.70	615.92
TH-17	663.93	47.82	616.11
RP-1 (Downriver)	643.17	19.09	624.08
RP-2 (Upriver)	643.05	18.88	624.17

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.

SEPT-07 WATER LEVELS.XLS

TABLE 2
WATER-LEVEL ELEVATION DATA
ORMET CORPORATION
HANNIBAL, OHIO
DATE: JUNE 10, 2008

WATER-LEVEL MEASURING POINT	MEASURING POINT ELEVATION (ft. MSL)	DEPTH TO WATER (feet)	GROUND-WATER ELEVATION (ft. MSL)
MW-1	668.07	47.33	620.74
MW-2	668.12	47.95	620.17
MW-3	645.17	22.82	622.35
MW-4	661.07	44.21	616.86
MW-5	668.16	50.84	617.32
MW-7	667.94	50.16	617.78
MW-8	667.71	52.78	614.93
MW-9	666.59	50.48	616.11
MW-10	667.16	51.97	615.19
MW-11	667.31	50.33	616.98
MW-12	636.73	14.71	622.02
MW-13	661.44	37.72	623.72
MW-14	653.59	30.86	622.73
MW-15	657.31	32.55	624.76
MW-16	662.72	40.49	622.23
MW-17	655.03	31.13	623.90
MW-18	660.91	36.44	624.47
MW-19	662.03	37.50	624.53
MW-20	632.33	9.19	623.14
MW-21s	664.02	47.53	616.49
MW-21d	663.60	47.15	616.45
MW-22s	667.47	51.26	616.21
MW-22d	667.21	51.02	616.19
MW-23s	663.18	46.51	616.67
MW-23d	663.41	46.85	616.56
MW-24s	667.88	52.26	615.62
MW-24d	667.75	52.20	615.55
MW-25	667.73	NM	---
MW-26s	665.54	NM	---
MW-26d	665.59	NM	---
MW-27	667.86	51.35	616.51
MW-28	663.27	19.48	643.79
MW-29s	653.40	31.54	621.86
MW-29d	653.07	31.26	621.81
MW-30	667.58	44.35	623.23
MW-31	661.59	38.62	622.97
MW-32	656.66	32.56	624.10
MW-34s	655.67	31.96	623.71
MW-34d	654.67	30.40	624.27
MW-35	661.90	34.48	627.42
MW-36	655.14	31.96	623.18
MW-37	661.14	20.31	640.83
MW-38	666.64	19.19	647.45
MW-39s	657.30	33.98	623.32
MW-39d	657.18	33.91	623.27
MW-40s	662.22	42.00	620.22
MW-40d	661.95	41.78	620.17
MW-41	637.67	NM	--
MW-42s	654.37	32.31	622.06
MW-42d	654.34	32.25	622.09
MW-44s	662.01	41.93	620.08
MW-44d	661.76	42.49	619.27

TABLE 2 (cont.)
WATER-LEVEL ELEVATION DATA
ORMET CORPORATION
HANNIBAL, OHIO
DATE: JUNE 10, 2008

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	NM	--
PPB-02d+	662.78	38.72	624.06
PPB-04+	661.57	NM	---
PPB-05*	661.62	NM	--
PPB-06+	663.04	42.19	620.85
PPB-07*	661.71	NM	--
PPB-09+	664.30	40.43	623.87
PPB-10*	663.45	NM	--
PPB-14*	660.64	NM	--
TH-3	667.81	48.31	619.50
TH-10	658.17	33.38	624.79
TH-11	659.08	33.86	625.22
TH-15	663.62	47.80	615.82
TH-16	664.62	48.21	616.41
TH-17	663.93	47.39	616.54
RP-1 (Downriver)	643.17	19.30	623.87
RP-2 (Upriver)	643.05	19.49	623.56

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.

TABLE 3
WATER-LEVEL ELEVATION DATA
ORMET CORPORATION
HANNIBAL, OHIO
DATE: SEPTEMBER 8, 2008

WATER-LEVEL MEASURING POINT	MEASURING POINT ELEVATION (ft. MSL)	DEPTH TO WATER (feet)	GROUND-WATER ELEVATION (ft. MSL)
MW-1	668.07	47.13	620.94
MW-2	668.12	47.70	620.42
MW-3	645.17	23.00	622.17
MW-4	661.07	43.55	617.52
MW-5	668.16	50.24	617.92
MW-7	667.94	49.67	618.27
MW-8	667.71	51.97	615.74
MW-9	666.59	49.70	616.89
MW-10	667.16	51.15	616.01
MW-11	667.31	49.70	617.61
MW-12	636.73	14.69	622.04
MW-13	661.44	37.90	623.54
MW-14	653.59	31.03	622.56
MW-15	657.31	33.20	624.11
MW-16	662.72	40.65	622.07
MW-17	655.03	31.69	623.34
MW-18	660.91	36.97	623.94
MW-19	662.03	38.09	623.94
MW-20	632.33	9.47	622.86
MW-21s	664.02	46.73	617.29
MW-21d	663.60	46.33	617.27
MW-22s	667.47	50.48	616.99
MW-22d	667.21	50.24	616.97
MW-23s	663.18	45.72	617.46
MW-23d	663.41	46.03	617.38
MW-24s	667.88	51.50	616.38
MW-24d	667.75	51.39	616.36
MW-25	667.73	50.50	617.23
MW-26s	665.54	NM	---
MW-26d	665.59	NM	---
MW-27	667.86	50.64	617.22
MW-28	663.27	20.71	642.56
MW-29s	653.40	31.58	621.82
MW-29d	653.07	31.29	621.78
MW-30	667.58	44.16	623.42
MW-31	661.59	38.95	622.64
MW-32	656.66	33.24	623.42
MW-34s	655.67	32.67	623.00
MW-34d	654.67	30.97	623.70
MW-35	661.90	35.00	626.90
MW-36	655.14	32.73	622.41
MW-37	661.14	21.21	639.93
MW-38	666.64	19.85	646.79
MW-39s	657.30	34.35	622.95
MW-39d	657.18	34.24	622.94
MW-40s	662.22	44.01	618.21
MW-40d	661.95	43.92	618.03
MW-41	637.67	NM	--
MW-42s	654.37	32.47	621.90
MW-42d	654.34	32.40	621.94
MW-44s	662.01	41.61	620.40
MW-44d	661.76	42.15	619.61

TABLE 3 (cont.)
WATER-LEVEL ELEVATION DATA
ORMET CORPORATION
HANNIBAL, OHIO
DATE: SEPTEMBER 8, 2008

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	NM	--
PPB-02d+	662.78	39.31	623.47
PPB-04+	661.57	NM	---
PPB-05*	661.62	NM	--
PPB-06+	663.04	NM	--
PPB-07*	661.71	NM	--
PPB-09+	664.30	40.65	623.65
PPB-10*	663.45	NM	--
PPB-14*	660.64	NM	--
TH-3	667.81	47.95	619.86
TH-10	658.17	34.05	624.12
TH-11	659.08	34.40	624.68
TH-15	663.62	47.03	616.59
TH-16	664.62	47.43	617.19
TH-17	663.93	46.59	617.34
RP-1	643.17	19.25	623.92
RP-2	643.05	19.10	623.95

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.

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

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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	6.82	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	
5/06	6.87	6.75	800	650	<0.01			<2.0B	<0.004	<0.0005		0.43	46	<0.01	
5/07	6.61	6.52	660	516	<0.01			1.1	<0.004	<0.0005		0.66	49	<0.01	
6/08	6.29		590	360	<0.01			0.5	<0.004	<0.0005		0.43	40	<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
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUND-WATER MONITORING WELLS AND PARAMETERS
ORMET CORPORATION
HANNIBAL, OHIO

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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
1/06	9.63	7.62	1,000	1,401	12		0.43	58J	0.064	0.00099		1.1	350	0.052	0.024
5/06	9.70	9.80	1,700	1,390	6.5		<0.01	46J	0.066	0.00084		1.0	370	0.05	0.024
5/06 (Dup.)	9.69	9.80	1,700	1,390	11		<0.01	52J	0.064	0.00083		1.0	380	0.049	0.024
9/06	9.75	9.81	1,700	1,356	19		5.70	48	0.061	<0.00050		0.63	350	0.032	0.021
2/07	9.54		1,600		15	0.046	2.50	32	0.046	<.0005		0.49	330	0.028	0.037
5/07	9.50	9.55	1,300	1,183	11		<0.01	47	0.050	0.00050		0.56	330	0.032	0.036
9/07	9.49	9.89	1,400	1,103	12		0.56	45	0.049	<0.00050		0.59	310	0.034	0.054
3/08	9.52	9.33	1,400	842	9		<0.01	42	0.046	<0.0005		0.52	310	0.03	0.041
6/08	9.48		1,400	910	12(J)		0.75	37	0.046	0.00063		0.52	280	0.032	0.062
6/08 (Dup.)	9.49		1,400	910	12		0.93	41	0.045	0.00060		0.52	290	0.031	0.065
9/08	9.43	9.58	1,200	1,318	7		<0.01	36	0.044	<0.0005		0.51	290	0.027	0.042

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

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

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

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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
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
1/06	8.10	7.28	1,400	1,206	1.3		<0.01	17J	0.0048	<0.0005		0.80	250	<0.01	<0.005
5/06	8.05	8.04	1,400	1,150	5.2		0.38	16J	<0.004	<0.0005		0.70	250	<0.01	<0.005
9/06	7.97	7.98	1,400	1,075	5.4		1.60	17	<0.004	<0.0005		0.44	240	,0.010	<0.005
2/07	8.27		1,400		6.2		0.90	21	<.004	<.0005		0.36	230	<.01	<0.005
5/07	8.00	7.92	1,200	857	5.9		<0.010	23	<0.004	<0.0005		0.40	230	<0.010	<0.005
5/07 (Dup.)	7.87	7.92	1,200	857	6.2		<o.01	23	<0.004	<0.0005		0.38	230	<0.01	<0.005
9/07	8.03	8.50	1,300	856	5.8		0.15	26	0.0046	<0.0005		0.45	240	<0.010	<0.0050
3/08	8.06	7.90	1,300	618	4.5		4.50	27	<0.0040	<0.0005		0.39	250	<0.010	<0.005
6/08	8.06		1,300	730	4.9(J)		0.40	27	0.0054	<0.0005		0.48	230	<0.01	<0.005
9/08	8.11	8.17	1,100	1,178	4.7		0.74	24	<0.004	<0.0005		0.44	240	<0.01	<0.005

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

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

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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	
5/06	5.99	5.86	790	672	0.019		0.019	<2.0B	0.044	<0.0005		2.1	79	<0.01	
5/07	6.04	5.68	660	509	<0.010			0.1	0.038	<0.0005		2.4	69	<0.010	
6/08	6.1	6.8	640	403	0.011		<0.01	0.17	0.031	<0.0005		2.3	63	<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
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUND-WATER MONITORING WELLS AND PARAMETERS
ORMET CORPORATION
HANNIBAL, OHIO

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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	
5/06	7.80	7.71	1000	856	0.094		<0.01	<2.0B	<0.004	<0.0005		0.57	140	<0.01	
5/07	7.56	7.51	890	622	0.59		<0.01	3.1	<0.004	<0.0005		0.19	120	<0.01	
6/08	7.53		1000	546	0.73		0.64	6.1	<0.004	<0.0005		0.19	140	<0.01	

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

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

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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	
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	
5/06	7.36	7.21	820	669	<0.01			<2.0B	<0.004	<0.0005		<0.01	27	<0.01	
5/07	7.17	7.18	750	521	<0.01			0.2	<0.004	<0.0005		<0.01	20	<0.01	
6/08	7.19		740	400	<0.01			0.4	<0.004	<0.0005		<0.01	23	<0.01	

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

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

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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	658	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	
5/06	7.85	7.84	620	518	0.013		<0.01	<2.0B	<0.004	<0.0005		0.59	29	<0.01	
5/07	7.8	7.8	700	527	0.066		<0.010	1.0	<0.004	<0.0005		0.62	69	<0.01	
6/08	7.84		900	509	0.19(J)		<0.01	1.1	0.0042	<0.0005		0.63	100	<0.01	

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

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

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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	
1/06	7.67	7.14	550	480	<0.01			0.61J	<0.004	<0.0005		1.8	25	<0.01	
1/06 (Dup.)	7.65	7.14	550	480	<0.01			0.48J	<0.004	<0.0005		1.8	25	<0.01	
5/06	7.55	7.57	510	473	<0.01			<2.0B	<0.004	<0.0005		1.9	23	<0.01	
9/06	7.61	7.57	610	508	<0.01			0.57	<0.004	<0.0005		2.2	26	<0.01	
9/06 (Dup.)	7.60		610		<0.01			0.62	<0.004	<0.0005		2.2	26	<0.01	
2/07	7.68		620		<.01			0.63	<.004	<.0005		2.0	25	<.01	
5/07	7.61	7.50	560	413	<0.01			1.40	<0.004	<0.0005		2.1	26	<0.01	
3/08	7.52	7.25	540	356	<0.01			0.74	<0.004	<0.0005		2.0	29	<0.01	
6/08	7.76		480	369	<0.01			0.58	<0.004	0.0019		2.0	28	<0.01	
9/08	7.63	7.67	470	545	<0.01			0.60	0.004	<0.0005		1.9	27	<0.01	

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

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

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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	
5/06	7.80	7.70	530	503	0.014		<0.01	2.2J	<0.004	<0.0005		1.2	38	<0.01	
5/07	7.55	7.33	520	423	0.031		<0.01	2.5	<0.004	<0.0005		1.1	44	<0.01	
6/08	7.60		520	365	0.029		<0.01	2.5	<0.004	<0.0005		1.1	39	<0.01	

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

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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	
5/06	8.22	8.34	1,300	1,100	16.0		5.9	35J	0.020	0.0024		0.75	280	0.069	
5/07	8.07	7.91	930	727	6.7		0.8	23	0.007	<0.0005		0.14	210	0.014	
5/07 (Dup.)	8.04	7.91	930	727	6.5		0.8	23	0.009	<0.0005		0.14	210	0.015	
6/08	7.91		790		7.2		1.4(J)	20	0.0046	<0.0005		0.1	180	<0.01	
6/08 (Dup.)	7.93		790	554	8.1		0.79(J)	20	<0.004	<0.0005		0.096	170	<0.01	

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

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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	0.0018		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	
1/06	9.17	7.51	1,100	972	2.8		<0.01	62J	0.067	0.0021J		2.1	220	0.10	
5/06	9.34	9.45	1,200	963	4.9		<0.01	49J	0.082	0.0019		1.4	250	0.12	
5/06 (Dup.)	9.35	9.45	1,200	963	5.9		<0.01	44J	0.078	0.0019		1.5	250	0.12	
9/06	9.39	9.44	1,200	1002	6.6		2.4	41	0.058	<0.0005		0.48	240	0.051	
2/07	9.3		1,300		7.4		<.01	38	0.045	<.0005		0.62	240	0.045	
5/07	9.19	9.22	1,100	854	59		<0.01	59	0.042	0.00083		1	240	0.056	
9/07	9.24	9.62	1,100	816	8.4		0.83	52	0.047	0.00076		1.3	240	0.058	
3/08	9.05	8.97	1,100	633	3.4		0.098	39	0.037	0.00056		1	220	0.046	
6/08	9.14		1,000	613	3.3		0.13	33	0.039	0.00071		0.89	200	0.041	
9/08	9.14	9.22	880	991	3.5		<0.01	26	0.033	<0.0005		0.79	210	0.038	

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

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

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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	
5/06	7.73	7.76	910	759	4.2		2.1	13J	<0.004	<0.0005		1.4	130	<0.01	
5/06 (Dup.)	7.85	7.76	910	759	3.5		0.64	22J	<0.004	<0.0005		1.4	130	<0.01	
5/07	7.58	7.56	740	544	2.2		<0.01	11	<0.004	<0.0005		1.6	87	<0.01	
6/08	7.72		770	505	2.9		0.32	17	<0.004	<0.0005		1.4	120	<0.01	

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

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

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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	9.86	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
1/06	9.55	7.60	2,900	2,990	4.6		<0.01	210J	0.049	0.0022J		0.78	650	0.034	0.0088
5/06	9.77	10.07	3,400	2,830	7.7		<0.01	380J	0.13	0.0013		0.54	700	0.043	0.0078
9/06	9.61	9.79	1,900	1,720	36.0		36	100	0.11	0.0026		1.80	380	0.099	<0.005
2/07	9.47		2,000		2.2		<.01	84	0.058	0.0012		1.20	300	0.056	<.005
5/07	9.39	9.45	1,700	1,471	3.0		<0.01	140	0.065	0.00091		0.43	350	0.039	<0.005
9/07	9.53	9.83	1,300	1,087	9.0		<0.010	75	0.067	0.00067		0.32	300	0.037	<0.0050
3/08	9.42	9.35	1,700	981	12.0		<0.01	92	0.069	<0.0005		0.24	370	0.021	<0.005
6/08	9.43		1,500	1,118	3.9		<0.01	88	0.066	0.00088		0.40	310	0.038	<0.005
9/08	9.40	9.48	1,100	1,260	5.4		<0.01	59	0.049	<0.0005		0.18	270	0.017	<0.005

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

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

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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	
5/06	7.48	7.46	590	541	<0.01			3.5J	<0.004	<0.0005		0.014	15	<0.01	
5/07	7.33	7.03	810	583	<0.01			1.1	0.0042	<0.0005		<0.01	49	<0.01	
6/08	7.27		680	432	<0.01			1.1	<0.004	<0.0005		<0.01	28	<0.01	
6/08 (Dup.)	7.28		680	432	<0.01			1.1	<0.004	<0.0005		<0.01	30	<0.01	

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

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

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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	
1/06	6.03	5.69	420	372	0.38		<0.01	1.5J	<0.004	<0.0005		<0.10B	72	<0.01	
5/06	6.12	5.70	380	316	0.48		<0.01	<2.0B	<0.004	<0.0005		0.032	51	<0.01	
9/06	6.06	5.77	380	345	0.23		0.230	<0.55B	<0.004	<0.0005		<0.01	52	<0.01	
2/07	6.24		470		0.47		0.020	0.78	<.004	<.0005		<.01	65	<.01	
5/07	6.04	5.68	380	341	0.26		<0.01	0.14	<0.004	<0.0005		0.018	61	<0.01	
5/07 (Dup.)	6.13	5.68	380	341	0.26		<0.01	<0.1	0.0044	<0.0005		0.010	61	<0.01	
9/07	6.69	6.59	360	295	0.26		<0.010	0.17	<0.0040	<0.00050		0.120	59	<0.010	
3/08	6.01	5.67	360	275	0.20		<0.01	0.15	<0.004	<0.0005		<0.010	56	<0.010	
6/08	6.07		380	276	0.24		<0.01	0.27	<0.004	<0.0005		0.069	63	<0.01	
9/08	6.39	6.23	310	354	0.17		<0.01	0.16	<0.004	<0.0005		<0.01	58	<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
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUND-WATER MONITORING WELLS AND PARAMETERS
ORMET CORPORATION
HANNIBAL, OHIO

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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	
5/06	7.47	7.32	2,000	1,510	1.7		<0.01	15J	<0.004	<0.0005		1.7	300	<0.01	
5/07	7.56	7.63	1,000	769	6.2		<0.01	20	<0.004	<0.0005		0.5	180	<0.01	
6/08	7.73		1,100	621	4.8(J)		4.4	31	<0.004	<0.0005		0.4	200	<0.01	

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

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

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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	
5/06	7.78	7.55	680	560	0.23		<0.01	2.4J	<0.004	<0.0005		2.1	39	<0.01	
5/07	7.54	7.58	660	509	0.23		<0.01	3.1	<0.004	<0.0005		2.0	45	<0.01	
6/08	7.56		670	393	0.3		0.086	3.9	<0.004	<0.0005		1.8	51	<0.01	

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

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

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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
5/06	6.66	6.13	500	428	<0.01			<2.0B	<0.004	<0.0005		0.51	26	<0.01	0.009
5/07	6.56	6.22	540	435	2.7		<0.01	7.6	0.0057	<0.0005		0.74	53	<0.01	0.016
6/08	6.49		600	339	6.8		1.8	11.0	0.0061	<0.0005		0.76	61	<0.01	0.017

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

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

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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	4.8	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
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
1/06	9.77	7.64	1,700	1,427	8.3		1.2	70J	0.06	0.0022J		2.3	370	0.12	0.030
1/06 (Dup.)	9.81	7.64	1,700	1,427	7.8		2.5	66J	0.061	0.0038J		2.2	360	0.12	0.028
5/06	9.82	9.98	1,600	1,291	9.7		<0.01	84J	0.05	0.0018		2.2	350	0.1	0.025
9/06	9.82	9.91	1,700	1,417	12		3.4	63	0.045	0.0006		0.6	360	0.048	0.026
9/06 (Dup.)	9.82	9.91	1,700	1,417	12		12	55	0.05	0.0013		1	390	0.071	0.027
2/07	9.72		1,600		8.8		1.5	42	0.034	<.0005		0.59	330	0.036	0.046
5/07	9.59	9.56	1,400	1,120	11		0.066	81	0.049	0.0016		1.5	320	0.082	0.083
9/07	9.62	9.93	1,300	1,104	8.6		0.16	62	0.043	0.00089		1.2	310	0.063	0.09
9/07 (Dup.)	9.62		1,400		8.1		<0.010	61	0.044	0.00086		1.2	310	0.064	0.089
3/08	9.52	9.26	1,500	1,022	6.9		<0.010	63	0.047	0.0014		1.6	330	0.077	0.036
6/08	9.61		1,400	999	8.4		<0.01	62	0.05	0.0013		1.8	310	0.082	0.067
9/08	9.57	9.68	1,100	1,299	4.4		<0.01	52	0.041	0.0012		1.2	300	0.069	0.042

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

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

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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	
1/06	9.97	7.68	1,600	1,332	9.4		1.1	52J	0.065	0.003J		3.2	330	0.14	
5/06	9.93	10.16	1,500	1,300	16		1.4	50J	0.049	0.0021		3.3	350	0.11	
9/06	10.03	10.08	1,700	1,395	12		12.0	60	0.059	0.0012		1.5	350	0.1	
2/07	10.03		1,700		9.7		0.3	69	0.059	0.00078		1.8	340	0.095	
5/07	9.93	9.96	1,400	1,211	11		11.0	69	0.063	0.0018		3.1	340	0.12	
9/07	10.00		1,500		6.5		0.0	64	0.060	0.00096		1.9	341	0.1	
9/07 (Dup.)	10.01		1,500		7		0.3	63	0.053	0.00095		1.8	330	0.1	
3/08	9.88	9.75	1,500	973	6.1		<0.01	60	0.054	0.0012		2.4	330	0.1	
3/08 (Dup)	9.88		1,500	1,041	7.3		0.7	55	0.058	0.0013		2.4	330	0.11	
6/08	9.90		1,400	1,041	12		1.6	55	0.047	0.0016		2.6	340	0.097	
9/08	9.86	9.97	1,400	1,514	9.2		<0.01	65	0.048	0.001		1.7	350	0.085	

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

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

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

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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	
5/06	8.59	8.75	1,600	1,358	6.4		0.47	68J	0.012	0.0021		0.51	380	0.036	
5/07	8.26	8.14	1,100	831	5.8		0.37	32	0.011	0.0007		0.38	250	0.02	
6/08	8.62		1,200	824	2.2		0.18	42	0.012	0.00091		0.24	300	0.018	

Note: All results in mg/L unless otherwise noted. J = One or more quality control criteria not met. Value considered estimated.

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

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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	
5/06	7.80	7.77	910	760	7.5		1.8	23J	<0.004	<0.0005		0.26	170	<0.01	
5/07	8.10	7.95	1,000	799	2.6		<0.01	31	0.0066	0.00055		0.34	230	0.018	
6/08	8.13		800	572	4.8		0.64	26	0.012	0.0013		0.52	190	0.038	

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

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

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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	
1/06	8.18	7.25	530	453	7.9		1.6	12J	0.0096	<0.0005		0.92	62	0.01	
5/06	9.51	9.78	1,300	1,222	16		<0.01	90J	0.028	0.0008		0.71	230	0.028	
9/06	9.16	8.78	860	568	32		32.00	27	0.013	<0.0005		0.82	100	0.015	
2/07	9.49		1,200		22		<.01	45	0.014	<.0005		0.61	120	<.01	
5/07	8.81	7.79	700	369	22		0.86	22	0.027	0.00059		0.74	180	0.023	
9/07	9.18	9.39	800	592	14		<0.010	32	0.016	<0.00050		0.79	150	<0.010	
3/08	8.97	8.74	760	485	21		0.56	23	0.017	<0.0005		1.10	130	0.021	
6/08	8.37		540	381	15		0.45	15	0.013	0.00061		1.20	86	0.013	
9/08	8.54	8.56	530	589	17		1.50	15	0.013	<0.0005		0.86	92	<0.01	

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

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

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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	
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	
1/06	9.32	7.52	1,100	970	12		4.4	36J	0.02	0.0018		0.81	230	0.058	
5/06	9.17	9.31	1,000	878	3.8		0.15	38J	0.0068	<0.0005		0.41	220	0.016	
9/06	9.32	9.25	870	737	9.7		9.6	22	0.0059	<0.0005		0.026	170	<0.010	
2/07	9.07		940		12		<.01	22	<.004	<.0005		0.082	180	<.01	
5/07	8.9	8.8	790	666	10		0.86	32	0.0071	<0.0005		0.18	180	<0.01	
9/07	9.07		560		0.55		<0.010	20	0.0085	<0.00050		0.16	120	0.013	
3/08	8.63	8.4	850	543	7.8		<0.01	18	<0.004	<0.0005		0.2	170	<0.01	
6/08	8.56		710	516	2.1		<0.01	33	0.0057	<0.0005		0.22	160	<0.01	
9/08	8.69		640		4.6		0.14(J)	17	0.0044	<0.0005		0.094	120	<0.01	
9/08 (Dup.)	8.58	8.68	640	724	4.4		2.1(J)	19	0.0072	<0.0005		0.1	150	<0.01	

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

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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	
1/06	7.96	7.14	550	463	7.7		2.8	6.3J	0.016	0.0015J		1.6	80	0.043	
5/06	7.00	6.56	570	476	4.0		0.9	8.4J	0.0088	0.00081		0.56	94	0.025	
9/06	6.91	6.53	490	414	2.4		2.4	7.3	<0.004	0.0005		0.60	74	<0.010	
2/07	7.22		500		2.1		<.01	12	0.0090	0.00085		1.70	54	0.03	
5/07	6.85	6.24	310	275	0.9		0.0	3.9	0.0087	<0.0005		0.19	40	0.011	
9/07	7.09	6.88	310	267	1.6		0.2	3.9	<0.0040	<0.00050		0.22	46	0.012	
3/08	6.46	5.93	310	237	<0.05			3.6	<0.004	<0.0005		0.08	47	<0.01	
6/08	6.34		260	183	0.9		0.2	3.4	0.0085	0.00073		0.20	37	0.015	
9/08	6.45	6.60	240	275	0.7		<0.01	3.5	<0.004	<0.0005		0.05	33	<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
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUND-WATER MONITORING WELLS AND PARAMETERS
ORMET CORPORATION
HANNIBAL, OHIO

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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	
5/06	8.96	9.24	4,400	3,530	7.2		2.4	130J	0.011	<0.0005		0.21	940	0.017	
5/07	9.08	9.22	4,000	3,380	5.7		0.069	180	0.012	<0.0005		0.11	950	<0.01	
9/07	9.12	9.55	3,300	2,810	3.2		<0.010	120	0.015	<0.00050		0.16	750	0.01	
3/08	9.03	8.93	3,300	1,881	3.1		<0.01	93	0.013	<0.0005		0.14	830	0.01	
3/08 (Dup)	9.03		3,400		3.9		<0.01	100	0.013	<0.0005		0.15	830	0.01	
6/08	9.06		3,700	1,211	5.7		0.820	140	0.013	<0.0005		0.11	860	<0.01	
9/08	9.08	9.19	3,400	4,120	5.4		<0.01	150	0.014	<0.0005		0.094	960	<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
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUND-WATER MONITORING WELLS AND PARAMETERS
ORMET CORPORATION
HANNIBAL, OHIO

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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	
5/06	7.63	7.62	860	720	0.32		<0.01	9.0J	<0.004	<0.0005		0.94	110	<0.01	
5/07	7.42	7.27	1,200	829	0.74		0.012	4.3	<0.004	<0.0005		1.90	150	<0.01	
6/08	7.42		2,400	338	3.7		0.28	12	<0.004	<0.0005		2	520	<0.01	

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

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

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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	
5/06	7.95	7.82	1,000	831	10		2.9	21J	<0.004	<0.0005		0.4	170	<0.01	
5/07	7.95	8.01	1,100	823	7		<0.01	44	0.0074	0.00066		0.57	230	0.016	
6/08	8.15		1,100	655	7.1		1	58	0.0072	0.00097		0.64	220	0.026	

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

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

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

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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	
5/06	7.91	7.82	1,100	915	6.6		0.15	11J	<0.004	<0.0005		0.98	180	<0.01	
5/07	7.76	7.76	1,000	738	4.1		<0.01	17	<0.004	<0.0005		0.94	180	<0.01	
6/08	7.88		990	579	6.8(J)		0.47	29	0.0045	<0.0005		0.77	180	<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
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUND-WATER MONITORING WELLS AND PARAMETERS
ORMET CORPORATION
HANNIBAL, OHIO

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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	
5/07	6.79	6.89	430	339	<0.01			0.23	0.015	<0.0005		1.3	22	<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
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUND-WATER MONITORING WELLS AND PARAMETERS
ORMET CORPORATION
HANNIBAL, OHIO

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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	
5/06	8.58	7.80	4,400	1,737	3.8		0.13	100J	0.0065	<0.0005		0.23	930	<0.01	
5/07	8.36	8.49	2,600	1,601	1.8		<0.01	39	<0.004	<0.0005		0.2	560	<0.01	
6/08	7.97		2,900	1,224	2.3		0.22	37	<0.004	<0.0005		0.37	570	<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
SUMMARY OF ANALYTICAL RESULTS FOR REMEDIAL ACTION
GROUND-WATER MONITORING WELLS AND PARAMETERS
ORMET CORPORATION
HANNIBAL, OHIO

	pH (lab)	pH (field)	Specific Cond. (lab)	Specific Cond. (field)	Cyanide Total	Cyanide Free	Cyanide Amenable	Fluoride	Arsenic	Beryllium	Iron	Manganese	Sodium	Vanadium	PCE
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 J	0.0073	<0.0005		0.35	810	<0.01	
5/06	7.73	7.80	2,000	1,737	2.7		0.92	10.0J	<0.004	<0.0005		1.2	450	<0.01	
5/07	7.81	7.68	1,200	832	0.63		<0.01	9.2	<0.004	<0.0005		0.9	220	<0.01	
6/08	7.64		2,900	1,320	4.6		0.81	14.0	<0.004	<0.0005		1.1	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 5

SUMMARY OF ANALYTICAL RESULTS FOR PCBS

ORMET CORPORATION

HANNIBAL, OHIO

	MV-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	<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	<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	<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	<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	<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	<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	<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-12								
	1/18/06	5/18/06	9/18/06	2/26/07	5/17/07	9/6/07	3/12/08	6/12/08	9/11/08
Aroclor-1016	<0.5/<0.5	<0.5	---	<0.5	<0.5	---	<0.5	<0.5	<0.5
Aroclor-1221	<0.5/<0.5	<0.5	---	<0.5	<0.5	---	<0.5	<0.5	<0.5
Aroclor-1232	<0.5/<0.5	<0.5	---	<0.5	<0.5	---	<0.5	<0.5	<0.5
Aroclor-1242	<0.5/<0.5	<0.5	---	<0.5	<0.5	---	<0.5	<0.5	<0.5
Aroclor-1248	<0.5/<0.5	<0.5	---	<0.5	<0.5	---	<0.5	<0.5	<0.5
Aroclor-1254	<0.5/<0.5	<0.5	---	<0.5	<0.5	---	<0.5	<0.5	<0.5
Aroclor-1260	<0.5/<0.5	<0.5	---	<0.5	<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	<0.52	<0.5	<0.5	<0.5	<0.5	<0.52	<0.5	<0.52	<0.51	<0.5	<0.5
Aroclor-1221	<0.52	<0.5	<0.5	<0.5	<0.5	<0.52	<0.5	<0.52	<0.51	<0.5	<0.5
Aroclor-1232	<0.52	<0.5	<0.5	<0.5	<0.5	<0.52	<0.5	<0.52	<0.51	<0.5	<0.5
Aroclor-1242	<0.52	<0.5	<0.5	<0.5	<0.5	<0.52	<0.5	<0.52	<0.51	<0.5	<0.5
Aroclor-1248	<0.52	<0.5	<0.5	<0.5	<0.5	<0.52	<0.5	<0.52	<0.51	<0.5	<0.5
Aroclor-1254	<0.52	<0.5	<0.5	<0.5	<0.5	<0.52	<0.5	<0.52	<0.51	<0.5	<0.5
Aroclor-1260	<0.52	<0.5	<0.5	<0.5	<0.5	<0.52	<0.5	<0.52	<0.51	<0.5	<0.5

	MW-44S								
	1/17/06	5/16/06	9/18/06	2/26/07	5/17/07	9/6/07	3/12/08	6/11/08	9/11/08
Aroclor-1016	<0.5	<0.5	<0.52	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Aroclor-1221	<0.5	<0.5	<0.52	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Aroclor-1232	<0.5	<0.5	<0.52	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Aroclor-1242	<0.5	<0.5	<0.52	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Aroclor-1248	<0.5	<0.5	<0.52	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Aroclor-1254	<0.5	<0.5	<0.52	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Aroclor-1260	<0.5	<0.5	<0.52	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

All results in ug/L. --- Not Analyzed

TABLE 5

SUMMARY OF ANALYTICAL RESULTS FOR PCBS

ORMET CORPORATION

HANNIBAL, OHIO

	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	<0.5	<0.51	<0.5	<0.5	<0.5	<0.51	<0.5	<0.51	<0.51	<0.5	<0.5
Aroclor-1221	<0.5	<0.51	<0.5	<0.5	<0.5	<0.51	<0.5	<0.51	<0.51	<0.5	<0.5
Aroclor-1232	<0.5	<0.51	<0.5	<0.5	<0.5	<0.51	<0.5	<0.51	<0.51	<0.5	<0.5
Aroclor-1242	<0.5	<0.51	<0.5	<0.5	<0.5	<0.51	<0.5	<0.51	<0.51	<0.5	<0.5
Aroclor-1248	<0.5	<0.51	<0.5	<0.5	<0.5	<0.51	<0.5	<0.51	<0.51	<0.5	<0.5
Aroclor-1254	<0.5	<0.51	<0.5	<0.5	<0.5	<0.51	<0.5	<0.51	<0.51	<0.5	<0.5
Aroclor-1260	<0.5	<0.51	<0.5	<0.5	<0.5	<0.51	<0.5	<0.51	<0.51	<0.5	<0.5

	MW-44D								
	1/17/06	5/16/06	9/18/06	2/26/07	5/17/07	9/6/07	3/12/08	6/11/08	9/11/08
Aroclor-1016	<0.5	<0.5	<0.53	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Aroclor-1221	<0.5	<0.5	<0.53	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Aroclor-1232	<0.5	<0.5	<0.53	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Aroclor-1242	<0.5	<0.5	<0.53	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Aroclor-1248	<0.5	<0.5	<0.53	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Aroclor-1254	<0.5	<0.5	<0.53	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Aroclor-1260	<0.5	<0.5	<0.53	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

All results in ug/L. — Not Analyzed

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
5/06	45.4 a.	+14.9	44.8 a.	+2.5
5/07	42.1 a.	-7.3	46.6 a.	+4.0
6/08	44.0 a.	+4.5	49.9 a.	+7.1

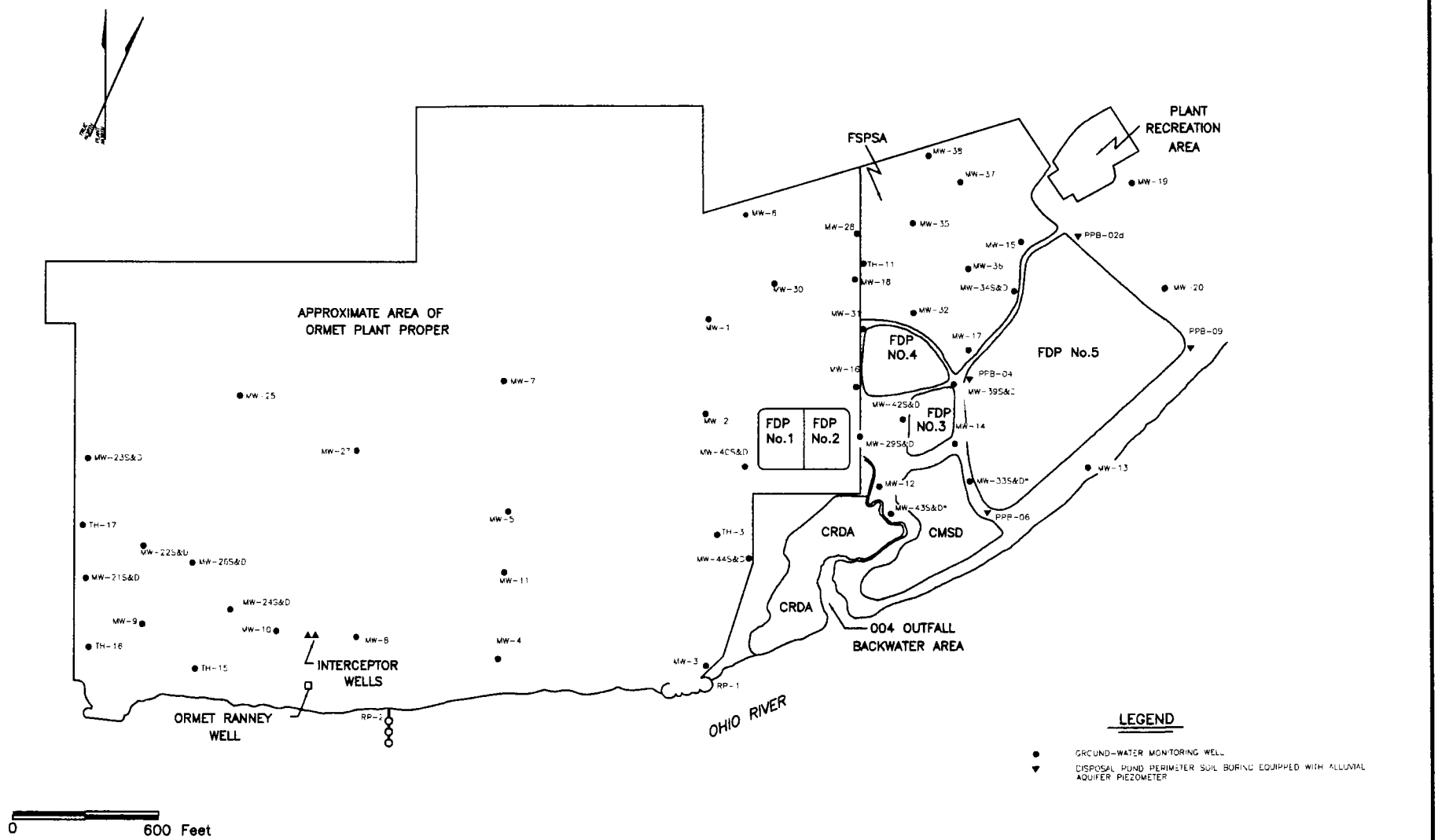
Sampling Date	Estimated Fluoride Mass-in-Place	% Change	Estimated Total CN Mass-in-Place	% Change
6/88	85,702 lbs.		6,821 lbs.	
1/95	28,168 lbs.	-67.1	4,271 lbs.	-37.4
5/97	29,033 lbs.	+3.1	2,943 lbs.	-31.1
5/98	23,888 lbs.	-17.7	2,597 lbs.	-11.8
5/99	30,416 lbs.*	+27.3	5,566 lbs.	+114
5/00	27,071 lbs.	-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
5/06	32,725 lbs.	-13.1	6,615 lbs.	+41.3
5/07	35,219 lbs.	+7.6	6,438 lbs.	-2.7
6/08	33,638 lbs.	-4.5	5,997 lbs.	-6.8

* - 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	POUNDS CHANGE	MASS REMOVED	ESTIMATED MASS-IN-PLACE	POUNDS CHANGE	MASS REMOVED
5/97	29,033			2,943		
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
5/06	32,735	-4,921	8,607	6,615	+1,934	1,392
5/07	35,219	+2,484	6,085	6,438	-177	1,151
6/08	33,638	-1,581	6,320	5,997	-441	1,000
	TOTAL MASS REMOVED		162,657	TOTAL MASS REMOVED		22,753

All values given in pounds.



HMI Environmental Consulting Services

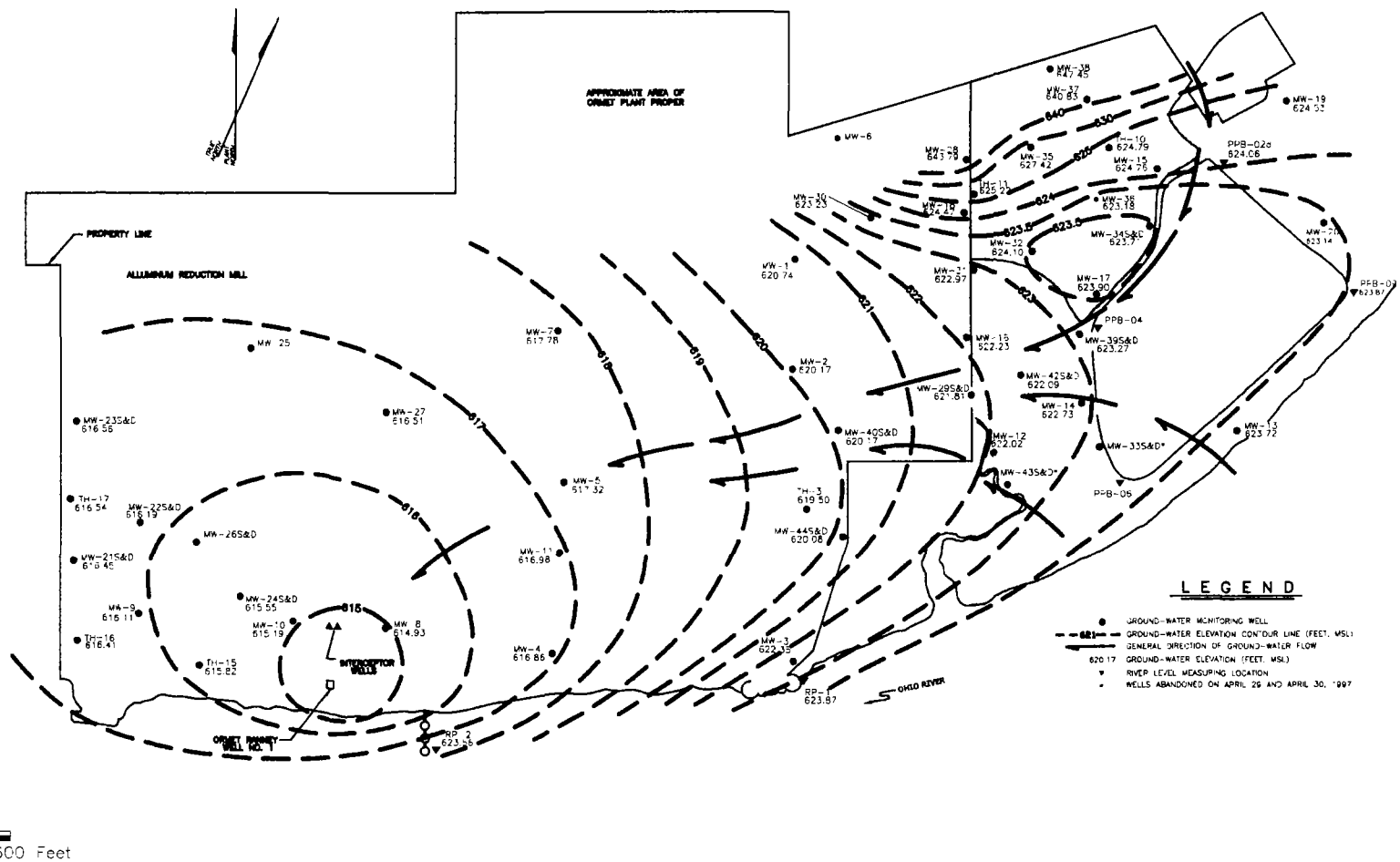
HydroSystems Management, Inc.
P.O. Box 789
Washington, Pennsylvania 15301

PROJECT NO: HM00319	FILE NO:
DRAWING: 01230BCL	PLOT SIZE=1"=600'
DRAFTED BY: CL	DATE: 06/20/2008
CHECKED BY: CPS	DATE: 06/20/2008
APPROVED BY: CPS	DATE: 06/20/2008
REVISION NO:	DATE:

LOCATION OF GROUND-WATER MONITORING WELLS

ORMET PRIMARY ALUMINUM CORPORATION — HANNIBAL, OHIO

FIGURE 1



HMI Environmental Consulting Services

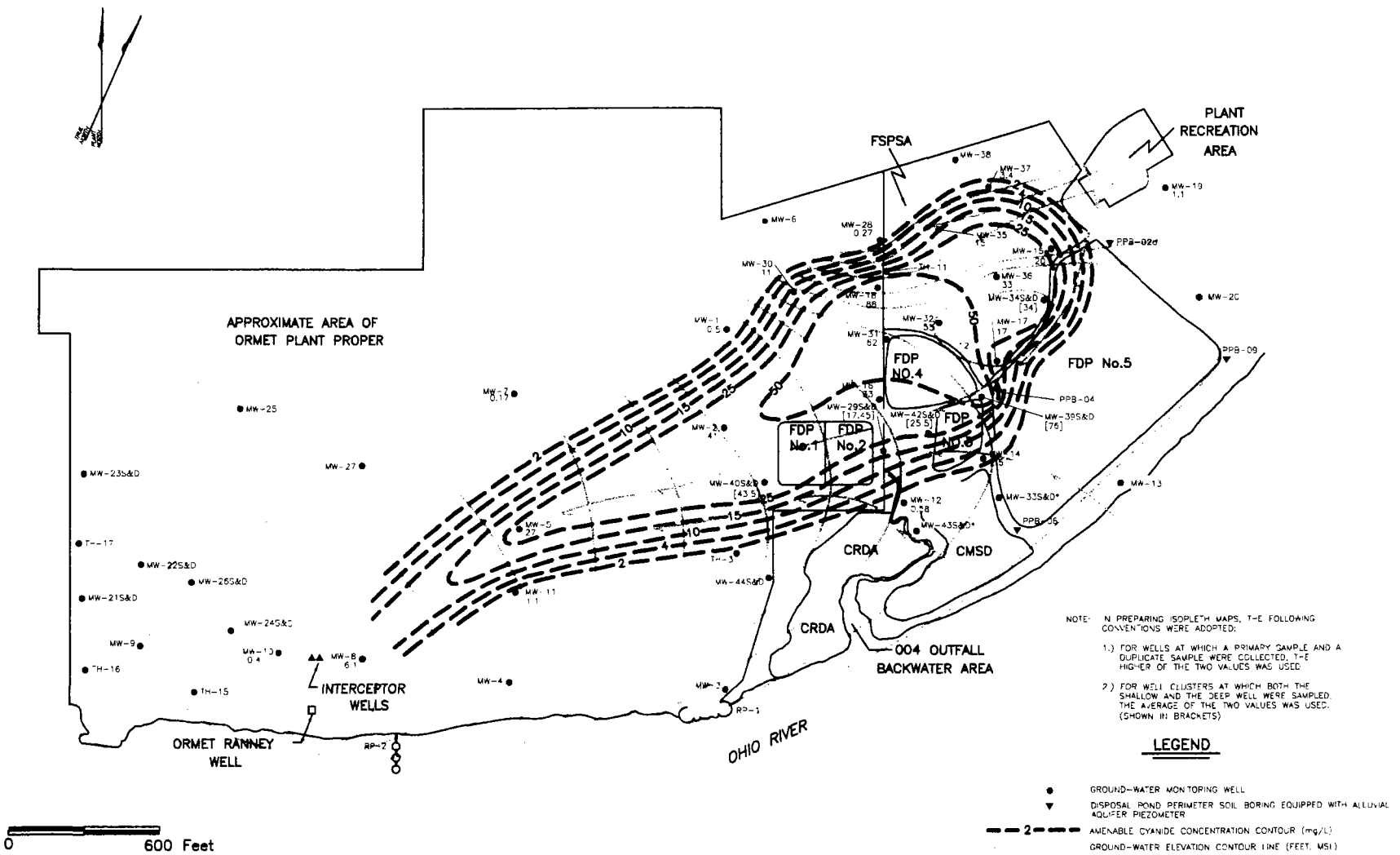
HydroSystems Management, Inc.
P.O. Box 789
Washington, Pennsylvania 15301

PROJECT NO. HM00319	FILE NO.
DRAWING. 052708CL	PLOT SIZE=1"=600'
DRAFTED BY: CL	DATE: 02/20/2008
CHECKED BY: CPS	DATE: 02/20/2008
APPROVED BY: CPS	DATE: 02/22/2008
REVISION NO	DATE:

GROUND-WATER ELEVATIONS AND FLOW PATTERNS WITHIN THE ALLUVIAL AQUIFER BASED ON JUNE 10, 2008 WATER-LEVEL DATA

ORMET PRIMARY ALUMINUM CORPORATION **HANNIBAL, OHIO**

FIGURE 2



HMI Environmental Consulting Services

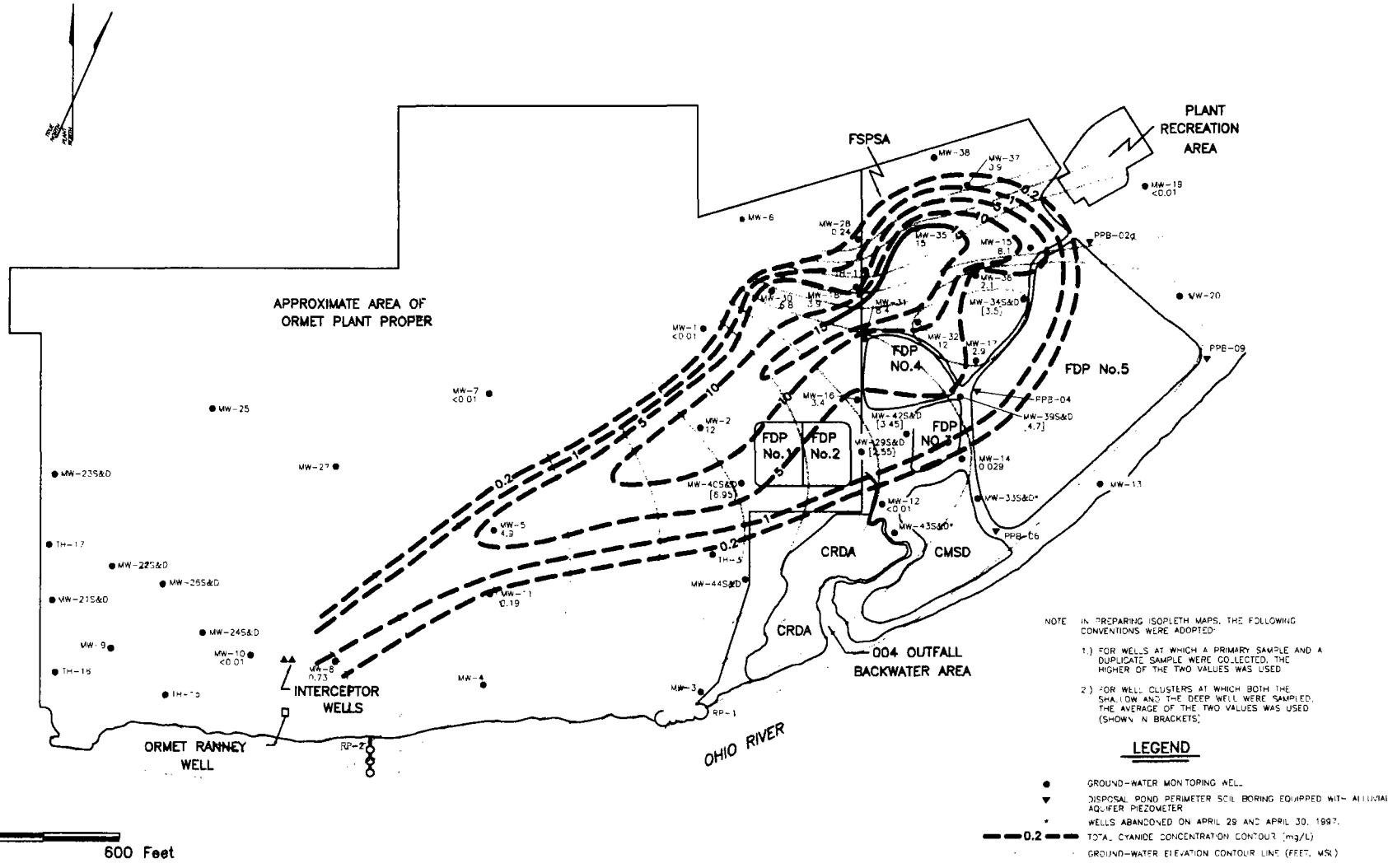
HydroSystems Management, Inc.
P.O. Box 789
Washington, Pennsylvania 15301

PROJECT NO: HM00319	FILE NO:
DRAWING: 022309C	PLOT SIZE=1"=500'
DRAFTED BY: CL	DATE: 02/20/2009
CHECKED BY: CPS	DATE: 02/20/2009
APPROVED BY: CPS	DATE: 02/23/2009
REVISION NO:	DATE

FLUORIDE ISOPLETH MAP FOR THE ALLUVIAL AQUIFER (BASED ON SAMPLES COLLECTED IN JUNE, 2008)

ORMET PRIMARY ALUMINUM CORPORATION — HANNIBAL, OHIO

FIGURE 3



HMI Environmental Consulting Services

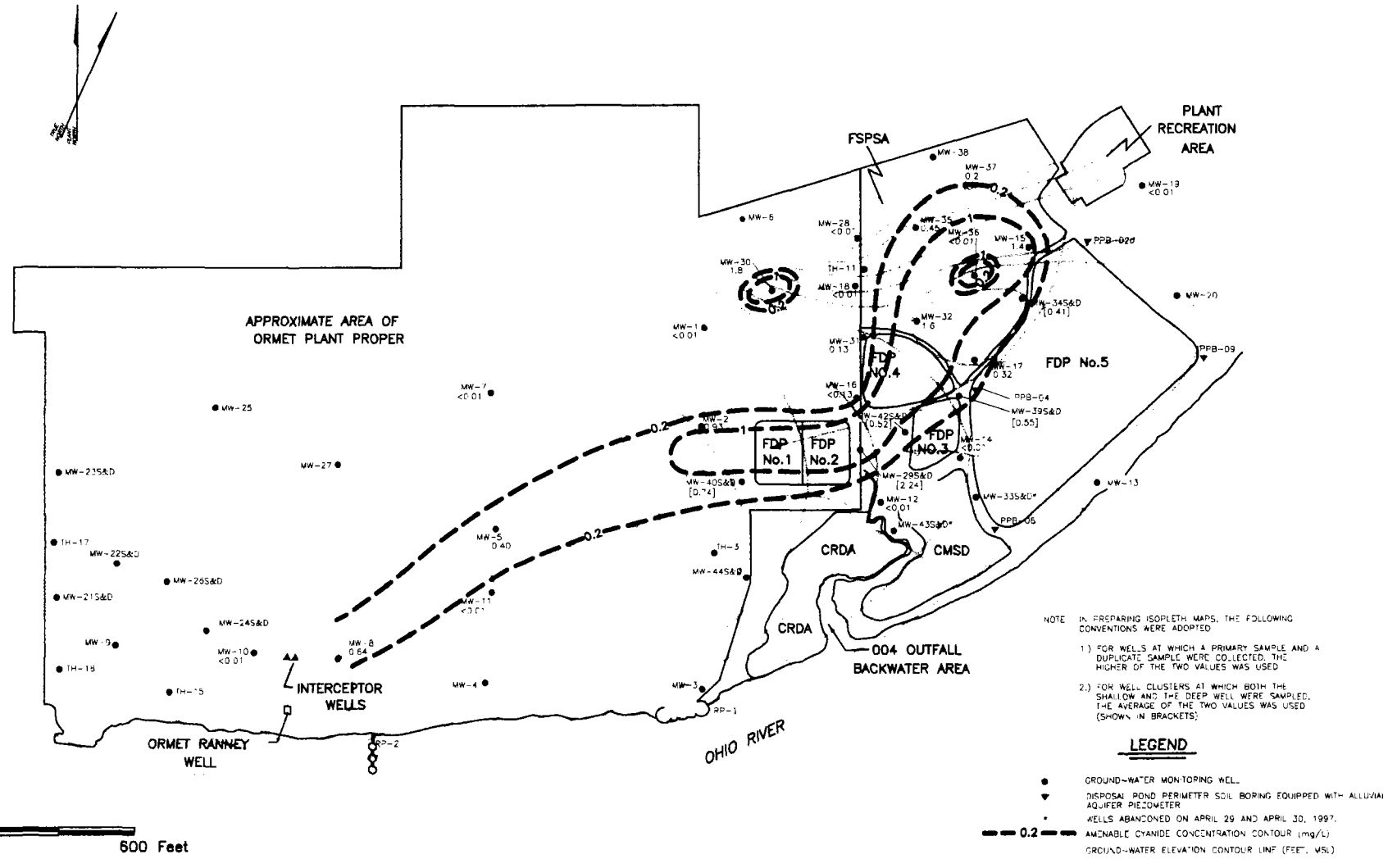
HydroSystems Management, Inc.
P.O. Box 789
Washington, Pennsylvania 15301

PROJECT NO. HM00319	FILE NO:
DRAWING 022309CL	PLOT SIZE=1"=600'
DRAFTED BY: CL	DATE: 02/20/2008
CHECKED BY: CPS	DATE: 02/20/2008
APPROVED BY: CPS	DATE: 02/23/2008
REVISION NO.	DATE:

TOTAL CYANIDE ISOPLETH MAP FOR THE ALLUVIAL AQUIFER (BASED ON SAMPLES COLLECTED IN JUNE 2008)

ORMET PRIMARY ALUMINUM CORPORATION — HANNIBAL, OHIO

FIGURE 4



NOTE: IN PREPARING ISOPLETH MAPS, THE FOLLOWING CONVENTIONS WERE ADOPTED

1.) FOR WELLS AT WHICH A PRIMARY SAMPLE AND A DUPLICATE SAMPLE WERE COLLECTED, THE HIGHER OF THE TWO VALUES WAS USED

2.) FOR WELL CLUSTERS AT WHICH BOTH THE SHALLOW AND THE DEEP WELL WERE SAMPLED, THE AVERAGE OF THE TWO VALUES WAS USED (SHOWN IN BRACKETS)

LEGEND

- ● GROUND-WATER MONITORING WELL
- ▼ DISPOSAL POND PERIMETER SOIL BORING EQUIPPED WITH ALLUVIAL AQUIFER PIEZOMETER
- * WELLS ABANDONED ON APRIL 29 AND APRIL 30, 1997.
- 0.2 AMENABLE CYANIDE CONCENTRATION CONTOUR (mg/L)
- GROUND-WATER ELEVATION CONTOUR LINE (FEET, MSL)

HMI Environmental Consulting Services

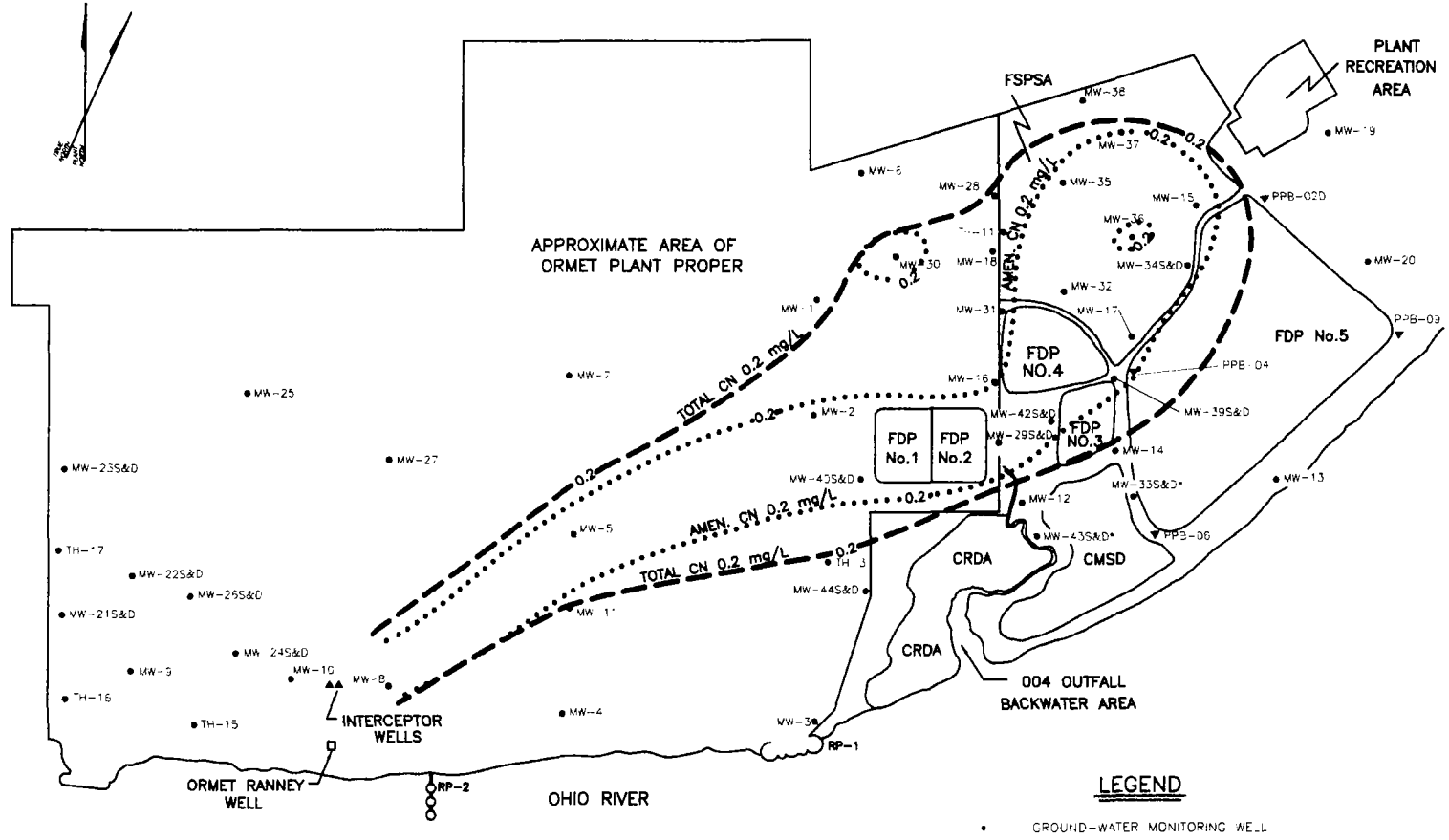
HydroSystems Management, Inc.
P.O. Box 780
Washington, Pennsylvania 15301

PROJECT NO: HM00319	FILE NO:
DRAWING: 022309CL	PLOT SIZE=1"=600'
DRAFTED BY: CL	DATE: 02/23/2009
CHECKED BY: CPS	DATE: 02/23/2009
APPROVED BY: CPS	DATE: 02/23/2009
REVISION NO:	DATE:

AMENABLE CYANIDE ISOPLETH MAP FOR THE ALLUVIAL AQUIFER (BASED ON SAMPLES COLLECTED IN JUNE 2008)

ORMET PRIMARY ALUMINUM CORPORATION — HANNIBAL, OHIO

FIGURE 5



LEGEND

- • GROUND-WATER MONITORING WELL
- ▼ DISPOSAL POND PERIMETER SOIL BORING EQUIPPED WITH A FLUVIAL AQUIFER PIEZOMETER.
- ✱ WELLS ABANDONED ON APRIL 29 AND APRIL 30, 1997
- TOTAL CN 0.2 mg/L
- AMEN. CN 0.2 mg/L

HMI Environmental Consulting Services

HydroSystems Management, Inc.
P.O. Box 789
Washington, Pennsylvania 15301

PROJECT NO. HM00319	FILE NO:
DRAWING: 022309CL	PLOT SIZE=1"=600'
DRAFTED BY CL	DATE: 02/23/2009
CHECKED BY CPS	DATE: 02/23/2009
APPROVED BY CPS	DATE: 02/23/2009
REVISION NO	DATE:

2008 COMPARISON OF TOTAL VS. AMENABLE CYANIDE DISTRIBUTION IN GROUND WATER
(BASED ON 0.2 mg/L CONCENTRATION CONTOURS)

ORMET PRIMARY ALUMINUM CORPORATION — HANNIBAL, OHIO

FIGURE 6

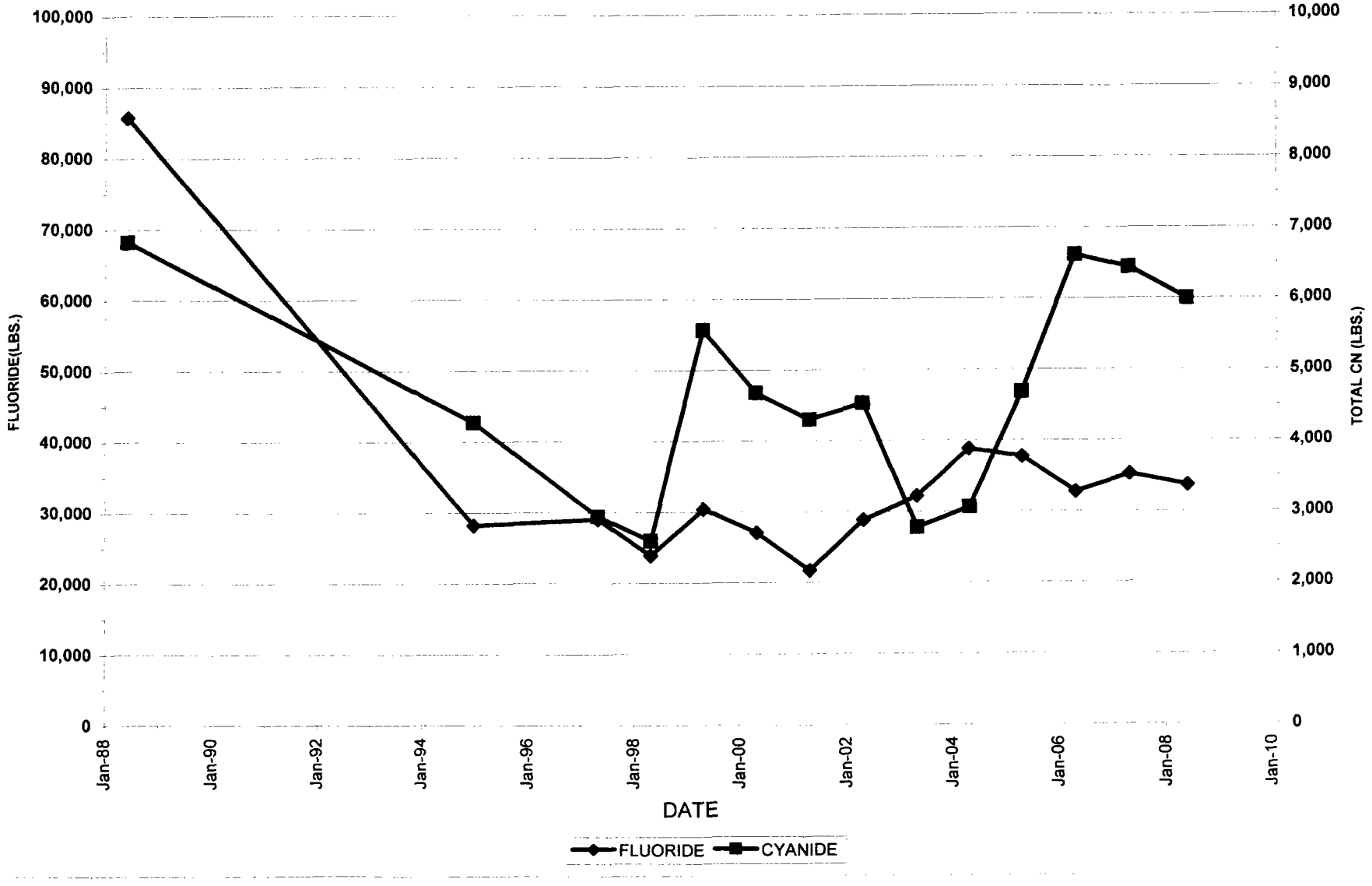


FIGURE 7
ESTIMATED MASS-IN-PLACE
FLUORIDE(LBS.)
TOTAL CN (LBS.)
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
Jan-88
Jan-90
Jan-92
Jan-94
Jan-96
Jan-98
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
DATE
FLUORIDE
CYANIDE

APPENDIX A

WATER SAMPLING LOG FORMS

Appendix A-1	Water Sampling Log Forms for March 2008 Monitoring Event
Appendix A-2	Water Sampling Log Forms for June 2008 Monitoring Event
Appendix A-3	Water Sampling Log Forms for September 2008 Monitoring Event

APPENDIX A-1

WATER SAMPLING LOG FORMS FOR MARCH 2008 MONITORING EVENT

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00322
Location: HANNIBAL, OHIO
Date: 3-12-08

Sample I.D.: MW-2
Duplicate I.D.:
Time Sampling Began: 1020
Time Sampling Complete: 1050

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 668.12
Depth of Well Below MP (TD): 82.25
Depth to Water Below MP (DTW): 48.33
Water Column (WC) in Well (TD - DTW): 33.92
Casing Diameter: 2"
Gallons in Well (WC x GPF): 5.4

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 16+

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: DK. BROWN Odor: NONE Turbidity: TURBID

Well Volumes:	3 GAL.	8 GAL.	15 GAL.			
pH:	9.40	9.38	9.33			
Spec. Cond.:	819	851	842			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	14.9	15.2	14.9			

PUMPED @ 15 gpm

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
pH, Spec. Cond., F	500 ml. PLASTIC	4 degrees 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

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00322
Location: HANNIBAL, OHIO
Date: 3-12-08

Sample I.D.: MW-5
Duplicate I.D.:
Time Sampling Began: 900
Time Sampling Complete: 930

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 668.16
Depth of Well Below MP (TD): 92
Depth to Water Below MP (DTW): 51.16
Water Column (WC) in Well (TD - DTW): 40.84
Casing Diameter: 2"
Gallons in Well (WC x GPF): 6.5

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 20

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: LT. BROWN Odor: NONE Turbidity: SLIGHTLY TURBID

Well Volumes:	3 GAL.	8 GAL.	12 GAL.	20 GAL		
pH:	8.21	7.93	8.03	7.90		
Spec. Cond.:	562	576	586	618		
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	14.1	14.7	14.9	14.8		

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
pH, Spec. Cond., F	500 ml. PLASTIC	4 degrees 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

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-12
Project #:	HM00322	Duplicate I.D.:	~~MW-12D~~
Location:	HANNIBAL, OHIO	Time Sampling Began:	1335
Date:	3-12-08	Time Sampling Complete:	1405

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 636.73
Depth of Well Below MP (TD): 68.42
Depth to Water Below MP (DTW): 15.18
Water Column (WC) in Well (TD - DTW): 53.24
Casing Diameter: 2"
Gallons in Well (WC x GPF): 8.5

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 26

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: NONE Odor: NONE Turbidity: CLEAR

Well Volumes:	5 GAL.	18 GAL.	24 GAL.			
pH:	7.01	7.23	7.25			
Spec. Cond.:	384	358	356			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.0	15.2	15.1			

PUMPED @

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
pH, Spec. Cond., F	500 ml. PLASTIC	4 degrees 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 degrees C

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00322
Location: HANNIBAL, OHIO
Date: 3-12-08

Sample I.D.: MW-16
Duplicate I.D.:
Time Sampling Began: 1050
Time Sampling Complete: 1120

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 662.72
Depth of Well Below MP (TD): 83.12
Depth to Water Below MP (DTW): 41.21
Water Column (WC) in Well (TD - DTW): 41.91
Casing Diameter: 2"
Gallons in Well (WC x GPF): 6.7

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 20+

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: DK. BROWN Odor: NONE Turbidity: SLIGHTY TURBID

Well Volumes:	3 GAL.	10 GAL.	20 GAL.			
pH:	8.95	8.96	8.97			
Spec. Cond.:	649	638	633			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.0	15.0	15.1			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
pH, Spec. Cond., F	500 ml. PLASTIC	4 degrees C
DISS. As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL & AMENABLE CN	250 ml. PLASTIC	NaOH

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00322
Location: HANNIBAL, OHIO
Date: 3-12-08

Sample I.D.: MW-18
Duplicate I.D.:
Time Sampling Began: 1120
Time Sampling Complete: 1145

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 660.91
Depth of Well Below MP (TD): 61.16
Depth to Water Below MP (DTW): 37.35
Water Column (WC) in Well (TD - DTW): 23.81
Casing Diameter: 2"
Gallons in Well (WC x GPF): 3.8

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 11+

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: DK. BROWN Odor: NONE Turbidity: TURBID

Well Volumes:	3 GAL.	6 GAL	10 GAL.	12 GAL.		
pH:	9.52	9.35	9.35	9.35		
Spec. Cond.:	977	1034	996	981		
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.4	15.4	15.3	15.3		

PUMP SET @ BOTTOM
STARTED PUMPING @ 1.5 gpm.

YIELD DECREASES UNTIL CAVITATION.

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
pH, Spec. Cond., F	500 ml. PLASTIC	4 degrees 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

Sampline Personnel: R. FARGO, C SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00322
Location: HANNIBAL, OHIO
Date: 3-12-08

Sample I.D.: MW-28
Duplicate I.D.:
Time Sampling Began: 1150
Time Sampling Complete: 1210

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 663.27
Depth of Well Below MP (TD): 46.2
Depth to Water Below MP (DTW): 21.41
Water Column (WC) in Well (TD - DTW): 24.79
Casing Diameter: 2"
Gallons in Well (WC x GPF): 4.0

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 12

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: LT. BROWN Odor: NONE Turbidity: CLOUDY / TURBID

Well Volumes:	3 GAL.	8 GAL.	12 GAL.			
pH:	5.71	5.69	5.67			
Spec. Cond.:	295	277	275			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	14.7	15.0	14.9			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
pH, Spec. Cond., F	500 ml. PLASTIC	4 degrees C
DISS. As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL & AMENABLE CN	250 ml PLASTIC	NaOH

Sampline Personnel: R. FARGO, C SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-31
Project #:	HM00322	Duplicate I.D.:	~~MW-31D~~
Location:	HANNIBAL, OHIO	Time Sampling Began:	1430
Date:	3-12-08	Time Sampling Complete:	1500

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation: 661.59

Depth of Well Below MP (TD): 67.58

Depth to Water Below MP (DTW): 39.50

Water Column (WC) in Well (TD - DTW): 28.08

Casing Diameter: 2"

Gallons in Well (WC x GPF): 4.5

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 13.5

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: DK. BROWN Odor: NONE Turbidity: TURBID

Well Volumes:	3 GAL.	6 GAL.	14 GAL.			
pH:	9.24	9.27	9.26			
Spec. Cond.:	1026	1027	1022			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.3	15.4	15.6			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
pH, Spec. Cond., F	500 ml. PLASTIC	4 degrees 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

Sampline Personnel: R. FARGO, C. SMITH

Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00322
Location: HANNIBAL, OHIO
Date: 3-12-08

Sample I.D.: MW-32
Duplicate I.D.: MW-32E (1640)
Time Sampling Began: 1610
Time Sampling Complete: 1630

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 656.66
Depth of Well Below MP (TD): 57.36
Depth to Water Below MP (DTW): 33.93
Water Column (WC) in Well (TD - DTW): 23.43
Casing Diameter: 2"
Gallons in Well (WC x GPF): 3.75

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 11+

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: DK. BROWN Odor: NONE Turbidity: TURBID

Well Volumes:	3 GAL	6 GAL.	9 GAL.			
pH:	9.74	9.75	9.75			
Spec. Cond.:	907	960	973			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	17.6	17.5	17.6			

PUMPED @ 1.5 gpm.

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
pH, Spec. Cond., F	500 ml. PLASTIC	4 degrees C
DISS. As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL & AMENABLE CN	250 ml. PLASTIC	NaOH

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00322
Location: HANNIBAL, OHIO
Date: 3-12-08

Sample I.D.: MW-35
Duplicate I.D.:
Time Sampling Began: 1500
Time Sampling Complete: 1530

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 661.90
Depth of Well Below MP (TD): 46.94
Depth to Water Below MP (DTW): 35.35
Water Column (WC) in Well (TD - DTW): 11.59
Casing Diameter: 2"
Gallons in Well (WC x GPF): 1.85

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 6

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: DK. BROWN Odor: NONE Turbidity: TURBID

Well Volumes: 2 GAL.						
pH:	7.47	8.53	8.69	8.74		
Spec. Cond.:	323	450	480	485		
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	16.3	16.8	17.1	17.2		

PUMPED @ 1.5 gpm. Began to cavitate after one well volume. Continued pumping for 10+ min. before sampling.

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
pH, Spec. Cond., F	500 ml. PLASTIC	4 degrees C
DISS. As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL & AMENABLE CN	250 ml. PLASTIC	NaOH

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00322
Location: HANNIBAL, OHIO
Date: 3-12-08

Sample I.D.: MW-36
Duplicate I.D.:
Time Sampling Began: 1550
Time Sampling Complete: 1610

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 655.14
Depth of Well Below MP (TD): 52.08
Depth to Water Below MP (DTW): 33.52
Water Column (WC) in Well (TD - DTW): 18.56
Casing Diameter: 2"
Gallons in Well (WC x GPF): 3

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 9

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: LT. BROWN Odor: NONE Turbidity: CLEAR

Well Volumes:	3 GAL.	6 GAL.	9 GAL.			
pH:	8.28	8.39	8.40			
Spec. Cond.:	529	540	543			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	19.4	19.9	19.8			

PUMPED @ 1.5 gpm

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
pH, Spec. Cond., F	500 ml. PLASTIC	4 degrees C
DISS. As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL & AMENABLE CN	250 ml. PLASTIC	NaOH

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name	ORMET-REDUCTION MILL	Sample I.D.:	MW-37
Project #:	HM00322	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1530
Date:	3-12-08	Time Sampling Complete:	1555

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 661.14
Depth of Well Below MP (TD): 36.9
Depth to Water Below MP (DTW): 22.20
Water Column (WC) in Well (TD - DTW): 14.70
Casing Diameter: 2"
Gallons in Well (WC x GPF): 2.35

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 7+

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: LT. BROWN Odor: NONE Turbidity: TURBID

Well Volumes:	2 GAL.					
pH:	6.35	6.05	5.93			
Spec. Cond.:	249	240	237			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.5	15.7	15.6			

PUMPED ONE WELL VOL. BEFORE CAVITATION. CONTINUED TO PUMP FOR 10+ MINUTES.

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
pH, Spec. Cond., F	500 ml. PLASTIC	4 degrees C
DISS. As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL & AMENABLE CN	250 ml. PLASTIC	NaOH

Sampline Personnel: R. FARGO, C. SMITH
Comments:

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-39S
Project #:	HM00322	Duplicate I.D.:	DUP. MW-39E (1440)
Location:	HANNIBAL, OHIO	Time Sampling Began:	1400
Date:	3-12-08	Time Sampling Complete:	1430

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation: 657.3

Depth of Well Below MP (TD): 60.23

Depth to Water Below MP (DTW): 34.84

Water Column (WC) in Well (TD - DTW): 25.39

Casing Diameter: 2"

Gallons in Well (WC x GPF): 4.06

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 12+

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: LT. BROWN Odor: NONE Turbidity: SLIGHT

Well Volumes:	3 GAL.	5 gal	7 gal	9 GAL.	12 GAL.	
pH:	9.08	9.04	8.99	8.96	8.93	
Spec. Cond.:	1945	3200	2970	1917	1881	
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	14.9	14.8	14.8	14.8	14.8	

PUMPED @ 1.5 gpm

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. FARGO, C. SMITH

Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00322
Location: HANNIBAL, OHIO
Date: 3-12-08

Sample I.D.: MW-44s
Duplicate I.D.:
Time Sampling Began: 1000
Time Sampling Complete: 1020

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 662.01
Depth of Well Below MP (TD): 69.05
Depth to Water Below MP (DTW): 42.30
Water Column (WC) in Well (TD - DTW): 26.75
Casing Diameter: 2"
Gallons in Well (WC x GPF): 4.28

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 13

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: NONE Odor: NONE Turbidity: CLEAR

Well Volumes:	3 GAL.	8 GAL.	14 GAL.			
pH:	6.81	6.78	6.76			
Spec. Cond.:	375	378	377			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	14.9	14.8	14.9			

PUMPED @ 1.5 gpm

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
PCBs	1 LITER AMBER GLASS	4 degrees C

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00322
Location: HANNIBAL, OHIO
Date: 3-12-08

Sample I.D.: MW-44D
Duplicate I.D.:
Time Sampling Began: 935
Time Sampling Complete: 1000

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 661.76
Depth of Well Below MP (TD): 93.97
Depth to Water Below MP (DTW): 42.82
Water Column (WC) in Well (TD - DTW): 51.15
Casing Diameter: 2"
Gallons in Well (WC x GPF): 8.18

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 24.5

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: NONE Odor: NONE Turbidity: CLEAR

Well Volumes:	3 GAL.	8 GAL.	14 GAL.	24 GAL.		
pH:	7.61	7.55	7.54	7.56		
Spec. Cond.:	361	364	361	363		
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	14.7	14.7	15.1	15.0		

PUMPED @ 1.5 gpm.

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
PCBs	1 LITER AMBER GLASS	4 degrees C

Sampling Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

APPENDIX A-2

WATER SAMPLING LOG FORMS FOR JUNE 2008 MONITORING EVENT

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 6-11-08

Sample I.D.: MW-1
Duplicate I.D.:
Time Sampling Began: 1305
Time Sampling Complete: 1320

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 668.07
Depth of Well Below MP (TD): 71.11
Depth to Water Below MP (DTW): 47.33
ater Column (WC) in Well (TD - DTW): 23.78
Casing Diameter: 2"
Gallons in Well (WC x GPF): 3.8

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 12

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: VERY SLIGHT TINT Odor: NONE Turbidity: CLEAR

Well Volumes:	5 GAL.	9 GAL.	15 GAL.			
pH:						
Spec. Cond.:	400	370	360			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	16.2	15.8	15.8			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. FARGO, C. SMITH

Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-2
Project #:	HM00324	Duplicate I.D.:	MW-52 (1300)
Location:	HANNIBAL, OHIO	Time Sampling Began:	1230
Date:	6-11-08	Time Sampling Complete:	1250

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation: 668.12

Depth of Well Below MP (TD): 85.23

Depth to Water Below MP (DTW): 47.95

ater Column (WC) in Well (TD - DTW): 37.28

Casing Diameter: 2"

Gallons in Well (WC x GPF): 6

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 18

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: DK. BROWN (TEA) Odor: NONE Turbidity: CLOUDY

Well Volumes:	6 GAL	12 GAL.	18 GAL.			
pH:						
Spec. Cond.:	992	957	910			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	16.8	16.2	16.5			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius
TETRACHLOROETHENE	3 x 40ml. GLASS	HCL

Sampline Personnel: R. FARGO, C. SMITH

Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 6-11-08

Sample I.D.: MW-5
Duplicate I.D.:
Time Sampling Began: 915
Time Sampling Complete: 945

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 668.16
Depth of Well Below MP (TD): 91.88
Depth to Water Below MP (DTW): 50.84
ater Column (WC) in Well (TD - DTW): 41.04
Casing Diameter: 2"
Gallons in Well (WC x GPF): 6.6

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 20+

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: LT. BROWN (TEA) Odor: NONE Turbidity: CLEAR

Well Volumes:	5 GAL.	7.5 GAL	12 GAL.	18 GAL.		
pH:						
Spec. Cond.:	738	733	732	730		
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	16.2	15.9	15.7	15.7		

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius
TETRACHLOROETHENE	3 x 40ml. GLASS	HCL

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 6-11-08

Sample I.D.: MW-7
Duplicate I.D.:
Time Sampling Began: 845
Time Sampling Complete: 930

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 667.94
Depth of Well Below MP (TD): 79.7
Depth to Water Below MP (DTW): 50.16
ater Column (WC) in Well (TD - DTW): 29.54
Casing Diameter: 2"
Gallons in Well (WC x GPF): 4.7

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 14+

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: LT. BROWN Odor: NONE Turbidity: CLOUDY

Well Volumes:	2 GAL	10 GAL.	15 GAL.			
pH:	6.8					
Spec. Cond.:	436	440	403			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	25.8	26.2	26.5			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-8
Project #:	HM00324	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1035
Date:	6-11-08	Time Sampling Complete:	1100

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation: 667.71

Depth of Well Below MP (TD): 99.78

Depth to Water Below MP (DTW): 52.78

ater Column (WC) in Well (TD - DTW): 47.00

Casing Diameter: 2"

Gallons in Well (WC x GPF): 7.5

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 23

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: NONE Odor: NONE Turbidity: CLEAR

Well Volumes:	4 GAL.	15 GAL.	21 GAL.			
pH:						
Spec. Cond.:	409	532	546			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	16.5	16.3	16.3			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. FARGO, C. SMITH

Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 6-11-08

Sample I.D.: MW-10
Duplicate I.D.:
Time Sampling Began: 1010
Time Sampling Complete: 1040

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 667.16
Depth of Well Below MP (TD): 100.72
Depth to Water Below MP (DTW): 51.97
ater Column (WC) in Well (TD - DTW): 48.75
Casing Diameter: 2"
Gallons in Well (WC x GPF): 7.8

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0 65	6"=1.47

Gallons to be Purged: 24

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: NONE Odor: NONE Turbidity: CLEAR

Well Volumes:	4 GAL.	7 GAL.	15 GAL.	23 GAL.		
pH:						
Spec. Cond.:	411	405	402	400		
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	17.9	17.9	17.9	18.0		

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-11
Project #:	HM00324	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	945
Date:	6-11-08	Time Sampling Complete:	1015

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation: 667.31

Depth of Well Below MP (TD): 97.35

Depth to Water Below MP (DTW): 50.33

ater Column (WC) in Well (TD - DTW): 47.02

Casing Diameter: 2"

Gallons in Well (WC x GPF): 7.5

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 23

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: SLIGHT BROWN Odor: NONE Turbidity: CLEAR

Well Volumes:	3 GAL.	6 GAL.	15 GAL.	20+		
pH:						
Spec. Cond.:	589	537	513	509		
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.8	15.8	15.8	15.8		

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R FARGO, C. SMITH

Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 6-12-08

Sample I.D.: MW-12
Duplicate I.D.:
Time Sampling Began: 840
Time Sampling Complete: 910

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 636.73
Depth of Well Below MP (TD): 68.24
Depth to Water Below MP (DTW): 14.71
ater Column (WC) in Well (TD - DTW): 53.53
Casing Diameter: 2"
Gallons in Well (WC x GPF): 8.6

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 26

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: NONE Odor: NONE Turbidity: CLEAR

Well Volumes:	6 GAL.	18 GAL.	27 GAL.			
pH:						
Spec. Cond.:	411	380	369			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.7	15.6	15.6			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius
PCB's	1 LITER GLASS	4 degrees celsius

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 6-12-08

Sample I.D.: MW-14
Duplicate I.D.:
Time Sampling Began: 900
Time Sampling Complete: 920

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 653.59
Depth of Well Below MP (TD): 86.9
Depth to Water Below MP (DTW): 30.86
ater Column (WC) in Well (TD - DTW): 56.04
Casing Diameter: 2"
Gallons in Well (WC x GPF): 9

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 27

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: NONE Odor: NONE Turbidity: CLEAR

Well Volumes:	2 GAL.	10 GAL	25 GAL.			
pH:						
Spec. Cond.:	359	366	365			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.7	15.6	15.6			

Sampling Method and Materials: *VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump*

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius
PCBs		

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-15
Project #:	HM00324	Duplicate I.D.:	MW-55 (1105)
Location:	HANNIBAL, OHIO	Time Sampling Began:	1040
Date:	6·12·08	Time Sampling Complete:	1100

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation: 657.31

Depth of Well Below MP (TD): 57.86

Depth to Water Below MP (DTW): 32.55

ater Column (WC) in Well (TD - DTW): 25.31

Casing Diameter: 2"

Gallons in Well (WC x GPF): 4

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 12

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN (TEA) Odor: NONE Turbidity: CLOUDY

Well Volumes:	3 GAL.	7+ GAL	10 GAL.			
pH:						
Spec. Cond.:	558	557	554			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	16.6	16.2	16.1			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. FARGO, C. SMITH

Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 6-11-08

Sample I.D.: MW-16
Duplicate I.D.:
Time Sampling Began: 1505
Time Sampling Complete: 1525

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 662.72
Depth of Well Below MP (TD): 83.11
Depth to Water Below MP (DTW): 40.49
ater Column (WC) in Well (TD - DTW): 42.62
Casing Diameter: 2"
Gallons in Well (WC x GPF): 6.8

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 20

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN (TEA) Odor: NONE Turbidity: CLEAR

Well Volumes:	2 GAL	10 GAL	18 GAL.			
pH:						
Spec. Cond.:	592	604	613			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	16.0	16.1	15.9			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 6·12·08

Sample I.D.: MW-17
Duplicate I.D.:
Time Sampling Began: 1000
Time Sampling Complete: 1020

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 655.03
Depth of Well Below MP (TD): 77.91
Depth to Water Below MP (DTW): 31.13
ater Column (WC) in Well (TD - DTW): 46.78
Casing Diameter: 2"
Gallons in Well (WC x GPF): 7.5

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 23

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN (TEA) Odor: NONE Turbidity: CLOUDY

Well Volumes:	3 GAL.	14 GAL.	25 GAL.			
pH:						
Spec. Cond.:	533	515	505			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.8	16.0	16.1			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 6-11-08

Sample I.D.: MW-18
Duplicate I.D.:
Time Sampling Began: 1605
Time Sampling Complete: 1630

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 660.91
Depth of Well Below MP (TD): 57.00
Depth to Water Below MP (DTW): 36.44
ater Column (WC) in Well (TD - DTW): 20.56
Casing Diameter: 2"
Gallons in Well (WC x GPF): 3.3

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 10

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN Odor: NONE Turbidity: SILTY

Well Volumes:	5 GAL.	8 GAL.	10 GAL.			
pH:						
Spec. Cond.:	1008	1046	1118			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.9	16.0	17.0			

PUMPED DRY @ ±8 GAL.
"SLURPED" OFF BOTTOM
TO ± 10 GAL.
RECOVERED. SAMPLED.

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius
TETRACHLOROETHENE	3 x 40ml. GLASS	HCL

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-19
Project #:	HM00324	Duplicate I.D.:	MW-59 (1230)
Location:	HANNIBAL, OHIO	Time Sampling Began:	1205
Date:	6.12.08	Time Sampling Complete:	1220

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation: 662.03

Depth of Well Below MP (TD): 65.20

Depth to Water Below MP (DTW): 37.50

ater Column (WC) in Well (TD - DTW): 27.70

Casing Diameter: 2"

Gallons in Well (WC x GPF): 4.4

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 13+

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: NONE Odor: NONE Turbidity: SLIGHTLY CLOUDY

Well Volumes:	4 GAL.	8 GAL.	13+			
pH:						
Spec. Cond.:	430	434	432			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	14.8	14.7	14.8			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. FARGO, C. SMITH

Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 6-11-08

Sample I.D.: MW-28
Duplicate I.D.:
Time Sampling Began: 1545
Time Sampling Complete: 1615

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 663.27
Depth of Well Below MP (TD): 46.06
Depth to Water Below MP (DTW): 19.48
ater Column (WC) in Well (TD - DTW): 26.58
Casing Diameter: 2"
Gallons in Well (WC x GPF): 4.3

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 13

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: LT. BROWN Odor: NONE Turbidity: SILTY

Well Volumes:	6 GAL.	10 GAL.	14 GAL			
pH:						
Spec. Cond.:	282	276	276			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	14.8	14.3	14.3			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 6-11-08

Sample I.D.: MW-29S
Duplicate I.D.:
Time Sampling Began: 1500
Time Sampling Complete: 1520

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 653.4
Depth of Well Below MP (TD): 61.35
Depth to Water Below MP (DTW): 31.54
ater Column (WC) in Well (TD - DTW): 29.81
Casing Diameter: 2"
Gallons in Well (WC x GPF): 4.8

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 15

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN (TEA) Odor: NONE Turbidity: CLEAR

Well Volumes:	2 GAL.	6 GAL.	14 GAL.			
pH:						
Spec. Cond.:	569	599	621			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.8	15.9	15.8			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 6-11-08

Sample I.D.: MW-29D
Duplicate I.D.:
Time Sampling Began: 1430
Time Sampling Complete: 1500

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 653.07
Depth of Well Below MP (TD): 81.98
Depth to Water Below MP (DTW): 31.26
ater Column (WC) in Well (TD - DTW): 50.70
Casing Diameter: 2"
Gallons in Well (WC x GPF): 8

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 24

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: NONE Odor: NONE Turbidity: CLEAR

Well Volumes:	4 GAL.	10 GAL.	16 GAL.	24 GAL.		
pH:						
Spec. Cond.:	413	400	396	393		
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	16.3	15.7	15.6	15.5		

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 6-11-08

Sample I.D.: MW-30
Duplicate I.D.:
Time Sampling Began: 1520
Time Sampling Complete: 1540

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 667.58
Depth of Well Below MP (TD): 60.41
Depth to Water Below MP (DTW): 44.35
ater Column (WC) in Well (TD - DTW): 16.06
Casing Diameter: 2"
Gallons in Well (WC x GPF): 2.6

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 8

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: LT. BROWN Odor: NONE Turbidity: SILTY

Well Volumes:	4 GAL.	8 GAL.				
pH:						
Spec. Cond.:	342	339				
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	16.1	16.4				

PUMPED TO NEAR DRY @ ± 8 GAL. ALLOWED TO RECOVER, THEN SAMPLED.

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius
TETRACHLOROETHENE	3 x 40ml. GLASS	HCL

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 6-11-08

Sample I.D.: MW-31
Duplicate I.D.:
Time Sampling Began: 1630
Time Sampling Complete: 1650

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 661.59
Depth of Well Below MP (TD): 67.51
Depth to Water Below MP (DTW): 38.62
ater Column (WC) in Well (TD - DTW): 28.89
Casing Diameter: 2"
Gallons in Well (WC x GPF): 4.6

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 14

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN (TEA) Odor: NONE Turbidity: CLOUDY

Well Volumes:	6 GAL.	9 GAL.	14 GAL.			
pH:						
Spec. Cond.:	1005	992	999			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	16.5	16.3	15.9			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius
TETRACHLOROETHENE	3 X 40ml. GLASS	HCL

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 6·12·08

Sample I.D.: MW-32
Duplicate I.D.:
Time Sampling Began: 1115
Time Sampling Complete: 1130

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 656.66
Depth of Well Below MP (TD): 57.18
Depth to Water Below MP (DTW): 32.56
ater Column (WC) in Well (TD - DTW): 24.62
Casing Diameter: 2"
Gallons in Well (WC x GPF): 4

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 12

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN (TEA) Odor: NONE Turbidity: CLOUDY

Well Volumes:	3 GAL.	7 GAL	12 GAL.			
pH:						
Spec. Cond.:	985	1024	1041			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	18.1	18.0	17.9			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 6 12.08

Sample I.D.: MW-34S
Duplicate I.D.:
Time Sampling Began: 1040
Time Sampling Complete: 1055

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 655.67
Depth of Well Below MP (TD): 49.35
Depth to Water Below MP (DTW): 31.96
ater Column (WC) in Well (TD - DTW): 17.39
Casing Diameter: 2"
Gallons in Well (WC x GPF): 2.8

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 8+

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: DK. BROWN Odor: NONE Turbidity: CLOUDY

Well Volumes:	2+ GAL.	5 GAL.	8 GAL.			
pH:						
Spec. Cond.:	802	822	824			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.1	15.2	15.3			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. FARGO. C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 6·12·08

Sample I.D.: MW-34D
Duplicate I.D.:
Time Sampling Began: 1020
Time Sampling Complete: 1040

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 654.67
Depth of Well Below MP (TD): 68.24
Depth to Water Below MP (DTW): 30.40
ater Column (WC) in Well (TD - DTW): 37.84
Casing Diameter: 2"
Gallons in Well (WC x GPF): 6

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 18

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: DK. BROWN (TEA) Odor: NONE Turbidity: SILTY

Well Volumes:	4 GAL.	12 GAL.	18+GAL.			
pH:						
Spec. Cond.:	551	571	572			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.6	15.6	15.6			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 6·12·08

Sample I.D.: MW-35
Duplicate I.D.:
Time Sampling Began: 1130
Time Sampling Complete: 1145

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 661.9
Depth of Well Below MP (TD): 46.70
Depth to Water Below MP (DTW): 34.48
ater Column (WC) in Well (TD - DTW): 12.22
Casing Diameter: 2"
Gallons in Well (WC x GPF): 2

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 6

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN (TEA) Odor: NONE Turbidity: SILTY → CLOUDY

Well Volumes:	2 GAL.					
pH:						
Spec. Cond.:	288	300	368	381		
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	17.5	17.9	18.5	18.6		

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 6.12.08

Sample I.D.: MW-36
Duplicate I.D.:
Time Sampling Began: 1100
Time Sampling Complete: 1115

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 655.14
Depth of Well Below MP (TD): 52.08
Depth to Water Below MP (DTW): 31.96
ater Column (WC) in Well (TD - DTW): 20.12
Casing Diameter: 2"
Gallons in Well (WC x GPF): 3.2

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 10 GAL.

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN (TEA) Odor: NONE Turbidity: CLEAR

Well Volumes:	3 GAL.	7 GAL.	10 GAL.			
pH:						
Spec. Cond.:	515	515	516			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	19.9	19.9	20.0			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 6·12·08

Sample I.D.: MW-37
Duplicate I.D.:
Time Sampling Began: 1150
Time Sampling Complete: 1210

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 661.14
Depth of Well Below MP (TD): 36.98
Depth to Water Below MP (DTW): 20.31
ater Column (WC) in Well (TD - DTW): 16.67
Casing Diameter: 2"
Gallons in Well (WC x GPF): 2.7

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 8+

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN Odor: NONE Turbidity: SILTY

Well Volumes:	3 GAL.	4 GAL.	8 GAL.			
pH:						
Spec. Cond.:	186	184	183			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.3	15.1	15.0			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. FARGO, C SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 6-11-08

Sample I.D.: MW-39S
Duplicate I.D.:
Time Sampling Began: 1715
Time Sampling Complete: 1730

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 657.3
Depth of Well Below MP (TD): 60.23
Depth to Water Below MP (DTW): 33.98
ater Column (WC) in Well (TD - DTW): 26.25
Casing Diameter: 2"
Gallons in Well (WC x GPF): 4.2

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 13

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: LT. BROWN (TEA) Odor: NONE Turbidity: CLEAR

Well Volumes:	2 GAL.	8 GAL.	14 GAL.			
pH:						
Spec. Cond.:	337	344	338			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.1	15.1	15.2			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 6-11-08

Sample I.D.: MW-39D
Duplicate I.D.:
Time Sampling Began: 1655
Time Sampling Complete: 1715

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 657.18
Depth of Well Below MP (TD): 80.21
Depth to Water Below MP (DTW): 33.91
ater Column (WC) in Well (TD - DTW): 46.30
Casing Diameter: 2"
Gallons in Well (WC x GPF): 7.4

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 22+

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: SLIGHT TINT BROWN/YELLOW Odor: NONE Turbidity: CLEAR

Well Volumes:	2 GAL.	14 GAL.	22+GAL			
pH:						
Spec. Cond.:	1030	1226	1211			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.6	15.0	15.0			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius
	3 X 40ml. GLASS	

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 6-11-08

Sample I.D.: MW-40S
Duplicate I.D.:
Time Sampling Began: 1215
Time Sampling Complete: 1230

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 662.22
Depth of Well Below MP (TD): 70.4
Depth to Water Below MP (DTW): 42.00
ater Column (WC) in Well (TD - DTW): 28.40
Casing Diameter: 2"
Gallons in Well (WC x GPF): 4.5

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 14

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: VERY DK. BROWN Odor: NONE Turbidity: CLOUDY

Well Volumes:	4 GAL.	8 GAL.	14 GAL.			
pH:						
Spec. Cond.:	634	648	655			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.9	16.0	15.9			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 6-11-08

Sample I.D.: MW-40D
Duplicate I.D.:
Time Sampling Began: 1150
Time Sampling Complete: 1215

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 661.95
Depth of Well Below MP (TD): 90.40
Depth to Water Below MP (DTW): 41.78
ater Column (WC) in Well (TD - DTW): 48.62
Casing Diameter: 2"
Gallons in Well (WC x GPF): 7.8

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 23+

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN (TEA) Odor: NONE Turbidity: CLOUDY

Well Volumes:	6 GAL	10 GAL.	18 GAL.	23 GAL.		
pH:						
Spec. Cond.:	505	587	580	579		
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	16.1	16.1	15.9	15.8		

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date:

Sample I.D.: MW-41
Duplicate I.D.:
Time Sampling Began:
Time Sampling Complete:

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 637.67
Depth of Well Below MP (TD): 62.26
Depth to Water Below MP (DTW):
ater Column (WC) in Well (TD - DTW):
Casing Diameter: 2"
Gallons in Well (WC x GPF):

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged:

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: Odor: Turbidity:

Well Volumes:						
pH:						
Spec. Cond.:						
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:						

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 6·12·08

Sample I.D.: MW-42S
Duplicate I.D.:
Time Sampling Began: 940
Time Sampling Complete: 1000

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 654.37
Depth of Well Below MP (TD): 52.30
Depth to Water Below MP (DTW): 32.31
ater Column (WC) in Well (TD - DTW): 19.99
Casing Diameter: 2"
Gallons in Well (WC x GPF): 3.2

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 10

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: LT. BROWN (TEA) Odor: NONE Turbidity: CLEAR

Well Volumes:	4 GAL.	7.5 GAL	10 GAL.			
pH:						
Spec. Cond.:	1266	1275	1224			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.0	15.1	15.1			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-42D
Project #:	HM00324	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	925
Date:	6-12-08	Time Sampling Complete:	945

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation: 654.34

Depth of Well Below MP (TD): 85.10

Depth to Water Below MP (DTW): 32.25

ater Column (WC) in Well (TD - DTW): 52.85

Casing Diameter: 2"

Gallons in Well (WC x GPF): 8.5

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 26

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: VERY SLIGHT TINT BROWN/YELLOW Odor: NONE Turbidity: CLEAR

Well Volumes:	~~7 GAL.~~	15 GAL.	18 GAL.	28 GAL.		
pH:						
Spec. Cond.:	~~335~~	1260	1288	1320		
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	~~15.4~~	15.1	15.2	15.0		

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. FARGO, C. SMITH

Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 6-11-08

Sample I.D.: MW-44S
Duplicate I.D.: MW-505 (1150)
Time Sampling Began: 1130
Time Sampling Complete: 1145

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 662.01
Depth of Well Below MP (TD): 69.05
Depth to Water Below MP (DTW): 41.93
ater Column (WC) in Well (TD - DTW): 28.12
Casing Diameter: 2"
Gallons in Well (WC x GPF): 4.5

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 14

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: NONE Odor: NONE Turbidity: CLEAR

Well Volumes:	2 GAL.	6 GAL.	13 GAL.			
pH:						
Spec. Cond.:	369	370	370			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.9	15.9	15.8			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
PCB's	1 LITER GLASS	4 degrees celsius

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 6-11-08

Sample I.D.: MW-44D
Duplicate I.D.:
Time Sampling Began: 1110
Time Sampling Complete: 1130

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 661.76
Depth of Well Below MP (TD): 93.97
Depth to Water Below MP (DTW): 42.49
ater Column (WC) in Well (TD - DTW): 51.48
Casing Diameter: 2"
Gallons in Well (WC x GPF): 8.2

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 25

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: NONE Odor: NONE Turbidity: CLEAR

Well Volumes:		11 GAL.	18 GAL.			
pH:						
Spec. Cond.:	359	344	342			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	16.0	15.9	15.8			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
PCB's	1 LITER GLASS	4 degrees celsius

Sampline Personnel: R. FARGO, C. SMITH
Comments:

APPENDIX A-3

WATER SAMPLING LOG FORMS FOR SEPTEMBER 2008 MONITORING EVENT

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 9-11-08

Sample I.D.: MW-2
Duplicate I.D.:
Time Sampling Began: ~~9:20~~ 1045
Time Sampling Complete: 1115

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Depth of Well Below MP (TD): 82.25
Depth to Water Below MP (DTW): 47.70
ater Column (WC) in Well (TD - DTW): 34.55
Casing Diameter: 2"
Gallons in Well (WC x GPF): 5.5

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0 16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 16.6

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: DK. BROWN (COFFEE) Odor: NONE Turbidity: CLOUDY

Well Volumes:	5 GAL.	10 GAL.	16 GAL.			
pH:	9.57	9.58	9.58			
Spec. Cond.:	1390	1345	1318			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.3	15.2	15.2			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 v. submersible pump

Parameters to be Analyzed	Container Description	Preservative
pH, Spec. Cond., F	500 ml. PLASTIC	4 degrees 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

Sampline Personnel: R FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-5
Project #:	HM00324	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	920
Date:		Time Sampling Complete:	945

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation:

Depth of Well Below MP (TD): 92.00

Depth to Water Below MP (DTW): 50.24

ater Column (WC) in Well (TD - DTW): 41.76

Casing Diameter: 2"

Gallons in Well (WC x GPF): 6.7

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 20.0

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: LT. BROWN Odor: NONE Turbidity: SLIGHT CLOUDY

Well Volumes:	5	15	18			
pH:	8.18	8.17	8.17			
Spec. Cond.:	1169	1186	1178			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.8	15.1	15.1			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 v. submersible pump

Parameters to be Analyzed	Container Description	Preservative
pH, Spec. Cond., F	500 ml. PLASTIC	4 degrees 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

Sampline Personnel: R. FARGO, C. SMITH

Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-12
Project #:	HM00324	Duplicate I.D.:	~~MW-12D~~
Location:	HANNIBAL, OHIO	Time Sampling Began:	1400
Date:	9-11-08	Time Sampling Complete:	1420

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation:

Depth of Well Below MP (TD): 68.42

Depth to Water Below MP (DTW): 14.69

ater Column (WC) in Well (TD - DTW): 53.73

Casing Diameter: 2"

Gallons in Well (WC x GPF): 8.6

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 25.8

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: NONE Odor: NONE Turbidity: CLEAR

Well Volumes:	6 GAL.	18 GAL.	25 GAL			
pH:	7.16	7.64	7.67			
Spec. Cond.:	876	545	545			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.8	15.0	14.8			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 v. submersible pump

Parameters to be Analyzed	Container Description	Preservative
pH, Spec. Cond., F	500 ml. PLASTIC	4 degrees 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 degrees C

Sampline Personnel: R. FARGO, C. SMITH

Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-16
Project #:	HM00324	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1120
Date:	9-11-08	Time Sampling Complete:	1140

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation:

Depth of Well Below MP (TD): 83.12

Depth to Water Below MP (DTW): 40.65

ater Column (WC) in Well (TD - DTW): 42.47

Casing Diameter: 2"

Gallons in Well (WC x GPF): 6.8

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 20.4

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: DK. BROWN (COFFEE) Odor: NONE Turbidity: CLOUDY

Well Volumes:	5 GAL.	15 GAL.	20 GAL.			
pH:	9.25	9.21	9.22			
Spec. Cond.:	1006	986	991			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.6	15.4	15.3			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 v. submersible pump

Parameters to be Analyzed	Container Description	Preservative
pH, Spec. Cond., F	500 ml. PLASTIC	4 degrees C
DISS. As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL & AMENABLE CN	250 ml. PLASTIC	NaOH

Sampline Personnel: R. FARGO, C. SMITH

Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 9-11-08

Sample I.D.: MW-18
Duplicate I.D.:
Time Sampling Began: 1210
Time Sampling Complete: 1230

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Depth of Well Below MP (TD): 61.16
Depth to Water Below MP (DTW): 36.97
ater Column (WC) in Well (TD - DTW): 24.19
Casing Diameter: 2"
Gallons in Well (WC x GPF): 3.9

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 11.6

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN (TEA) Odor: NONE Turbidity: TURBID

Well Volumes:	3 GAL.	5 GAL.	8 GAL.	10 GAL.		
pH:	9.38	9.45	9.47	9.48		
Spec. Cond.:	1208	1569	1328	1260		
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	16.3	15.6	15.8	16.0		

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 v. submersible pump

Parameters to be Analyzed	Container Description	Preservative
pH, Spec. Cond., F	500 ml. PLASTIC	4 degrees 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

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-28
Project #:	HM00324	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1145
Date:	9-11-08	Time Sampling Complete:	1200

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Depth of Well Below MP (TD): 46.20
Depth to Water Below MP (DTW): 20.71
ater Column (WC) in Well (TD - DTW): 25.49
Casing Diameter: 2"
Gallons in Well (WC x GPF): 4.1

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 12.2

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: LT. BROWN Odor: NONE Turbidity: CLOUDY

Well Volumes:	4 GAL.	8 GAL.	12 GAL.			
pH:	6.80	6.49	6.23			
Spec. Cond.:	346	354	354			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.0	14.6	14.6			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 v. submersible pump

Parameters to be Analyzed	Container Description	Preservative
pH, Spec. Cond., F	500 ml. PLASTIC	4 degrees C
DISS. As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL & AMENABLE CN	250 ml. PLASTIC	NaOH

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-31
Project #:	HM00324	Duplicate I.D.:	~~MW-34D~~
Location:	HANNIBAL, OHIO	Time Sampling Began:	1440
Date:	9-11-08	Time Sampling Complete:	1500

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Depth of Well Below MP (TD): 67.58
Depth to Water Below MP (DTW): 38.95
ater Column (WC) in Well (TD - DTW): 28.63
Casing Diameter: 2"
Gallons in Well (WC x GPF): 4.6

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 13.7

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: T.K. BROWN (COFFEE) Odor: NONE Turbidity: CLOUDY

Well Volumes:	4 GAL.	8 GAL.	12+ GAL.			
pH:	9.64	9.67	9.68			
Spec. Cond.:	1382	1306	1299			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.7	15.3	15.1			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 v. submersible pump

Parameters to be Analyzed	Container Description	Preservative
pH, Spec. Cond., F	500 ml. PLASTIC	4 degrees 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

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-32
Project #:	HM00324	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1620
Date:	9-11-08	Time Sampling Complete:	1645

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation:

Depth of Well Below MP (TD): 57.36

Depth to Water Below MP (DTW): 33.24

ater Column (WC) in Well (TD - DTW): 24.12

Casing Diameter: 2"

Gallons in Well (WC x GPF): 3.9

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 11.6

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: DK. BROWN (COFFEE) Odor: NONE Turbidity: CLOUDY

Well Volumes:	4 GAL.	7 GAL.	12+ GAL			
pH:	9.95	9.96	9.97			
Spec. Cond.:	1545	1526	1514			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	17.0	17.0	17.1			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 v. submersible pump

Parameters to be Analyzed	Container Description	Preservative
pH, Spec. Cond., F	500 ml. PLASTIC	4 degrees C
DISS. As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL & AMENABLE CN	250 ml. PLASTIC	NaOH

Sampline Personnel: R. FARGO, C. SMITH FB-1 (1700)

Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-35
Project #:	HM00324	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1515
Date:	9-11-08	Time Sampling Complete:	1540

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Depth of Well Below MP (TD): 46.94
Depth to Water Below MP (DTW): 35.00
ater Column (WC) in Well (TD - DTW): 11.94
Casing Diameter: 2"
Gallons in Well (WC x GPF): 1.9

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 5.7

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN (TEA) Odor: NONE Turbidity: CLOUDY

Well Volumes:	2 GAL.	4 GAL.	5 GAL.	6 GAL.		
pH:	7.78	8.27	8.42	8.56		
Spec. Cond.:	457	555	573	589		
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	18.5	18.2	18.3	18.2		

PUMPED DRY AFTER 1 WELL VOL. CONTINUED @ VERY LOW RATE.

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
pH, Spec. Cond., F	500 ml. PLASTIC	4 degrees C
DISS. As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL & AMENABLE CN	250 ml. PLASTIC	NaOH

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-36
Project #:	HM00324	Duplicate I.D.:	MW-56 (1640)
Location:	HANNIBAL, OHIO	Time Sampling Began:	1600
Date:	9-11-08	Time Sampling Complete:	1630

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation:

Depth of Well Below MP (TD): 52.08

Depth to Water Below MP (DTW): 32.73

ater Column (WC) in Well (TD - DTW): 19.35

Casing Diameter: 2"

Gallons in Well (WC x GPF): 3.1

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 9.3

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: LT. BROWN (TEA) Odor: NONE Turbidity: CLEAR

Well Volumes:	3 GAL.	8 GAL.	12 GAL.			
pH:	8.36	8.64	8.68			
Spec. Cond.:	704	722	724			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	19.7	19.6	19.6			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
pH, Spec. Cond., F	500 ml. PLASTIC	4 degrees C
DISS. As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL & AMENABLE CN	250 ml. PLASTIC	NaOH

Sampline Personnel: R. FARGO, C. SMITH

Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 9-11-08

Sample I.D.: MW-37
Duplicate I.D.:
Time Sampling Began: 1540
Time Sampling Complete: 1600

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Depth of Well Below MP (TD): 36.90
Depth to Water Below MP (DTW): 21.21
ater Column (WC) in Well (TD - DTW): 15.69
Casing Diameter: 2"
Gallons in Well (WC x GPF): 2.5

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 7.5

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: BROWN Odor: NONE Turbidity: TURBID

Well Volumes:	3 GAL.	5+ GAL.	10 GAL.			
pH:	7.32	6.73	6.60			
Spec. Cond.:	277	276	275			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.7	15.8	15.8			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
pH, Spec. Cond., F	500 ml. PLASTIC	4 degrees C
DISS. As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (1 MICRON)
TOTAL & AMENABLE CN	250 ml. PLASTIC	NaOH

Sampline Personnel: R. FARGO, C. SMITH
Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-44s
Project #:	HM00324	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1020
Date:		Time Sampling Complete:	1040

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation:

Depth of Well Below MP (TD): 69.05

Depth to Water Below MP (DTW): 41.61

ater Column (WC) in Well (TD - DTW): 27.44

Casing Diameter: 2"

Gallons in Well (WC x GPF): 4.4

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 13.2

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: NONE Odor: NONE Turbidity: CLEAR

Well Volumes:	4 GAL.	9 GAL.	15 GAL.			
pH:	7.21	7.11	7.10			
Spec. Cond.:	612	608	612			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.0	15.1	14.8			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
PCBs	1 LITER AMBER GLASS	4 degrees C

Sampline Personnel: R. FARGO, C. SMITH

Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-44D
Project #:	HM00324	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1000
Date:	9-11-08	Time Sampling Complete:	1020

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation:
Depth of Well Below MP (TD): 93.97
Depth to Water Below MP (DTW): 42.15
ater Column (WC) in Well (TD - DTW): 51.82
Casing Diameter: 2"
Gallons in Well (WC x GPF): 8.3

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 24.9

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: NONE Odor: NONE Turbidity: CLEAR

Well Volumes:	3 GAL	12	25			
pH:	7.87	7.82	7.81			
Spec. Cond.:	480	493	493			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.1	15.2	15.1			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
PCBs	1 LITER AMBER GLASS	4 degrees C

Sampline Personnel: R. FARGO, C. SMITH
Comments.

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 9-11-08

Sample I.D.: MW-39S
Duplicate I.D.:
Time Sampling Began: 1420
Time Sampling Complete: 1440

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 657.3
Depth of Well Below MP (TD): 60.23
Depth to Water Below MP (DTW): 34.35
ater Column (WC) in Well (TD - DTW): 25.88
Casing Diameter: 2"
Gallons in Well (WC x GPF): 4.1

GALLONS PER FOOT (GPF)				
1"=0.04	2"=0.16	3"=0.37	4"=0.65	6"=1.47

Gallons to be Purged: 12.4

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: LT. BROWN (TEA) Odor: NONE Turbidity: CLEAR

Well Volumes:	4 GAL.	9 GAL.	14 GAL.			
pH:	9.23	9.22	9.19			
Spec. Cond.:	4950	4330	4120			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	14.5	14.4	14.5			

Sampling Method and Materials: VOCs-disposable polypropylene bailer and rope; All others 12 volt submersible pump

Parameters to be Analyzed	Container Description	Preservative
DISSOLVED As, Be, Mn, Na, V	250 ml. PLASTIC	HNO_3 - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	250 ml. PLASTIC	NAOH
pH, SPEC. COND., F	500 ml. PLASTIC	4 degrees celsius

Sampline Personnel: R. FARGO, C. SMITH
Comments:

APPENDIX B

LABORATORY ANALYTICAL REPORTS

Appendix B-1 Laboratory Analytical Report for March 2008 Monitoring Event

Appendix B-2 Laboratory Analytical Report for June 2008 Monitoring Event

Appendix B-3 Laboratory Analytical Report for September 2008 Monitoring Event

APPENDIX B-1

LABORATORY ANALYTICAL REPORT FOR MARCH 2008 MONITORING EVENT

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
5223 Triangle Lane
Export, PA 15632
Phone 724.733.1161
Fax: 724.327.7793

March 31, 2008

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
P.O. Box 789
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 March 14, 2008. 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. Parameters printed in italics represent Non-NELAC accredited parameters. Please reference Pace project number 08-1940 when inquiring about this report.

Client Site: Reduction Mill
Client Ref.: HM00324

Pace Sample Identification	Client Sample Identification
0803-2753	MW-2
0803-2754	MW-5
0803-2755	MW-12
0803-2756	MW-16
0803-2757	MW-18
0803-2758	MW-28
0803-2759	MW-31
0803-2760	MW-32
0803-2761	MW-32E

Pace Sample Identification	Client Sample Identification
0803-2762	MW-35
0803-2763	MW-36
0803-2764	MW-37
0803-2765	MW-44S
0803-2766	MW-44D
0803-2767	MW-39S
0803-2768	MW-39E
0803-2769	FB-1
0803-2770	TB-1

General Comments: The recommended holding time for pH requires immediate analysis. The samples were received past the recommended holding time for pH. Cooler temperature 2.4 ° C upon receipt. Ice was present. 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.

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

Sincerely,

Rachel D. Christner
Project Manager

RDC: jld

Enclosures

Page 1 of 51

cc: John Reggi, Ormet Primary Aluminum Corporation

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Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
P.O. Box 789
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00324

Lab Project ID: **08-1940**
Lab Sample ID: **0803-2753**
Client Sample ID: MW-2
Sample Matrix: Aqueous

Date Sampled: 03/12/2008
Date Received: 03/14/2008

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	MMD	03/27/2008	0071929-1	<0.010
Cyanide (Total)	335.4(1)	8.9	0.50	mg/l	MMD	03/25/2008	0071915-1	<0.010
Fluoride	340.2(1)	42	1.0	mg/l	BRJ	03/20/2008	0071673-1	<0.10
pH	150.1(1)	9.52	1.00	pH	DJT	03/14/2008	0071528-1	4.51
Specific Conductance	120.1(1)	1400	1.0	umhos/cm	BKH	03/18/2008	0071562-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.046	0.0040	mg/l	CS0	03/20/2008	0071549-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	03/20/2008	0071549-1	<0.00050
Manganese	6010B(2)	0.52	0.010	mg/l	CS0	03/20/2008	0071549-1	<0.010
Sodium	6010B(2)	310	0.50	mg/l	CS0	03/24/2008	0071549-1	<0.50
Vanadium	6010B(2)	0.030	0.010	mg/l	CS0	03/20/2008	0071549-1	<0.010

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Tetrachloroethene	8260B(2)	0.041	0.0050	mg/l	JHC	03/25/2008	0071888-1	<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. One surrogate recovery was outside QC limits (high) due to matrix interferences.

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Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
P.O. Box 789
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00324

Lab Project ID: **08-1940**
Lab Sample ID: **0803-2754**
Client Sample ID: MW-5
Sample Matrix: Aqueous

Date Sampled: 03/12/2008
Date Received: 03/14/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1[1]	4.5	0.010	mg/l	MMD	03/27/2008	0071929-1	<0.010
Cyanide (Total)	335.4[1]	4.5	0.13	mg/l	MMD	03/25/2008	0071915-1	<0.010
Fluoride	340.2[1]	27	0.20	mg/l	BRJ	03/20/2008	0071673-1	<0.10
pH	150.1[1]	8.06	1.00	pH	DJT	03/14/2008	0071528-1	4.51
Specific Conductance	120.1[1]	1300	1.0	umhos/cm	BKH	03/18/2008	0071562-1	<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	03/20/2008	0071549-1	<0.0040
Beryllium	6010B[2]	<0.00050	0.00050	mg/l	CS0	03/20/2008	0071549-1	<0.00050
Manganese	6010B[2]	0.39	0.010	mg/l	CS0	03/20/2008	0071549-1	<0.010
Sodium	6010B[2]	250	0.50	mg/l	CS0	03/24/2008	0071549-1	<0.50
Vanadium	6010B[2]	<0.010	0.010	mg/l	CS0	03/20/2008	0071549-1	<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	JHC	03/25/2008	0071888-1	<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. One surrogate recovery was outside QC limits (high) due to matrix interferences.

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Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
P.O. Box 789
Washington, PA 15301

Lab Project ID: **08-1940**
Lab Sample ID: **0803-2755**
Client Sample ID: MW-12
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 03/12/2008
Date Received: 03/14/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Total)	335.4(1)	<0.010	0.010	mg/l	MMD	03/25/2008	0071915-1	<0.010
Fluoride	340.2(1)	0.74	0.10	mg/l	BRJ	03/20/2008	0071673-1	<0.10
pH	150.1(1)	7.52	1.00	pH	DJT	03/17/2008	0071559-1	4.98
Specific Conductance	120.1(1)	540	1.0	umhos/cm	BKH	03/18/2008	0071562-1	<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	03/20/2008	0071549-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	03/20/2008	0071549-1	<0.00050
Manganese	6010B(2)	2.0	0.010	mg/l	CS0	03/20/2008	0071549-1	<0.010
Sodium	6010B(2)	29	0.50	mg/l	CS0	03/24/2008	0071549-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	03/20/2008	0071549-1	<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	SJG	03/19/2008	0071560-1	<0.50
Aroclor-1221	8082(2)	<0.50	0.50	mg/l	SJG	03/19/2008	0071560-1	<0.50
Aroclor-1232	8082(2)	<0.50	0.50	mg/l	SJG	03/19/2008	0071560-1	<0.50
Aroclor-1242	8082(2)	<0.50	0.50	mg/l	SJG	03/19/2008	0071560-1	<0.50
Aroclor-1248	8082(2)	<0.50	0.50	mg/l	SJG	03/19/2008	0071560-1	<0.50
Aroclor-1254	8082(2)	<0.50	0.50	mg/l	SJG	03/19/2008	0071560-1	<0.50
Aroclor-1260	8082(2)	<0.50	0.50	mg/l	SJG	03/19/2008	0071560-1	<0.50
PCB Total-TCL	8082(2)	<0.50	0.50	mg/l	SJG	03/19/2008	0071560-1	<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.

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Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
P.O. Box 789
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00324

Lab Project ID: **08-1940**
Lab Sample ID: **0803-2756**
Client Sample ID: MW-16
Sample Matrix: Aqueous

Date Sampled: 03/12/2008
Date Received: 03/14/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1[1]	0.098	0.010	mg/l	MMD	03/27/2008	0071929-1	<0.010
Cyanide (Total)	335.4[1]	3.4	0.25	mg/l	MMD	03/25/2008	0071915-1	<0.010
Fluoride	340.2[1]	39	1.0	mg/l	BRJ	03/20/2008	0071673-1	<0.10
pH	150.1[1]	9.05	1.00	pH	DJT	03/14/2008	0071529-1	4.89
Specific Conductance	120.1[1]	1100	1.0	umhos/cm	BKH	03/18/2008	0071562-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B[2]	0.037	0.0040	mg/l	CS0	03/20/2008	0071549-1	<0.0040
Beryllium	6010B[2]	0.00056	0.00050	mg/l	CS0	03/20/2008	0071549-1	<0.00050
Manganese	6010B[2]	1.0	0.010	mg/l	CS0	03/20/2008	0071549-1	<0.010
Sodium	6010B[2]	220	0.50	mg/l	CS0	03/24/2008	0071549-1	<0.50
Vanadium	6010B[2]	0.046	0.010	mg/l	CS0	03/20/2008	0071549-1	<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.

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Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
P.O. Box 789
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00324

Lab Project ID: **08-1940**
Lab Sample ID: **0803-2757**
Client Sample ID: MW-18
Sample Matrix: Aqueous

Date Sampled: 03/12/2008
Date Received: 03/14/2008

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	MMD	03/27/2008	0071929-1	<0.010
Cyanide (Total)	335.4(1)	12	0.50	mg/l	MMD	03/25/2008	0071915-1	<0.010
Fluoride	340.2(1)	92	0.50	mg/l	BRJ	03/20/2008	0071673-1	<0.10
pH	150.1(1)	9.42	1.00	pH	DJT	03/14/2008	0071529-1	4.89
Specific Conductance	120.1(1)	1700	1.0	umhos/cm	BKH	03/18/2008	0071562-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.069	0.0040	mg/l	CS0	03/20/2008	0071549-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	03/20/2008	0071549-1	<0.00050
Manganese	6010B(2)	0.24	0.010	mg/l	CS0	03/20/2008	0071549-1	<0.010
Sodium	6010B(2)	370	0.50	mg/l	CS0	03/24/2008	0071549-1	<0.50
Vanadium	6010B(2)	0.021	0.010	mg/l	CS0	03/20/2008	0071549-1	<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	JHC	03/25/2008	0071920-1	<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.

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Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
P.O. Box 789
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00324

Lab Project ID: **08-1940**
Lab Sample ID: **0803-2758**
Client Sample ID: MW-28
Sample Matrix: Aqueous

Date Sampled: 03/12/2008
Date Received: 03/14/2008

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	MMD	03/27/2008	0071929-1	<0.010
Cyanide (Total)	335.4[1]	0.20	0.010	mg/l	MMD	03/25/2008	0071915-1	<0.010
Fluoride	340.2[1]	0.15	0.10	mg/l	BRJ	03/20/2008	0071673-1	<0.10
pH	150.1[1]	6.01	1.00	pH	DJT	03/14/2008	0071529-1	4.89
Specific Conductance	120.1[1]	360	1.0	umhos/cm	BKH	03/18/2008	0071562-1	<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	03/20/2008	0071549-1	<0.0040
Beryllium	6010B[2]	<0.00050	0.00050	mg/l	CS0	03/20/2008	0071549-1	<0.00050
Manganese	6010B[2]	<0.010	0.010	mg/l	CS0	03/20/2008	0071549-1	<0.010
Sodium	6010B[2]	56	0.50	mg/l	CS0	03/24/2008	0071549-1	<0.50
Vanadium	6010B[2]	<0.010	0.010	mg/l	CS0	03/20/2008	0071549-1	<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.

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Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
P.O. Box 789
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00324

Lab Project ID: **08-1940**
Lab Sample ID: **0803-2759**
Client Sample ID: MW-31
Sample Matrix: Aqueous

Date Sampled: 03/12/2008
Date Received: 03/14/2008

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	MMD	03/27/2008	0071929-1	<0.010
Cyanide (Total)	335.4(1)	6.9	0.25	mg/l	MMD	03/25/2008	0071915-1	<0.010
Fluoride	340.2(1)	63	1.0	mg/l	BRJ	03/20/2008	0071673-1	<0.10
pH	150.1(1)	9.52	1.00	pH	DJT	03/14/2008	0071529-1	4.89
Specific Conductance	120.1(1)	1500	1.0	umhos/cm	BKH	03/18/2008	0071562-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.047	0.0040	mg/l	CS0	03/20/2008	0071549-1	<0.0040
Beryllium	6010B(2)	0.0014	0.00050	mg/l	CS0	03/20/2008	0071549-1	<0.00050
Manganese	6010B(2)	1.6	0.010	mg/l	CS0	03/20/2008	0071549-1	<0.010
Sodium	6010B(2)	330	0.50	mg/l	CS0	03/24/2008	0071549-1	<0.50
Vanadium	6010B(2)	0.077	0.010	mg/l	CS0	03/20/2008	0071549-1	<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	JHC	03/24/2008	0071745-1	<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.

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Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
P.O. Box 789
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00324

Lab Project ID: **08-1940**
Lab Sample ID: **0803-2760**
Client Sample ID: MW-32
Sample Matrix: Aqueous

Date Sampled: 03/12/2008
Date Received: 03/14/2008

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	MMD	03/27/2008	0071929-1	<0.010
Cyanide (Total)	335.4[1]	6.1	0.50	mg/l	MMD	03/25/2008	0071915-1	<0.010
Fluoride	340.2[1]	60	1.0	mg/l	BRJ	03/20/2008	0071673-1	<0.10
pH	150.1[1]	9.88	1.00	pH	DJT	03/14/2008	0071529-1	4.89
Specific Conductance	120.1[1]	1500	1.0	umhos/cm	BKH	03/18/2008	0071562-1	<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	03/20/2008	0071549-1	<0.0040
Beryllium	6010B[2]	0.0012	0.00050	mg/l	CS0	03/20/2008	0071549-1	<0.00050
Manganese	6010B[2]	2.4	0.010	mg/l	CS0	03/20/2008	0071549-1	<0.010
Sodium	6010B[2]	330	0.50	mg/l	CS0	03/24/2008	0071549-1	<0.50
Vanadium	6010B[2]	0.10	0.010	mg/l	CS0	03/20/2008	0071549-1	<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.

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Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
P.O. Box 789
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00324

Lab Project ID: **08-1940**
Lab Sample ID: **0803-2761**
Client Sample ID: MW-32E
Sample Matrix: Aqueous

Date Sampled: 03/12/2008
Date Received: 03/14/2008

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	MMD	03/27/2008	0071929-1	<0.010
Cyanide (Total)	335.4[1]	7.3	0.21	mg/l	MMD	03/25/2008	0071915-1	<0.010
Fluoride	340.2[1]	55	1.0	mg/l	BRJ	03/25/2008	0071829-1	<0.10
pH	150.1[1]	9.88	1.00	pH	DJT	03/14/2008	0071529-1	4.89
Specific Conductance	120.1[1]	1500	1.0	umhos/cm	BKH	03/18/2008	0071562-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B[2]	0.058	0.0040	mg/l	CS0	03/20/2008	0071549-1	<0.0040
Beryllium	6010B[2]	0.0013	0.00050	mg/l	CS0	03/20/2008	0071549-1	<0.00050
Manganese	6010B[2]	2.4	0.010	mg/l	CS0	03/20/2008	0071549-1	<0.010
Sodium	6010B[2]	330	0.50	mg/l	CS0	03/24/2008	0071549-1	<0.50
Vanadium	6010B[2]	0.11	0.010	mg/l	CS0	03/20/2008	0071549-1	<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.

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Mr. Robert L. Fargo (Principal/Senior Consultant)
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Washington, PA 15301

Lab Project ID: **08-1940**
Lab Sample ID: **0803-2762**
Client Sample ID: MW-35
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 03/12/2008
Date Received: 03/14/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.56	0.010	mg/l	MMD	03/27/2008	0071929-1	<0.010
Cyanide (Total)	335.4(1)	21	0.50	mg/l	MMD	03/25/2008	0071915-1	<0.010
Fluoride	340.2(1)	23	0.20	mg/l	BRJ	03/25/2008	0071829-1	<0.10
pH	150.1(1)	8.97	1.00	pH	DJT	03/14/2008	0071529-1	4.89
Specific Conductance	120.1(1)	760	1.0	umhos/cm	BKH	03/18/2008	0071562-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.017	0.0040	mg/l	CS0	03/20/2008	0071549-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	03/20/2008	0071549-1	<0.00050
Manganese	6010B(2)	1.1	0.010	mg/l	CS0	03/20/2008	0071549-1	<0.010
Sodium	6010B(2)	130	0.50	mg/l	CS0	03/24/2008	0071549-1	<0.50
Vanadium	6010B(2)	0.021	0.010	mg/l	CS0	03/20/2008	0071549-1	<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.

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Washington, PA 15301

Lab Project ID: **08-1940**
Lab Sample ID: **0803-2763**
Client Sample ID: MW-36
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 03/12/2008
Date Received: 03/14/2008

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	MMD	03/27/2008	0071929-1	<0.010
Cyanide (Total)	335.4(1)	7.8	0.50	mg/l	MMD	03/25/2008	0071915-1	<0.010
Fluoride	340.2(1)	18	0.10	mg/l	BRJ	03/25/2008	0071829-1	<0.10
pH	150.1(1)	8.63	1.00	pH	DJT	03/14/2008	0071529-1	4.89
Specific Conductance	120.1(1)	850	1.0	umhos/cm	BKH	03/18/2008	0071562-1	<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	03/20/2008	0071549-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	03/20/2008	0071549-1	<0.00050
Manganese	6010B(2)	0.20	0.010	mg/l	CS0	03/20/2008	0071549-1	<0.010
Sodium	6010B(2)	170	0.50	mg/l	CS0	03/24/2008	0071549-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	03/20/2008	0071549-1	<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.

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Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00324

Lab Project ID: **08-1940**
Lab Sample ID: **0803-2764**
Client Sample ID: MW-37
Sample Matrix: Aqueous

Date Sampled: 03/12/2008
Date Received: 03/14/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Total)	335.4[1]	<0.050	0.050	mg/l	MMD	03/25/2008	0071916-1	<0.010
Fluoride	340.2[1]	3.6	0.10	mg/l	BRJ	03/25/2008	0071829-1	<0.10
pH	150.1[1]	6.46	1.00	pH	DJT	03/14/2008	0071529-1	4.89
Specific Conductance	120.1[1]	310	1.0	umhos/cm	BKH	03/18/2008	0071562-1	<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	03/20/2008	0071549-1	<0.0040
Beryllium	6010B[2]	<0.00050	0.00050	mg/l	CS0	03/20/2008	0071549-1	<0.00050
Manganese	6010B[2]	0.084	0.010	mg/l	CS0	03/20/2008	0071549-1	<0.010
Sodium	6010B[2]	47	0.50	mg/l	CS0	03/20/2008	0071549-1	<0.50
Vanadium	6010B[2]	<0.010	0.010	mg/l	CS0	03/20/2008	0071549-1	<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.

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Washington, PA 15301

Lab Project ID: **08-1940**
Lab Sample ID: **0803-2765**
Client Sample ID: MW-44S
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 03/12/2008
Date Received: 03/14/2008

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	SJG	03/19/2008	0071560-1	<0.50
Aroclor-1221	8082[1]	<0.50	0.50	mg/l	SJG	03/19/2008	0071560-1	<0.50
Aroclor-1232	8082[1]	<0.50	0.50	mg/l	SJG	03/19/2008	0071560-1	<0.50
Aroclor-1242	8082[1]	<0.50	0.50	mg/l	SJG	03/19/2008	0071560-1	<0.50
Aroclor-1248	8082[1]	<0.50	0.50	mg/l	SJG	03/19/2008	0071560-1	<0.50
Aroclor-1254	8082[1]	<0.50	0.50	mg/l	SJG	03/19/2008	0071560-1	<0.50
Aroclor-1260	8082[1]	<0.50	0.50	mg/l	SJG	03/19/2008	0071560-1	<0.50
PCB Total-TCL	8082[1]	<0.50	0.50	mg/l	SJG	03/19/2008	0071560-1	<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.

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Lab Project ID: **08-1940**
Lab Sample ID: **0803-2766**
Client Sample ID: MW-44D
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 03/12/2008
Date Received: 03/14/2008

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	SJG	03/19/2008	0071560-1	<0.50
Aroclor-1221	8082(1)	<0.50	0.50	mg/l	SJG	03/19/2008	0071560-1	<0.50
Aroclor-1232	8082(1)	<0.50	0.50	mg/l	SJG	03/19/2008	0071560-1	<0.50
Aroclor-1242	8082(1)	<0.50	0.50	mg/l	SJG	03/19/2008	0071560-1	<0.50
Aroclor-1248	8082(1)	<0.50	0.50	mg/l	SJG	03/19/2008	0071560-1	<0.50
Aroclor-1254	8082(1)	<0.50	0.50	mg/l	SJG	03/19/2008	0071560-1	<0.50
Aroclor-1260	8082(1)	<0.50	0.50	mg/l	SJG	03/19/2008	0071560-1	<0.50
PCB Total-TCL	8082(1)	<0.50	0.50	mg/l	SJG	03/19/2008	0071560-1	<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.

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P.O. Box 789
Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00324

Lab Project ID: **08-1940**
Lab Sample ID: **0803-2767**
Client Sample ID: MW-39S
Sample Matrix: Aqueous

Date Sampled: 03/12/2008
Date Received: 03/14/2008

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	MMD	03/27/2008	0071929-1	<0.010
Cyanide (Total)	335.4(1)	3.1	0.25	mg/l	MMD	03/25/2008	0071916-1	<0.010
Fluoride	340.2(1)	93	1.0	mg/l	BRJ	03/25/2008	0071829-1	<0.10
pH	150.1(1)	9.03	1.00	pH	DJT	03/14/2008	0071529-1	4.89
Specific Conductance	120.1(1)	3300	1.0	umhos/cm	BKH	03/18/2008	0071562-1	<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	03/20/2008	0071549-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	03/20/2008	0071549-1	<0.00050
Manganese	6010B(2)	0.14	0.010	mg/l	CS0	03/20/2008	0071549-1	<0.010
Sodium	6010B(2)	830	0.50	mg/l	CS0	03/20/2008	0071549-1	<0.50
Vanadium	6010B(2)	0.010	0.010	mg/l	CS0	03/20/2008	0071549-1	<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.

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Washington, PA 15301

Lab Project ID: **08-1940**
Lab Sample ID: **0803-2768**
Client Sample ID: MW-39E
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 03/12/2008
Date Received: 03/14/2008

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	MMD	03/27/2008	0071929-1	<0.010
Cyanide (Total)	335.4(1)	3.9	0.11	mg/l	MMD	03/25/2008	0071916-1	<0.010
Fluoride	340.2(1)	100	1.0	mg/l	BRJ	03/25/2008	0071829-1	<0.10
pH	150.1(1)	9.03	1.00	pH	DJT	03/14/2008	0071529-1	4.89
Specific Conductance	120.1(1)	3400	1.0	umhos/cm	BKH	03/18/2008	0071562-1	<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	03/20/2008	0071549-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	03/20/2008	0071549-1	<0.00050
Manganese	6010B(2)	0.15	0.010	mg/l	CS0	03/20/2008	0071549-1	<0.010
Sodium	6010B(2)	830	0.50	mg/l	CS0	03/20/2008	0071549-1	<0.50
Vanadium	6010B(2)	0.010	0.010	mg/l	CS0	03/20/2008	0071549-1	<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.

MW-39S DUP.
CALCULATE RPD
$\frac{X^1 - X^2}{\bar{X}} \times 100 = RPD$

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Client Site: Reduction Mill
Client Ref.: HM00324

Lab Project ID: **08-1940**
Lab Sample ID: **0803-2769**
Client Sample ID: FB-1
Sample Matrix: Aqueous

Date Sampled: 03/12/2008
Date Received: 03/14/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Total)	335.4(1)	<0.010	0.010	mg/l	MMD	03/25/2008	0071916-1	<0.010
Fluoride	340.2(1)	<0.10	0.10	mg/l	BRJ	03/25/2008	0071829-1	<0.10
pH	150.1(1)	5.90	1.00	pH	DJT	03/14/2008	0071529-1	4.89
Specific Conductance	120.1(1)	3.5	1.0	umhos/cm	BKH	03/18/2008	0071562-1	<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	03/20/2008	0071549-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	03/20/2008	0071549-1	<0.00050
Manganese	6010B(2)	<0.010	0.010	mg/l	CS0	03/20/2008	0071549-1	<0.010
Sodium	6010B(2)	1.5	0.50	mg/l	CS0	03/20/2008	0071549-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	03/20/2008	0071549-1	<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	JHC	03/24/2008	0071745-1	<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.

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Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00324

Lab Project ID: **08-1940**
Lab Sample ID: **0803-2770**
Client Sample ID: TB-1
Sample Matrix: Aqueous

Date Sampled: 03/12/2008
Date Received: 03/14/2008

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	JHC	03/24/2008	0071745-1	<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.

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General Chemistry

General Chemistry

Parameter	EPA or Standard Method	SW846 Method	Holding Time	Bottle Type and Volume	Preservative
Cyanide (Amenable)	335.1		14 days	250ml Plastic*	Sodium Hydroxide
Cyanide (Total)	335.2	4500-CN	14 days	250ml Plastic*	Sodium Hydroxide
Fluoride	340.1	4500-Fl	28 days	500ml Plastic**	None
pH	150.1	9040/9045	Immediate	500ml Plastic**	None
Specific Conductance	120.1	9050	28 days	500ml Plastic**	None

*Cyanide Total and Amenable are analyzed from the same bottle.
**Fluoride, pH, and Specific Conductance are analyzed from the same bottle.

Pace Analytical Report of Quality Control

Project: 08-1940 General Chemistry

Parameter	Method	Batch	Units	MB Found	LCS Spike	LCS Found	LCS %Rec	QC Limits
		Laboratory Control Sample						
pH	150.1	71528	pH	4.51	7	7.07	101.00*	0- 0
pH	150.1	71529	pH	4.89	7	7.07	101.00*	0- 0
pH	150.1	71559	pH	4.98	7	7.01	100.14*	0- 0
Fluoride	340.2	71673	ppm	0.0	2	2.29	114.50	85-115
Fluoride	340.2	71829	ppm	0.0	2	2.24	112.00	85-115
Cyanide (Total)	335.4	71915	ppm	0.0012	0.2	0.19	93.30	85-115
Cyanide (Total)	335.4	71916	ppm	0.0	0.2	0.21	102.85	85-115

* Denotes recovery outside of QC limits.

Summary of LCS Batches for Project 08-1940

Batch	Analyzed	Samples
71528	03/17/2008	0803-2753 0803-2754
71529	03/17/2008	0803-2756 0803-2757 0803-2758 0803-2759 0803-2760 0803-2761 0803-2762 0803-2763 0803-2764 0803-2767 0803-2768 0803-2769
71559	03/18/2008	0803-2755
71673	03/20/2008	0803-2753 0803-2754 0803-2755 0803-2756 0803-2757 0803-2758 0803-2759 0803-2760
71829	03/26/2008	0803-2761 0803-2762 0803-2763 0803-2764 0803-2767 0803-2768 0803-2769
71915	03/27/2008	0803-2753 0803-2754 0803-2755 0803-2756 0803-2757 0803-2758 0803-2759 0803-2760 0803-2761 0803-2762 0803-2763
71916	03/27/2008	0803-2764 0803-2767 0803-2768 0803-2769

Pace Analytical Report of Quality Control

Project: 08-1940 General Chemistry

Matrix Spike Sample								
Parameter	Method	Batch	Units	Sample Found	MS Spike	MS Found	MS %Rec	QC Limits
Fluoride	340.2	71673	ppm	4.7	4	8.74	102.25	85-115
Fluoride	340.2	71829	ppm	3.6	4	7.44	96.00	85-115
Cyanide (Total)	335.4	71915	ppm	7.8	0.1	ND	NC*	85-115

* Denotes recovery outside of QC limits. Not Calculable

Summary of MS Batches for Project 08-1940

Batch	Analyzed	Samples
71673	03/20/2008	0803-2753 0803-2754 0803-2755 0803-2756 0803-2757 0803-2758 0803-2759 0803-2760
71829	03/26/2008	0803-2761 0803-2762 0803-2763 0803-2764 0803-2767 0803-2768 0803-2769
71915	03/27/2008	0803-2753 0803-2754 0803-2755 0803-2756 0803-2757 0803-2758 0803-2759 0803-2760 0803-2761 0803-2762 0803-2763

Metals

Metals Analysis - ICP

Parameter	Chemical Symbol	EPA or Standard Method	SW846 Method	Holding Time	Bottle Type and Volume	Preservative
Arsenic	As	200.7	6010	6 Months	250ml Plastic	Nitric Acid
Beryllium	Be	200.7	6010	6 Months	250ml Plastic	Nitric Acid
Manganese	Mn	200.7	6010	6 Months	250ml Plastic	Nitric Acid
Sodium	Na	200.7	6010	6 Months	250ml Plastic	Nitric Acid
Vanadium	V	200.7	6010	6 Months	250ml Plastic	Nitric Acid

Pace Analytical

Metals Data Reporting Form

Laboratory Control Sample Results

Lab Sample ID: QC71549LCS

Matrix: Water **Units:** ug/L **Prep Date:** 3/18/2008 **Prep Batch:** 71549

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	550	110.0		80-120	1	ICP	3/20/2008	18:04
Beryllium	313.042	500	534	106.8		80-120	1	ICP	3/20/2008	18:04
Manganese	257.61	500	542	108.4		80-120	1	ICP	3/20/2008	18:04
Sodium	330.232	5000	6240	124.8	N	80-120	1	ICP	3/20/2008	18:04
Vanadium	292.402	500	537	107.4		80-120	1	ICP	3/20/2008	18:04

Comments: QC Data for 08-1940

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

Matrix Spike Sample Results

Spike Sample ID: QC71549MS D

Original Sample ID: 1971-0803-3040 **Client ID:** Batch

Matrix: Water **Units:** ug/L **Prep Date:** 3/18/2008 **Prep Batch:** 71549

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	1.7	U	551		500	110.2	1	1	ICP	3/20/2008	18:55	3/20/2008	19:01
Beryllium	313.0	0.070	U	533		500	106.6	1	1	ICP	3/20/2008	18:55	3/20/2008	19:01
Manganese	257.6	3270		3790	NC	500		1	1	ICP	3/20/2008	18:55	3/20/2008	19:01
Sodium	330.2	101000		107000	NC	5000		1	1	ICP	3/20/2008	18:55	3/20/2008	19:01
Vanadium	292.4	0.40	U	536		500	107.2	1	1	ICP	3/20/2008	18:55	3/20/2008	19:01

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 5A Equivalent

Pace Analytical

Metals Data Reporting Form

Matrix Spike Duplicate Sample Results

Spike Sample ID: QC71549MSD

Original Sample ID: 1971-0803-3040 **Client ID:** Batch

Matrix: Water **Units:** ug/L **Prep Date:** 3/18/2008 **Prep Batch:** 71549

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	1.7	U	550		500	110.1	1	1	ICP	3/20/2008	18:55	3/20/2008	19:04
Beryllium	313.0	0.070	U	537		500	107.5	1	1	ICP	3/20/2008	18:55	3/20/2008	19:04
Manganese	257.6	3270		3860	NC	500		1	1	ICP	3/20/2008	18:55	3/20/2008	19:04
Sodium	330.2	101000		109000	NC	5000		1	1	ICP	3/20/2008	18:55	3/20/2008	19:04
Vanadium	292.4	0.40	U	541		500	108.3	1	1	ICP	3/20/2008	18:55	3/20/2008	19:04

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 5A Equivalent

Pace Analytical

Metals Data Reporting Form

Matrix Spike Duplicate RPD Report

Matrix Spike Duplicate Sample ID: QC71549MSD

Matrix Spike Sample ID: QC71549MS D **Client ID:** Batch

Matrix: Water **Units:** ug/L **Prep Date:** 3/18/2008 **Prep Batch:** 71549

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	551		550		0.2	1	1	ICP	3/20/2008	19:01	3/20/2008	19:04
Beryllium	313.042	533		537		0.8	1	1	ICP	3/20/2008	19:01	3/20/2008	19:04
Manganese	257.61	3790	NC	3860	NC	1.8	1	1	ICP	3/20/2008	19:01	3/20/2008	19:04
Sodium	330.232	107000	NC	109000	NC	1.5	1	1	ICP	3/20/2008	19:01	3/20/2008	19:04
Vanadium	292.402	536		541		1.0	1	1	ICP	3/20/2008	19:01	3/20/2008	19:04

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

Project No.: 08-1940

Organic Prep

Pace Analytical Services, Inc.-PGH

Matrix: H_2O

LIMS QC Batch #: 71560

Analytical Method: PCB 8082

Extraction Method: 3510

Solvent	Lot #				
CH_2Cl_2	XI 82-07	NaOH			
Hexane	XI 83-07A	H_2SO_4	XI 85-09		
Na_2SO_4	XI 86-02	Surrogate: XI 84-04, 1 ppm, 1.0 ml			
		Matrix Spike: XI 61-04, 2.5 ppm, 1.0 ml			
		Matrix Spike:			

Date	Project #	Sample ID	Analyst	Initial Volume	Final Volume	pH 5-9	Comments
3/18/08	1814	TBK	KM	1 L	10 ml	✓	
		LCS		1 L			
		LCSD		1 L			insufficient sample provided for ms/msd
		2109 B		1000 mL			
		2110 B		1000 mL			
		2111 B		990 mL			
		2112 B		940 mL			
		2113 B		985 mL			
		2114 B		990 mL			
		2115 B		990 mL			
		2116 B		1000 mL			
		2117 B		1000 mL			
		2118 B		1000 mL			
		2119 B		1000 mL			
		2120 B		985 mL			
		2121 B		990 mL			
		2122 B		985 mL			
		2123 B		980 mL			
	1919	2628 B		500 mL			adjusted pH with H_2SO_4 ; limited sample volume ; samp[illegible] was a trilogy due to emu[illegible]
	1940	2755 C		975 mL			
	JSC 3/18/08	~~2756~~ 2765 A		975 mL			
		2766 A		970 mL			

JSC 3/18/08

Project No.: 08-1

Polychlorinated Biphenyls

PCB Analysis

Parameter	EPA or Standard Method	SW846 Method	Holding Time	Bottle Type and Volume	Preservative
Aroclor-1016	608	8082	7/30 days*	Liter Glass Amber	None
Aroclor-1221	608	8082	7/30 days*	Liter Glass Amber	None
Aroclor-1232	608	8082	7/30 days*	Liter Glass Amber	None
Aroclor-1242	608	8082	7/30 days*	Liter Glass Amber	None
Aroclor-1248	608	8082	7/30 days*	Liter Glass Amber	None
Aroclor-1254	608	8082	7/30 days*	Liter Glass Amber	None
Aroclor-1260	608	8082	7/30 days*	Liter Glass Amber	None
PCB Total-TCL	608	8082	7/30 days*	Liter Glass Amber	None

*7/30 days = 7 days for extraction, 30 days for analysis on extract

2E
WATER AROCLOR SURROGATE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: 08-1940 SAS No.: SDG No.: 08-1940

GC Column(1): RTX-1701 ID: 0.53 (mm)

	EPA SAMPLE NO.	TCX %REC #	DCB %REC #	S3 %REC #	S4 %REC #	S5 %REC #	S6 %REC #	TOT OUT
01	MW-12	69	58					0
02	MW-44S	71	66					0
03	MW-44D	73	68					0
04	LCS	73	61					0
05	LCSD	74	64					0
06	BLK	65	75					0
07								
08								
09								
10								
11								
12								
13								
14								
15								
16								
17								
18								
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23								
24								
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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: Contract:

Lab Code: Case No.: 08-1940 SAS No.: SDG No.: 08-1940

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		2.07	83	55-145

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Aroclor-1248	2.50	2.12	85	2	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 08-1940 is associated with the QC from 08-1814.

Volatiles

Volatiles Analysis

Parameter	EPA or Standard Method	SW846 Method	Holding Time	Bottle Type and Volume	Preservative
Tetrachloroethene	624	8260	14 Days	3/ 40ml Vials	Hydrochloric Acid

FORM 2
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: PASI-PGH Contract:

Lab Code: Case No.: 08-1940 SAS No.: SDG No.: 08-1940

	CLIENT SAMPLE NO.	SMC1 (TOL) #	SMC2 (BFB) #	SMC3 (DCE) #	OTHER	TOT OUT
01	VLCS[20]	103	98	124		0
02	VLCS[20] DUP	102	97	125		0
03	VBLK	103	94	128		0
04	0803-2753	102	97	134*		1
05	0803-2754	102	99	132*		1
06	0803-2757 ~~DL~~	102	96	134*		1
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

		QC LIMITS
SMC1 (TOL)	= Toluene-d8	(70-130)
SMC2 (BFB)	= Bromofluorobenzene	(70-130)
SMC3 (DCE)	= 1,2-Dichloroethane-d4	(70-130)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: PASI-PGH Contract:

Lab Code: Case No.: 08-1940 SAS No.: SDG No.: 08-1940

Matrix Spike - Sample No.: VLCS[20]

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
1,2-Dichloroethane	20.0		23.2	116	70-130
Benzene	20.0		18.5	92	70-130
Toluene	20.0		18.4	92	70-130
Ethylbenzene	20.0		19.6	98	70-130
o-Xylene	20.0		19.6	98	70-130
n-Propylbenzene	20.0		20.8	104	70-130
1,3,5-Trimethylbenzene	20.0		20.6	103	70-130
1,2,4-Trimethylbenzene	20.0		20.3	102	70-130
Naphthalene	20.0		17.9	90	70-130
Acetone	20.0		23.2	116	70-130
Isobutanol					70-130
Cyclohexane	20.0		21.1	106	70-130
Methylcyclohexane	20.0		20.2	101	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM III VOA

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: PASI-PGH Contract:

Lab Code: Case No.: 08-1940 SAS No.: SDG No.: 08-1940

Matrix Spike - Sample No.: VLCS[20] DUP

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)		LCS % REC #	QC. LIMITS REC.
1,2-Dichloroethane	20.0		3.8%	24.1	120	70-130
Benzene	20.0		4.2	19.3	96	70-130
Toluene	20.0		4.8	19.3	96	70-130
Ethylbenzene	20.0		3.0	20.2	101	70-130
o-Xylene	20.0		4.9	20.6	103	70-130
n-Propylbenzene	20.0		3.3	21.5	108	70-130
1,3,5-Trimethylbenzene	20.0		3.3	21.3	106	70-130
1,2,4-Trimethylbenzene	20.0		4.3	21.2	106	70-130
Naphthalene	20.0		2.2	17.5	88	70-130
Acetone	20.0		0.4	23.3	116	70-130
Isobutanol						70-130
Cyclohexane	20.0		5.5	22.3	112	70-130
Methylcyclohexane	20.0		5.3	21.3	106	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM III VOA

FORM 2
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: PASI-PGH Contract:

Lab Code: Case No.: 08-1940 SAS No.: SDG No.: 08-1940

	CLIENT SAMPLE NO.	SMC1 (TOL) #	SMC2 (BFB) #	SMC3 (DCE) #	OTHER	TOT OUT
01	VLCS[20]	104	98	114		0
02	VLCS[20] DUP	103	100	120		0
03	VBLK	102	98	114		0
04	0803-2770	106	99	126		0
05	0803-2759	104	98	129		0
06	0803-2769	103	95	127		0
07						
08						
09						
10						
11						
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22						
23						
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25						
26						
27						
28						
29						
30						

		QC LIMITS
SMC1 (TOL)	= Toluene-d8	(70-130)
SMC2 (BFB)	= Bromofluorobenzene	(70-130)
SMC3 (DCE)	= 1,2-Dichloroethane-d4	(70-130)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: PASI-PGH Contract:

Lab Code: Case No.: 08-1940 SAS No.: SDG No.: 08-1940

Matrix Spike - Sample No.: VLCS[20]

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Bromochloromethane	20.0		18.2	91	50-150
Chloromethane	20.0		11.0	55	50-150
Bromomethane	20.0		11.6	58	50-150
Vinyl Chloride	20.0		11.9	60	50-150
Chloroethane	20.0		21.8	109	50-150
Methylene Chloride	20.0		19.0	95	50-150
1,1-Dichloroethene	20.0		17.2	86	50-150
1,1-Dichloroethane	20.0		21.4	107	50-150
trans-1,2-Dichloroethen	20.0		21.9	110	50-150
Chloroform	20.0		21.5	108	50-150
1,2-Dichloroethane	20.0		21.6	108	50-150
1,1,1-Trichloroethane	20.0		19.2	96	50-150
Carbon Tetrachloride	20.0		18.1	90	50-150
Bromodichloromethane	20.0		19.6	98	50-150
1,2-Dichloropropane	20.0		20.0	100	50-150
trans-1,3-Dichloroprope	20.0		18.7	94	50-150
Trichloroethene	20.0		19.8	99	50-150
Dibromochloromethane	20.0		18.0	90	50-150
1,1,2-Trichloroethane	20.0		19.5	98	50-150
Benzene	20.0		19.9	100	50-150
cis-1,3-Dichloropropene	20.0		18.7	94	50-150
Bromoform	20.0		16.0	80	50-150
Tetrachloroethene	20.0		19.8	99	50-150
1,1,2,2-Tetrachloroetha	20.0		19.5	98	50-150
Toluene	20.0		19.5	98	50-150
Chlorobenzene	20.0		20.2	101	50-150
Ethylbenzene	20.0		20.2	101	50-150
Styrene	20.0		19.3	96	50-150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: PASI-PGH Contract:

Lab Code: Case No.: 08-1940 SAS No.: SDG No.: 08-1940

Matrix Spike - Sample No.: VLCS[20]

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Trichlorofluoromethane	20.0		18.4	92	50-150
cis-1,2-Dichloroethene	20.0		20.2	101	50-150
o-Xylene	20.0		20.1	100	50-150
1,2,3-Trichloropropane	20.0		21.0	105	50-150
1,3-Dichlorobenzene	20.0		20.4	102	50-150
1,4-Dichlorobenzene	20.0		19.6	98	50-150
Dibromomethane	20.0		19.0	95	50-150
1,2-Dichlorobenzene	20.0		20.2	101	50-150
Dichlorodifluoromethane	20.0		3.19	16*	50-150
2,2-Dichloropropane	20.0		18.5	92	50-150
1,1-Dichloropropene	20.0		19.3	96	50-150
1,3-Dichloropropane	20.0		20.8	104	50-150
1,1,1,2-Tetrachloroetha	20.0		17.3	86	50-150
Bromobenzene	20.0		22.3	112	50-150
n-Propylbenzene	20.0		21.9	110	50-150
2-Chlorotoluene	20.0		22.0	110	50-150
4-Chlorotoluene	20.0		22.3	112	50-150
1,3,5-Trimethylbenzene	20.0		21.1	106	50-150
tert-Butylbenzene	20.0		20.6	103	50-150
1,2,4-Trimethylbenzene	20.0		20.4	102	50-150
sec-Butylbenzene	20.0		20.4	102	50-150
n-Butylbenzene	20.0		22.0	110	50-150
1,2,4-Trichlorobenzene	20.0		19.2	96	50-150
Naphthalene	20.0		18.6	93	50-150
1,2,3-Trichlorobenzene	20.0		18.0	90	50-150
Acrolein	20.0		27.2	136	50-150
Carbon Disulfide	20.0		28.6	143	50-150
Acetone	20.0		20.3	102	50-150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS:

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: PASI-PGH Contract:

Lab Code: Case No.: 08-1940 SAS No.: SDG No.: 08-1940

Matrix Spike - Sample No.: VLCS[20]

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acrylonitrile	20.0		0.512	2*	50-150
Vinyl Acetate	20.0		10.1	50	50-150
4-Methyl-2-Pentanone	20.0		19.7	98	50-150
2-Hexanone	20.0		18.6	93	50-150
2-Butanone	20.0		17.1	86	50-150
Iodomethane	50.0		51.9	104	50-150
Tetrahydrofuran	20.0		17.6	88	50-150
trans 1,4-Dichloro-2-bu	20.0		17.9	90	50-150
Acetonitrile	50.0		114	228*	50-150
Allyl chloride	50.0		63.5	127	50-150
Propionitrile	20.0		18.0	90	50-150
Methacrylonitrile	20.0		18.7	94	50-150
Isobutanol	20.0		5.82	29*	50-150
Methyl methacrylate	20.0		23.5	118	50-150
1,4-Dioxane	20.0		220	1100*	50-150
Ethyl methacrylate	20.0		17.7	88	50-150
Methyl Acetate	20.0		30.6	153*	50-150
Cyclohexane	20.0		22.2	111	50-150
Methylcyclohexane	20.0		22.6	113	50-150
Ethyl Acetate	20.0		11.4	57	50-150
2-Nitropropane	50.0		179	358*	50-150
bis(2Chloro1methyl ethy	20.0		19.1	96	50-150
Cyclohexanone	50.0		52.8	106	50-150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 7 out of 79 outside limits

COMMENTS:

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: PASI-PGH Contract:

Lab Code: Case No.: 08-1940 SAS No.: SDG No.: 08-1940

Matrix Spike - Sample No.: VLCS[20] DUP

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Bromochloromethane	20.0		17.8	89	50-150
Chloromethane	20.0		10.3	52	50-150
Bromomethane	20.0		12.3	62	50-150
Vinyl Chloride	20.0		10.9	54	50-150
Chloroethane	20.0		18.1	90	50-150
Methylene Chloride	20.0		18.7	94	50-150
1,1-Dichloroethene	20.0		15.8	79	50-150
1,1-Dichloroethane	20.0		20.1	100	50-150
trans-1,2-Dichloroethen	20.0		20.6	103	50-150
Chloroform	20.0		20.3	102	50-150
1,2-Dichloroethane	20.0		20.9	104	50-150
1,1,1-Trichloroethane	20.0		17.6	88	50-150
Carbon Tetrachloride	20.0		16.8	84	50-150
Bromodichloromethane	20.0		18.8	94	50-150
1,2-Dichloropropane	20.0		19.7	98	50-150
trans-1,3-Dichloroprope	20.0		17.6	88	50-150
Trichloroethene	20.0		17.9	90	50-150
Dibromochloromethane	20.0		17.4	87	50-150
1,1,2-Trichloroethane	20.0		18.9	94	50-150
Benzene	20.0		18.5	92	50-150
cis-1,3-Dichloropropene	20.0		18.3	92	50-150
Bromoform	20.0		15.6	78	50-150
Tetrachloroethene	20.0		18.8	94	50-150
1,1,2,2-Tetrachloroetha	20.0		18.8	94	50-150
Toluene	20.0		18.3	92	50-150
Chlorobenzene	20.0		19.2	96	50-150
Ethylbenzene	20.0		18.9	94	50-150
Styrene	20.0		18.0	90	50-150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: PASI-PGH Contract:

Lab Code: Case No.: 08-1940 SAS No.: SDG No.: 08-1940

Matrix Spike - Sample No.: VLCS[20] DUP

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Trichlorofluoromethane	20.0		16.9	84	50-150
cis-1,2-Dichloroethene	20.0		19.2	96	50-150
o-Xylene	20.0		19.1	96	50-150
1,2,3-Trichloropropane	20.0		20.7	104	50-150
1,3-Dichlorobenzene	20.0		19.3	96	50-150
1,4-Dichlorobenzene	20.0		18.8	94	50-150
Dibromomethane	20.0		18.1	90	50-150
1,2-Dichlorobenzene	20.0		19.1	96	50-150
Dichlorodifluoromethane	20.0		2.99	15*	50-150
2,2-Dichloropropane	20.0		17.1	86	50-150
1,1-Dichloropropene	20.0		17.8	89	50-150
1,3-Dichloropropane	20.0		20.2	101	50-150
1,1,1,2-Tetrachloroetha	20.0		16.2	81	50-150
Bromobenzene	20.0		21.6	108	50-150
n-Propylbenzene	20.0		20.3	102	50-150
2-Chlorotoluene	20.0		21.2	106	50-150
4-Chlorotoluene	20.0		21.1	106	50-150
1,3,5-Trimethylbenzene	20.0		20.0	100	50-150
tert-Butylbenzene	20.0		19.6	98	50-150
1,2,4-Trimethylbenzene	20.0		19.4	97	50-150
sec-Butylbenzene	20.0		18.8	94	50-150
n-Butylbenzene	20.0		20.4	102	50-150
1,2,4-Trichlorobenzene	20.0		18.6	93	50-150
Naphthalene	20.0		17.6	88	50-150
1,2,3-Trichlorobenzene	20.0		17.5	88	50-150
Acrolein	20.0		24.6	123	50-150
Carbon Disulfide	20.0		26.4	132	50-150
Acetone	20.0		20.9	104	50-150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: PASI-PGH Contract:

Lab Code: Case No.: 08-1940 SAS No.: SDG No.: 08-1940

Matrix Spike - Sample No.: VLCS[20] DUP

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acrylonitrile	20.0		4.80	24*	50-150
Vinyl Acetate	20.0		9.98	50	50-150
4-Methyl-2-Pentanone	20.0		19.2	96	50-150
2-Hexanone	20.0		18.7	94	50-150
2-Butanone	20.0		18.5	92	50-150
Iodomethane	50.0		48.2	96	50-150
Tetrahydrofuran	20.0		17.5	88	50-150
trans 1,4-Dichloro-2-bu	20.0		17.4	87	50-150
Acetonitrile	50.0		112	224*	50-150
Allyl chloride	50.0		62.4	125	50-150
Propionitrile	20.0		19.0	95	50-150
Methacrylonitrile	20.0		17.9	90	50-150
Isobutanol	20.0		7.00	35*	50-150
Methyl methacrylate					50-150
1,4-Dioxane	20.0		215	1075*	50-150
Ethyl methacrylate	20.0		17.5	88	50-150
Methyl Acetate	20.0		29.6	148	50-150
Cyclohexane	20.0		20.8	104	50-150
Methylcyclohexane	20.0		20.5	102	50-150
Ethyl Acetate	20.0		12.3	62	50-150
2-Nitropropane	50.0		173	346*	50-150
bis(2Chloro1methyl ethy	20.0		18.3	92	50-150
Cyclohexanone	50.0		70.0	140	50-150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 6 out of 79 outside limits

COMMENTS: _____

Chain of Custody

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 2

1143964

Section A Required Client Information

Company	HYDROSYSTEMS MGMT. INC.
Address	P.O. Box 789
	WASHINGTON, PA 15301
Email To	rfargo@hmiconsulting.com
Phone	724 228 4310
Fax	228-4343
Requested Due Date/TAT:	STD.

Section B Required Project Information:

Report To	ROBERT FARGO
Copy To	
Purchase Order No	
Project Name	ORMET
Project Number	HM00324

Section C Invoice Information:

Attention:	
Company Name:	SAME
Address	
Pace Quote Reference	
Pace Project Manager:	R. CHRISTNER
Pace Profile #	

REGULATORY AGENCY

NPDES X GROUND WATER DRINKING WATER
UST RCRA OTHER

Site Location STATE: OH

Section D Required Client Information

Matrix Codes MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-2	WT				3-12	1050	14.9	6	1		1	3	1						0803-2753
2	MW-5						930	14.8	6	1		1	3	1						54
3	MW-12						1405		5	3		1		1						55
4	MW-16						1120		3	1		1		1						56
5	MW-18						1145		6	1		1	3	1						57
6	MW-28						1210		3	1		1		1						58
7	MW-31						1500		6	1		1	3	1						59
8	MW-32						1630		3	1		1		1						60
9	MW-32E						1640		3	1		1		1						61
10	MW-35						1530		3	1		1		1						62
11	MW-36						1610		3	1		1		1						63
12	MW-37						1555		3	1		1		1						64

08-01940

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	R J Fargo	3/13/08	1700							
	Erik Fargo	3/14/08	1:40	Samantha Bayuca	3/14/08	140	2.4	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: ROBERT L. FARGO

SIGNATURE of SAMPLER: Robert L. Fargo

DATE Signed (MM/DD/YY): 3/13/08

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 2 of 2

1143903

Section A Required Client Information

Company:	HYDROSYSTEMS MGMT., INC.
Address:	P.O. BOX 789
	WASHINGTON, PA 15301
Email To:	rfargo@hmiconsulting.com
Phone:	724 228 4310
Fax:	228-4343
Requested Due Date/TAT:	STD.

Section B Required Project Information

Report To:	ROBERT FARGO
Copy To:	
Purchase Order No.:	
Project Name:	ORMET
Project Number:	HM00324

Section C Invoice Information:

Attention:	
Company Name:	SAME
Address:	
Pace Quote Reference:	
Pace Project Manager:	R. CHRISTNER
Pace Profile #:	

REGULATORY AGENCY

NPDES X GROUND WATER DRINKING WATER
UST RCRA OTHER

Site Location STATE: OH

Section D Required Client Information

Matrix Codes MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-44S	WT				3-12	1020		1	1										0803-2765
2	MW-44D	↓				↓	1000		1	1										66
3	MW-39S	↓				↓	1430		3	1		1		1						67
4	MW-39E	↓				↓	1440		3	1		1		1						68
5	FB-1	↓				↓	1630		6	1		1	3	1						69
6	TB-1	↓				↓														70
7																				
8																				
9																				
10																				
11																				
12																				

08-0194C

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	R. Fargo	3/13/08	1700							
	Robert Fargo	3/14/08	1:40	Samantha Bayard	3/14/08	140	2.4	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: ROBERT L. FARGO

SIGNATURE of SAMPLER: Robert L. Fargo DATE Signed (MM/DD/YY): 3/13/08

Temp in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15 May 2007

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1638 Roseytown Rd
Suites 2, 3 & 4
Greensburg, PA 15601
Phone: 724.850.5600
Fax: 724.850.5601

July 1, 2008

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
P.O. Box 789
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 June 12, 2008. 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. Parameters printed in italics represent Non-NELAC accredited parameters. Please reference Pace project number 08-4302 when inquiring about this report.

Client Site: Reduction Mill
Client Ref.: HM00324

Pace Sample Identification	Client Sample Identification
0806-2103	MW-2
0806-2104	MW-1
0806-2105	MW-5
0806-2106	MW-7
0806-2107	MW-8
0806-2108	MW-10
0806-2109	MW-11
0806-2110	MW-44S
0806-2111	MW-44D
0806-2112	MW-50S
0806-2113	MW-40S
0806-2114	MW-40D

Pace Sample Identification	Client Sample Identification
0806-2115	MW-29S
0806-2116	MW-29D
0806-2117	MW-52
0806-2118	MW-16
0806-2119	MW-30
0806-2120	MW-28
0806-2121	MW-18
0806-2122	MW-31
0806-2123	MW-39S
0806-2124	MW-39D
0806-2125	TB-1

General Comments: The recommended holding time for pH requires immediate analysis. The samples were received past the recommended holding time for pH. Cooler temperature 3.1 ° C upon receipt. Ice was present. 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

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Pace Analytical Services, Inc.
1638 Roseytown Rd
Suites 2, 3 & 4
Greensburg, PA 15601
Phone: 724.850.5600
Fax: 724.850.5601

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
P.O. Box 789
Washington, PA 15301

Lab Project ID: **08-4302**
Lab Sample ID: **0806-2104**
Client Sample ID: MW-1
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/11/2008
Date Received: 06/12/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Total)	335.4[1]	<0.010	0.010	mg/l	BKH	06/16/2008	0074011-1	<0.010
Fluoride	340.2[1]	0.49	0.10	mg/l	BRJ	06/24/2008	0074250-1	<0.10
pH	150.1[1]	6.29	1.00	pH	DJT	06/12/2008	0073924-1	4.64
Specific Conductance	120.1[1]	590	1.0	umhos/cm	BKH	06/20/2008	0074169-1	<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	06/25/2008	0073950-1	<0.0040
Beryllium	6010B[2]	<0.00050	0.00050	mg/l	CS0	06/26/2008	0073950-1	<0.00050
Manganese	6010B[2]	0.43	0.010	mg/l	CS0	06/25/2008	0073950-1	<0.010
Sodium	6010B[2]	40	0.50	mg/l	CS0	06/25/2008	0073950-1	<0.50
Vanadium	6010B[2]	<0.010	0.010	mg/l	CS0	06/25/2008	0073950-1	<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
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Pace Analytical Services, Inc.
1638 Roseytown Rd
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Greensburg, PA 15601
Phone: 724.850.5600
Fax: 724.850.5601

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
P.O. Box 789
Washington, PA 15301

Lab Project ID: **08-4302**
Lab Sample ID: **0806-2105**
Client Sample ID: MW-5
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/11/2008
Date Received: 06/12/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.40	0.010	mg/l	BKH	06/20/2008	0074164-1	<0.010
Cyanide (Total)	335.4(1)	4.9	0.25	mg/l	BKH	06/16/2008	0074011-1	<0.010
Fluoride	340.2(1)	27	0.20	mg/l	BRJ	06/24/2008	0074250-1	<0.10
pH	150.1(1)	8.06	1.00	pH	DJT	06/12/2008	0073924-1	4.64
Specific Conductance	120.1(1)	1300	1.0	umhos/cm	BKH	06/20/2008	0074169-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.0054	0.0040	mg/l	CS0	06/25/2008	0073950-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/25/2008	0073950-1	<0.00050
Manganese	6010B(2)	0.48	0.010	mg/l	CS0	06/25/2008	0073950-1	<0.010
Sodium	6010B(2)	230	0.50	mg/l	CS0	06/25/2008	0073950-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/25/2008	0073950-1	<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	EAC	06/23/2008	0074218-1	<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

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Pace Analytical Services, Inc.
1638 Roseytown Rd
Suites 2, 3 & 4
Greensburg, PA 15601
Phone: 724.850.5600
Fax: 724.850.5601

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
P.O. Box 789
Washington, PA 15301

Lab Project ID: **08-4302**
Lab Sample ID: **0806-2106**
Client Sample ID: MW-7
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/11/2008
Date Received: 06/12/2008

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	BKH	06/20/2008	0074164-1	<0.010
Cyanide (Total)	335.4(1)	0.011	0.010	mg/l	BKH	06/18/2008	0074058-1	<0.010
Fluoride	340.2(1)	0.17	0.10	mg/l	BRJ	06/24/2008	0074250-1	<0.10
pH	150.1(1)	6.10	1.00	pH	DJT	06/12/2008	0073924-1	4.64
Specific Conductance	120.1(1)	640	1.0	umhos/cm	BKH	06/20/2008	0074169-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.031	0.0040	mg/l	CS0	06/25/2008	0073950-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/25/2008	0073950-1	<0.00050
Manganese	6010B(2)	2.3	0.010	mg/l	CS0	06/25/2008	0073950-1	<0.010
Sodium	6010B(2)	63	0.50	mg/l	CS0	06/25/2008	0073950-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/25/2008	0073950-1	<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.

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P.O. Box 789
Washington, PA 15301

Lab Project ID: **08-4302**
Lab Sample ID: **0806-2107**
Client Sample ID: MW-8
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/11/2008
Date Received: 06/12/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.64	0.010	mg/l	BKH	06/20/2008	0074164-1	<0.010
Cyanide (Total)	335.4(1)	*0.73*	*0.050*	*mg/l*	BKH	*06/18/2008*	*0074058-1*	*<0.010*
Fluoride	340.2(1)	6.1	0.10	mg/l	BRJ	06/24/2008	0074250-1	<0.10
pH	150.1(1)	7.53	1.00	pH	DJT	06/12/2008	0073924-1	4.64
Specific Conductance	120.1(1)	1000	1.0	umhos/cm	BKH	06/20/2008	0074169-1	<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	06/25/2008	0073950-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/25/2008	0073950-1	<0.00050
Manganese	6010B(2)	0.19	0.010	mg/l	CS0	06/25/2008	0073950-1	<0.010
Sodium	6010B(2)	140	0.50	mg/l	CS0	06/25/2008	0073950-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/25/2008	0073950-1	<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.

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Lab Project ID: **08-4302**
Lab Sample ID: **0806-2110**
Client Sample ID: MW-44S
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/11/2008
Date Received: 06/12/2008

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	06/23/2008	0073953-1	<0.50
Aroclor-1221	8082[1]	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
Aroclor-1232	8082[1]	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
Aroclor-1242	8082[1]	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
Aroclor-1248	8082[1]	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
Aroclor-1254	8082[1]	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
Aroclor-1260	8082[1]	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
PCB Total-TCL	8082[1]	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<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.

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Lab Project ID: **08-4302**
Lab Sample ID: **0806-2111**
Client Sample ID: MW-44D
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/11/2008
Date Received: 06/12/2008

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	06/23/2008	0073953-1	<0.50
Aroclor-1221	8082[1]	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
Aroclor-1232	8082[1]	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
Aroclor-1242	8082[1]	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
Aroclor-1248	8082[1]	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
Aroclor-1254	8082[1]	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
Aroclor-1260	8082[1]	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
PCB Total-TCL	8082[1]	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<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.

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Lab Project ID: **08-4302**
Lab Sample ID: **0806-2112**
Client Sample ID: MW-50S
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/11/2008
Date Received: 06/12/2008

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	06/23/2008	0073953-1	<0.50
Aroclor-1221	8082[1]	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
Aroclor-1232	8082[1]	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
Aroclor-1242	8082[1]	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
Aroclor-1248	8082[1]	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
Aroclor-1254	8082[1]	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
Aroclor-1260	8082[1]	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
PCB Total-TCL	8082[1]	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<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.

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Lab Project ID: **08-4302**
Lab Sample ID: **0806-2113**
Client Sample ID: MW-40S
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/11/2008
Date Received: 06/12/2008

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	BKH	06/20/2008	0074164-1	<0.010
Cyanide (Total)	335.4(1)	7.1	0.21	mg/l	BKH	06/16/2008	0074058-1	<0.010
Fluoride	340.2(1)	58	1.0	mg/l	BRJ	06/24/2008	0074250-1	<0.10
pH	150.1(1)	8.15	1.00	pH	DJT	06/12/2008	0073924-1	4.64
Specific Conductance	120.1(1)	1100	1.0	umhos/cm	BKH	06/20/2008	0074169-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.0072	0.0040	mg/l	CS0	06/25/2008	0073950-1	<0.0040
Beryllium	6010B(2)	0.00097	0.00050	mg/l	CS0	06/25/2008	0073950-1	<0.00050
Manganese	6010B(2)	0.64	0.010	mg/l	CS0	06/25/2008	0073950-1	<0.010
Sodium	6010B(2)	220	0.50	mg/l	CS0	06/25/2008	0073950-1	<0.50
Vanadium	6010B(2)	0.026	0.010	mg/l	CS0	06/25/2008	0073950-1	<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.

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Lab Project ID: **08-4302**
Lab Sample ID: **0806-2114**
Client Sample ID: MW-40D
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/11/2008
Date Received: 06/12/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.47	0.010	mg/l	BKH	06/20/2008	0074164-1	<0.010
Cyanide (Total)	335.4(1)	6.8	0.25	mg/l	BKH	06/16/2008	0074011-1	<0.010
Fluoride	340.2(1)	29	1.0	mg/l	BRJ	06/24/2008	0074250-1	<0.10
pH	150.1(1)	7.88	1.00	pH	DJT	06/12/2008	0073924-1	4.64
Specific Conductance	120.1(1)	990	1.0	umhos/cm	BKH	06/20/2008	0074169-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.0045	0.0040	mg/l	CS0	06/25/2008	0073950-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/25/2008	0073950-1	<0.00050
Manganese	6010B(2)	0.77	0.010	mg/l	CS0	06/25/2008	0073950-1	<0.010
Sodium	6010B(2)	180	0.50	mg/l	CS0	06/25/2008	0073950-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/25/2008	0073950-1	<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.

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Lab Project ID: **08-4302**
Lab Sample ID: **0806-2115**
Client Sample ID: MW-29S
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/11/2008
Date Received: 06/12/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	4.4	0.010	mg/l	BKH	06/20/2008	0074164-1	<0.010
Cyanide (Total)	335.4(1)	4.8	0.10	mg/l	BKH	06/16/2008	0074011-1	<0.010
Fluoride	340.2(1)	31	1.0	mg/l	BRJ	06/24/2008	0074250-1	<0.10
pH	150.1(1)	7.73	1.00	pH	DJT	06/12/2008	0073924-1	4.64
Specific Conductance	120.1(1)	1100	1.0	umhos/cm	BKH	06/20/2008	0074169-1	<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	06/25/2008	0073950-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/25/2008	0073950-1	<0.00050
Manganese	6010B(2)	0.40	0.010	mg/l	CS0	06/25/2008	0073950-1	<0.010
Sodium	6010B(2)	200	0.50	mg/l	CS0	06/25/2008	0073950-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/25/2008	0073950-1	<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.

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Lab Project ID: **08-4302**
Lab Sample ID: **0806-2116**
Client Sample ID: MW-29D
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/11/2008
Date Received: 06/12/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.086	0.010	mg/l	BKH	06/20/2008	0074164-1	<0.010
Cyanide (Total)	335.4(1)	0.30	0.010	mg/l	BKH	06/18/2008	0074058-1	<0.010
Fluoride	340.2(1)	3.9	0.10	mg/l	BRJ	06/24/2008	0074250-1	<0.10
pH	150.1(1)	7.56	1.00	pH	DJT	06/12/2008	0073924-1	4.64
Specific Conductance	120.1(1)	670	1.0	umhos/cm	BKH	06/20/2008	0074169-1	<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	06/25/2008	0073950-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/25/2008	0073950-1	<0.00050
Manganese	6010B(2)	1.8	0.010	mg/l	CS0	06/25/2008	0073950-1	<0.010
Sodium	6010B(2)	51	0.50	mg/l	CS0	06/25/2008	0073950-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/25/2008	0073950-1	<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.

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Lab Project ID: **08-4302**
Lab Sample ID: **0806-2117**
Client Sample ID: MW-52
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/11/2008
Date Received: 06/12/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.93	0.010	mg/l	BKH	06/20/2008	0074164-1	<0.010
Cyanide (Total)	335.4(1)	12	0.21	mg/l	BKH	06/18/2008	0074058-1	<0.010
Fluoride	340.2(1)	41	1.0	mg/l	BRJ	06/24/2008	0074250-1	<0.10
pH	150.1(1)	9.49	1.00	pH	DJT	06/12/2008	0073924-1	4.64
Specific Conductance	120.1(1)	1400	1.0	umhos/cm	BKH	06/20/2008	0074169-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.045	0.0040	mg/l	CS0	06/25/2008	0073950-1	<0.0040
Beryllium	6010B(2)	0.00060	0.00050	mg/l	CS0	06/26/2008	0073950-1	<0.00050
Manganese	6010B(2)	0.52	0.010	mg/l	CS0	06/25/2008	0073950-1	<0.010
Sodium	6010B(2)	290	0.50	mg/l	CS0	06/25/2008	0073950-1	<0.50
Vanadium	6010B(2)	0.031	0.010	mg/l	CS0	06/25/2008	0073950-1	<0.010

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Tetrachloroethene	8260B(2)	0.065	0.0050	mg/l	EAC	06/23/2008	0074218-1	<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.

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Lab Project ID: **08-4302**
Lab Sample ID: **0806-2118**
Client Sample ID: MW-16
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/11/2008
Date Received: 06/12/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.13	0.010	mg/l	BKH	06/20/2008	0074164-1	<0.010
Cyanide (Total)	335.4(1)	3.3	0.10	mg/l	BKH	06/18/2008	0074058-1	<0.010
Fluoride	340.2(1)	33	1.0	mg/l	BRJ	06/24/2008	0074250-1	<0.10
pH	150.1(1)	9.14	1.00	pH	DJT	06/12/2008	0073924-1	4.64
Specific Conductance	120.1(1)	1000	1.0	umhos/cm	BKH	06/20/2008	0074169-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.039	0.0040	mg/l	CS0	06/25/2008	0073950-1	<0.0040
Beryllium	6010B(2)	0.00071	0.00050	mg/l	CS0	06/25/2008	0073950-1	<0.00050
Manganese	6010B(2)	0.89	0.010	mg/l	CS0	06/25/2008	0073950-1	<0.010
Sodium	6010B(2)	200	0.50	mg/l	CS0	06/25/2008	0073950-1	<0.50
Vanadium	6010B(2)	0.041	0.010	mg/l	CS0	06/25/2008	0073950-1	<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.

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P.O. Box 789
Washington, PA 15301

Lab Project ID: **08-4302**
Lab Sample ID: **0806-2119**
Client Sample ID: MW-30
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/11/2008
Date Received: 06/12/2008

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	BKH	06/20/2008	0074164-1	<0.010
Cyanide (Total)	335.4(1)	6.8	0.21	mg/l	BKH	06/18/2008	0074058-1	<0.010
Fluoride	340.2(1)	11	0.10	mg/l	BRJ	06/24/2008	0074250-1	<0.10
pH	150.1(1)	6.49	1.00	pH	DJT	06/12/2008	0073924-1	4.64
Specific Conductance	120.1(1)	600	1.0	umhos/cm	BKH	06/20/2008	0074169-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.0061	0.0040	mg/l	CS0	06/25/2008	0073950-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/25/2008	0073950-1	<0.00050
Manganese	6010B(2)	0.76	0.010	mg/l	CS0	06/25/2008	0073950-1	<0.010
Sodium	6010B(2)	61	0.50	mg/l	CS0	06/25/2008	0073950-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/25/2008	0073950-1	<0.010

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Tetrachloroethene	8260B(2)	0.017	0.0050	mg/l	EAC	06/23/2008	0074218-1	<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.

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Washington, PA 15301

Client Site: Reduction Mill
Client Ref.: HM00324

Lab Project ID: **08-4302**
Lab Sample ID: **0806-2120**
Client Sample ID: MW-28
Sample Matrix: Aqueous

Date Sampled: 06/11/2008
Date Received: 06/12/2008

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	BKH	06/20/2008	0074164-1	<0.010
Cyanide (Total)	335.4[1]	0.24	0.010	mg/l	BKH	06/18/2008	0074058-1	<0.010
Fluoride	340.2[1]	0.27	0.10	mg/l	BRJ	06/24/2008	0074250-1	<0.10
pH	150.1[1]	6.07	1.00	pH	DJT	06/12/2008	0073924-1	4.64
Specific Conductance	120.1[1]	380	1.0	umhos/cm	BKH	06/20/2008	0074169-1	<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	06/25/2008	0073950-1	<0.0040
Beryllium	6010B[2]	<0.00050	0.00050	mg/l	CS0	06/25/2008	0073950-1	<0.00050
Manganese	6010B[2]	0.069	0.010	mg/l	CS0	06/25/2008	0073950-1	<0.010
Sodium	6010B[2]	63	0.50	mg/l	CS0	06/25/2008	0073950-1	<0.50
Vanadium	6010B[2]	<0.010	0.010	mg/l	CS0	06/25/2008	0073950-1	<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.

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Lab Project ID: **08-4302**
Lab Sample ID: **0806-2121**
Client Sample ID: MW-18
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/11/2008
Date Received: 06/12/2008

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	BKH	06/20/2008	0074164-1	<0.010
Cyanide (Total)	335.4(1)	3.9	0.10	mg/l	BKH	06/18/2008	0074058-1	<0.010
Fluoride	340.2(1)	88	1.0	mg/l	BRJ	06/24/2008	0074250-1	<0.10
pH	150.1(1)	9.43	1.00	pH	DJT	06/12/2008	0073924-1	4.64
Specific Conductance	120.1(1)	1500	1.0	umhos/cm	BKH	06/20/2008	0074169-1	<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	06/25/2008	0073950-1	<0.0040
Beryllium	6010B(2)	0.00088	0.00050	mg/l	CS0	06/25/2008	0073950-1	<0.00050
Manganese	6010B(2)	0.40	0.010	mg/l	CS0	06/25/2008	0073950-1	<0.010
Sodium	6010B(2)	310	0.50	mg/l	CS0	06/25/2008	0073950-1	<0.50
Vanadium	6010B(2)	0.038	0.010	mg/l	CS0	06/25/2008	0073950-1	<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	EAC	06/23/2008	0074218-1	<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.

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Lab Project ID: **08-4302**
Lab Sample ID: **0806-2122**
Client Sample ID: MW-31
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/11/2008
Date Received: 06/12/2008

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	BKH	06/20/2008	0074164-1	<0.010
Cyanide (Total)	335.4[1]	8.4	0.25	mg/l	BKH	06/18/2008	0074058-1	<0.010
Fluoride	340.2[1]	62	1.0	mg/l	BRJ	06/24/2008	0074250-1	<0.10
pH	150.1[1]	9.61	1.00	pH	DJT	06/12/2008	0073924-1	4.64
Specific Conductance	120.1[1]	1400	1.0	umhos/cm	BKH	06/20/2008	0074169-1	<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	06/25/2008	0073950-1	<0.0040
Beryllium	6010B[2]	0.0013	0.00050	mg/l	CS0	06/25/2008	0073950-1	<0.00050
Manganese	6010B[2]	1.8	0.010	mg/l	CS0	06/25/2008	0073950-1	<0.010
Sodium	6010B[2]	310	0.50	mg/l	CS0	06/25/2008	0073950-1	<0.50
Vanadium	6010B[2]	0.082	0.010	mg/l	CS0	06/25/2008	0073950-1	<0.010

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Tetrachloroethene	8260B[2]	0.067	0.0050	mg/l	EAC	06/23/2008	0074218-1	<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.

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Lab Project ID: **08-4302**
Lab Sample ID: **0806-2123**
Client Sample ID: MW-39S
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/11/2008
Date Received: 06/12/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1[1]	0.28	0.010	mg/l	BKH	06/20/2008	0074164-1	<0.010
Cyanide (Total)	335.4[1]	3.7	0.25	mg/l	BKH	06/18/2008	0074058-1	<0.010
Fluoride	340.2[1]	12	0.10	mg/l	BRJ	06/24/2008	0074250-1	<0.10
pH	150.1[1]	7.42	1.00	pH	DJT	06/12/2008	0073924-1	4.64
Specific Conductance	120.1[1]	2400	1.0	umhos/cm	BKH	06/20/2008	0074169-1	<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	06/25/2008	0073950-1	<0.0040
Beryllium	6010B[2]	<0.00050	0.00050	mg/l	CS0	06/25/2008	0073950-1	<0.00050
Manganese	6010B[2]	2.0	0.010	mg/l	CS0	06/25/2008	0073950-1	<0.010
Sodium	6010B[2]	520	0.50	mg/l	CS0	06/25/2008	0073950-1	<0.50
Vanadium	6010B[2]	<0.010	0.010	mg/l	CS0	06/25/2008	0073950-1	<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.

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Lab Project ID: **08-4302**
Lab Sample ID: **0806-2124**
Client Sample ID: MW-39D
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/11/2008
Date Received: 06/12/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1[1]	0.82	0.010	mg/l	BKH	06/20/2008	0074164-1	<0.010
Cyanide (Total)	335.4[1]	5.7	0.11	mg/l	BKH	06/18/2008	0074058-1	<0.010
Fluoride	340.2[1]	140	2.5	mg/l	BRJ	06/24/2008	0074250-1	<0.10
pH	150.1[1]	9.06	1.00	pH	DJT	06/12/2008	0073924-1	4.64
Specific Conductance	120.1[1]	3700	1.0	umhos/cm	BKH	06/20/2008	0074169-1	<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	06/25/2008	0073950-1	<0.0040
Beryllium	6010B[2]	<0.00050	0.00050	mg/l	CS0	06/25/2008	0073950-1	<0.00050
Manganese	6010B[2]	0.11	0.010	mg/l	CS0	06/25/2008	0073950-1	<0.010
Sodium	6010B[2]	860	0.50	mg/l	CS0	06/25/2008	0073950-1	<0.50
Vanadium	6010B[2]	<0.010	0.010	mg/l	CS0	06/25/2008	0073950-1	<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.

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Lab Project ID: **08-4302**
Lab Sample ID: **0806-2125**
Client Sample ID: TB-1
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/11/2008
Date Received: 06/12/2008

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	EAC	06/23/2008	0074218-1	<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.

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Metals

Metals Analysis - ICP

Parameter	Chemical Symbol	EPA or Standard Method	SW846 Method	Holding Time	Bottle Type and Volume	Preservative
Arsenic	As	200.7	6010	6 Months	250ml Plastic	Nitric Acid
Beryllium	Be	200.7	6010	6 Months	250ml Plastic	Nitric Acid
Manganese	Mn	200.7	6010	6 Months	250ml Plastic	Nitric Acid
Sodium	Na	200.7	6010	6 Months	250ml Plastic	Nitric Acid
Vanadium	V	200.7	6010	6 Months	250ml Plastic	Nitric Acid

Pace Analytical

Metals Data Reporting Form

Laboratory Control Sample Results

Lab Sample ID: QC73950LCS

Matrix: Water **Units:** ug/L **Prep Date:** 6/16/2008 **Prep Batch:** 73950

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	527	105.4		80-120	1	ICP	6/25/2008	18:16
Beryllium	313.042	500	517	103.3		80-120	1	ICP	6/25/2008	18:16
Manganese	257.61	500	525	105.0		80-120	1	ICP	6/25/2008	18:16
Sodium	330.232	5000	5390	107.8		80-120	1	ICP	6/25/2008	18:16
Vanadium	292.402	500	518	103.5		80-120	1	ICP	6/25/2008	18:16

Comments: QC Dtat for 08-4302

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

Matrix Spike Sample Results

Spike Sample ID: QC73950MS D

Original Sample ID: 4302-0806-2103 D **Client ID:** MW-2

Matrix: Water **Units:** ug/L **Prep Date:** 6/16/2008 **Prep Batch:** 73950

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	46.3		588		500	108.3	1	1	ICP	6/25/2008	18:21	6/25/2008	18:28
Beryllium	313.0	2.2		526		500	104.7	1	1	ICP	6/25/2008	18:21	6/25/2008	18:28
Manganese	257.6	520		1060		500	108.8	1	1	ICP	6/25/2008	18:21	6/25/2008	18:28
Sodium	330.2	283000		298000	NC	5000		1	1	ICP	6/25/2008	18:21	6/25/2008	18:28
Vanadium	292.4	31.5		554		500	104.6	1	1	ICP	6/25/2008	18:21	6/25/2008	18:28

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 5A Equivalent

Pace Analytical

Metals Data Reporting Form

Matrix Spike Duplicate Sample Results

Spike Sample ID: QC73950MSD

Original Sample ID: 4302-0806-2103 D **Client ID:** MW-2

Matrix: Water **Units:** ug/L **Prep Date:** 6/16/2008 **Prep Batch:** 73950

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	46.3		574		500	105.5	1	1	ICP	6/25/2008	18:21	6/25/2008	18:31
Beryllium	313.0	2.2		515		500	102.5	1	1	ICP	6/25/2008	18:21	6/25/2008	18:31
Manganese	257.6	520		1040		500	103.8	1	1	ICP	6/25/2008	18:21	6/25/2008	18:31
Sodium	330.2	283000		294000	NC	5000		1	1	ICP	6/25/2008	18:21	6/25/2008	18:31
Vanadium	292.4	31.5		543		500	102.2	1	1	ICP	6/25/2008	18:21	6/25/2008	18:31

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 5A Equivalent

Pace Analytical

Metals Data Reporting Form

Matrix Spike Duplicate RPD Report

Matrix Spike Duplicate Sample ID: QC73950MSD

Matrix Spike Sample ID: QC73950MS D **Client ID:** MW-2

Matrix: Water **Units:** ug/L **Prep Date:** 6/16/2008 **Prep Batch:** 73950

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	588		574		2.3	1	1	ICP	6/25/2008	18:28	6/25/2008	18:31
Beryllium	313.042	526		515		2.1	1	1	ICP	6/25/2008	18:28	6/25/2008	18:31
Manganese	257.61	1060		1040		2.4	1	1	ICP	6/25/2008	18:28	6/25/2008	18:31
Sodium	330.232	298000	NC	294000	NC	1.2	1	1	ICP	6/25/2008	18:28	6/25/2008	18:31
Vanadium	292.402	554		543		2.1	1	1	ICP	6/25/2008	18:28	6/25/2008	18:31

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

Volatiles

Volatiles Analysis

Parameter	EPA or Standard Method	SW846 Method	Holding Time	Bottle Type and Volume	Preservative
Tetrachloroethene	624	8260	14 Days	3/ 40ml Vials	Hydrochloric Acid

Pace Analytical Report of Quality Control

Project: 08-4302 Volatiles

Laboratory Control Sample												
Parameter	Method	Batch	Units	MB Found	LCS Spike	LCS Found	LCS %Rec	QC Limits	LCSD Found	LCSD %Rec	LCS RPD	Max RPD
Tetrachloroethene	MS VOC 8260 Aqu	74218	ppm	0.0	20	21.08	105.41	70-130	20.18	100.88	4.4	30

* Denotes recovery outside of QC limits.

Summary of LCS Batches for Project 08-4302

Batch	Analyzed	Samples
74218	06/24/2008	0806-2103 0806-2105 0806-2117 0806-2119 0806-2121 0806-2122 0806-2125

Organic Prep

Pace Analytical Services, Inc.-PGH

Matrix: H_2O

LIMS QC Batch #: 73953

Analytical Method: RB 5002

Extraction Method: 3510

Solvent	Lot #				
CH_2Cl_2	VI-111-05 H	NaOH			
Hexane	VI-113-01 A	H_2SO_4			
Na_2SO_4	VI-103-01	Surrogate: VI 106-04, 1 ppm, 0.5 ml			
		Matrix Spike: VI 105-03, 2.5 ppm, 0.5 ml → used 0.5 ml versus 1.0 ml as the SOP requires			
		Matrix Spike:			

xsc 6/16/08

Date	Project #	Sample ID	Analyst	Initial Volume	Final Volume	pH 5-9	Comments
6/16/08	4229	MB	CnB	1L	5 ml	✓	
		LCS		1L			
		LCSD		1L			insufficient sample provided for MS/MSD
		1717 A		990 ml			
		1718 A		995 ml			
		1719 A		990 ml			
		1720 A		995 ml			
	4302	2110 A		970 ml			
		2111 A		975 ml			
		2112 A		965 ml			
	4311	2185 B		975 ml			
		2186 B		960 ml			
		2200 B		940 ml			

xsc 6/16/08

Peer Review 6/20/08 CnB

Project No.: 08-4

Polychlorinated Biphenyls

PCB Analysis

Parameter	EPA or Standard Method	SW846 Method	Holding Time	Bottle Type and Volume	Preservative
Aroclor-1016	608	8082	7/30 days*	Liter Glass Amber	None
Aroclor-1221	608	8082	7/30 days*	Liter Glass Amber	None
Aroclor-1232	608	8082	7/30 days*	Liter Glass Amber	None
Aroclor-1242	608	8082	7/30 days*	Liter Glass Amber	None
Aroclor-1248	608	8082	7/30 days*	Liter Glass Amber	None
Aroclor-1254	608	8082	7/30 days*	Liter Glass Amber	None
Aroclor-1260	608	8082	7/30 days*	Liter Glass Amber	None
PCB Total-TCL	608	8082	7/30 days*	Liter Glass Amber	None

*7/30 days = 7 days for extraction, 30 days for analysis on extract

1E
WATER AND SOIL SURROGATE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: 08-4302 SAS No.: SDG No.: 06-4302

[illegible] : [illegible] ID: [illegible] mm

	EPA SAMPLE NO.	TCX %REC #	DCB %REC #	S3 %REC #	S4 %REC #	S5 %REC #	S6 %REC #	TOT OUT
01	MW-44S	60	87					0
02	MW-44D	61	81					0
03	MW-50S	65	86					0
04	LCS	70	59					0
05	LCSD	56	53					0
06	BLK	66	76					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
MATRIX AND % LAB CONTROL SAMPLE

Lab Name: Contract:

Lab Code: Case No.: 08-4302 SAS No.: SDG No.: 08-4302

Matrix Spike - Sample No.: LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Aroclor-1016	1.25		1.09	87	55-145
Aroclor-1260	1.25		1.23	98	55-145

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Aroclor-1016	1.25	0.726	58	40*	25	55-145
Aroclor-1260	1.25	0.998	80	20	25	55-145

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 2 outside limits
Spike Recovery: 0 out of 4 outside limits

COMMENTS: Project 08-4302 is associated with the QC from 08-4229.

General Chemistry

General Chemistry

Parameter	EPA or Standard Method	SW846 Method	Holding Time	Bottle Type and Volume	Preservative
Cyanide (Amenable)	335.1		14 days	250ml Plastic*	Sodium Hydroxide
Cyanide (Total)	335.2	4500-CN	14 days	250ml Plastic*	Sodium Hydroxide
Fluoride	340.1	4500-Fl	28 days	500ml Plastic**	None
pH	150.1	9040/9045	Immediate	500ml Plastic**	None
Specific Conductance	120.1	9050	28 days	500ml Plastic**	None

*Cyanide Total and Amenable are analyzed from the same bottle.
**Fluoride, pH, and Specific Conductance are analyzed from the same bottle.

Pace Analytical Report of Quality Control

Project: 08-4302 General Chemistry

Laboratory Control Sample								
Parameter	Method	Batch	Units	MB Found	LCS Spike	LCS Found	LCS %Rec	QC Limits
pH	150.1	73924	pH	4.64	7	6.98	99.71*	0- 0
Cyanide (Total)	335.4	74011	ppm	0.0	0.2	0.43	216.50*	85-115
Cyanide (Total)	335.4	74058	ppm	0.0	0.2	0.20	97.70	85-115
Fluoride	340.2	74250	ppm	0.0	2	2.12	106.00	85-115

* Denotes recovery outside of QC limits.

Summary of LCS Batches for Project 08-4302

Batch	Analyzed	Samples
73924	06/13/2008	0806-2103 0806-2104 0806-2105 0806-2106 0806-2107 0806-2108 0806-2109 0806-2113 0806-2114 0806-2115 0806-2116 0806-2117 0806-2118 0806-2119 0806-2120 0806-2121 0806-2122 0806-2123 0806-2124
74011	06/17/2008	0806-2103 0806-2104 0806-2105 0806-2109 0806-2114 0806-2115
74058	06/18/2008	0806-2106 0806-2107 0806-2108 0806-2113 0806-2116 0806-2117 0806-2118 0806-2119 0806-2120 0806-2121 0806-2122 0806-2123 0806-2124
74250	06/24/2008	0806-2103 0806-2104 0806-2105 0806-2106 0806-2107 0806-2108 0806-2109 0806-2113 0806-2114 0806-2115 0806-2116 0806-2117 0806-2118 0806-2119 0806-2120 0806-2121 0806-2122 0806-2123 0806-2124

Pace Analytical Report of Quality Control

Project: 08-4302 General Chemistry

Matrix Spike Sample								
Parameter	Method	Batch	Units	Sample Found	MS Spike	MS Found	MS %Rec	QC Limits
Cyanide (Total)	335.4	74011	ppm	0.021	0.1	0.02	0.00	0- 0
Cyanide (Total)	335.4	74058	ppm	5.7	0.1	0.11	-5558.7*	0- 0
Fluoride	340.2	74250	ppm	0.36	4	4.52	104.00	85-115

* Denotes recovery outside of QC limits.

Summary of MS Batches for Project 08-4302

Batch	Analyzed	Samples
74011	06/17/2008	0806-2103 0806-2104 0806-2105 0806-2109 0806-2114 0806-2115
74058	06/18/2008	0806-2106 0806-2107 0806-2108 0806-2113 0806-2116 0806-2117 0806-2118 0806-2119 0806-2120 0806-2121 0806-2122 0806-2123 0806-2124
74250	06/24/2008	0806-2103 0806-2104 0806-2105 0806-2106 0806-2107 0806-2108 0806-2109 0806-2113 0806-2114 0806-2115 0806-2116 0806-2117 0806-2118 0806-2119 0806-2120 0806-2121 0806-2122 0806-2123 0806-2124

Chain of Custody

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of

Section A
Required Client Information:

Company:	
Address:	
Email To:	
Phone:	Fax:
Requested Due Date/TAT:	

Section B
Required Project Information:

Report To:	
Copy To:	
Purchase Order No:	
Project Name:	
Project Number:	

Section C
Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER
UST RCRA OTHER

Site Location
STATE: _____

Section D
Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Matrix Codes
MATRIX / CODE

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N)												Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1																														
2																														
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: **DATE Signed (MM/DD/YY):**

Temp in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of

Section A
Required Client Information:

Company:	
Address:	
Email To:	
Phone:	Fax:
Requested Due Date/TAT:	

Section B
Required Project Information:

Report To:	
Copy To:	
Purchase Order No.:	
Project Name:	
Project Number:	

Section C
Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY

NPDES	GROUND WATER	DRINKING WATER
UST	RCRA	OTHER

Site Location
STATE: _____

Section D
Required Client Information:

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Matrix Codes
MATRIX / CODE

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

Requested Analysis Filtered (Y/N)

ITEM #	Sample ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COLLECTED: COMPOSITE START TIME	COLLECTED: COMPOSITE END/GRAB DATE	COLLECTED: COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1																				
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER:

DATE Signed (MM/DD/YY):

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

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July 1, 2008

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
P.O. Box 789
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 June 13, 2008. 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. Parameters printed in italics represent Non-NELAC accredited parameters. Please reference Pace project number 08-4311 when inquiring about this report.

Client Site: Reduction Mill
Client Ref.: HM00324

Pace Sample Identification	Client Sample Identification
0806-2185	MW-12
0806-2186	MW-14
0806-2187	MW-42D
0806-2188	MW-42S
0806-2189	MW-17
0806-2190	MW-34D
0806-2191	MW-34S
0806-2192	MW-36

Pace Sample Identification	Client Sample Identification
0806-2193	MW-15
0806-2194	MW-55
0806-2195	MW-32
0806-2196	MW-35
0806-2197	MW-37
0806-2198	MW-19
0806-2199	MW-59
0806-2200	Field Blank

General Comments: The recommended holding time for pH requires immediate analysis. The samples were received past the recommended holding time for pH. Cooler temperature 5.8 ° C upon receipt. Ice was present. 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

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Pace Analytical Services, Inc.
1638 Roseytown Rd
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Greensburg, PA 15601
Phone: 724.850.5600
Fax: 724.850.5601

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 40

cc: John Reggi, Ormet Primary Aluminum Corporation

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Greensburg, PA 15601
Phone: 724.850.5600
Fax: 724.850.5601

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
P.O. Box 789
Washington, PA 15301

Lab Project ID: **08-4311**
Lab Sample ID: **0806-2185**
Client Sample ID: MW-12
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/12/2008
Date Received: 06/13/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Total)	335.4[1]	<0.010	0.010	mg/l	BKH	06/16/2008	0074010-1	<0.010
Fluoride	340.2[1]	0.58	0.10	mg/l	BRJ	06/27/2008	0074367-1	<0.10
pH	150.1[1]	7.76	1.00	pH	DJT	06/13/2008	0073976-1	4.07
Specific Conductance	120.1[1]	480	1.0	umhos/cm	BKH	06/20/2008	0074170-1	<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	06/27/2008	0073967-1	<0.0040
Beryllium	6010B[2]	0.0019	0.00050	mg/l	CS0	06/27/2008	0073967-1	0.00053
Manganese	6010B[2]	2.0	0.010	mg/l	CS0	06/27/2008	0073967-1	<0.010
Sodium	6010B[2]	28	0.50	mg/l	CS0	06/27/2008	0073967-1	<0.50
Vanadium	6010B[2]	<0.010	0.010	mg/l	CS0	06/27/2008	0073967-1	<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	06/23/2008	0073953-1	<0.50
Aroclor-1221	8082[2]	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
Aroclor-1232	8082[2]	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
Aroclor-1242	8082[2]	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
Aroclor-1248	8082[2]	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
Aroclor-1254	8082[2]	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
Aroclor-1260	8082[2]	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
PCB Total-TCL	8082[2]	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<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

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Phone: 724.850.5600
Fax: 724.850.5601

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
P.O. Box 789
Washington, PA 15301

Lab Project ID: **08-4311**
Lab Sample ID: **0806-2186**
Client Sample ID: MW-14
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/12/2008
Date Received: 06/13/2008

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	BKH	06/20/2008	0074168-1	<0.010
Cyanide (Total)	335.4(1)	0.029	0.010	mg/l	BKH	06/16/2008	0074010-1	<0.010
Fluoride	340.2(1)	2.5	0.10	mg/l	BRJ	06/27/2008	0074367-1	<0.10
pH	150.1(1)	7.60	1.00	pH	DJT	06/13/2008	0073976-1	4.07
Specific Conductance	120.1(1)	520	1.0	umhos/cm	BKH	06/20/2008	0074170-1	<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	06/27/2008	0073967-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/27/2008	0073967-1	0.00053
Manganese	6010B(2)	1.1	0.010	mg/l	CS0	06/27/2008	0073967-1	<0.010
Sodium	6010B(2)	39	0.50	mg/l	CS0	06/27/2008	0073967-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/27/2008	0073967-1	<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	06/23/2008	0073953-1	<0.50
Aroclor-1221	8082(2)	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
Aroclor-1232	8082(2)	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
Aroclor-1242	8082(2)	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
Aroclor-1248	8082(2)	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
Aroclor-1254	8082(2)	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
Aroclor-1260	8082(2)	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
PCB Total-TCL	8082(2)	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<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.

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Greensburg, PA 15601
Phone: 724.850.5600
Fax: 724.850.5601

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
P.O. Box 789
Washington, PA 15301

Lab Project ID: **08-4311**
Lab Sample ID: **0806-2187**
Client Sample ID: MW-42D
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/12/2008
Date Received: 06/13/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.81	0.010	mg/l	BKH	06/20/2008	0074168-1	<0.010
Cyanide (Total)	335.4(1)	4.6	0.11	mg/l	BKH	06/16/2008	0074010-1	<0.010
Fluoride	340.2(1)	14	0.10	mg/l	BRJ	06/27/2008	0074367-1	<0.10
pH	150.1(1)	7.64	1.00	pH	DJT	06/13/2008	0073976-1	4.07
Specific Conductance	120.1(1)	2900	1.0	umhos/cm	BKH	06/20/2008	0074170-1	<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	06/27/2008	0073967-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/27/2008	0073967-1	0.00053
Manganese	6010B(2)	1.1	0.010	mg/l	CS0	06/27/2008	0073967-1	<0.010
Sodium	6010B(2)	650	0.50	mg/l	CS0	06/27/2008	0073967-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/27/2008	0073967-1	<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.

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Washington, PA 15301

Lab Project ID: **08-4311**
Lab Sample ID: **0806-2188**
Client Sample ID: MW-42S
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/12/2008
Date Received: 06/13/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1[1]	0.22	0.010	mg/l	BKH	06/20/2008	0074168-1	<0.010
Cyanide (Total)	335.4[1]	2.3	0.10	mg/l	BKH	06/16/2008	0074010-1	<0.010
Fluoride	340.2[1]	37	1.0	mg/l	BRJ	06/27/2008	0074367-1	<0.10
pH	150.1[1]	7.97	1.00	pH	DJT	06/13/2008	0073976-1	4.07
Specific Conductance	120.1[1]	2900	1.0	umhos/cm	BKH	06/20/2008	0074170-1	<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	06/27/2008	0073967-1	<0.0040
Beryllium	6010B[2]	<0.00050	0.00050	mg/l	CS0	06/27/2008	0073967-1	0.00053
Manganese	6010B[2]	0.37	0.010	mg/l	CS0	06/27/2008	0073967-1	<0.010
Sodium	6010B[2]	570	0.50	mg/l	CS0	06/27/2008	0073967-1	<0.50
Vanadium	6010B[2]	<0.010	0.010	mg/l	CS0	06/27/2008	0073967-1	<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.

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Lab Project ID: **08-4311**
Lab Sample ID: **0806-2189**
Client Sample ID: MW-17
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/12/2008
Date Received: 06/13/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.32	0.010	mg/l	BKH	06/20/2008	0074168-1	<0.010
Cyanide (Total)	335.4(1)	2.9	0.10	mg/l	BKH	06/16/2008	0074010-1	<0.010
Fluoride	340.2(1)	17	1.0	mg/l	BRJ	06/27/2008	0074367-1	<0.10
pH	150.1(1)	7.72	1.00	pH	DJT	06/13/2008	0073976-1	4.07
Specific Conductance	120.1(1)	770	1.0	umhos/cm	BKH	06/20/2008	0074170-1	<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	06/27/2008	0073967-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/27/2008	0073967-1	0.00053
Manganese	6010B(2)	1.4	0.010	mg/l	CS0	06/27/2008	0073967-1	<0.010
Sodium	6010B(2)	120	0.50	mg/l	CS0	06/27/2008	0073967-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/27/2008	0073967-1	<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.

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Lab Project ID: **08-4311**
Lab Sample ID: **0806-2190**
Client Sample ID: MW-34D
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/12/2008
Date Received: 06/13/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.64	0.010	mg/l	BKH	06/20/2008	0074168-1	<0.010
Cyanide (Total)	335.4(1)	4.8	0.10	mg/l	BKH	06/16/2008	0074010-1	<0.010
Fluoride	340.2(1)	26	1.0	mg/l	BRJ	06/27/2008	0074367-1	<0.10
pH	150.1(1)	8.13	1.00	pH	DJT	06/13/2008	0073976-1	4.07
Specific Conductance	120.1(1)	800	1.0	umhos/cm	BKH	06/20/2008	0074170-1	<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	06/27/2008	0073967-1	<0.0040
Beryllium	6010B(2)	0.0013	0.00050	mg/l	CS0	06/27/2008	0073967-1	0.00053
Manganese	6010B(2)	0.52	0.010	mg/l	CS0	06/27/2008	0073967-1	<0.010
Sodium	6010B(2)	190	0.50	mg/l	CS0	06/27/2008	0073967-1	<0.50
Vanadium	6010B(2)	0.038	0.010	mg/l	CS0	06/27/2008	0073967-1	<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.

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Lab Project ID: **08-4311**
Lab Sample ID: **0806-2191**
Client Sample ID: MW-34S
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/12/2008
Date Received: 06/13/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1[1]	0.18	0.010	mg/l	BKH	06/20/2008	0074168-1	<0.010
Cyanide (Total)	335.4[1]	2.2	0.25	mg/l	BKH	06/16/2008	0074010-1	<0.010
Fluoride	340.2[1]	42	2.0	mg/l	BRJ	06/27/2008	0074367-1	<0.10
pH	150.1[1]	8.62	1.00	pH	DJT	06/13/2008	0073976-1	4.07
Specific Conductance	120.1[1]	1200	1.0	umhos/cm	BKH	06/20/2008	0074170-1	<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	06/27/2008	0073967-1	<0.0040
Beryllium	6010B[2]	0.00091	0.00050	mg/l	CS0	06/27/2008	0073967-1	0.00053
Manganese	6010B[2]	0.24	0.010	mg/l	CS0	06/27/2008	0073967-1	<0.010
Sodium	6010B[2]	300	0.50	mg/l	CS0	06/27/2008	0073967-1	<0.50
Vanadium	6010B[2]	0.018	0.010	mg/l	CS0	06/27/2008	0073967-1	<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.

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Lab Project ID: **08-4311**
Lab Sample ID: **0806-2192**
Client Sample ID: MW-36
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/12/2008
Date Received: 06/13/2008

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	BKH	06/20/2008	0074168-1	<0.010
Cyanide (Total)	335.4(1)	2.1	0.50	mg/l	BKH	06/16/2008	0074010-1	<0.010
Fluoride	340.2(1)	33	1.0	mg/l	BRJ	06/27/2008	0074367-1	<0.10
pH	150.1(1)	8.56	1.00	pH	DJT	06/13/2008	0073976-1	4.07
Specific Conductance	120.1(1)	710	1.0	umhos/cm	BKH	06/20/2008	0074170-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.0057	0.0040	mg/l	CS0	06/27/2008	0073967-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/27/2008	0073967-1	0.00053
Manganese	6010B(2)	0.22	0.010	mg/l	CS0	06/27/2008	0073967-1	<0.010
Sodium	6010B(2)	160	0.50	mg/l	CS0	06/27/2008	0073967-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/27/2008	0073967-1	<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.

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Lab Project ID: **08-4311**
Lab Sample ID: **0806-2193**
Client Sample ID: MW-15
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/12/2008
Date Received: 06/13/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	1.4	0.010	mg/l	BKH	06/20/2008	0074168-1	<0.010
Cyanide (Total)	335.4(1)	7.2	0.50	mg/l	BKH	06/16/2008	0074010-1	<0.010
Fluoride	340.2(1)	20	1.0	mg/l	BRJ	06/27/2008	0074367-1	<0.10
pH	150.1(1)	7.91	1.00	pH	DJT	06/13/2008	0073976-1	4.07
Specific Conductance	120.1(1)	790	1.0	umhos/cm	BKH	06/20/2008	0074170-1	<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	06/27/2008	0073967-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/27/2008	0073967-1	0.00053
Manganese	6010B(2)	0.10	0.010	mg/l	CS0	06/27/2008	0073967-1	<0.010
Sodium	6010B(2)	180	0.50	mg/l	CS0	06/27/2008	0073967-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/27/2008	0073967-1	<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.

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Lab Project ID: **08-4311**
Lab Sample ID: **0806-2194**
Client Sample ID: MW-55
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/12/2008
Date Received: 06/13/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.79	0.010	mg/l	BKH	06/20/2008	0074168-1	<0.010
Cyanide (Total)	335.4(1)	8.1	0.21	mg/l	BKH	06/16/2008	0074010-1	<0.010
Fluoride	340.2(1)	20	1.0	mg/l	BRJ	06/27/2008	0074367-1	<0.10
pH	150.1(1)	7.93	1.00	pH	DJT	06/13/2008	0073976-1	4.07
Specific Conductance	120.1(1)	790	1.0	umhos/cm	BKH	06/20/2008	0074170-1	<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	06/27/2008	0073967-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/27/2008	0073967-1	0.00053
Manganese	6010B(2)	0.096	0.010	mg/l	CS0	06/27/2008	0073967-1	<0.010
Sodium	6010B(2)	170	0.50	mg/l	CS0	06/27/2008	0073967-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/27/2008	0073967-1	<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.

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Lab Project ID: **08-4311**
Lab Sample ID: **0806-2195**
Client Sample ID: MW-32
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/12/2008
Date Received: 06/13/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1[1]	1.6	0.010	mg/l	BKH	06/20/2008	0074168-1	<0.010
Cyanide (Total)	335.4[1]	12	0.50	mg/l	BKH	06/16/2008	0074010-1	<0.010
Fluoride	340.2[1]	55	1.0	mg/l	BRJ	06/27/2008	0074367-1	<0.10
pH	150.1[1]	9.90	1.00	pH	DJT	06/13/2008	0073976-1	4.07
Specific Conductance	120.1[1]	1400	1.0	umhos/cm	BKH	06/20/2008	0074170-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B[2]	0.047	0.0040	mg/l	CS0	06/27/2008	0073967-1	<0.0040
Beryllium	6010B[2]	0.0016	0.00050	mg/l	CS0	06/27/2008	0073967-1	0.00053
Manganese	6010B[2]	2.6	0.010	mg/l	CS0	06/27/2008	0073967-1	<0.010
Sodium	6010B[2]	340	0.50	mg/l	CS0	06/27/2008	0073967-1	<0.50
Vanadium	6010B[2]	0.097	0.010	mg/l	CS0	06/27/2008	0073967-1	<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.
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Lab Project ID: **08-4311**
Lab Sample ID: **0806-2196**
Client Sample ID: MW-35
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/12/2008
Date Received: 06/13/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.45	0.010	mg/l	BKH	06/20/2008	0074168-1	<0.010
Cyanide (Total)	335.4(1)	15	0.50	mg/l	BKH	06/16/2008	0074010-1	<0.010
Fluoride	340.2(1)	15	1.0	mg/l	BRJ	06/27/2008	0074367-1	<0.10
pH	150.1(1)	8.37	1.00	pH	DJT	06/13/2008	0073976-1	4.07
Specific Conductance	120.1(1)	540	1.0	umhos/cm	BKH	06/20/2008	0074170-1	<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	06/27/2008	0073967-1	<0.0040
Beryllium	6010B(2)	0.00061	0.00050	mg/l	CS0	06/27/2008	0073967-1	0.00053
Manganese	6010B(2)	1.2	0.010	mg/l	CS0	06/27/2008	0073967-1	<0.010
Sodium	6010B(2)	86	0.50	mg/l	CS0	06/27/2008	0073967-1	<0.50
Vanadium	6010B(2)	0.013	0.010	mg/l	CS0	06/27/2008	0073967-1	<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.
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Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
P.O. Box 789
Washington, PA 15301

Lab Project ID: **08-4311**
Lab Sample ID: **0806-2197**
Client Sample ID: MW-37
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/12/2008
Date Received: 06/13/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.15	0.010	mg/l	BKH	06/20/2008	0074168-1	<0.010
Cyanide (Total)	335.4(1)	0.87	0.10	mg/l	BKH	06/16/2008	0074010-1	<0.010
Fluoride	340.2(1)	3.4	1.0	mg/l	BRJ	06/27/2008	0074367-1	<0.10
pH	150.1(1)	6.34	1.00	pH	DJT	06/13/2008	0073976-1	4.07
Specific Conductance	120.1(1)	260	1.0	umhos/cm	BKH	06/20/2008	0074170-1	<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	06/27/2008	0073967-1	<0.0040
Beryllium	6010B(2)	0.00073	0.00050	mg/l	CS0	06/27/2008	0073967-1	0.00053
Manganese	6010B(2)	0.20	0.010	mg/l	CS0	06/27/2008	0073967-1	<0.010
Sodium	6010B(2)	37	0.50	mg/l	CS0	06/27/2008	0073967-1	<0.50
Vanadium	6010B(2)	0.015	0.010	mg/l	CS0	06/27/2008	0073967-1	<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.

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Mr. Robert L. Fargo (Principal/Senior Consultant)
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P.O. Box 789
Washington, PA 15301

Lab Project ID: **08-4311**
Lab Sample ID: **0806-2198**
Client Sample ID: MW-19
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/12/2008
Date Received: 06/13/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Total)	335.4(1)	<0.010	0.010	mg/l	BKH	06/16/2008	0074011-1	<0.010
Fluoride	340.2(1)	1.1	0.10	mg/l	BRJ	06/27/2008	0074367-1	<0.10
pH	150.1(1)	7.27	1.00	pH	DJT	06/13/2008	0073976-1	4.07
Specific Conductance	120.1(1)	680	1.0	umhos/cm	BKH	06/20/2008	0074170-1	<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	06/27/2008	0073967-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/27/2008	0073967-1	0.00053
Manganese	6010B(2)	<0.010	0.010	mg/l	CS0	06/27/2008	0073967-1	<0.010
Sodium	6010B(2)	28	0.50	mg/l	CS0	06/27/2008	0073967-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/27/2008	0073967-1	<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

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Washington, PA 15301

Lab Project ID: **08-4311**
Lab Sample ID: **0806-2199**
Client Sample ID: MW-59
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/12/2008
Date Received: 06/13/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Total)	335.4[1]	<0.010	0.010	mg/l	BKH	06/16/2008	0074011-1	<0.010
Fluoride	340.2[1]	1.1	0.10	mg/l	BRJ	06/27/2008	0074367-1	<0.10
pH	150.1[1]	7.28	1.00	pH	DJT	06/13/2008	0073976-1	4.07
Specific Conductance	120.1[1]	680	1.0	umhos/cm	BKH	06/20/2008	0074170-1	<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	06/27/2008	0073967-1	<0.0040
Beryllium	6010B[2]	<0.00050	0.00050	mg/l	CS0	06/27/2008	0073967-1	0.00053
Manganese	6010B[2]	<0.010	0.010	mg/l	CS0	06/27/2008	0073967-1	<0.010
Sodium	6010B[2]	30	0.50	mg/l	CS0	06/27/2008	0073967-1	<0.50
Vanadium	6010B[2]	<0.010	0.010	mg/l	CS0	06/27/2008	0073967-1	<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.

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Washington, PA 15301

Lab Project ID: **08-4311**
Lab Sample ID: **0806-2200**
Client Sample ID: Field Blank
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 06/12/2008
Date Received: 06/13/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Total)	335.4(1)	<0.010	0.010	mg/l	BKH	06/16/2008	0074011-1	<0.010
Fluoride	340.2(1)	<0.10	0.10	mg/l	BRJ	06/27/2008	0074367-1	<0.10
pH	150.1(1)	5.77	1.00	pH	DJT	06/13/2008	0073976-1	4.07
Specific Conductance	120.1(1)	1.2	1.0	umhos/cm	BKH	06/20/2008	0074170-1	<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	06/27/2008	0073967-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	06/27/2008	0073967-1	0.00053
Manganese	6010B(2)	<0.010	0.010	mg/l	CS0	06/27/2008	0073967-1	<0.010
Sodium	6010B(2)	0.90	0.50	mg/l	CS0	06/27/2008	0073967-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	06/27/2008	0073967-1	<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	06/23/2008	0073953-1	<0.50
Aroclor-1221	8082(2)	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
Aroclor-1232	8082(2)	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
Aroclor-1242	8082(2)	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
Aroclor-1248	8082(2)	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
Aroclor-1254	8082(2)	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
Aroclor-1260	8082(2)	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50
PCB Total-TCL	8082(2)	<0.50	0.50	mg/l	RDJ	06/23/2008	0073953-1	<0.50

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	EAC	06/23/2008	0074218-1	<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

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Metals

Metals Analysis - ICP

Parameter	Chemical Symbol	EPA or Standard Method	SW846 Method	Holding Time	Bottle Type and Volume	Preservative
Arsenic	As	200.7	6010	6 Months	250ml Plastic	Nitric Acid
Beryllium	Be	200.7	6010	6 Months	250ml Plastic	Nitric Acid
Manganese	Mn	200.7	6010	6 Months	250ml Plastic	Nitric Acid
Sodium	Na	200.7	6010	6 Months	250ml Plastic	Nitric Acid
Vanadium	V	200.7	6010	6 Months	250ml Plastic	Nitric Acid

Pace Analytical

Metals Data Reporting Form

Laboratory Control Sample Results

Lab Sample ID: QC73967LCS

Matrix: Water **Units:** ug/L **Prep Date:** 6/16/2008 **Prep Batch:** 73967

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	509	101.7		80-120	1	ICP	6/27/2008	10:27
Beryllium	313.042	500	495	99.0		80-120	1	ICP	6/27/2008	10:27
Manganese	257.61	500	509	101.8		80-120	1	ICP	6/27/2008	10:27
Sodium	330.232	5000	5150	102.9		80-120	1	ICP	6/27/2008	10:27
Vanadium	292.402	500	498	99.5		80-120	1	ICP	6/27/2008	10:27

Comments: QC Data for 08-4311

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

Matrix Spike Sample Results

Spike Sample ID: QC73967MS D

Original Sample ID: 4311-0806-2185 D **Client ID:** MW-12

Matrix: Water **Units:** ug/L **Prep Date:** 6/16/2008 **Prep Batch:** 73967

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	1.7	U	530		500	105.9	1	1	ICP	6/27/2008	10:32	6/27/2008	10:39
Beryllium	313.0	1.9		512		500	102.0	1	1	ICP	6/27/2008	10:32	6/27/2008	10:39
Manganese	257.6	1960		2530		500	112.7	1	1	ICP	6/27/2008	10:32	6/27/2008	10:39
Sodium	330.2	28400		35600	NC	5000		1	1	ICP	6/27/2008	10:32	6/27/2008	10:39
Vanadium	292.4	1.7	B	513		500	102.3	1	1	ICP	6/27/2008	10:32	6/27/2008	10:39

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 5A Equivalent

Pace Analytical

Metals Data Reporting Form

Matrix Spike Duplicate Sample Results

Spike Sample ID: QC73967MSD

Original Sample ID: 4311-0806-2185 D **Client ID:** MW-12

Matrix: Water **Units:** ug/L **Prep Date:** 6/16/2008 **Prep Batch:** 73967

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	1.7	U	534		500	106.7	1	1	ICP	6/27/2008	10:32	6/27/2008	10:43
Beryllium	313.0	1.9		515		500	102.6	1	1	ICP	6/27/2008	10:32	6/27/2008	10:43
Manganese	257.6	1960		2510		500	109.2	1	1	ICP	6/27/2008	10:32	6/27/2008	10:43
Sodium	330.2	28400		34600	NC	5000		1	1	ICP	6/27/2008	10:32	6/27/2008	10:43
Vanadium	292.4	1.7	B	516		500	102.8	1	1	ICP	6/27/2008	10:32	6/27/2008	10:43

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 5A Equivalent

Pace Analytical

Metals Data Reporting Form

Matrix Spike Duplicate RPD Report

Matrix Spike Duplicate Sample ID: QC73967MSD

Matrix Spike Sample ID: QC73967MS D **Client ID:** MW-12

Matrix: Water **Units:** ug/L **Prep Date:** 6/16/2008 **Prep Batch:** 73967

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	530		534		0.8	1	1	ICP	6/27/2008	10:39	6/27/2008	10:43
Beryllium	313.042	512		515		0.6	1	1	ICP	6/27/2008	10:39	6/27/2008	10:43
Manganese	257.61	2530		2510		0.7	1	1	ICP	6/27/2008	10:39	6/27/2008	10:43
Sodium	330.232	35600	NC	34600	NC	3.0	1	1	ICP	6/27/2008	10:39	6/27/2008	10:43
Vanadium	292.402	513		516		0.4	1	1	ICP	6/27/2008	10:39	6/27/2008	10:43

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

Volatiles

Volatiles Analysis

Parameter	EPA or Standard Method	SW846 Method	Holding Time	Bottle Type and Volume	Preservative
Tetrachloroethene	624	8260	14 Days	3/ 40ml Vials	Hydrochloric Acid

Pace Analytical Report of Quality Control

Project: 08-4311 Volatiles

Laboratory Control Sample												
Parameter	Method	Batch	Units	MB Found	LCS Spike	LCS Found	LCS %Rec	QC Limits	LCSD Found	LCSD %Rec	LCS RPD	Max RPD
Tetrachloroethene	MS VOC 8260 Aqu	74218	ppm	0.0	20	21.08	105.41	70-130	20.18	100.88	4.4	30

* Denotes recovery outside of QC limits.

Summary of LCS Batches for Project 08-4311

Batch	Analyzed	Samples
74218	06/24/2008	0806-2200

Project No.: 08-4311

Organic Prep

Pace Analytical Services, Inc.-PGH

Matrix: H_2O

LIMS QC Batch #: 73953

Analytical Method: RB 8082

Extraction Method: 3510

Solvent	Lot #				
CH_2Cl_2	XI-111-05 H	NaOH			
Hexane	XI-113-01 A	H_2SO_4			
Na_2SO_4	XI-103-01	Surrogate: XI 106-04, 1 ppm, 0.5 ml			
		Matrix Spike: ~~XI 105-03, 2.5 ppm, 0.5 ml~~ → used 0.5 ml			
		Matrix Spike:			

versus 1.0 ml as the SOP states

XSL 6/16/08

Date	Project #	Sample ID	Analyst	Initial Volume	Final Volume	pH 5-9	Comments
6/16/08	4229	BLK	CnB	1L	5 ml	✓	
		LCS		1L			
		LCSD		1L			insufficient sample provided for MS/MSD
		1717 A		990 ml			
		1718 A		995 ml			
		1719 A		990 ml			
		1720 A		995 ml			
	4362	2110 A		970 ml			
		2111 A		975 ml			
		2112 A		965 ml			
	4311	2185 B		975 ml			
		2186 B		960 ml			
		2200 B		940 ml			

XSL 6/18/08

Peer Review 6/20/08 CnB

Polychlorinated Biphenyls

PCB Analysis

Parameter	EPA or Standard Method	SW846 Method	Holding Time	Bottle Type and Volume	Preservative
Aroclor-1016	608	8082	7/30 days*	Liter Glass Amber	None
Aroclor-1221	608	8082	7/30 days*	Liter Glass Amber	None
Aroclor-1232	608	8082	7/30 days*	Liter Glass Amber	None
Aroclor-1242	608	8082	7/30 days*	Liter Glass Amber	None
Aroclor-1248	608	8082	7/30 days*	Liter Glass Amber	None
Aroclor-1254	608	8082	7/30 days*	Liter Glass Amber	None
Aroclor-1260	608	8082	7/30 days*	Liter Glass Amber	None
PCB Total-TCL	608	8082	7/30 days*	Liter Glass Amber	None

*7/30 days = 7 days for extraction, 30 days for analysis on extract

2E
WATER AQUEOUS SURROGATE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: 08-4311 SAS No.: SDG No.: 08-4311

GC Column(1) : RTX-1701 ID: 0.53 (mm)

	EPA SAMPLE NO.	TCX %REC #	DCB %REC #	S3 %REC #	S4 %REC #	S5 %REC #	S6 %REC #	TOT OUT
01	MW-12	75	88					0
02	MW-14	66	89					0
03	FIELDBLANK	75	63					0
04	LCS	70	59					0
05	LCSD	56	53					0
06	BLK	66	76					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: Contract:

Lab Code: Case No.: 08-4311 SAS No.: SDG No.: 08-4311

Matrix Spike - Sample No.: LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Aroclor-1016	1.25		1.09	87	55-145
Aroclor-1260	1.25		1.23	98	55-145

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Aroclor-1016	1.25	0.726	58	40*	25	55-145
Aroclor-1260	1.25	0.998	80	20	25	55-145

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 2 outside limits
Spike Recovery: 0 out of 4 outside limits

COMMENTS: Project 08-4311 is associated with the QC from 08-4229.

Project No.: 08-4311

General Chemistry

General Chemistry

Parameter	EPA or Standard Method	SW846 Method	Holding Time	Bottle Type and Volume	Preservative
Cyanide (Amenable)	335.1		14 days	250ml Plastic*	Sodium Hydroxide
Cyanide (Total)	335.2	4500-CN	14 days	250ml Plastic*	Sodium Hydroxide
Fluoride	340.1	4500-Fl	28 days	500ml Plastic**	None
pH	150.1	9040/9045	Immediate	500ml Plastic**	None
Specific Conductance	120.1	9050	28 days	500ml Plastic**	None

*Cyanide Total and Amenable are analyzed from the same bottle.
**Fluoride, pH, and Specific Conductance are analyzed from the same bottle.

Pace Analytical Report of Quality Control

Project: 08-4311 General Chemistry

Laboratory Control Sample								
Parameter	Method	Batch	Units	MB Found	LCS Spike	LCS Found	LCS %Rec	QC Limits
pH	150.1	73976	pH	4.07	7	7.04	100.57*	0- 0
Cyanide (Total)	335.4	74010	ppm	0.0	0.2	0.20	99.10	85-115
Cyanide (Total)	335.4	74011	ppm	0.0	0.2	0.43	216.50*	85-115
Fluoride	340.2	74367	ppm	0.0	2	1.88	94.00	85-115

* Denotes recovery outside of QC limits.

Summary of LCS Batches for Project 08-4311

Batch	Analyzed	Samples
73976	06/16/2008	0806-2185 0806-2186 0806-2187 0806-2188 0806-2189 0806-2190 0806-2191 0806-2192 0806-2193 0806-2194 0806-2195 0806-2196 0806-2197 0806-2198 0806-2199 0806-2200
74010	06/17/2008	0806-2185 0806-2186 0806-2187 0806-2188 0806-2189 0806-2190 0806-2191 0806-2192 0806-2193 0806-2194 0806-2195 0806-2196 0806-2197
74011	06/17/2008	0806-2198 0806-2199 0806-2200
74367	06/27/2008	0806-2185 0806-2186 0806-2187 0806-2188 0806-2189 0806-2190 0806-2191 0806-2192 0806-2193 0806-2194 0806-2195 0806-2196 0806-2197 0806-2198 0806-2199 0806-2200

Pace Analytical Report of Quality Control

Project: 08-4311 General Chemistry

Matrix Spike Sample								
Parameter	Method	Batch	Units	Sample Found	MS Spike	MS Found	MS %Rec	QC Limits
Cyanide (Total)	335.4	74010	ppm	0.029	0.1	0.13	100.10*	0- 0
Cyanide (Total)	335.4	74011	ppm	0.021	0.1	0.02	0.00	0- 0
Fluoride	340.2	74367	ppm	2.5	4	6.42	99.25	85-115

* Denotes recovery outside of QC limits.

Summary of MS Batches for Project 08-4311

Batch	Analyzed	Samples
74010	06/17/2008	0806-2185 0806-2186 0806-2187 0806-2188 0806-2189 0806-2190 0806-2191 0806-2192 0806-2193 0806-2194 0806-2195 0806-2196 0806-2197
74011	06/17/2008	0806-2198 0806-2199 0806-2200
74367	06/27/2008	0806-2185 0806-2186 0806-2187 0806-2188 0806-2189 0806-2190 0806-2191 0806-2192 0806-2193 0806-2194 0806-2195 0806-2196 0806-2197 0806-2198 0806-2199 0806-2200

Chain of Custody

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of

Section A
Required Client Information:

Company:
Address:
Email To:
Phone: Fax:
Requested Due Date/TAT:

Section B
Required Project Information:

Report To:
Copy To:
Purchase Order No.:
Project Name:
Project Number:

Section C
Invoice Information

Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER
UST RCRA OTHER

Site Location
STATE:

Section D
Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Matrix Codes
MATRIX / CODE

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COLLECTED: COMPOSITE START TIME	COLLECTED: COMPOSITE END/GRAB DATE	COLLECTED: COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N)											Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1																														
2																														
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME

SAMPLE CONDITIONS

Temp in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER:

DATE Signed (MM/DD/YY):

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of

Section A
Required Client Information

Company:	
Address:	
Email To:	
Phone:	Fax:
Requested Due Date/TAT:	

Section B
Required Project Information:

Report To:	
Copy To:	
Purchase Order No.:	
Project Name:	
Project Number:	

Section C
Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER
UST RCRA OTHER

Site Location
STATE:

Section D
Required Client Information

Matrix Codes
MATRIX / CODE

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COLLECTED: COMPOSITE START TIME	COLLECTED: COMPOSITE END/GRAB DATE	COLLECTED: COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1																				
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: **DATE Signed (MM/DD/YY):**

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

APPENDIX B-3

LABORATORY ANALYTICAL REPORT FOR SEPTEMBER 2008 MONITORING EVENT

Pace Analytical
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1638 Roseytown Rd
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Phone: 724.850.5600
Fax: 724.850.5601

October 1, 2008

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
P.O. Box 789
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 September 12, 2008. 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. Parameters printed in italics represent Non-NELAC accredited parameters. Please reference Pace project number 08-6706 when inquiring about this report.

Client Site: Reduction Mill
Client Ref.: HM00324

Pace Sample Identification	Client Sample Identification
0809-2246	MW-2
0809-2247	MW-5
0809-2248	MW-12
0809-2249	MW-16
0809-2250	MW-18
0809-2251	MW-28
0809-2252	MW-31
0809-2253	MW-32
0809-2254	MW-35

Pace Sample Identification	Client Sample Identification
0809-2255	MW-36
0809-2256	MW-37
0809-2257	MW-39S
0809-2258	MW-44S
0809-2259	MW-44D
0809-2260	MW-56 (MW-36)
0809-2261	FB-1
0809-2262	Trip Blank

General Comments: The recommended holding time for pH requires immediate analysis. The samples were received past the recommended holding time for pH. Cooler temperature 3.4 ° C upon receipt. Ice was present. 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

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Greensburg, PA 15601
Phone: 724.850.5600
Fax: 724.850.5601

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

Sincerely,

Rachel D. Christner
Project Manager

RDC: jld

Enclosures

Page 1 of 41

cc: John Reggi, Ormet Primary Aluminum Corporation

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Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
P.O. Box 789
Washington, PA 15301

Lab Project ID: **08-6706**
Lab Sample ID: **0809-2246**
Client Sample ID: MW-2
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 09/11/2008
Date Received: 09/12/2008

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	DLD	09/24/2008	0077349-1	<0.010
Cyanide (Total)	335.4(1)	7.2	0.25	mg/l	DLD	09/23/2008	0077206-1	<0.010
Fluoride	340.2(1)	36	1.0	mg/l	DJT	09/18/2008	0077030-1	<0.10
pH	150.1(1)	9.43	1.00	pH	BJB	09/12/2008	0076834-1	5.60
Specific Conductance	120.1(1)	1200	1.0	umhos/cm	BKH	09/22/2008	0077105-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.044	0.0040	mg/l	CS0	09/25/2008	0076983-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	09/25/2008	0076983-1	<0.00050
Manganese	6010B(2)	0.51	0.010	mg/l	CS0	09/25/2008	0076983-1	<0.010
Sodium	6010B(2)	290	0.50	mg/l	CS0	09/25/2008	0076983-1	<0.50
Vanadium	6010B(2)	0.027	0.010	mg/l	CS0	09/25/2008	0076983-1	<0.010

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Tetrachloroethene	8260B(2)	0.042	0.0050	mg/l	JHC	09/19/2008	0077097-1	<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.

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Greensburg, PA 15601
Phone: 724.850.5600
Fax: 724.850.5601

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
P.O. Box 789
Washington, PA 15301

Lab Project ID: **08-6706**
Lab Sample ID: **0809-2247**
Client Sample ID: MW-5
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 09/11/2008
Date Received: 09/12/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1(1)	0.74	0.010	mg/l	DLD	09/24/2008	0077349-1	<0.010
Cyanide (Total)	335.4(1)	4.7	0.25	mg/l	DLD	09/23/2008	0077206-1	<0.010
Fluoride	340.2(1)	24	0.10	mg/l	DJT	09/18/2008	0077030-1	<0.10
pH	150.1(1)	8.11	1.00	pH	BJB	09/12/2008	0076834-1	5.60
Specific Conductance	120.1(1)	1100	1.0	umhos/cm	BKH	09/22/2008	0077105-1	<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	09/25/2008	0076983-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	09/25/2008	0076983-1	<0.00050
Manganese	6010B(2)	0.44	0.010	mg/l	CS0	09/25/2008	0076983-1	<0.010
Sodium	6010B(2)	240	0.50	mg/l	CS0	09/25/2008	0076983-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	09/25/2008	0076983-1	<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	JHC	09/19/2008	0077097-1	<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.

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Greensburg, PA 15601
Phone: 724.850.5600
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Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
P.O. Box 789
Washington, PA 15301

Lab Project ID: **08-6706**
Lab Sample ID: **0809-2248**
Client Sample ID: MW-12
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 09/11/2008
Date Received: 09/12/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Total)	335.4(1)	<0.010	0.010	mg/l	DLD	09/23/2008	0077206-1	<0.010
Fluoride	340.2(1)	0.60	0.10	mg/l	DJT	09/19/2008	0077081-1	<0.10
pH	150.1(1)	7.63	1.00	pH	BJB	09/12/2008	0076834-1	5.60
Specific Conductance	120.1(1)	470	1.0	umhos/cm	BKH	09/22/2008	0077105-1	<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	09/25/2008	0076983-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	09/25/2008	0076983-1	<0.00050
Manganese	6010B(2)	1.9	0.010	mg/l	CS0	09/25/2008	0076983-1	<0.010
Sodium	6010B(2)	27	0.50	mg/l	CS0	09/25/2008	0076983-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	09/25/2008	0076983-1	<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	09/17/2008	0076878-1	<0.50
Aroclor-1221	8082(2)	<0.50	0.50	mg/l	RDJ	09/17/2008	0076878-1	<0.50
Aroclor-1232	8082(2)	<0.50	0.50	mg/l	RDJ	09/17/2008	0076878-1	<0.50
Aroclor-1242	8082(2)	<0.50	0.50	mg/l	RDJ	09/17/2008	0076878-1	<0.50
Aroclor-1248	8082(2)	<0.50	0.50	mg/l	RDJ	09/17/2008	0076878-1	<0.50
Aroclor-1254	8082(2)	<0.50	0.50	mg/l	RDJ	09/17/2008	0076878-1	<0.50
Aroclor-1260	8082(2)	<0.50	0.50	mg/l	RDJ	09/17/2008	0076878-1	<0.50
PCB Total-TCL	8082(2)	<0.50	0.50	mg/l	RDJ	09/17/2008	0076878-1	<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.

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Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
P.O. Box 789
Washington, PA 15301

Lab Project ID: **08-6706**
Lab Sample ID: **0809-2249**
Client Sample ID: MW-16
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 09/11/2008
Date Received: 09/12/2008

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	DLD	09/24/2008	0077349-1	<0.010
Cyanide (Total)	335.4[1]	3.5	0.25	mg/l	DLD	09/23/2008	0077206-1	<0.010
Fluoride	340.2[1]	26	1.0	mg/l	DJT	09/19/2008	0077081-1	<0.10
pH	150.1[1]	9.14	1.00	pH	BJB	09/12/2008	0076834-1	5.60
Specific Conductance	120.1[1]	880	1.0	umhos/cm	BKH	09/22/2008	0077105-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B[2]	0.033	0.0040	mg/l	CS0	09/25/2008	0076983-1	<0.0040
Beryllium	6010B[2]	<0.00050	0.00050	mg/l	CS0	09/25/2008	0076983-1	<0.00050
Manganese	6010B[2]	0.79	0.010	mg/l	CS0	09/25/2008	0076983-1	<0.010
Sodium	6010B[2]	210	0.50	mg/l	CS0	09/25/2008	0076983-1	<0.50
Vanadium	6010B[2]	0.038	0.010	mg/l	CS0	09/25/2008	0076983-1	<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.

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Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
P.O. Box 789
Washington, PA 15301

Lab Project ID: **08-6706**
Lab Sample ID: **0809-2250**
Client Sample ID: MW-18
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 09/11/2008
Date Received: 09/12/2008

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	DLD	09/24/2008	0077349-1	<0.010
Cyanide (Total)	335.4[1]	5.4	0.25	mg/l	DLD	09/23/2008	0077206-1	<0.010
Fluoride	340.2[1]	59	1.0	mg/l	DJT	09/19/2008	0077081-1	<0.10
pH	150.1[1]	9.40	1.00	pH	BJB	09/12/2008	0076834-1	5.60
Specific Conductance	120.1[1]	1100	1.0	umhos/cm	BKH	09/22/2008	0077105-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B[2]	0.049	0.0040	mg/l	CS0	09/25/2008	0076983-1	<0.0040
Beryllium	6010B[2]	<0.00050	0.00050	mg/l	CS0	09/25/2008	0076983-1	<0.00050
Manganese	6010B[2]	0.18	0.010	mg/l	CS0	09/25/2008	0076983-1	<0.010
Sodium	6010B[2]	270	0.50	mg/l	CS0	09/25/2008	0076983-1	<0.50
Vanadium	6010B[2]	0.017	0.010	mg/l	CS0	09/25/2008	0076983-1	<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	JHC	09/19/2008	0077097-1	<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.

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Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
P.O. Box 789
Washington, PA 15301

Lab Project ID: **08-6706**
Lab Sample ID: **0809-2251**
Client Sample ID: MW-28
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 09/11/2008
Date Received: 09/12/2008

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	DLD	09/24/2008	0077349-1	<0.010
Cyanide (Total)	335.4(1)	0.17	0.010	mg/l	DLD	09/23/2008	0077206-1	<0.010
Fluoride	340.2(1)	0.16	0.10	mg/l	DJT	09/19/2008	0077081-1	<0.10
pH	150.1(1)	6.39	1.00	pH	BJB	09/12/2008	0076834-1	5.60
Specific Conductance	120.1(1)	310	1.0	umhos/cm	BKH	09/22/2008	0077106-1	<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	09/25/2008	0076983-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	09/25/2008	0076983-1	<0.00050
Manganese	6010B(2)	<0.010	0.010	mg/l	CS0	09/25/2008	0076983-1	<0.010
Sodium	6010B(2)	58	0.50	mg/l	CS0	09/25/2008	0076983-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	09/25/2008	0076983-1	<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.

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Washington, PA 15301

Lab Project ID: **08-6706**
Lab Sample ID: **0809-2252**
Client Sample ID: MW-31
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 09/11/2008
Date Received: 09/12/2008

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	DLD	09/24/2008	0077349-1	<0.010
Cyanide (Total)	335.4(1)	4.4	0.25	mg/l	DLD	09/23/2008	0077206-1	<0.010
Fluoride	340.2(1)	52	1.0	mg/l	DJT	09/19/2008	0077081-1	<0.10
pH	150.1(1)	9.57	1.00	pH	BJB	09/12/2008	0076834-1	5.60
Specific Conductance	120.1(1)	1100	1.0	umhos/cm	BKH	09/22/2008	0077106-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.041	0.0040	mg/l	CS0	09/25/2008	0076983-1	<0.0040
Beryllium	6010B(2)	0.0012	0.00050	mg/l	CS0	09/25/2008	0076983-1	<0.00050
Manganese	6010B(2)	1.2	0.010	mg/l	CS0	09/25/2008	0076983-1	<0.010
Sodium	6010B(2)	300	0.50	mg/l	CS0	09/25/2008	0076983-1	<0.50
Vanadium	6010B(2)	0.069	0.010	mg/l	CS0	09/25/2008	0076983-1	<0.010

Volatiles

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Volatile Organic Compounds, MS								
Tetrachloroethene	8260B(2)	0.042	0.0050	mg/l	JHC	09/19/2008	0077097-1	<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.

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Lab Project ID: **08-6706**
Lab Sample ID: **0809-2253**
Client Sample ID: MW-32
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 09/11/2008
Date Received: 09/12/2008

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	DLD	09/24/2008	0077349-1	<0.010
Cyanide (Total)	335.4(1)	9.2	0.21	mg/l	DLD	09/22/2008	0077289-1	<0.010
Fluoride	340.2(1)	65	1.0	mg/l	DJT	09/19/2008	0077081-1	<0.10
pH	150.1(1)	9.86	1.00	pH	BJB	09/12/2008	0076834-1	5.60
Specific Conductance	120.1(1)	1400	1.0	umhos/cm	BKH	09/22/2008	0077106-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.048	0.0040	mg/l	CS0	09/25/2008	0076983-1	<0.0040
Beryllium	6010B(2)	0.0010	0.00050	mg/l	CS0	09/25/2008	0076983-1	<0.00050
Manganese	6010B(2)	1.7	0.010	mg/l	CS0	09/25/2008	0076983-1	<0.010
Sodium	6010B(2)	350	0.50	mg/l	CS0	09/25/2008	0076983-1	<0.50
Vanadium	6010B(2)	0.085	0.010	mg/l	CS0	09/25/2008	0076983-1	<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.

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Lab Project ID: **08-6706**
Lab Sample ID: **0809-2254**
Client Sample ID: MW-35
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 09/11/2008
Date Received: 09/12/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Amenable)	335.1[1]	1.5	0.010	mg/l	DLD	09/24/2008	0077349-1	<0.010
Cyanide (Total)	335.4[1]	17	0.35	mg/l	DLD	09/22/2008	0077289-1	<0.010
Fluoride	340.2[1]	15	1.0	mg/l	DJT	09/19/2008	0077081-1	<0.10
pH	150.1[1]	8.54	1.00	pH	BJB	09/12/2008	0076834-1	5.60
Specific Conductance	120.1[1]	530	1.0	umhos/cm	BKH	09/22/2008	0077106-1	<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	09/25/2008	0076983-1	<0.0040
Beryllium	6010B[2]	<0.00050	0.00050	mg/l	CS0	09/25/2008	0076983-1	<0.00050
Manganese	6010B[2]	0.86	0.010	mg/l	CS0	09/25/2008	0076983-1	<0.010
Sodium	6010B[2]	92	0.50	mg/l	CS0	09/25/2008	0076983-1	<0.50
Vanadium	6010B[2]	<0.010	0.010	mg/l	CS0	09/25/2008	0076983-1	<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.

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Lab Project ID: **08-6706**
Lab Sample ID: **0809-2255**
Client Sample ID: MW-36
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 09/11/2008
Date Received: 09/12/2008

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	DLD	09/24/2008	0077349-1	<0.010
Cyanide (Total)	335.4[1]	4.6	0.11	mg/l	DLD	09/22/2008	0077289-1	<0.010
Fluoride	340.2[1]	17	1.0	mg/l	DJT	09/19/2008	0077081-1	<0.10
pH	150.1[1]	8.69	1.00	pH	BJB	09/12/2008	0076834-1	5.60
Specific Conductance	120.1[1]	640	1.0	umhos/cm	BKH	09/22/2008	0077106-1	<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	09/25/2008	0076983-1	<0.0040
Beryllium	6010B[2]	<0.00050	0.00050	mg/l	CS0	09/25/2008	0076983-1	<0.00050
Manganese	6010B[2]	0.094	0.010	mg/l	CS0	09/25/2008	0076983-1	<0.010
Sodium	6010B[2]	120	0.50	mg/l	CS0	09/25/2008	0076983-1	<0.50
Vanadium	6010B[2]	<0.010	0.010	mg/l	CS0	09/25/2008	0076983-1	<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.

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Client Site: Reduction Mill
Client Ref.: HM00324

Lab Project ID: **08-6706**
Lab Sample ID: **0809-2256**
Client Sample ID: MW-37
Sample Matrix: Aqueous

Date Sampled: 09/11/2008
Date Received: 09/12/2008

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	DLD	09/24/2008	0077349-1	<0.010
Cyanide (Total)	335.4[1]	0.68	0.050	mg/l	DLD	09/22/2008	0077289-1	<0.010
Fluoride	340.2[1]	3.5	1.0	mg/l	DJT	09/19/2008	0077081-1	<0.10
pH	150.1[1]	6.45	1.00	pH	BJB	09/12/2008	0076834-1	5.60
Specific Conductance	120.1[1]	240	1.0	umhos/cm	BKH	09/22/2008	0077106-1	<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	09/25/2008	0076983-1	<0.0040
Beryllium	6010B[2]	<0.00050	0.00050	mg/l	CS0	09/25/2008	0076983-1	<0.00050
Manganese	6010B[2]	0.047	0.010	mg/l	CS0	09/25/2008	0076983-1	<0.010
Sodium	6010B[2]	33	0.50	mg/l	CS0	09/25/2008	0076983-1	<0.50
Vanadium	6010B[2]	<0.010	0.010	mg/l	CS0	09/25/2008	0076983-1	<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.

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Lab Project ID: **08-6706**
Lab Sample ID: **0809-2257**
Client Sample ID: MW-39S
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 09/11/2008
Date Received: 09/12/2008

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	DLD	09/24/2008	0077349-1	<0.010
Cyanide (Total)	335.4(1)	5.4	0.11	mg/l	DLD	09/22/2008	0077289-1	<0.010
Fluoride	340.2(1)	150	1.0	mg/l	DJT	09/19/2008	0077081-1	<0.10
pH	150.1(1)	9.08	1.00	pH	BJB	09/12/2008	0076834-1	5.60
Specific Conductance	120.1(1)	3400	1.0	umhos/cm	BKH	09/22/2008	0077106-1	<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	09/25/2008	0076983-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	09/25/2008	0076983-1	<0.00050
Manganese	6010B(2)	0.094	0.010	mg/l	CS0	09/25/2008	0076983-1	<0.010
Sodium	6010B(2)	960	0.50	mg/l	CS0	09/25/2008	0076983-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	09/25/2008	0076983-1	<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.

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Lab Project ID: **08-6706**
Lab Sample ID: **0809-2258**
Client Sample ID: MW-44S
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 09/11/2008
Date Received: 09/12/2008

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	09/17/2008	0076878-1	<0.50
Aroclor-1221	8082[1]	<0.50	0.50	mg/l	RDJ	09/17/2008	0076878-1	<0.50
Aroclor-1232	8082[1]	<0.50	0.50	mg/l	RDJ	09/17/2008	0076878-1	<0.50
Aroclor-1242	8082[1]	<0.50	0.50	mg/l	RDJ	09/17/2008	0076878-1	<0.50
Aroclor-1248	8082[1]	<0.50	0.50	mg/l	RDJ	09/17/2008	0076878-1	<0.50
Aroclor-1254	8082[1]	<0.50	0.50	mg/l	RDJ	09/17/2008	0076878-1	<0.50
Aroclor-1260	8082[1]	<0.50	0.50	mg/l	RDJ	09/17/2008	0076878-1	<0.50
PCB Total-TCL	8082[1]	<0.50	0.50	mg/l	RDJ	09/17/2008	0076878-1	<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.

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Lab Project ID: **08-6706**
Lab Sample ID: **0809-2259**
Client Sample ID: MW-44D
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 09/11/2008
Date Received: 09/12/2008

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	09/17/2008	0076878-1	<0.50
Aroclor-1221	8082[1]	<0.50	0.50	mg/l	RDJ	09/17/2008	0076878-1	<0.50
Aroclor-1232	8082[1]	<0.50	0.50	mg/l	RDJ	09/17/2008	0076878-1	<0.50
Aroclor-1242	8082[1]	<0.50	0.50	mg/l	RDJ	09/17/2008	0076878-1	<0.50
Aroclor-1248	8082[1]	<0.50	0.50	mg/l	RDJ	09/17/2008	0076878-1	<0.50
Aroclor-1254	8082[1]	<0.50	0.50	mg/l	RDJ	09/17/2008	0076878-1	<0.50
Aroclor-1260	8082[1]	<0.50	0.50	mg/l	RDJ	09/17/2008	0076878-1	<0.50
PCB Total-TCL	8082[1]	<0.50	0.50	mg/l	RDJ	09/17/2008	0076878-1	<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.

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Lab Project ID: **08-6706**
Lab Sample ID: **0809-2260**
Client Sample ID: MW-56
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 09/11/2008
Date Received: 09/12/2008

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	DLD	09/24/2008	0077349-1	<0.010
Cyanide (Total)	335.4(1)	4.4	0.11	mg/l	DLD	09/22/2008	0077289-1	<0.010
Fluoride	340.2(1)	19	1.0	mg/l	DJT	09/19/2008	0077081-1	<0.10
pH	150.1(1)	8.58	1.00	pH	BJB	09/12/2008	0076834-1	5.60
Specific Conductance	120.1(1)	640	1.0	umhos/cm	BKH	09/22/2008	0077106-1	<1.0

Metals

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Trace Metals, Dissolved, ICP								
Arsenic	6010B(2)	0.0072	0.0040	mg/l	CS0	09/25/2008	0076983-1	<0.0040
Beryllium	6010B(2)	<0.00050	0.00050	mg/l	CS0	09/25/2008	0076983-1	<0.00050
Manganese	6010B(2)	0.10	0.010	mg/l	CS0	09/25/2008	0076983-1	<0.010
Sodium	6010B(2)	150	0.50	mg/l	CS0	09/25/2008	0076983-1	<0.50
Vanadium	6010B(2)	<0.010	0.010	mg/l	CS0	09/25/2008	0076983-1	<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.
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Lab Project ID: **08-6706**
Lab Sample ID: **0809-2261**
Client Sample ID: FB-1
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 09/11/2008
Date Received: 09/12/2008

General Chemistry

Test	Method	Result	Reporting Limit	Units	Analyst	Analysis Date	Method Blank ID	Blank Result
Cyanide (Total)	335.4[1]	<0.010	0.010	mg/l	DLD	09/22/2008	0077289-1	<0.010
Fluoride	340.2[1]	<0.10	0.10	mg/l	DJT	09/19/2008	0077081-1	<0.10
pH	150.1[1]	5.64	1.00	pH	BJB	09/12/2008	0076834-1	5.60
Specific Conductance	120.1[1]	1.3	1.0	umhos/cm	BKH	09/22/2008	0077106-1	<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	09/25/2008	0076983-1	<0.0040
Beryllium	6010B[2]	<0.00050	0.00050	mg/l	CS0	09/25/2008	0076983-1	<0.00050
Manganese	6010B[2]	<0.010	0.010	mg/l	CS0	09/25/2008	0076983-1	<0.010
Sodium	6010B[2]	<0.50	0.50	mg/l	CS0	09/25/2008	0076983-1	<0.50
Vanadium	6010B[2]	<0.010	0.010	mg/l	CS0	09/25/2008	0076983-1	<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	09/17/2008	0076878-1	<0.50
Aroclor-1221	8082[2]	<0.50	0.50	mg/l	RDJ	09/17/2008	0076878-1	<0.50
Aroclor-1232	8082[2]	<0.50	0.50	mg/l	RDJ	09/17/2008	0076878-1	<0.50
Aroclor-1242	8082[2]	<0.50	0.50	mg/l	RDJ	09/17/2008	0076878-1	<0.50
Aroclor-1248	8082[2]	<0.50	0.50	mg/l	RDJ	09/17/2008	0076878-1	<0.50
Aroclor-1254	8082[2]	<0.50	0.50	mg/l	RDJ	09/17/2008	0076878-1	<0.50
Aroclor-1260	8082[2]	<0.50	0.50	mg/l	RDJ	09/17/2008	0076878-1	<0.50
PCB Total-TCL	8082[2]	<0.50	0.50	mg/l	RDJ	09/17/2008	0076878-1	<0.50

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	JHC	09/19/2008	0077097-1	<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

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nelac

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
1638 Roseytown Rd
Suites 2, 3 & 4
Greensburg, PA 15601
Phone: 724.850.5600
Fax: 724.850.5601

Mr. Robert L. Fargo (Principal/Senior Consultant)
Hydro Systems Management, Inc.
P.O. Box 789
Washington, PA 15301

Lab Project ID: **08-6706**
Lab Sample ID: **0809-2262**
Client Sample ID: Trip Blank
Sample Matrix: Aqueous

Client Site: Reduction Mill
Client Ref.: HM00324

Date Sampled: 09/11/2008
Date Received: 09/12/2008

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	JHC	09/19/2008	0077097-1	<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
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nelac

Metals

Metals Analysis - ICP

Parameter	Chemical Symbol	EPA or Standard Method	SW846 Method	Holding Time	Bottle Type and Volume	Preservative
Arsenic	As	200.7	6010	6 Months	250ml Plastic	Nitric Acid
Beryllium	Be	200.7	6010	6 Months	250ml Plastic	Nitric Acid
Manganese	Mn	200.7	6010	6 Months	250ml Plastic	Nitric Acid
Sodium	Na	200.7	6010	6 Months	250ml Plastic	Nitric Acid
Vanadium	V	200.7	6010	6 Months	250ml Plastic	Nitric Acid

Pace Analytical

Metals Data Reporting Form

Laboratory Control Sample Results

Lab Sample ID: QC76983LCS

Matrix: Water **Units:** ug/L **Prep Date:** 9/18/2008 **Prep Batch:** 76983

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	515	103.0		80-120	1	ICP	9/25/2008	17:21
Beryllium	313.042	500	515	103.0		80-120	1	ICP	9/25/2008	17:21
Manganese	257.61	500	505	101.0		80-120	1	ICP	9/25/2008	17:21
Sodium	330.232	5000	4790	95.7		80-120	1	ICP	9/25/2008	17:21
Vanadium	292.402	500	503	100.5		80-120	1	ICP	9/25/2008	17:21

Comments: QC Data for 08-6706

U Result is less than the MDL
B Result is between MDL and RL

Form 7 Equivalent

Pace Analytical

Metals Data Reporting Form

Matrix Spike Sample Results

Spike Sample ID: QC76983MS D

Original Sample ID: 6706-0809-2246 D **Client ID:** MW-2

Matrix: Water **Units:** ug/L **Prep Date:** 9/18/2008 **Prep Batch:** 76983

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	44.2		554		500	101.9	1	1	ICP	9/25/2008	17:27	9/25/2008	17:33
Beryllium	313.0	0.43	B	512		500	102.2	1	1	ICP	9/25/2008	17:27	9/25/2008	17:33
Manganese	257.6	512		1000		500	98.2	1	1	ICP	9/25/2008	17:27	9/25/2008	17:33
Sodium	330.2	291000		296000	NC	5000		1	1	ICP	9/25/2008	17:27	9/25/2008	17:33
Vanadium	292.4	27.5		528		500	100.1	1	1	ICP	9/25/2008	17:27	9/25/2008	17:33

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 5A Equivalent

Pace Analytical

Metals Data Reporting Form

Matrix Spike Duplicate Sample Results

Spike Sample ID: QC76983MSD

Original Sample ID: 6706-0809-2246 D **Client ID:** MW-2

Matrix: Water **Units:** ug/L **Prep Date:** 9/18/2008 **Prep Batch:** 76983

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	44.2		552		500	101.5	1	1	ICP	9/25/2008	17:27	9/25/2008	17:36
Beryllium	313.0	0.43	B	511		500	102.1	1	1	ICP	9/25/2008	17:27	9/25/2008	17:36
Manganese	257.6	512		1010		500	99.2	1	1	ICP	9/25/2008	17:27	9/25/2008	17:36
Sodium	330.2	291000		300000	NC	5000		1	1	ICP	9/25/2008	17:27	9/25/2008	17:36
Vanadium	292.4	27.5		528		500	100.0	1	1	ICP	9/25/2008	17:27	9/25/2008	17:36

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 5A Equivalent

Pace Analytical

Metals Data Reporting Form

Matrix Spike Duplicate RPD Report

Matrix Spike Duplicate Sample ID: QC76983MSD

Matrix Spike Sample ID: QC76983MS D **Client ID:** MW-2

Matrix: Water **Units:** ug/L **Prep Date:** 9/18/2008 **Prep Batch:** 76983

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	554		552		0.4	1	1	ICP	9/25/2008	17:33	9/25/2008	17:36
Beryllium	313.042	512		511		0.1	1	1	ICP	9/25/2008	17:33	9/25/2008	17:36
Manganese	257.61	1000		1010		0.5	1	1	ICP	9/25/2008	17:33	9/25/2008	17:36
Sodium	330.232	296000	NC	300000	NC	1.3	1	1	ICP	9/25/2008	17:33	9/25/2008	17:36
Vanadium	292.402	528		528		0.1	1	1	ICP	9/25/2008	17:33	9/25/2008	17:36

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

Volatiles

Volatiles Analysis

Parameter	EPA or Standard Method	SW846 Method	Holding Time	Bottle Type and Volume	Preservative
Tetrachloroethene	624	8260	14 Days	3/ 40ml Vials	Hydrochloric Acid

Pace Analytical Report of Quality Control

Project: 08-6706 Volatiles

Laboratory Control Sample												
Parameter	Method	Batch	Units	MB Found	LCS Spike	LCS Found	LCS %Rec	QC Limits	LCSD Found	LCSD %Rec	LCS RPD	Max RPD
Tetrachloroethene	MS VOC 8260 Aqu	77097	ppm	0.0	20	19.76	98.78	70-130	21.29	106.46	7.5	30

* Denotes recovery outside of QC limits.

Summary of LCS Batches for Project 08-6706

Batch	Analyzed	Samples
77097	09/22/2008	0809-2246 0809-2247 0809-2250 0809-2252 0809-2261 0809-2262

Organic Prep

Pace Analytical Services, Inc.-PGH

Matrix: H_2O Pest | PCB

LIMS QC Batch #: 76877 | 76878

Analytical Method: Pest 8081 | PCB 8082

Extraction Method: 3510

Solvent	Lot #				
CH_2Cl_2	XI 134-01 P	NaOH	XI 125-04 A		
Hexane	XI 134-03 C	H_2SO_4	XI 134-05		
Na_2SO_4	XI 132-03	Surrogate: XI 131-06, 1 ppm, 0.5 ml			
		Matrix Spike: XI 105-03, 2.5 ppm, 0.5 ml (PCB) * used 0.5ml			
		Matrix Spike: XI 115-04, 0.4 ppm, 1.0 ml (Pest)			

vs 1.0 ml as SOP reads use 9/15/08

Date	Project #	Sample ID	Analyst	Initial Volume	Final Volume	pH 5-9	Comments
9/15/08	6650	BLK	DL	1 L	5 ml	✓	
		LCS PCB		1 L			
		LCSD PCB		1 L			
		LCS Pest		1 L			
		LCSD Pest		1 L			insufficient sample provided for MS/MSD
		1911 C		950 ml			Pest only, added H_2SO_4
	6672	2012 A		1 L			* Sample volume taken from 1 Gallon Jar, added NaOH
	6706	2248 B		965 ml			PCB only
		2258 A		975 ml			
		2259 A		975 ml			
		2261 B		960 ml			

9/16/08

Peer Review DL 9/16/08

Polychlorinated Biphenyls

PCB Analysis

Parameter	EPA or Standard Method	SW846 Method	Holding Time	Bottle Type and Volume	Preservative
Aroclor-1016	608	8082	7/30 days*	Liter Glass Amber	None
Aroclor-1221	608	8082	7/30 days*	Liter Glass Amber	None
Aroclor-1232	608	8082	7/30 days*	Liter Glass Amber	None
Aroclor-1242	608	8082	7/30 days*	Liter Glass Amber	None
Aroclor-1248	608	8082	7/30 days*	Liter Glass Amber	None
Aroclor-1254	608	8082	7/30 days*	Liter Glass Amber	None
Aroclor-1260	608	8082	7/30 days*	Liter Glass Amber	None
PCB Total-TCL	608	8082	7/30 days*	Liter Glass Amber	None

*7/30 days = 7 days for extraction, 30 days for analysis on extract

[illegible]

Lab Name: Contract:

Lab Code: Case No.: 08-6706 SAS No.: SDG No.: 08-6706

Matrix Spike - Sample No.: LCS

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	LCS CONCENTRATION (mg/Kg)	LCS % REC #	QC. LIMITS REC.
Aroclor-1016	1.25		1.23	98	55-145
Aroclor-1260	1.25		1.43	114	55-145

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Aroclor-1016	1.25	1.21	97	1	25	55-145
Aroclor-1260	1.25	1.40	112	2	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 2 outside limits
Spike Recovery: 0 out of 4 outside limits

COMMENTS: Project 08-6706 is associated with the QC from 08-6650.

2E

WATER AROCLOR SURROGATE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: 08-6706 SAS No.: SDG No.: 08-6706

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	MW12	80	79					0
02	MW44S	90	86					0
03	MW44D	90	79					0
04	FB1	82	47					0
05	LCS	85	75					0
06	LCSD	87	71					0
07	BLK	78	87					0
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

General Chemistry

General Chemistry

Parameter	EPA or Standard Method	SW846 Method	Holding Time	Bottle Type and Volume	Preservative
Cyanide (Amenable)	335.1		14 days	250ml Plastic*	Sodium Hydroxide
Cyanide (Total)	335.2	4500-CN	14 days	250ml Plastic*	Sodium Hydroxide
Fluoride	340.1	4500-Fl	28 days	500ml Plastic**	None
pH	150.1	9040/9045	Immediate	500ml Plastic**	None
Specific Conductance	120.1	9050	28 days	500ml Plastic**	None

*Cyanide Total and Amenable are analyzed from the same bottle.
**Fluoride, pH, and Specific Conductance are analyzed from the same bottle.

Pace Analytical Report of Quality Control

Project: 08-6706 General Chemistry

Laboratory Control Sample								
Parameter	Method	Batch	Units	MB Found	LCS Spike	LCS Found	LCS %Rec	QC Limits
pH	150.1	76834	pH	5.60	7	7.02	100.29*	0- 0
Fluoride	340.2	77030	ppm	0.0	2	2.08	104.00	85-115
Fluoride	340.2	77081	ppm	0.0	2	1.92	96.00	85-115
Cyanide (Total)	335.4	77206	ppm	0.0	0.2	0.18	88.70*	0- 0
Cyanide (Total)	335.4	77289	ppm	0.00080	0.2	0.19	93.10*	0- 0

* Denotes recovery outside of QC limits.

Summary of LCS Batches for Project 08-6706

Batch	Analyzed	Samples
76834	09/15/2008	0809-2246 0809-2247 0809-2248 0809-2249 0809-2250 0809-2251 0809-2252 0809-2253 0809-2254 0809-2255 0809-2256 0809-2257 0809-2260 0809-2261
77030	09/19/2008	0809-2246 0809-2247
77081	09/22/2008	0809-2248 0809-2249 0809-2250 0809-2251 0809-2252 0809-2253 0809-2254 0809-2255 0809-2256 0809-2257 0809-2260 0809-2261
77206	09/24/2008	0809-2246 0809-2247 0809-2248 0809-2249 0809-2250 0809-2251 0809-2252
77289	09/25/2008	0809-2253 0809-2254 0809-2255 0809-2256 0809-2257 0809-2260 0809-2261

Pace Analytical Report of Quality Control

Project: 08-6706 General Chemistry

Matrix Spike Sample								
Parameter	Method	Batch	Units	Sample Found	MS Spike	MS Found	MS %Rec	QC Limits
Fluoride	340.2	77030	ppm	0.14	4	4.12	99.43	85-115
Fluoride	340.2	77081	ppm	1.7	4	5.77	101.75	85-115
Cyanide (Total)	335.4	77206	ppm	4.4	5	0.10	-86.33*	85-115
Cyanide (Total)	335.4	77289	ppm	0.0054	0.1	0.08	76.60*	85-115

* Denotes recovery outside of QC limits.

Summary of MS Batches for Project 08-6706

Batch	Analyzed	Samples
77030	09/19/2008	0809-2246 0809-2247
77081	09/22/2008	0809-2248 0809-2249 0809-2250 0809-2251 0809-2252 0809-2253 0809-2254 0809-2255 0809-2256 0809-2257 0809-2260 0809-2261
77206	09/24/2008	0809-2246 0809-2247 0809-2248 0809-2249 0809-2250 0809-2251 0809-2252
77289	09/25/2008	0809-2253 0809-2254 0809-2255 0809-2256 0809-2257 0809-2260 0809-2261

Chain of Custody

Pace Analytical
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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

YOUR FORM LEAVES NO SPACE TO WRITE. THIS IS RIDICULOUS!

Page: 1 of 2

1208138

Section A Required Client Information:

Company:	HYDROSYSTEMS MGMT. INC.
Address:	P.O. BOX 789 WASHINGTON, PA 15301
Email To:	rfargo@HMICONSULTING.COM
Phone:	724-228-4310
Requested Due Date/TAT:	STD.

Section B Required Project Information:

Report To:	BOB FARGO
Copy To:	
Purchase Order No.:	
Project Name:	
Project Number:	HM00324

Section C Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote Reference:	SAME
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY

NPDES | GROUND WATER | DRINKING WATER | UST | RCRA | OTHER

Site Location STATE:

Section D Required Client Information

Matrix Codes MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil-Solid SL, Oil OL, Wipe WP, Air AR, Tissue TS, Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N)	~~500 mL Plastic - Metals~~	~~250 mL~~	500 mL Plastic - GEN CHEM	250 mL Plastic - CN	250 mL Plastic - Metals	1L Amber - PCBs	40 mL Glass - VOC	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-2	WT				9-11	1115		6	1		1	3	1							1	1	1		3		0809-2246
2	MW-5						945		6	1		1	3	1							1	1	1		3		47
3	MW-12						1420		4	2		1		1							1	1	1	1			48
4	MW-16						1140		3	1		1		1							1	1	1				49
5	MW-18						1230		6	1		1	3	1							1	1	1		3		50
6	MW-28						1200		3	1		1		1							1	1	1				51
7	MW-31						1500		6	1		1	3	1							1	1	1		3		52
8	MW-32						1645		3	1		1		1							1	1	1				53
9	MW-35						1540		3	1		1		1							1	1	1				54
10	MW-36						1630		3	1		1		1							1	1	1				55
11	MW-37						1600		3	1		1		1							1	1	1				56
12	MW-39-5						1440		3	1		1		1							1	1	1				57

08-06706

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Erik Fargo	9/12/08	1:15	C Urbowsky Pace	9.12.08	1:15	34	Y	N	Y

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: ROBERT L. FARGO

SIGNATURE of SAMPLER: Robert L. Fargo

DATE Signed (MM/DD/YY): 9/12/08

*Important Note. By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q 020rev 07, 15 May 2007

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately

Page: 2 of 2

1208139

Section A Required Client Information:

Company: HYDROSYSTEMS MGMT. INC.
Address: P.O. BOX 789
WASHINGTON, PA 15301
Email To: RFARGO@HMICONSULTING.COM
Phone: 724-228-4310 Fax:
Requested Due Date/TAT: STD.

Section B Required Project Information:

Report To: BOB FARGO
Copy To
Purchase Order No.:
Project Name:
Project Number: HM00324

Section C Invoice Information:

Attention:
Company Name: SAME
Address:
Pace Quote Reference:
Pace Project Manager
Pace Profile #:

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER
UST RCRA OTHER

Site Location STATE:

Section D Required Client Information

Matrix Codes MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Tissue TS, Other OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N)	500 mL Plastic - Geo. Chem.	250 mL Plastic - CN	250 mL Plastic - Metals	1L Amber - PCB	40 mL Glass - VOC	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-44S	WT				9-11	1040		1	1												1			08-09-2258
2	MW-44D						1020		1	1												1			59
3	MW-56						1640		3	1		1		1					1	1	1				60
4	FB-1						1700		7	2		1	3	1					1	1	1	1	3		61
5																									TB 62
6																									
7																									
8																									
9																									
10																									
11																									
12																									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Bob Fargo	9/12/08	1:15	C Urowitz Pace	9.12.08	1:15	3.4	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: ROBERT L. FARGO

SIGNATURE of SAMPLER: Robert L. Fargo DATE Signed (MM/DD/YY): 9/12/08

Temp in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

APPENDIX C

DATA VALIDATION SUMMARY REPORT FOR 2008 MONITORING EVENTS

March 2008 SAMPLING EVENT
PACE ANALYTICAL SERVICES, INC. PROJECT #08-1940

General

Holding Time
All holding times met, except pH and specific conductance. Specific conductance and pH also measured in field at time of sample collection.

Field Blank
All results below detection.

Trip Blank
All results below detection.

Field Duplicate RPD
MW-39S and MW-39E
All RPD values <10%, except cyanide (total): RPD = 22.86%
No qualification of results deemed warranted.

MW-32 and MW-32E
All RPD values <10%, except cyanide (total): RPD = 17.91%
No qualification of results deemed warranted.

Metals

MS/MSD
All results within acceptable range.
RPD for sodium calculated to be 1.9%, not 1.5% as indicated in lab report.

LCS
Sodium recovery of 124.8%, slightly outside QC limits of 80-120%
No qualification of results deemed warranted.

Volatiles

Monitoring Compound Recovery
MW-2: 1, 2-Dichloroethane-d4 recovery of 134% outside QC limits of 70-130%
MW-5: 1, 2-Dichloroethane-d4 recovery of 132% outside QC limits of 70-130%
MW-18: 1, 2-Dichloroethane-d4 recovery of 134% outside QC limits of 70-130%
No qualification of results deemed warranted.

LCS
All results within acceptable range.

PCBs

Extraction and analysis times met

Surrogate Recovery
All recovery values within control limits

LCS
Spike recovery and RPD values within control limits

JUNE 2008 SAMPLING EVENT
PACE ANALYTICAL SERVICES, INC. PROJECT #08-4302

General

Holding Time
All holding times met, except pH. pH also measured in field at time of sample collection.

Trip Blank
All results below detection.

Field Duplicate RPD
MW-2/MW-52
All RPD values ≤ 10%, except CN (Amenable): RPD = 21.43%
No qualification of results deemed warranted.

MW-15/MW-55
All RPD values ≤ 10%, except CN (Total): RPD = 11.76% and CN (Amenable): RPD = 55.71%
No qualification of CN (Total) result deemed warranted.
CN (Amenable) regarded as estimated.

Metals

MS/MSD
All results within acceptable range.

LCS
All results within acceptable range.

Volatiles

LCS
All LCS recovery values within limits.

PCBs

Extraction and analysis holding times met.

Surrogate Recovery
All values within control limits.

LCS
Aroclor-1016 RPD = 40%
Aroclor-1016 not a constituent of interest at site.

General Chemistry

LCS
Cyanide (Total) #1 recovery of 216.5% outside QC limits of 85-115% for Batch 74011.
Batch 74011: MW-1, 2, 5, 11, 29S, 40D
Detections of CN(Total) for Batch 74011 samples qualified as estimated (J).

MS
Cyanide (Total) #2 recovery of -5558.7% with QC limits of 0-0%
See note above for LCS.

SEPTEMBER 2008 SAMPLING EVENT
PACE ANALYTICAL SERVICES, INC. PROJECT #08-6706

General

Holding Time
All sample holding times met, except pH. pH measured in field at time of sample collection.

Field Blank
All results below detection.

Trip Blank
All results below detection.

Field Duplicate RPD
MW-36/MW-56
Cyanide (Amenable) RPD = 175%
As RPD = 48.28%
Na RPD = 22.22%
No qualification of As or Na results deemed warranted.
CN (Amenable) results qualified as estimated (J).

Metals

LCS
All LCS recovery values within limits.

MS/MSD
All MS and MSD results and RPD values within limits.

Volatiles

LCS
All LCS recovery values within limits.

PCBs

Extraction and analysis holding times met.

LCS
All LCS recovery values within limits.

Surrogate Recovery
All recovery values within control limits.

General Chemistry

LCS
All LCS recovery values within limits.

MS
Cyanide (total) recovery of 76.6% below QC limits of 85-115%

No qualification of results deemed warranted.

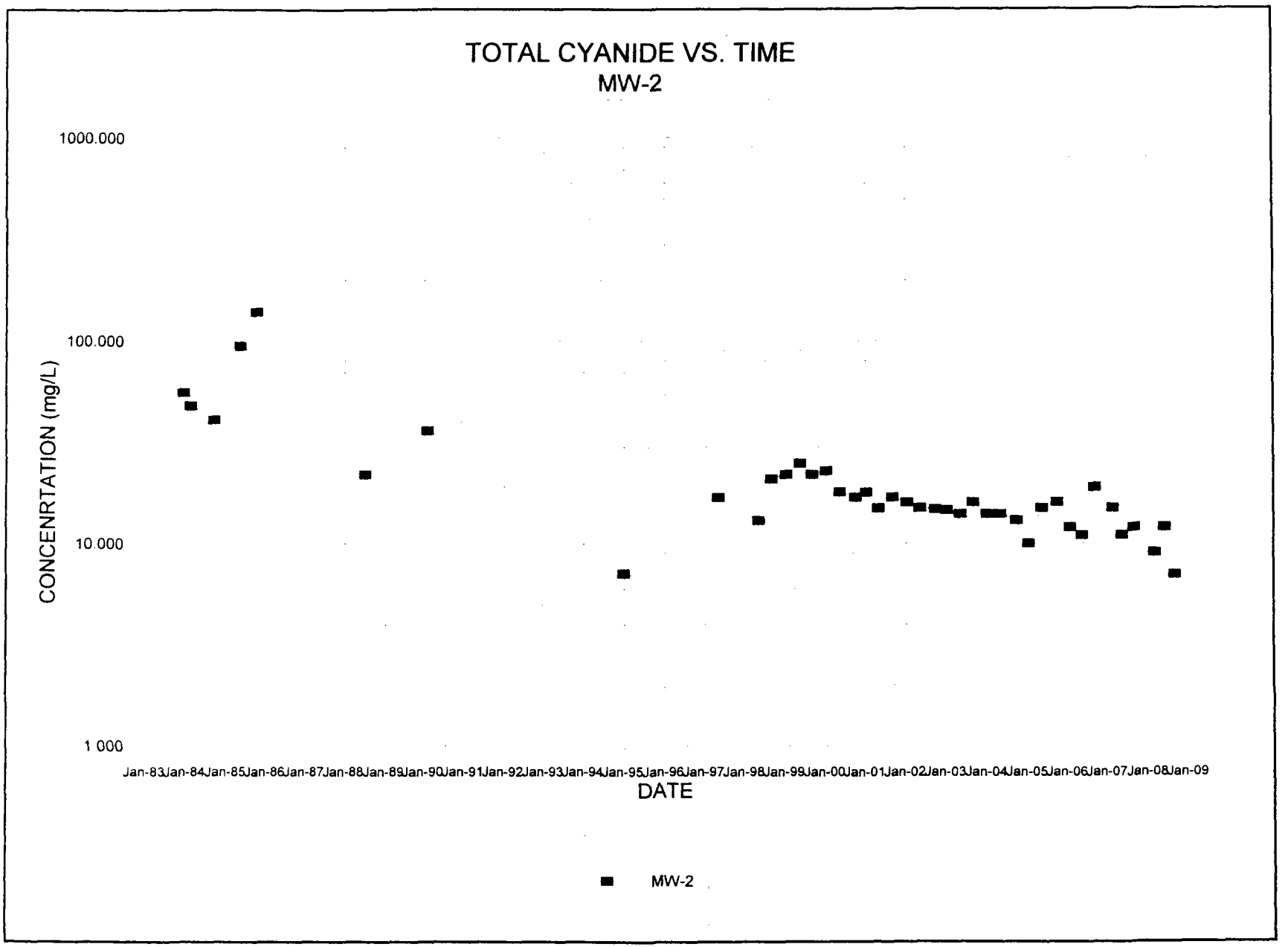
APPENDIX D

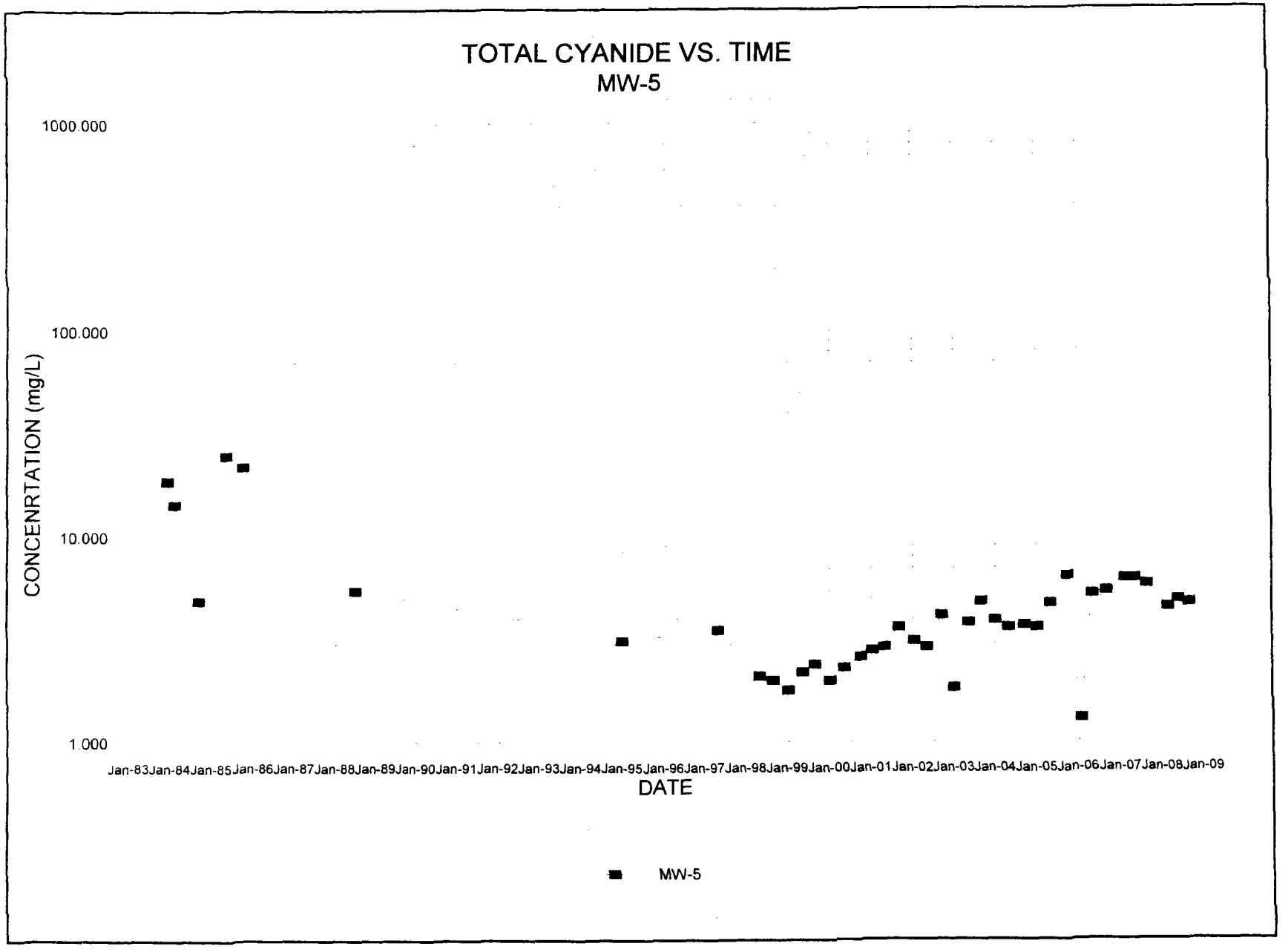
CONCENTRATION VS. TIME GRAPHS FOR REMEDIAL ACTION MONITORING PARAMETERS

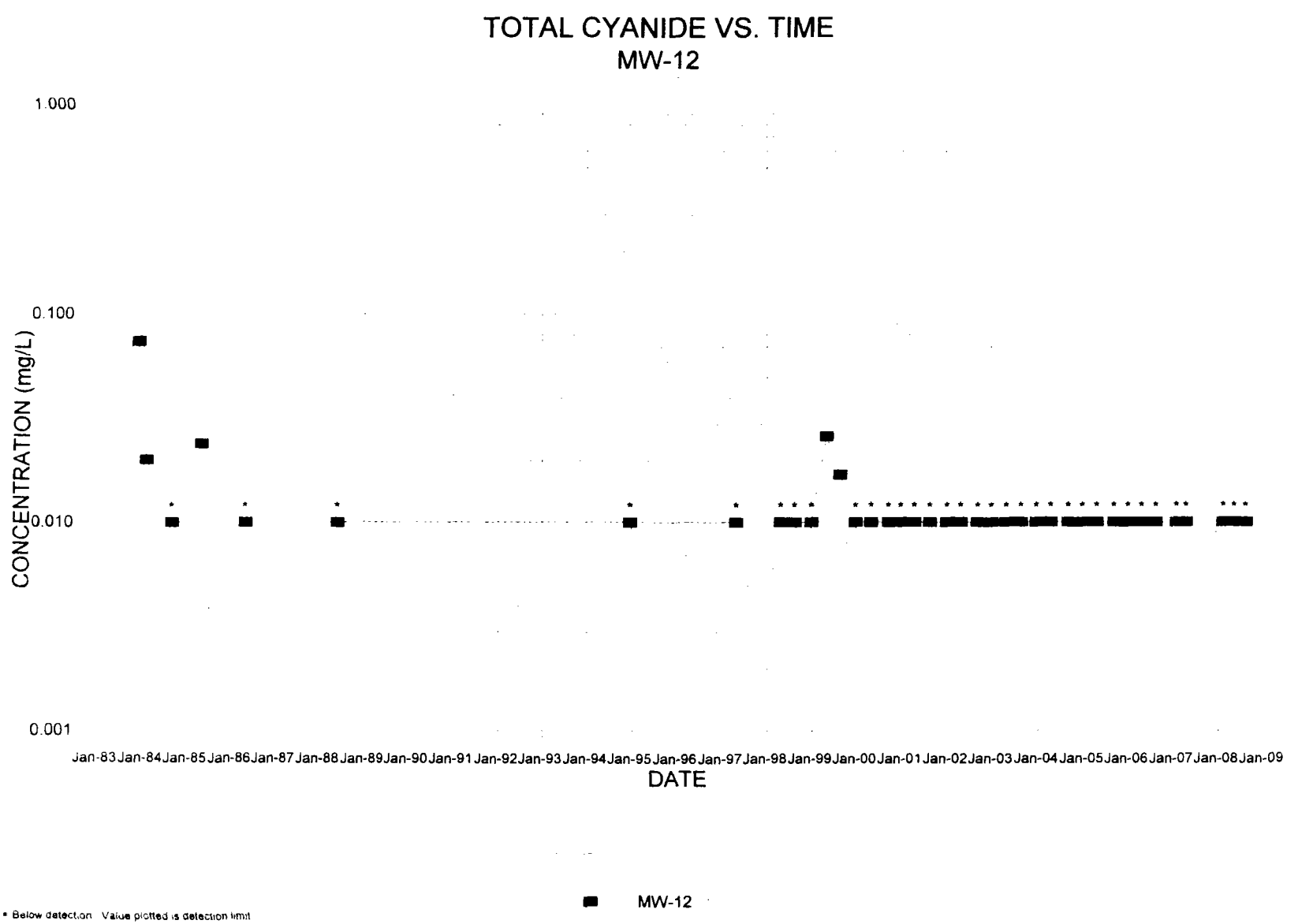
Appendix D-1	Total Cyanide
Appendix D-2	Cyanide Amenable to Chlorination
Appendix D-3	Fluoride
Appendix D-4	Arsenic
Appendix D-5	Beryllium
Appendix D-6	Manganese
Appendix D-7	Vanadium
Appendix D-8	Tetrachloroethene
Appendix D-9	Sodium

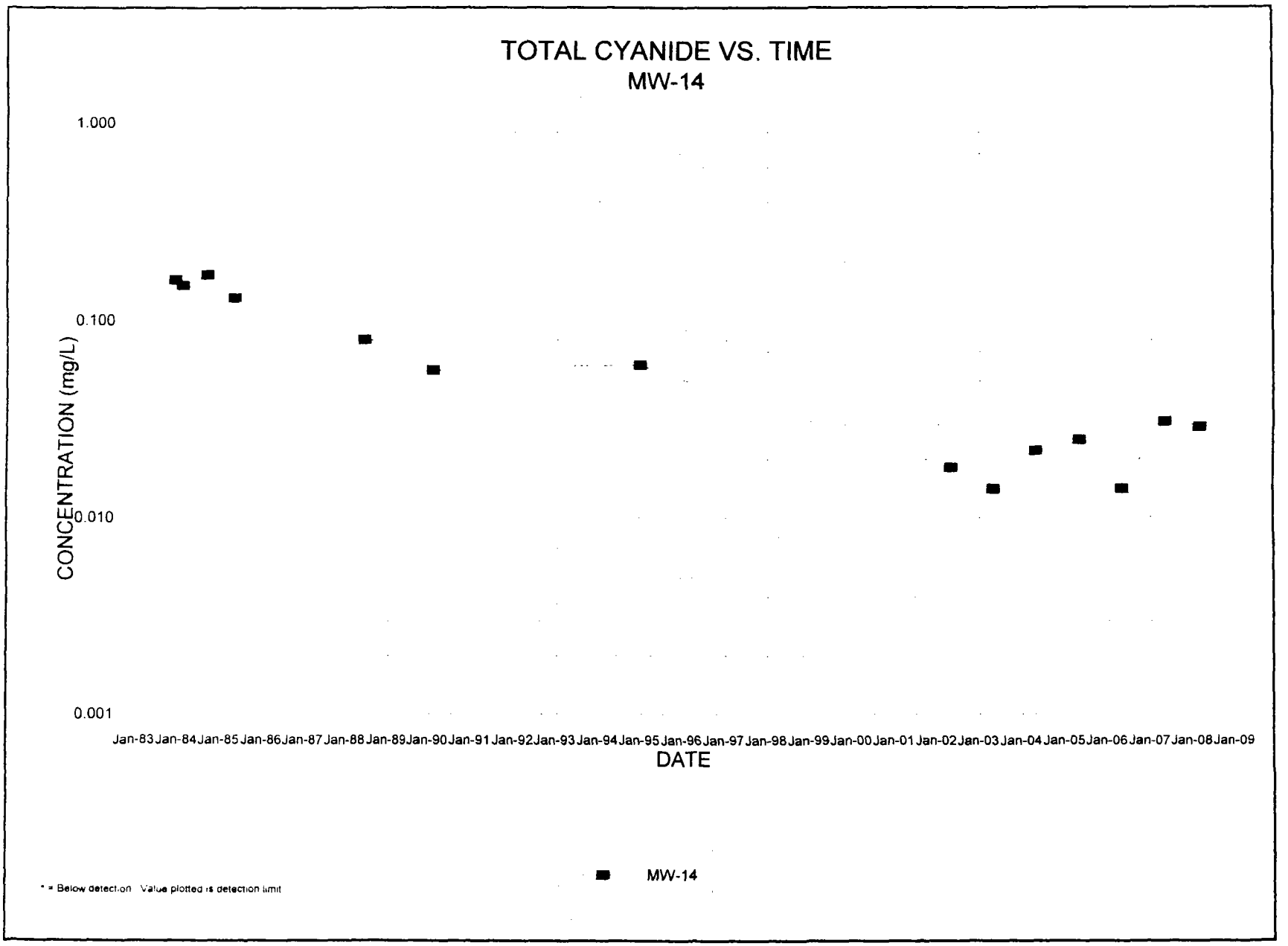
APPENDIX D-1

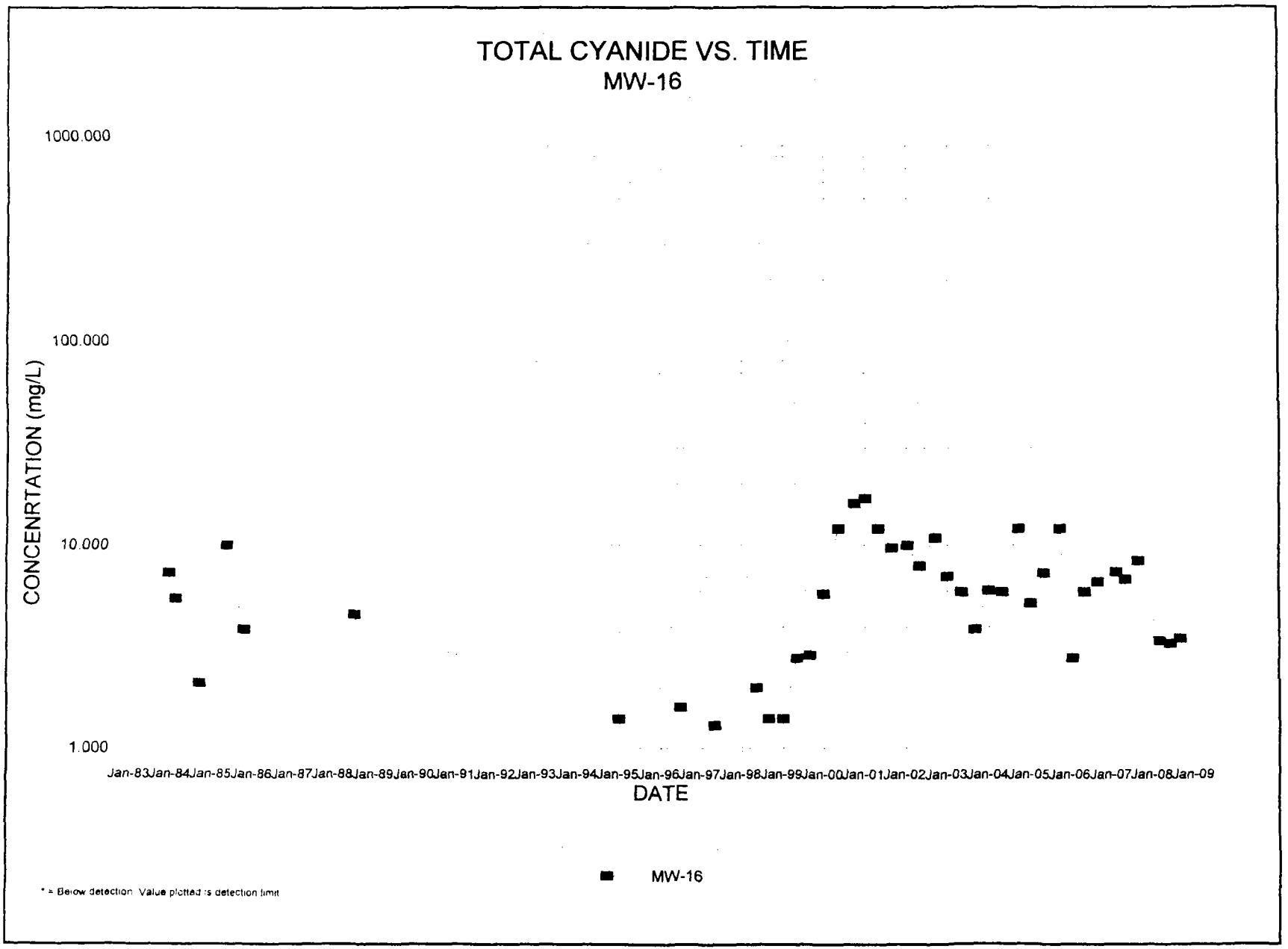
TOTAL CYANIDE

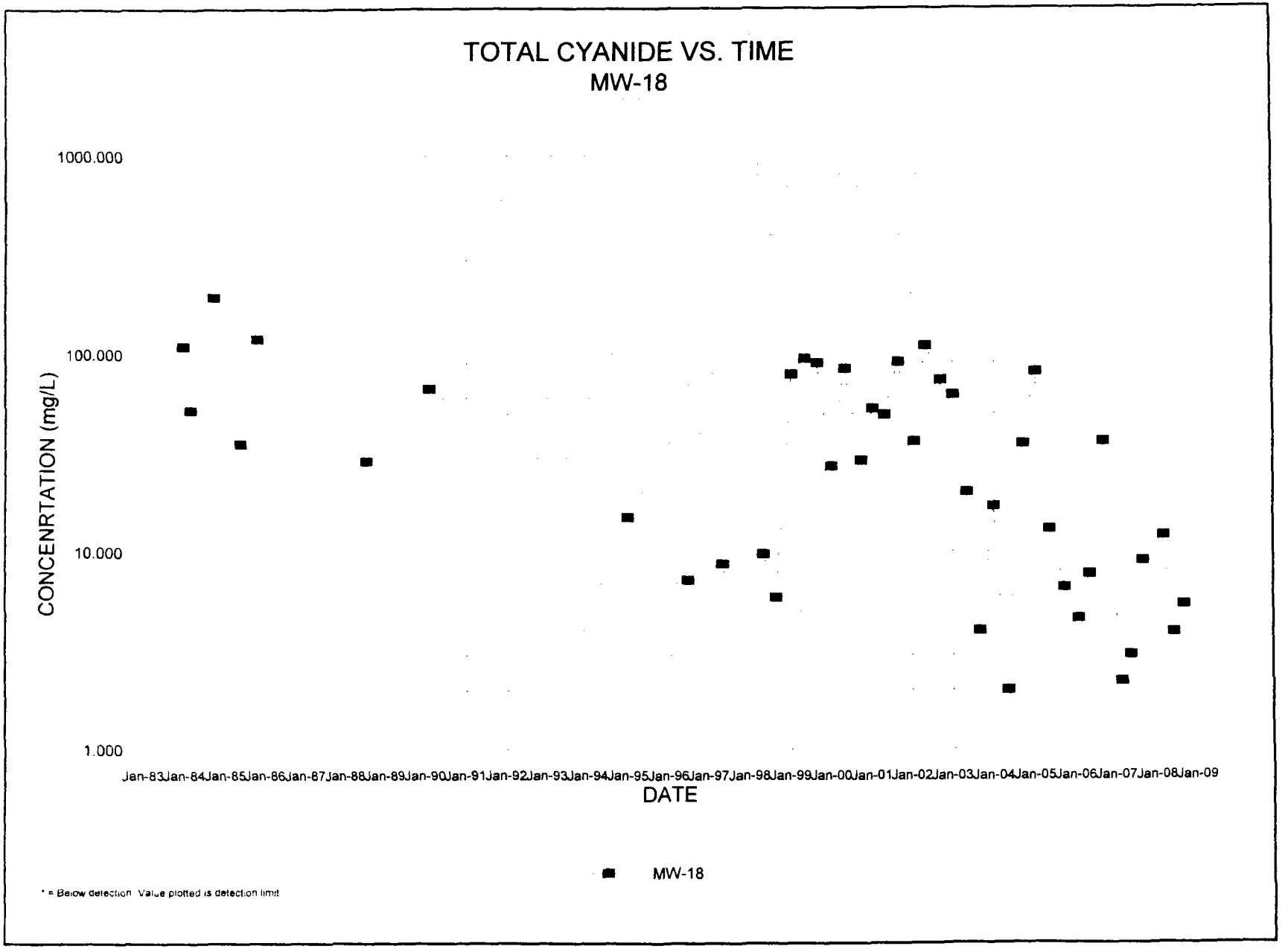

TOTAL CYANIDE VS. TIME
MW-2
1000.000
100.000
10.000
1.000
CONCENRTATION (mg/L)
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
DATE
MW-2

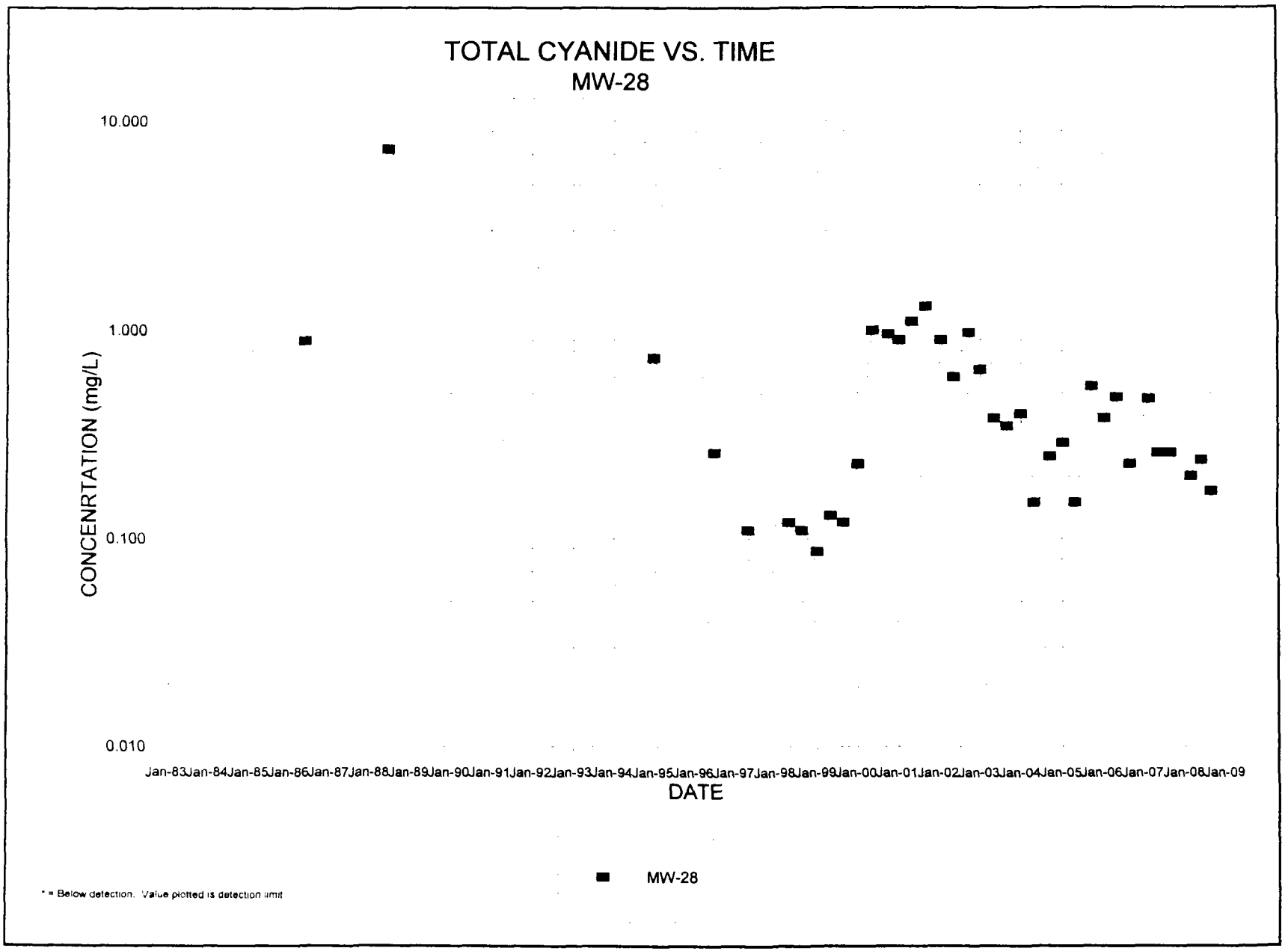

TOTAL CYANIDE VS. TIME
MW-5
1000.000
100.000
10.000
1.000
CONCENRTATION (mg/L)
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
DATE
MW-5

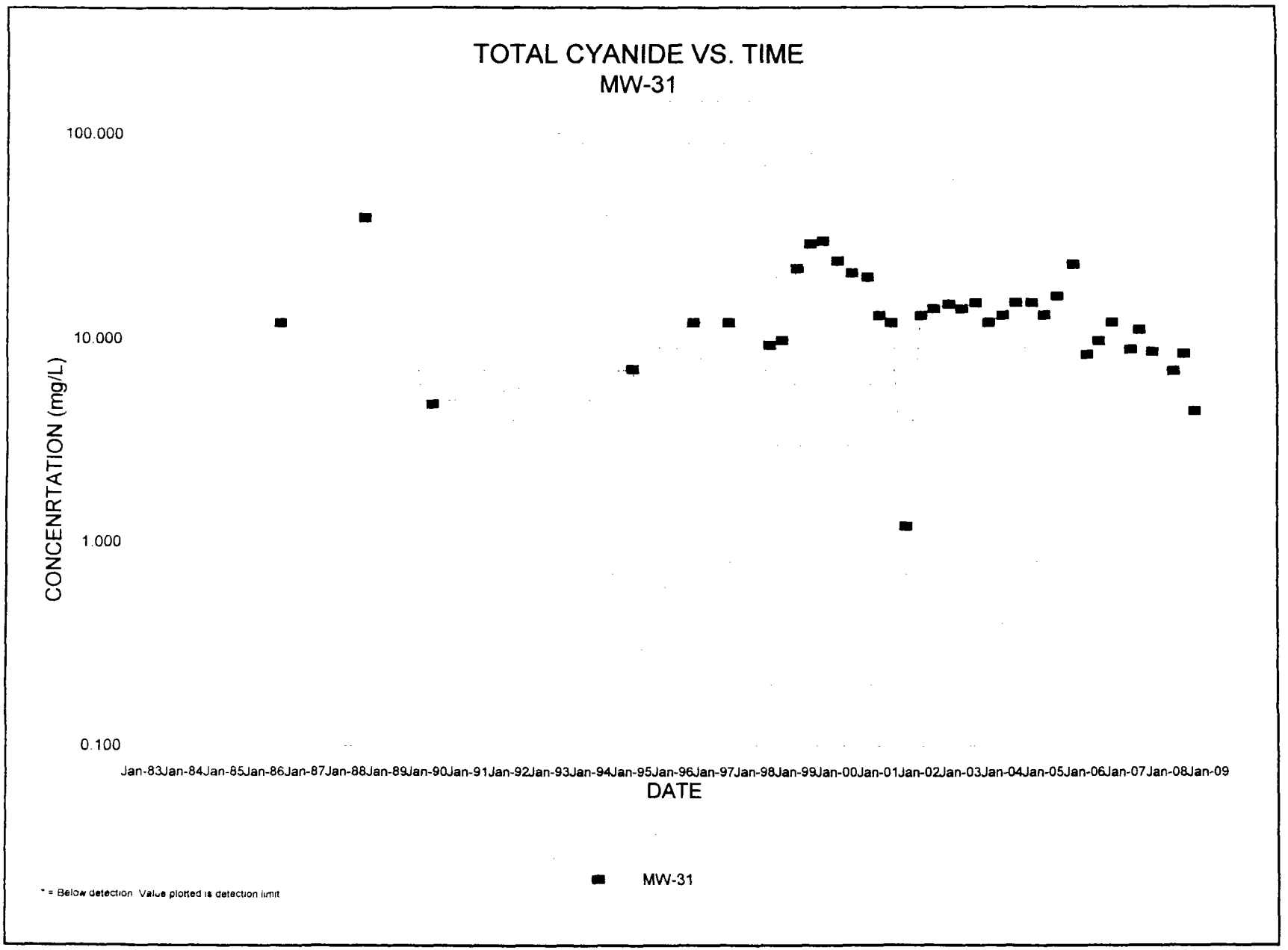

TOTAL CYANIDE VS. TIME
MW-12
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-12
* = Below detection. Value plotted is detection limit

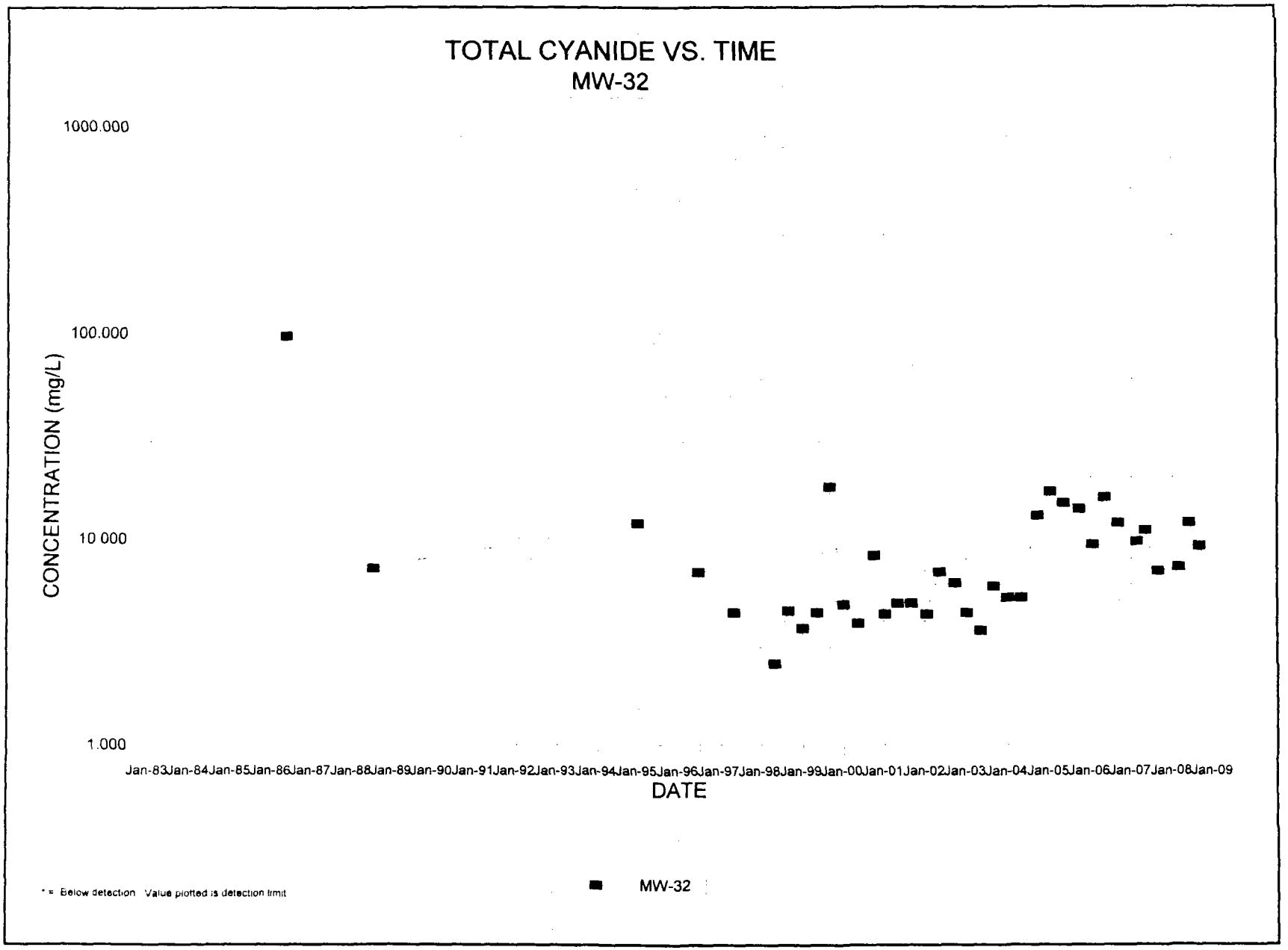

TOTAL CYANIDE VS. TIME
MW-14
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-14
* = Below detection. Value plotted is detection limit

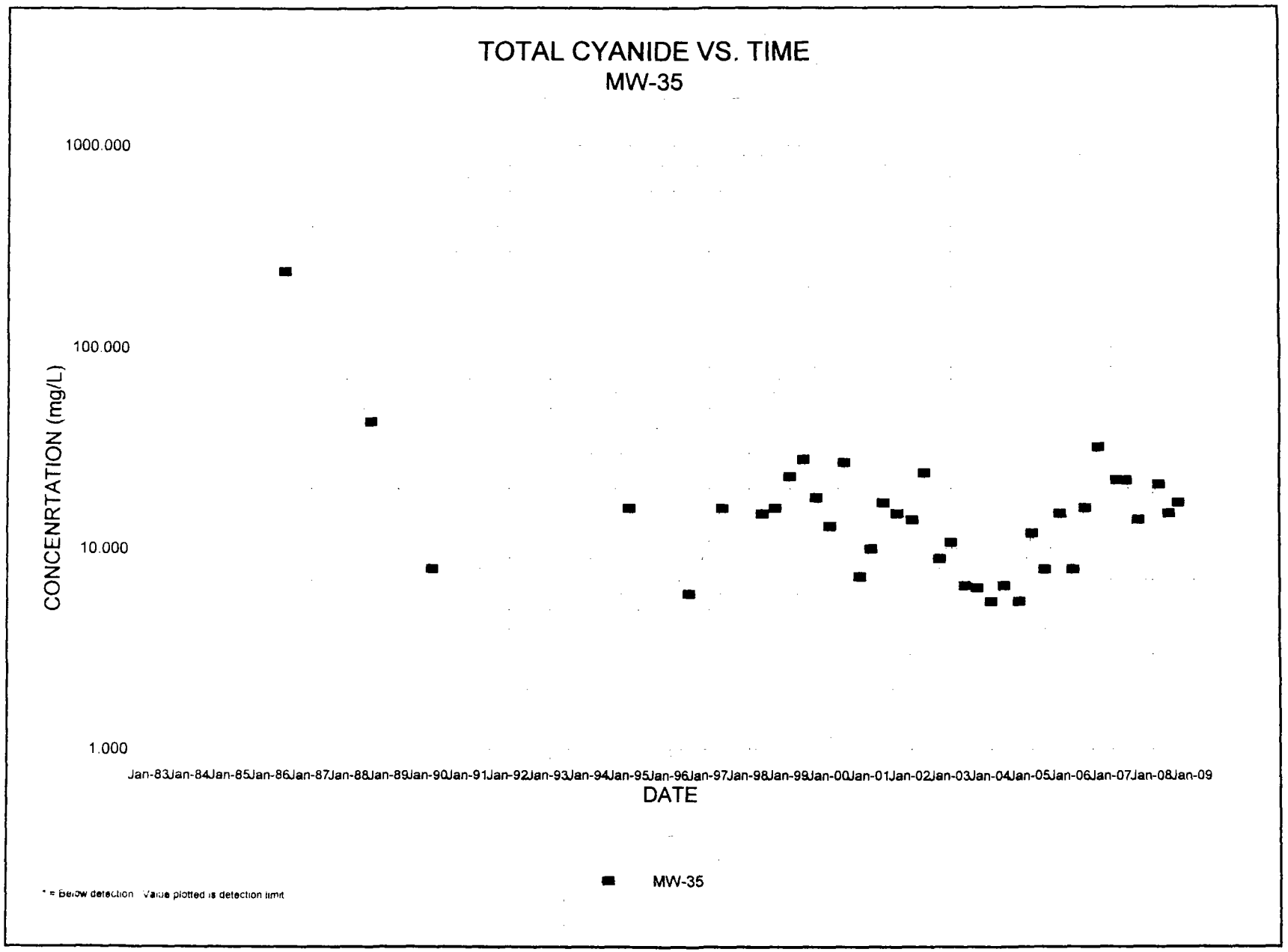

TOTAL CYANIDE VS. TIME
MW-16
1000.000
100.000
10.000
1.000
CONCENRTATION (mg/L)
Jan-83Jan-84Jan-85Jan-86Jan-87Jan-88Jan-89Jan-90Jan-91Jan-92Jan-93Jan-94Jan-95Jan-96Jan-97Jan-98Jan-99Jan-00Jan-01Jan-02Jan-03Jan-04Jan-05Jan-06Jan-07Jan-08Jan-09
DATE
MW-16
* = Below detection. Value plotted is detection limit

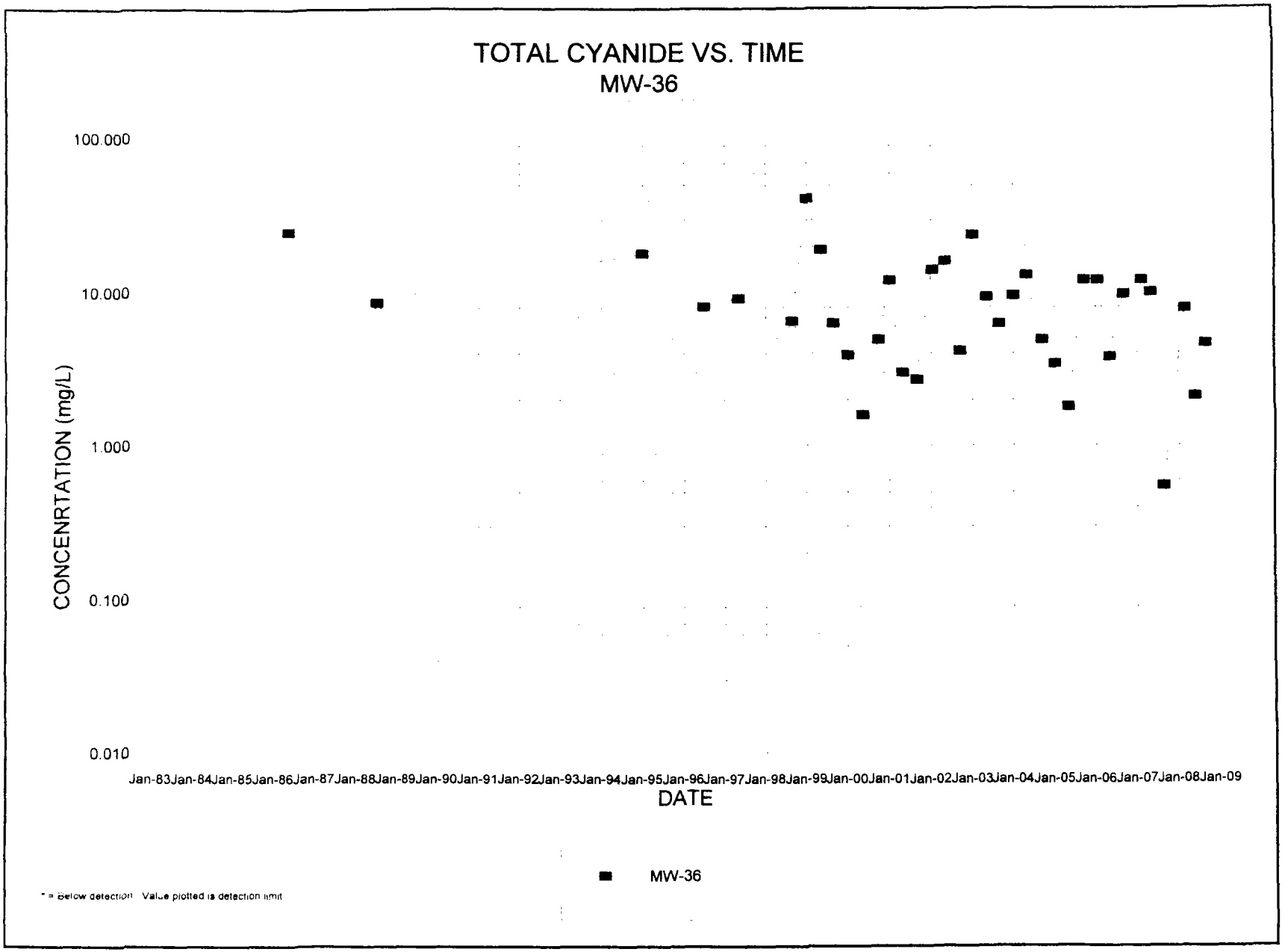

TOTAL CYANIDE VS. TIME
MW-18
1000.000
100.000
10.000
1.000
CONCENRTATION (mg/L)
Jan-83Jan-84Jan-85Jan-86Jan-87Jan-88Jan-89Jan-90Jan-91Jan-92Jan-93Jan-94Jan-95Jan-96Jan-97Jan-98Jan-99Jan-00Jan-01Jan-02Jan-03Jan-04Jan-05Jan-06Jan-07Jan-08Jan-09
DATE
MW-18
* = Below detection. Value plotted is detection limit

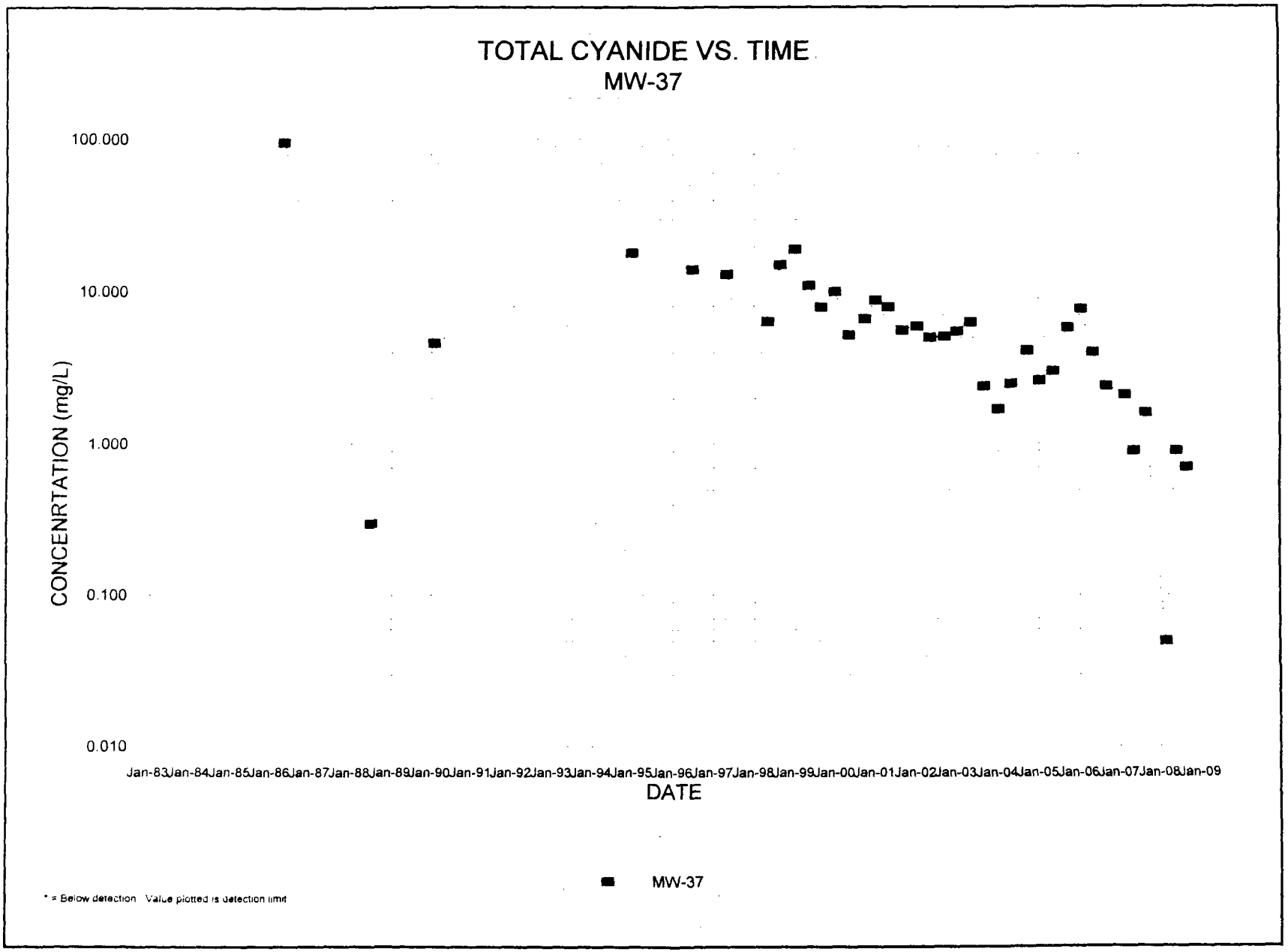

TOTAL CYANIDE VS. TIME
MW-28
10.000
1.000
0.100
0.010
CONCENRTATION (mg/L)
Jan-83Jan-84Jan-85Jan-86Jan-87Jan-88Jan-89Jan-90Jan-91Jan-92Jan-93Jan-94Jan-95Jan-96Jan-97Jan-98Jan-99Jan-00Jan-01Jan-02Jan-03Jan-04Jan-05Jan-06Jan-07Jan-08Jan-09
DATE
MW-28
* = Below detection. Value plotted is detection limit


TOTAL CYANIDE VS. TIME
MW-31
100.000
10.000
1.000
0.100
CONCENRTATION (mg/L)
Jan-83Jan-84Jan-85Jan-86Jan-87Jan-88Jan-89Jan-90Jan-91Jan-92Jan-93Jan-94Jan-95Jan-96Jan-97Jan-98Jan-99Jan-00Jan-01Jan-02Jan-03Jan-04Jan-05Jan-06Jan-07Jan-08Jan-09
DATE
MW-31
* = Below detection Value plotted is detection limit


TOTAL CYANIDE VS. TIME
MW-32
1000.000
100.000
10 000
1.000
CONCENTRATION (mg/L)
Jan-83Jan-84Jan-85Jan-86Jan-87Jan-88Jan-89Jan-90Jan-91Jan-92Jan-93Jan-94Jan-95Jan-96Jan-97Jan-98Jan-99Jan-00Jan-01Jan-02Jan-03Jan-04Jan-05Jan-06Jan-07Jan-08Jan-09
DATE
MW-32
* = Below detection Value plotted is detection limit

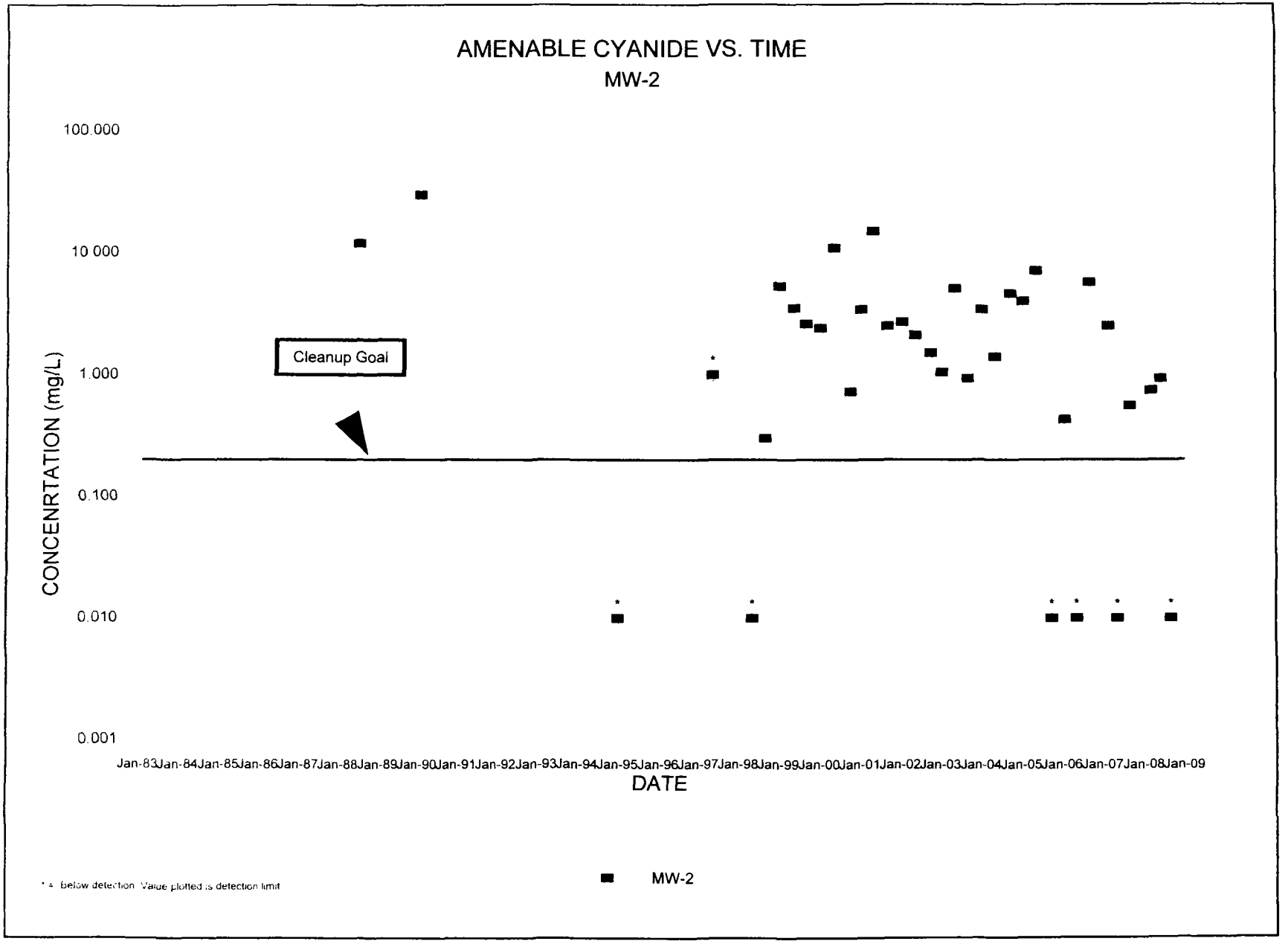

TOTAL CYANIDE VS. TIME
MW-35
1000.000
100.000
10.000
1.000
CONCENRTATION (mg/L)
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
DATE
MW-35
* = Below detection Value plotted is detection limit

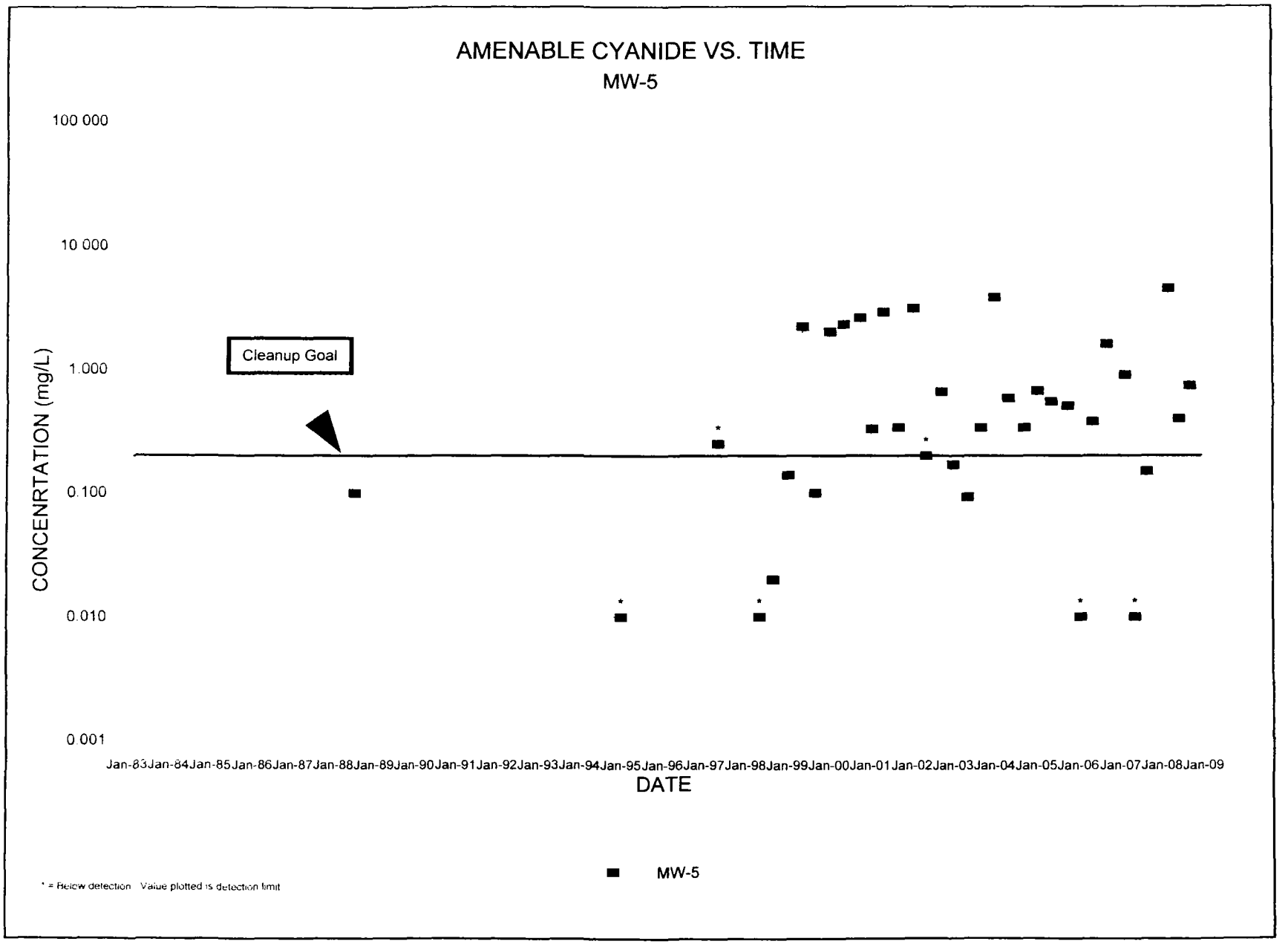

TOTAL CYANIDE VS. TIME
MW-36
100.000
10.000
1.000
0.100
0.010
CONCENRTATION (mg/L)
Jan-83Jan-84Jan-85Jan-86Jan-87Jan-88Jan-89Jan-90Jan-91Jan-92Jan-93Jan-94Jan-95Jan-96Jan-97Jan-98Jan-99Jan-00Jan-01Jan-02Jan-03Jan-04Jan-05Jan-06Jan-07Jan-08Jan-09
DATE
MW-36
* = Below detection Value plotted is detection limit

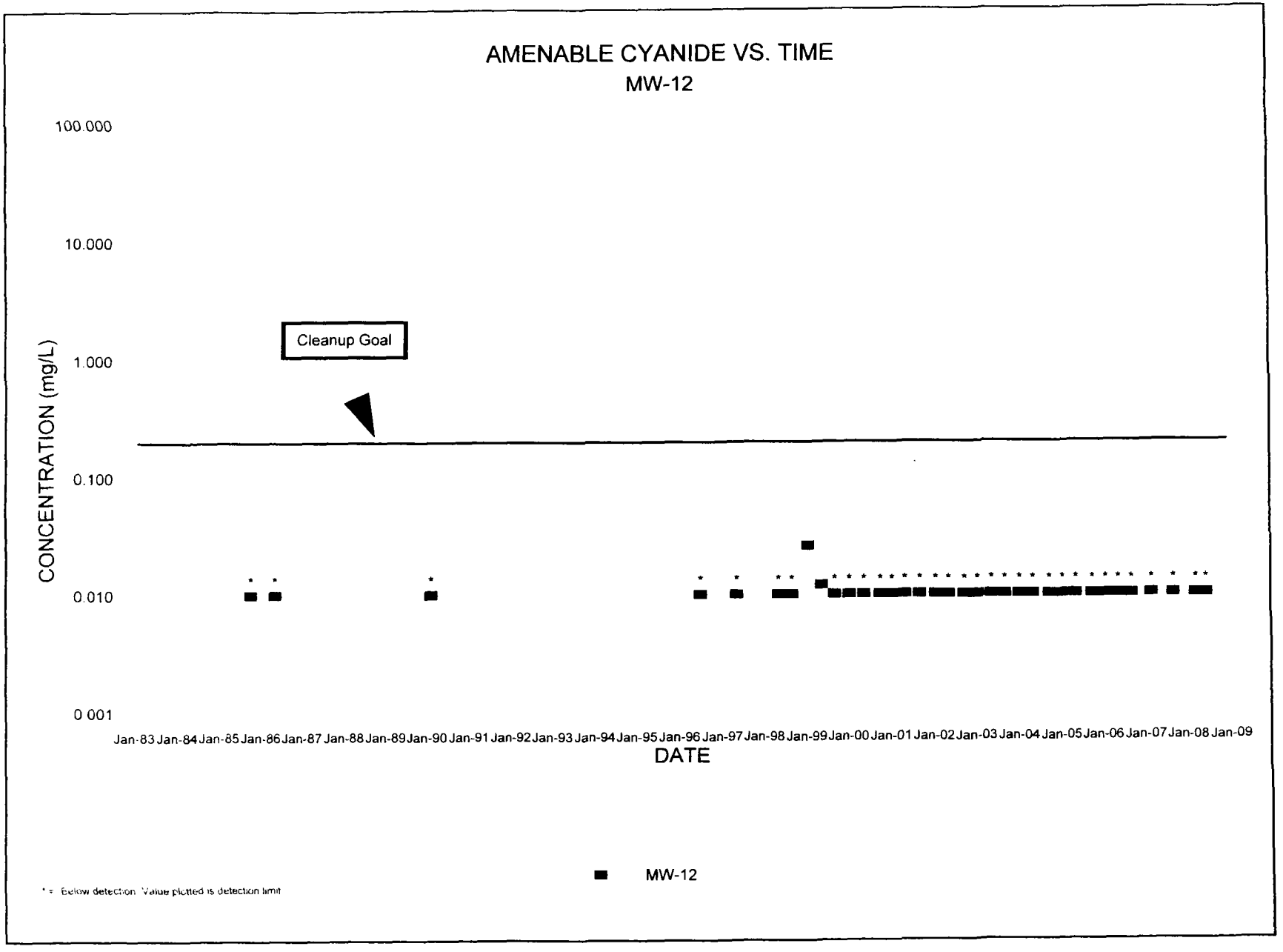

TOTAL CYANIDE VS. TIME
MW-37
100.000
10.000
1.000
0.100
0.010
CONCENRTATION (mg/L)
Jan-83Jan-84Jan-85Jan-86Jan-87Jan-88Jan-89Jan-90Jan-91Jan-92Jan-93Jan-94Jan-95Jan-96Jan-97Jan-98Jan-99Jan-00Jan-01Jan-02Jan-03Jan-04Jan-05Jan-06Jan-07Jan-08Jan-09
DATE
MW-37
* = Below detection Value plotted is detection limit

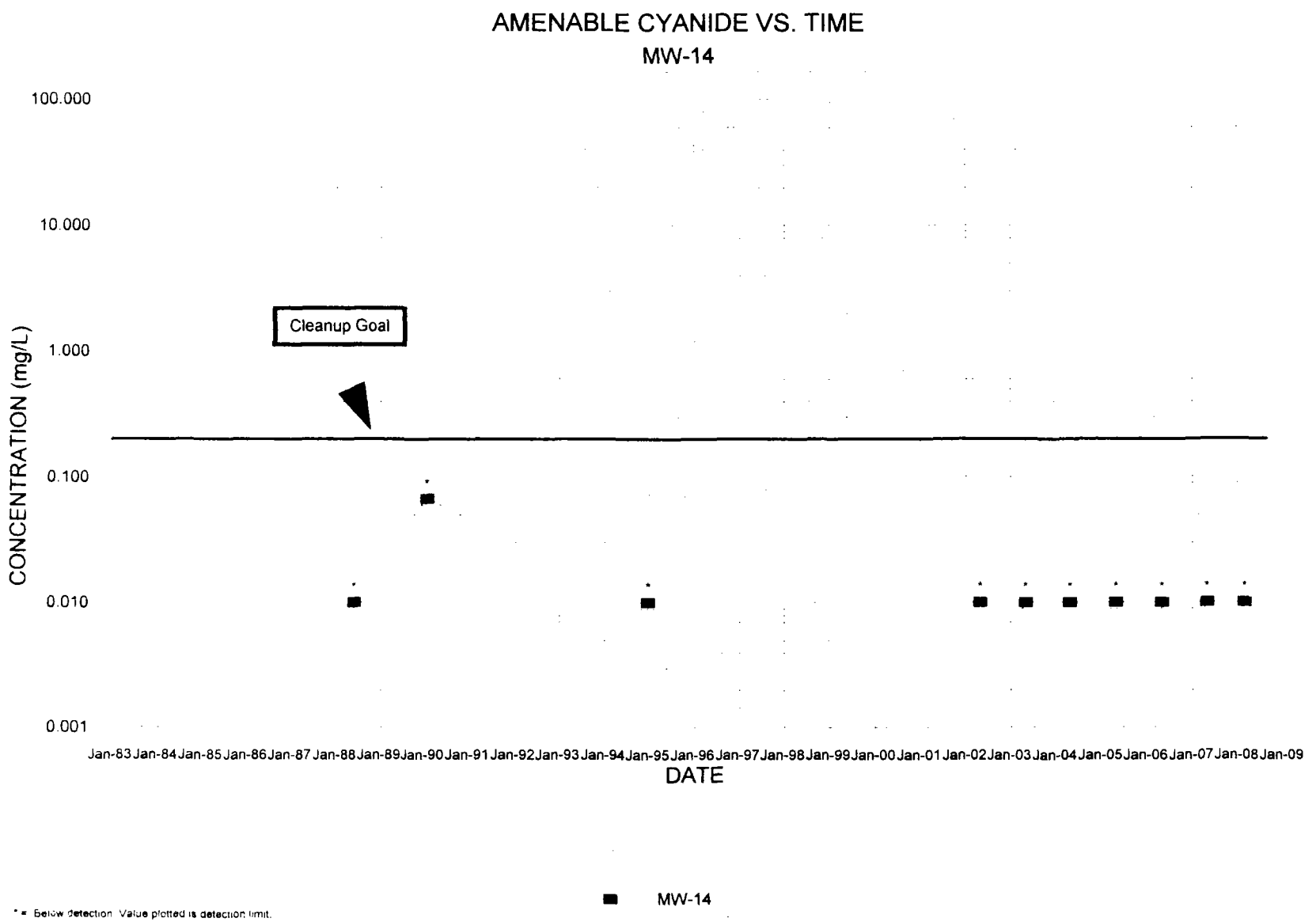
APPENDIX D-2

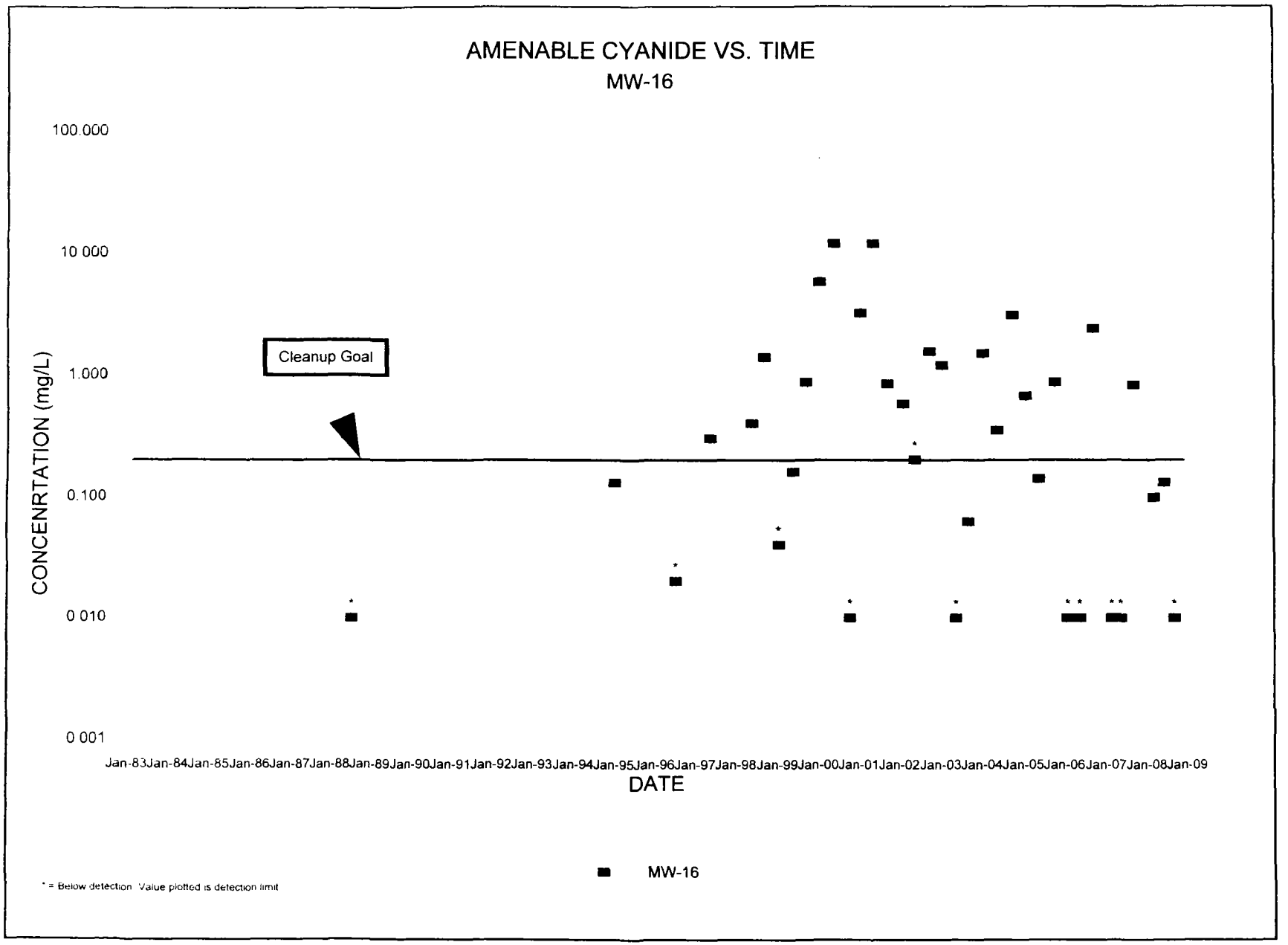
CYANIDE AMENABLE TO CHLORINATION

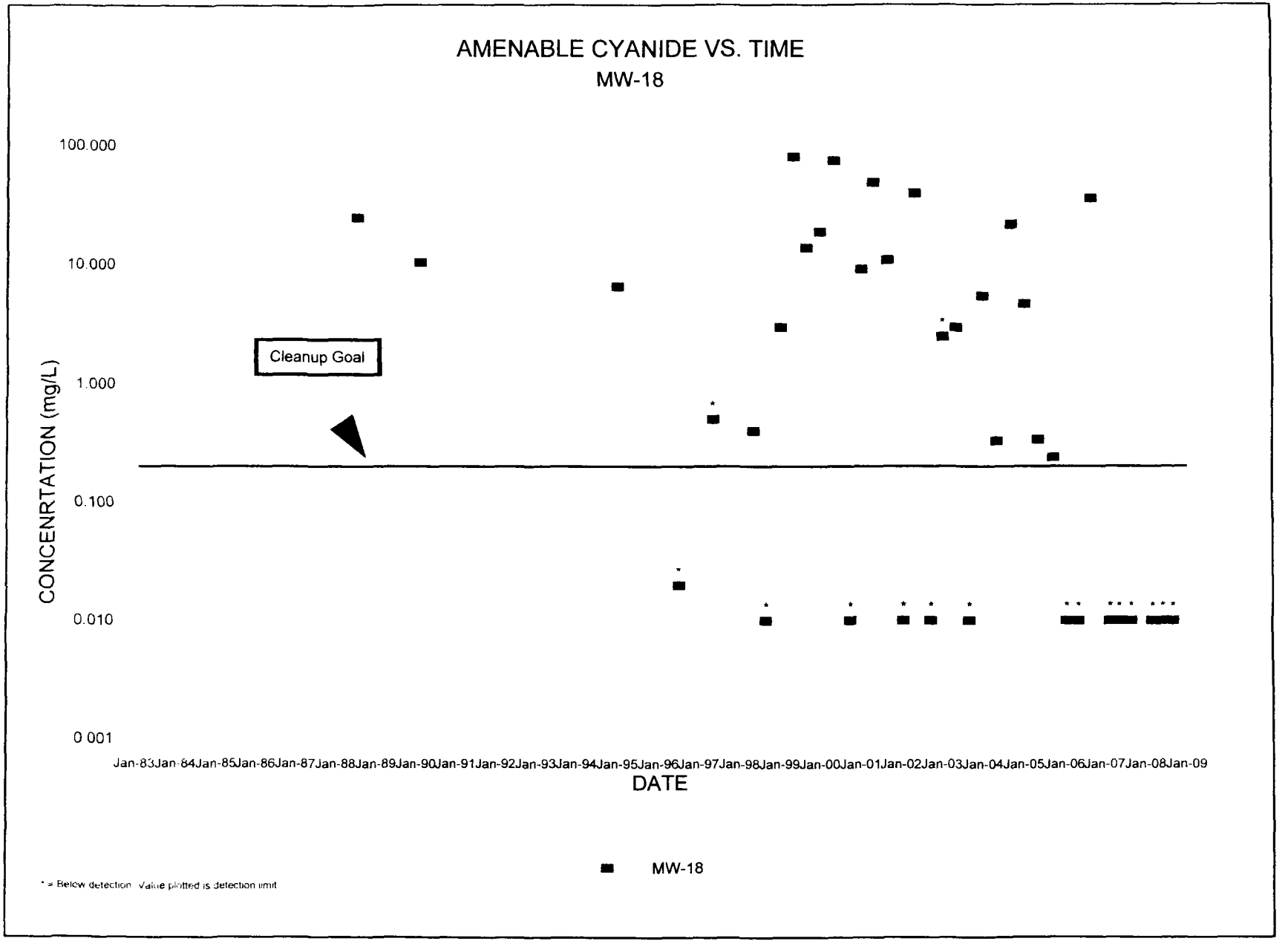

AMENABLE CYANIDE VS. TIME
MW-2
100.000
10.000
1.000
0.100
0.010
0.001
CONCENRTATION (mg/L)
Cleanup Goal
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
DATE
MW-2
* = Below detection. Value plotted is detection limit

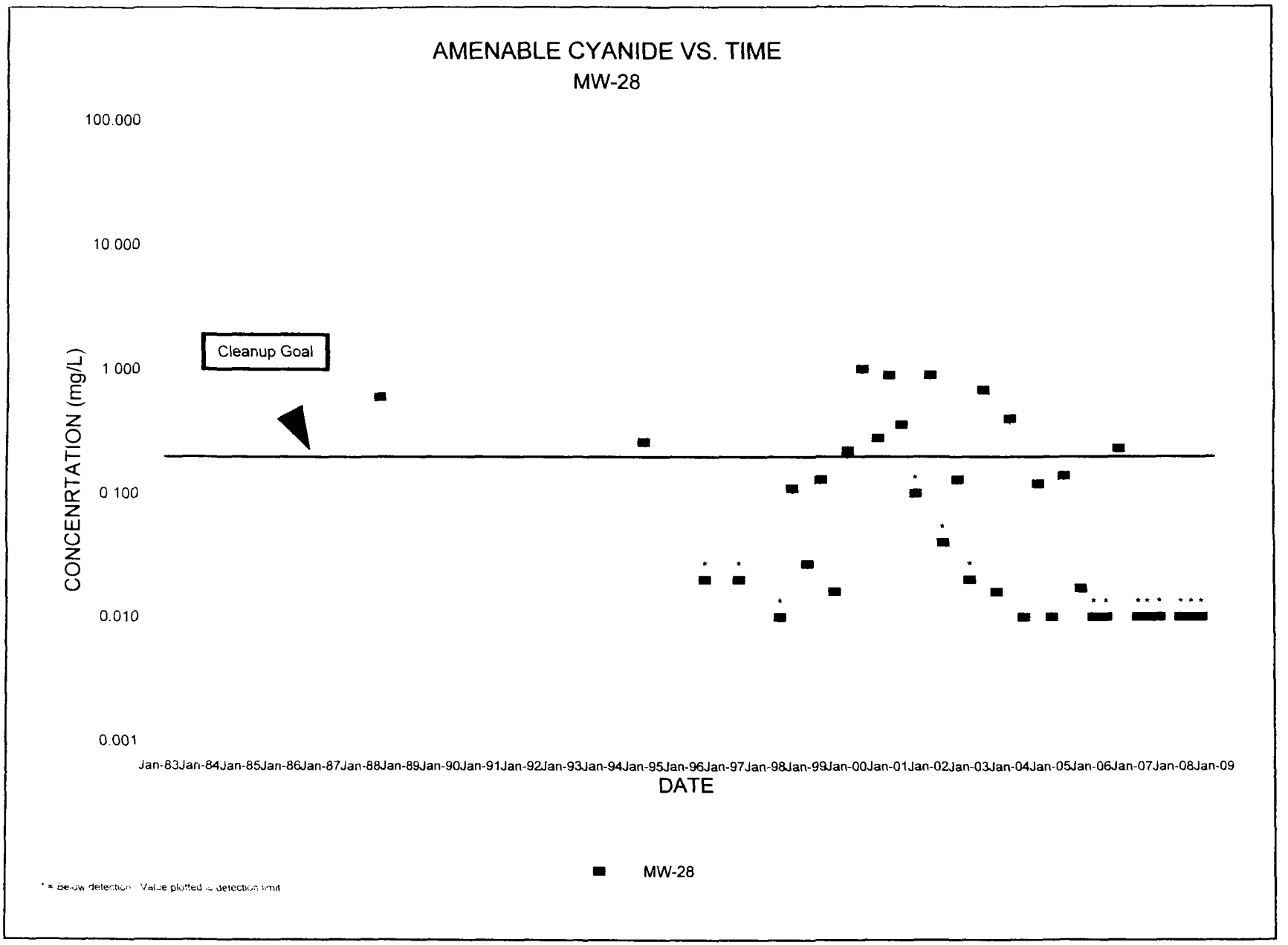

AMENABLE CYANIDE VS. TIME
MW-5
100 000
10 000
1.000
0.100
0.010
0.001
CONCENRTATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-5
* = Below detection Value plotted is detection limit

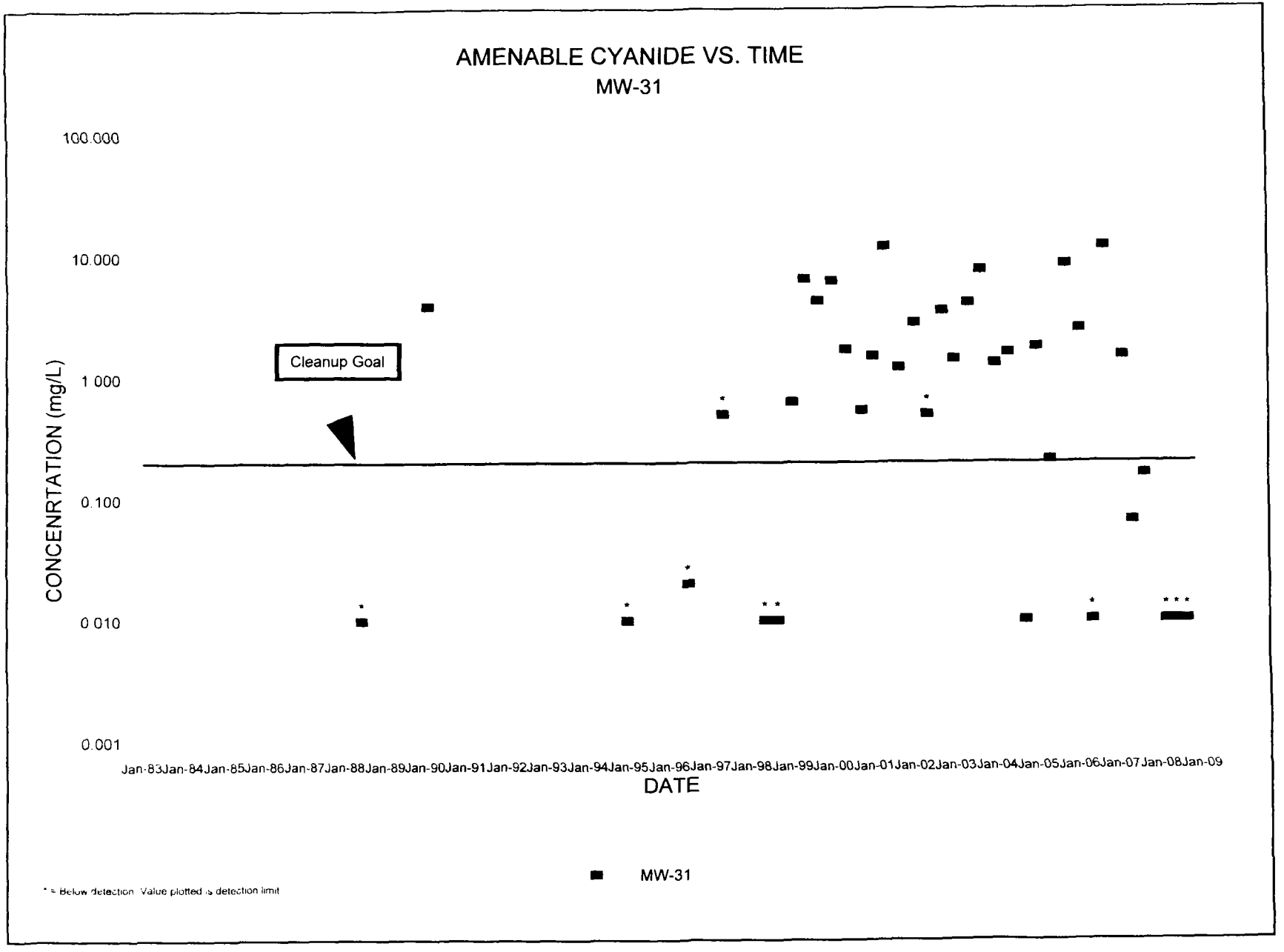

AMENABLE CYANIDE VS. TIME
MW-12
100.000
10.000
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-12
* = Below detection. Value plotted is detection limit

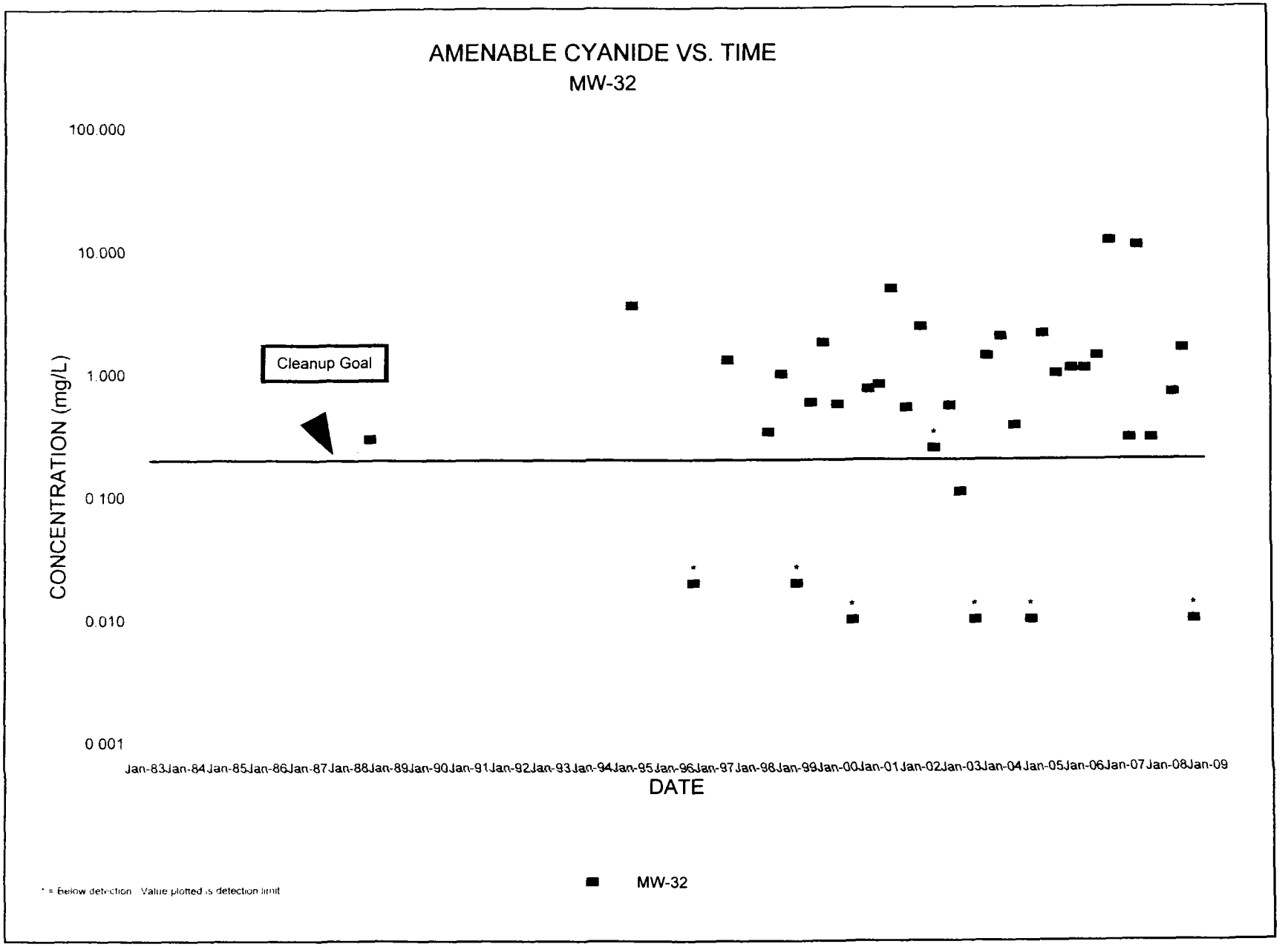

AMENABLE CYANIDE VS. TIME
MW-14
100.000
10.000
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-14
* = Below detection. Value plotted is detection limit.

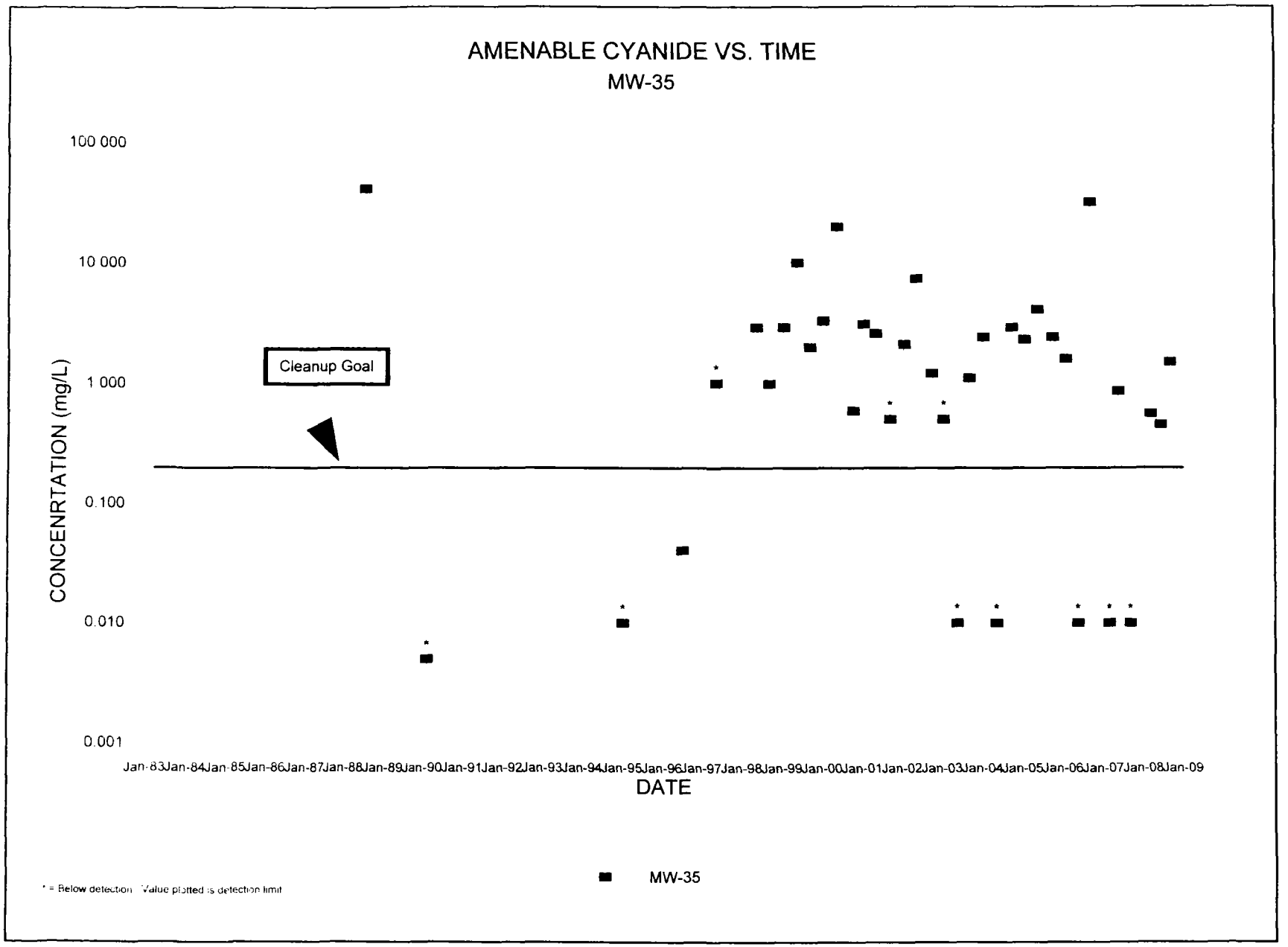

AMENABLE CYANIDE VS. TIME
MW-16
100.000
10 000
1.000
0.100
0 010
0 001
CONCENRTATION (mg/L)
Cleanup Goal
Jan-83Jan-84Jan-85Jan-86Jan-87Jan-88Jan-89Jan-90Jan-91Jan-92Jan-93Jan-94Jan-95Jan-96Jan-97Jan-98Jan-99Jan-00Jan-01Jan-02Jan-03Jan-04Jan-05Jan-06Jan-07Jan-08Jan-09
DATE
MW-16
* = Below detection Value plotted is detection limit

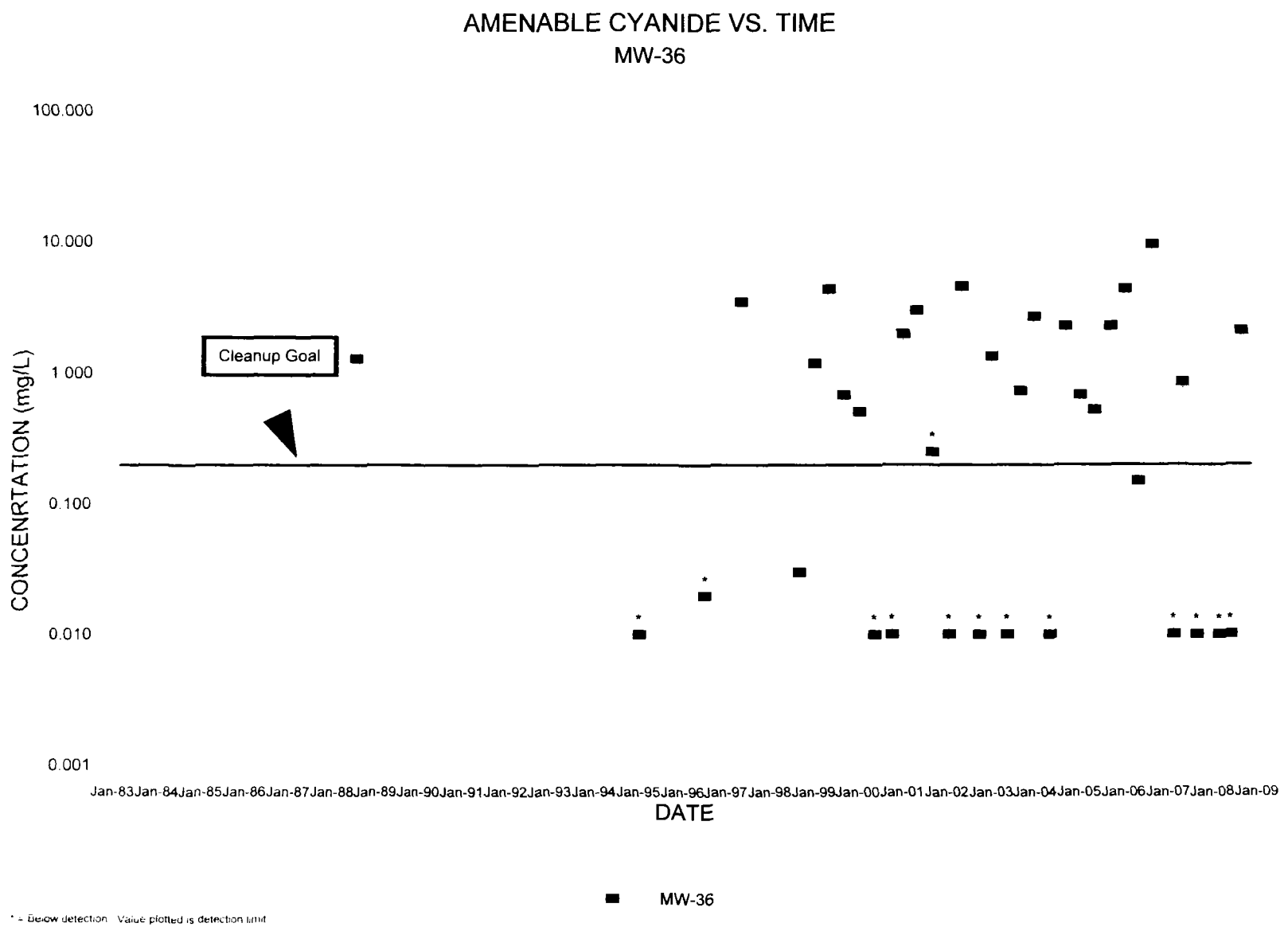

AMENABLE CYANIDE VS. TIME
MW-18
100.000
10.000
1.000
0.100
0.010
0.001
CONCENRTATION (mg/L)
Cleanup Goal
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
DATE
MW-18
* = 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-83Jan-84Jan-85Jan-86Jan-87Jan-88Jan-89Jan-90Jan-91Jan-92Jan-93Jan-94Jan-95Jan-96Jan-97Jan-98Jan-99Jan-00Jan-01Jan-02Jan-03Jan-04Jan-05Jan-06Jan-07Jan-08Jan-09
DATE
MW-28
* = Below detection. Value plotted @ detection limit

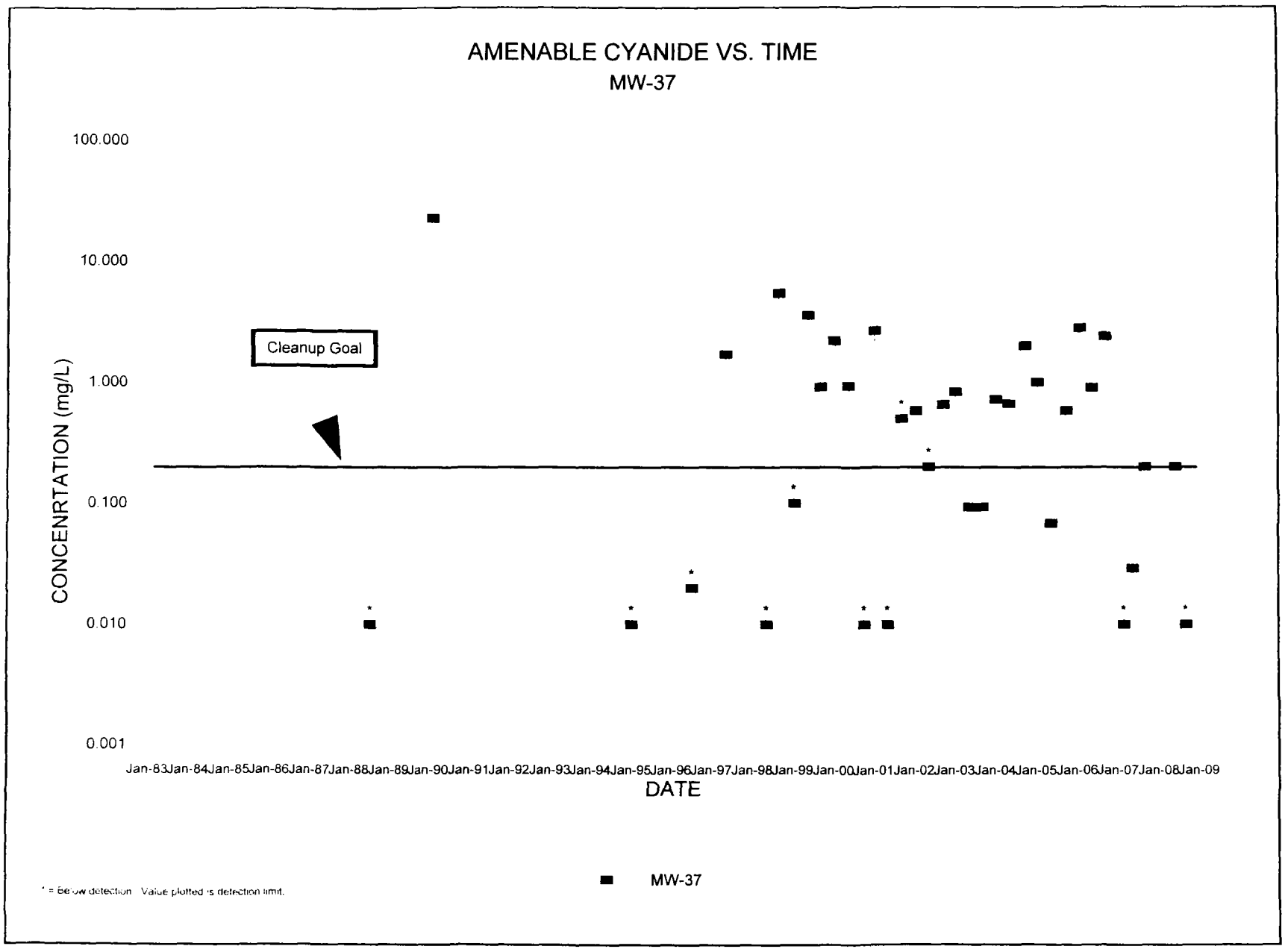

AMENABLE CYANIDE VS. TIME
MW-31
100.000
10.000
1.000
0.100
0.010
0.001
CONCENRTATION (mg/L)
Cleanup Goal
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
DATE
MW-31
* = Below detection. Value plotted is detection limit


AMENABLE CYANIDE VS. TIME
MW-32
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 Jan-07 Jan-08 Jan-09
DATE
MW-32
* = 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
Jan-07
Jan-08
Jan-09
DATE
MW-35
* = Below detection. Value plotted is detection limit

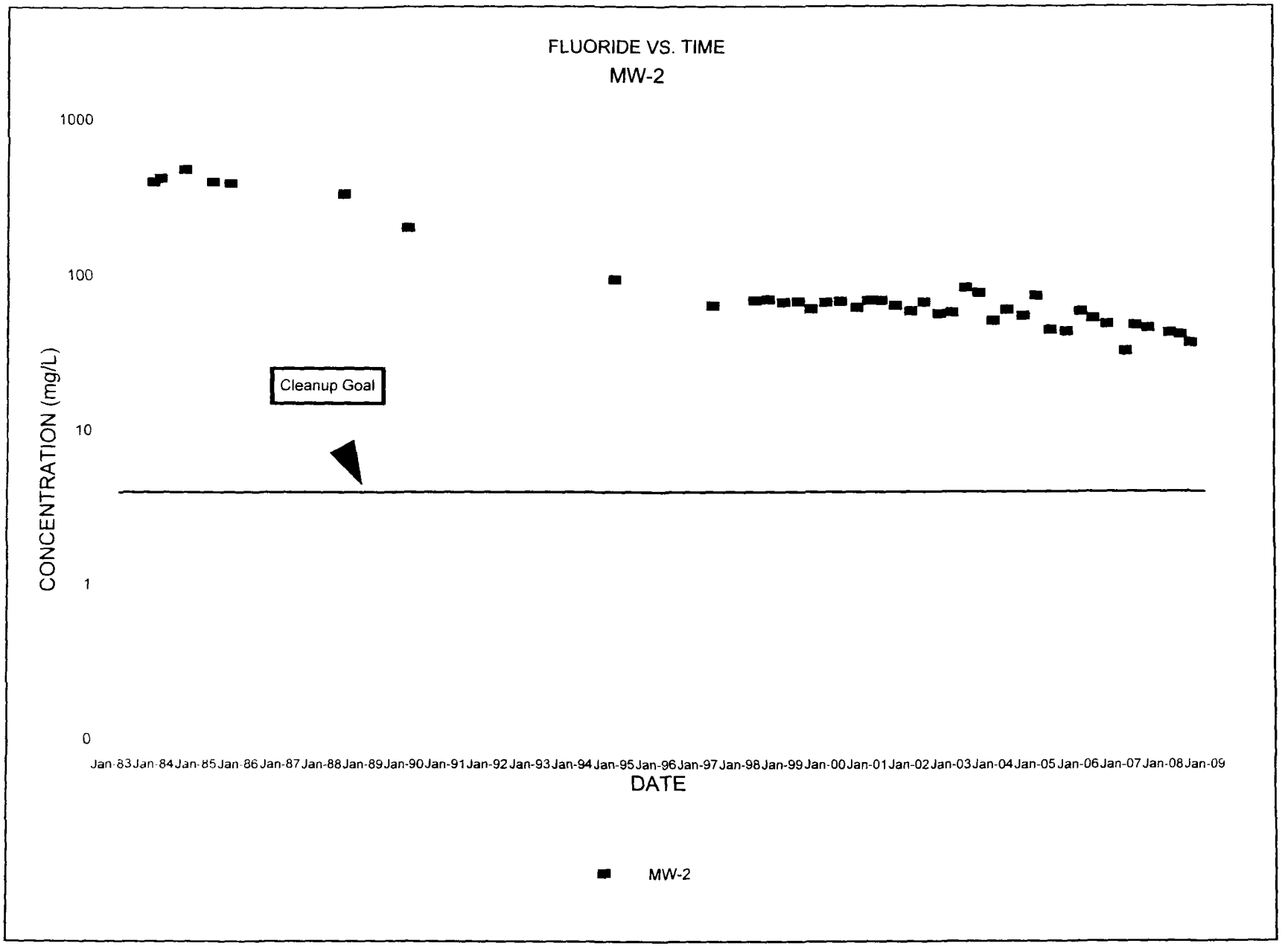


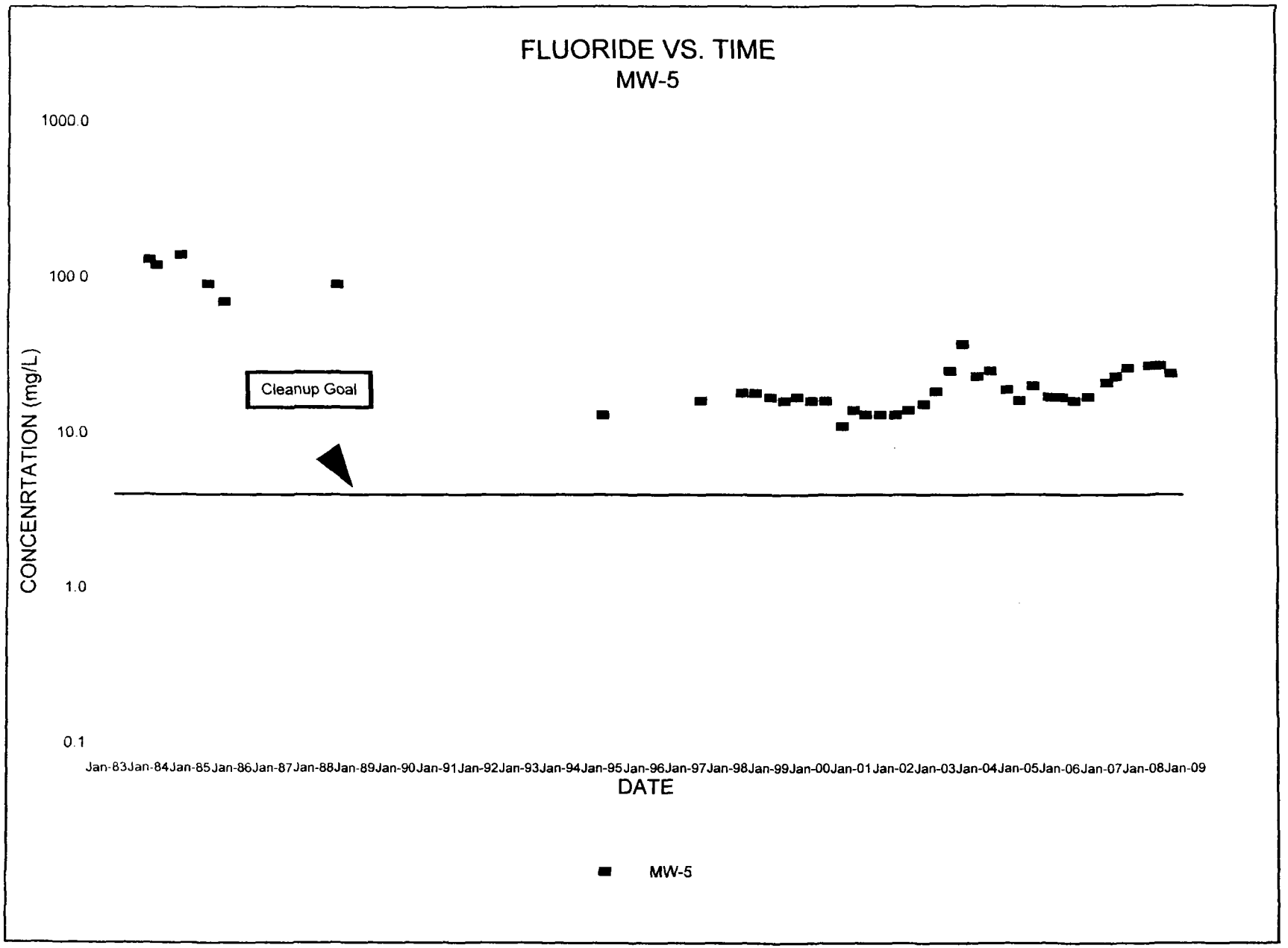
* = Below detection. Value plotted is detection limit

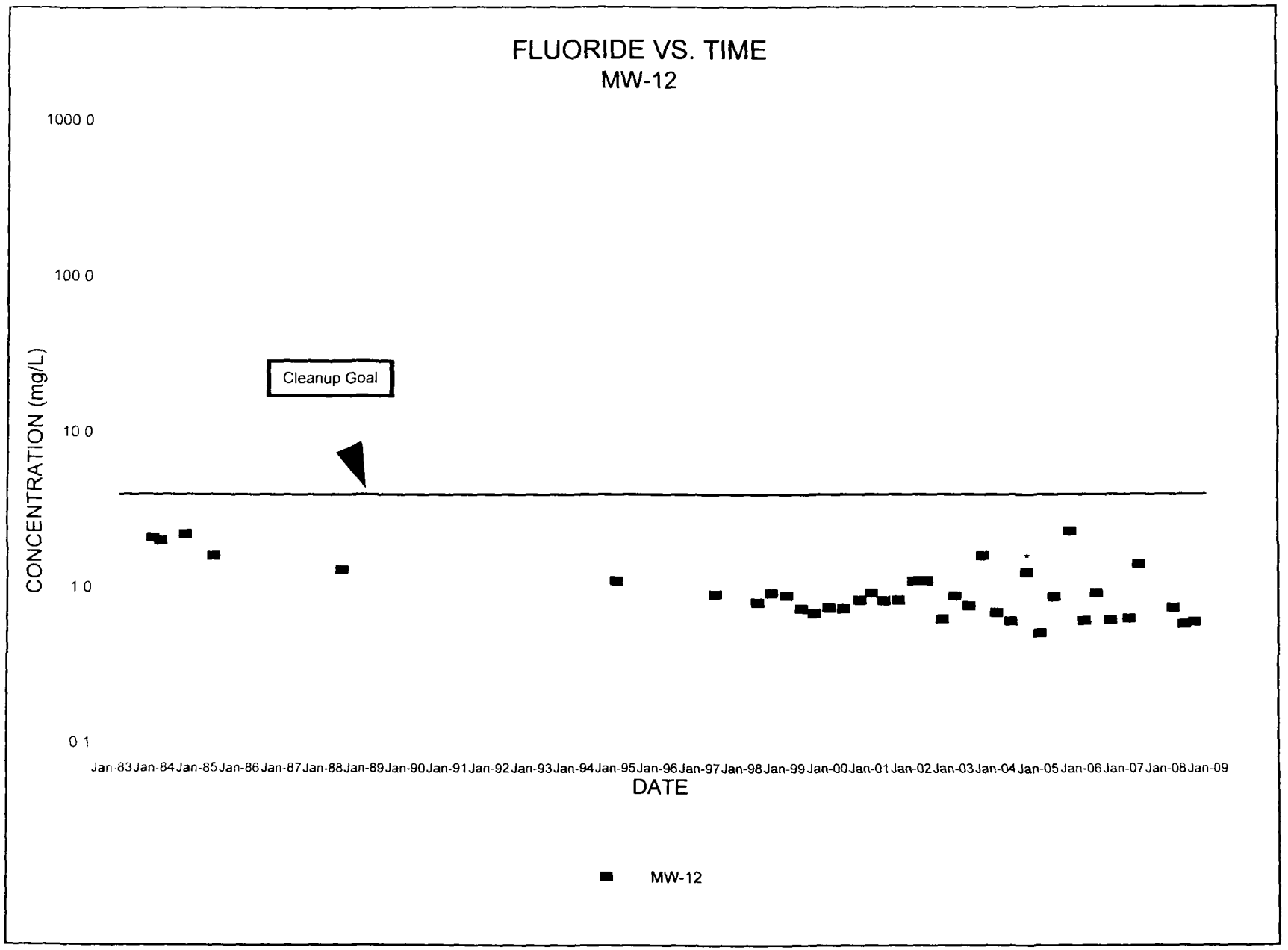

AMENABLE CYANIDE VS. TIME
MW-37
100.000
10.000
1.000
0.100
0.010
0.001
CONCENRTATION (mg/L)
Cleanup Goal
Jan-83Jan-84Jan-85Jan-86Jan-87Jan-88Jan-89Jan-90Jan-91Jan-92Jan-93Jan-94Jan-95Jan-96Jan-97Jan-98Jan-99Jan-00Jan-01Jan-02Jan-03Jan-04Jan-05Jan-06Jan-07Jan-08Jan-09
DATE
MW-37
* = Below detection. Value plotted is detection limit.

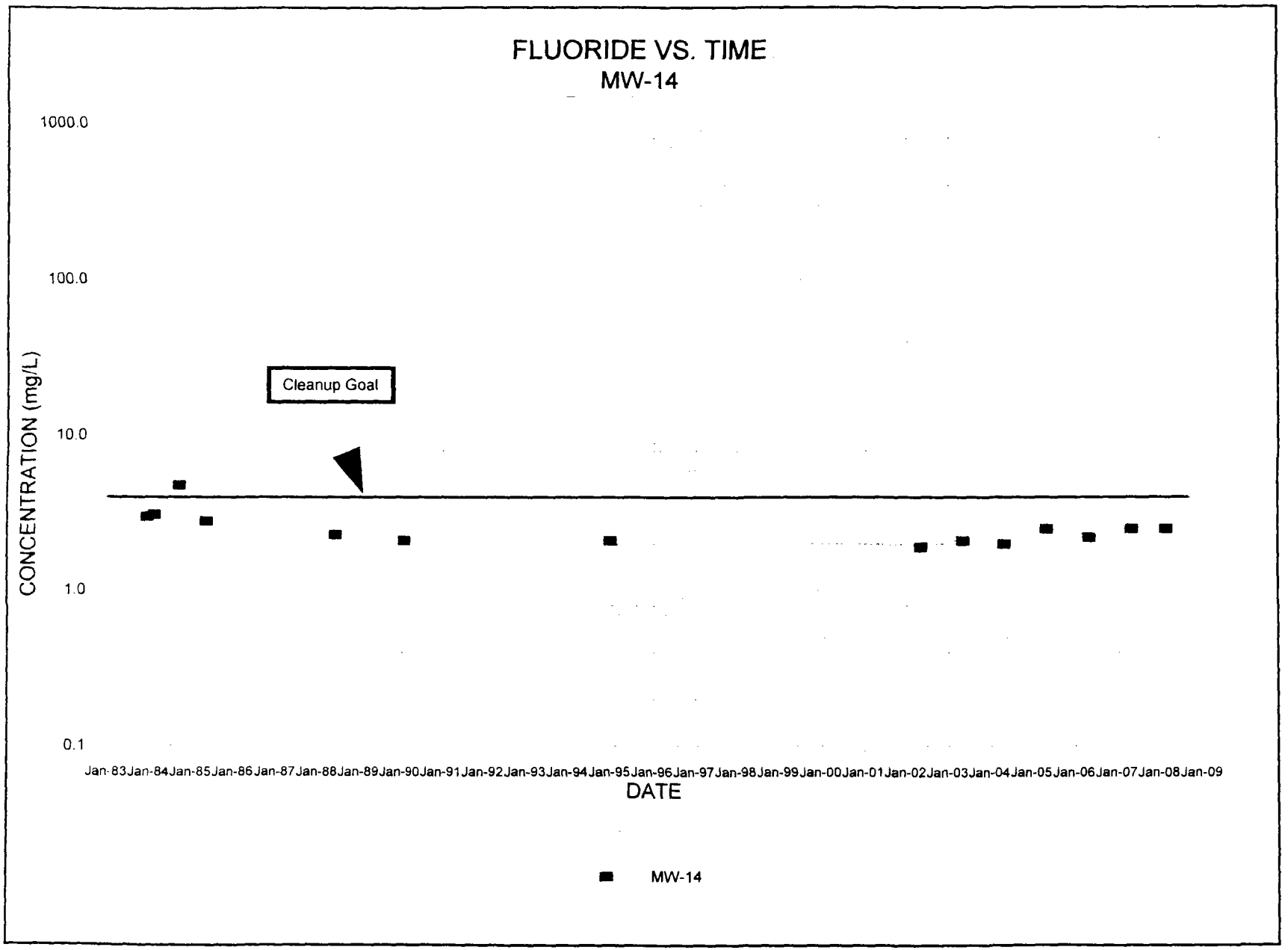
APPENDIX D-3

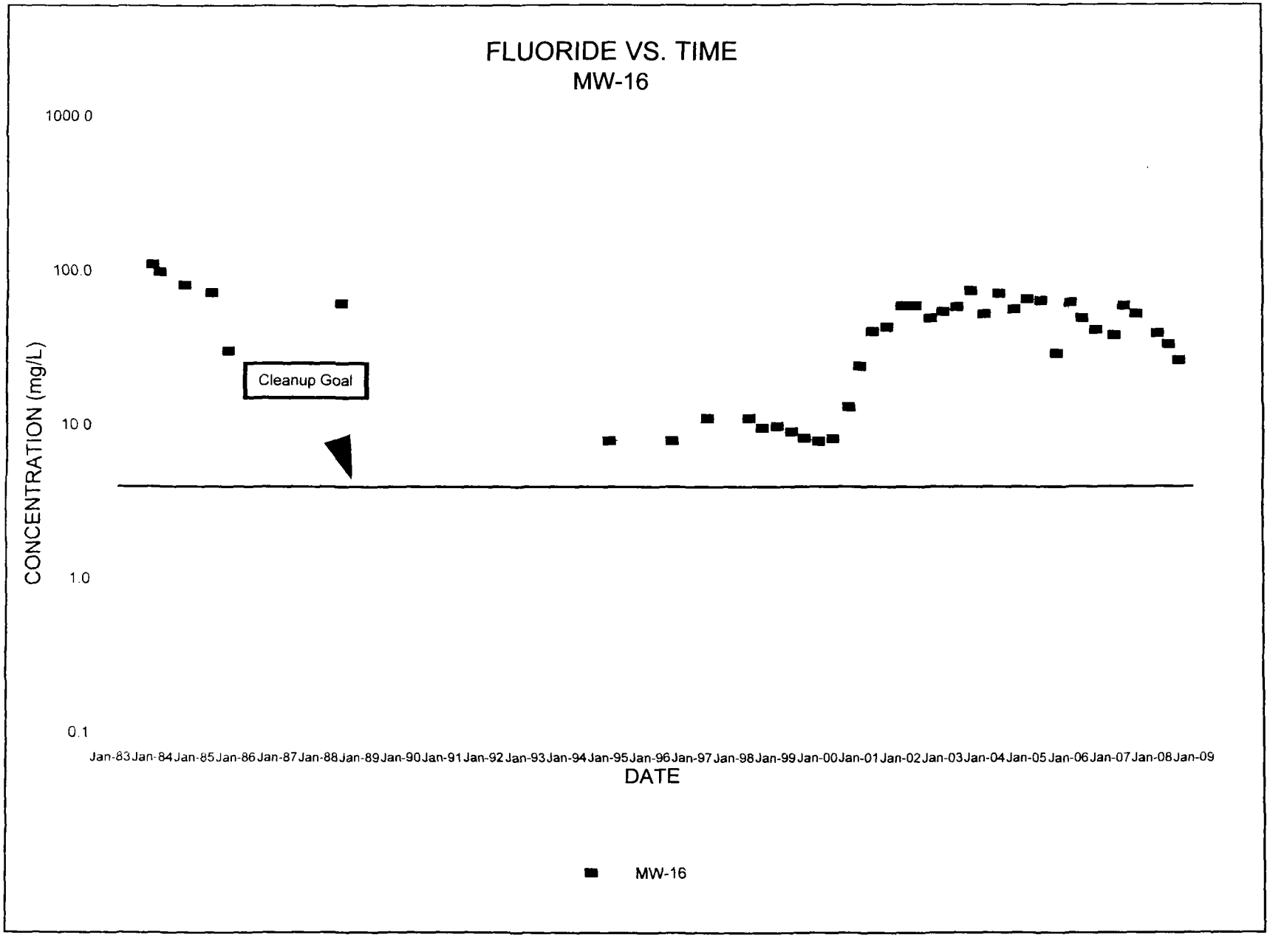
FLUORIDE

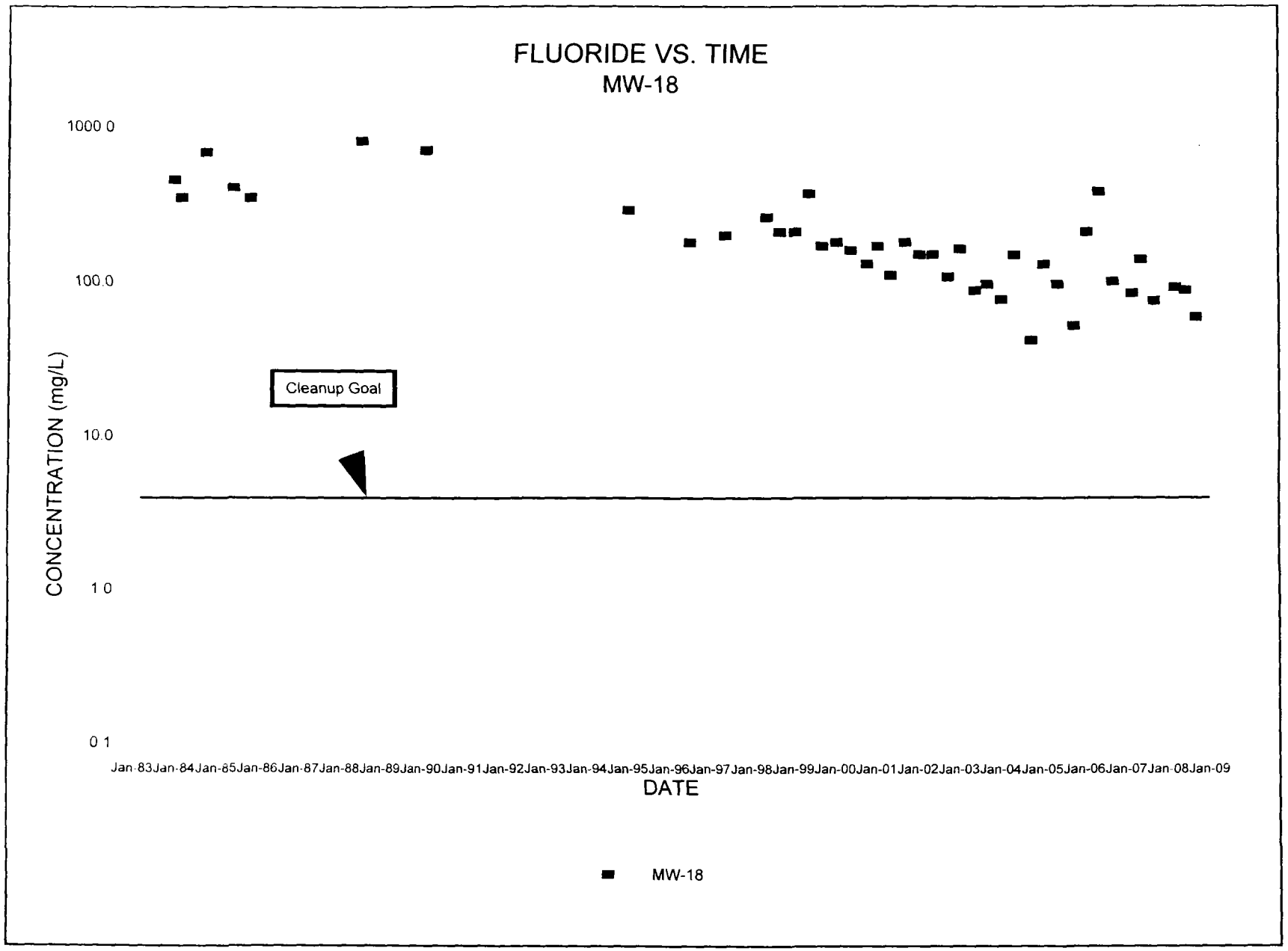

FLUORIDE VS. TIME
MW-2
1000
100
10
1
0
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-2

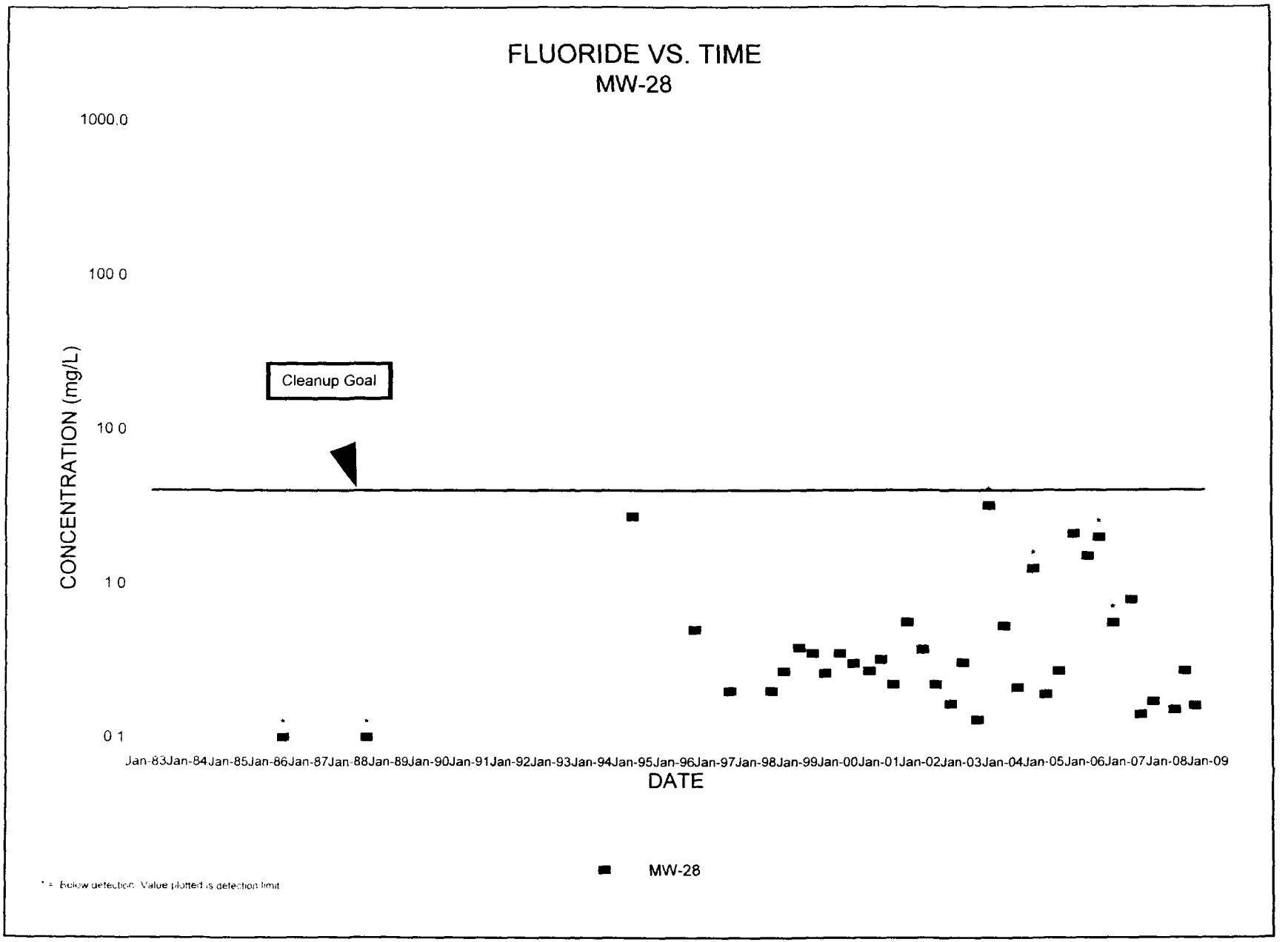

FLUORIDE VS. TIME
MW-5
1000.0
100.0
10.0
1.0
0.1
CONCENRTATION (mg/L)
Cleanup Goal
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
DATE
MW-5

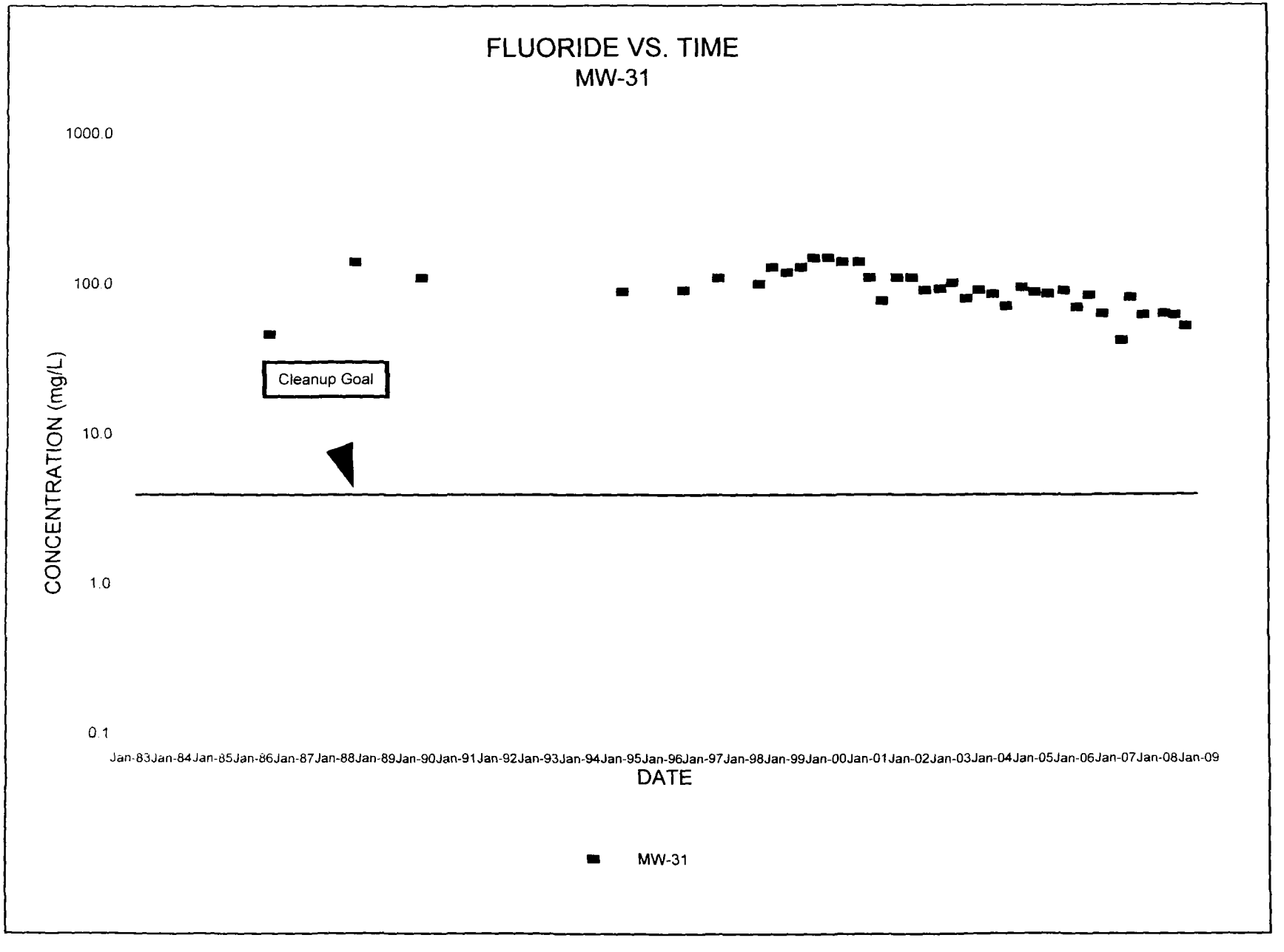

FLUORIDE VS. TIME
MW-12
1000 0
100 0
10 0
1 0
0 1
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-12

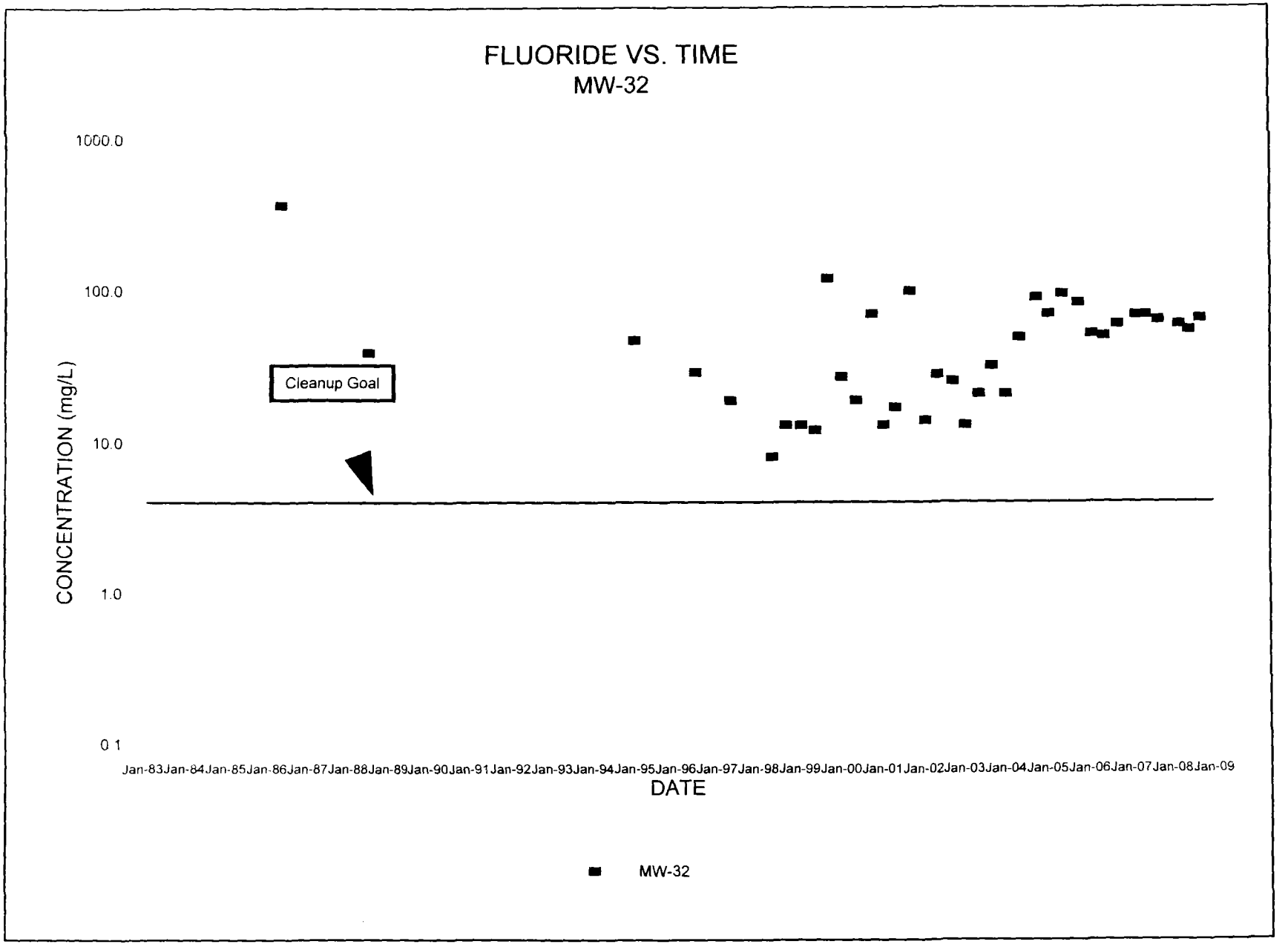

FLUORIDE VS. TIME
MW-14
1000.0
100.0
10.0
1.0
0.1
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-14

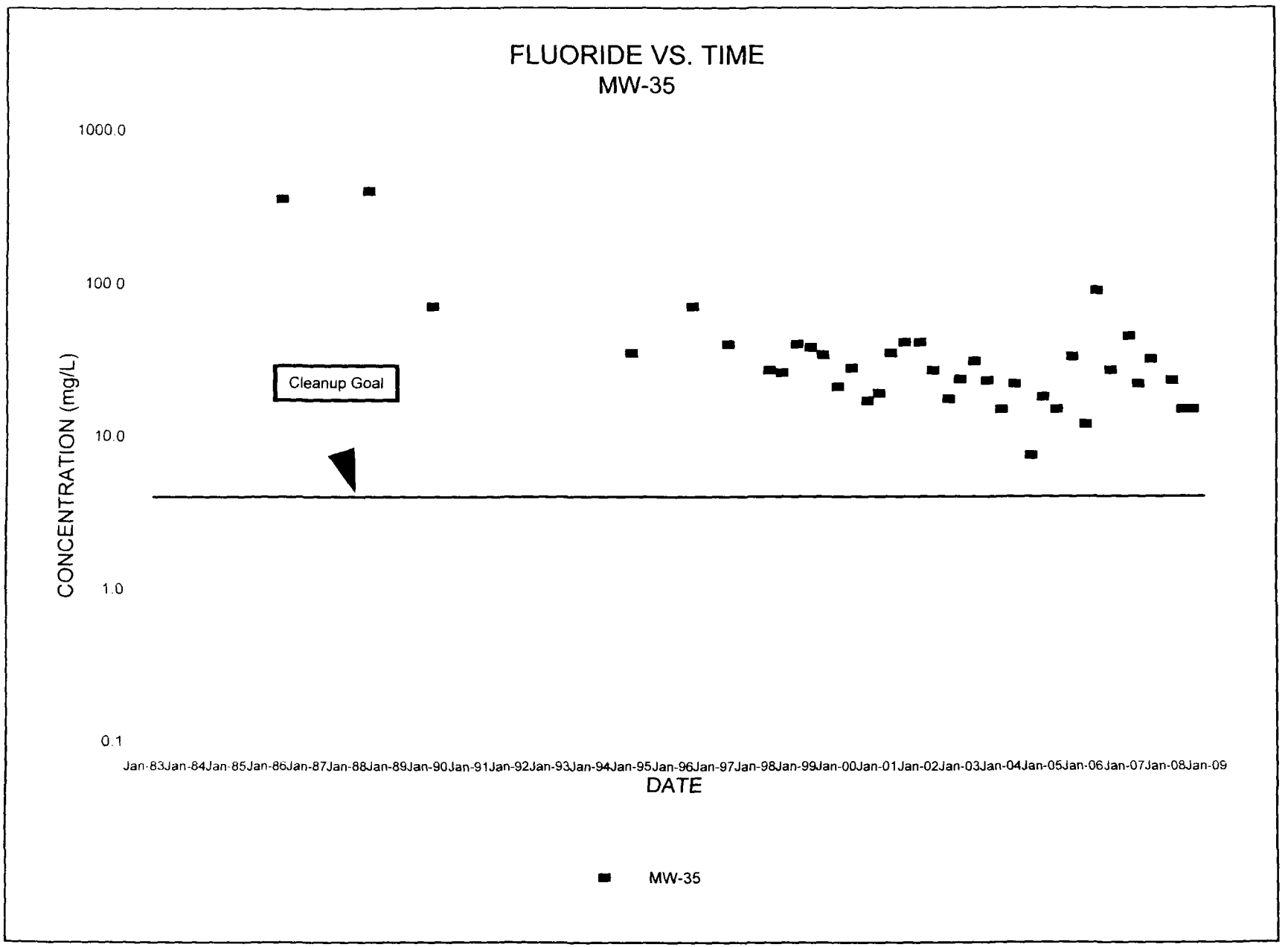

FLUORIDE VS. TIME
MW-16
1000 0
100.0
10 0
1.0
0.1
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-16

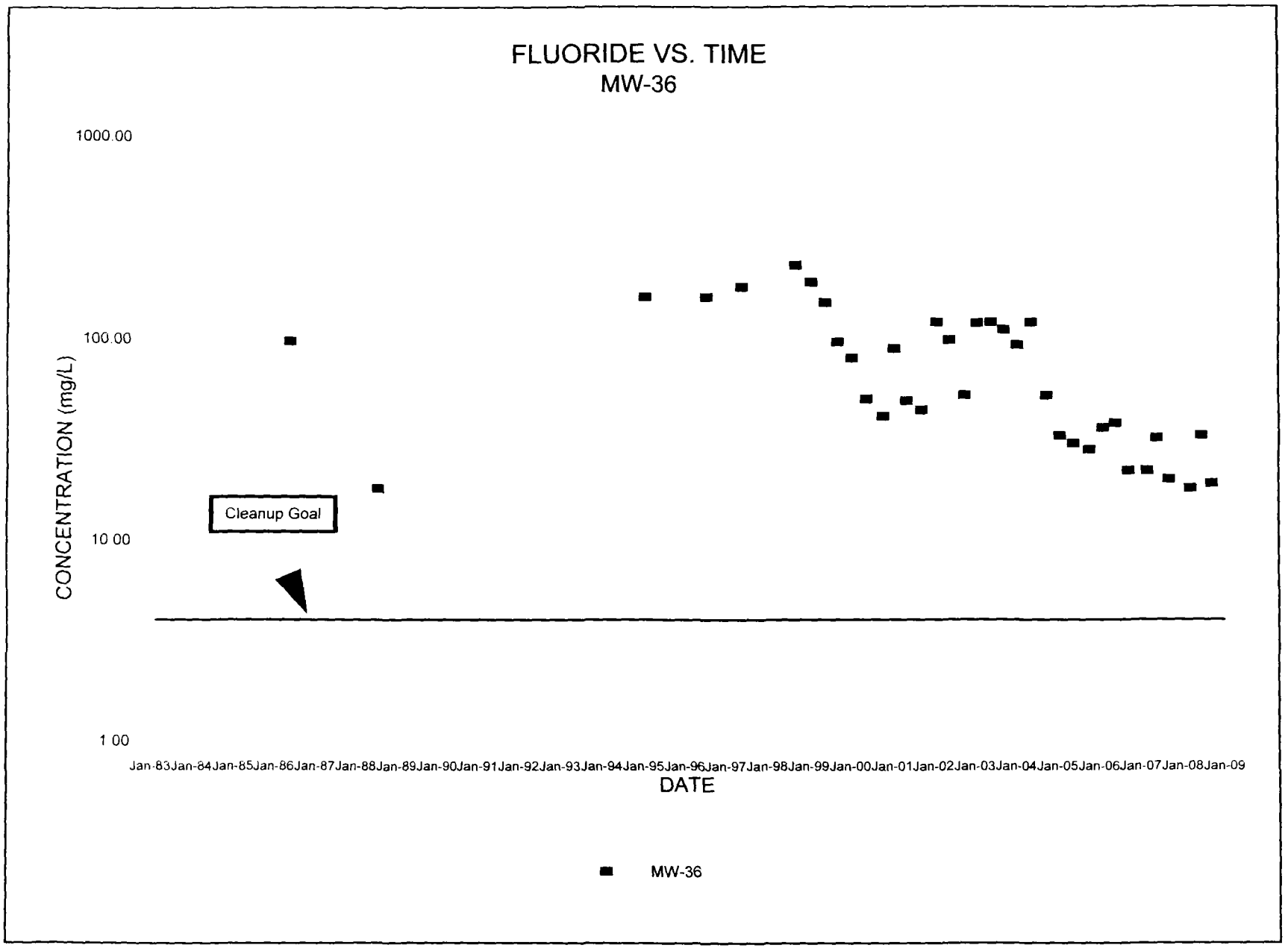

FLUORIDE VS. TIME
MW-18
1000 0
100.0
10.0
1 0
0 1
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-18

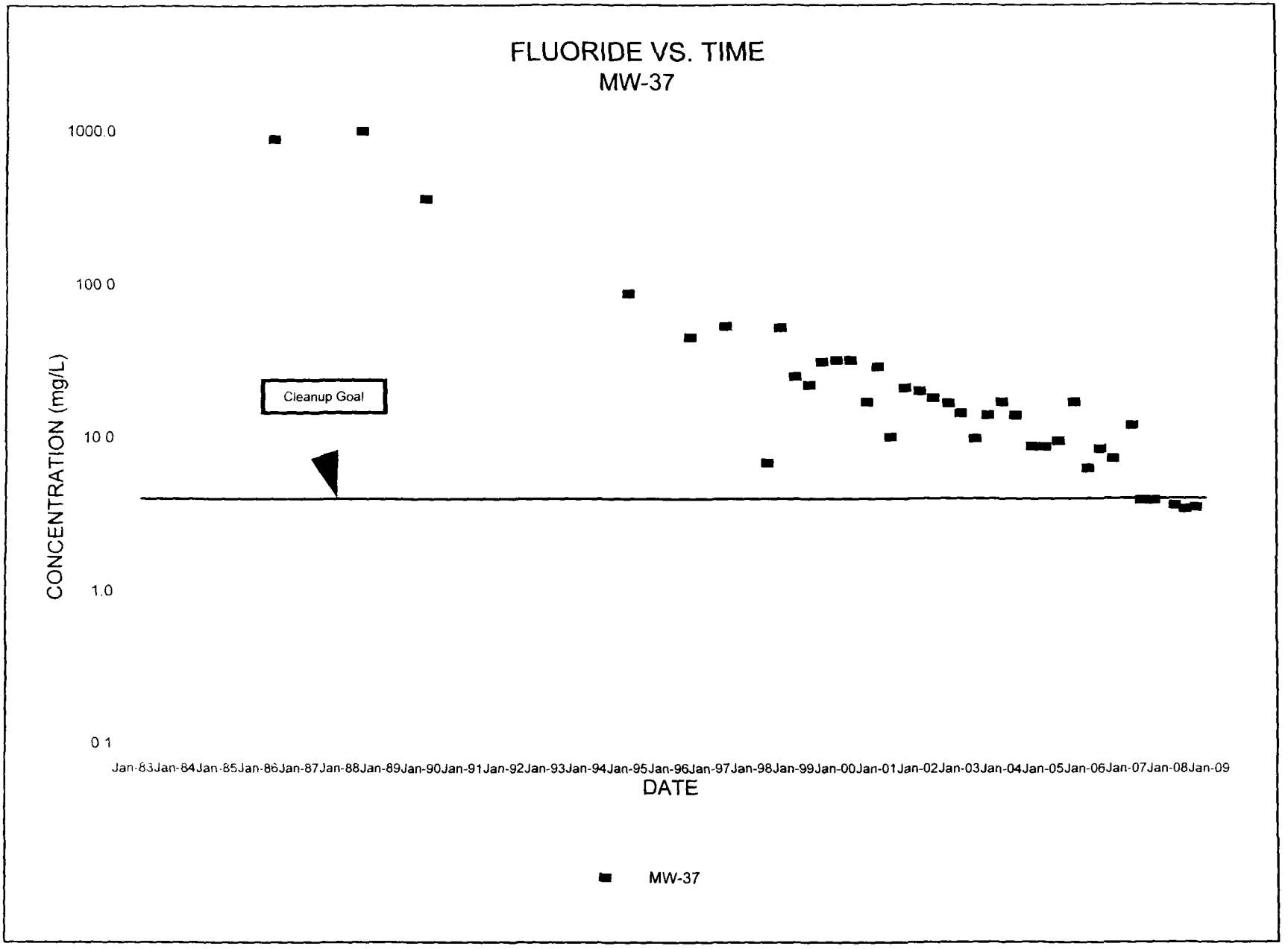

FLUORIDE VS. TIME
MW-28
1000.0
100 0
10 0
1 0
0 1
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
DATE
MW-28
* = Below detection. Value plotted is detection limit


FLUORIDE VS. TIME
MW-31
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
Jan-07
Jan-08
Jan-09
DATE
MW-31


FLUORIDE VS. TIME
MW-32
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
Jan-07
Jan-08
Jan-09
DATE
MW-32

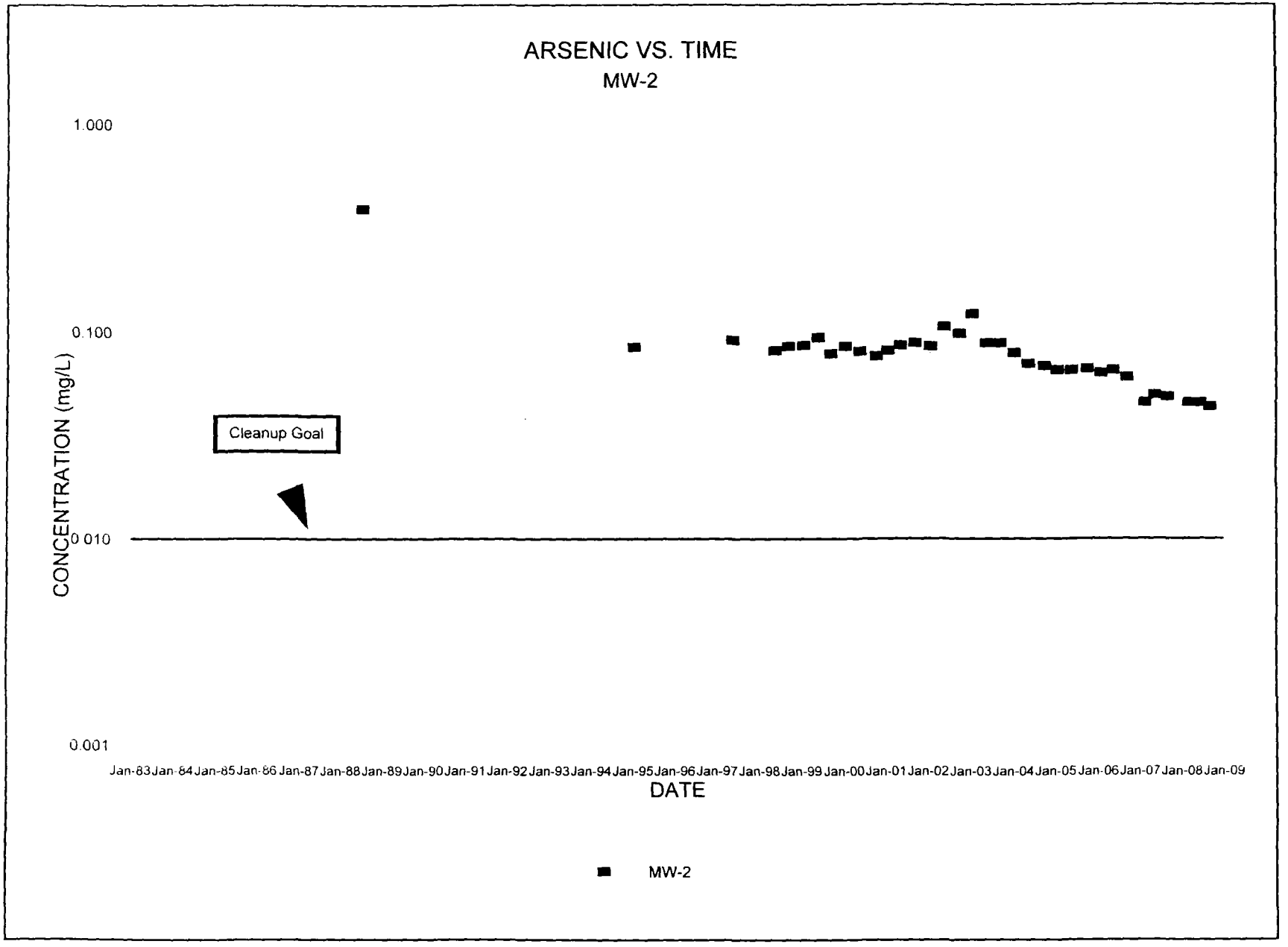

FLUORIDE VS. TIME
MW-35
1000.0
100.0
10.0
1.0
0.1
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
DATE
MW-35

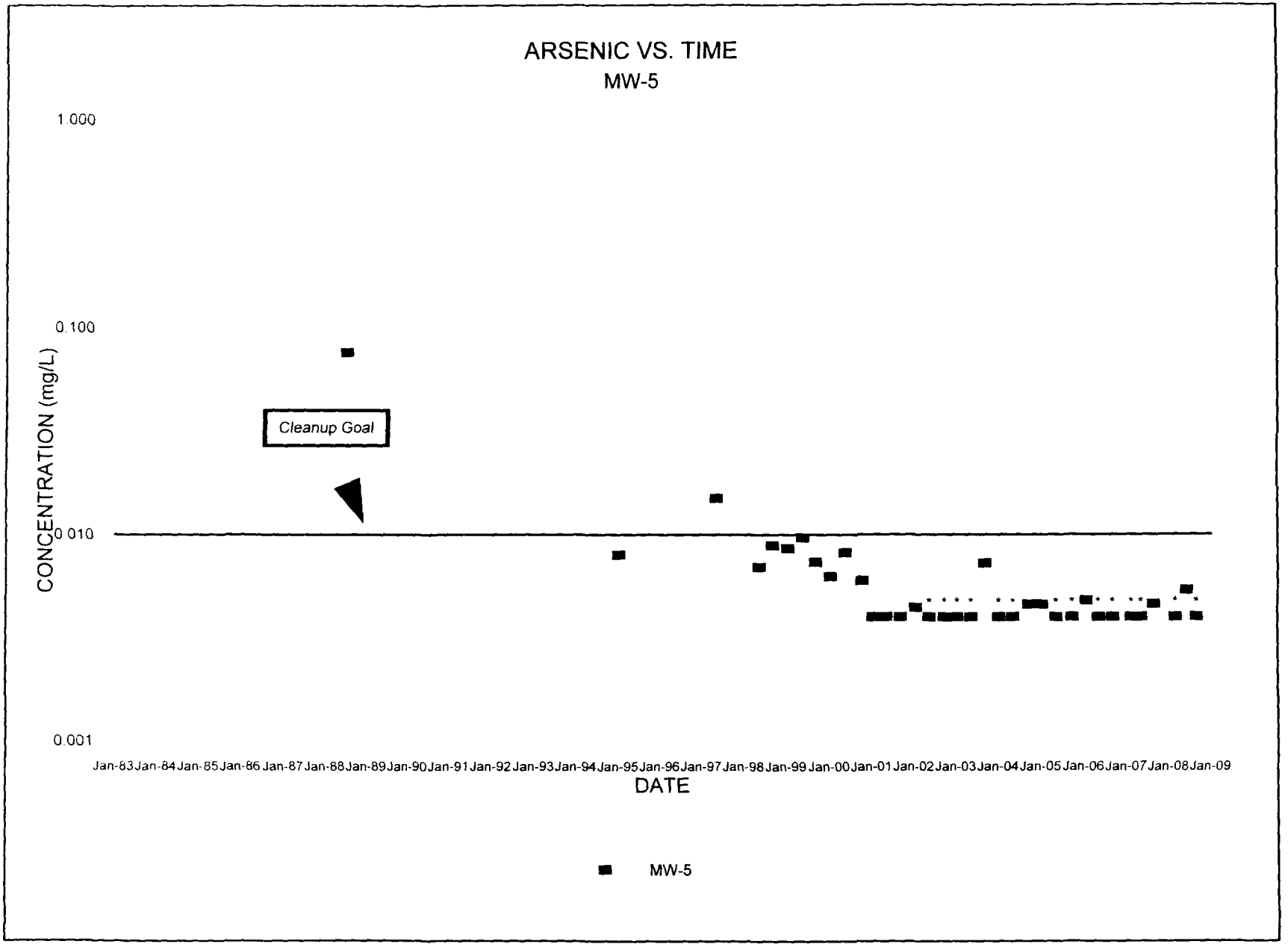

FLUORIDE VS. TIME
MW-36
1000.00
100.00
10 00
1 00
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
DATE
MW-36

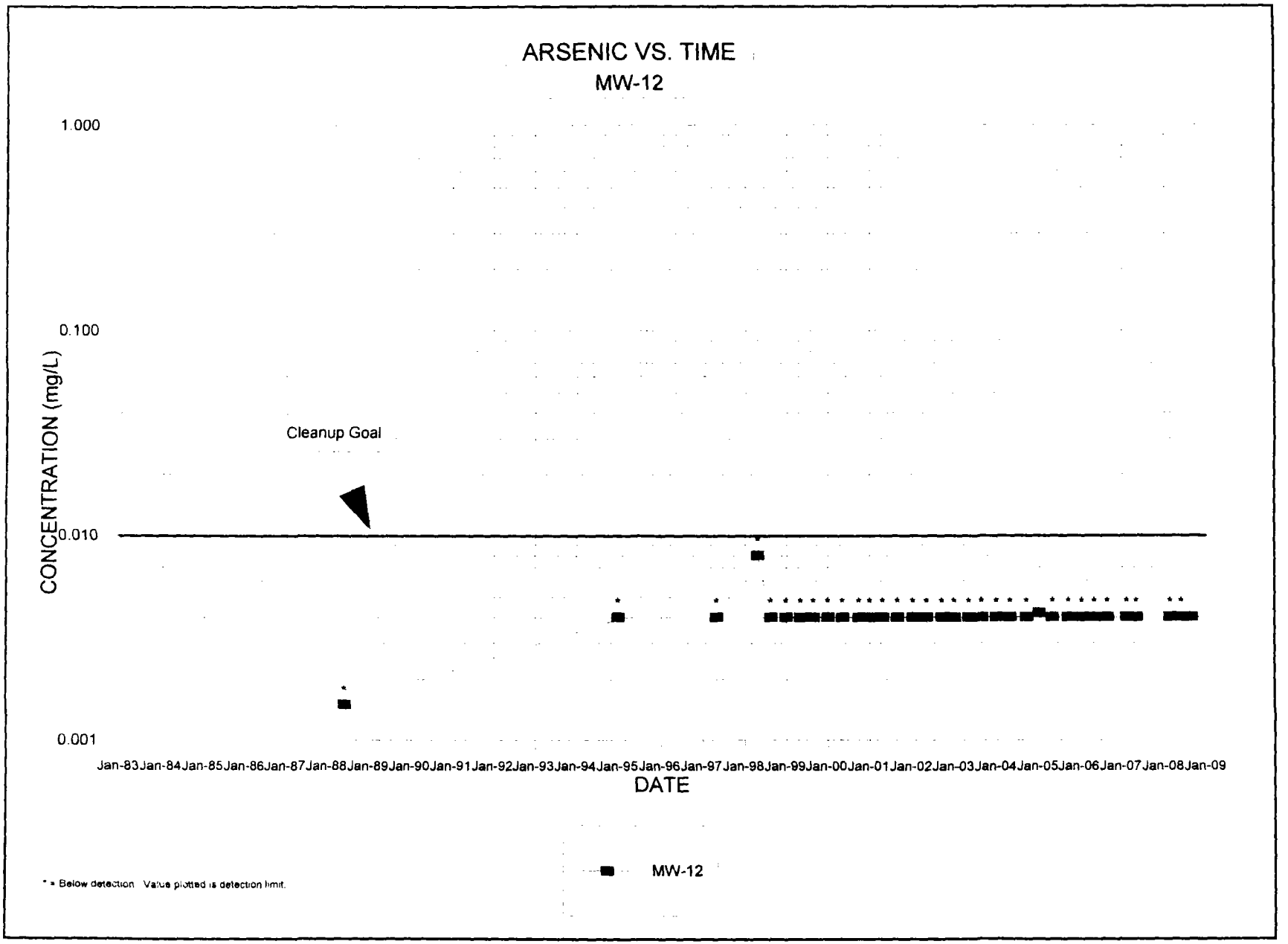

FLUORIDE VS. TIME
MW-37
1000.0
100 0
10 0
1.0
0 1
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
DATE
MW-37

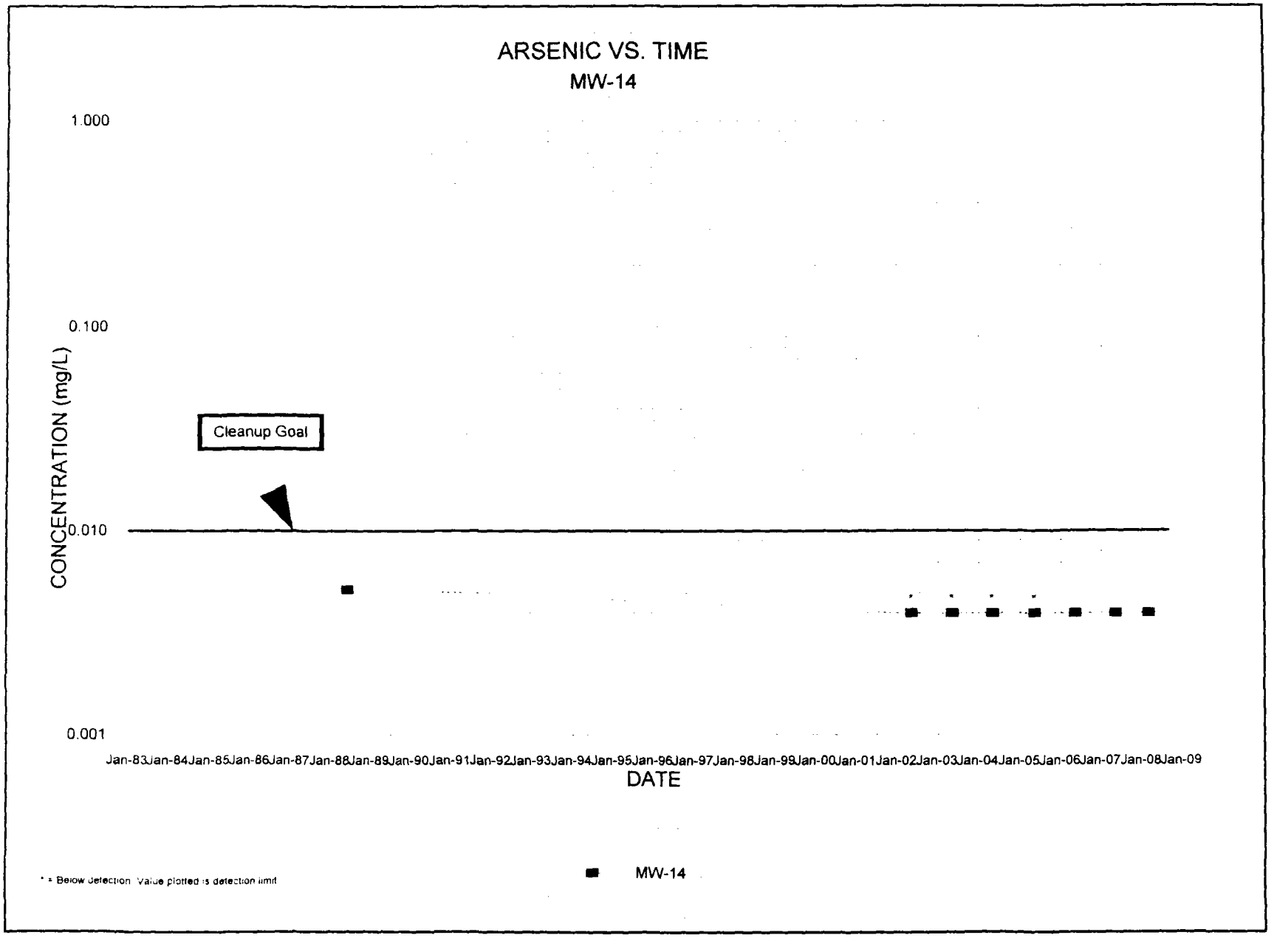
APPENDIX D-4

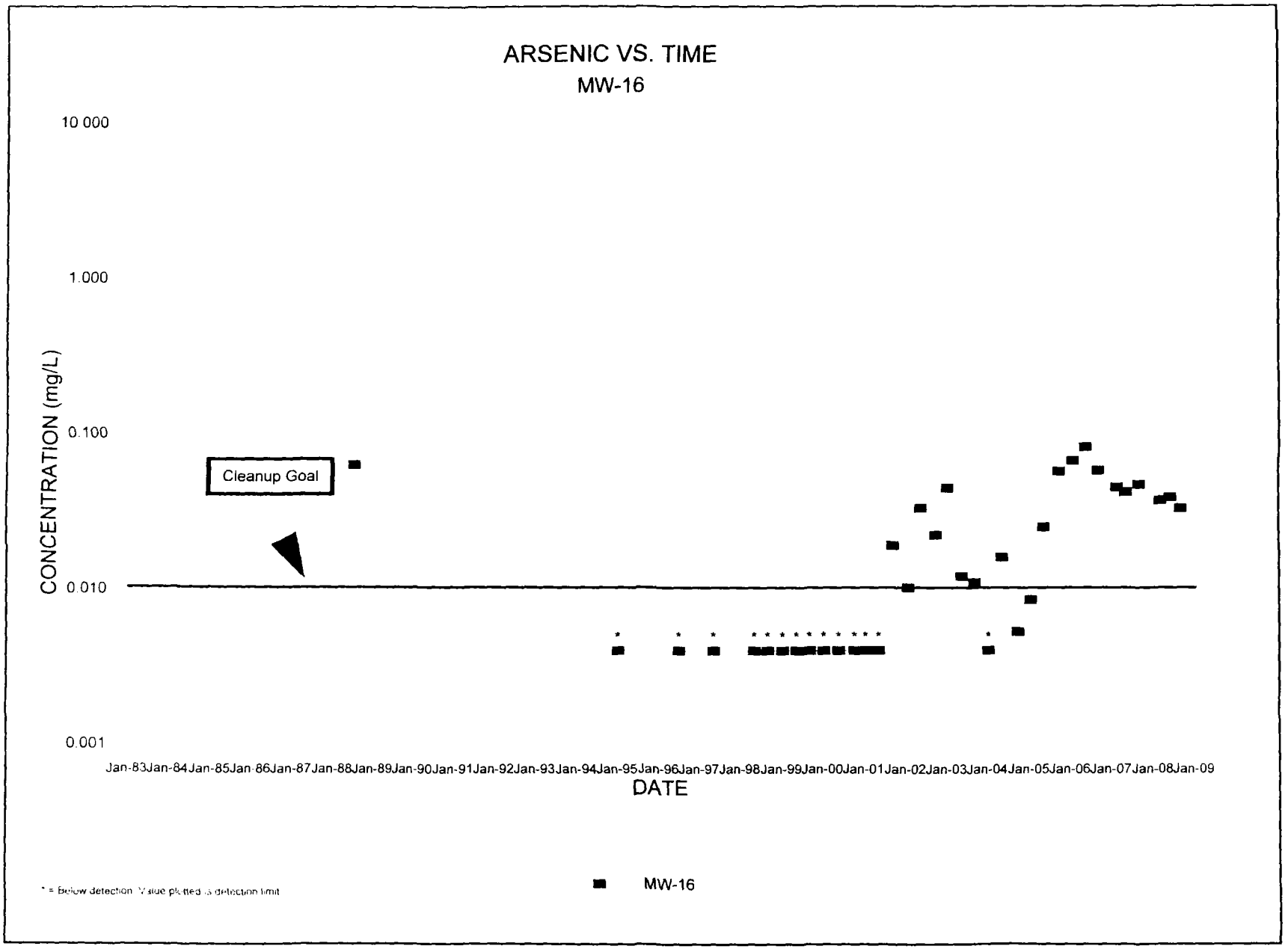
ARSENIC

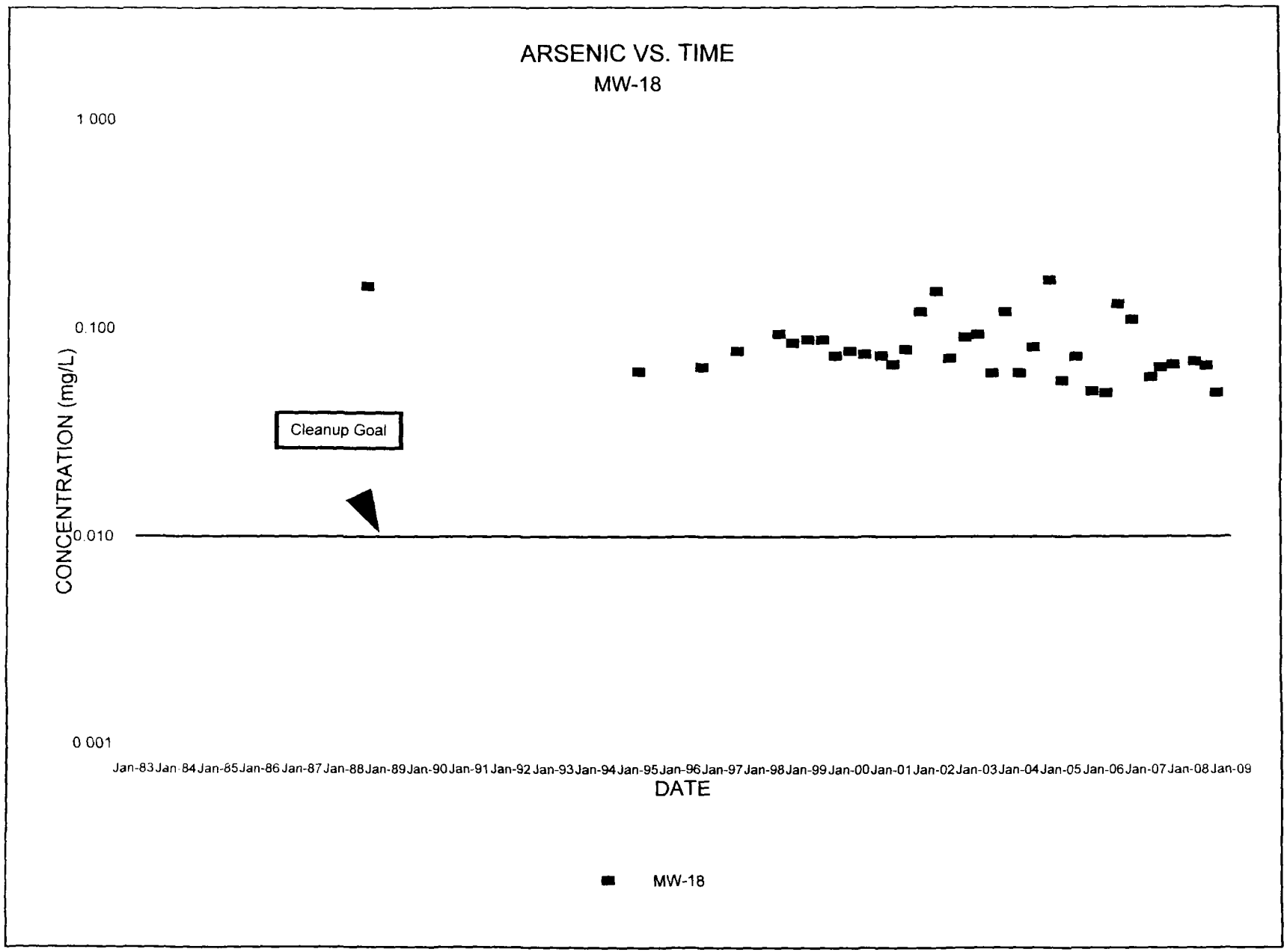

ARSENIC VS. TIME
MW-2
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-2

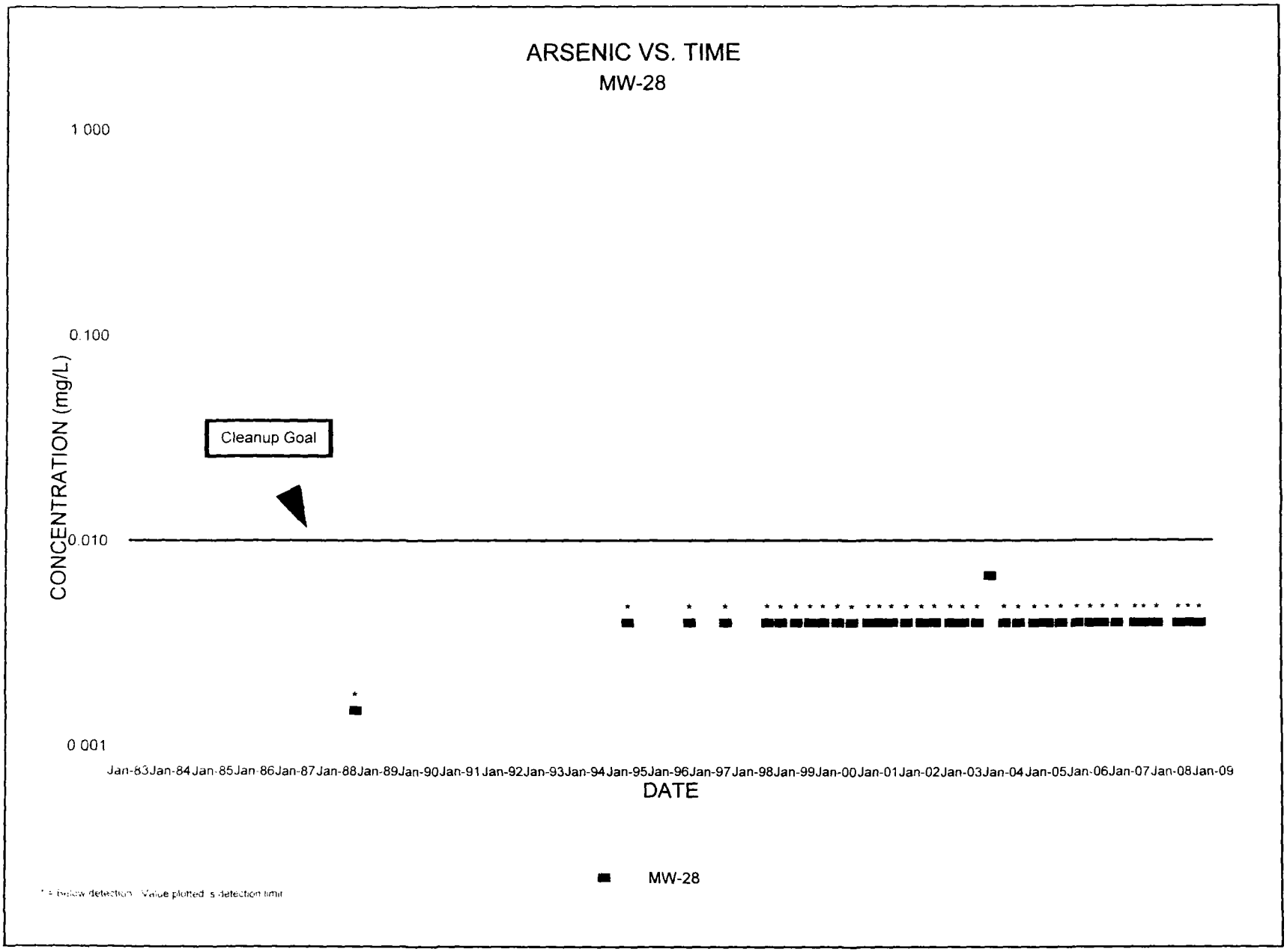

ARSENIC VS. TIME
MW-5
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-5

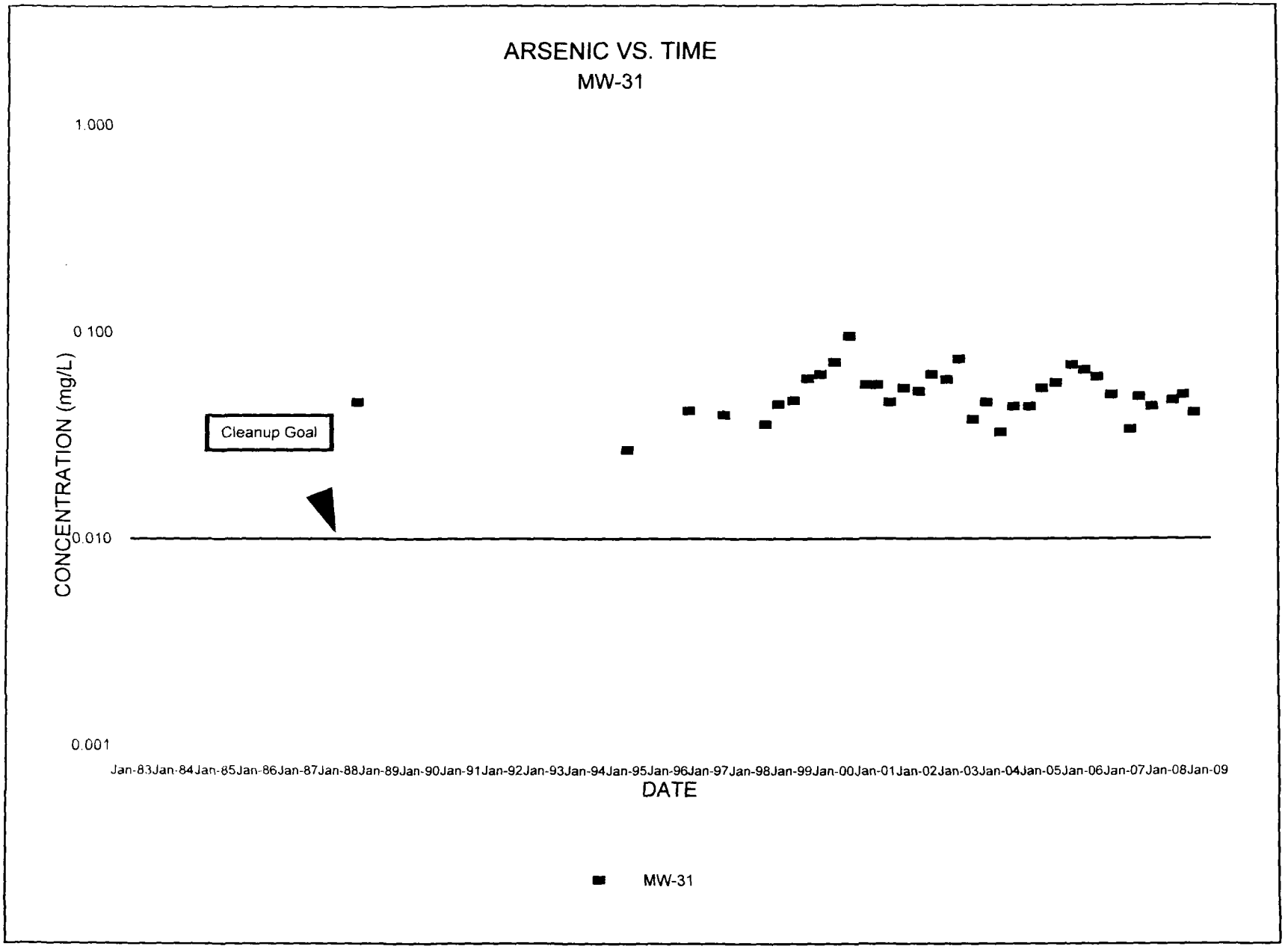

ARSENIC VS. TIME
MW-12
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-12
* = Below detection. Value plotted is detection limit.

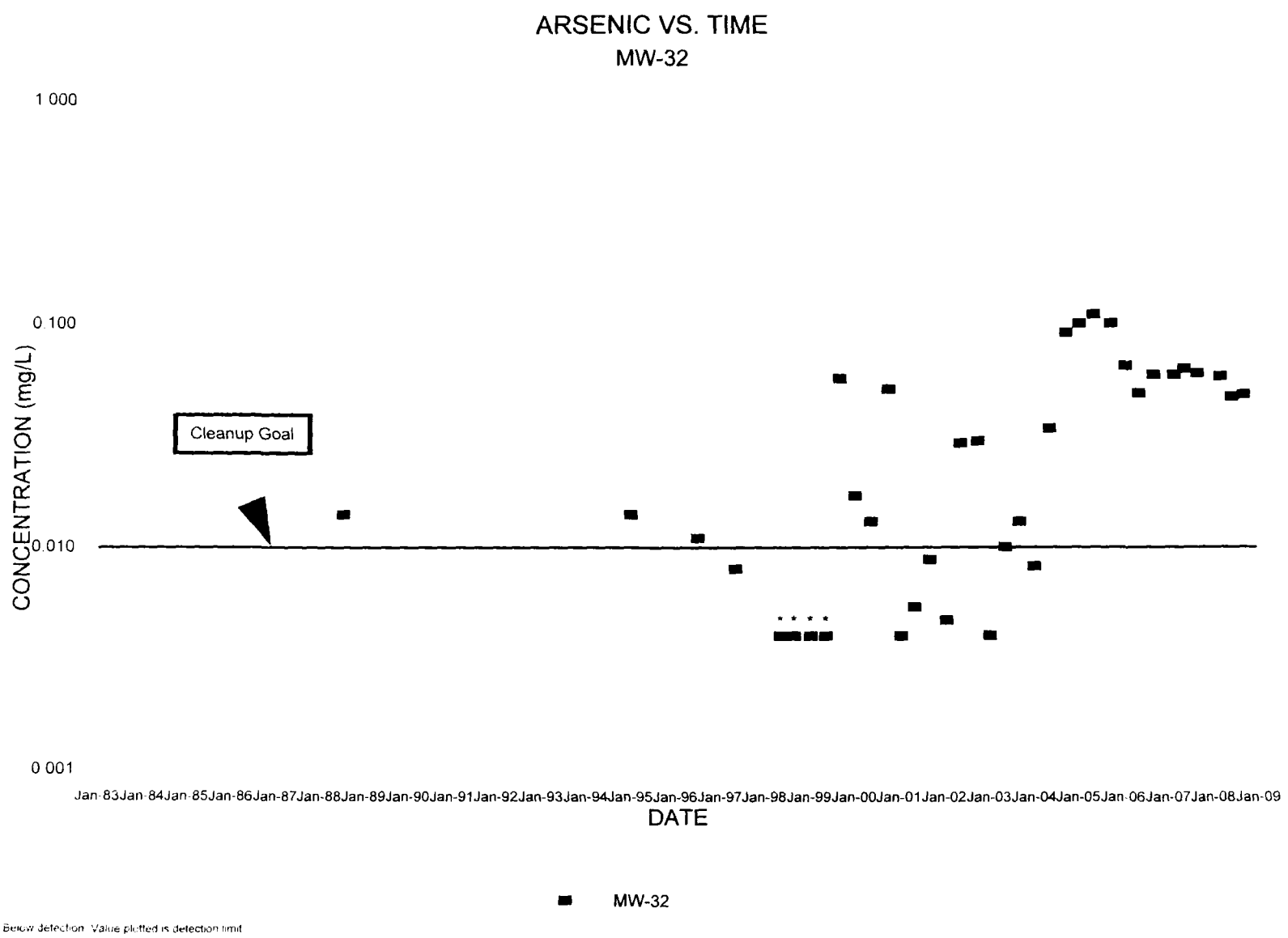

ARSENIC VS. TIME
MW-14
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-14
* = Below detection. Value plotted is detection limit


ARSENIC VS. TIME
MW-16
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 Jan-07 Jan-08 Jan-09
DATE
MW-16
* = Below detection. Value plotted as detection limit

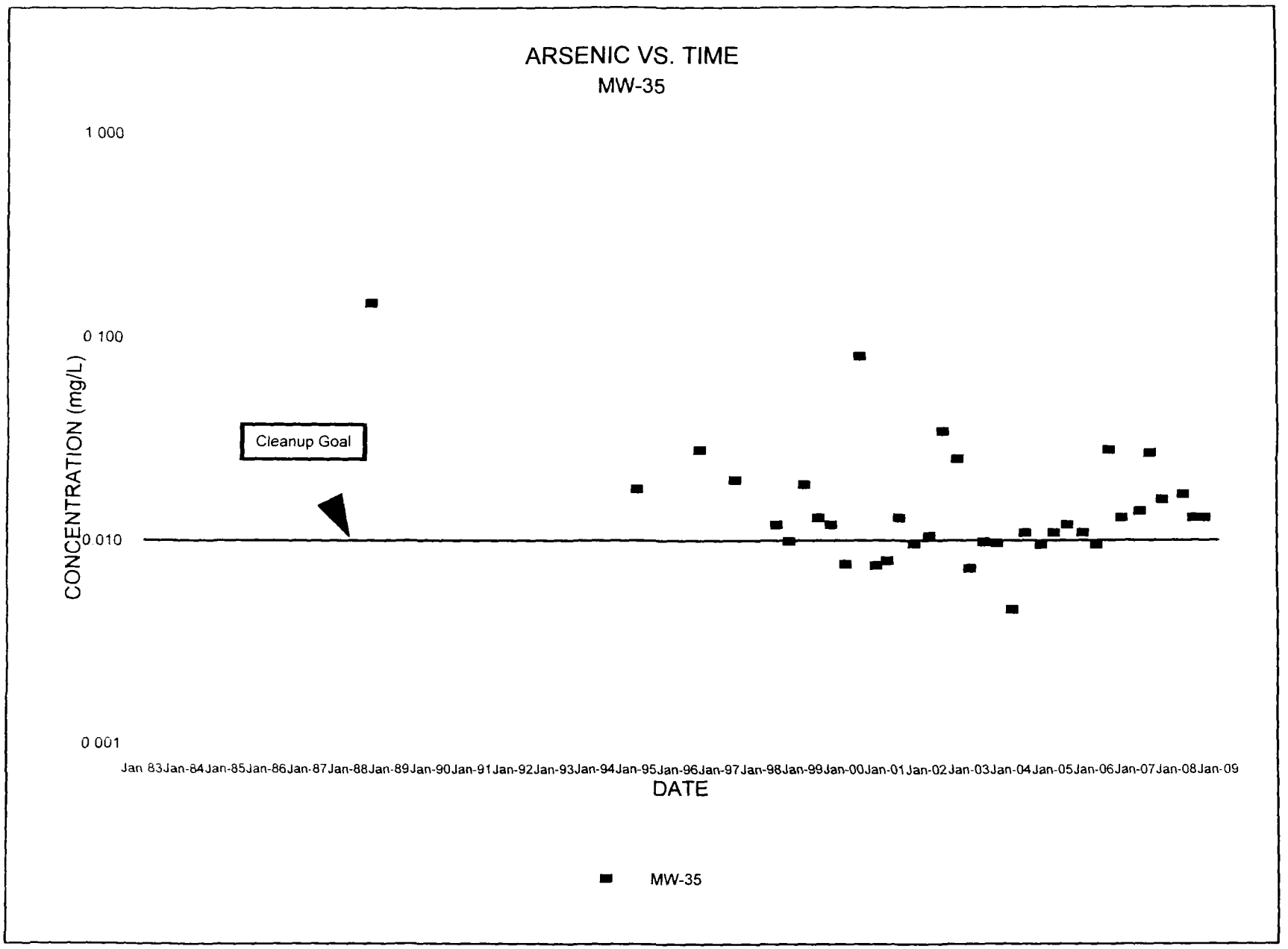

ARSENIC VS. TIME
MW-18
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-18

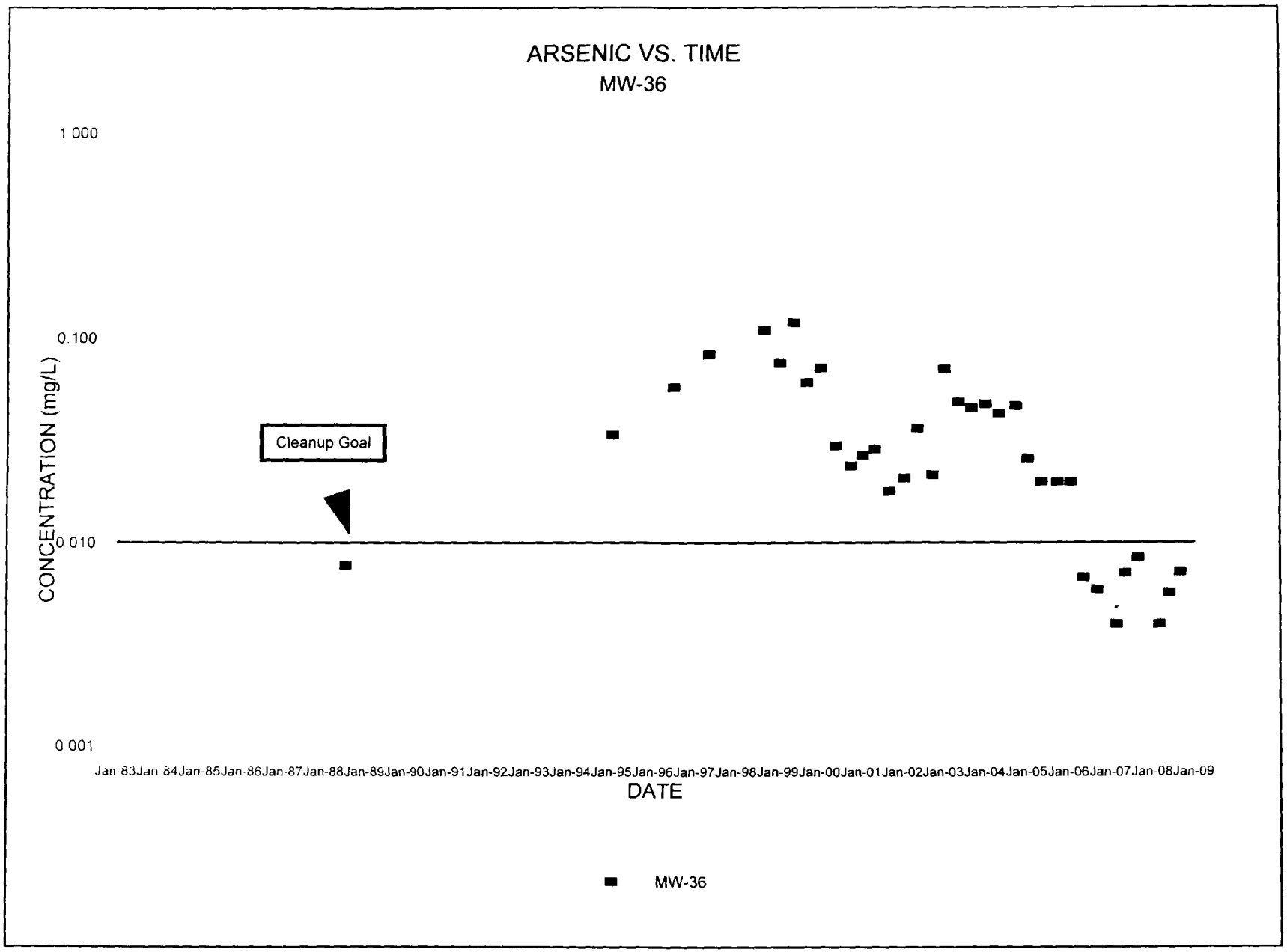

ARSENIC VS. TIME
MW-28
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-28
* = below detection. Value plotted is detection limit

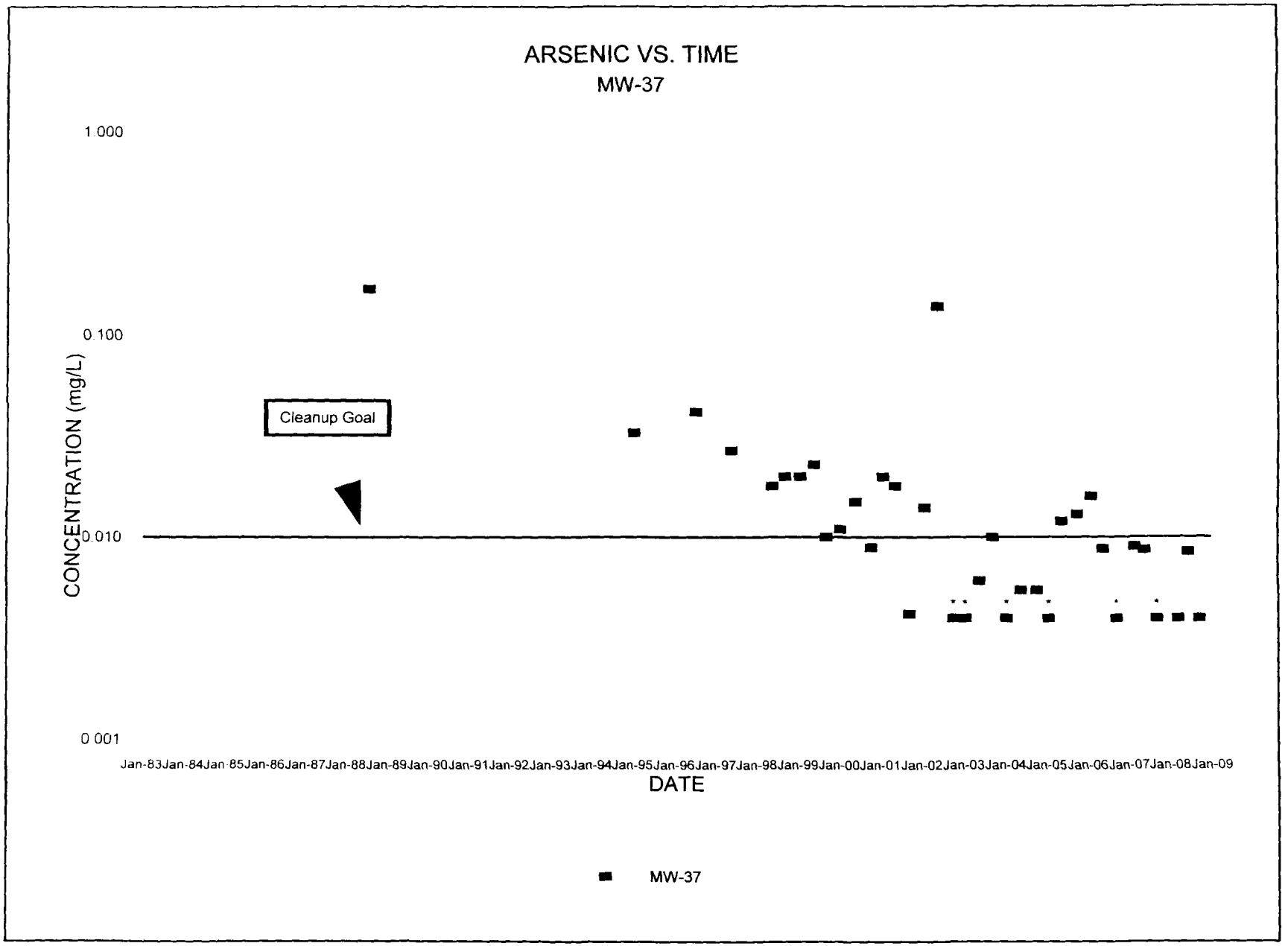

ARSENIC VS. TIME
MW-31
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
DATE
MW-31



* = Below detection. Value plotted is detection limit

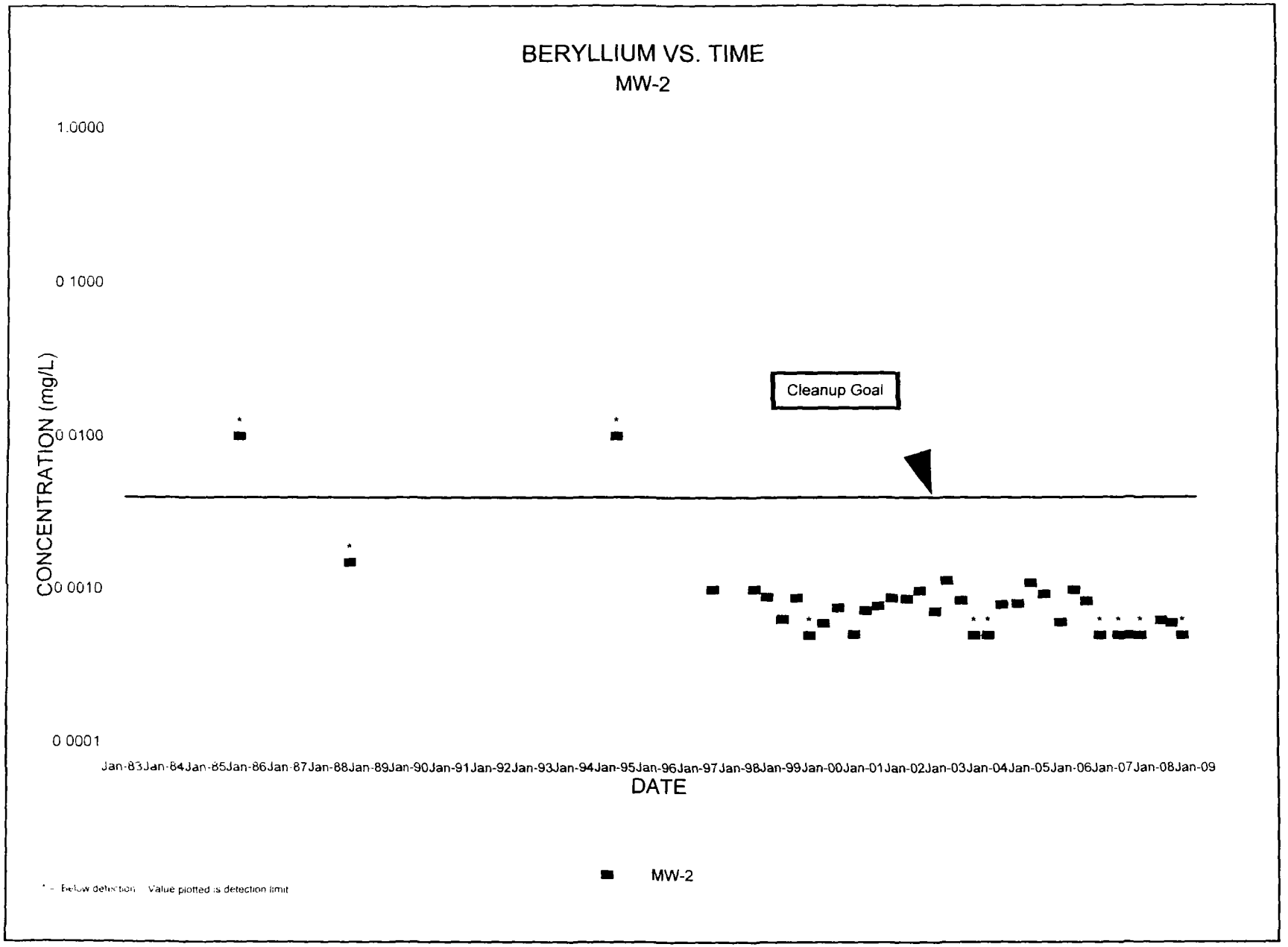

ARSENIC VS. TIME
MW-35
1 000
0 100
0 010
0 001
CONCENTRATION (mg/L)
Cleanup Goal
Jan 83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
DATE
MW-35

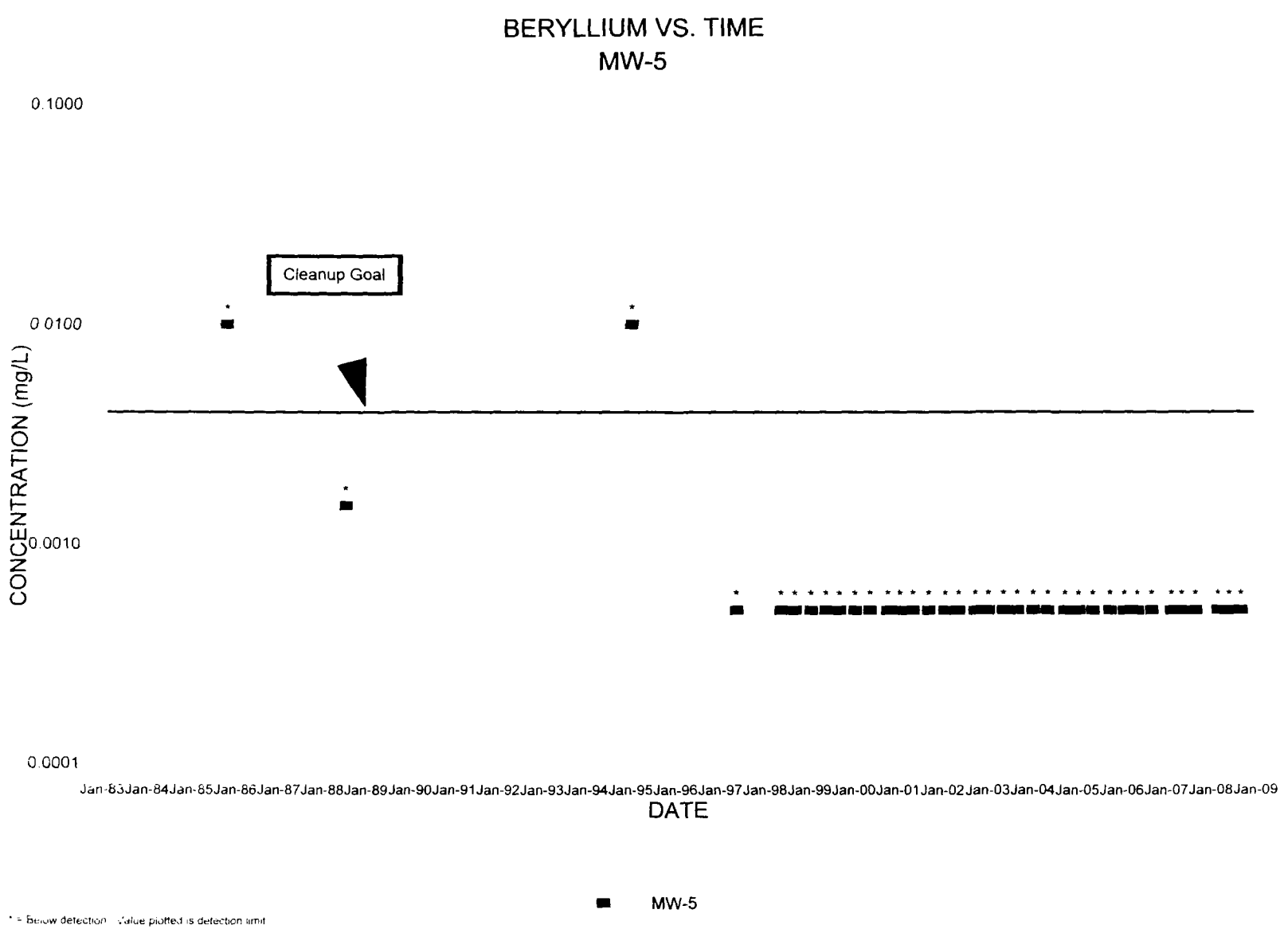

ARSENIC VS. TIME
MW-36
1 000
0.100
0 010
0 001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-36

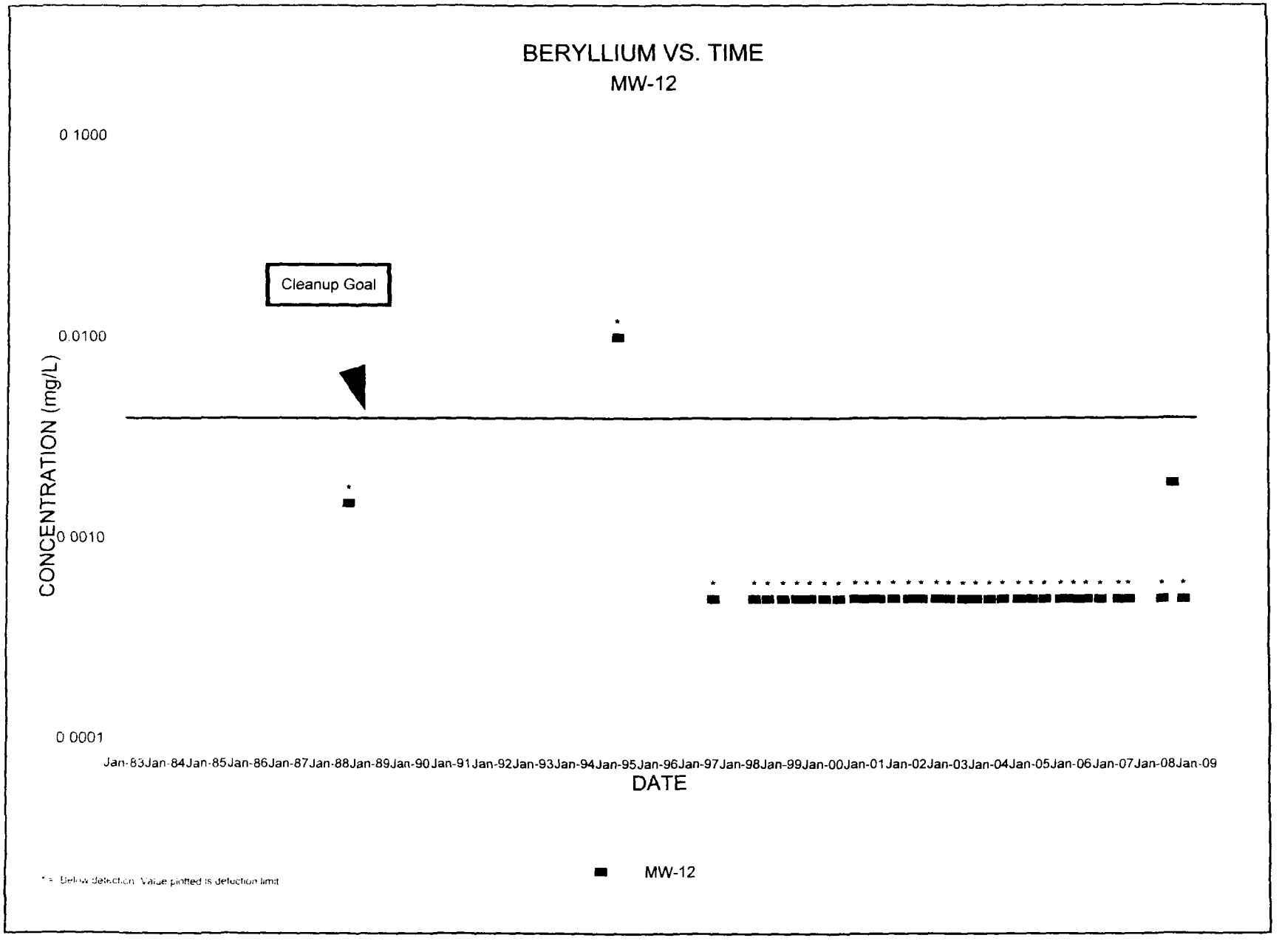

ARSENIC VS. TIME
MW-37
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-37

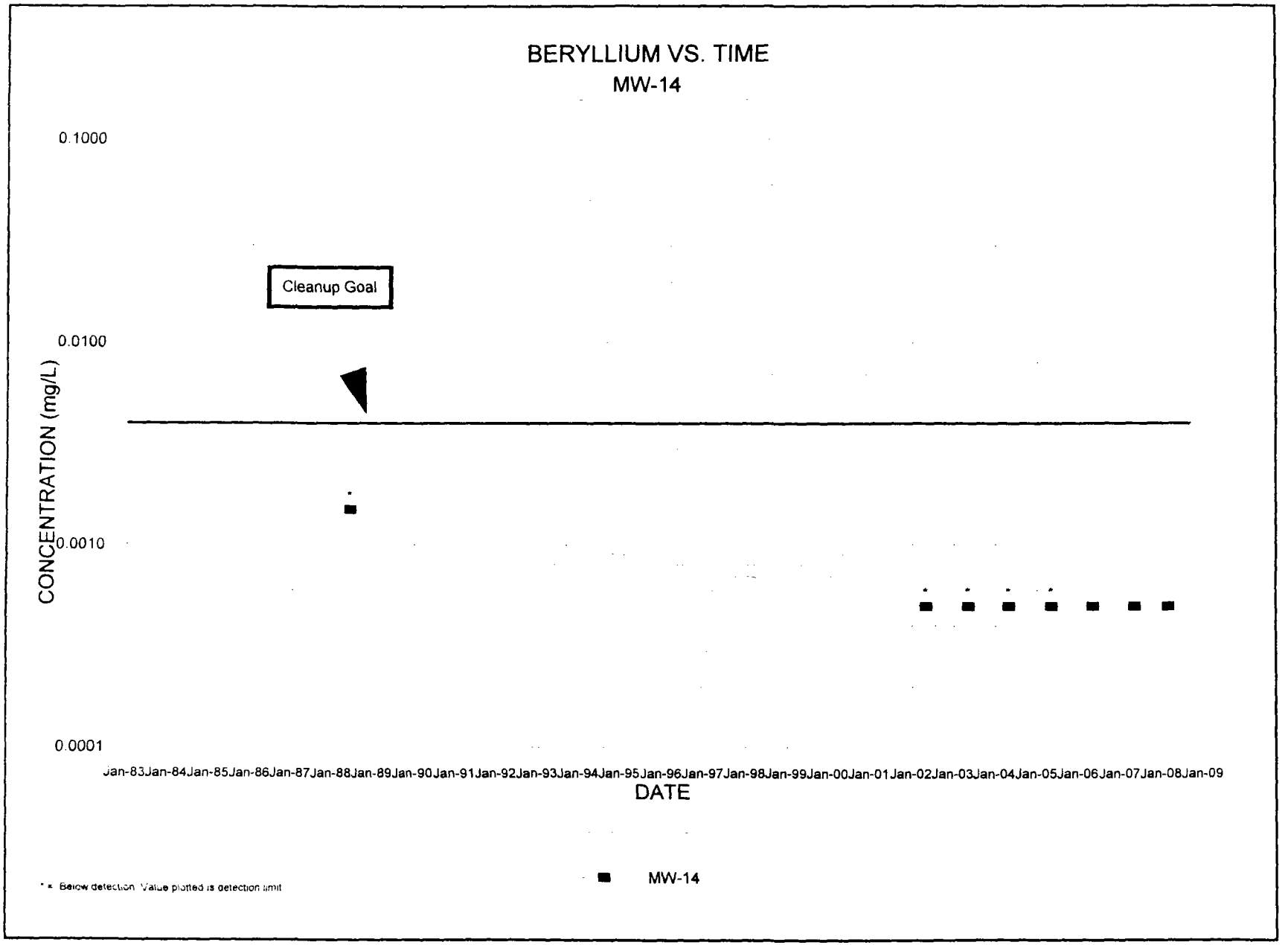
APPENDIX D-5

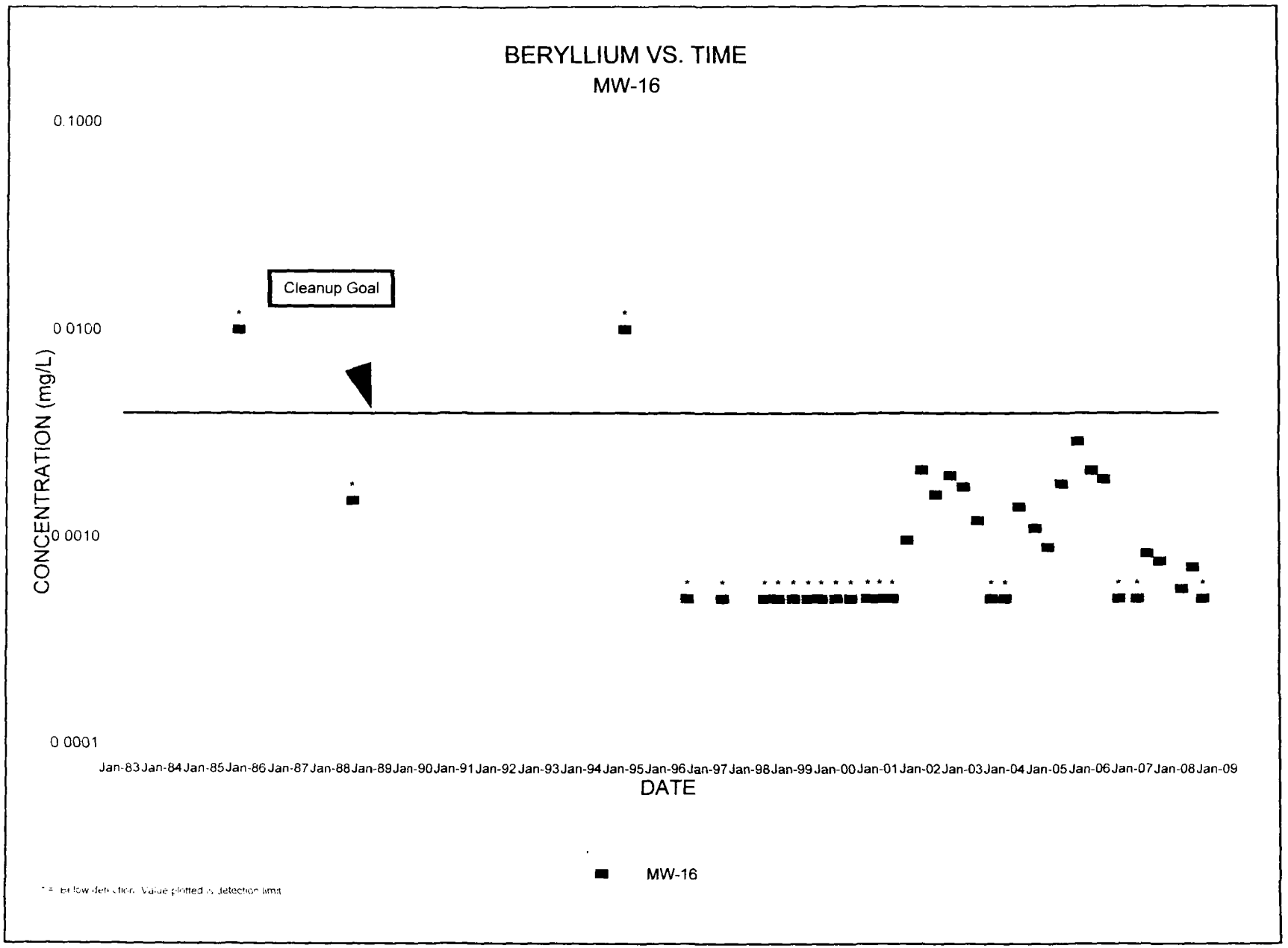
BERYLLIUM


BERYLLIUM VS. TIME
MW-2
1.0000
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 Jan-07 Jan-08 Jan-09
DATE
MW-2
* = Below detection. Value plotted is detection limit

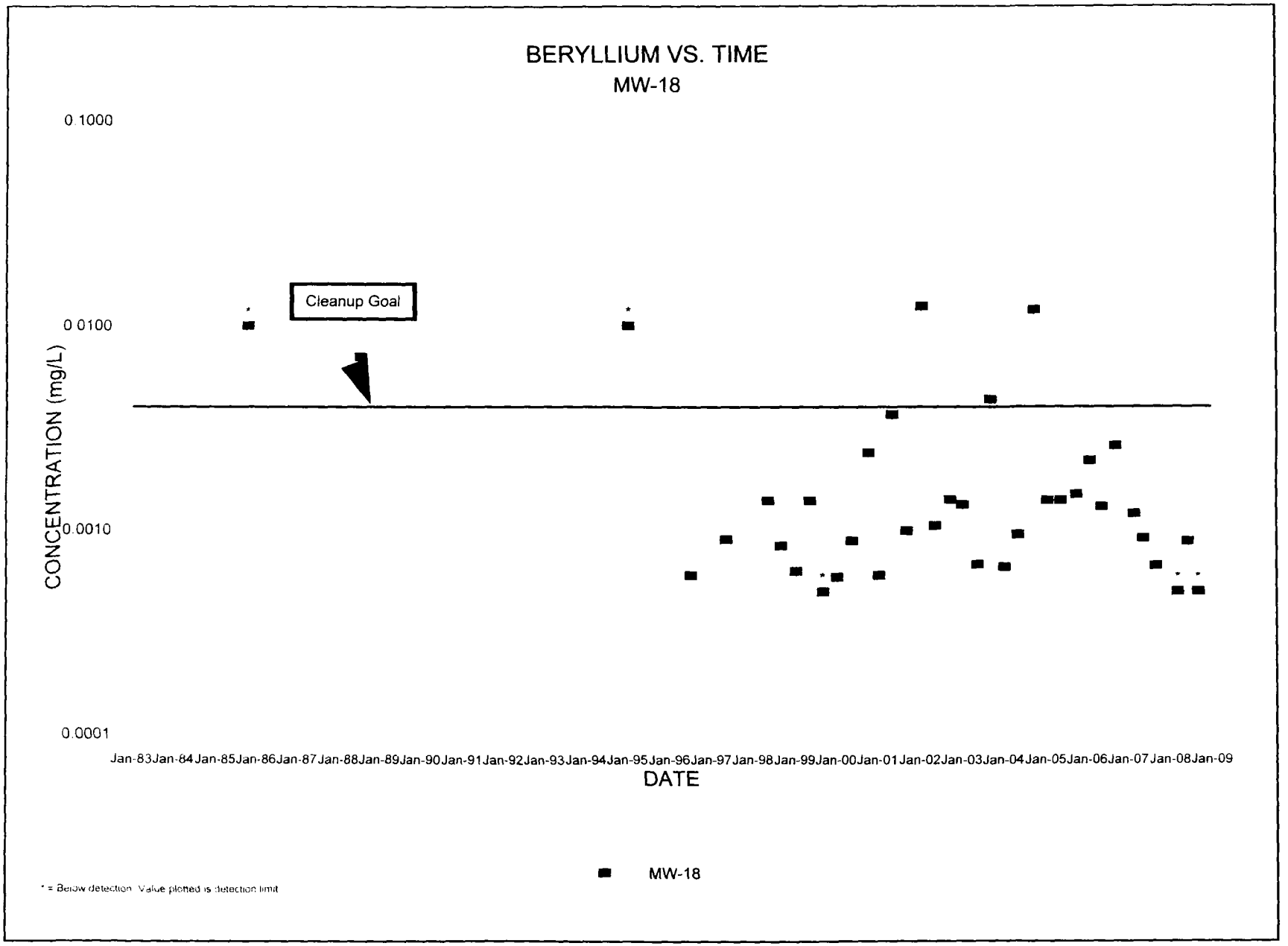

BERYLLIUM VS. TIME
MW-5
0.1000
0.0100
0.0010
0.0001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-5
* = Below detection. Value plotted is detection limit

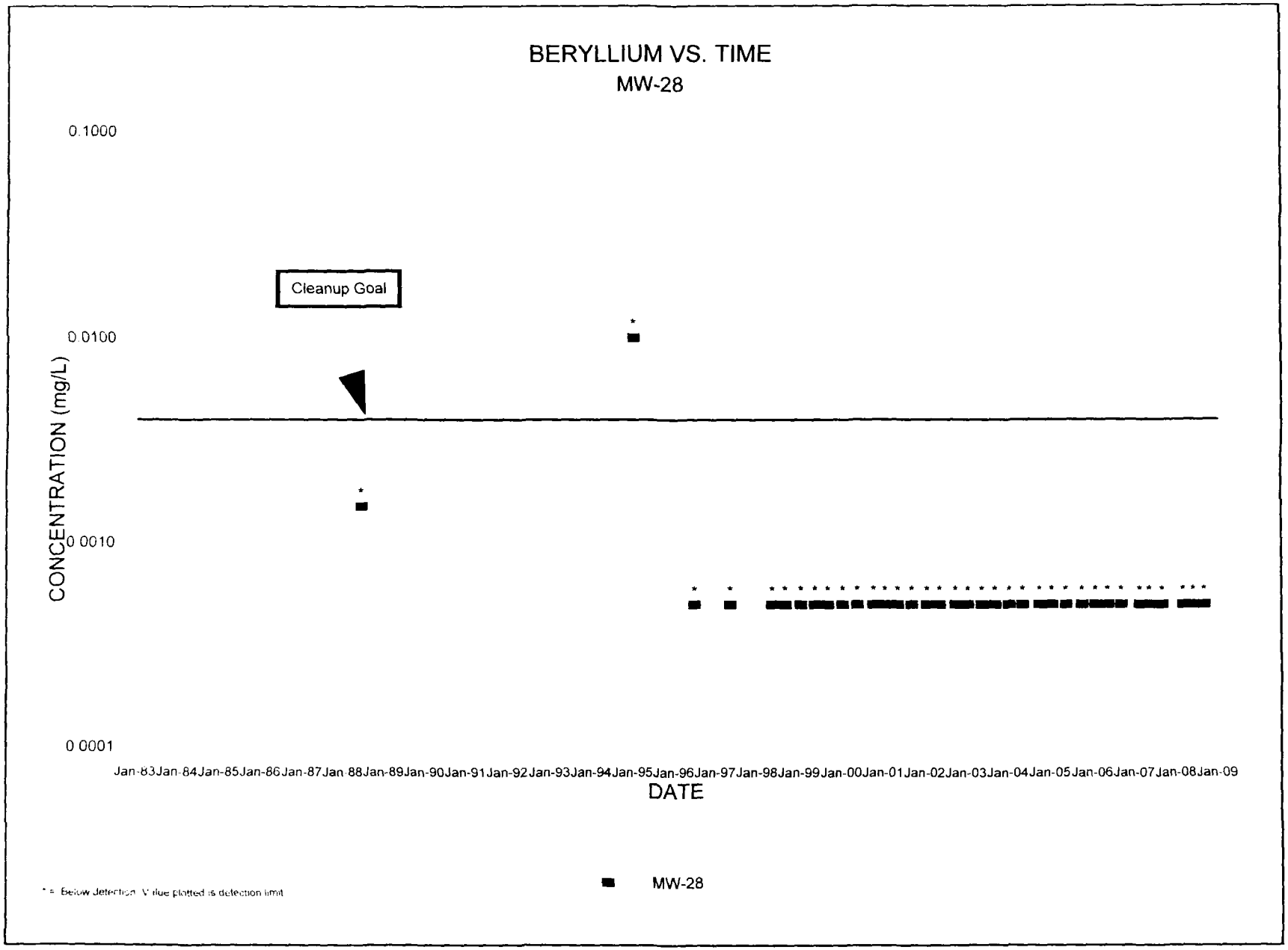

BERYLLIUM VS. TIME
MW-12
0 1000
0.0100
0 0010
0 0001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-12
* = Below detection. Value plotted is detection limit

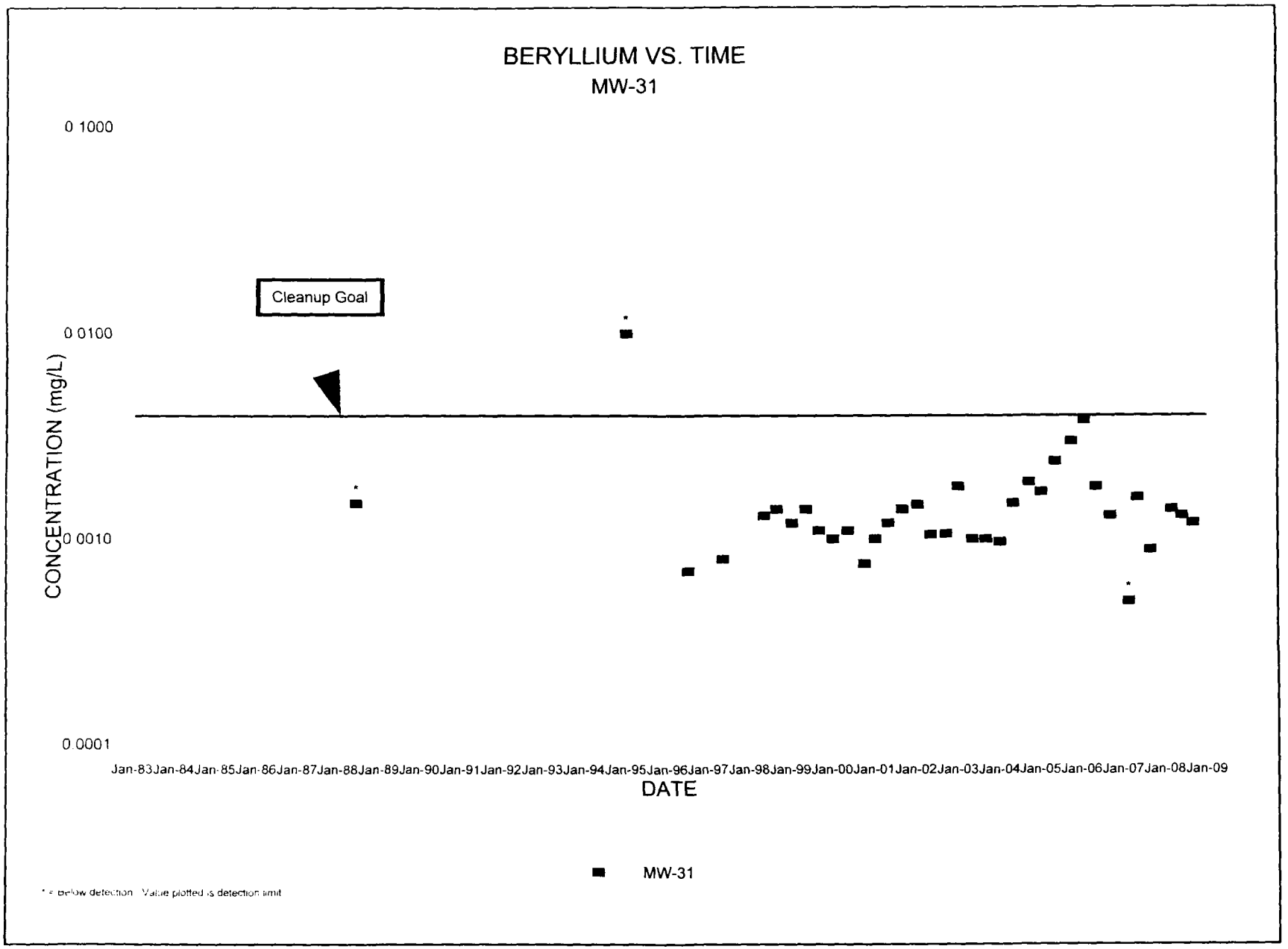

BERYLLIUM VS. TIME
MW-14
0.1000
0.0100
0.0010
0.0001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83Jan-84Jan-85Jan-86Jan-87Jan-88Jan-89Jan-90Jan-91Jan-92Jan-93Jan-94Jan-95Jan-96Jan-97Jan-98Jan-99Jan-00Jan-01Jan-02Jan-03Jan-04Jan-05Jan-06Jan-07Jan-08Jan-09
DATE
MW-14
* = Below detection. Value plotted is detection limit

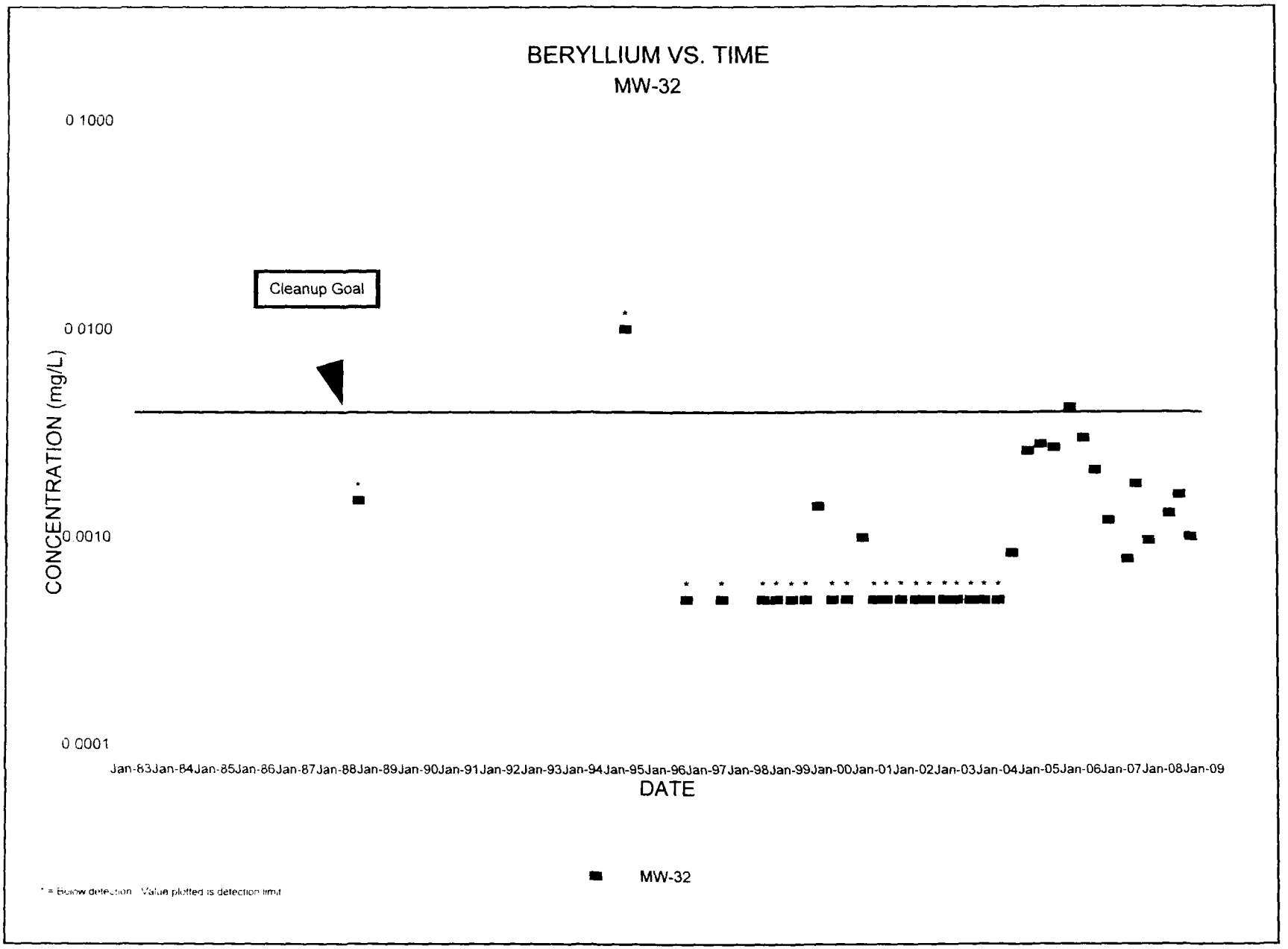


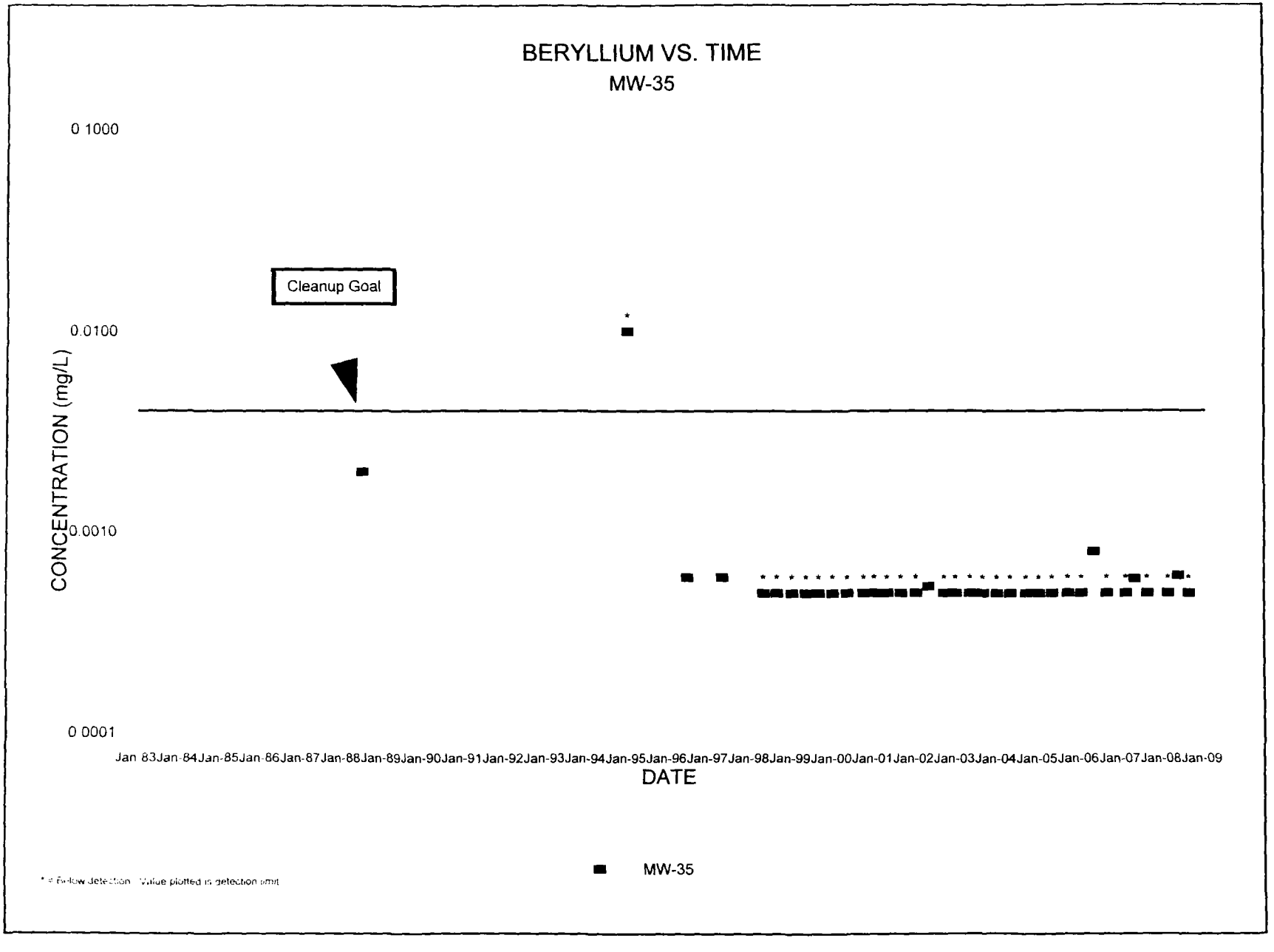
* = Below detection. Value plotted is detection limit

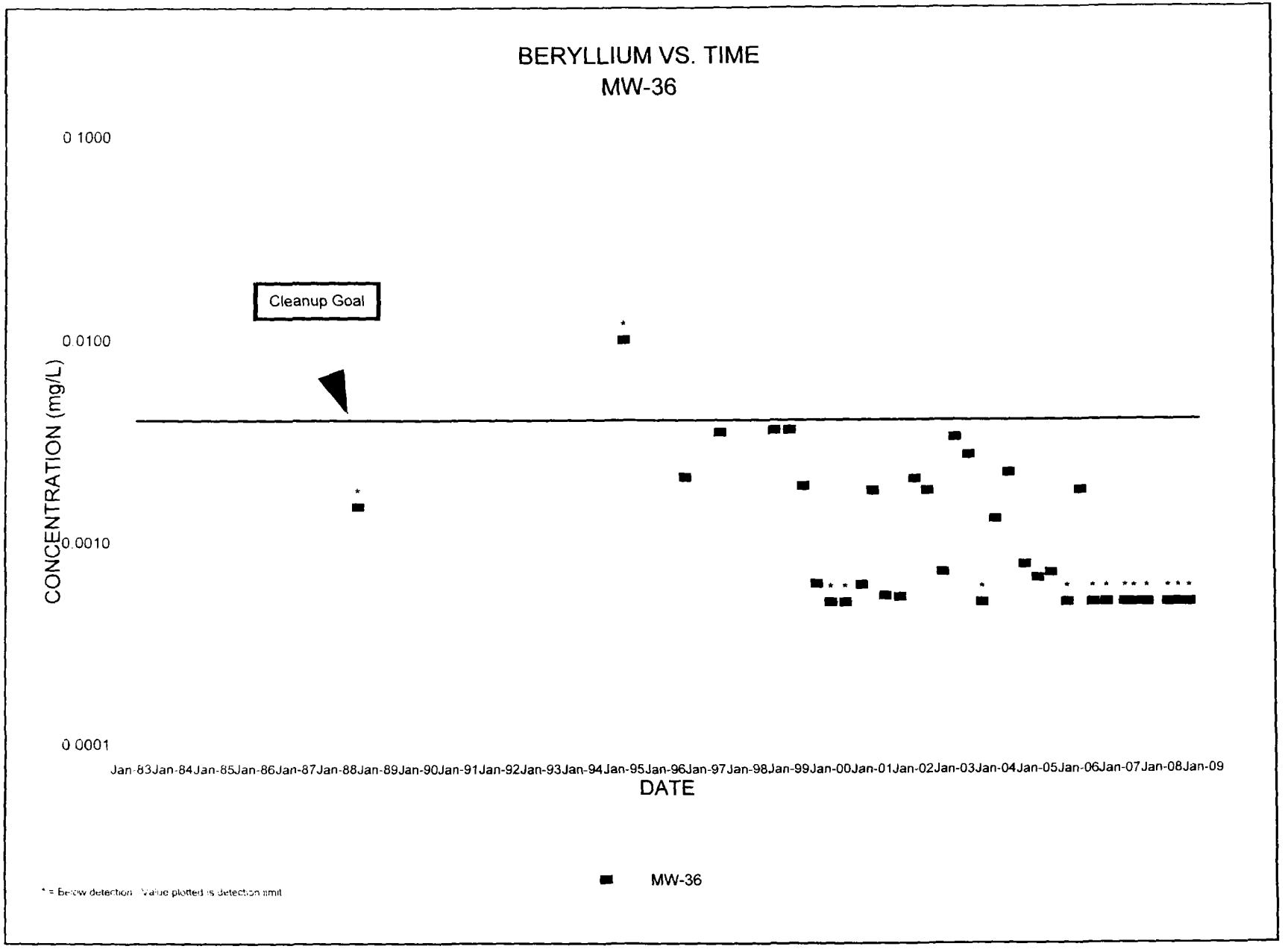

BERYLLIUM VS. TIME
MW-18
0.1000
0.0100
0.0010
0.0001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-18
* = Below detection. Value plotted is detection limit

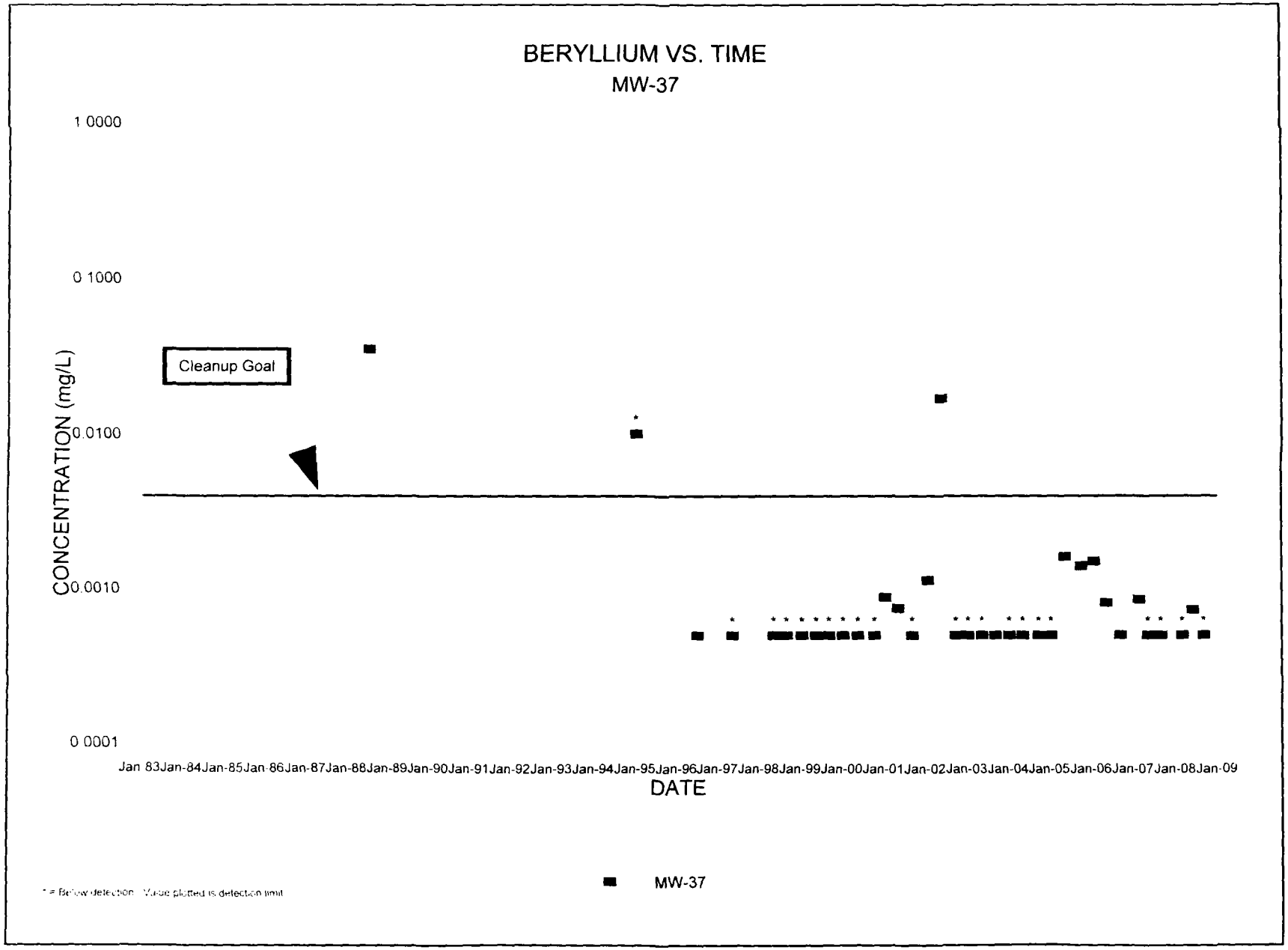

BERYLLIUM VS. TIME
MW-28
0.1000
0.0100
0.0010
0.0001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-28
* = Below detection. Value plotted is detection limit


BERYLLIUM VS. TIME
MW-31
0 1000
0 0100
0 0010
0.0001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83Jan-84Jan-85Jan-86Jan-87Jan-88Jan-89Jan-90Jan-91Jan-92Jan-93Jan-94Jan-95Jan-96Jan-97Jan-98Jan-99Jan-00Jan-01Jan-02Jan-03Jan-04Jan-05Jan-06Jan-07Jan-08Jan-09
DATE
MW-31
* = Below detection. Value plotted is detection limit


BERYLLIUM VS. TIME
MW-32
0 1000
0 0100
0.0010
0 0001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83Jan-84Jan-85Jan-86Jan-87Jan-88Jan-89Jan-90Jan-91Jan-92Jan-93Jan-94Jan-95Jan-96Jan-97Jan-98Jan-99Jan-00Jan-01Jan-02Jan-03Jan-04Jan-05Jan-06Jan-07Jan-08Jan-09
DATE
MW-32
* = Below detection. Value plotted is detection limit

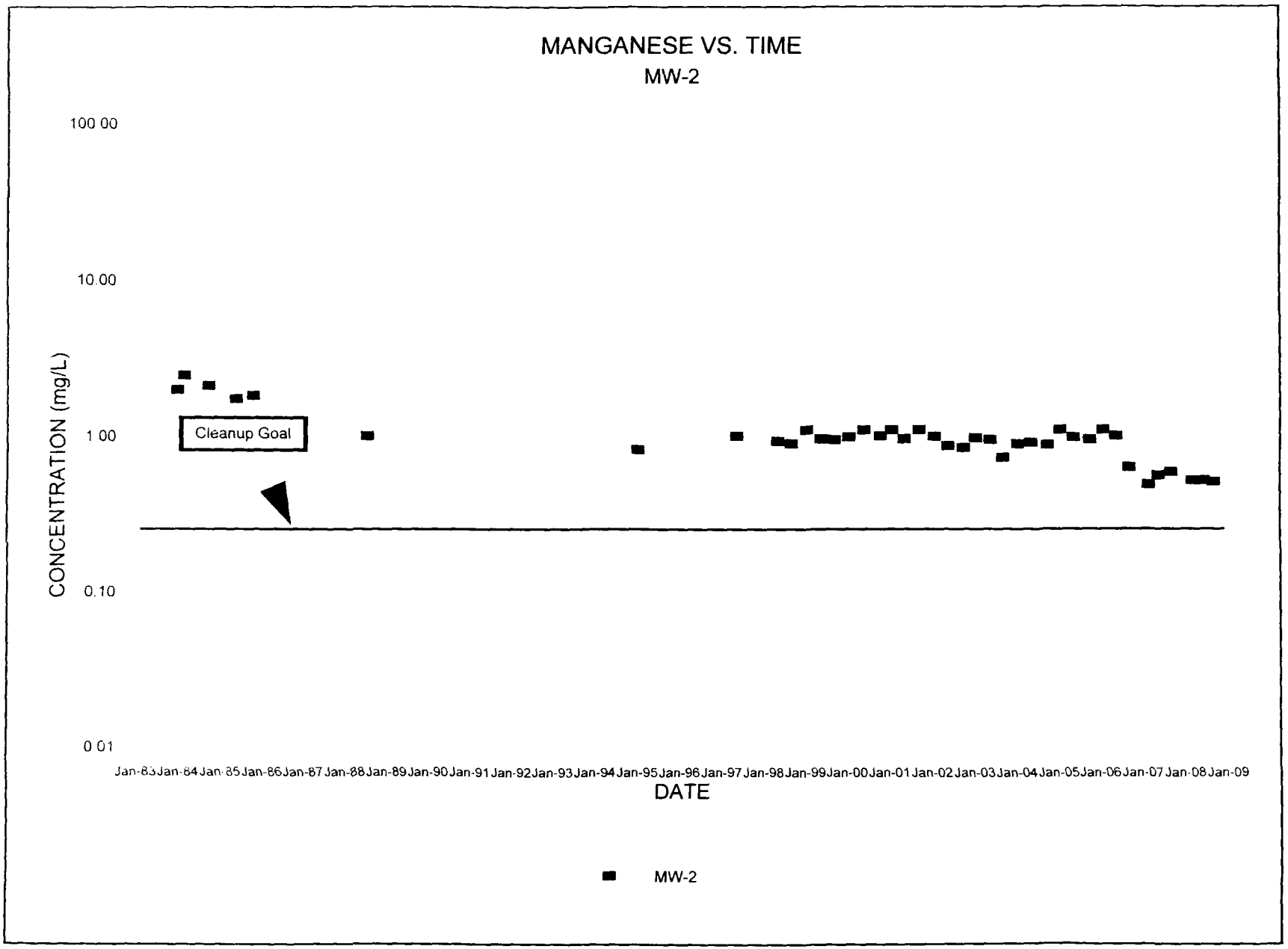

BERYLLIUM VS. TIME
MW-35
0 1000
0.0100
0.0010
0 0001
CONCENTRATION (mg/L)
Cleanup Goal
Jan 83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
DATE
MW-35
* = Below detection. Value plotted is detection limit

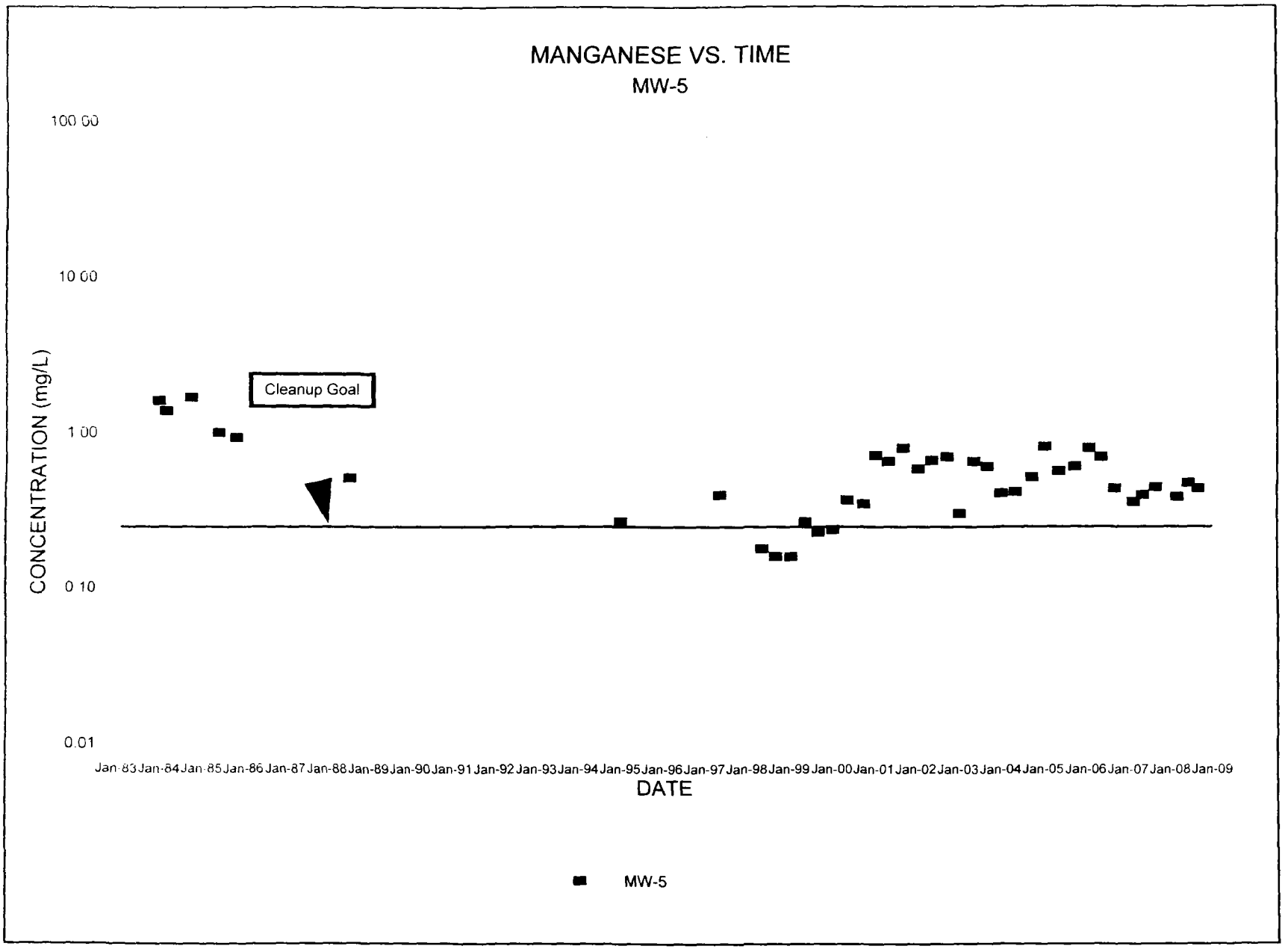

BERYLLIUM VS. TIME
MW-36
0.1000
0.0100
0.0010
0.0001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
DATE
MW-36
* = Below detection. Value plotted is detection limit

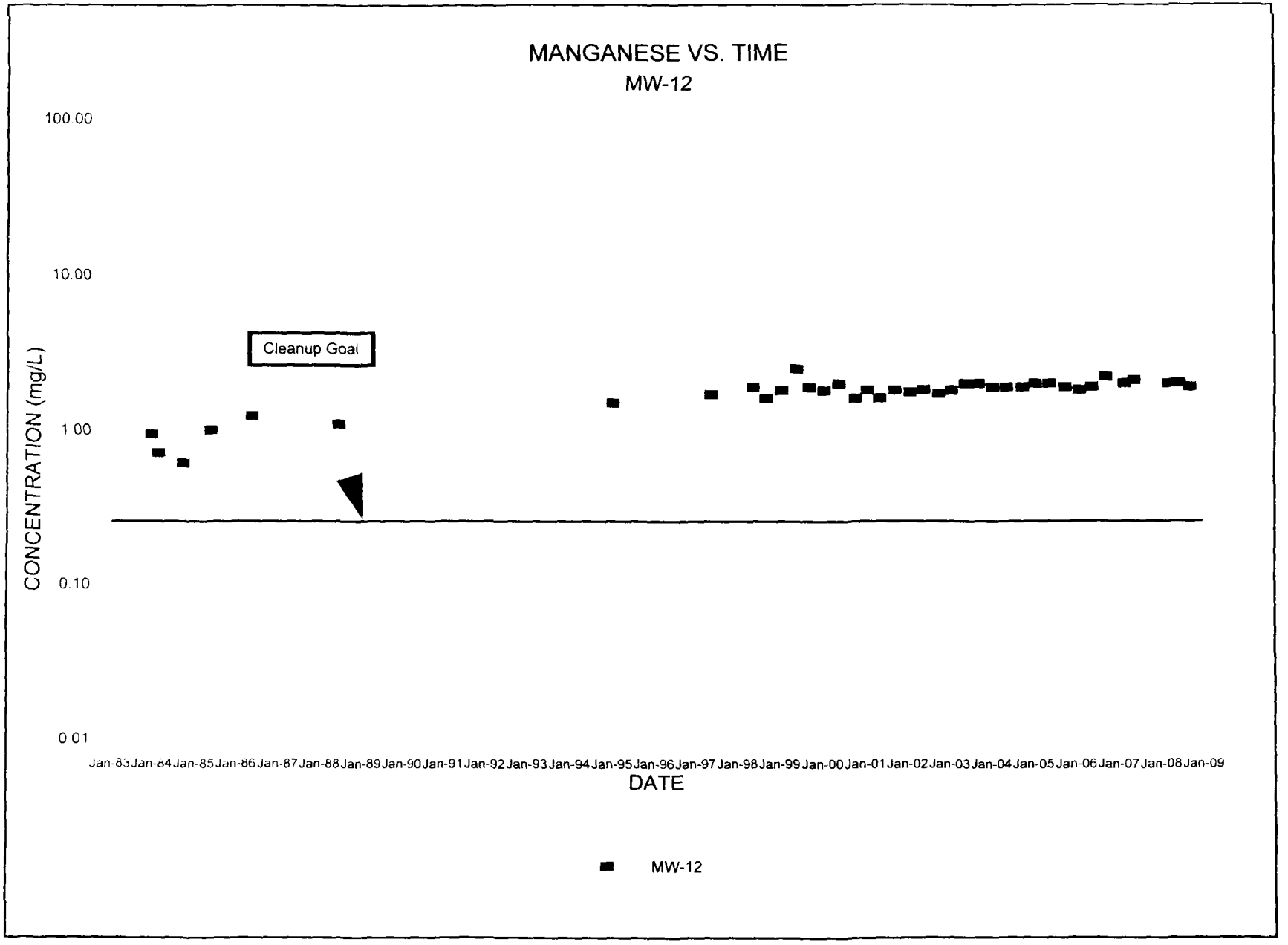

BERYLLIUM VS. TIME
MW-37
1 0000
0 1000
0.0100
0.0010
0 0001
CONCENTRATION (mg/L)
Cleanup Goal
Jan 83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
DATE
MW-37
* = Below detection. Value plotted is detection limit

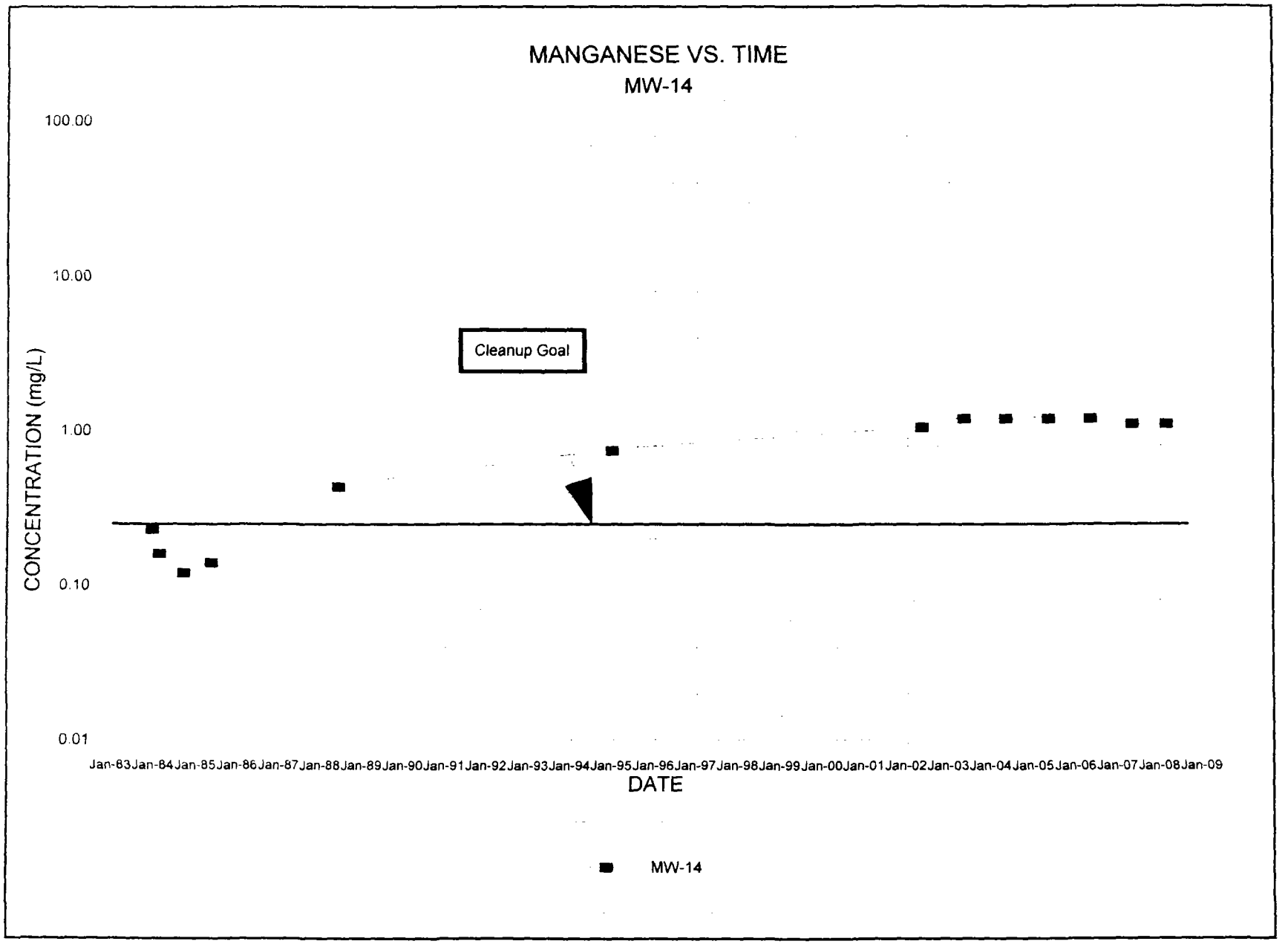
APPENDIX D-6

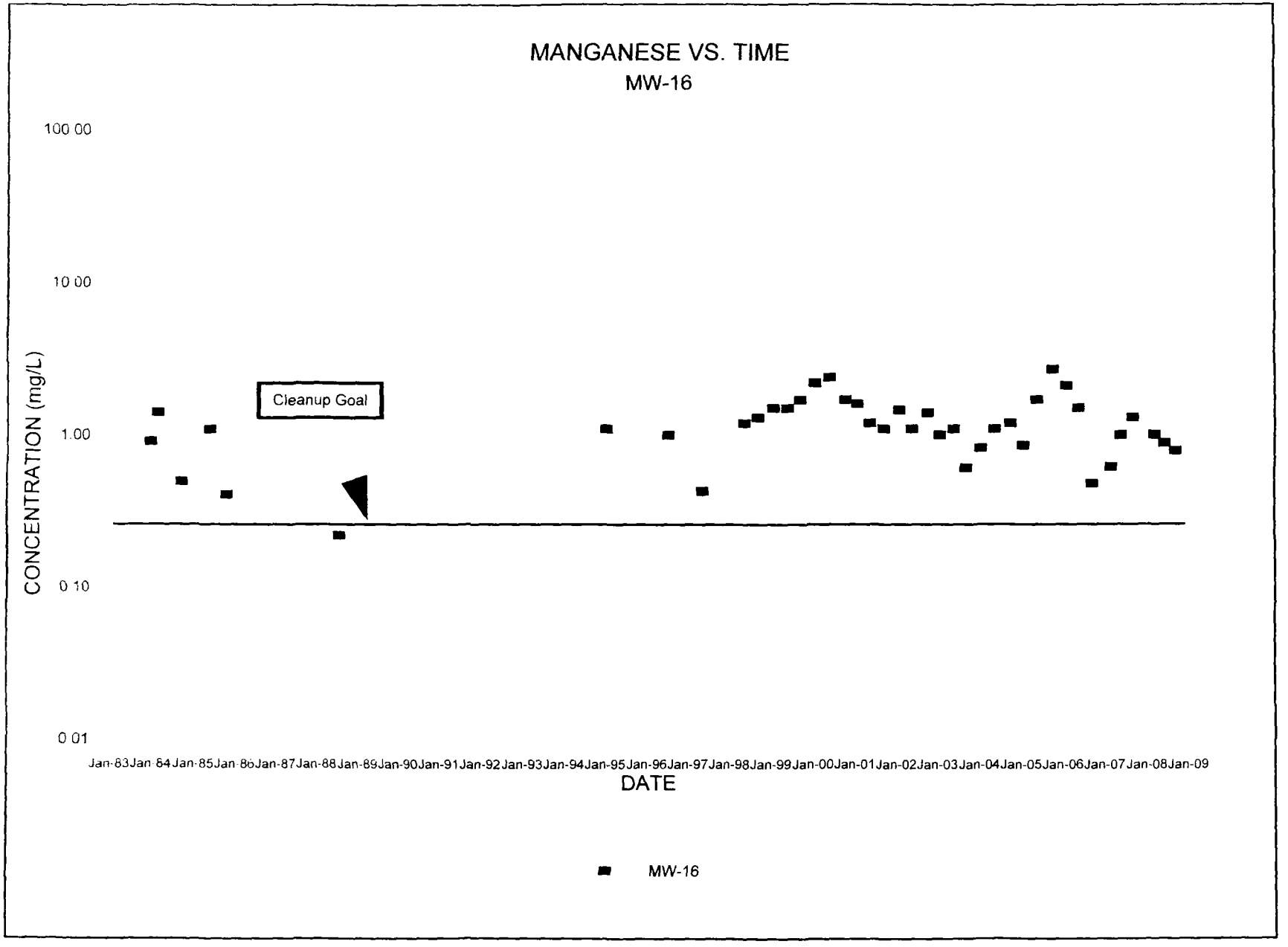
MANGANESE

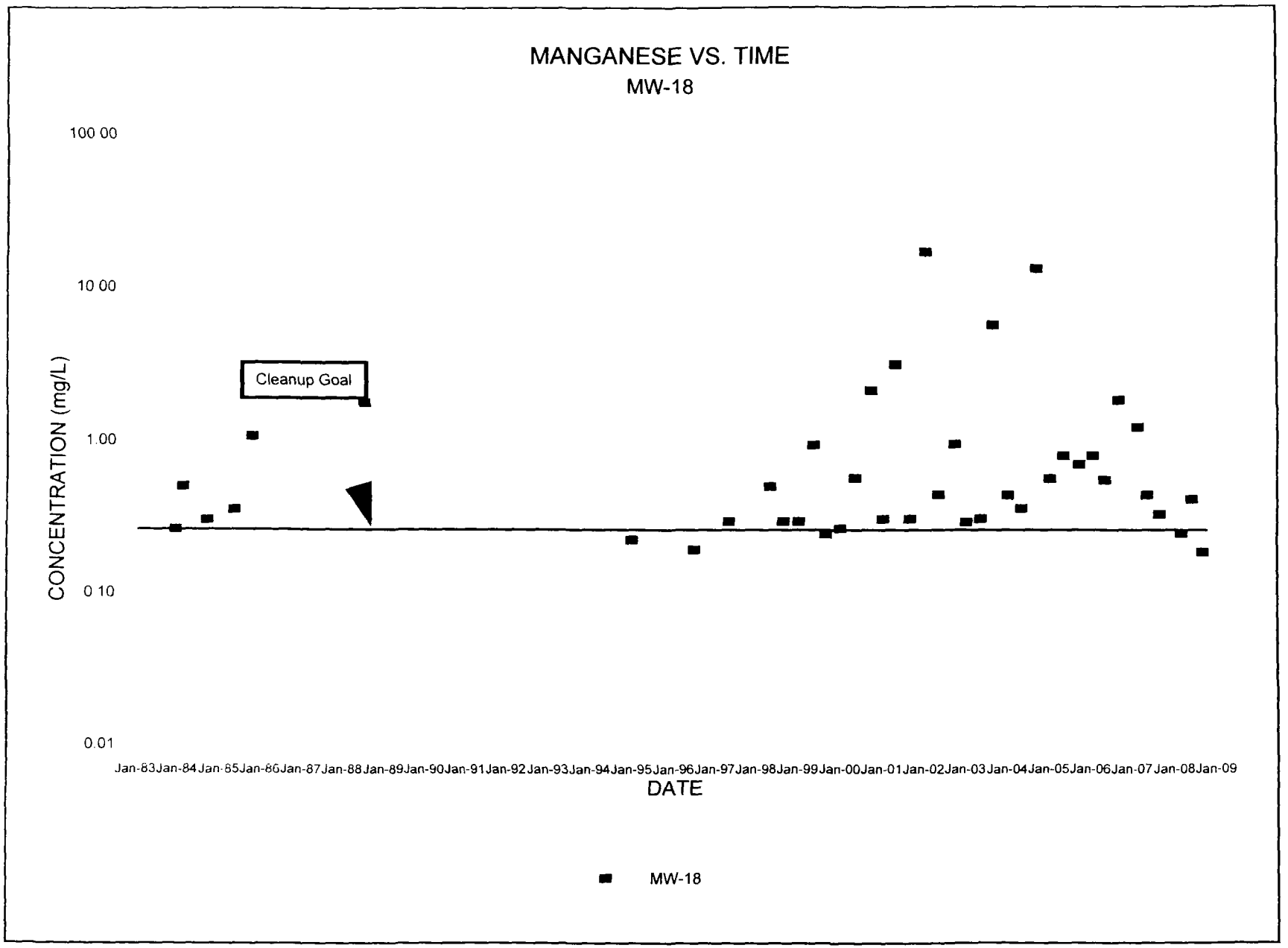

MANGANESE VS. TIME
MW-2
100 00
10.00
1 00
0.10
0 01
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-2

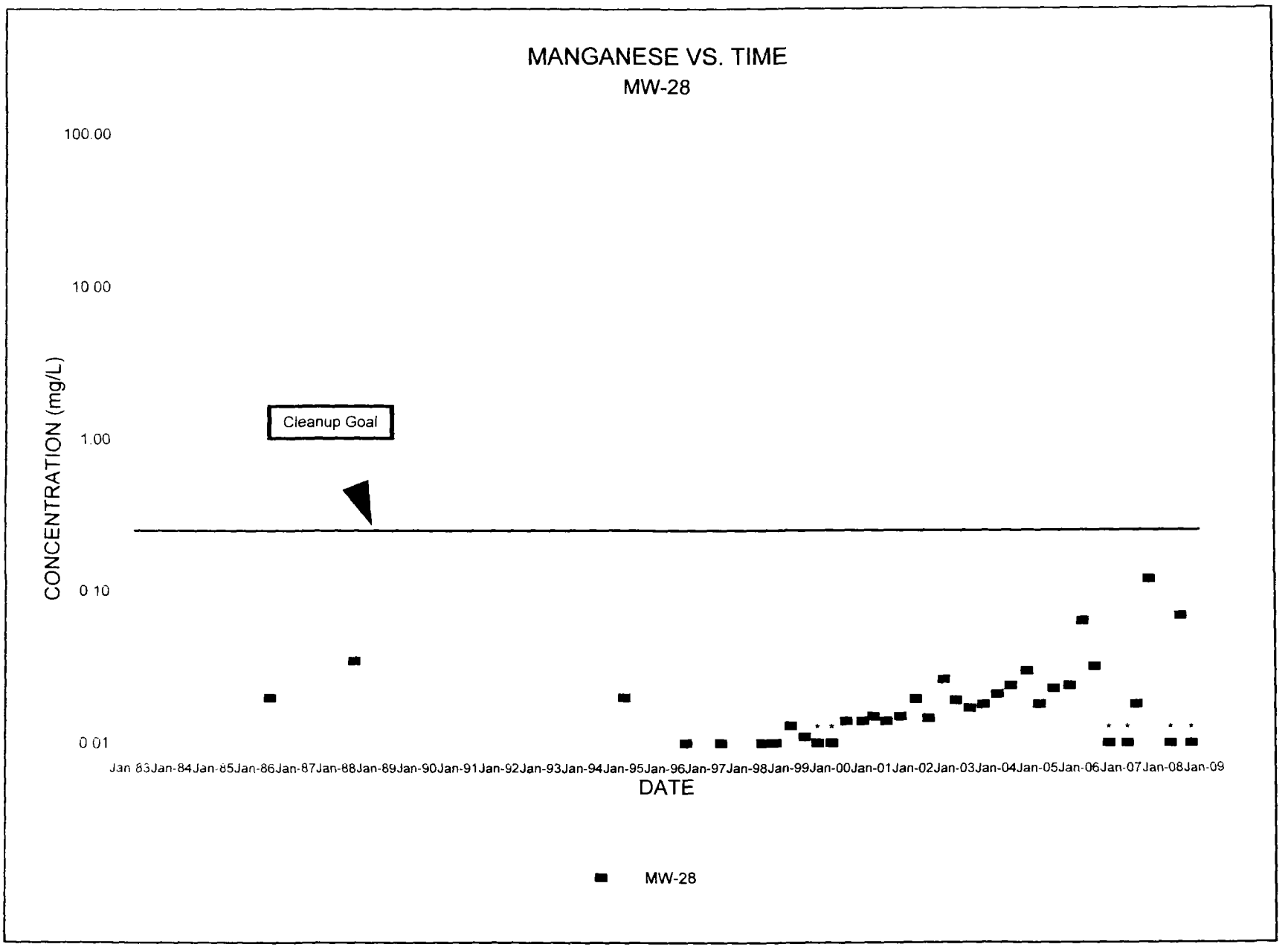

MANGANESE VS. TIME
MW-5
100.00
10.00
1.00
0.10
0.01
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-5

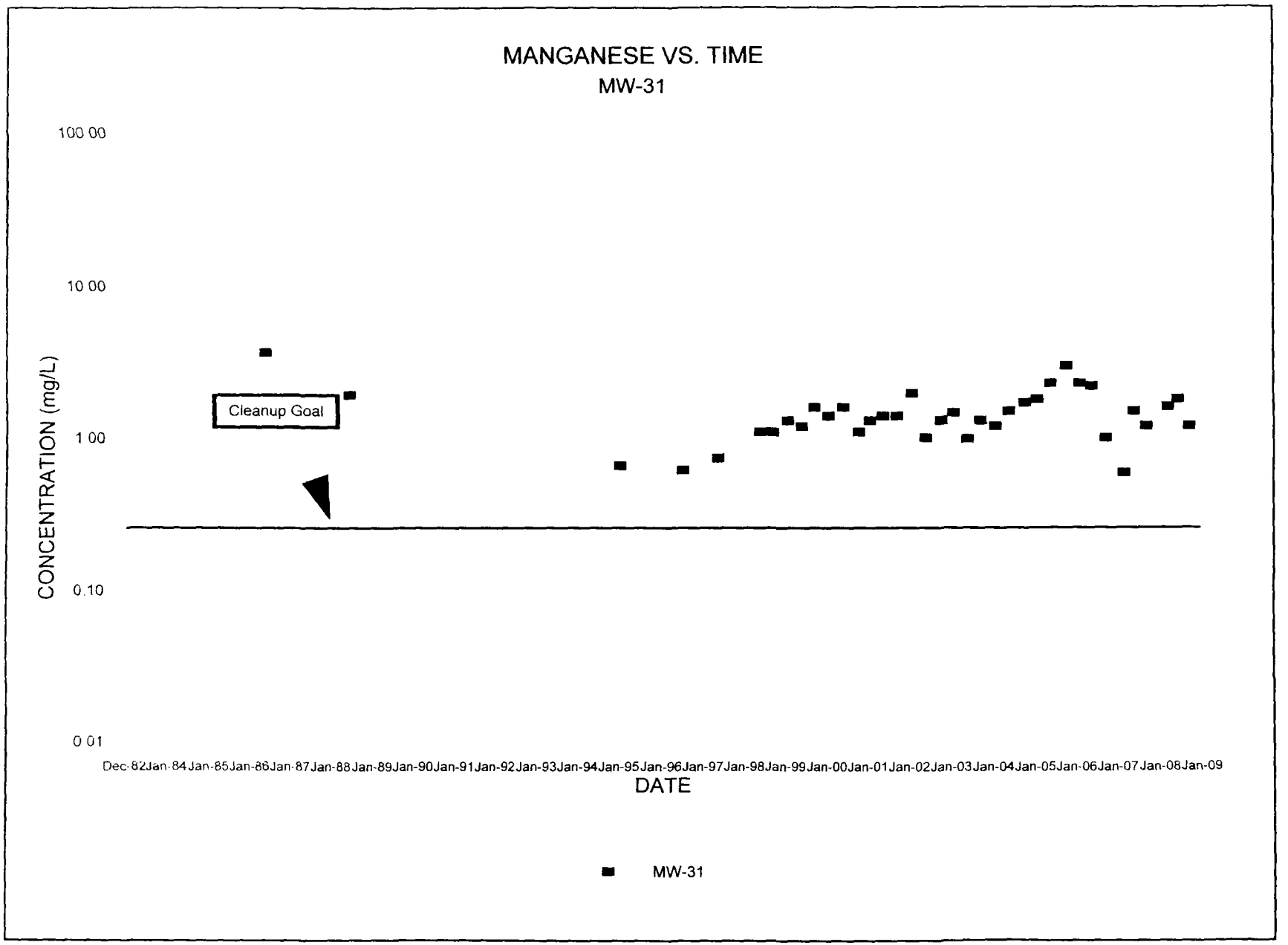

MANGANESE VS. TIME
MW-12
100.00
10.00
1.00
0.10
0.01
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-12

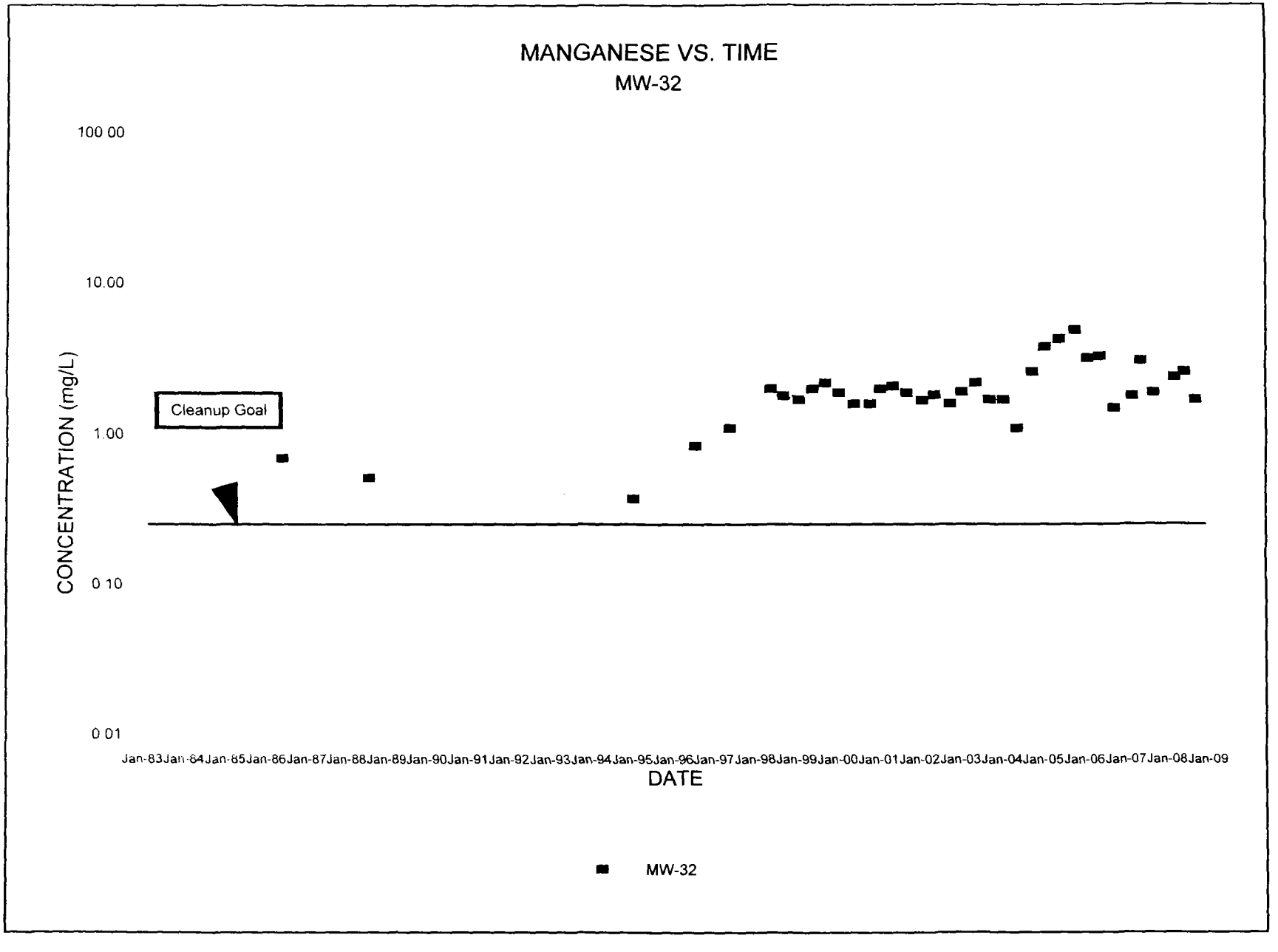

MANGANESE VS. TIME
MW-14
100.00
10.00
1.00
0.10
0.01
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-14

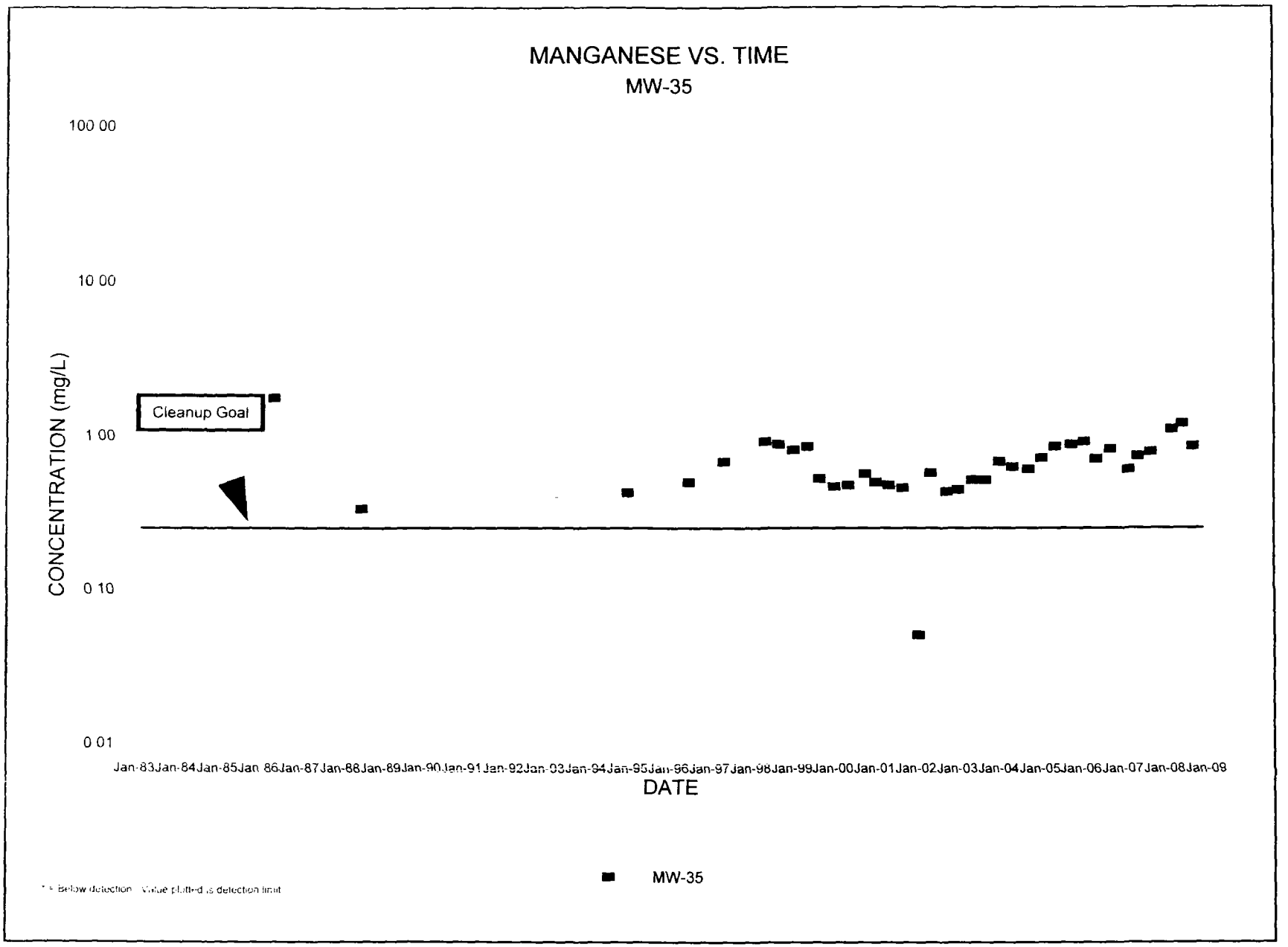

MANGANESE VS. TIME
MW-16
100 00
10 00
1.00
0 10
0 01
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-16

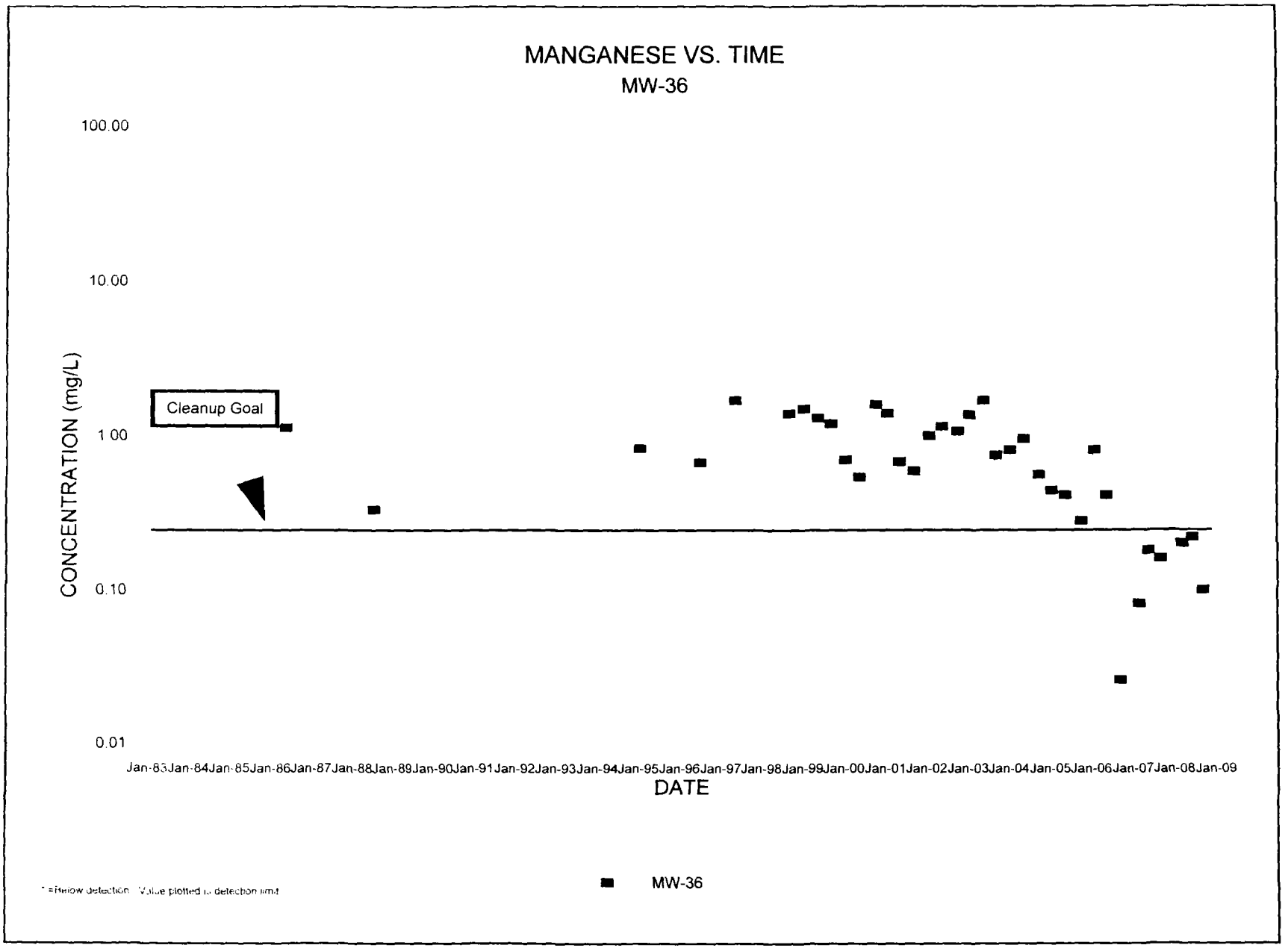

MANGANESE VS. TIME
MW-18
100 00
10 00
1.00
0 10
0.01
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-18


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 Jan-07 Jan-08 Jan-09
DATE
MW-28

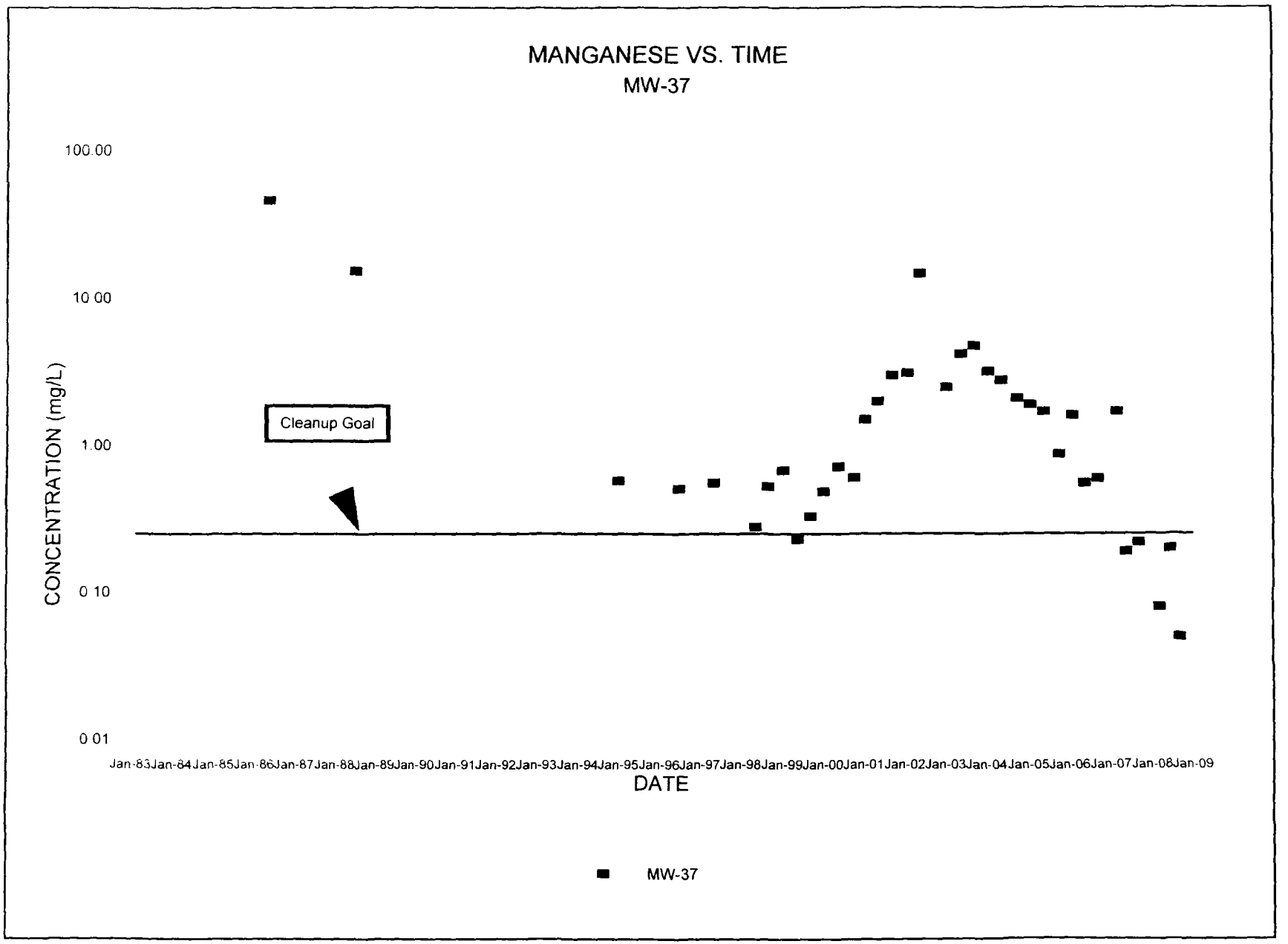

MANGANESE VS. TIME
MW-31
100 00
10 00
1 00
0.10
0 01
CONCENTRATION (mg/L)
Cleanup Goal
Dec-82
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
DATE
MW-31


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 Jan-07 Jan-08 Jan-09
DATE
MW-32


MANGANESE VS. TIME
MW-35
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 Jan-07 Jan-08 Jan-09
DATE
MW-35
* = Below detection Value plotted is detection limit

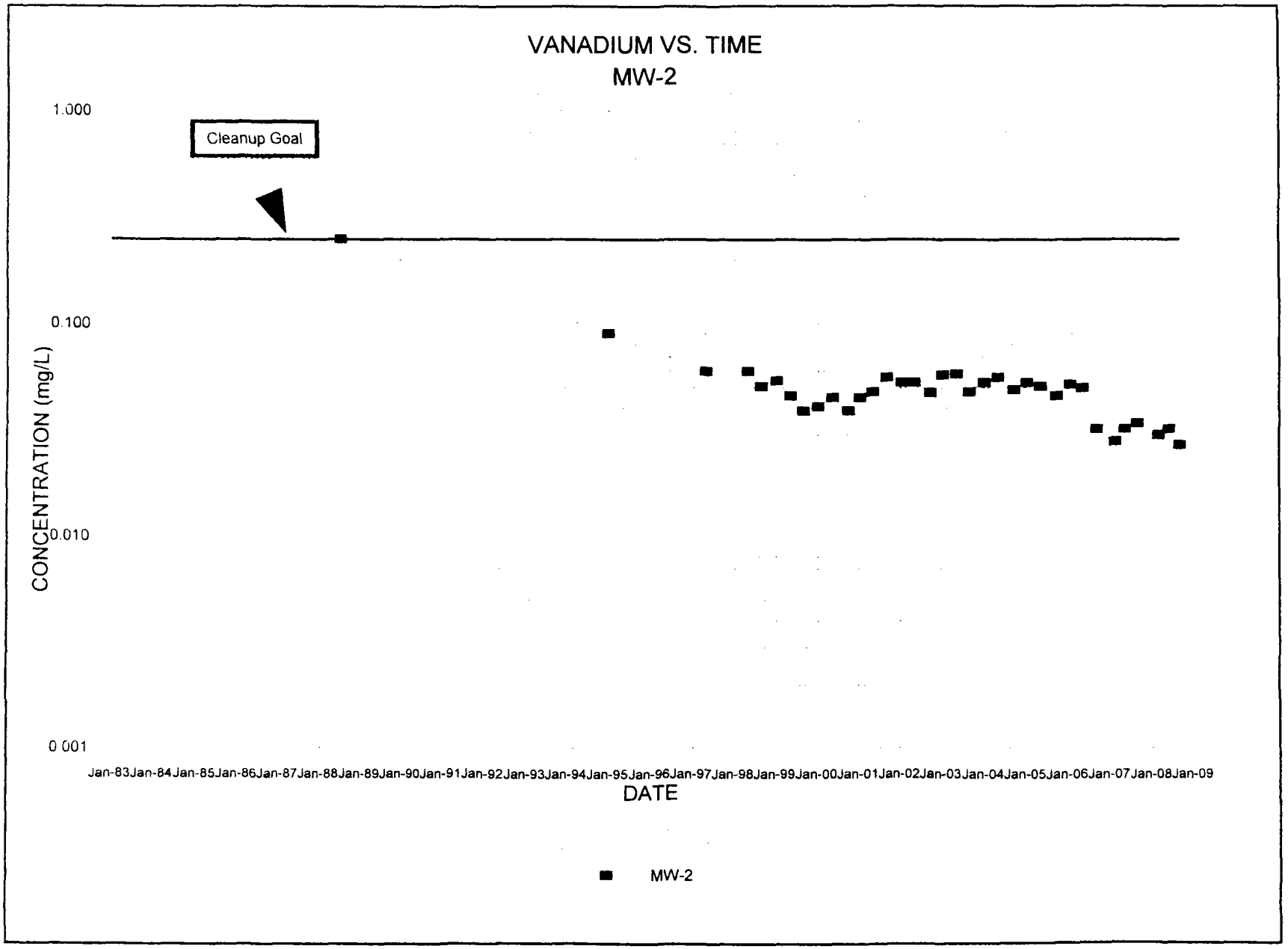


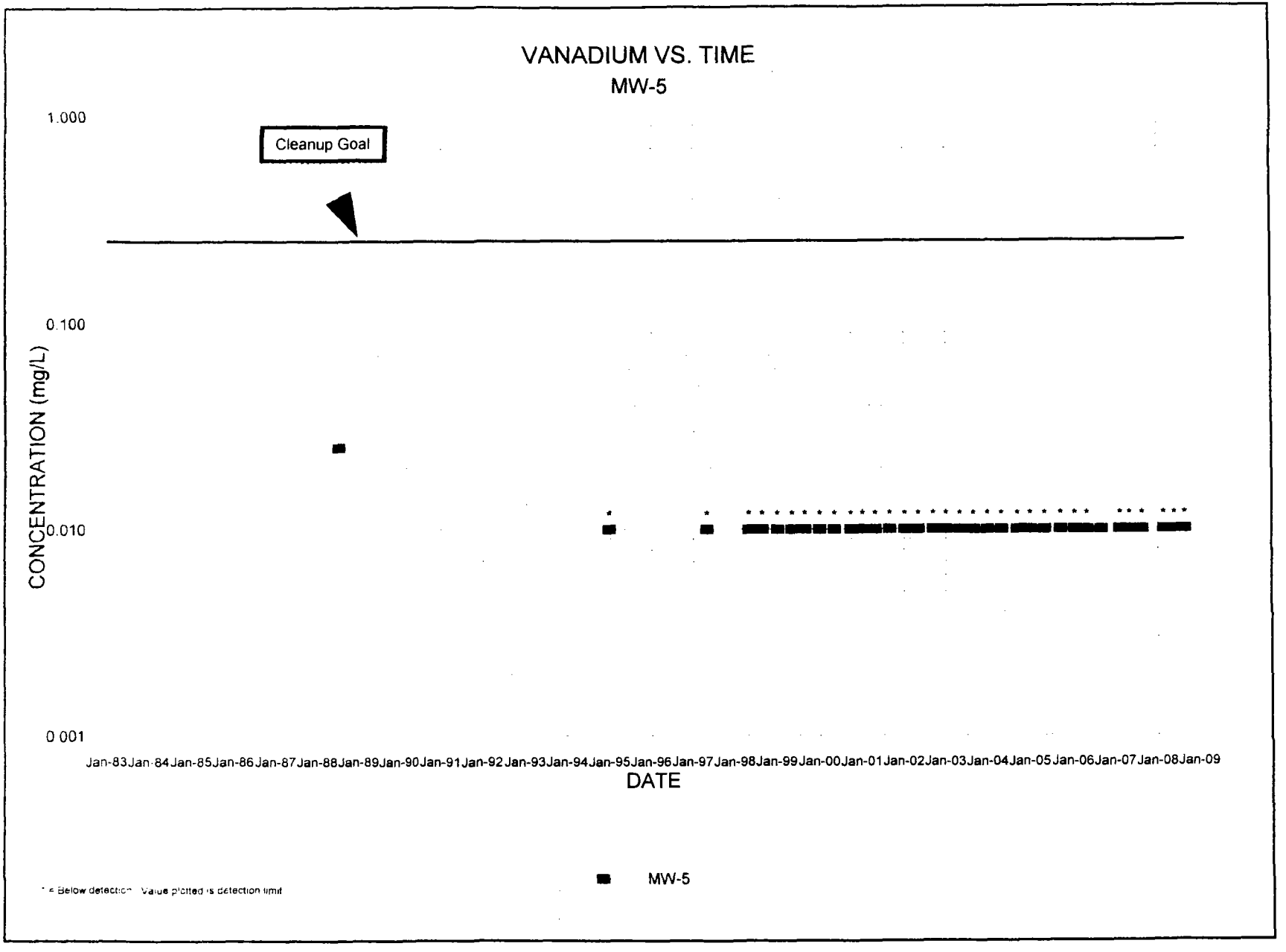
* = Below detection. Value plotted is detection limit

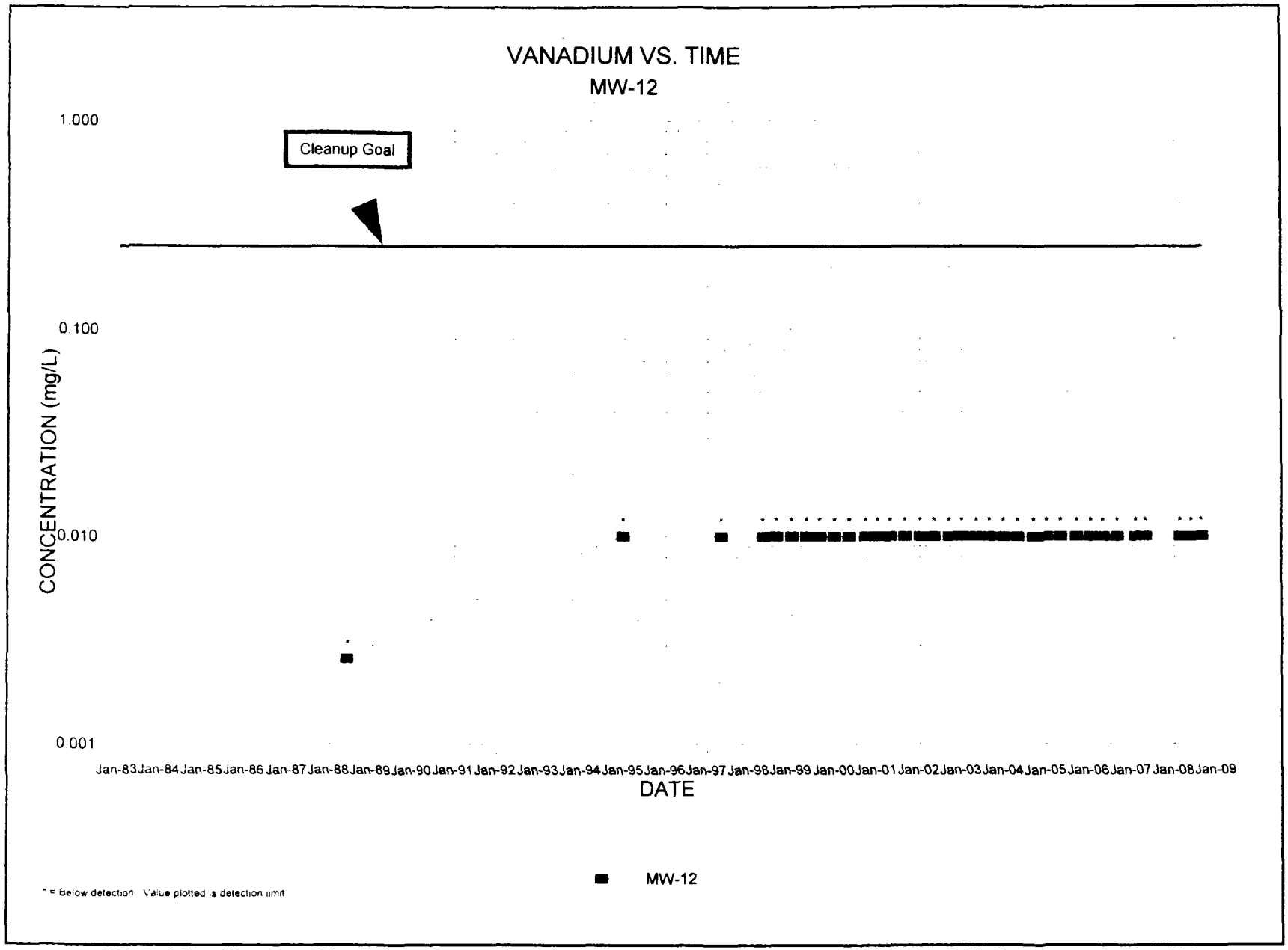

MANGANESE VS. TIME
MW-37
100.00
10 00
1.00
0 10
0 01
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
DATE
MW-37

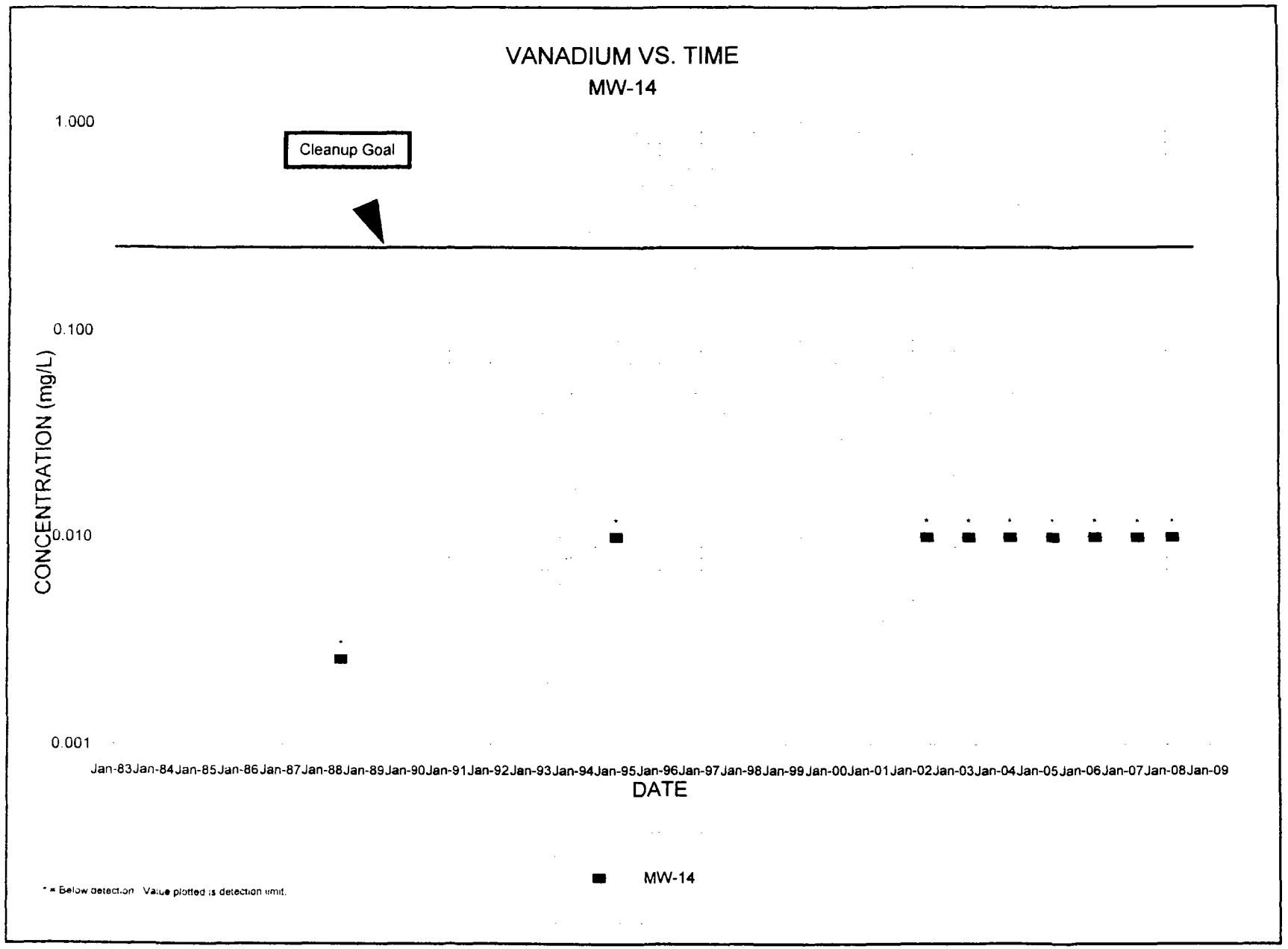
APPENDIX D-7

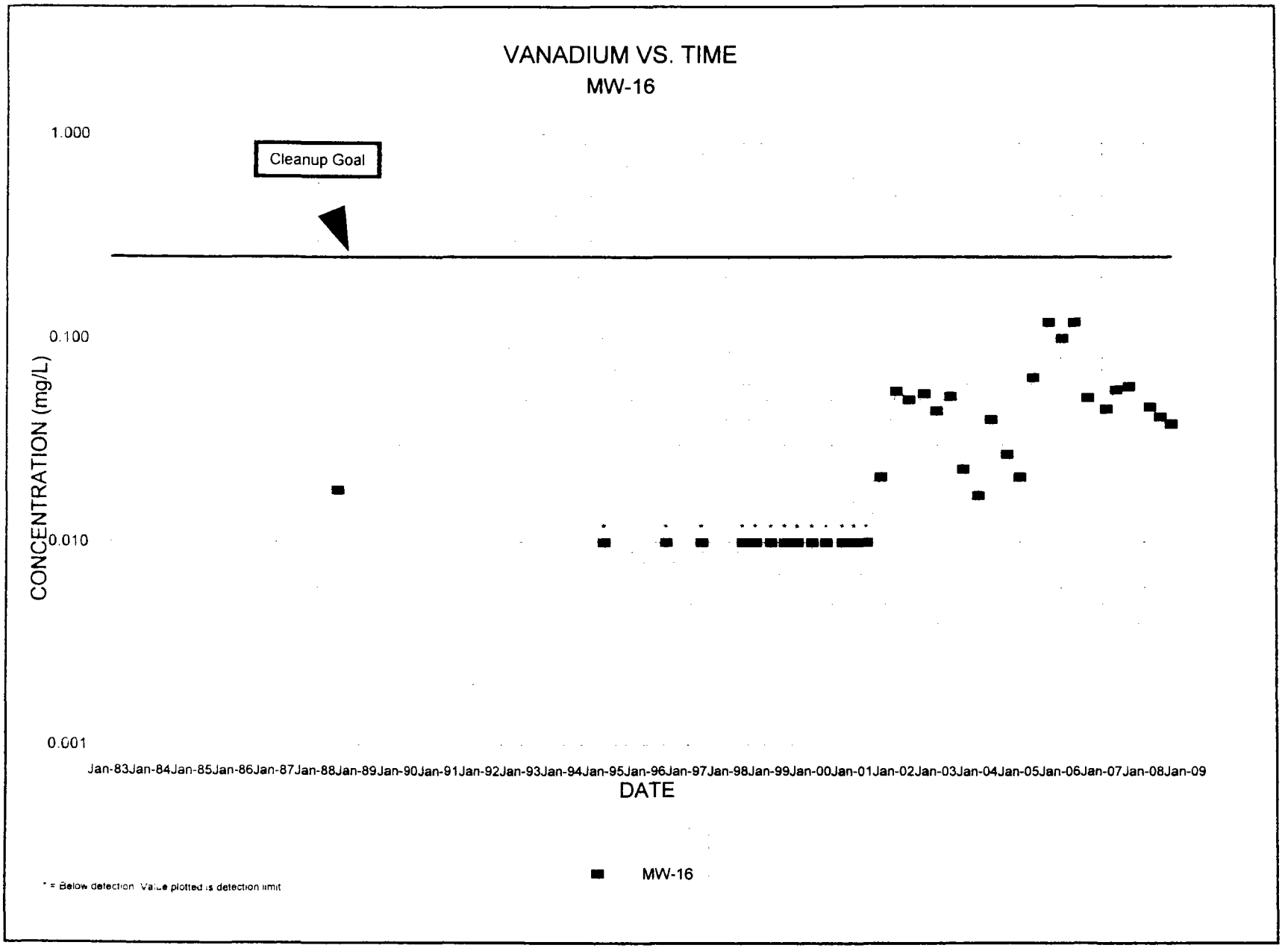
VANADIUM

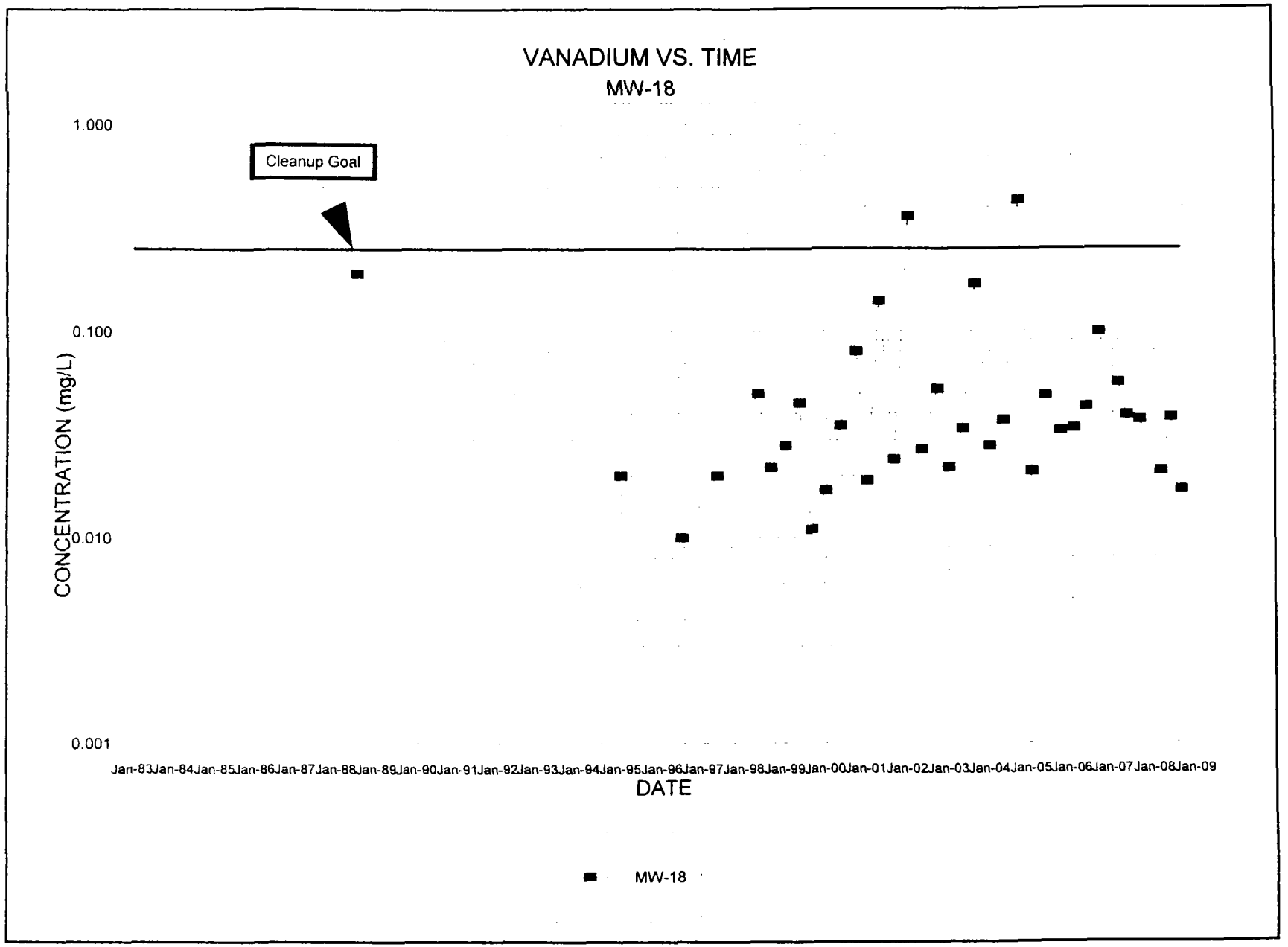

VANADIUM VS. TIME
MW-2
Cleanup Goal
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-2

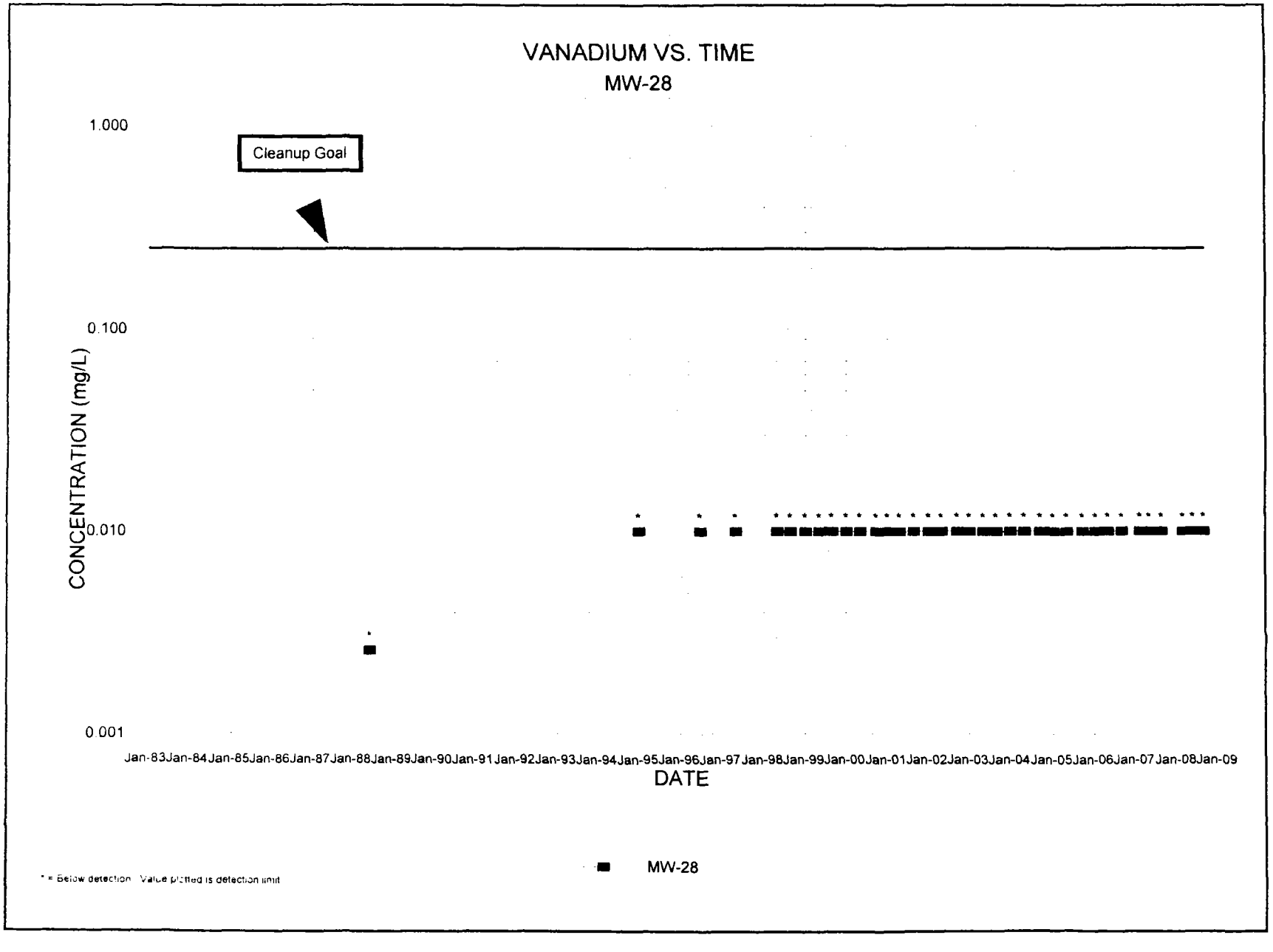

VANADIUM VS. TIME
MW-5
Cleanup Goal
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-5
* = Below detection. Value plotted is detection limit

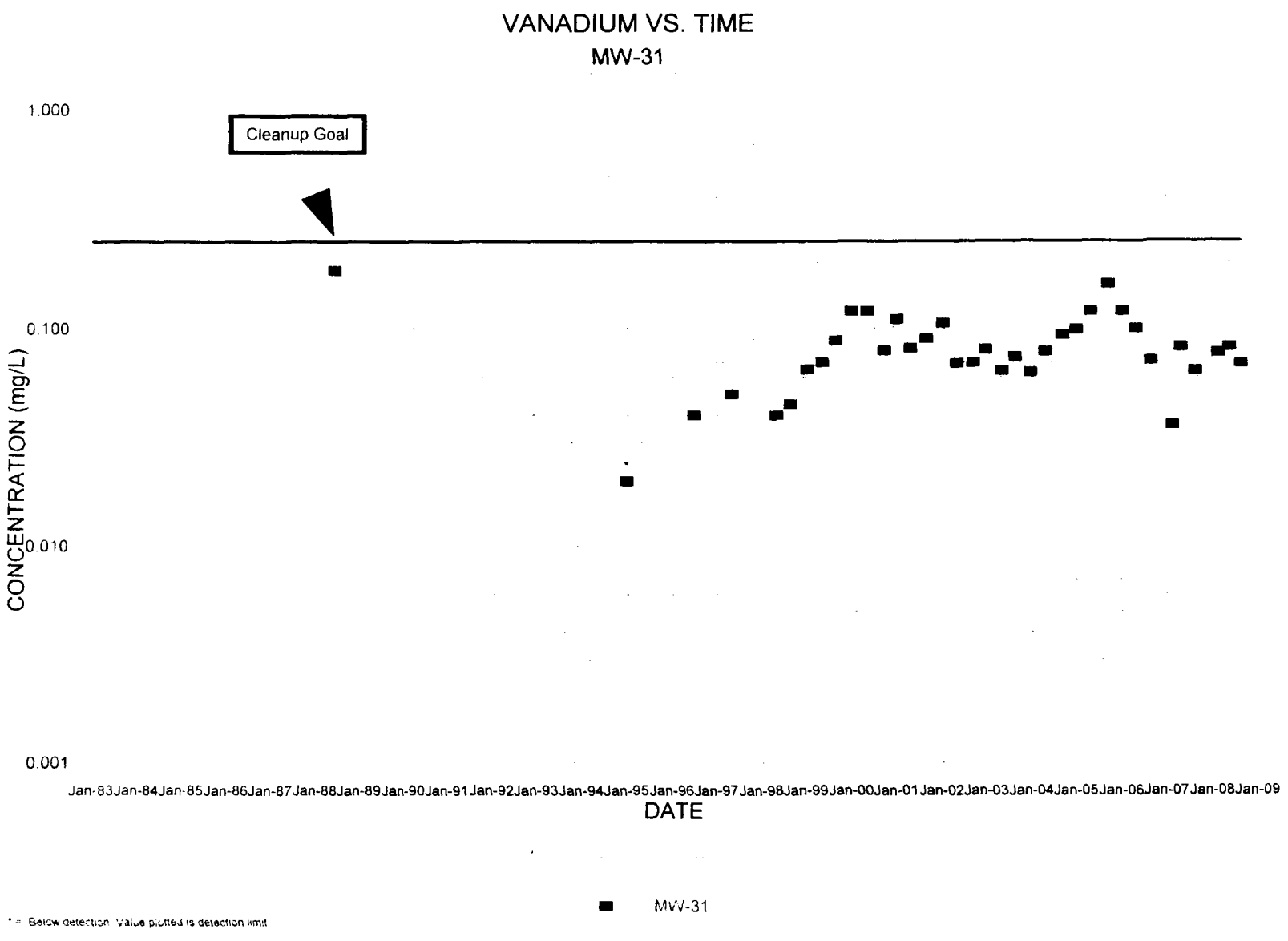

VANADIUM VS. TIME
MW-12
Cleanup Goal
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-12
* = Below detection. Value plotted is detection limit

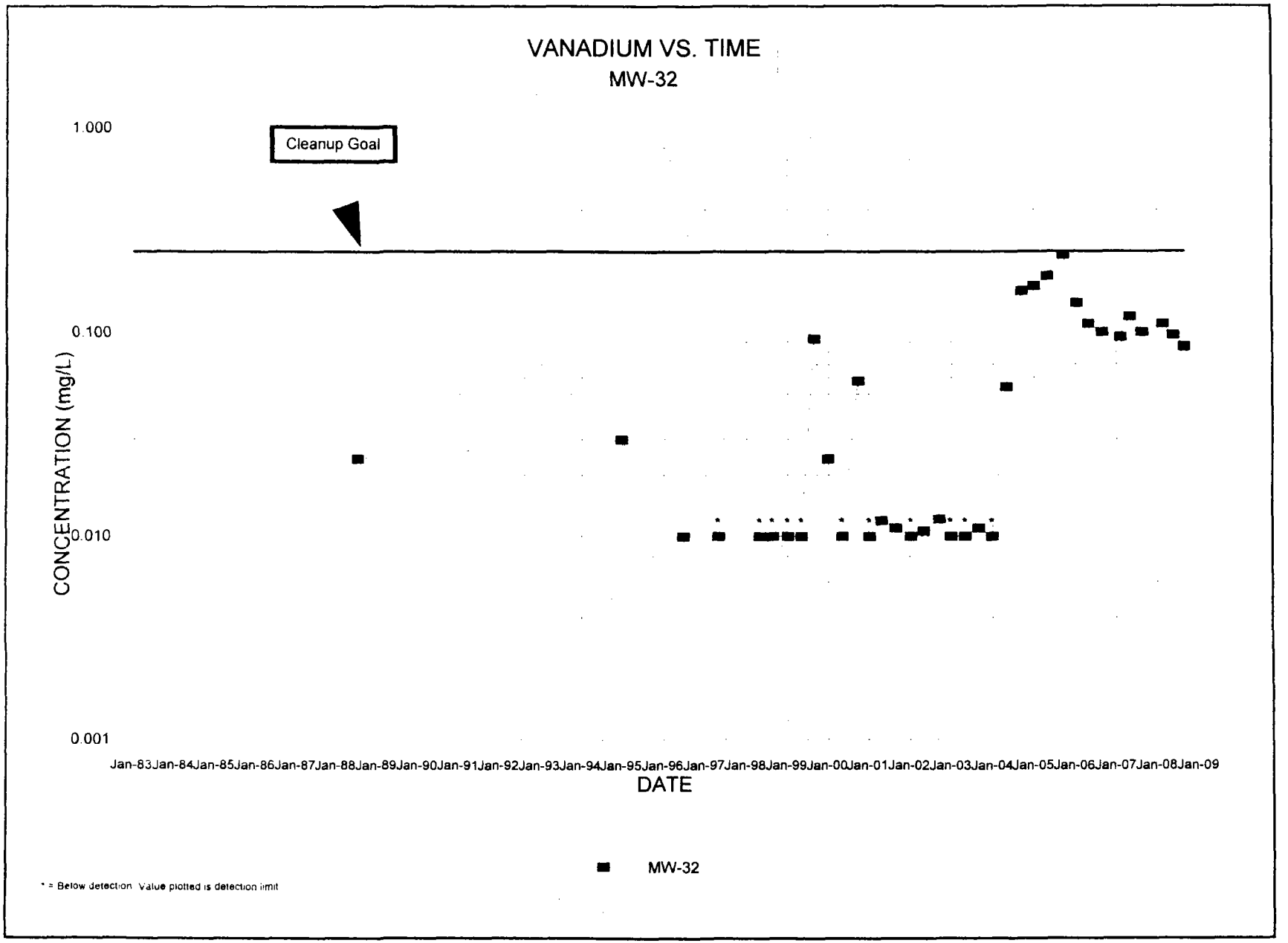

VANADIUM VS. TIME
MW-14
Cleanup Goal
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-14
* = Below detection. Value plotted is detection limit.

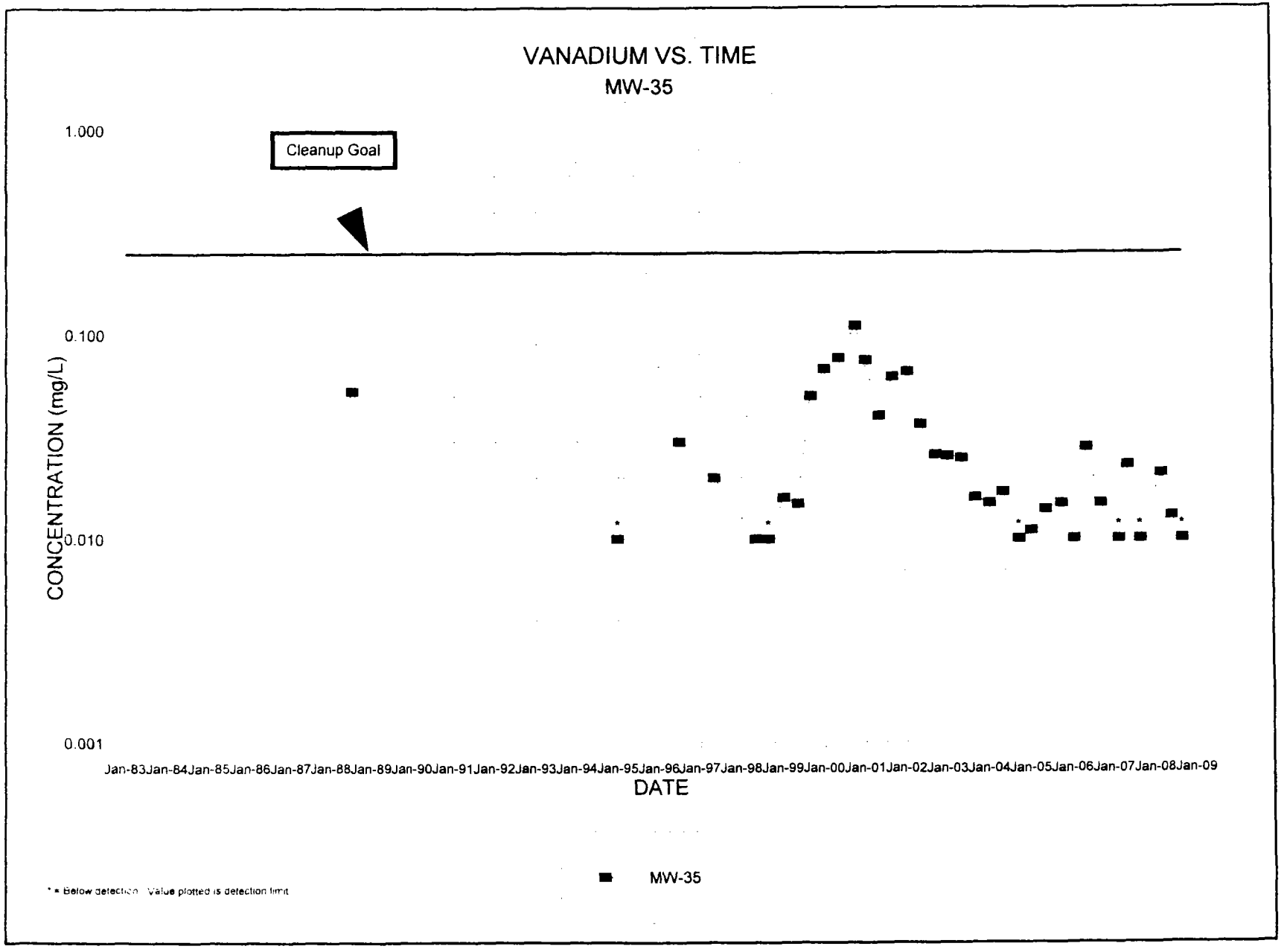

VANADIUM VS. TIME
MW-16
Cleanup Goal
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Jan-83Jan-84Jan-85Jan-86Jan-87Jan-88Jan-89Jan-90Jan-91Jan-92Jan-93Jan-94Jan-95Jan-96Jan-97Jan-98Jan-99Jan-00Jan-01Jan-02Jan-03Jan-04Jan-05Jan-06Jan-07Jan-08Jan-09
DATE
MW-16
* = Below detection Value plotted as detection limit

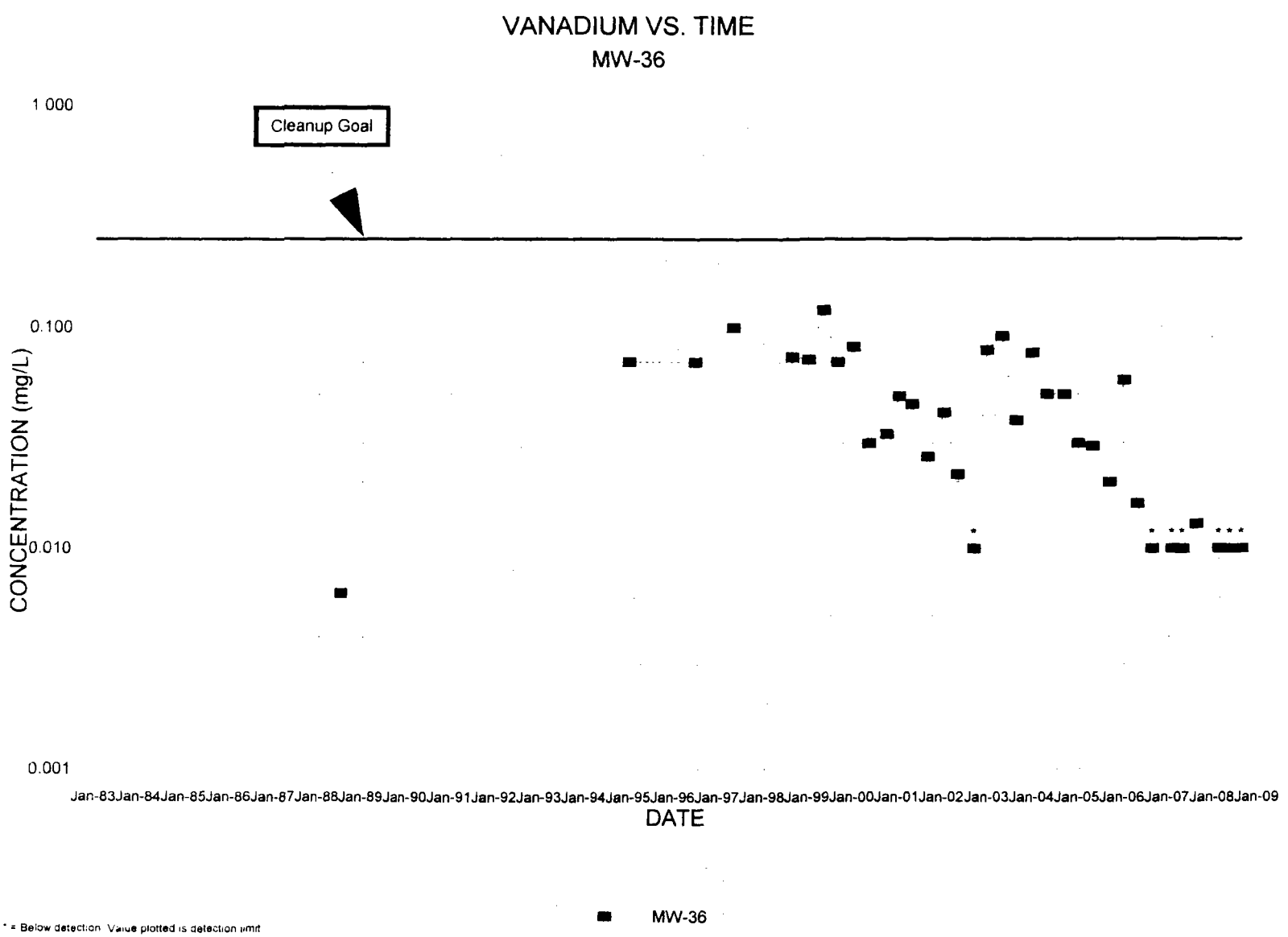

VANADIUM VS. TIME
MW-18
Cleanup Goal
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-18

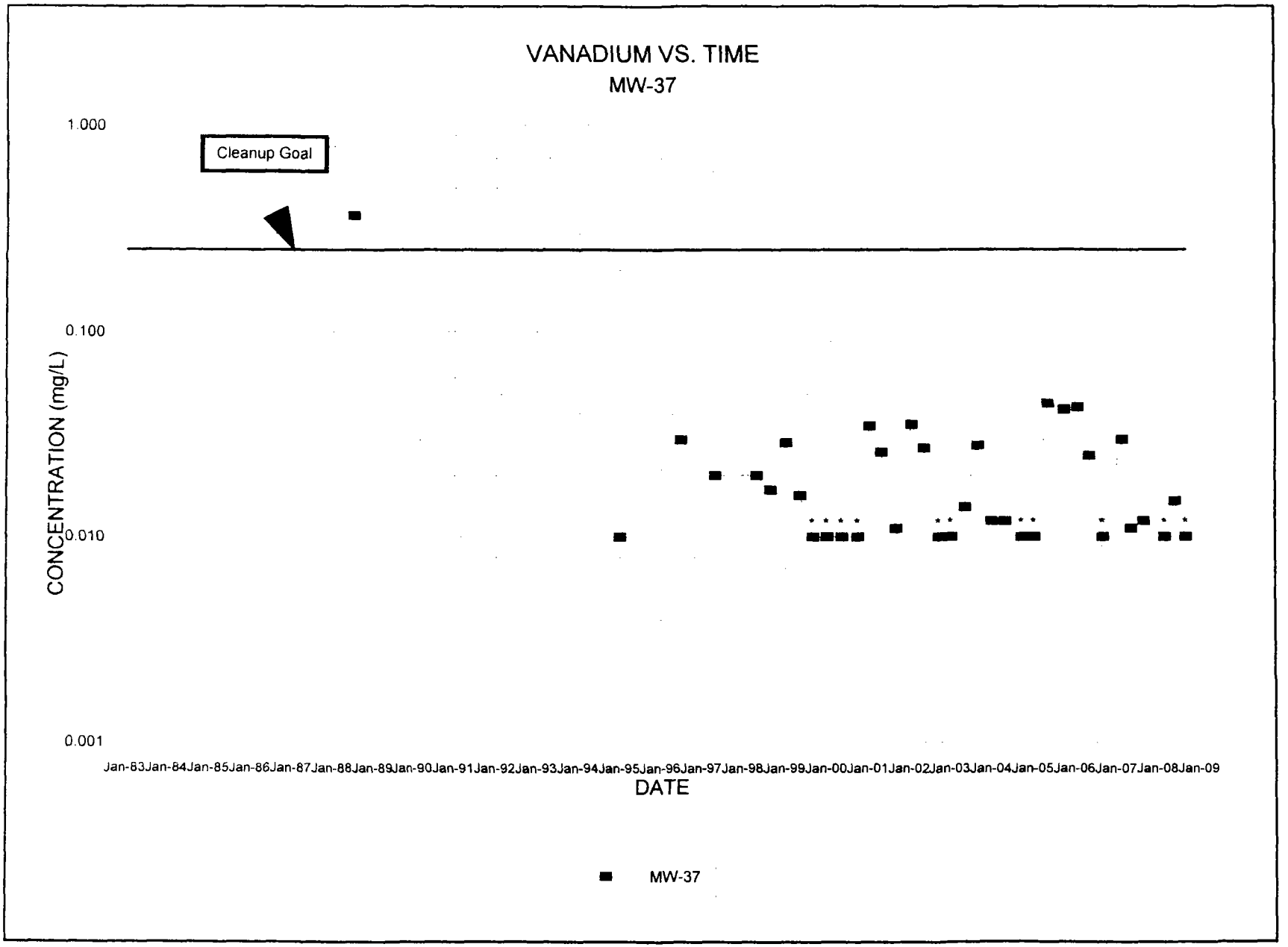

VANADIUM VS. TIME
MW-28
Cleanup Goal
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-28
* = Below detection. Value plotted is detection limit


VANADIUM VS. TIME
MW-31
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 Jan-07 Jan-08 Jan-09
DATE
MW-31
* = Below detection. Value plotted is detection limit


VANADIUM VS. TIME
MW-32
Cleanup Goal
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Jan-83Jan-84Jan-85Jan-86Jan-87Jan-88Jan-89Jan-90Jan-91Jan-92Jan-93Jan-94Jan-95Jan-96Jan-97Jan-98Jan-99Jan-00Jan-01Jan-02Jan-03Jan-04Jan-05Jan-06Jan-07Jan-08Jan-09
DATE
MW-32
* = Below detection. Value plotted is detection limit

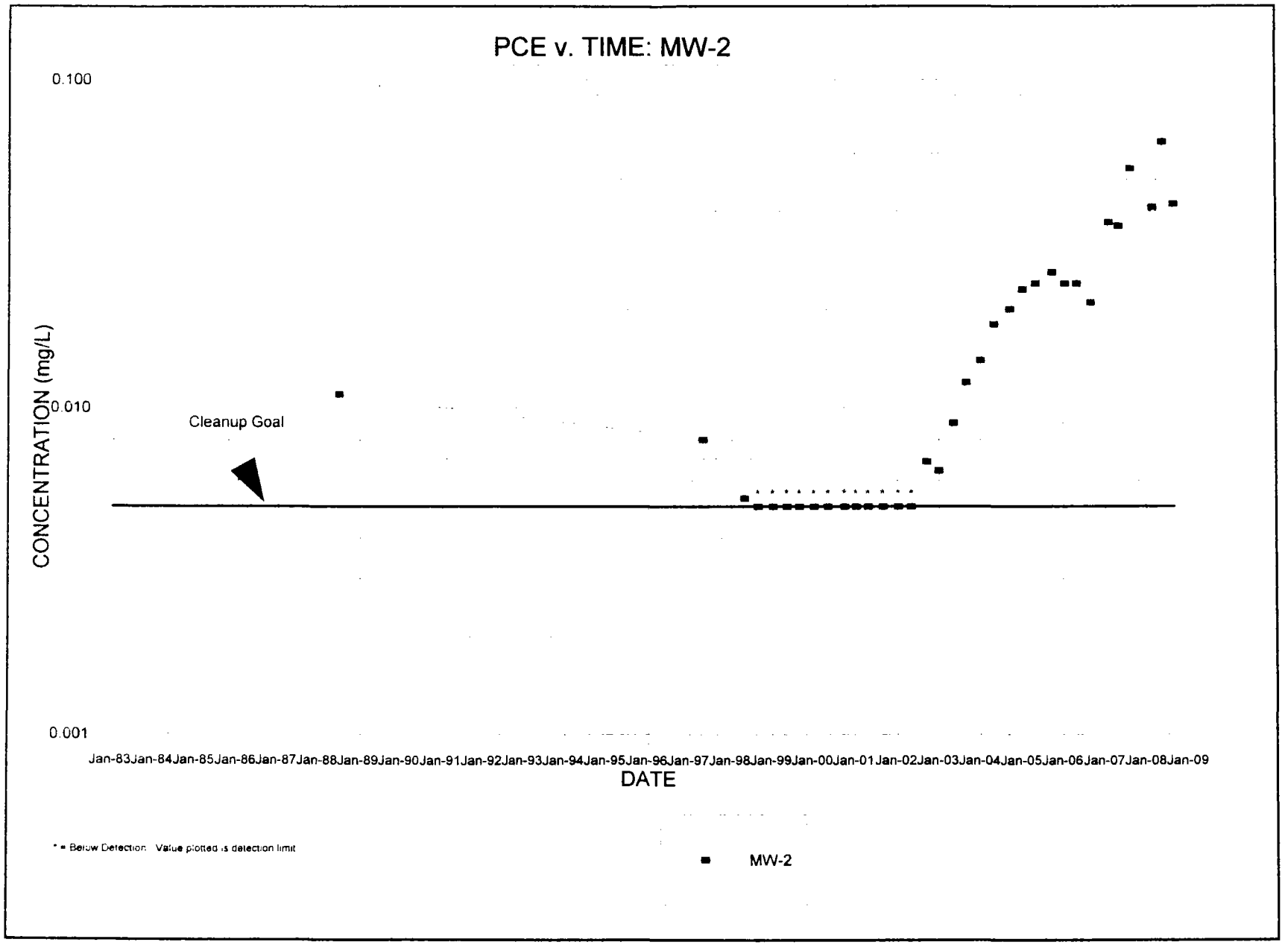

VANADIUM VS. TIME
MW-35
Cleanup Goal
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Jan-83Jan-84Jan-85Jan-86Jan-87Jan-88Jan-89Jan-90Jan-91Jan-92Jan-93Jan-94Jan-95Jan-96Jan-97Jan-98Jan-99Jan-00Jan-01Jan-02Jan-03Jan-04Jan-05Jan-06Jan-07Jan-08Jan-09
DATE
MW-35
* = Below detection. Value plotted is detection limit

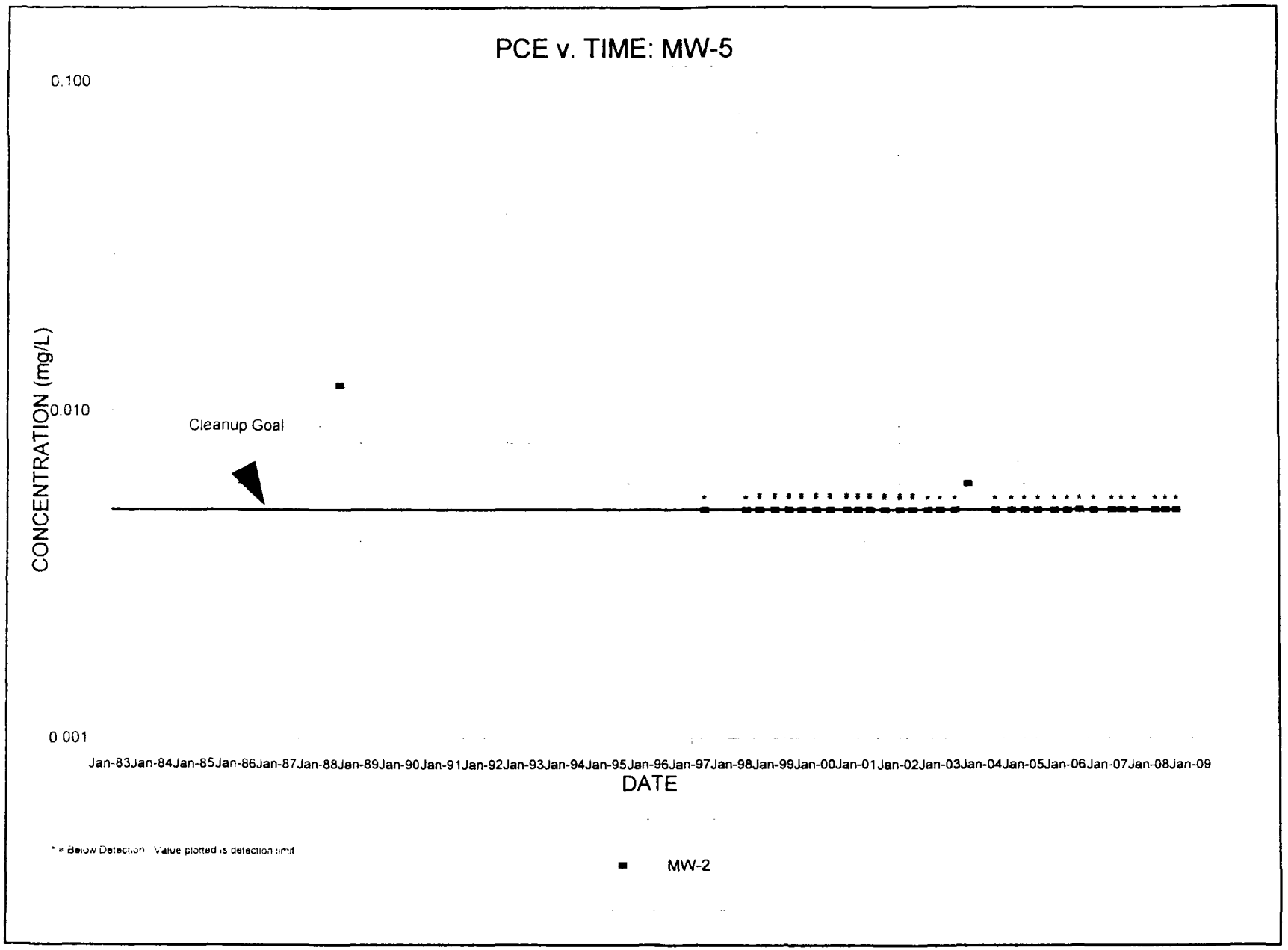

VANADIUM VS. TIME
MW-36
Cleanup Goal
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-36
* = Below detection. Value plotted is detection limit

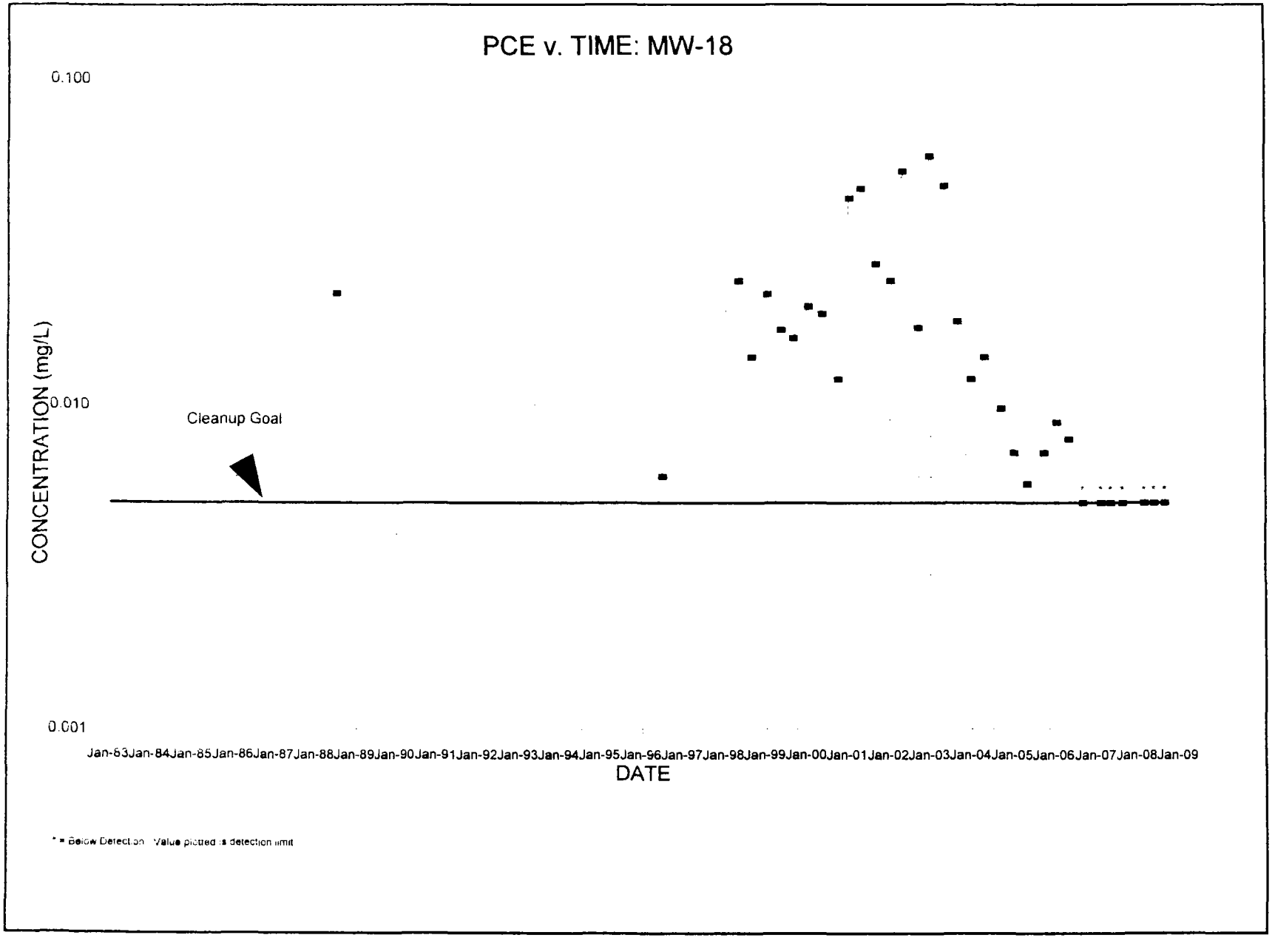

VANADIUM VS. TIME
MW-37
Cleanup Goal
1.000
0.100
0.010
0.001
CONCENTRATION (mg/L)
Jan-83Jan-84Jan-85Jan-86Jan-87Jan-88Jan-89Jan-90Jan-91Jan-92Jan-93Jan-94Jan-95Jan-96Jan-97Jan-98Jan-99Jan-00Jan-01Jan-02Jan-03Jan-04Jan-05Jan-06Jan-07Jan-08Jan-09
DATE
MW-37

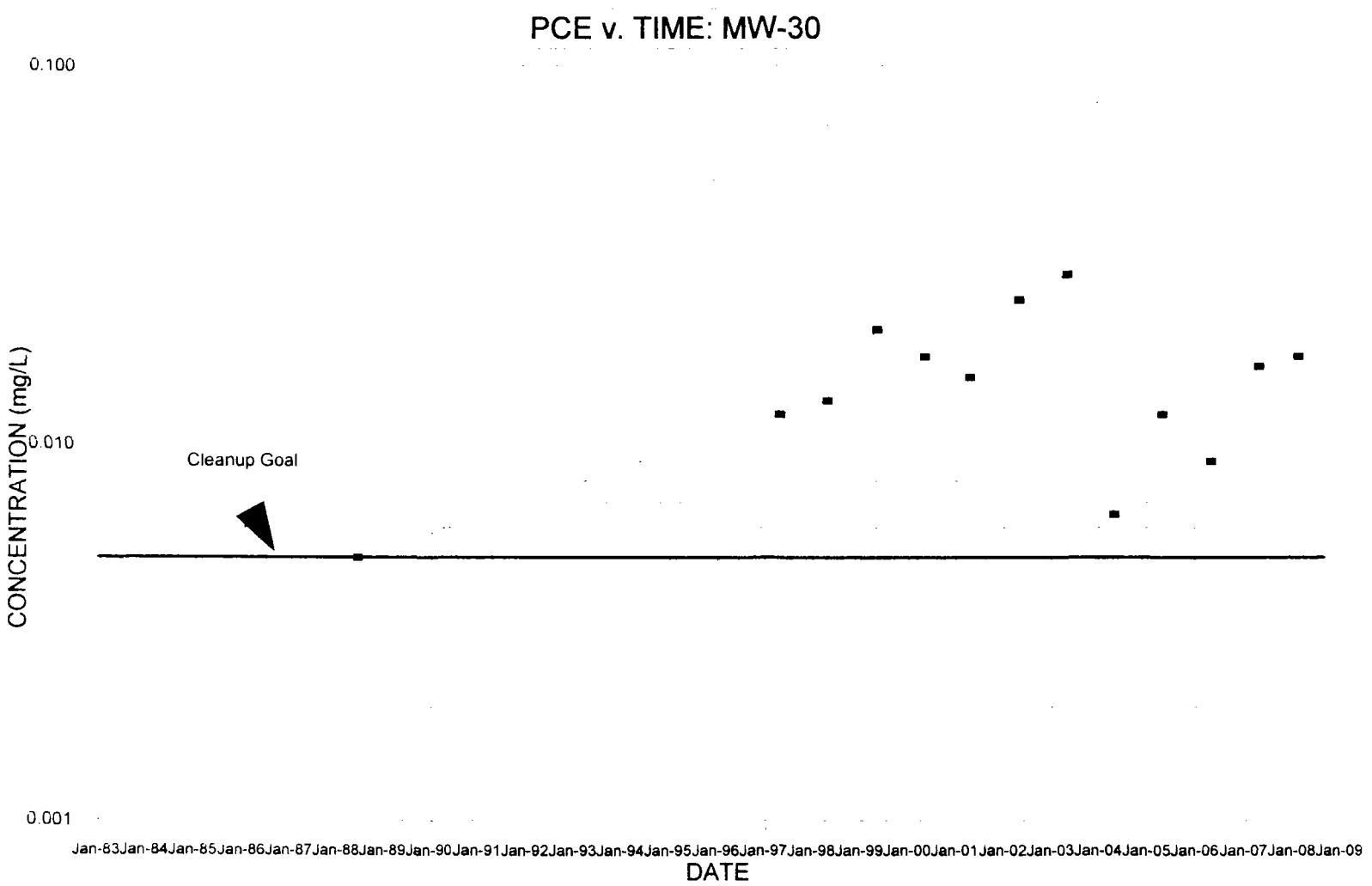
APPENDIX D-8

TETRACHLOROETHENE

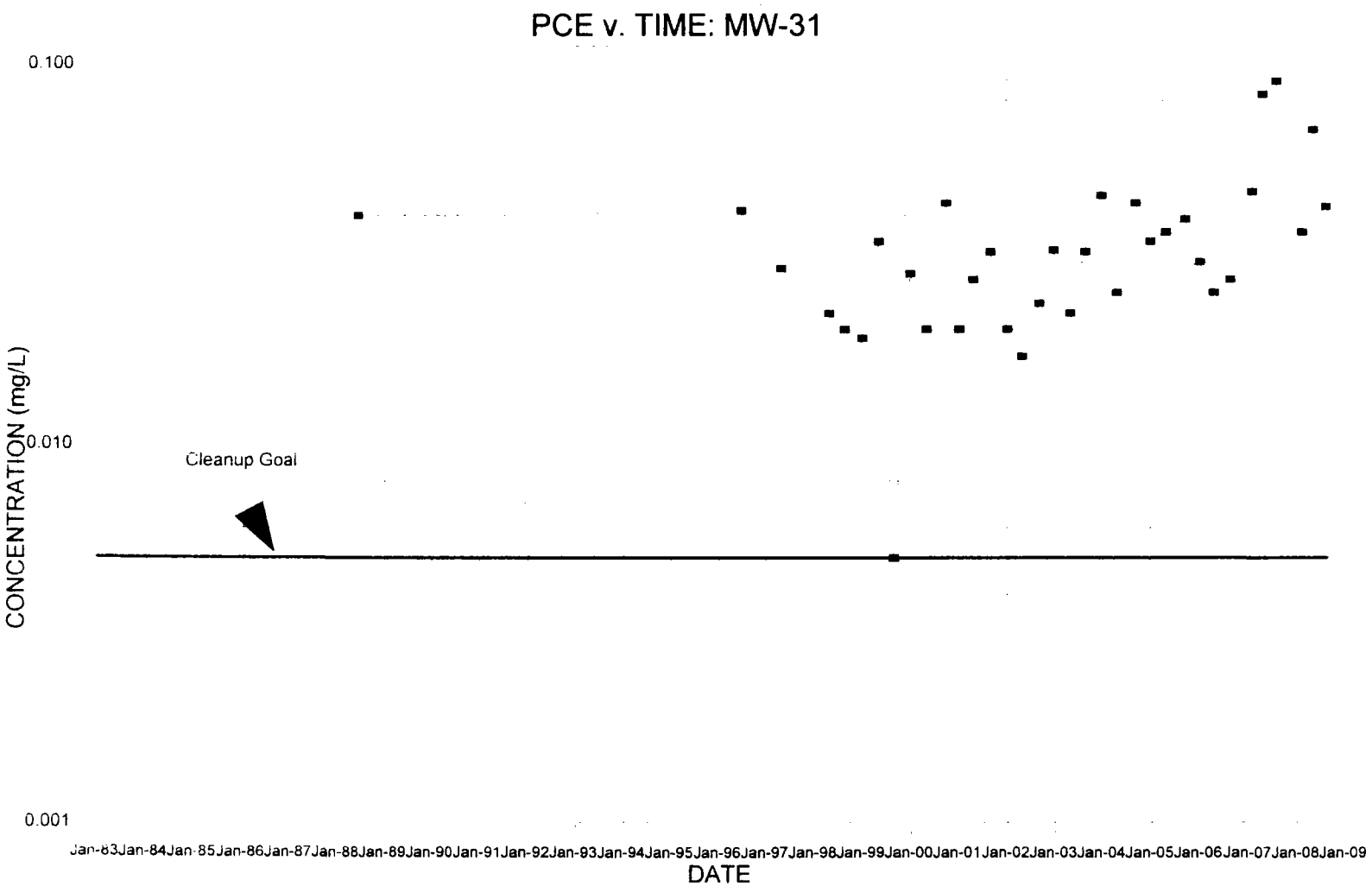

PCE v. TIME: MW-2
0.100
0.010
0.001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83Jan-84Jan-85Jan-86Jan-87Jan-88Jan-89Jan-90Jan-91Jan-92Jan-93Jan-94Jan-95Jan-96Jan-97Jan-98Jan-99Jan-00Jan-01Jan-02Jan-03Jan-04Jan-05Jan-06Jan-07Jan-08Jan-09
DATE
* = Below Detection: Value plotted is detection limit
MW-2


PCE v. TIME: MW-5
0.100
0.010
0.001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83Jan-84Jan-85Jan-86Jan-87Jan-88Jan-89Jan-90Jan-91Jan-92Jan-93Jan-94Jan-95Jan-96Jan-97Jan-98Jan-99Jan-00Jan-01Jan-02Jan-03Jan-04Jan-05Jan-06Jan-07Jan-08Jan-09
DATE
* = Below Detection Value plotted is detection limit
MW-2


PCE v. TIME: MW-18
0.100
0.010
0.001
CONCENTRATION (mg/L)
Cleanup Goal
Jan-83Jan-84Jan-85Jan-86Jan-87Jan-88Jan-89Jan-90Jan-91Jan-92Jan-93Jan-94Jan-95Jan-96Jan-97Jan-98Jan-99Jan-00Jan-01Jan-02Jan-03Jan-04Jan-05Jan-06Jan-07Jan-08Jan-09
DATE
* = Below Detection Value plotted is detection limit



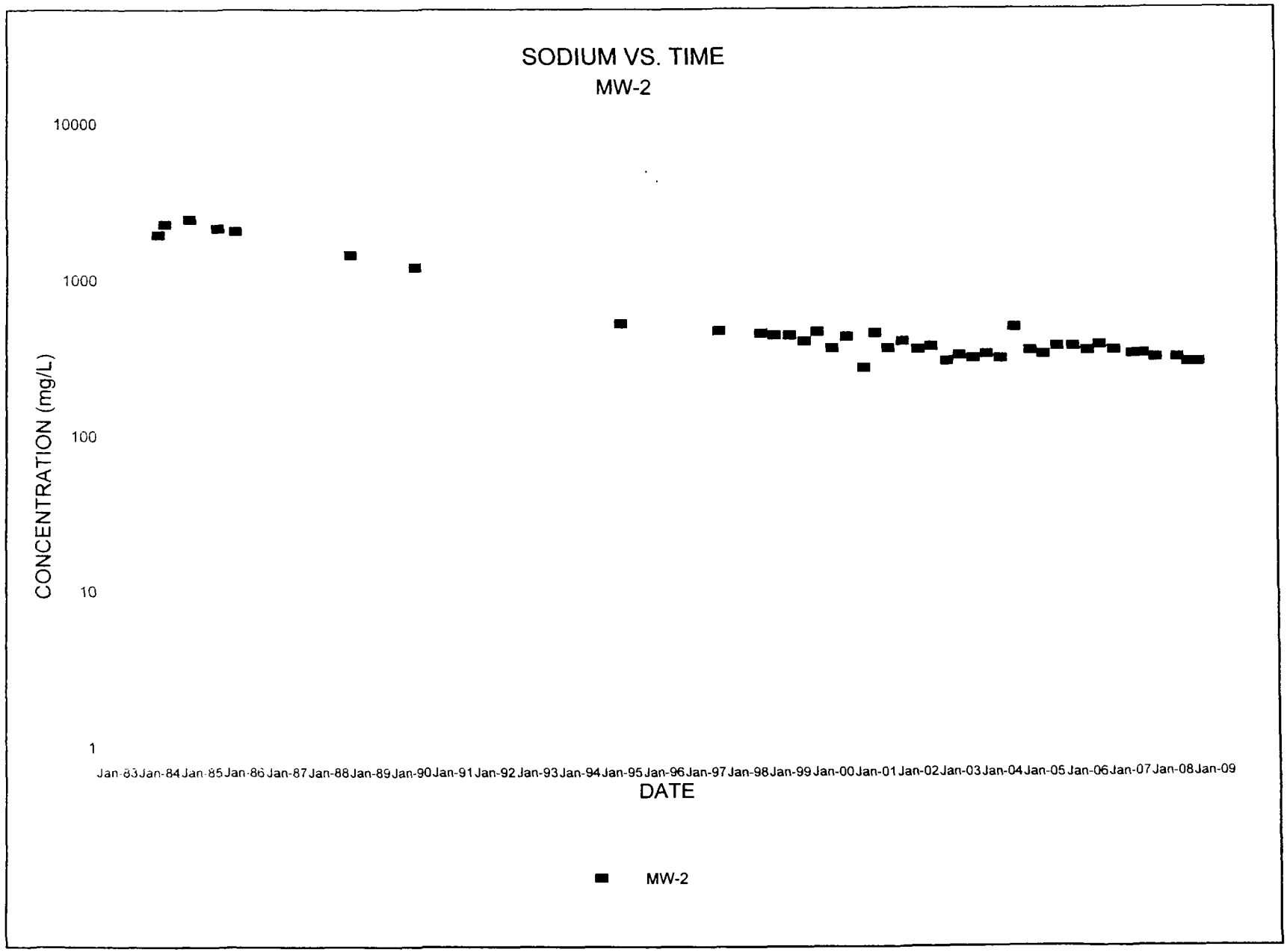
* = Below Detection Value plotted as detection limit

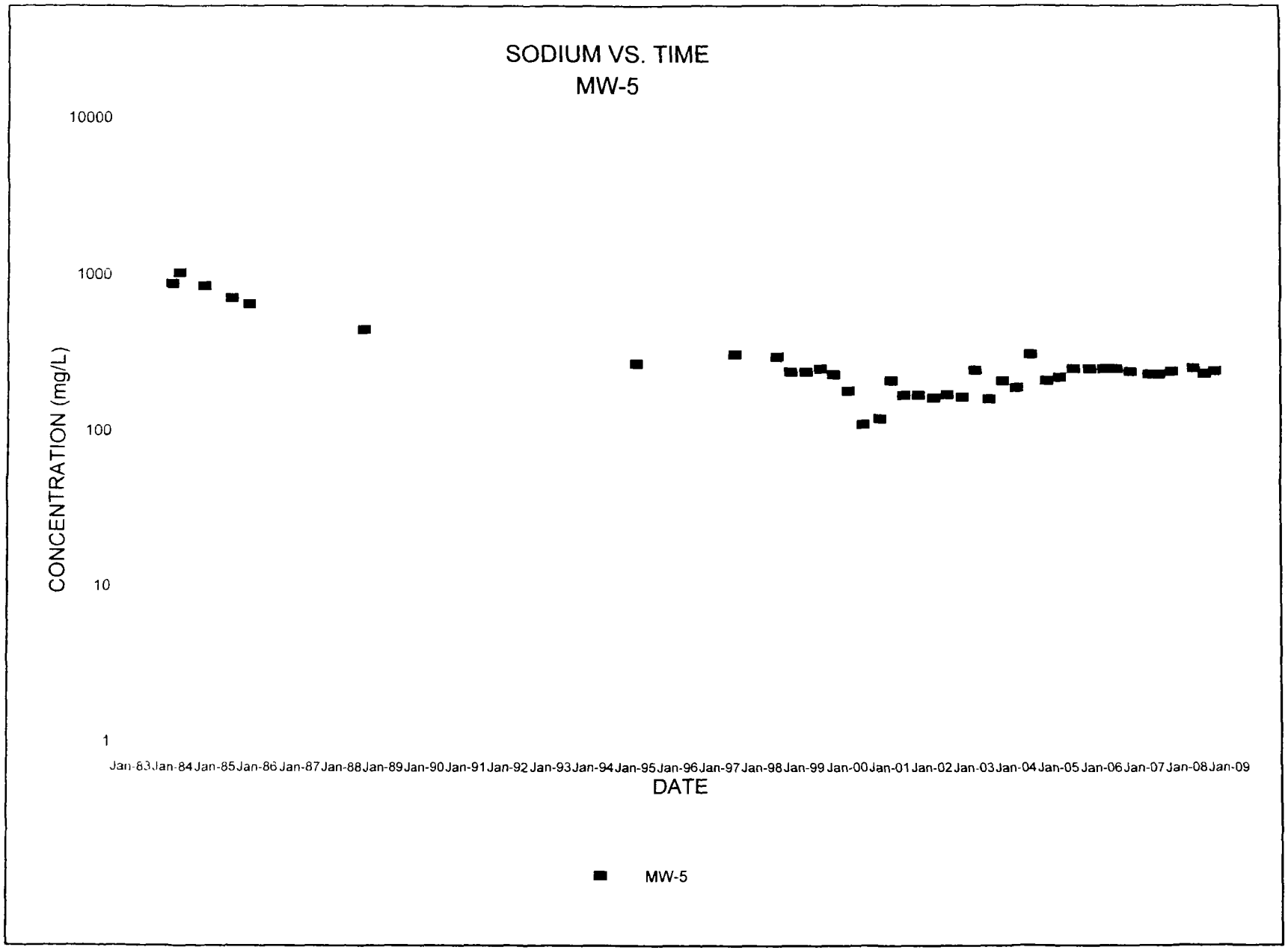


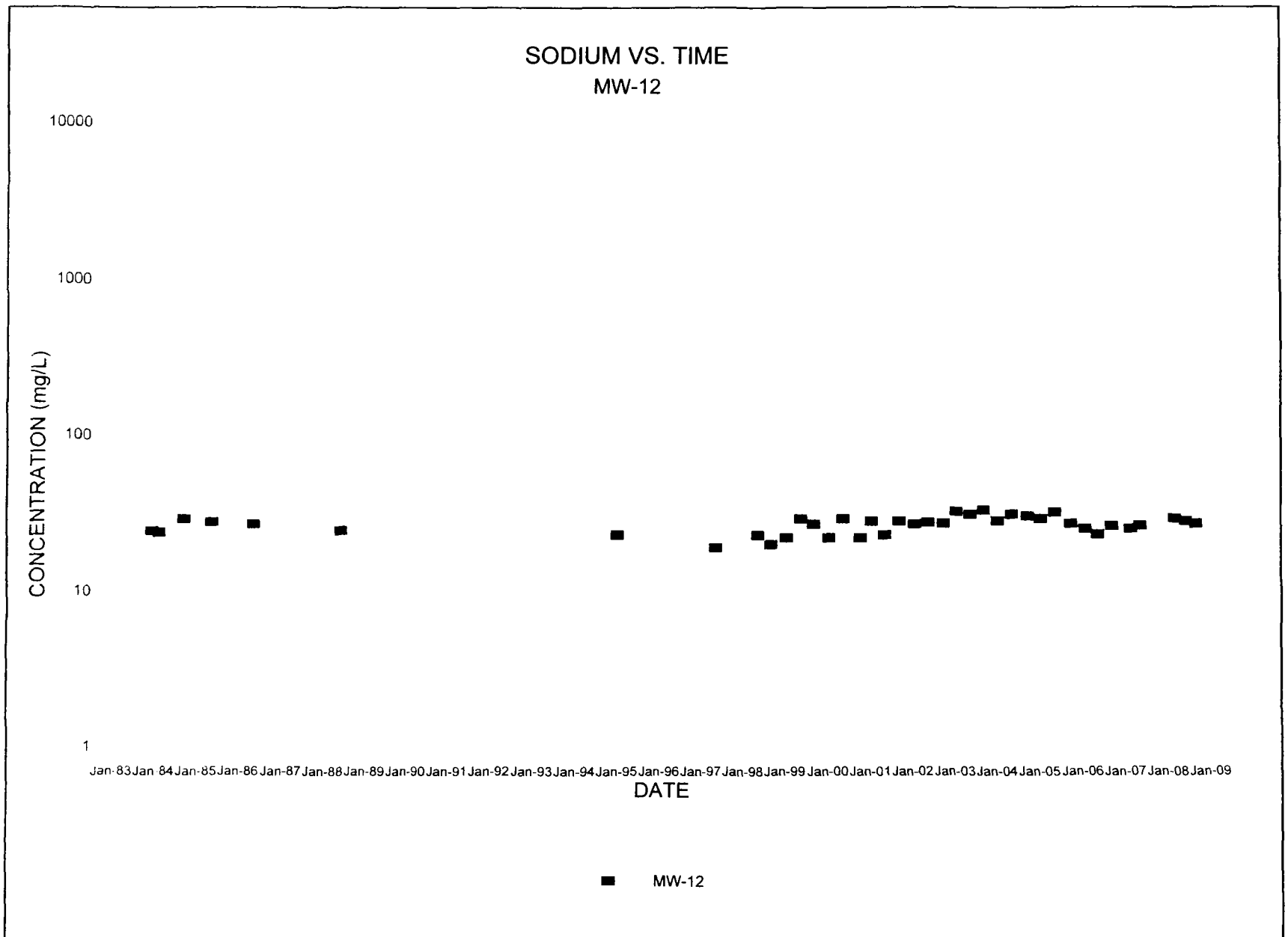
* = Below Detection. Value plotted is detection limit

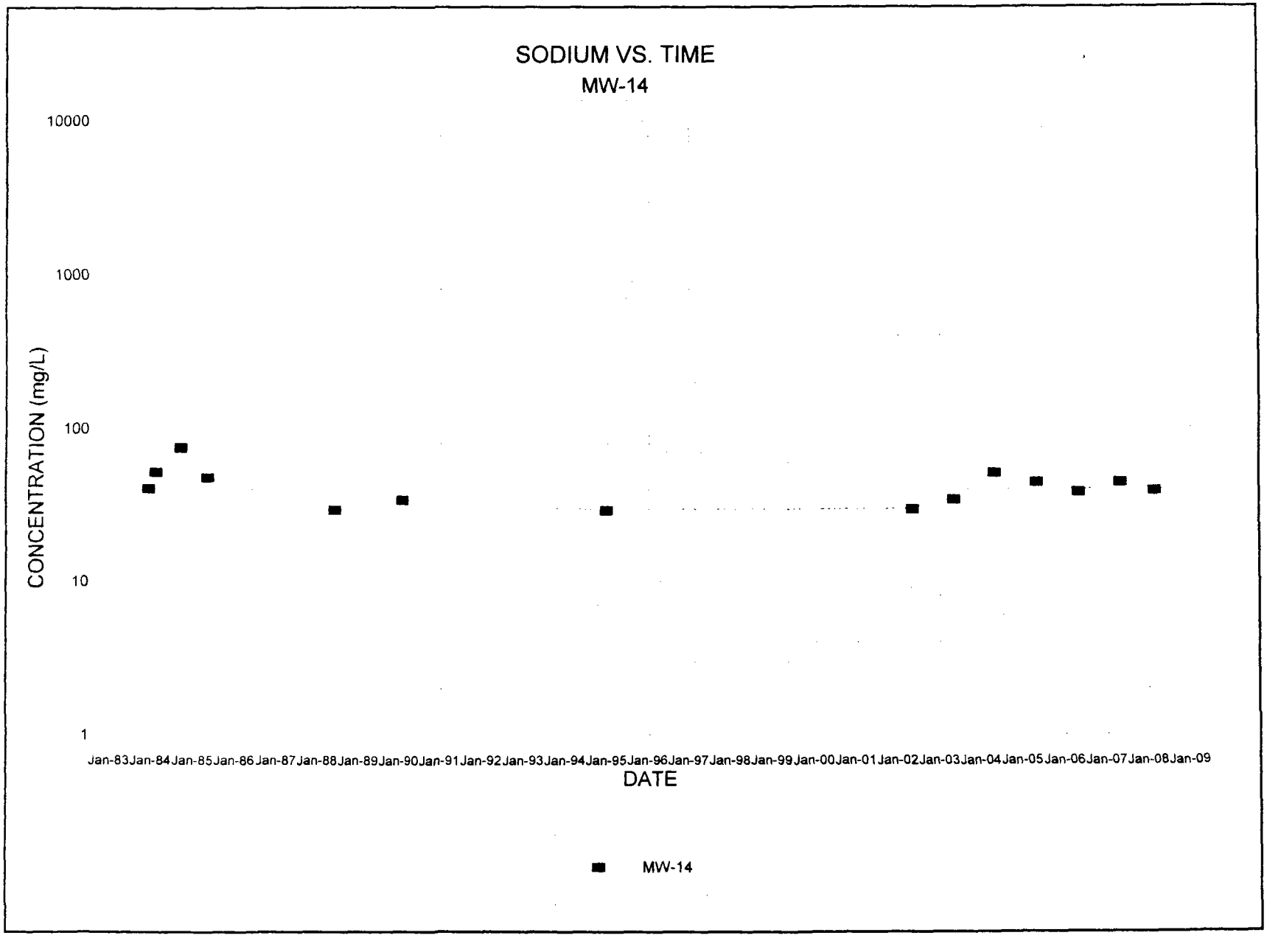
APPENDIX D-9

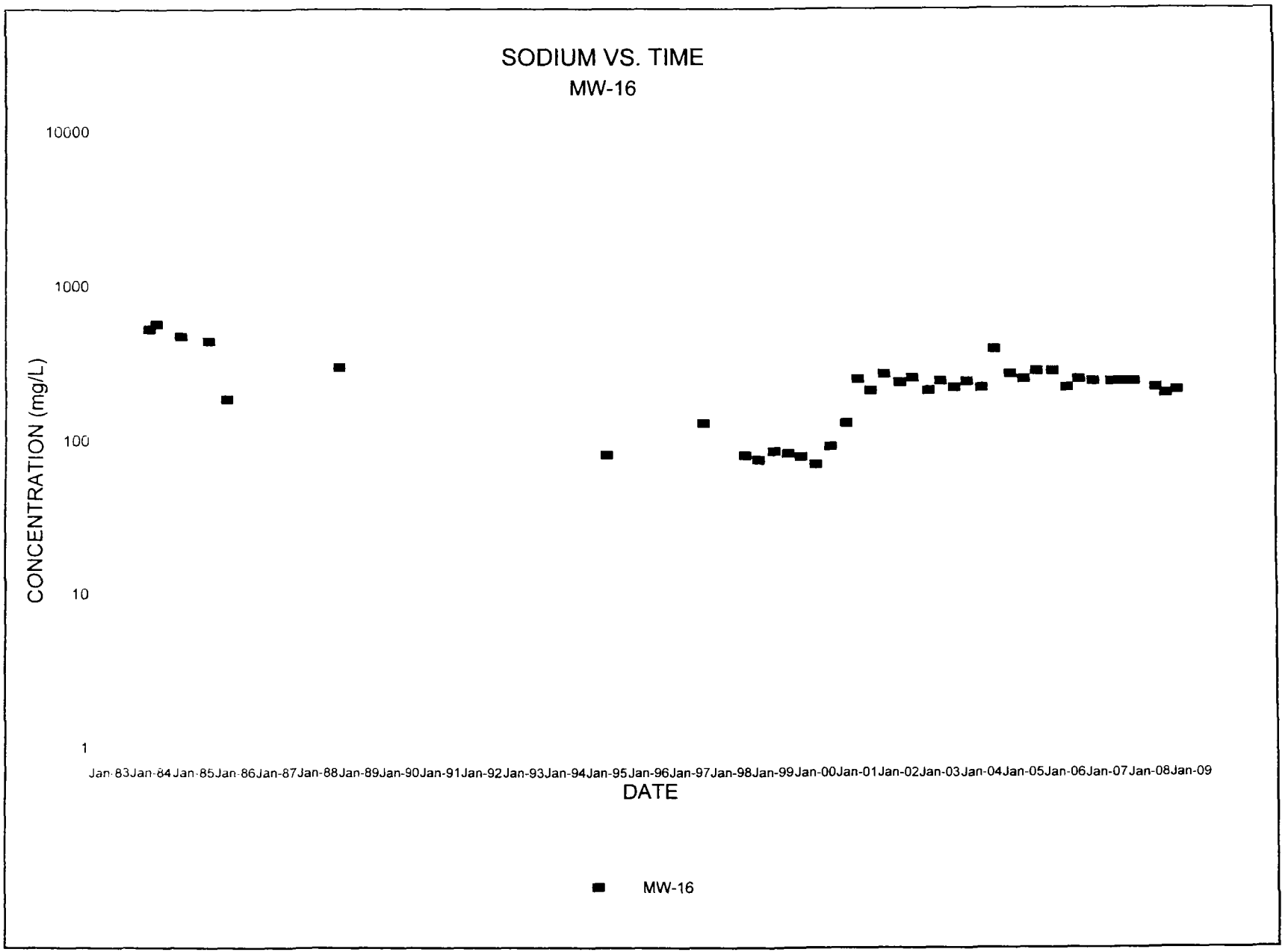
SODIUM

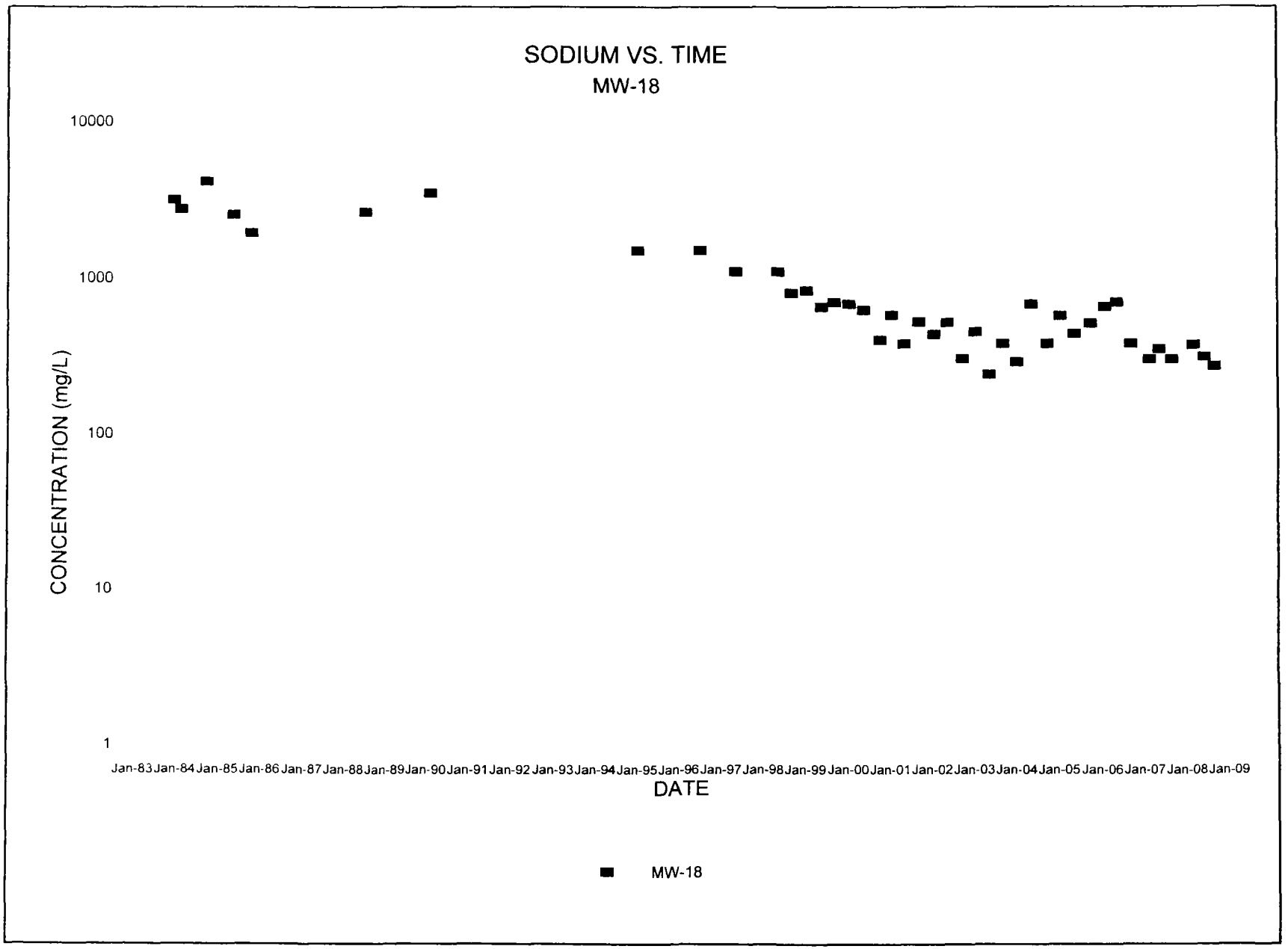

SODIUM VS. TIME
MW-2
10000
1000
100
10
1
CONCENTRATION (mg/L)
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-2

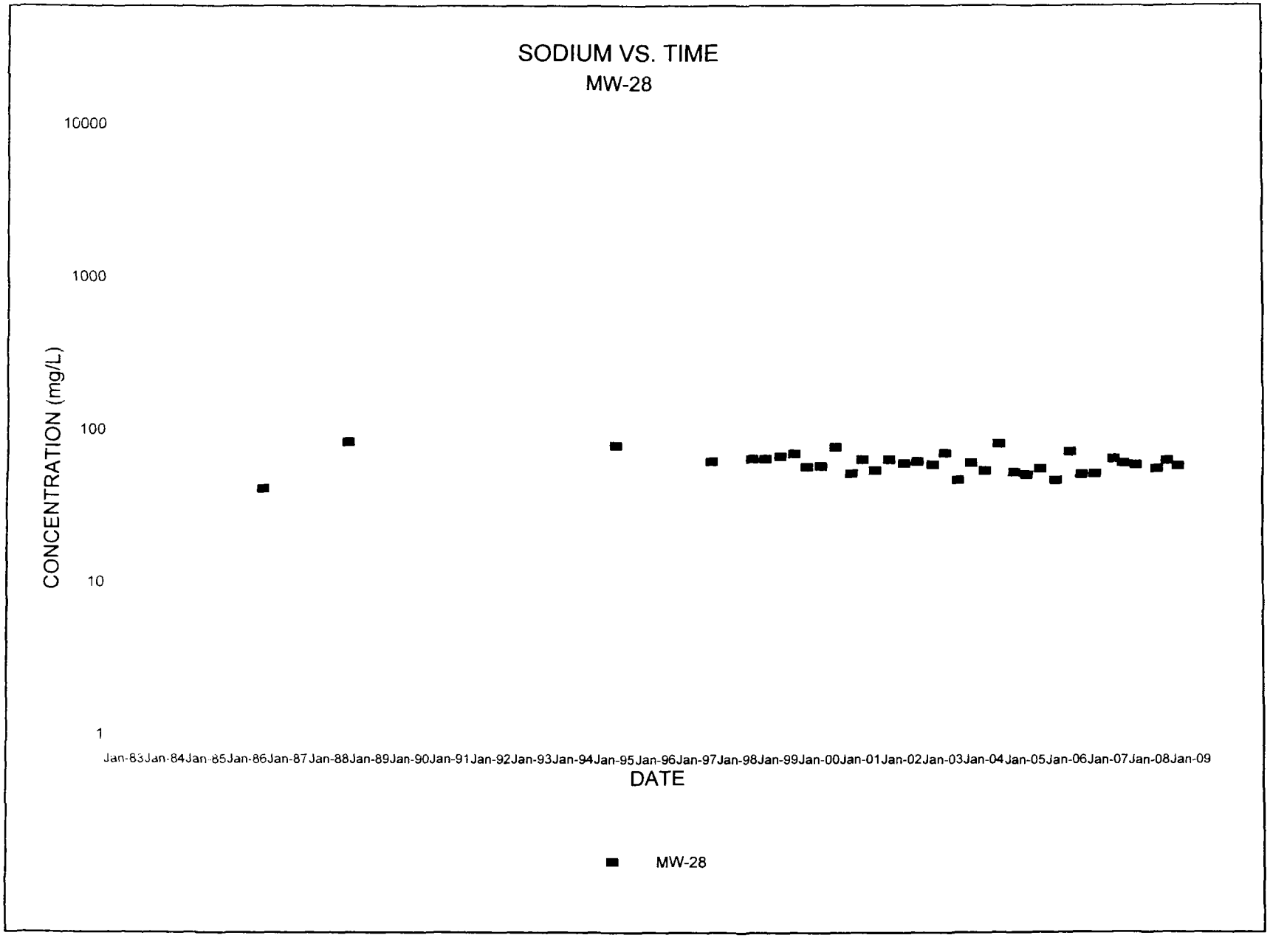

SODIUM VS. TIME
MW-5
10000
1000
100
10
1
CONCENTRATION (mg/L)
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-5

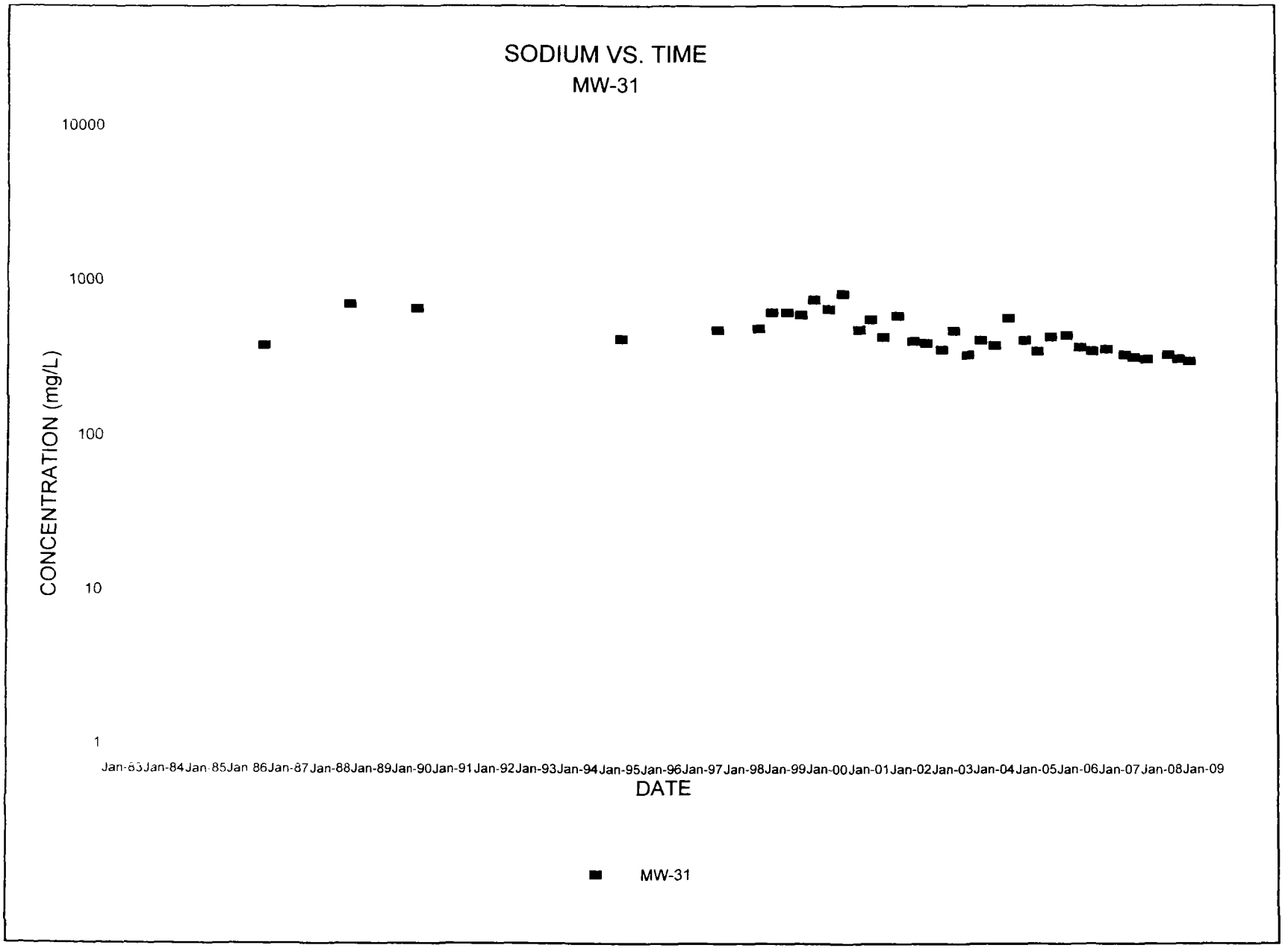

SODIUM VS. TIME
MW-12
10000
1000
100
10
1
CONCENTRATION (mg/L)
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-12

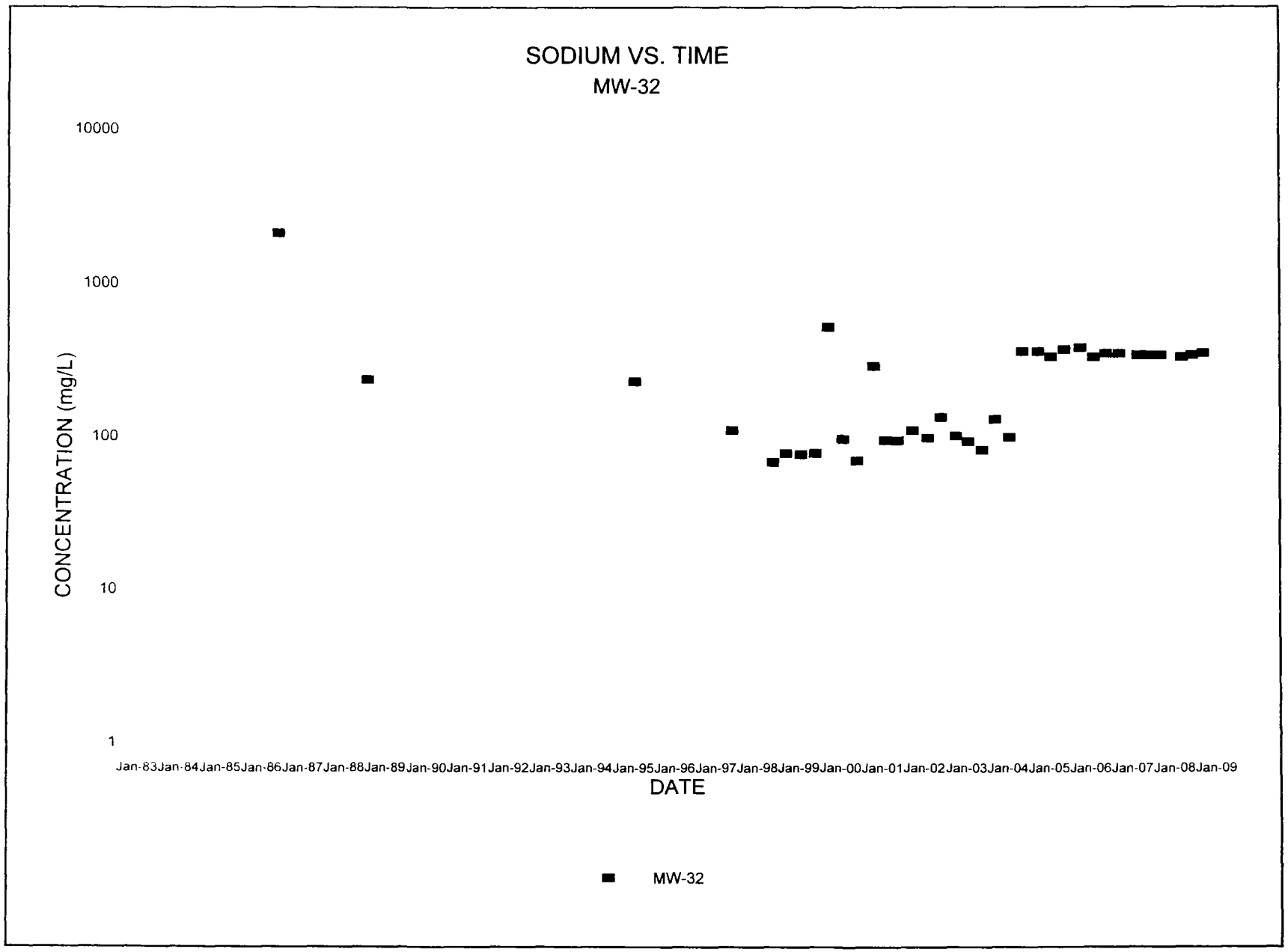

SODIUM VS. TIME
MW-14
10000
1000
100
10
1
CONCENTRATION (mg/L)
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-14

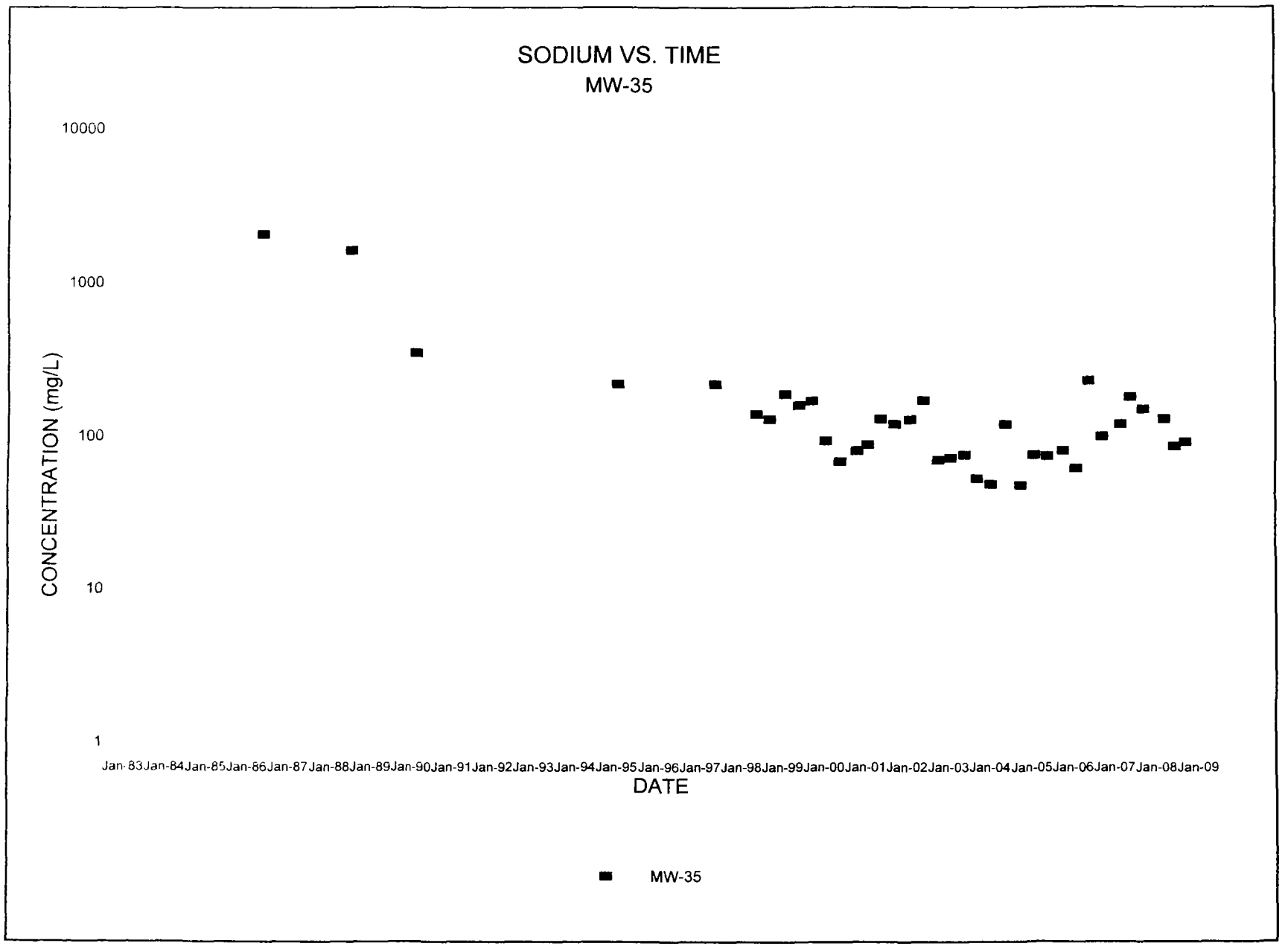

SODIUM VS. TIME
MW-16
10000
1000
100
10
1
CONCENTRATION (mg/L)
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
DATE
MW-16

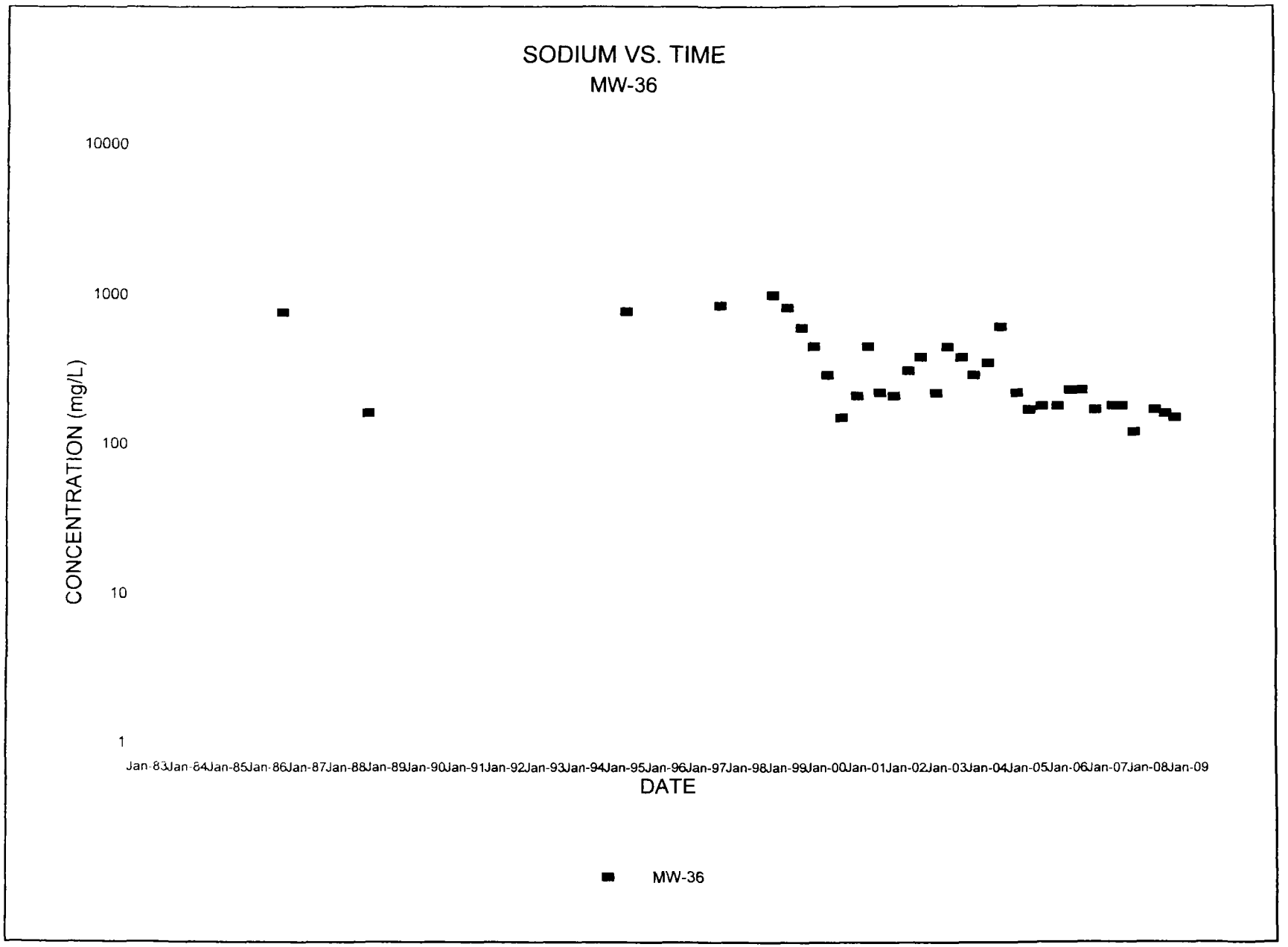

SODIUM VS. TIME
MW-18
10000
1000
100
10
1
CONCENTRATION (mg/L)
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-18

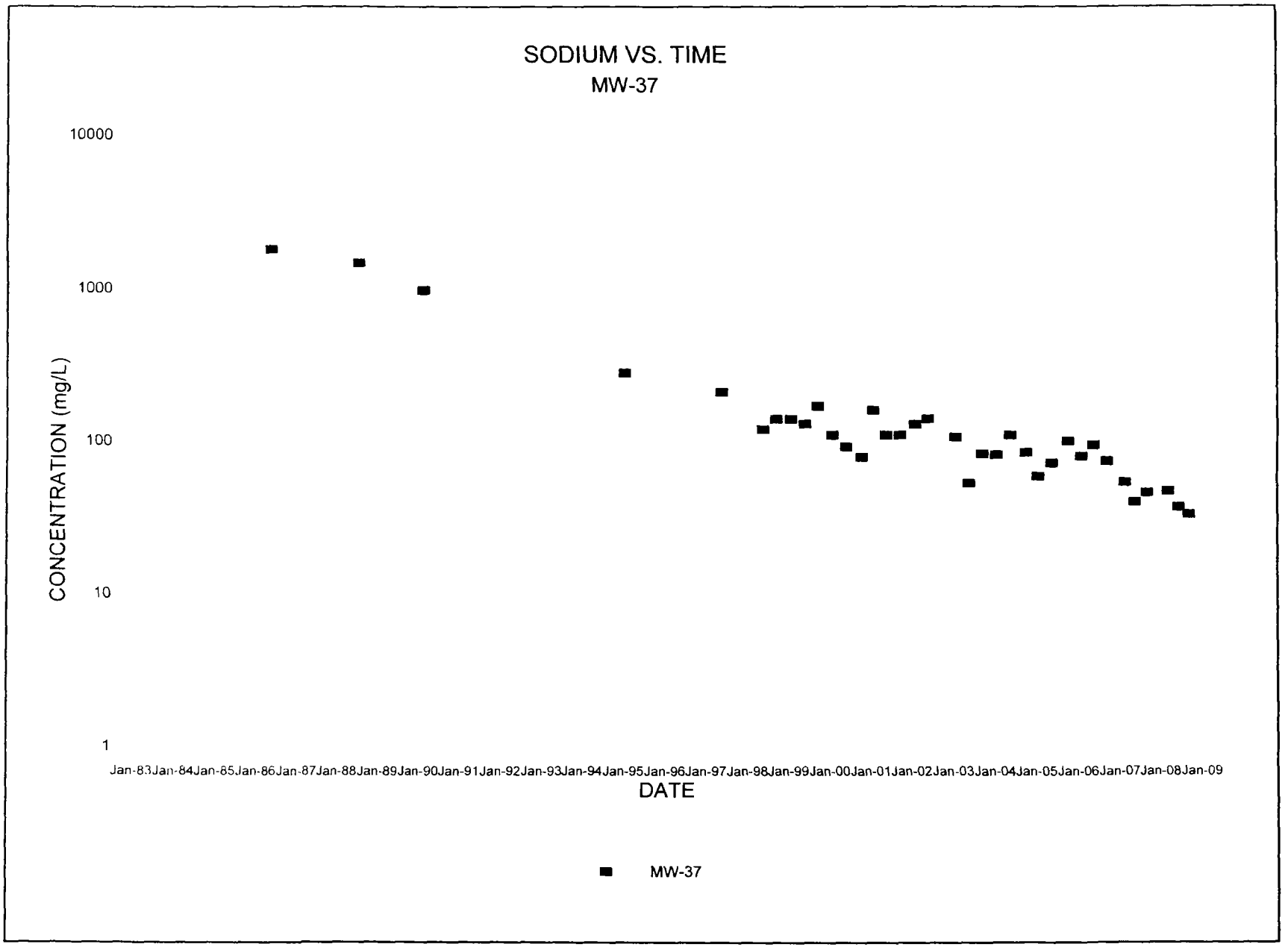

SODIUM VS. TIME
MW-28
10000
1000
100
10
1
CONCENTRATION (mg/L)
Jan-83 Jan-84 Jan-85 Jan-86 Jan-87 Jan-88 Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09
DATE
MW-28


SODIUM VS. TIME
MW-31
10000
1000
100
10
1
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 Jan-07 Jan-08 Jan-09
DATE
MW-31


SODIUM VS. TIME
MW-32
10000
1000
100
10
1
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
Jan-07
Jan-08
Jan-09
DATE
MW-32


SODIUM VS. TIME
MW-35
10000
1000
100
10
1
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 Jan-07 Jan-08 Jan-09
DATE
MW-35


SODIUM VS. TIME
MW-36
10000
1000
100
10
1
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
Jan-07
Jan-08
Jan-09
DATE
MW-36


SODIUM VS. TIME
MW-37
10000
1000
100
10
1
CONCENTRATION (mg/L)
Jan-83Jan-84Jan-85Jan-86Jan-87Jan-88Jan-89Jan-90Jan-91Jan-92Jan-93Jan-94Jan-95Jan-96Jan-97Jan-98Jan-99Jan-00Jan-01Jan-02Jan-03Jan-04Jan-05Jan-06Jan-07Jan-08Jan-09
DATE
MW-37

APPENDIX E

CONTAMINANT MASS-IN-PLACE ESTIMATION SUPPORTING DATA

JUNE 2008 MONITORING EVENT

APPENDIX E-1
ANALYTICAL RESULTS FOR GROUND-WATER SAMPLES
COLLECTED JUNE 2008

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	12/12	4.9	0.011	0.73	<0.01	0.19	<0.01	0.029	7.2/8.1	3.3	2.9
Fluoride	0.05	37/41	27	0.17	6.1	0.40	1.1	0.58	2.5	20/20	33	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	3.9	<0.01/<0.01	0.24	4.8	0.3	6.8	8.4	12	2.2	4.8	15	2.1
Fluoride	88	1.1/1.1	0.27	31	3.9	11	62	55	42	26	15	33

SAMPLE I.D.:	MW-37	MW-39S	MW-39D	MW-40S	MW-40D	MW-42S	MW-42D
Cyanide, Total	0.9	5.7	3.70	7.1	6.8	2.3	4.6
Fluoride	3.4	140	12.0	58	29	37	14.0

NOTE: All results in mg/L.

5.9/6.2 - Primary sample and duplicate sample.

APPENDIX E-1 (CONT.)
PLUME CONTOUR AREA CALCULATIONS
FOR TOTAL CYANIDE AND FLUORIDE
BASED ON RESULTS OF SAMPLING CONDUCTED JUNE 2008

ORMET CORPORATION
HANNIBAL, OHIO

TOTAL CYANIDE	CONTOUR INTERVAL (from Figure 4)	CONTOUR AREA in sqare feet (estimated using CAD* software)
	0.2 - 1 mg/L	389,861
	1 - 5 mg/L	763,936
	5 - 10 mg/L	601,595
	10 - 15 mg/L	301,803
	15 mg/L	115,860

TOTAL FLUORIDE	CONTOUR INTERVAL (from Figure 3)	CONTOUR AREA in sqare feet (estimated using CAD* software)
	4 - 10 mg/L	278,245
	10 - 15 mg/L	317,548
	15 - 25 mg/L	280,959
	25 - 50 mg/L	718,106
	50 mg/L	320,189

* CAD - Computer Aided Drafting

0319-ANN-E1b.123

APPENDIX E-1 (CONT.)
AVERAGE AQUIFER THICKNESS CALCULATIONS
WITHIN EACH PLUME CONTOUR INTERVAL
BASED ON RESULTS OF SAMPLING CONDUCTED JUNE 2008

ORMET CORPORATION
HANNIBAL, OHIO

TOTAL CYANIDE

CONTOUR INTERVAL (from Figure 4)	MONITORING WELL ID	REPORTED CONCENTRATION (mg/L)	AQUIFER THICKNESS (in feet)	AVERAGE AQUIFER THICKNESS (b, in feet)
0.2 - 1 mg/L	MW-8	0.73	47.00	30.08
	MW-28	0.24	26.58	
	MW-37	0.9	16.67	
1 - 5 mg/L	MW-5	4.9	41.04	39.87
	MW-16	3.3	42.62	
	MW-17	2.9	46.78	
	MW-18	3.9	20.56	
	MW-29S&D	2.55*	50.70	
	MW-34S&D	3.5*	37.84	
	MW-36	2.1	20.12	
	MW-39S&D	4.7*	46.30	
	MW-42S&D	3.45*	52.85	
5 - 10 mg/L	MW-15	8.1	25.31	29.72
	MW-30	6.8	16.06	
	MW-31	8.4	28.89	
	MW-40S&D	6.95*	48.62	
10 - 15 mg/L	MW-2	12	37.28	30.95
	MW-32	12	24.62	
15 mg/L	MW-35	15	12.22	12.22

NOTE: In preparing the above-referenced isopleth map (i.e., Figure 4), the higher of the values reported for a primary and a duplicate sample, and the average of values for the shallow well and the deep well of a well cluster were used to draw contour lines.

* - Denotes average of the values for the shallow well and the deep well of a well cluster.

[ ] - Denotes use of a surrogate well for determination of a representative aquifer thickness.

NA - Not applicable.

APPENDIX E-1 (CONT.)
AVERAGE AQUIFER THICKNESS CALCULATIONS
WITHIN EACH PLUME CONTOUR INTERVAL
BASED ON RESULTS OF SAMPLING CONDUCTED JUNE 2008

ORMET CORPORATION
HANNIBAL, OHIO

FLUORIDE

CONTOUR INTERVAL (from Figure 3)	MONITORING WELL ID	REPORTED CONCENTRATION (mg/L)	AQUIFER THICKNESS (in feet)	AVERAGE AQUIFER THICKNESS (b, in feet)
4 - 10 mg/L	MW-8 [MW-37]	6.1 NA	47.00 16.67	31.84
10 - 15 mg/L	[MW-5] MW-30 MW-35	NA 11 15	41.04 16.06 12.22	23.11
15 - 25 mg/L	MW-15 MW-17 MW-29S&D	20 17 17.45*	25.31 46.78 50.70	40.93
25 - 50 mg/L	MW-2 MW-5 MW-16 MW-34S&D MW-36 MW-40S&D MW-42S&D	41 27 33 34* 33 43.5* 25.5*	37.28 41.04 42.62 37.84 20.12 48.62 52.85	40.05
50 mg/L	MW-18 MW-31 MW-32 MW-39S&D	88 62 55 76*	20.56 28.89 24.62 46.30	30.09

NOTE: In preparing the above-referenced isopleth map (i.e., Figure 3), the higher of the values reported for a primary and a duplicate sample, and the average of values for the shallow well and the deep well of a well cluster were used to draw contour lines.

* - Denotes average of the values for the shallow well and the deep well of a well cluster.

[ ] - Denotes use of a surrogate well for determination of a representative aquifer thickness.

NA - Not applicable.

APPENDIX E-1 (CONT.)
TOTAL CYANIDE AND FLUORIDE MASS-IN-PLACE
CALCULATION WORKSHEET
BASED ON RESULTS OF SAMPLING CONDUCTED JUNE 2008

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	15 mg/L	115,860	12.22	1,415,809	0.25	353,952	10,023,929	15	150,358,937	332
	10 - 15 mg/L	301,803	30.95	9,340,803	0.25	2,335,201	66,132,884	13	859,727,494	1,896
	5 - 10 mg/L	601,595	29.72	17,879,403	0.25	4,469,851	126,586,176	8.0	1,012,689,409	2,233
	1 - 5 mg/L	763,936	39.87	30,458,128	0.25	7,614,532	215,643,549	3.0	646,930,646	1,426
	0.2 - 1 mg/L	389,861	30.08	11,727,019	0.25	2,931,755	83,027,294	0.6	49,816,376	110
									Total Cyanide Mw:	5,997
FLUORIDE	(From Figure 3) 50 mg/L	320,189	30.09	9,634,487	0.25	2,408,622	68,212,168	70	4,774,851,762	10,529
	25-50 mg/L	718,106	40.05	28,760,145	0.25	7,190,036	203,621,829	38	7,737,629,492	17,061
	15 - 25 mg/L	280,959	40.93	11,499,652	0.25	2,874,913	81,417,535	20	1,628,350,705	3,591
	10 - 15 mg/L	317,548	23.11	7,338,534	0.25	1,834,634	51,956,823	13	675,438,695	1,489
	4 - 10 mg/L	278,245	31.84	8,859,321	0.25	2,214,830	62,723,991	7	439,067,939	968
									Total Fluoride Mw:	33,638

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