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2009 ANNUAL REMEDIAL ACTION GROUND-WATER MONITORING REPORT ORMET CORPORATION SUPERFUND SITE

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2009 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 (Ormet), Ormet has undertaken Remedial Action (RA) at their Hannibal, Ohio Superfund site consisting of the following:

- Containment of the plume in the alluvial aquifer by pumping of ground water at the Reduction Plant;
- 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 along 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 1.5 hours and off for 0.75 hours for about 14 hours each day. The flushing system is not operated during winter months when the ground may be frozen and freezing of the lines could occur, 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 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 2009, the first monitoring event was performed on January 27 and 28, the second from May 19 through 21, and the third on September 23 and 24. On July 30, 2009, additional ground-water samples were collected from selected wells (MW-12, MW-14, MW-18, MW-42S&D) to resolve data inconsistencies for total cyanide and amenable cyanide observed in the May data set.

Each monitoring event included measurement of water-level elevations at MW- and TH-series monitoring wells, PPB-series piezometers monitoring the alluvial aquifer, and Ohio River pool measuring points RP-1 and RP-2. Water-level elevation data collected in conjunction with the 2009 monitoring events are provided in Tables 1, 2, and 3, respectively, and a ground-water contour map based on May 2009 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 denoted by "*"):

MW - 2	MW - 32
MW - 5	MW - 35
MW - 12*	MW - 36
MW - 16	MW - 37
MW - 18	MW - 39S
MW - 28	MW - 44S*
MW - 31	MW - 44D*

With the exception of MW-39S, 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. MW-39S was later added at the request of USEPA.

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 and proximate to 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-39D
MW-14	MW-40S & D
MW-15	MW-42S & D
MW-17	

Water Sampling Log forms for each of the three monitoring events conducted during 2009 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.

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, and 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 2009 monitoring events were performed by Pace Analytical Services, Inc. (Pace) of Export, PA. The analytical methods used by Pace to analyze ground-water samples are listed below.

Analytical Parameter	Analytical Method	Ground-Water Clean-Up Goal (mg/L)	Reporting Limit (mg/L)
Arsenic	EPA/6010	0.01*	0.005
Beryllium	EPA/6010	0.004	0.001
Manganese	EPA/6010	0.23*	0.005
Vanadium	EPA/6010	0.26	0.005
Cyanide (total)	SM4500-CN-E	N/A	0.005
Cyanide (amenable)	SM4500-CN-G	0.2	0.005
Fluoride	SM4500F/C	4	1.0
PCBs	EPA/8082	N/A	0.0005
Tetrachloroethene	EPA/8260	0.005	0.005
pH	SM4500-H+B	N/A	N/A
Specific Conductance	EPA/9050	N/A	N/A
Sodium	EPA/6010	N/A	1.0

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 data reports for the 2009 ground-water analyses are provided in Appendix B, and 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. The data validation summary report for the 2009 analyses is provided in Appendix C.

RESULTS OF 2009 REMEDIAL ACTION GROUND-WATER MONITORING

GROUND-WATER FLOW

Water-level elevation data collected during the May 2009 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. 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.

Pumping of the former Ormet Rolling Mill Ranney well (located about 2000 feet west of the Reduction Plant Ranney well) was discontinued in late 2005 and the well was abandoned by Reynolds, Inc. of Middletown, Ohio in June 2009. 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 2009. Ground-water flow beneath the former Rolling Mill property during 2009 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

Cleanup Goals

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 2009) 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	*	*
MW - 36	*	*	*	*	*	+
MW - 37	+	*	*	*	*	*
Downgradient Edge of FSPSA						
MW - 16	+	o	*	o	*	+
MW - 18	+	x	*	*	*	+
MW - 28	*	*	*	*	*	*
MW - 31	+	o	*	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.

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 of the concentration versus time trends for each parameter focus mainly on data collected since the pre-remediation monitoring event performed in 1997. In viewing the concentration versus time graphs, it should be noted that the construction and operation of the soil flushing system in the FSPSA altered site water-quality conditions for certain parameters (e.g., cyanide, fluoride) at certain wells. Construction activities (1997 to 1998) involved grading to establish desired surface slopes and trenching to install underground piping to route water to spray birds, both of which loosened the upper soil profile and predictably made contaminants present in the soil matrix more available to leaching. Operation of soil flushing (pilot tested in 1998 and fully operational in 1999) was specifically designed to accelerate the rate at which contaminants were leached from the soil to the ground water. The net result observed for certain wells was an initial increase in concentrations roughly corresponding to construction and operation of soil flushing, generally followed by a gradual decrease.

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. Except for apparent increases in amenable cyanide concentrations at a number of the compliance wells following the soil-flushing system construction and operation (e.g., MW-2, MW-5, MW-16, MW-18, MW-28, MW-31, MW-35), the graphs give no indication of subsequently increasing concentrations and, at several of the wells (MW-2, MW-16, MW-28, MW-31), a probably trend of decreasing concentrations. Only at compliance well MW-12 has the amenable cyanide cleanup goal of 0.2 mg/L been consistently achieved. Other wells at which the amenable cyanide cleanup goal has typically, but not consistently been achieved in recent years include MW-16, MW-18, MW-28 and MW-31.

For total cyanide, following increased concentrations in response to soil flushing, a trend of decreasing concentrations is apparent at compliance wells MW-2, MW-16, MW-18, MW-28, MW-31 and MW-37. At wells MW-5 and to a lesser extent MW-32, a trend of increasing total cyanide concentrations was observed but, at both wells, concentrations appear to have stabilized and begun to decrease in recent years. At MW-35 and MW-36, no discernable trend in total cyanide concentrations is apparent, and at MW-12 concentrations have typically been below detection limits. 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 compliance wells MW-12 and MW-28. Recently, fluoride concentrations have also typically been below the cleanup goal at MW-37. Following increases in fluoride concentrations attributed to soil flushing, a general decreasing concentration trend is observed at compliance wells MW-2, MW-16, MW-18, MW-31, MW-35, MW-36 and MW-37. At MW-5 and MW-32 increased concentrations of fluoride following soil flushing persisted longer than at other wells, and in recent years have stabilized.

Arsenic

Concentration versus time graphs for arsenic for each of the compliance point wells are provided in Appendix D-4. At 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 concentrations reported since mid 2006 were also below the 0.01 mg/L clean-up goal. At MW-35, reported arsenic concentrations, though commonly 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 wells MW-2, MW-18, MW-31, MW-36 and MW-37 show a general trend of decreasing concentrations, and data for MW-35 exhibit no consistent trend. At MW-16 and MW-32, arsenic concentrations increased relative to historical values, possibly as a result of soil flushing, but in recent years have shown a downward trend.

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 were typically 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 monitoring wells analyzed during each of the 2009 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, 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, with the exception of MW-35, have since shown a general decreasing trend.

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 both MW-18 and MW-37, only two of the historically reported vanadium values 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 and the ROD-specified cleanup goal of 0.005 mg/L at MW-5 and, in recent samples, also at MW-18. PCE concentrations have shown increases at MW-2 and, to a lesser degree, at MW-30 and MW-31. At all three of these wells the increases appear to have stabilized and, at MW-30, subsequent decreases are apparent.

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 an indicator of changes in the overall condition of the plume. At compliance wells MW-2, MW-18, MW-31, MW-35, MW-36 and MW-37, data collected since 1997 show decreases in sodium concentrations, and at MW-5, MW-12 and MW-28 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 May 2009 expanded 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 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 May 2009 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 and 2009 decreased to about 33,638 pounds and 29,510 pounds, respectively.

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 and 2009 continued to decrease to about 5,997 pounds and 5,422 pounds, respectively.

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 ground water at the Reduction Plant, the mass removals achieved from January through December 2009 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 during 2009 were calculated using analytical data and flow data routinely collected by Ormet for the Reduction Plant pumping centers (i.e., the Ranney well and the interceptor well).

During the period from January through December 2009, approximately 6,964 pounds of fluoride and approximately 936 pounds of cyanide were removed from the alluvial aquifer by ground-water pumping. During the same period, the estimated mass of fluoride in the aquifer decreased by approximately 4,128 pounds and the estimated mass of cyanide decreased by approximately 575 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 shows estimated masses of fluoride and total cyanide in the alluvial aquifer versus time, and Figure 8 shows fluoride and total cyanide mass removal 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 May 2009 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 2009, the aquifer area with fluoride concentrations above 4.0 mg/L was about 41.7 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 50.0 acres in 2009. Soil flushing in the FSPSA is the probable 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 2009 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 ground water at the Ormet Reduction Plant continues to provide containment of the plume beneath the Ormet property and removes contaminant mass from the alluvial aquifer. Along the river/plant boundary, the flow of ground water continues to be from the river to the aquifer.

- Pumping of ground water removed approximately 6,964 pounds of fluoride and approximately 936 pounds of cyanide from the alluvial aquifer during the period January through December 2009. During the same period, the estimated mass of fluoride in the aquifer decreased by about 4,128 pounds and the estimated mass of cyanide in the aquifer decreased by about 575 pounds. These results indicate continued leaching of residual spent potliner materials in the soil of the FSPSA.

- Between 2008 and 2009, the estimated area of the alluvial aquifer with fluoride concentrations above 4.0 mg/L decreased by about 5.2% and the estimated area of the aquifer with total cyanide concentrations above the 0.2 mg/L increased by about 0.2%.

- 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 operations and changes in waste management practices undertaken by Ormet prior to the Superfund project, including pumping of groundwater that removes contaminant mass 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 are attributed to the flushing itself, and also the excavation/ rearrangement of shallow soil during the installation of the flushing system.

- Analyses of ground water samples for PCBs during 2009 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 27, 2009

WATER-LEVEL MEASURING POINT	MEASURING POINT ELEVATION (ft. MSL)	DEPTH TO WATER (feet)	GROUND-WATER ELEVATION (ft. MSL)
MW-1	667.80	48.55	619.25
MW-2	667.52	49.38	618.14
MW-3	645.17	24.26	620.91
MW-4	661.07	45.94	615.13
MW-5	668.16	52.45	615.71
MW-7	667.94	51.43	616.51
MW-8	667.71	54.58	613.13
MW-9	666.59	52.33	614.26
MW-10	667.16	53.78	613.38
MW-11	667.31	51.97	615.34
MW-12	635.82	16.08	619.74
MW-13	661.44	38.62	622.82
MW-14	653.59	32.25	621.34
MW-15	657.31	34.27	623.04
MW-16	662.72	42.02	620.70
MW-17	655.03	32.75	622.28
MW-18	660.91	37.97	622.94
MW-19	662.03	38.70	623.33
MW-20	632.79	9.97	622.82
MW-21s	663.47	49.35	614.12
MW-21d	663.60	48.92	614.68
MW-22s	667.47	53.08	614.39
MW-22d	667.21	52.82	614.39
MW-23s	663.18	48.24	614.94
MW-23d	663.41	48.58	614.83
MW-24s	667.88	54.10	613.78
MW-24d	667.75	54.00	613.75
MW-25	667.30	BROKEN	—
MW-26s	665.54	NM	—
MW-26d	665.59	NM	—
MW-27	667.31	52.95	614.36
MW-28	663.27	22.62	640.65
MW-29s	653.40	32.99	620.41
MW-29d	653.07	32.70	620.37
MW-30	667.58	45.41	622.17
MW-31	661.59	40.25	621.34
MW-32	656.12	34.59	621.53
MW-34s	655.67	33.79	621.88
MW-34d	654.67	31.90	622.77
MW-35	661.90	35.65	626.25
MW-36	655.14	34.11	621.03
MW-37	661.14	22.98	638.16
MW-38	666.64	20.64	646.00
MW-39s	657.30	35.52	621.78
MW-39d	657.18	35.37	621.81
MW-40s	663.90	45.70	618.20
MW-40d	663.75	45.60	618.15

TABLE 1 (cont.)
WATER-LEVEL ELEVATION DATA
ORMET CORPORATION
HANNIBAL, OHIO
DATE: JANUARY 27, 2009

WATER-LEVEL MEASURING POINT	MEASURING POINT ELEVATION (ft. MSL)	DEPTH TO WATER (feet)	GROUND-WATER ELEVATION (ft. MSL)
MW-41	637.67	NM	–
MW-42s	654.37	33.75	620.62
MW-42d	654.34	33.65	620.69
MW-44s	662.01	43.39	618.62
MW-44d	661.76	43.94	617.82
PPB-01*	663.24	NM	–
PPB-02s*	663.14	NM	–
PPB-02d+	662.78	40.07	622.71
PPB-04+	661.57	NM	–
PPB-05*	661.62	NM	–
PPB-06+	663.04	NM	–
PPB-07*	661.71	NM	–
PPB-09+	664.30	41.24	623.06
PPB-10*	663.45	NM	–
PPB-14*	660.64	NM	–
TH-3	667.81	49.80	618.01
TH-10	658.17	34.33	623.84
TH-11	659.08	35.32	623.76
TH-15	663.62	49.76	613.86
TH-16	664.62	50.08	614.54
TH-17	663.93	49.18	614.75
RP-1	643.17	19.60	623.57
RP-2	643.05	19.35	623.70

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 walkwa

* - Designates a perched zone piezometer
+ - Designates an alluvial aquifer piezometer.
NM = Not measured.

TABLE 2
WATER-LEVEL ELEVATION DATA
ORMET CORPORATION
HANNIBAL, OHIO
DATE: MAY 19, 2009

WATER-LEVEL MEASURING POINT	MEASURING POINT ELEVATION (ft. MSL)	DEPTH TO WATER (feet)	GROUND-WATER ELEVATION (ft. MSL)
MW-1	667.80	48.50	619.30
MW-2	667.52	48.93	618.59
MW-3	645.17	23.13	622.04
MW-4	661.07	45.18	615.89
MW-5	668.16	51.81	616.35
MW-7	667.94	50.80	617.14
MW-8	667.71	53.70	614.01
MW-9	666.59	51.52	615.07
MW-10	667.16	52.93	614.23
MW-11	667.31	51.30	616.01
MW-12	635.82	15.52	620.30
MW-13	661.44	38.13	623.31
MW-14	653.59	31.70	621.89
MW-15	657.31	33.61	623.70
MW-16	662.72	41.50	621.22
MW-17	655.03	32.16	622.87
MW-18	660.91	37.77	623.14
MW-19	662.03	38.21	623.82
MW-20	632.79	9.31	623.48
MW-21s	663.47	48.60	614.87
MW-21d	663.60	48.19	615.41
MW-22s	667.47	52.33	615.14
MW-22d	667.21	52.08	615.13
MW-23s	663.18	47.59	615.59
MW-23d	663.41	47.91	615.50
MW-24s	667.88	53.29	614.59
MW-24d	667.75	53.18	614.57
MW-25	667.30	BROKEN	—
MW-26s	665.54	NM	—
MW-26d	665.59	NM	—
MW-27	667.31	52.38	614.93
MW-28	663.27	22.05	641.22
MW-29s	653.40	32.42	620.98
MW-29d	653.07	32.12	620.95
MW-30	667.58	45.43	622.15
MW-31	661.59	39.78	621.81
MW-32	656.12	33.90	622.22
MW-34s	655.67	33.15	622.52
MW-34d	654.67	31.31	623.36
MW-35	661.90	35.95	625.95
MW-36	655.14	32.30	622.84
MW-37	661.14	22.37	638.77
MW-38	666.64	20.60	646.04
MW-39s	657.30	34.97	622.33
MW-39d	657.18	34.82	622.36
MW-40s	663.90	45.14	618.76
MW-40d	663.75	45.03	618.72

TABLE 2 (cont.)
WATER-LEVEL ELEVATION DATA
ORMET CORPORATION
HANNIBAL, OHIO
DATE: MAY 19, 2009

WATER-LEVEL MEASURING POINT	MEASURING POINT ELEVATION (ft. MSL)	DEPTH TO WATER (feet)	GROUND-WATER ELEVATION (ft. MSL)
MW-41	637.67	NM	–
MW-42s	654.37	33.20	621.17
MW-42d	654.34	33.13	621.21
MW-44s	662.01	42.80	619.21
MW-44d	661.76	43.32	618.44
PPB-01*	663.24	NM	–
PPB-02s*	663.14	NM	–
PPB-02d+	662.78	39.57	623.21
PPB-04+	661.57	NM	–
PPB-05*	661.62	NM	–
PPB-06+	663.04	NM	–
PPB-07*	661.71	NM	–
PPB-09+	664.30	40.77	623.53
PPB-10*	663.45	NM	–
PPB-14*	660.64	NM	–
TH-3	667.81	49.20	618.61
TH-10	658.17	33.55	624.62
TH-11	659.08	35.25	623.83
TH-15	663.62	48.80	614.82
TH-16	664.62	49.27	615.35
TH-17	663.93	48.44	615.49
RP-1	643.17	19.03	624.14
RP-2	643.05	18.80	624.25

NOTE:

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

* - 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 23, 2009

WATER-LEVEL MEASURING POINT	MEASURING POINT ELEVATION (ft. MSL)	DEPTH TO WATER (feet)	GROUND-WATER ELEVATION (ft. MSL)
MW-1	667.80	NM	—
MW-2	667.52	46.65	620.87
MW-3	645.17	22.53	622.64
MW-4	661.07	41.91	619.16
MW-5	668.16	48.66	619.50
MW-7	667.94	47.85	620.09
MW-8	667.71	49.86	617.85
MW-9	666.59	48.06	618.53
MW-10	667.16	49.17	617.99
MW-11	667.31	48.07	619.24
MW-12	635.82	13.83	621.99
MW-13	661.44	37.37	624.07
MW-14	653.59	30.27	623.32
MW-15	657.31	32.52	624.79
MW-16	662.72	39.78	622.94
MW-17	655.03	30.85	624.18
MW-18	660.91	36.00	624.91
MW-19	662.03	37.60	624.43
MW-20	632.79	9.05	623.74
MW-21s	663.47	45.25	618.22
MW-21d	663.60	44.86	618.74
MW-22s	667.47	48.90	618.57
MW-22d	667.21	48.64	618.57
MW-23s	663.18	44.32	618.86
MW-23d	663.41	44.62	618.79
MW-24s	667.88	49.63	618.25
MW-24d	667.75	49.55	618.20
MW-25	667.30	48.96	618.34
MW-26s	665.54	NM	—
MW-26d	665.59	NM	—
MW-27	667.31	48.95	618.36
MW-28	663.27	20.22	643.05
MW-29s	653.40	30.70	622.70
MW-29d	653.07	30.40	622.67
MW-30	667.58	43.55	624.03
MW-31	661.59	38.05	623.54
MW-32	656.12	32.30	623.82
MW-34s	655.67	31.92	623.75
MW-34d	654.67	30.34	624.33
MW-35	661.90	34.09	627.81
MW-36	655.14	31.96	623.18
MW-37	661.14	20.22	640.92
MW-38	666.64	19.93	646.71
MW-39s	657.30	33.53	623.77
MW-39d	657.18	33.45	623.73
MW-40s	663.90	42.96	620.94
MW-40d	663.75	42.85	620.90

TABLE 3 (cont.)
WATER-LEVEL ELEVATION DATA
ORMET CORPORATION
HANNIBAL, OHIO
DATE: SEPTEMBER 23, 2009

WATER-LEVEL MEASURING POINT	MEASURING POINT ELEVATION (ft. MSL)	DEPTH TO WATER (feet)	GROUND-WATER ELEVATION (ft. MSL)
MW-41	637.67	NM	–
MW-42s	654.37	31.63	622.74
MW-42d	654.34	31.65	622.69
MW-44s	662.01	40.52	621.49
MW-44d	661.76	41.07	620.69
PPB-01*	663.24	NM	–
PPB-02s*	663.14	NM	–
PPB-02d+	662.78	38.78	624.00
PPB-04+	661.57	NM	–
PPB-05*	661.62	NM	–
PPB-06+	663.04	NM	–
PPB-07*	661.71	NM	–
PPB-09+	664.30	40.27	624.03
PPB-10*	663.45	NM	–
PPB-14*	660.64	NM	–
TH-3	667.81	46.80	621.01
TH-10	658.17	32.55	625.62
TH-11	659.08	33.42	625.66
TH-15	663.62	45.30	618.32
TH-16	664.62	45.93	618.69
TH-17	663.93	45.13	618.80
RP-1	643.17	19.08	624.09
RP-2	643.05	19.20	623.85

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

* - 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	6.62	6.76	470	343	<0.01			0.67	<0.004	<0.0005		0.0298	24.6	<0.01	
5/03	6.32	6.39	570	416	<0.01			0.25	<0.004	<0.0005		0.048	24	<0.01	
5/04	6.66	6.46	690	701	<0.01			2.1	<0.004	<0.0005		0.47	50	<0.01	
5/05	6.66	6.46	660	591	<0.01			1.8 J	<0.004	<0.0005		0.40	47	<0.01	
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	
5/09	6.0	6.16	562	551	0.09		0.087	0.26	<0.0050	<0.0010		0.47	51.2	<0.0050	

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	6,306	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		
7/86	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	0.00884
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

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-2 (cont.)															
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	0.048	<.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	0.00083		0.52	280	0.032	0.062
6/08 (Dup.)	9.49		1,400	910	12		0.93	41	0.045	0.00080		0.52	290	0.031	0.065
9/08	9.43	9.58	1,200	1,318	7		<0.01	38	0.044	<0.0005		0.51	290	0.027	0.042
1/09	9.30	9.55	1,270	1,283	9.5		9.50	33.5	0.043	<0.0010		0.39	174	0.022	0.048
5/09	9.20	9.58	1,180	1,212	8.8		<0.0050	33.6	0.038	<0.0010		0.53	359	0.027	0.056
9/09	9.40	9.79	1,310	1,243	11.1		0.40	43.7	0.045	<0.0010		0.59	332	0.026	0.037

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	5.88	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	
5/09	5.70	6.01	728	614	<0.0050		<0.0050	0.10	0.03	<0.0010		2.2	82.4	<0.0050	

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-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	850		
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	8.86	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		<0.01	23	<0.004	<0.0005		0.38	230	<0.01	<0.005
9/07	8.03	8.50	1,300	858	5.8		0.16	26	0.0046	<0.0005		0.46	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
1/09	7.90	8.13	1,230	1,210	4.3		4.30	30.2	<0.0050	<0.0010		0.40	153	<0.0050	<0.0050
5/09	7.90	8.22	1,170	1,220	6.0		<0.0050	26.2	<0.0050	<0.0010		0.52	332	<0.0050	<0.0050
9/09	8.00	8.26	1,340	1,153	4.6		0.51	23.7	0.0076	<0.0010		0.46	307	<0.0050	<0.0050

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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-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	0.0016	<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	560	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		0.48	77	<0.01	
5/05	7.40	7.28	680	607	0.034		<0.01	2.5 J	<0.004	<0.0005		0.16	81	<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	
5/09	7.40	7.67	1100	1035	0.83		<0.0050	7.0	<0.0050	<0.0010		0.16	198	<0.0050	

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-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	0.28	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		
5/86	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	
5/09	7.00	7.29	721	696	<0.0050		<0.0050	0.23	<0.0050	<0.0010		<0.0050	19.7	<0.0050	

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-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	585	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	
5/09	7.6	7.8	1130	1168	0.74		<0.0050	0.99	<0.0050	<0.0010		0.83	238	<0.0050	

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-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		1.8	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		460	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	
1/09	7.40	7.54	558	567	<0.0050			0.68	<0.0050	<0.0010		2.2	29.8	<0.0050	
5/09	7.40	7.61	579	559	[7.1]		[0.052]	0.57	<0.0050	<0.0010		2.2	27.5	<0.0050	
7/09		7.73		541	<0.005		<0.005								
7/09 (Dup.)					<0.005		<0.005								
9/09	7.50	7.66	590	531	<0.0050		<0.0050	0.71	0.0051	<0.0010		2.1	26.2	<0.0050	

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-14															
5/02	7.64	7.81	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	
5/09	7.40	7.59	581	559	5.6		0.087	2.3	<0.0050	<0.0010		1.2	56.3	<0.0050	
7/09		7.89		544	0.025		<0.005								
7/09 (Dup.)					0.026		<0.005								

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

TABLE 4
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	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	
5/09	7.7	7.91	946	918	5.6		0.012	17.1	<0.0050	<0.0010		0.072	232	<0.0050	

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-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	7.8	<0.004	<0.0005		2.2	68	<0.01	
1/00 (Dup.)	7.77	6.95	940	810	5.8		5.8	7.8	<0.004	<0.005		2.2	70	<0.01	
5/00	7.69	7.53	1,100	945	12		12	7.9	<0.004	<0.0005	4.3	2.3	91	<0.01	
5/00 (Dup.)	7.72	7.53	1,000	945	12		12	8.1	<0.004	<0.0005	4.4	2.4	91	<0.01	
10/00	7.74	7.67	1,000	774	16		<0.01	13	<0.004	<0.0005		1.6	130	<0.01	
10/00 (Dup.)	7.77	7.67	1,000	774	15		<0.01	13	<0.004	<0.0005		1.7	130	<0.01	
1/01	7.84	7.42	1,200	939	16		3.2	24	<0.004	<0.0005		1.6	250	<0.01	
1/01 (Dup.)	7.85	7.42	1,200	939	17		2.5	24	<0.004	<0.0005		1.6	250	<0.01	
5/01	7.89	8.04	1,100	920	12		12	39	<0.004	<0.0005		1.2	200	<0.01	
5/01 (Dup.)	7.90	8.04	1,100	920	11		11	40	<0.004	<0.0005		1.2	210	<0.01	
9/01	7.91	7.86	1,300	754	9.7		0.85	43	<0.004	0.00058		0.89	270	0.013	
9/01 (Dup.)	7.90	7.86	1,200	754	9.0		0.65	43	0.019	0.00096		1.1	260	0.021	
1/02	8.03	8.11	1,300	913	9.5		<0.5	57	0.0102	0.00211		1.46	237	0.055	
1/02 (Dup.)	8.05	8.11	1,300	913	10		0.58	59	0.00816	0.00171		1.33	211	0.0422	
5/02	7.92	7.92	1,300	695	7.9		<0.20	57	0.0332	0.0015		1.12	254	0.0469	
5/02 (Dup.)	8.06	7.92	1,300	695	7.4		<0.20	59	0.0269	0.0016		1.10	242	0.0500	
9/02	8.17	8.33	1,260	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	

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

TABLE 4

GROUND-WATER MONITORING WELLS AND PARAMETERS
URMET 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 (cont.)															
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	833	3.4		0.098	39	0.037	0.00056		1	220	0.046	
6/08	9.14		1,000	813	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	
1/09	8.8	9.07	921	908	3.7		3.7	107	0.02	<0.0010		0.54	118	0.02	
5/09	9.0	9.28	1,040	986	<0.0050		<0.0050	35.8	0.045	<0.0010		0.85	266	0.049	
5/09 (Dup.)	9.0	9.28	1,040	986	1.2		0.077	35.7	0.048	<0.0010		0.85	268	0.049	
9/09	9.0	9.35	1,040	899	5.0		0.38	31.9	0.028	<0.0010		0.67	232	0.028	

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-17															
12/83	7.9	7.8	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	486	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	
5/09	7.5	7.71	712	679	2.0		0.19	6.4	<0.0050	<0.0010		1.6	93.2	<0.0050	
5/09 (Dup.)	7.4		650		2.0		0.19	6.2	<0.0050	<0.0010		1.6	92.9	<0.0050	

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-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		8,300		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	0.00083		0.29	830	0.028	0.0219
5/99	9.72	9.80	3,000	3,000	95		81	370	0.088	0.0014		0.92	650	0.045	0.017
9/99	9.62	10.26	3,000	2,870	90		14	170	0.074	<0.0005		0.24	700	0.011	0.016
1/00	9.56	9.15	3,000	2,700	27		19	180	0.078	0.00059		0.26	680	0.017	0.020
5/00	9.59	9.73	2,800	2,270	84		75	160	0.075	0.00089	25	0.56	620	0.035	0.019
5/00 (Dup.)	9.60	9.73	2,800	2,270	64		50	160	0.073	0.00062	20	0.33	620	0.023	0.016
10/00	9.54	9.67	2,400	1,948	29		<0.01	130	0.074	0.0024		2.1	400	0.08	0.012
1/01	9.62	10.82	2,500	1,980	53		9.2	170	0.067	0.0006		0.3	580	0.019	0.043
5/01	9.52	10.36	2,100	1,780	15		<0.50	100	0.065	0.0014		0.97	380	0.042	0.040
5/01 (Dup.)	9.52	10.36	2,000	1,780	49		49	110	0.079	0.0037		3.1	380	0.140	0.046
9/01	9.61	9.75	2,100	1,668	91		11	180	0.12	0.00099		0.3	520	0.024	0.027
1/02	9.44	9.65	2,400	1,680	36		<0.01	150	0.15	0.0125		16.8	436	0.360	0.024
5/02	9.48	9.55	2,300	1,693	110		40	150	0.0716	0.00105		0.432	517	0.0269	0.020
5/02 (Dup.)	9.49	9.55	2,300	1,693	72		8.3	150	0.0703	0.00104		0.401	510	0.0248	0.052
9/02	9.49	9.77	1,720	1,599	74		<0.01	108	0.0906	0.00141		0.927	303	0.0525	0.0172
1/03	9.48	9.57	2,010	2,160	62.1		<2.5	163	0.0932	0.00133		0.285	452	0.0220	0.058
5/03	9.34	9.58	1,400	1,257	15		3.0	88	0.061	<0.0005		0.20	240	0.021	0.027
5/03 (Dup.)	9.39	9.58	1,400	1,257	20		<0.01	83	0.066	0.00068		0.30	230	0.034	0.047
9/03	9.42	9.61	1,800	1,424	4		<0.01	97	0.12	0.0044		5.60	380	0.17	0.018
1/04	9.33	9.62	2,400	1,237	17		5.5	77	0.061	0.00066		0.43	290	0.028	0.012
5/04	9.51	9.66	2,300	1,546	1.8		0.33	150	0.081	0.00095		0.35	680	0.037	0.012
5/04 (Dup.)	9.49	9.66	2,200	1,546	2		<0.01	140	0.079	0.00092		0.35	680	0.035	0.014
9/04	9.30	9.48	1,800	1,145	35		22	42	0.17	0.012		13	380	0.43	0.0097
1/05	9.40	9.45	3,000	2,920	81		4.7	130	0.056	0.0014		0.55	570	0.021	0.0071
5/05	9.44	9.45	1,700	1,056	13		0.34	97 J	0.07	0.0014		0.78	430	0.049	0.0057
5/05 (Dup.)	9.49	9.45	1,600	1,056	8.2		0.14	94 J	0.073	0.0012		0.75	440	0.037	0.0056
10/05	9.35	9.47	2,300	1,937	6.6		0.24	52	0.05	0.0015		0.68	510	0.033	0.0071
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
1/09	9.30	9.47	1,710	1,704	36.7		36.6	117	0.05	0.0014		0.78	242	0.034	<0.0050
5/09	9.50	9.76	3,580	2,580	[0.88]		0.033	206	0.06	0.0014		0.56	805	0.021	<0.0050
7/09		9.94		1,750	7.40		<0.005								
9/09	9.60	9.90	1,480	1,439	26.5		10.7	98.6	0.065	<0.0010		0.13	384	0.016	<0.0050

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-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	
5/09	7.1	7.32	695	602	<0.0050		<0.0050	1.4	<0.0050	<0.0010		<0.0050	13.4	<0.0050	

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-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	5.8	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		0.38	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	61	<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	
1/09	6.00	6.21	339	348	<0.0050			0.15	<0.0050	<0.0010		0.090	53	<0.0050	
5/09	5.90	6.17	383	385	4.10		0.062	0.15	<0.0050	<0.0010		0.018	74.0	<0.0050	
9/09	6.30	6.33	400	372	0.14		0.021	0.24	<0.0050	<0.0010		0.0079	74.9	<0.0050	
9/09 (Dup)	6.20		448		0.13		<0.0050	0.21	<0.0050	<0.0010		0.020	76.0	<0.0050	

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-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			26	<0.004	<0.0005		0.09	370	<0.01	
5/99	8.35	8.37	1,300	1,090	0.22			16	<0.004	<0.0005		0.30	230	<0.01	
5/00	8.11	8.11	1,200	1,023	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			16	<0.004	<0.0005		0.42	180	<0.01	
5/02	7.73	7.71	700	408	0.08			10	<0.004	<0.0005		0.563	79.6	<0.01	
5/03	7.68	7.81	1,000	759	0.21			9.1	<0.004	<0.0005		0.78	110	<0.01	
5/04	7.48	7.56	1,700	1,760	0.93			8.7	<0.004	<0.0005		1.2	380	<0.01	
5/05	7.82	7.37	1,200	950	1.3			9.7 J	<0.004	<0.0005		0.78	170	<0.01	
5/06	7.47	7.32	2,000	1,510	1.7			15J	<0.004	<0.0005		1.7	300	<0.01	
5/07	7.56	7.63	1,000	769	6.2			20	<0.004	<0.0005		0.5	180	<0.01	
6/08	7.73		1,100	621	4.8(J)			31	<0.004	<0.0005		0.4	200	<0.01	
5/09	7.6	7.73	1,230	1,188	<0.0050			22.8	<0.0050	<0.0010		0.50	300	<0.0050	

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	560	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	
5/09	7.7	7.51	1010	970	0.21		<0.0050	3.9	<0.0050	<0.0010		2.4	153	<0.0050	

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
5/09	6.4	6.49	593	518	4.2		<0.0050	12.8	<0.0050	<0.0010		0.62	81.9	<0.0050	0.0096

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-31															
5/86	9.1		1,250		12	1.5		46			84.5	3.67	380		
6/86	10.2	10.5	3,400	3,500	39		<0.01	140	0.046	<0.0015	20.3	1.93	703	0.184	0.040
2/90	10.0	9.95	2,300	2,700	4.80		3.94	110			49		660		
1/95	9.6	10.4	1,900	1,600	7.1		<0.01	89	0.027	<0.01	4.6	0.66	420	<0.02	
7/96	9.5	9.52	2,300	2,100	12	<0.020		91	0.042	0.0007		0.62		0.04	0.041
5/97	9.9	9.69	2,500	2,100	12		<0.50	110	0.04	0.0007		0.68	480	0.05	0.028
5/97 (Dup.)	9.9	9.69	2,500	2,100	6.2			93	0.038	0.0008		0.74	480	0.05	0.029
5/98	9.63	9.80	2,400	2,350	9.3		<0.01	100	0.036	0.0013		1.1	490	0.04	0.022
9/98	9.67	9.86	2,600	2,520	9.8		<0.01	120	0.044	0.0014		1.1	620	0.045	0.017
9/98 (Dup.)	9.67	9.86	2,700	2,520	9.5		<0.01	130	0.045	0.0013		1.1	600	0.043	0.020
1/99	9.72	9.97	2,500	2,240	22		0.63	120	0.047	0.0012		1.3	620	0.065	0.019
5/99	9.91	10.02	2,600	2,510	29		6.5	130	0.06	0.0014		1.2	600	0.07	0.034
9/99	9.83	10.03	2,600	2,810	30		4.3	150	0.063	0.0011		1.6	750	0.088	<0.005
1/00	9.98	9.80	2,900	2,600	24		6.3	150	0.072	0.001		1.4	650	0.120	0.028
5/00	10.1	10.10	2,900	2,400	21		1.7	140	0.096	0.0011	13	1.6	820	0.12	0.020
10/00	9.99	10.18	2,800	2,550	20		0.54	140	0.056	0.00076		1.1	480	0.079	0.043
1/01	10.1	11.21	2,100	1,900	13		1.5	110	0.056	0.001		1.3	560	0.11	0.020
5/01	9.93	10.85	2,100	1,866	12		12	77	0.046	0.0012		1.4	430	0.081	0.027
9/01	9.95	9.98	2,300	1,877	18		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	9.86	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	1,874	22		3.9	86	0.07	0.0031		3.1	440	0.16	0.038
10/05 (Dup.)	9.68	9.78	1,900	1,874	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

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 (cont.)															
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	0.090
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
1/09	9.5	9.64	1,350	1,341	7.4		7.3	63.4	0.039	<0.0010		0.74	195	0.043	0.038
5/09	9.5	9.74	1,350	1,314	5.1		0.016	50	0.045	<0.0010		1.4	406	0.065	0.030
5/09 (Dup.)	9.5	9.74	1,360	1,314	0.13		<0.0050	49.7	0.043	<0.0010		1.4	407	0.065	0.029
9/09	9.6	9.93	1,430	1,335	7.4		0.10	56.5	0.039	0.0013		0.89	393	0.056	0.040
9/09 (Dup)	9.6		1,480		7.6		0.85	53.6	0.038	0.0013		0.92	409	0.058	0.047

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	9.98	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	
1/09	9.80	9.94	1,380	1,392	5.9		5.9	70	0.051	0.001		1.7	198	0.085	
5/09	9.70	9.97	1,330	1,305	5.8		0.16	43.6	0.047	<0.0010		1.5	398	0.075	
9/09	9.80	10.15	1,600	1,433	8.0		0.28	66.2	0.045	0.0016		1.7	443	0.085	

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-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	
5/09	8.00	8.25	982	911	3.1		0.12	21.1	0.011	<0.0010		0.29	269	0.014	

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	463	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	
5/09	7.70	7.99	829	767	1.4		0.29	17.0	0.0056	<0.0010		0.20	198	<0.0050	

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-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	18		<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		0.68	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	0.061	<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	
8/08	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	
1/09	8.70	8.76	635	615	19.3		19.30	24	0.016	<0.0010		1.10	72.1	0.012	
5/09	7.80	7.89	520	481	12.25		<0.0050	10.7	0.011	<0.0010		1.10	86.4	0.0076	
9/09	7.60	7.67	402	354	3.9		0.13	3.3	0.0092	<0.0010		0.93	52.0	0.0052	

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		180	0.058	0.0021		0.67		0.07	
5/97	9.8	9.64	3,800	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		0.88	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	180	<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	
1/09	8.4		625		3.3		3.3	19	0.0059	<0.0010		0.16	75.8	<0.0050	
1/09 (Dup.)	8.4	8.44	629	622	<0.0050			20.4	0.0053	<0.0010		0.15	75.5	<0.0050	
5/09	8.3	8.57	899	677	13.5		0.10	26.2	<0.0050	<0.0010		0.20	163	<0.0050	
9/09	8.6	8.81	906	792	1.2		0.021	21.8	0.0057	<0.0010		0.18	199	0.0064	

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-37															
5/86	10.1		7,340		97	8.2		890			498	46.3	1,800		
7/88	9.9	9.8	5,800	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		0.61		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	
1/09	6.30	6.47	332	343	0.7		0.7	4.1	<0.0050	<0.0010		0.05	43.8	<0.0050	
5/09	6.30	6.46	337	327	7.1		0.27	3.3	<0.0050	<0.0010		0.21	53.8	0.0084	
9/09	6.40	6.54	361	307	0.37		0.31	2.8	<0.0050	<0.0010		0.11	55.3	0.012	

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-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	3,670	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	9.08	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		0.18	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	
1/09	8.9	9.04	3,300	3,510	4.0		4	162	0.014	<0.0010		0.083	585	0.0051	
5/09	8.9	9.13	2,980	3,840	3.6		0.11	115	0.016	<0.0010		0.12	1,200	0.0094	
9/09	9.0	9.38	3,050	3,030	3.5		<0.0050	109	0.011	<0.0010		0.13	982	0.013	

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-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	0.08	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	560	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	
5/09	7.4	7.65	1,350	1,120	1.1		<0.0050	6.5	<0.0050	<0.0010		1.1	230	<0.0050	

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-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	7.81	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		0.84	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	
5/09	8.0	8.26	1,020	1002	8.9		0.019	37.5	<0.0050	0.0012		0.65	280	0.029	

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-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	7.58	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	
5/09	7.7	8.00	975	964	7.8		<0.0050	19.8	<0.0050	<0.0010		0.82	225	0.0061	

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-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	1,630	0.66		0.66	26	<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		0.64	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	
5/09	7.90	8.10	3,280	3,380	[7.9]		[0.033]	60.1	0.0053	<0.0010		0.25	1,010	<0.0050	
7/09		8.45		2,630	3.1		<0.005								

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

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

TABLE 4
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	7.63	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	318	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	7.60	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	
5/09	7.7	7.87	2,660	2,260	[5.8]		<0.0050	24.1	0.0058	<0.0010		0.84	877	<0.0050	
7/09		8.10		3,320	4.7		<0.005								

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

	MW-12										
	5/15/02	10/01/02	1/15/03	5/22/03	9/11/03	1/13/04	5/11/04	9/28/04	1/18/05	5/19/05	10/6/05
Aroclor-1016	<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	1/28/09	5/20/09	9/24/09
Aroclor-1016	<0.5/<0.5	<0.5	---	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.52	<0.51/<0.52	<0.52
Aroclor-1221	<0.5/<0.5	<0.5	---	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.52	<0.51/<0.52	<0.52
Aroclor-1232	<0.5/<0.5	<0.5	---	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.52	<0.51/<0.52	<0.52
Aroclor-1242	<0.5/<0.5	<0.5	---	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.52	<0.51/<0.52	<0.52
Aroclor-1248	<0.5/<0.5	<0.5	---	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.52	<0.51/<0.52	<0.52
Aroclor-1254	<0.5/<0.5	<0.5	---	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.52	<0.51/<0.52	<0.52
Aroclor-1260	<0.5/<0.5	<0.5	---	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.52	<0.51/<0.52	<0.52

TABLE 5

SUMMARY OF ANALYTICAL RESULTS FOR PCBS

ORMET CORPORATION

HANNIBAL, OHIO

	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	1/28/09	5/19/09	9/23/09
Aroclor-1016	<0.5	<0.5	<0.52	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.53	<0.52	<0.51
Aroclor-1221	<0.5	<0.5	<0.52	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.53	<0.52	<0.51
Aroclor-1232	<0.5	<0.5	<0.52	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.53	<0.52	<0.51
Aroclor-1242	<0.5	<0.5	<0.52	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.53	<0.52	<0.51
Aroclor-1248	<0.5	<0.5	<0.52	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.53	<0.52	<0.51
Aroclor-1254	<0.5	<0.5	<0.52	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.53	<0.52	<0.51
Aroclor-1260	<0.5	<0.5	<0.52	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.53	<0.52	<0.51

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	1/28/09	5/19/09	9/23/09
Aroclor-1016	<0.5	<0.5	<0.53	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.52	<0.51	<0.52
Aroclor-1221	<0.5	<0.5	<0.53	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.52	<0.51	<0.52
Aroclor-1232	<0.5	<0.5	<0.53	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.52	<0.51	<0.52
Aroclor-1242	<0.5	<0.5	<0.53	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.52	<0.51	<0.52
Aroclor-1248	<0.5	<0.5	<0.53	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.52	<0.51	<0.52
Aroclor-1254	<0.5	<0.5	<0.53	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.52	<0.51	<0.52
Aroclor-1260	<0.5	<0.5	<0.53	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.52	<0.51	<0.52

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
5/09	41.7 a.	-5.2	50.0 a.	+0.2

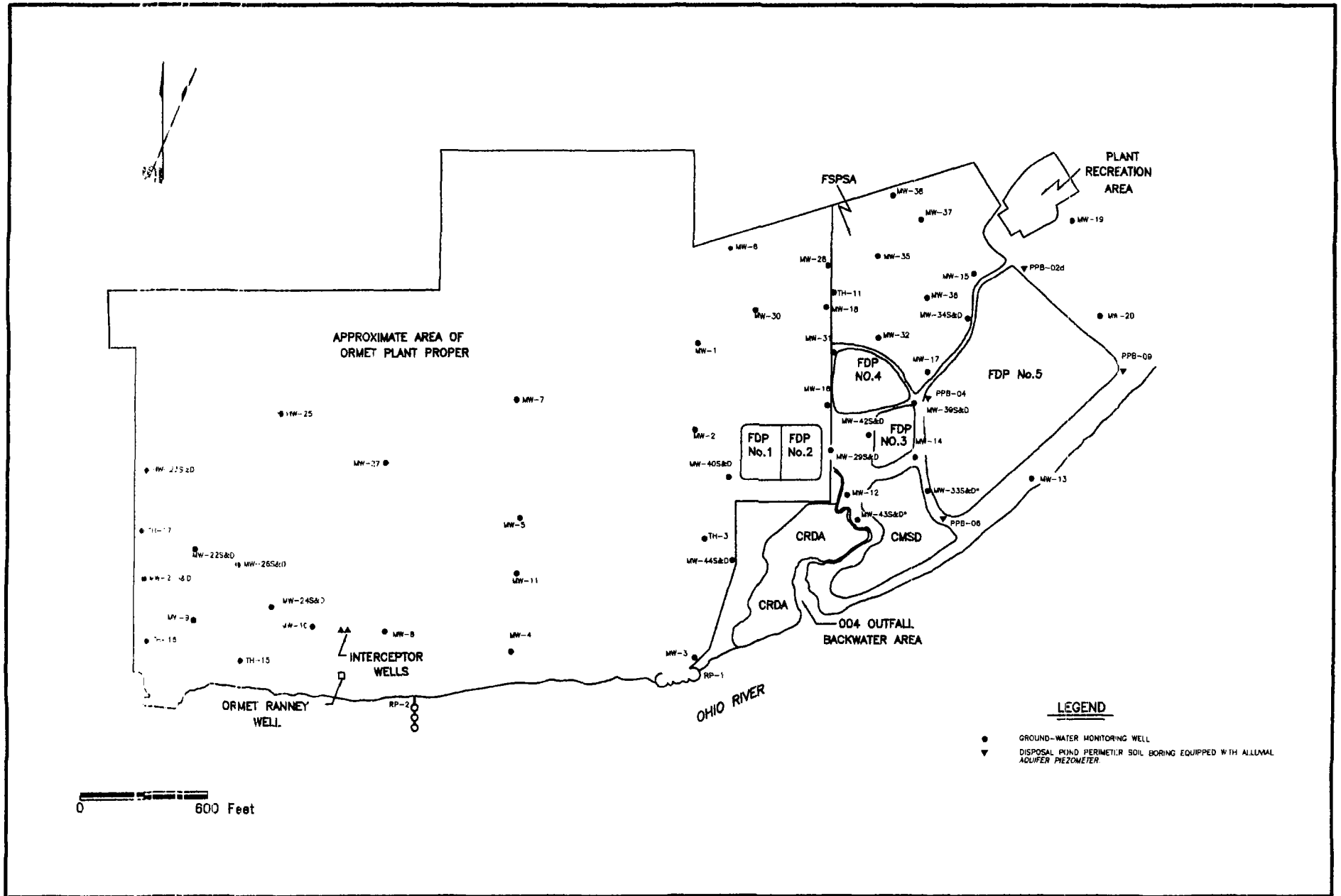
Sampling Date	Estimated Fluoride Mass-in-Place	% Change	Estimated Total CN Mass-in-Place	% Change
6/88	85,702 lbs.		6,821 lbs.	
1/95	28,168 lbs.	-67.1	4,271 lbs.	-37.4
5/97	29,033 lbs.	+3.1	2,943 lbs.	-31.1
5/98	23,888 lbs.	-17.7	2,597 lbs.	-11.8
5/99	30,416 lbs.*	+27.3	5,566 lbs.	+114
5/00	27,071 lbs.	-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
5/09	29,510 lbs.	-12.3	5,422 lbs.	-9.6

* - Value corrected due to omission during 1999 calculation.

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

	FLUORIDE			TOTAL CYANIDE		
SAMPLE DATE	ESTIMATED MASS-IN-PLACE	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
5/09	29,510	-4,128	6,964	5,422	-575	936
	TOTAL MASS REMOVED		169,621	TOTAL MASS REMOVED		23,689

All values given in pounds.



HMI Environmental Consulting Services

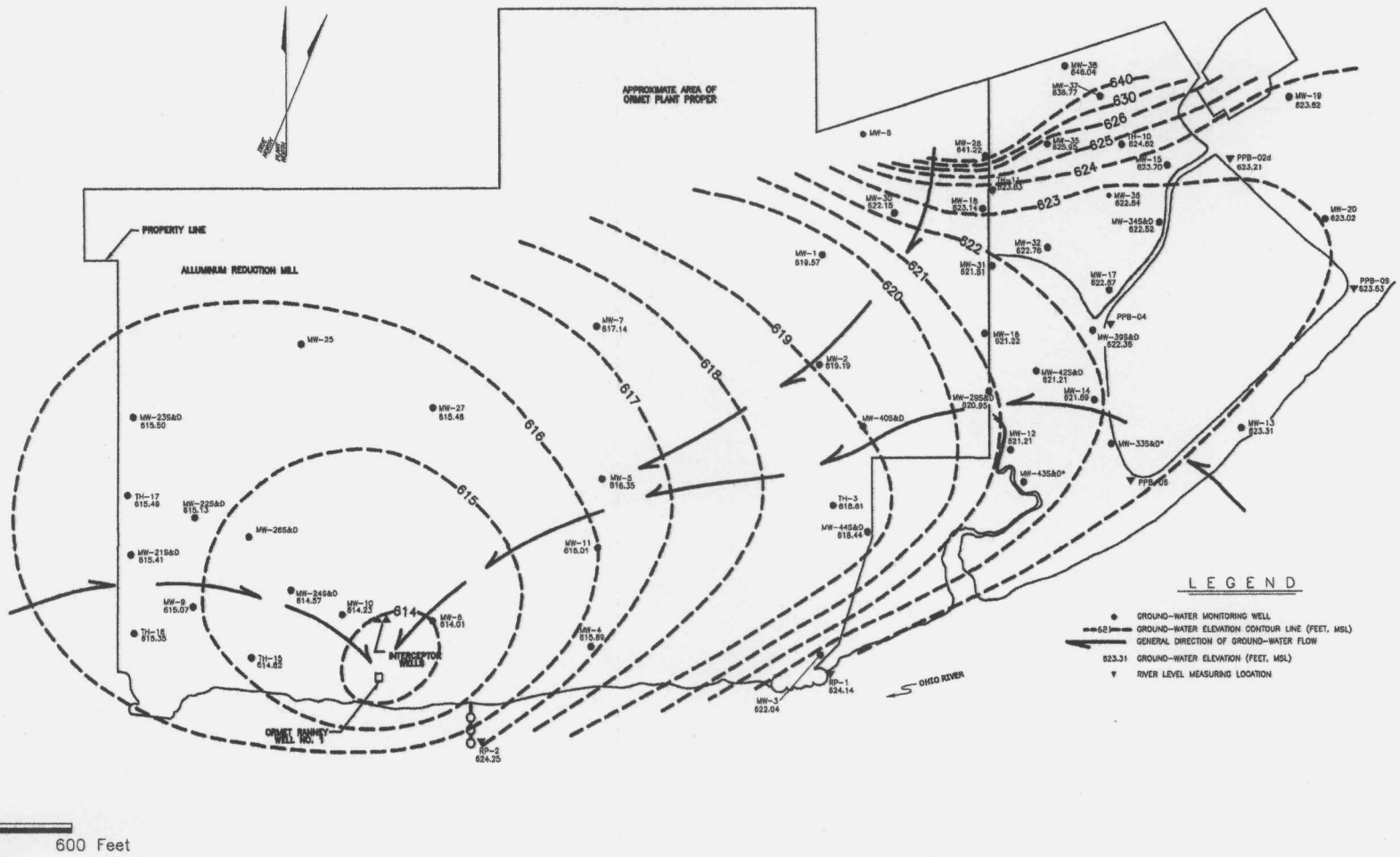
HydroSystems Management, Inc.
P.O. Box 789
Washington, Pennsylvania 15301

PROJECT NO: HM00318	FILE NO:
DRAWING: 012308CL	PLOT SIZE=1"=600'
DRAFTED BY: CL	DATE: 05/20/2008
CHECKED BY: CPS	DATE: 05/20/2008
APPROVED BY: CPS	DATE: 05/20/2008
REVISION NO:	DATE:

LOCATION OF GROUND-WATER MONITORING WELLS

ORMET PRIMARY ALUMINUM CORPORATION HANNIBAL, OHIO

FIGURE 1



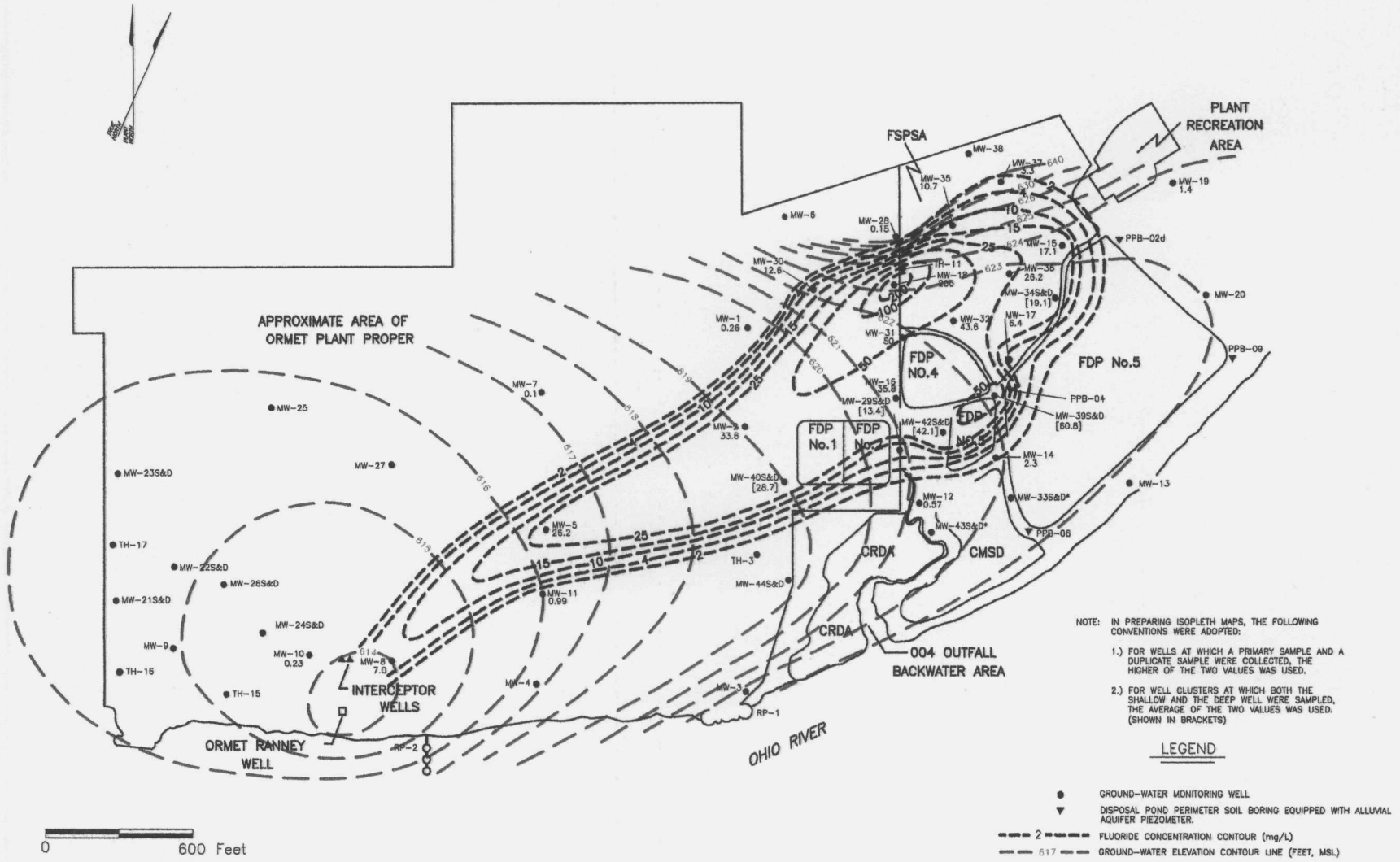
HMI Environmental Consulting Services

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

PROJECT NO: HM00319	FILE NO:
DRAWING: 091409CL	PLOT SIZE=1"=600'
DRAFTED BY: CL	DATE: 09/10/2009
CHECKED BY: CPS	DATE: 09/10/2009
APPROVED BY: CPS	DATE: 09/10/2009
REVISION NO:	DATE:

GROUND-WATER ELEVATIONS AND FLOW PATTERNS
WITHIN THE ALLUVIAL AQUIFER
BASED ON MAY 19, 2009 WATER-LEVEL DATA
ORMET PRIMARY ALUMINUM CORPORATION HANNIBAL, OHIO

FIGURE 2



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.
- 2 FLUORIDE CONCENTRATION CONTOUR (mg/L)
- 617 GROUND-WATER ELEVATION CONTOUR LINE (FEET, MSL)

HMI Environmental Consulting Services

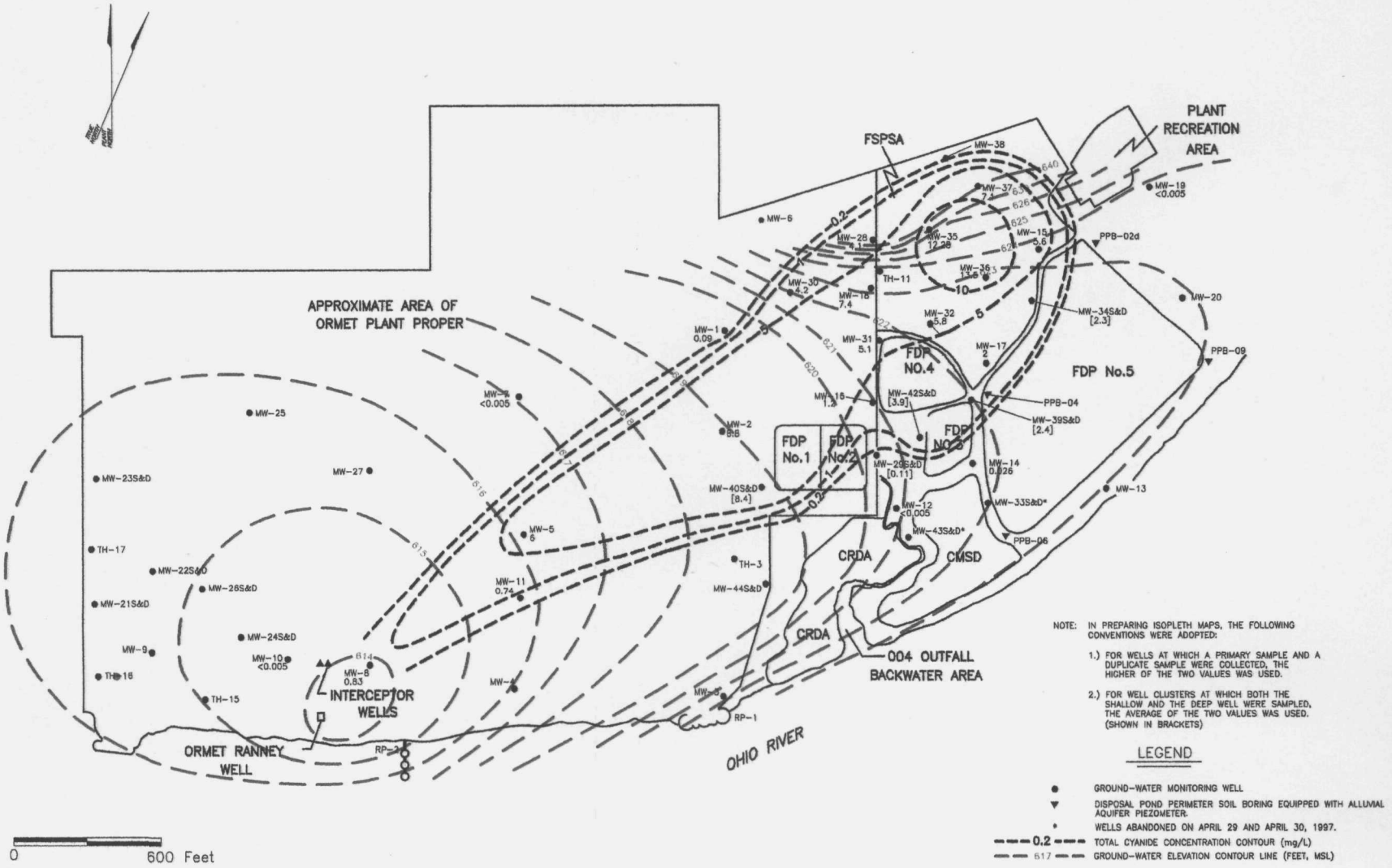
HydroSystems Management, Inc.
P.O. Box 789
Washington, Pennsylvania 15301

PROJECT NO: HM00319	FILE NO:
DRAWING: 091009A	PLOT SIZE=1"=600'
DRAFTED BY: CL	DATE: 09/10/2009
CHECKED BY: CPS	DATE: 09/11/2009
APPROVED BY: CPS	DATE: 09/11/2009
REVISION NO:	DATE:

FLUORIDE ISOPLETH MAP
FOR THE ALLUVIAL AQUIFER
(BASED ON SAMPLES COLLECTED IN MAY, 2009)

ORMET PRIMARY ALUMINUM CORPORATION — HANNIBAL, OHIO

FIGURE 3



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 TOTAL CYANIDE CONCENTRATION CONTOUR (mg/L)
- 617 GROUND-WATER ELEVATION CONTOUR LINE (FEET, MSL)

0 600 Feet

HMI Environmental Consulting Services

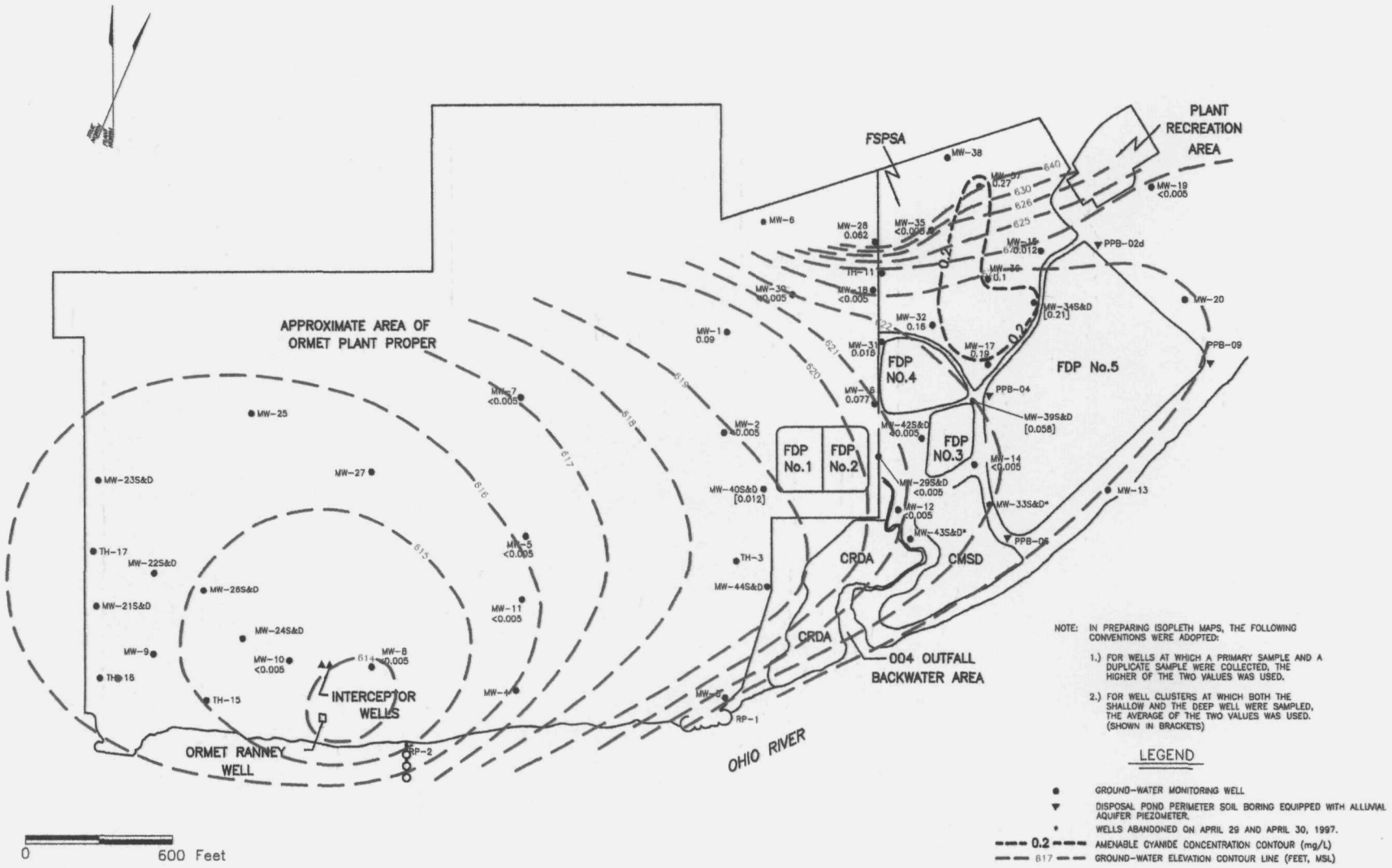
HydroSystems Management, Inc.
P.O. Box 789
Washington, Pennsylvania 15301

PROJECT NO: HM00319	FILE NO:
DRAWING: 091209CL	PLOT SIZE=1"=600'
DRAFTED BY: CL	DATE: 09/12/2009
CHECKED BY: CPS	DATE: 09/12/2009
APPROVED BY: CPS	DATE: 09/12/2009
REVISION NO:	DATE:

TOTAL CYANIDE ISOPLETH MAP
FOR THE ALLUVIAL AQUIFER
(BASED ON SAMPLES COLLECTED IN MAY 2009)

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)
- 617 GROUND-WATER ELEVATION CONTOUR LINE (FEET, MSL)

HMI Environmental Consulting Services

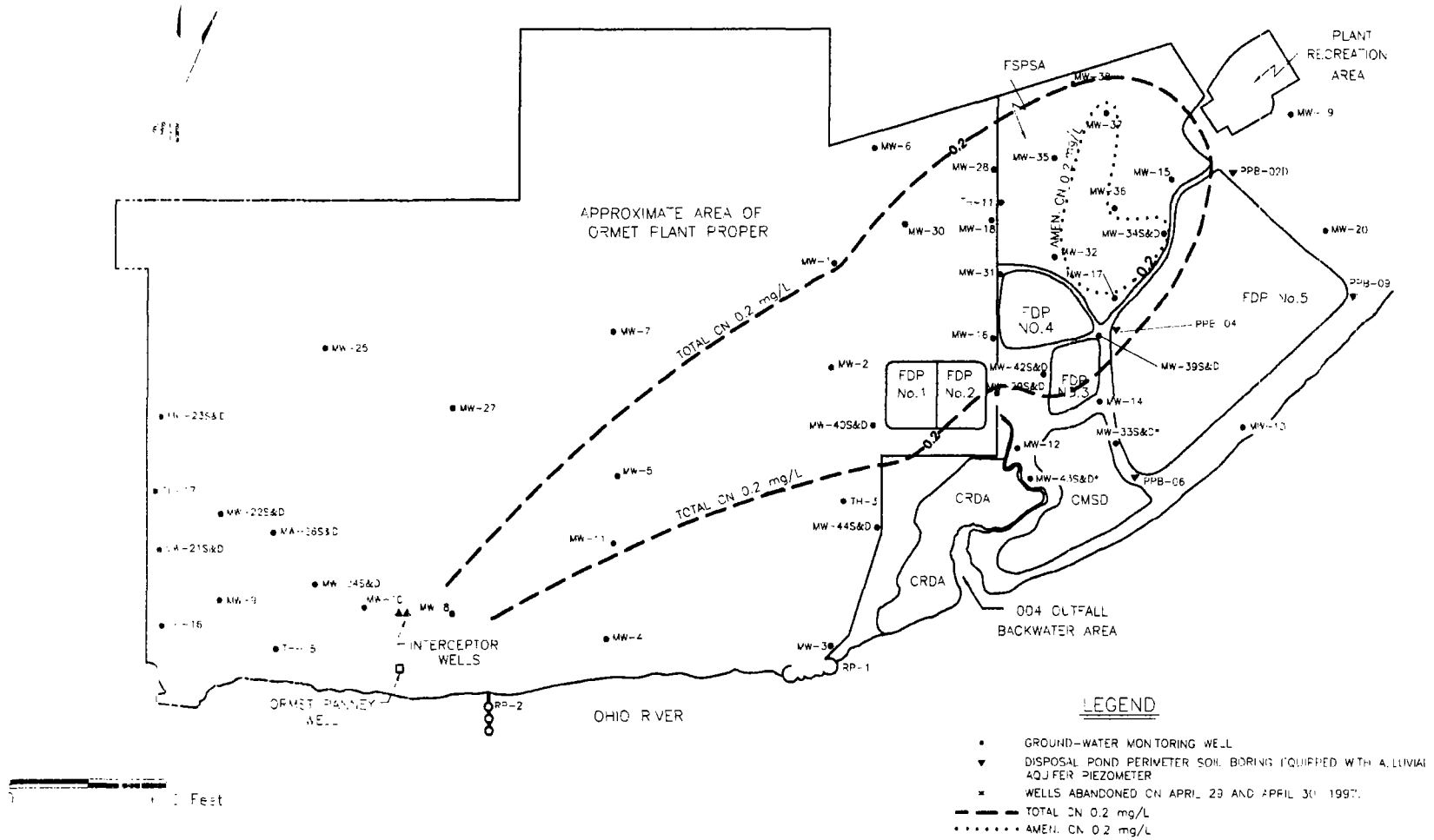
HydroSystems Management, Inc.
P.O. Box 789
Washington, Pennsylvania 15301

PROJECT NO: HM00319	FILE NO:
DRAWING: 091109CL	PLOT SIZE=1"=600'
DRAFTED BY: CL	DATE: 09/8/2009
CHECKED BY: CPS	DATE: 09/11/2009
APPROVED BY: CPS	DATE: 09/11/2009
REVISION NO:	DATE:

AMENABLE CYANIDE ISOPLETH MAP
FOR THE ALLUVIAL AQUIFER
(BASED ON SAMPLES COLLECTED IN MAY, 2009)

ORMET PRIMARY ALUMINUM CORPORATION — HANNIBAL, OHIO

FIGURE 5



HML Environmental Consulting Services

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

PROJECT NO: HM00319	FILE NO:
DRAW NG. 091509CL	PLOT SIZE=1"=600'
DRAFTED BY CL	DATE: 09/15/2009
CHECKED BY CPS	DATE: 09/16/2009
APPROVED BY CPS	DATE: 09/16/2009
REVISION NO.	DATE:

2009 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
FLUORIDE AND TOTAL CYANIDE MASS-IN-PLACE VS. TIME
ORMET PRIMARY ALUMINUM CORPORATION
HANNIBAL, OHIO

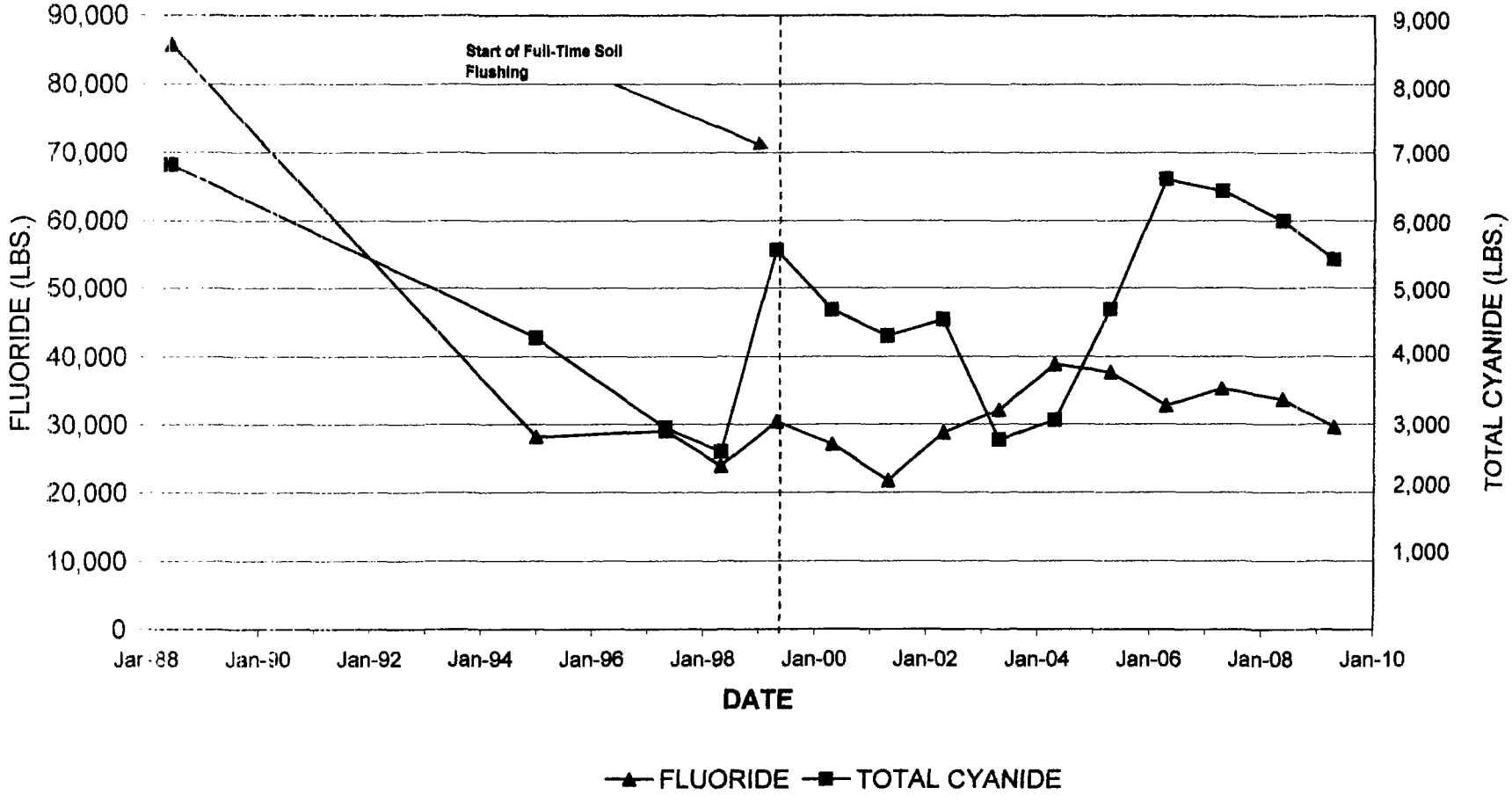
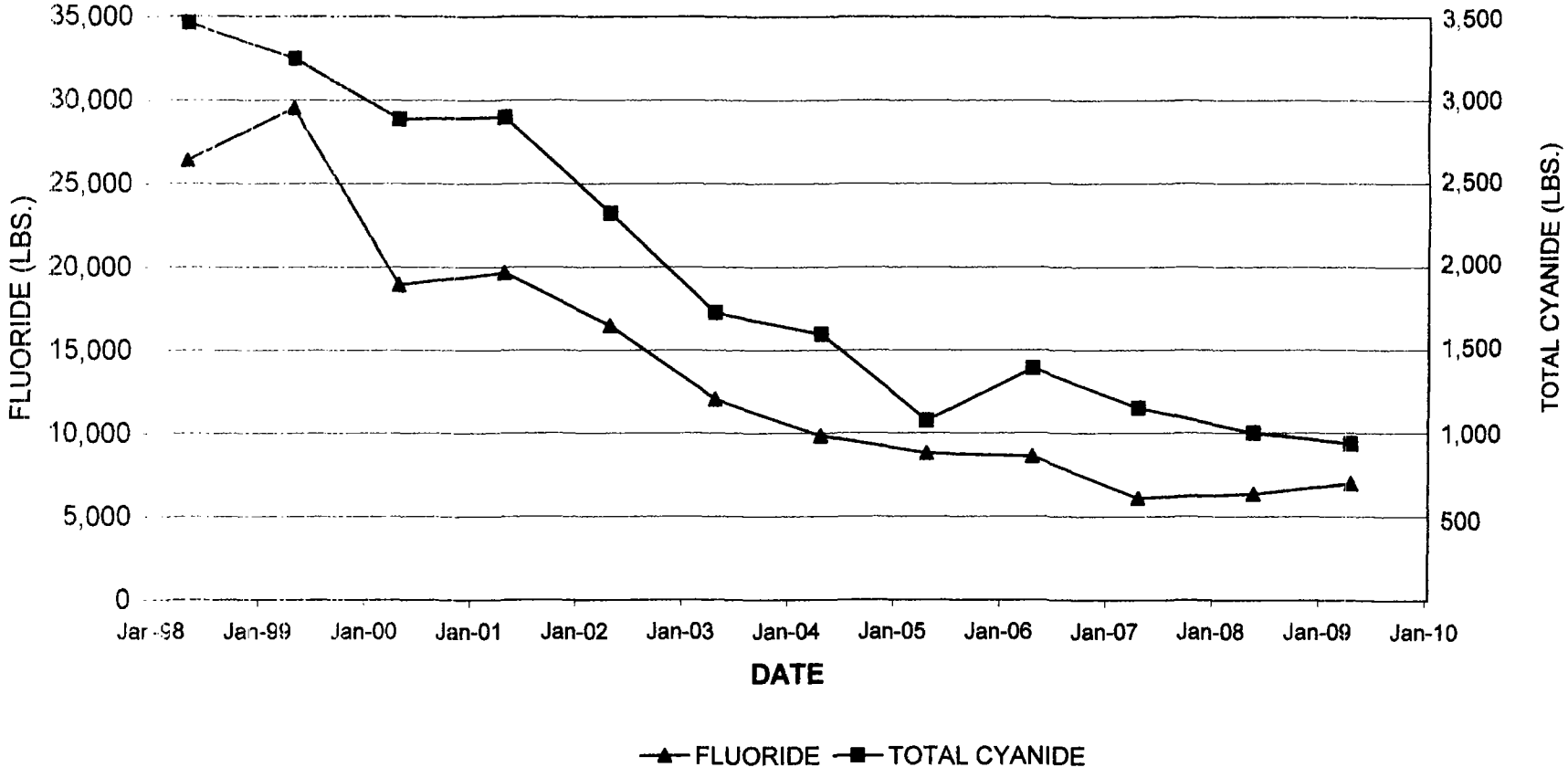


FIGURE 8
FLUORIDE AND TOTAL CYANIDE MASS REMOVAL VS. TIME
ORMET PRIMARY ALUMINUM CORPORATION
HANNIBAL, OHIO



APPENDIX A

WATER SAMPLING LOG FORMS

Appendix A-1	Water Sampling Log Forms for January 2009 Monitoring Event
Appendix A-2	Water Sampling Log Forms for May 2009 Monitoring Event
Appendix A-3	Water Sampling Log Forms for July 2009 Monitoring Event
Appendix A-4	Water Sampling Log Forms for September 2009 Monitoring Event

APPENDIX A-1

WATER SAMPLING LOG FORMS FOR JANUARY 2009 MONITORING EVENT

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00326
Location: HANNIBAL, OHIO
Date: 1/28/2009

Sample I.D.: MW-2
Duplicate I.D.:
Time Sampling Began: 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): 49.38
ater Column (WC) in Well (TD - DTW): 32.87
Casing Diameter: 2"
Gallons in Well (WC x GPF): 5.3

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

Gallons to be Purged: 16.0

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: Dark Brown Odor: None Turbidity: Cloudy

Well Volumes:	4 Gal.	8 Gal.	12 Gal.	16+		
pH:	9.56	9.59	9.55	9.55		
Spec. Cond.:	1350	1344	1295	1283		
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	14.3	14.6	14.6	14.7		

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 #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	940
Date:	1/28/2009	Time Sampling Complete:	1015

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):	52.45
Water Column (WC) in Well (TD - DTW):	39.55
Casing Diameter:	2"
Gallons in Well (WC x GPF):	6.3

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

Gallons to be Purged: 19.0

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: Light Amber Odor: None Turbidity: Clear

Well Volumes	5 Gal.	12 Gal.	18+			
pH:	7.82	8.03	8.13			
Spec. Cond.:	1220	1228	1210			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.	13.9	14.3	14.2			

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

Sampling Personnel: R. FARGO, C. SMITH

Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-12
Project #:	HM00326	Duplicate I.D.:	MW-12D
Location:	HANNIBAL, OHIO	Time Sampling Began:	1315
Date:	1/28/2009	Time Sampling Complete:	1330

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): 16.08

ater Column (WC) in Well (TD - DTW): 52.34

Casing Diameter: 2"

Gallons in Well (WC x GPF): 8.4

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:	8 Gal.	16 Gal.	24 Gal.			
pH:	7.55	7.55	7.54			
Spec. Cond.:	562	565	567			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	14.4	14.4	14.5			

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 #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1115
Date:	1/28/2009	Time Sampling Complete:	1145

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): 42.02

Water Column (WC) in Well (TD - DTW): 41.10

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: 19.7

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: Amber Odor: None Turbidity: Cloudy

Well Volumes:	7 Gal.	15 Gal.	20+			
pH:	9.03	9.06	9.07			
Spec. Cond.:	885	904	908			
Diss. Oxygen:						
Turbidity:						
Redox						
Temp.	14.3	14.5	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

Sampling Personnel: R. FARGO, C. SMITH

Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-18
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1205
Date:	1/28/2009	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): 37.97

ater Column (WC) in Well (TD - DTW): 23.19

Casing Diameter: 2"

Gallons in Well (WC x GPF): 3.7

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

Gallons to be Purged: 11.0

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: Dark Brown Odor: None Turbidity: Cloudy

Well Volumes:	5 Gal.	10 Gal.	12 Gal.			
pH:	9.58	9.46	9.47			
Spec. Cond.:	1810	1722	1704			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	13.5	14.2	14.4			

Pumped Dry

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 #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1145
Date:	1/28/2009	Time Sampling Complete:	1215

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): 22.62

Water Column (WC) in Well (TD - DTW): 23.58

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: Light Brown Odor: None Turbidity: Cloudy

Well Volumes:	3 Gal.	8 Gal.	10 Gal.			
pH:	7.34	6.39	6.21			
Spec. Cond.:	320	345	348			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	14	14.6	14.7			

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 #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1240
Date:	1/28/2009	Time Sampling Complete:	1300

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): 40.25

ater Column (WC) in Well (TD - DTW): 27.33

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: Dark Brown Odor: None Turbidity: Cloudy

Well Volumes:	5 Gal.	10 Gal.	15 Gal.			
pH:	9.64	9.64	9.64			
Spec. Cond.:	1320	1331	1341			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	14.1	14.5	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
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 #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1430
Date:	1/28/2009	Time Sampling Complete:	1450

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): 34.59

Water Column (WC) in Well (TD - DTW): 22.77

Casing Diameter: 2"

Gallons in Well (WC x GPF): 3.6

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

Gallons to be Purged: 11.0

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: Dark Amber Odor: None Turbidity: Cloudy

Well Volumes:	5 Gal.	9 Gal.	12+			
pH:	9.92	9.94	9.94			
Spec. Cond.:	1364	1381	1392			
Diss. Oxygen:						
Turbidity:						
Redox						
Temp.:	16.7	16.9	16.9			

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-35
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1335
Date:	1/28/2009	Time Sampling Complete:	1350

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): 35.65

ater Column (WC) in Well (TD - DTW): 11.29

Casing Diameter: 2"

Gallons in Well (WC x GPF): 1.8

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

Gallons to be Purged: 6.0

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: Dark Amber Odor: None Turbidity: Cloudy

Well Volumes:						
pH:	7.59	8.63	8.76			
Spec. Cond.:	357	580	615			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.3	15.6	15.8			

*Well Volumes not reported on form

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 #:	HM00326	Duplicate I.D.:	MW-56 (1445)
Location:	HANNIBAL, OHIO	Time Sampling Began:	1415
Date:	1/28/2009	Time Sampling Complete:	1430

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): 34.11

Water Column (WC) in Well (TD - DTW): 17.97

Casing Diameter: 2"

Gallons in Well (WC x GPF): 2.9

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

Gallons to be Purged: 9.0

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: Very Pale Brown Odor: None Turbidity: Slightly Cloudy

Well Volumes:	4 Gal.	10 Gal.				
pH:	8.33	8.44				
Spec. Cond.:	615	622				
Diss. Oxygen:						
Turbidity:						
Redox						
Temp.:	19.2	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	Sample I.D.:	MW-37
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1345
Date:	1/28/2009	Time Sampling Complete:	1400

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): 22.98

ater Column (WC) in Well (TD - DTW): 13.92

Casing Diameter: 2"

Gallons in Well (WC x GPF): 2.2

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

Gallons to be Purged: 7.0

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: Light Brown Odor: None Turbidity: Cloudy

Well Volumes:	3 Gal.	5 Gal.	7 Gal.			
pH:	6.99	6.53	6.47			
Spec. Cond.:	367	345	343			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	14.3	14.8	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
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 #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1015
Date:	1/28/2009	Time Sampling Complete:	1045

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): 43.39

Water Column (WC) in Well (TD - DTW): 25.66

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+

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: None Odor: None Turbidity: Clear

Well Volumes:	4 Gal.	7 Gal.	12+			
pH:	7.2	7.13	7.06			
Spec. Cond.:	571	571	571			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	14.5	14.6	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
PCBs	1 LITER AMBER GLASS	4 degrees C

Sampling Personnel: R. FARGO, C. SMITH

Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-44D
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1030
Date:	1/28/2009	Time Sampling Complete:	1050

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): 43.94

ater Column (WC) in Well (TD - DTW): 50.03

Casing Diameter: 2"

Gallons in Well (WC x GPF): 8.0

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

Gallons to be Purged: 24.0

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: None Odor: None Turbidity: Clear

Well Volumes:	7 Gal.	12 Gal.	20+			
pH:	7.55	7.7	7.74			
Spec. Cond.:	446	442	441			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	14.6	14.8	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
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-39S
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1300
Date:	1/28/2009	Time Sampling Complete:	1315

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): 35.52

Water Column (WC) in Well (TD - DTW): 24.71

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: 12.0

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: Amber Odor: None Turbidity: Clear

Well Volumes:	5 Gal.	10 Gal.	14 Gal.			
pH:	9.06	9.05	9.04			
Spec. Cond.:	3860	3630	3510			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	13.9	13.8	13.9			

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

Sampling Personnel: R. FARGO, C. SMITH

Comments:

APPENDIX A-2

WATER SAMPLING LOG FORMS FOR MAY 2009 MONITORING EVENT

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00326
Location: HANNIBAL, OHIO
Date: 5/20/2009

Sample I.D.: MW-1
Duplicate I.D.:
Time Sampling Began: 930
Time Sampling Complete: 950

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): 48.50
Water Column (WC) in Well (TD - DTW): 22.61
Casing Diameter: 2"
Gallons in Well (WC x GPF): 3.6

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: VERY LT. BROWN Odor: NONE Turbidity: CLOUDY

Well Volumes:	4 GAL.	8 GAL.	11 GAL.			
pH:	6.08	6.21	6.16			
Spec. Cond.:	645	555	551			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	14.7	14.4	14.4			

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 #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1620
Date	5/19/2009	Time Sampling Complete:	1650

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): 48.93

Water Column (WC) in Well (TD - DTW): 36.30

Casing Diameter: 2"

Gallons in Well (WC x GPF): 5.8

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. AMBER Odor: NONE Turbidity: CLOUDY

Well Volumes:	4 GAL.	9 GAL.	15 GAL.	18 GAL.		
pH:	9.68	9.66	9.61	9.58		
Spec. Cond.:	1363	1296	1232	1212		
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.2	15.1	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
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-5
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1400
Date:	5/19/2009	Time Sampling Complete:	1430

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): 51.81
Water Column (WC) in Well (TD - DTW): 40.07
Casing Diameter: 2"
Gallons in Well (WC x GPF): 6.4

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

Gallons to be Purged: 19.2

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: LT. AMBER Odor: NONE Turbidity: CLEAR

Well Volumes:	6 GAL.	9 GAL.	18+			
pH:	7.95	8.20	8.22			
Spec. Cond.:	1242	1232	1220			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.7	15.3	15.4			

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-7
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1330
Date:	5/19/2009	Time Sampling Complete:	1400

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation: 667.94

Depth of Well Below MP (TD): 79.70

Depth to Water Below MP (DTW): 50.80

Water Column (WC) in Well (TD - DTW): 28.90

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: LT. BROWN Odor: NONE Turbidity: CLOUDY

Well Volumes:	5 GAL.	9 GAL.	15 GAL.			
pH:	6.09	6.01	6.01			
Spec. Cond.:	633	603	614			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	30.3	30.5	30.5			

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

Sampling Personnel: R. FARGO, C. SMITH

Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-8
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1450
Date:	5/19/2009	Time Sampling Complete:	1510

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): 53.70

Water Column (WC) in Well (TD - DTW): 46.08

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: NONE Odor: NONE Turbidity: CLEAR

Well Volumes:	4 GAL.	11 GAL.	16 GAL.	22 GAL.		
pH:	7.56	7.65	7.67	7.67		
Spec. Cond.:	768	1077	1026	1035		
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	16.1	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	Sample I.D.:	MW-10
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1515
Date:	5/19/2009	Time Sampling Complete:	1535

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): 52.93

Water Column (WC) in Well (TD - DTW): 47.79

Casing Diameter: 2"

Gallons in Well (WC x GPF): 7.7

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:	5 GAL.	9 GAL.	18 GAL.			
pH:	7.33	7.29	7.29			
Spec. Cond.:	704	697	696			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	17.6	17.5	17.6			

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

Sampling Personnel: R. FARGO, C. SMITH

Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-11
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1430
Date:	5/19/2000	Time Sampling Complete:	1445

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): 51.30
Water Column (WC) in Well (TD - DTW): 46.05
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: NONE Odor: NONE Turbidity: CLEAR

Well Volumes:	4 GAL.	8 GAL.	16 GAL.			
pH:	7.81	7.81	7.80			
Spec. Cond.:	1402	1201	1168			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.2	15.2	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	Sample I.D.:	MW-12
Project #:	HM00326	Duplicate I.D.:	MW-52 (1640)
Location:	HANNIBAL, OHIO	Time Sampling Began:	1605
Date:	5/20/2009	Time Sampling Complete:	1630

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): 15.52

Water Column (WC) in Well (TD - DTW): 52.72

Casing Diameter: 2"

Gallons in Well (WC x GPF): 8.4

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:	1 GAL.	12 GAL.	21 GAL.			
pH:	7.40	7.60	7.61			
Spec. Cond.:	565	563	559			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.1	14.8	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
PCB's	1 LITER GLASS	4 degrees celsius

Sampline Personnel: R. FARGO, C. SMITH

Comments:

DUP. PCBs ONLY

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-14
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	905
Date:	5/21/2009	Time Sampling Complete:	930

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation: 653.59

Depth of Well Below MP (TD): 86.90

Depth to Water Below MP (DTW): 31.70

Water Column (WC) in Well (TD - DTW): 55.20

Casing Diameter: 2"

Gallons in Well (WC x GPF): 8.8

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.	15 GAL.	24 GAL.			
pH:	7.33	7.56	7.59			
Spec. Cond.:	572	559	559			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	14.7	14.7	14.7			

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

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 #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1630
Date	5/20/2009	Time Sampling Complete:	1645

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): 33.61

Water Column (WC) in Well (TD - DTW): 24.25

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: 12

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: LT. AMBER Odor: NONE Turbidity: SLIGHTLY CLOUDY

Well Volumes:	5 GAL.	8 GAL.	14 GAL.			
pH:	7.91	7.91	7.91			
Spec. Cond.:	926	924	918			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.4	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
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

Sampling Personnel: R. FARGO, C. SMITH

Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-16
Project #:	HM00326	Duplicate I.D.:	MW-46 (1100)
Location:	HANNIBAL, OHIO	Time Sampling Began:	1030
Date:	5/20/2009	Time Sampling Complete:	1050

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): 41.50

Water Column (WC) in Well (TD - DTW): 42.61

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: DK. AMBER Odor: NONE Turbidity: CLOUDY

Well Volumes:	4 GAL.	14 GAL.	20+			
pH:	9.19	9.28	9.28			
Spec. Cond.:	987	986	986			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.2	15.3	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	Sample I.D.:	MW-17
Project #:	HM00326	Duplicate I.D.:	MW-47 (1145)
Location:	HANNIBAL, OHIO	Time Sampling Began:	1115
Date:	5/21/2009	Time Sampling Complete:	1130

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): 32.16

Water Column (WC) in Well (TD - DTW): 45.75

Casing Diameter: 2"

Gallons in Well (WC x GPF): 7.3

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

Gallons to be Purged: 21

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: AMBER Odor: NONE Turbidity: CLOUDY

Well Volumes:	4 GAL.	10 GAL.	22 GAL.			
pH:	7.63	7.68	7.71			
Spec. Cond.:	645	667	679			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.2	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-18
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1410
Date:	5/20/2009	Time Sampling Complete:	1430

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): 37.77
Vater Column (WC) in Well (TD - DTW): 19.23
Casing Diameter: 2"
Gallons in Well (WC x GPF): 3.0

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

Gallons to be Purged: 9.0

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: DK. BROWN/AMBER Odor: NONE Turbidity: CLOUDY

Well Volumes:	4 GAL.	6 GAL.	9 GAL.			
pH:	9.75	9.76	9.76			
Spec. Cond.:	2850	2720	2580			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.5	15.6	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
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 #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1050
Date	5/21/2009	Time Sampling Complete:	1110

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation: 662.03

Depth of Well Below MP (TD): 65.2

Depth to Water Below MP (DTW): 38.21

Water Column (WC) in Well (TD - DTW): 26.99

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: 15 GAL.

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: NONE Odor: NONE Turbidity: CLEAR

Well Volumes:	5 GAL.	10 GAL.	15 GAL.			
pH:	7.23	7.30	7.32			
Spec. Cond.:	615	600	602			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	13.6	13.2	13.2			

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

Sampling Personnel: R. FARGO, C. SMITH

Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-28
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1350
Date:	5/20/2009	Time Sampling Complete:	1410

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): 22.05
Water Column (WC) in Well (TD - DTW): 24.01
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: 8+

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: LT. AMBER Odor: NONE Turbidity: CLOUDY/SILTY

Well Volumes:	3 GAL.	6 GAL.	9 GAL.			
pH:	6.32	6.24	6.17			
Spec. Cond.:	404	390	385			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	14.1	14.0	13.8			

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-29S
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1015
Date:	5/20/2009	Time Sampling Complete:	1030

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): 32.42

Water Column (WC) in Well (TD - DTW): 28.93

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: AMBER Odor: NONE Turbidity: SLIGHTLY CLOUDY

Well Volumes:	4 GAL.	8 GAL.	14 GAL.			
pH:	7.69	7.72	7.73			
Spec. Cond.:	1219	1221	1188			
Diss. Oxygen:						
Turbidity:						
Recox:						
Temp.:	14.9	14.8	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
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

Sampling Personnel: R. FARGO, C. SMITH

Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-29D
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	995
Date:	5/20/2009	Time Sampling Complete:	1015

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): 32.12

Vater Column (WC) in Well (TD - DTW): 49.86

Casing Diameter: 2"

Gallons in Well (WC x GPF): 8.0

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:	5 GAL.	12 GAL.	18 GAL.	24 GAL.		
pH:	7.19	7.46	7.49	7.51		
Spec. Cond.:	833	917	956	970		
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	14.7	14.7	14.7	14.7		

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

Sampline Personnel: R. FARGO, C. SMITH

Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-30
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1105
Date	5/20/2009	Time Sampling Complete:	1130

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): 45.43

Water Column (WC) in Well (TD - DTW): 14.98

Casing Diameter: 2"

Gallons in Well (WC x GPF): 2.4

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: DK. BROWN Odor: NONE Turbidity: CLOUDY

Well Volumes:	4 GAL.	7 GAL.	8 GAL.			
pH:	7.20	6.63	6.49			
Spec. Cond.:	900	532	518			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	16.6	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
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-31
Project #:	HM00326	Duplicate I.D.:	MW-51 (1515)
Location:	HANNIBAL, OHIO	Time Sampling Began:	1440
Date:	5/20/2009	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): 67.51

Depth to Water Below MP (DTW): 39.78

Vater Column (WC) in Well (TD - DTW): 27.73

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: DK. AMBER Odor: NONE Turbidity: CLOUDY

Well Volumes:	5 GAL.	8 GAL.	12 GAL.			
pH:	9.73	9.74	9.74			
Spec. Cond.:	1316	1318	1314			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.5	15.5	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
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-32
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1700
Date:	5/20/2009	Time Sampling Complete:	1715

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): 33.90

Water Column (WC) in Well (TD - DTW): 23.28

Casing Diameter: 2"

Gallons in Well (WC x GPF): 3.7

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: AMBER Odor: NONE Turbidity: CLOUDY

Well Volumes:	5 GAL.	8 GAL.	12 GAL.			
pH:	9.94	9.97	9.97			
Spec. Cond.:	1306	1302	1305			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	17.8	17.7	17.7			

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

Sampling Personnel: R. FARGO, C. SMITH

Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-34S
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1150
Date:	5/21/2009	Time Sampling Complete:	1210

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): 33.15

Water Column (WC) in Well (TD - DTW): 16.20

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: 9

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: AMBER Odor: NONE Turbidity: CLOUDY

Well Volumes:	4 GAL.	8 GAL.	10 GAL.			
pH:	8.21	8.25	8.25			
Spec. Cond.:	878	900	911			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	14.8	14.7	14.7			

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

Sampline Personnel: R. FARGO, C. SMITH

Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-34D
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1135
Date:	5/21/2009	Time Sampling Complete:	1150

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): 31.31

Water Column (WC) in Well (TD - DTW): 36.93

Casing Diameter: 2"

Gallons in Well (WC x GPF): 5.9

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: AMBER Odor: NONE Turbidity: CLOUDY

Well Volumes:	5 GAL.	10 GAL.	16 GAL.			
pH:	8.00	7.99	7.99			
Spec. Cond.:	767	764	767			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.1	14.6	14.6			

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

Sampling Personnel: R. FARGO, C. SMITH

Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-35
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1515
Date:	5/20/2009	Time Sampling Complete:	1530

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation: 661.9

Depth of Well Below MP (TD): 46.7

Depth to Water Below MP (DTW): 35.95

Water Column (WC) in Well (TD - DTW): 10.75

Casing Diameter: 2"

Gallons in Well (WC x GPF): 1.7

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

Gallons to be Purged: 5+

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: AMBER Odor: NONE Turbidity: CLOUDY

Well Volumes:	2 GAL.	3 GAL.	4 GAL.			
pH:	7.72	7.70	7.89			
Spec. Cond.:	323	421	481			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	17.2	18.0	18.1			

Pumps nearly dry after ±1 well vol.

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-36
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1645
Date:	5/20/2009	Time Sampling Complete:	1700

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): 33.30

Water Column (WC) in Well (TD - DTW): 18.78

Casing Diameter: 2"

Gallons in Well (WC x GPF): 3.0

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: AMBER Odor: NONE Turbidity: CLEAR

Well Volumes:	4 GAL.	8 GAL.	10 GAL.			
pH:	8.52	8.56	8.57			
Spec. Cond.:	677	678	677			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	18.7	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

Sampling Personnel: R. FARGO, C. SMITH

Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-37
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1540
Date:	5/20/2009	Time Sampling Complete:	1600

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): 22.37
Water Column (WC) in Well (TD - DTW): 14.62
Casing Diameter: 2"
Gallons in Well (WC x GPF): 2.3

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: SILTY

Well Volumes:	2 GAL.	4 GAL.	6 GAL.			
pH:	6.90	6.53	6.46			
Spec. Cond.:	348	328	327			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	14.7	14.9	14.8			

Pumped nearly dry after ±2 gal.

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-39S
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1015
Date:	5/21/2009	Time Sampling Complete:	1030

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): 34.97

Water Column (WC) in Well (TD - DTW): 25.26

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: AMBER Odor: NONE Turbidity: CLOUDY

Well Volumes:	4 GAL.	8 GAL.	12 GAL.	16 GAL.		
pH:	9.10	9.18	9.15	9.13		
Spec. Cond.:	4340	4200	3930	3840		
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	14.3	14.2	14.2	14.2		

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

Sampling Personnel: R. FARGO, C. SMITH

Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-39D
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1000
Date:	5/21/2009	Time Sampling Complete:	1015

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): 34.82

Water Column (WC) in Well (TD - DTW): 45.39

Casing Diameter: 2"

Gallons in Well (WC x GPF): 7.3

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

Gallons to be Purged: 24

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: NONE Odor: NONE Turbidity: CLEAR

Well Volumes:	4 GAL.	6 GAL.	15 GAL.	24 GAL.		
pH:	7.83	7.65	7.64	7.65		
Spec. Cond.:	843	969	1061	1120		
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	14.2	14.1	14.1	14.1		

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-40S
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1715
Date:	5/19/2009	Time Sampling Complete:	1730

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC

MP Elevation: 662.22

Depth of Well Below MP (TD): 70.40

Depth to Water Below MP (DTW): 45.14

Water Column (WC) in Well (TD - DTW): 25.26

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: DK. AMBER Odor: NONE Turbidity: CLOUDY

Well Volumes	3 GAL.	6 GAL.	9 GAL.			
pH:	8.21	8.24	8.26			
Spec. Cond.:	997	998	1002			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.3	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

Sampling Personnel: R. FARGO, C. SMITH

Comments:

* DID NOT ENTER METALS SAMPLE*

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-40D
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1655
Date:	5/19/2009	Time Sampling Complete:	1715

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 661.95
Depth of Well Below MP (TD): 90.4
Depth to Water Below MP (DTW): 45.03
Water Column (WC) in Well (TD - DTW): 45.37
Casing Diameter: 2"
Gallons in Well (WC x GPF): 7.3

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: DK. AMBER Odor: NONE Turbidity: CLOUDY

Well Volumes:	5 GAL.	10 GAL.	15 GAL.			
pH:	8.32	7.99	8.00			
Spec. Cond.:	943	963	964			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.3	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 #: HM00326
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):
Water 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

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

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-42S
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	945
Date:	5/21/2009	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): 52.3
Depth to Water Below MP (DTW): 33.20
Vater Column (WC) in Well (TD - DTW): 19.10
Casing Diameter: 2"
Gallons in Well (WC x GPF): 3.0

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: SLIGHT AMBER Odor: NONE Turbidity: SLIGHTLY CLOUDY

Well Volumes:	2 GAL.	4 GAL.	8+ GAL.			
pH:	7.73	8.01	8.10			
Spec. Cond.:	3400	3400	3380			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	14.2	14.1	14.2			

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	Sample I.D.:	MW-42D
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	930
Date	5/21/2009	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): 85.1

Depth to Water Below MP (DTW): 33.13

Water Column (WC) in Well (TD - DTW): 51.97

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: 25

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: NONE Odor: NONE Turbidity: CLEAR

Well Volumes:	4 GAL.	12 GAL.	18 GAL.			
pH:	7.58	7.83	7.87			
Spec. Cond.:	608	2600	2260			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	14.2	14.1	14.1			

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

Sampling Personnel: R. FARGO, C. SMITH

Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-44D
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1540
Date:	5/19/2009	Time Sampling Complete:	1600

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): 43.32

Vater Column (WC) in Well (TD - DTW): 50.65

Casing Diameter: 2"

Gallons in Well (WC x GPF): 8.1

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:	6 GAL.	14 GAL.	22 GAL.			
pH:	7.61	7.77	7.76			
Spec. Cond.:	546	541	539			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.5	15.3	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
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	Sample I.D.:	MW-44S
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1600
Date:	5/19/2009	Time Sampling Complete:	1615

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): 42.80

Water 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:

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: NONE Odor: NONE Turbidity: CLEAR

Well Volumes:	2 GAL.	6 GAL.	14 GAL.			
pH:	7.20	7.12	7.08			
Spec. Cond.:	577	576	575			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.1	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
PCB's	1 LITER GLASS	4 degrees celsius

Sampling Personnel: R. FARGO, C. SMITH

Comments:

APPENDIX A-3

WATER SAMPLING LOG FORMS FOR JULY 2009 MONITORING EVENT

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00324
Location: HANNIBAL, OHIO
Date: 7-30-09

Sample I.D.: MW-12 MW-A
Duplicate I.D.: MW-B
Time Sampling Began: 1000
Time Sampling Complete: 1030 (1040)

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): 14.89
ater Column (WC) in Well (TD - DTW): 53.35
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: 25+

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: NONE Odor: NONE Turbidity: CLEAR

Well Volumes:	7 GAL.	12 GAL.	25+	30		
pH:	7.26	7.52	7.72	7.73		
Spec. Cond.:	552	543	543	541		
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.0	14.9	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
~~DISSOLVED As, Be, Mn, Na, V~~	~~250 ml. PLASTIC~~	~~HNO_3~~ - FIELD FILTERED (IMICRON)
TOTAL CN, AMENABLE CN	2X 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: 7-30-09

Sample I.D.: MW-14 MW-C
Duplicate I.D.: MW-D (~~1145~~) (1125)
Time Sampling Began: 1045
Time Sampling Complete: 1115

WELL EVACUATION DATA

Description of Measuring Point (MP): TOP OF PVC
MP Elevation: 653.59
Depth of Well Below MP (TD): 86.90
Depth to Water Below MP (DTW): 31.07
Water Column (WC) in Well (TD - DTW): 55.83
Casing Diameter: 2"
Gallons in Well (WC x GPF): 8.9

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:	4 GAL.	12 GAL.	21 GAL.			
pH:	7.88	7.92	7.89			
Spec. Cond.:	539	542	544			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.1	14.9	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
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

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

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-18 MW-G
Project #:	HM00324	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1220
Date:	7.30.09	Time Sampling Complete:	1245

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): 36.59
ater Column (WC) in Well (TD - DTW):
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: DK. BROWN Odor: NONE Turbidity: CLOUDY

Well Volumes:	4 GAL.	9 GAL.	10+	12 GAL.	14 GAL.	
pH:	10.09	10.07	9.91	9.94	9.94	
Spec. Cond.:	1703	1591	2410	1867	1750	
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.9	15.4	16.5	16.5	16.7	

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: 7.30.09

Sample I.D.: MW-42S MW-E
Duplicate I.D.:
Time Sampling Began: 1130
Time Sampling Complete: 1145

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): 32.52
ater Column (WC) in Well (TD - DTW): 19.78
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: MED. AMBER Odor: NONE Turbidity: CLOUDY

Well Volumes:	4 GAL.	8 GAL.	12 GAL.			
pH:	8.17	8.39	8.45			
Spec. Cond.:	2900	2670	2630			
Diss. Oxygen						
Turbidity:						
Redox:						
Temp.:	14.2	14.2	14.2			

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	Sample I.D.:	MW-42D MW-F
Project #:	HM00324	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1110
Date:	7.20.09	Time Sampling Complete:	1130

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): 32.49
ater Column (WC) in Well (TD - DTW):
Casing Diameter: 2"
Gallons in Well (WC x GPF): 8.4

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: VERY LT. AMBER Odor: NONE Turbidity: CLEAR

Well Volumes:	8 GAL.	12 GAL.	20 GAL.	25 GAL.		
pH:	8.10	8.09	8.10	8.10		
Spec. Cond.:	3870	3490	3340	3320		
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	14.5	14.3	14.2	14.2		

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:

APPENDIX A-4

WATER SAMPLING LOG FORMS FOR SEPTEMBER 2009 MONITORING EVENT

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name: ORMET-REDUCTION MILL
Project #: HM00326
Location: HANNIBAL, OHIO
Date: 9-24-09

Sample I.D.: MW-2
Duplicate I.D.:
Time Sampling Began: 945
Time Sampling Complete: 1015

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): 46.65
Vater Column (WC) in Well (TD - DTW): 35.60
Casing Diameter: 2"
Gallons in Well (WC x GPF): 5.7

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

Gallons to be Purged: 17

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: DK. AMBER Odor: NONE Turbidity: CLOUDY

Well Volumes:	7 GAL.	11 GAL.	15 GAL			
pH:	9.83	9.80	9.79			
Spec. Cond.:	1303	1267	1243			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.9	15.6	15.4			

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
Project #: HM00326
Location: HANNIBAL, OHIO
Date: 9.24.09

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:
Depth of Well Below MP (TD): 92.00
Depth to Water Below MP (DTW): 48.66
Water Column (WC) in Well (TD - DTW): 43.34
Casing Diameter: 2"
Gallons in Well (WC x GPF): 6.9

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

Gallons to be Purged: 21

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: LT. AMBER Odor: NONE Turbidity: CLOUDY

Well Volumes:	6 GAL.	10 GAL.	13 GAL.	20+		
pH:	7.99	8.23	8.25	8.26		
Spec. Cond.:	1210	1170	1163	1153		
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.8	15.4	15.3	15.5		

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

Parameters to be Analyzed	Containier 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 #:	HM00326	Duplicate I.D.:	~~MW-12D~~
Location:	HANNIBAL, OHIO	Time Sampling Began:	1300
Date:	9.24.09	Time Sampling Complete:	1330

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): 13.83
Water Column (WC) in Well (TD - DTW): 54.60
Casing Diameter: 2"
Gallons in Well (WC x GPF): 8.7

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 (±3 gpm)

SAMPLING DATA AND FIELD PARAMETERS

Color: NONE Odor: NONE Turbidity: CLEAR

Well Volumes:	4 GAL.	18 GAL.	24+			
pH:	7.41	7.66	7.66			
Spec. Cond.:	549	530	531			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.3	14.9	15.0			

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
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 #: HM00326
Location: HANNIBAL, OHIO
Date: 9.23.09

Sample I.D.: MW-16
Duplicate I.D.:
Time Sampling Began: 1450
Time Sampling Complete: 1515

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): 39.78
Water Column (WC) in Well (TD - DTW): 43.34
Casing Diameter: 2"
Gallons in Well (WC x GPF): 6.9

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

Gallons to be Purged: 21

Evacuation Method: 12 Volt submersible purge pump (±1.5 gpm)

SAMPLING DATA AND FIELD PARAMETERS

Color: AMBER (TEA) Odor: NONE Turbidity: SLIGHT CLOUDY

Well Volumes:	3 GAL.	8 GAL.	12 GAL.	18 GAL.		
pH:	8.99	9.30	9.36	9.35		
Spec. Cond.:	874	894	905	899		
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.3	15.3	15.3	15.4		

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

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

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-18
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1030
Date:	9.24.09	Time Sampling Complete:	1100

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): 36.00
Water Column (WC) in Well (TD - DTW): 25.16
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: BROWN/AMBER Odor: NONE Turbidity: VERY TURBID.

Well Volumes:	3 GAL.	9 GAL.	12 GAL			
pH:	10.02	9.96	9.90			
Spec. Cond.:	1392	1383	1439			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.0	15.0	15.5			

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
Project #: HM00326
Location: HANNIBAL, OHIO
Date: 9·23·09

Sample I.D.: MW-28
Duplicate I.D.: MW-48 (1600)
Time Sampling Began: 1515
Time Sampling Complete: 1545

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): 20.22
Water Column (WC) in Well (TD - DTW): 25.98
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 (± 1.5 gpm)

SAMPLING DATA AND FIELD PARAMETERS

Color: LT. BROWN Odor: NONE Turbidity: CLOUDY

Well Volumes:	2 GAL.	6 GAL.	12 GAL.	15 GAL.		
pH:	6.46	6.52	6.35	6.33		
Spec. Cond.:	369	372	370	372		
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	14.9	15.0	14.3	14.4		

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 #:	HM00326	Duplicate I.D.:	~~MW-31D~~ MW-51
Location:	HANNIBAL, OHIO	Time Sampling Began:	1055 (1145)
Date:	9-24-09	Time Sampling Complete:	1130

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): 38.05
Water Column (WC) in Well (TD - DTW): 29.53
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: dark amber Odor: none Turbidity: cloudy

Well Volumes:	6 gal	11 gal				
pH:	9.91	9.92	9.93			
Spec. Cond.:	1332	1330	1335			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.5	15.3	15.1			

Small amount of unfiltered water in MW-51 metals bottle.

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
Project #: HM00326
Location: HANNIBAL, OHIO
Date: 9-24-09

Sample I.D.: MW-32
Duplicate I.D.:
Time Sampling Began: 1500
Time Sampling Complete: 1520

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): 32.30
Water Column (WC) in Well (TD - DTW): 25.06
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: DK. AMBER Odor: NONE Turbidity: CLOUDY

Well Volumes:	3 GAL	6 GAL.	12 GAL.			
pH:	10.10	10.15	10.15			
Spec. Cond.:	1462	1432	1433			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	17.8	17.6	17.7			

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-35
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1350
Date:	9.24.09	Time Sampling Complete:	1415

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): 34.09
Water Column (WC) in Well (TD - DTW): 12.85
Casing Diameter: 2"
Gallons in Well (WC x GPF): 2.0

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: AMBER Odor: NONE Turbidity: CLOUDY

Well Volumes:	2 GAL.					
pH:	7.61	7.54	7.67			
Spec. Cond.:	319	345	354			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	17.4	17.0	17.0			

Pumped to very low flow after ± 2 gal.

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 #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1435
Date	9.24.09	Time Sampling Complete:	1500

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): 31.96

Water 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

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

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

Well Volumes:	3 GAL.	6 GAL.	10 GAL.			
pH:	8.40	8.78	8.81			
Spec. Cond.:	809	799	792			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	17.4	17.3	17.1			

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

Sampling Personnel: R. FARGO, C. SMITH

Comments:

HYDROSYSTEMS MANAGEMENT, INC.
WATER SAMPLING LOG FORM

Project Name:	ORMET-REDUCTION MILL	Sample I.D.:	MW-44s
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1420
Date:	9-23-09	Time Sampling Complete:	1440

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): 40.52
Water Column (WC) in Well (TD - DTW): 28.53
Casing Diameter: 2"
Gallons in Well (WC x GPF): 4.6
Gallons to be Purged: 14

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

Evacuation Method: 12 Volt submersible purge pump (±1.5gpm)

SAMPLING DATA AND FIELD PARAMETERS

Color: NONE Odor: NONE Turbidity: CLEAR

Well Volumes:	6 gal.	9 GAL.	12 GAL.			
pH:	7.33	7.17	7.17			
Spec. Cond.:	599	602	602			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.0	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
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-37
Project #:	HM00326	Duplicate I.D.:	
Location:	HANNIBAL, OHIO	Time Sampling Began:	1405
Date:	9-24-09	Time Sampling Complete:	1430

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): 20.22
Water Column (WC) in Well (TD - DTW): 16.68
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: LT. BROWN Odor: NONE Turbidity: VERY SILTY

Well Volumes:	4 GAL.	6 GAL.	8 GAL.			
pH:	6.75	6.63	6.54			
Spec. Cond.:	298	304	307			
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	16.1	15.9	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
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 #: HM00326
Location: HANNIBAL, OHIO
Date 9-23-09

Sample I.D.: MW-44D
Duplicate I.D.:
Time Sampling Began: 1410
Time Sampling Complete: 1430

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): 41.07
Water Column (WC) in Well (TD - DTW): 52.90
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: 25+

Evacuation Method: 12 Volt submersible purge pump

SAMPLING DATA AND FIELD PARAMETERS

Color: NONE Odor: NONE Turbidity: CLEAR

Well Volumes:	6 GAL.	8 GAL.	18 GAL.	25 GAL.		
pH:	7.60	7.72	7.82	7.84		
Spec. Cond.:	499	488	486	488		
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	15.8	15.5	15.3	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
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 #: HM00326
Location: HANNIBAL, OHIO
Date: 9.24.09

Sample I.D.: MW-39S
Duplicate I.D.:
Time Sampling Began: 1330
Time Sampling Complete: 1345

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): 33.53
Water Column (WC) in Well (TD - DTW): 26.70
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: AMBER (TEA) Odor: NONE Turbidity: SLIGHT CLOUDY

Well Volumes:	3gal	9 GAL.	12 GAL.	15 gal		
pH:	9.40	9.41	9.39	9.38		
Spec. Cond.:	3820	3420	3230	3030		
Diss. Oxygen:						
Turbidity:						
Redox:						
Temp.:	14.3	14.1	14.0	14.0		

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:

APPENDIX B

LABORATORY ANALYTICAL REPORTS
(provided on disc including the following:)

Laboratory Analytical Report for January 2009 Monitoring Event

Laboratory Analytical Report for May 2009 Monitoring Event

Laboratory Analytical Report for July 2009 Monitoring Event

Laboratory Analytical Report for September 2009 Monitoring Event

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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.

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1215051

Section A Required Client Information:

Company: HYDROSYSTEMS MANAGEMENT, 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.: HM00326
Project Name: ORMET - '09 SAMPLING
Project Number: HM00326

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 LCRCLA

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	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)	pH, Cond., F	Diss. As, Be, Mn, Na, V	CN (TOTAL/AMEN)	PCB	PCBs				Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
3	1	MW-2	W				1/28	1115		6	1		1	3	1					X	X	X	X						001
3	2	MW-5						1015		6	1		1	3	1					X	X	X	X						002
2	3	MW-12						1330		4	2		1		1					X	X	X		X					005
1	4	MW-16						1145		3	1		1		1					X	X	X							006
3	5	MW-18						1230		6	1		1	3	1					X	X	X	X						003
1	6	MW-28						1215		3	1		1		1					X	X	X							007
3	7	MW-31						1300		6	1		1	3	1					X	X	X	X						004
1	8	MW-32						1450		3	1		1		1					X	X	X							008
1	9	MW-35						1350		3	1		1		1					X	X	X							009
1	10	MW-36						1430		3	1		1		1					X	X	X							010
1	11	MW-37						1400		3	1		1		1					X	X	X							011
1	12	MW-39S						1315		3	1		1		1					X	X	X							012

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
ALL METALS BOTTLES HAVE	R.L. Fargo	1/29/09	1230							
BEEN FIELD FILTERED	Rich Fargo	1/29/09	230	Justin A. Miller	1/29/09	1430	5.1	Y	N	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: R. L. FARGO

SIGNATURE of SAMPLER: R.L. Fargo

DATE Signed (MM/DD/YY): 1/29/09

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: 2 of 2

1215052

Section A Required Client Information:

Company: HYDROSYSTEMS MANAGEMENT, 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:
Copy To:
Purchase Order No.:
Project Name: ORMET - '09 SAMPLING
Project Number: HM00326

Section C Invoice Information:

Attention:
Company Name:
Address: SAME
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☒ OTHER CERCLA

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): pH, Cond., F	Diss. As, Be, Mg, Na, V	CN (Total/Amen.)	PCBs	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-44S					1/28	1045	W	1	1											X		014
2	MW-44D					↓	1050		1	1											X		015
3	MW-56					↓	1445	↓	3	1		1		1				X	X	X			013
4																							
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							

304557

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
METALS HAVE BEEN	R.L. Fargo	1/29/09	1230							
FIELD FILTERED	Eric Fargo	1/29/09	2:30	Justin Miller	1/29/09	1430	5.1	Y	N	Y

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: R.L. FARGO

SIGNATURE of SAMPLER: R.L. Fargo

DATE Signed (MM/DD/YY): 1/29/09

*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

Sample Condition Upon Receipt

Pace Analytical

Client Name: H M S Project # _____

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Tracking #: _____

Optional
Proj. Due Date:
Proj. Name:

Custody Seal on Cooler/Box Present: ☐ yes ☐ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other _____

Thermometer Used 3 4 **Type of Ice:** Wet Blue None ☑ Samples on ice, cooling process has begun

Cooler Temperature 5.1 **Biological Tissue is Frozen:** Yes No

Date and Initials of person examining contents: Cam 1-29

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☑Yes ☐No ☐N/A	6. pH
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☑No ☐N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: WT		
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☑Yes ☐No	Initial when completed Cam Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☑No ☐N/A	15.
Trip Blank Present:	☐Yes ☑No ☐N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☐N/A	
Pace Trip Blank Lot # (if purchased): _____		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Rachel D Christner **Date:** 1/30/09

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

May 18, 2010

Mr. Robert L. Fargo
Hydro Systems Managment, Inc.
PO Box 789
Washington, PA 15301

RE: Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

Dear Mr. Fargo:
Enclosed are the analytical results for sample(s) received by the laboratory on January 29, 2009. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Amy Wells for
Rachel Christner
rachel.christner@pacelabs.com
Project Manager

Enclosures

cc: Mr. John Reggi, Ormet Primary Aluminum Corporation

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CERTIFICATIONS

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

Pennsylvania Certification IDs
1638 Roseytown Road Suites 2,3&4 Greensburg, PA 15601
Wyoming Certification #: 8TMS-Q
Wisconsin/PADEP Certification
West Virginia Certification #: 143
Washington Certification #: C1941
Virginia Certification #: 00112
Virgin Island/PADEP Certification
Utah/NELAC Certification #: ANTE
Texas/NELAC Certification #: T104704188-09 TX
Tennessee Certification #: TN2867
South Dakota Certification
Puerto Rico Certification #: PA01457
Pennsylvania/NELAC Certification #: 65-00282
Oregon/NELAC Certification #: PA200002
North Carolina Certification #: 42706
New York/NELAC Certification #: 10888
New Mexico Certification
New Jersey/NELAC Certification #: PA 051
New Hampshire/NELAC Certification #: 2976
Nevada Certification
Montana Certification #: Cert 0082
Missouri Certification #: 235
Michigan/PADEP Certification
Massachusetts Certification #: M-PA1457
Maryland Certification #: 308
Maine Certification #: PA0091
Louisiana/NELAC Certification #: LA080002
Louisiana/NELAC Certification #: 4086
Kentucky Certification #: 90133
Kansas/NELAC Certification #: E-10358
Iowa Certification #: 391
Indiana/PADEP Certification
Illinois/PADEP Certification
Idaho Certification
Hawaii/PADEP Certification
Guam/PADEP Certification
Florida/NELAC Certification #: E87683
Delaware Certification
Connecticut Certification #: PH 0694
Colorado Certification
California/NELAC Certification #: 04222CA
Arkansas Certification
Arizona Certification #: AZ0734
Alabama Certification #: 41590

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SAMPLE SUMMARY

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

Lab ID	Sample ID	Matrix	Date Collected	Date Received
304557001	**MW-2**	Water	01/28/09 11:15	01/29/09 15:15
304557002	**MW-5**	Water	01/28/09 10:15	01/29/09 15:15
304557003	**MW-18**	Water	01/28/09 12:30	01/29/09 15:15
304557004	**MW-31**	Water	01/28/09 13:00	01/29/09 15:15
304557005	**MW-12**	Water	01/28/09 13:30	01/29/09 15:15
304557006	**MW-16**	Water	01/28/09 11:45	01/29/09 15:15
304557007	**MW-28**	Water	01/28/09 12:15	01/29/09 15:15
304557008	**MW-32**	Water	01/28/09 14:50	01/29/09 15:15
304557009	**MW-35**	Water	01/28/09 13:50	01/29/09 15:15
304557010	**MW-36**	Water	01/28/09 14:30	01/29/09 15:15
304557011	**MW-37**	Water	01/28/09 14:00	01/29/09 15:15
304557012	**MW-39S**	Water	01/28/09 13:15	01/29/09 15:15
304557013	**MW-56**	Water	01/28/09 14:45	01/29/09 15:15
304557014	**MW-44S**	Water	01/28/09 10:45	01/29/09 15:15
304557015	**MW-44D**	Water	01/28/09 10:50	01/29/09 15:15

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SAMPLE ANALYTE COUNT

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
304557001	**MW-2**	EPA 6010	CTS	5	PASI-PA
		EPA 8260	JAS	4	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
304557002	**MW-5**	EPA 6010	CTS	5	PASI-PA
		EPA 8260	JAS	4	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
304557003	**MW-18**	EPA 6010	CTS	5	PASI-PA
		EPA 8260	JAS	4	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	SAB	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
304557004	**MW-31**	EPA 6010	CTS	5	PASI-PA
		EPA 8260	JAS	4	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	SAB	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
304557005	**MW-12**	EPA 8082	RDJ	9	PASI-PA
		EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	SAB	1	PASI-PA
304557006	**MW-16**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA

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SAMPLE ANALYTE COUNT

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	SAB	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
304557007	**MW-28**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	SAB	1	PASI-PA
304557008	**MW-32**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	SAB	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
304557009	**MW-35**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	SAB	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
304557010	**MW-36**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	SAB	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
304557011	**MW-37**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	SAB	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
304557012	**MW-39S**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	SAB	1	PASI-PA

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SAMPLE ANALYTE COUNT

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 4500-CN-G	DLD	1	PASI-PA
304557013	**MW-56**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	SAB	1	PASI-PA
304557014	**MW-44S**	EPA 8082	RDJ	9	PASI-PA
304557015	**MW-44D**	EPA 8082	RDJ	9	PASI-PA

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PROJECT NARRATIVE

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

Method: **EPA 8082**
Description: 8082 GCS PCB
Client: Ormet Primary Aluminum Corporation
Date: May 18, 2010

General Information:
3 samples were analyzed for EPA 8082. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: GCSV/1179

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

Method: **EPA 6010**
Description: 6010 MET ICP,Dissolved
Client: Ormet Primary Aluminum Corporation
Date: May 18, 2010

General Information:
13 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3005 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MPRP/1435

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 304557001,304557011

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MSD (Lab ID: 23621)
  - Sodium, Dissolved

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

Method: **EPA 8260**
Description: 8260 MSV
Client: Ormet Primary Aluminum Corporation
Date: May 18, 2010

General Information:
4 samples were analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

Method: **SM 4500F/C**
Description: 4500FC Fluoride
Client: Ormet Primary Aluminum Corporation
Date: May 18, 2010

General Information:
13 samples were analyzed for SM 4500F/C. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

Method: **SM 4500-H+B**
Description: 4500H+ pH, Electrometric
Client: Ormet Primary Aluminum Corporation
Date: May 18, 2010

General Information:
13 samples were analyzed for SM 4500-H+B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H6: Analysis initiated more than 15 minutes after sample collection.
- MW-12 (Lab ID: 304557005)
- MW-16 (Lab ID: 304557006)
- MW-18 (Lab ID: 304557003)
- MW-2 (Lab ID: 304557001)
- MW-28 (Lab ID: 304557007)
- MW-31 (Lab ID: 304557004)
- MW-32 (Lab ID: 304557008)
- MW-35 (Lab ID: 304557009)
- MW-36 (Lab ID: 304557010)
- MW-37 (Lab ID: 304557011)
- MW-39S (Lab ID: 304557012)
- MW-5 (Lab ID: 304557002)
- MW-56 (Lab ID: 304557013)

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

Method: **EPA 9050**
Description: 9050 Specific Conductance
Client: Ormet Primary Aluminum Corporation
Date: May 18, 2010

General Information:
13 samples were analyzed for EPA 9050. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

Method: **SM 4500-CN-E**
Description: 4500CNE Cyanide, Total
Client: Ormet Primary Aluminum Corporation
Date: May 18, 2010

General Information:
13 samples were analyzed for SM 4500-CN-E. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: WETA/1427

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 304557013

M3: Matrix spike recovery was outside laboratory control limits due to matrix interferences.

- MS (Lab ID: 26441)
  - Cyanide

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

Method: **SM 4500-CN-G**
Description: 4500CNG Cyanide, Amenable
Client: Ormet Primary Aluminum Corporation
Date: May 18, 2010

General Information:
10 samples were analyzed for SM 4500-CN-G. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

Sample: MW-2 **Lab ID: 304557001** Collected: 01/28/09 11:15 Received: 01/29/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.043**	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 10:01	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	01/30/09 11:28	02/03/09 10:01	7440-41-7	
Manganese, Dissolved	**0.39**	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 10:01	7439-96-5	
Sodium, Dissolved	**174**	mg/L	1.0	0.50	1	01/30/09 11:28	02/03/09 10:01	7440-23-5	
Vanadium, Dissolved	**0.022**	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 10:01	7440-62-2	
8260 MSV	Analytical Method: EPA 8260								
Tetrachloroethene	**0.048**	mg/L	0.0050	0.00050	1		02/03/09 05:29	127-18-4	
4-Bromofluorobenzene (S)	100	%	70-130		1		02/03/09 05:29	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	70-130		1		02/03/09 05:29	17060-07-0	
Toluene-d8 (S)	95	%	70-130		1		02/03/09 05:29	2037-26-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**33.5**	mg/L	1.0	0.64	1		02/03/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**9.3**	Std. Units	1.0	1.0	1		01/29/09 20:46		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**1270**	umhos/cm	1.0	1.0	1		02/05/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**9.5**	mg/L	0.50	0.31	100		02/09/09 15:35	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**9.5**	mg/L	0.0050	0.0031	1		02/10/09 23:35	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

Sample: MW-5 **Lab ID: 304557002** Collected: 01/28/09 10:15 Received: 01/29/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	ND	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 10:18	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	01/30/09 11:28	02/03/09 10:18	7440-41-7	
Manganese, Dissolved	**0.40**	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 10:18	7439-96-5	
Sodium, Dissolved	**153**	mg/L	1.0	0.50	1	01/30/09 11:28	02/03/09 10:18	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 10:18	7440-62-2	
8260 MSV	Analytical Method: EPA 8260								
Tetrachloroethene	ND	mg/L	0.0050	0.00050	1		02/03/09 05:55	127-18-4	
4-Bromofluorobenzene (S)	99	%	70-130		1		02/03/09 05:55	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130		1		02/03/09 05:55	17060-07-0	
Toluene-d8 (S)	95	%	70-130		1		02/03/09 05:55	2037-26-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**30.2**	mg/L	1.0	0.64	1		02/03/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.9**	Std. Units	1.0	1.0	1		01/29/09 20:46		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**1230**	umhos/cm	1.0	1.0	1		02/05/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**4.3**	mg/L	0.25	0.16	50		02/09/09 15:35	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**4.3**	mg/L	0.0050	0.0031	1		02/10/09 23:35	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

Sample: MW-18 **Lab ID: 304557003** Collected: 01/28/09 12:30 Received: 01/29/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.050**	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 10:21	7440-38-2	
Beryllium, Dissolved	**0.0014**	mg/L	0.0010	0.00050	1	01/30/09 11:28	02/03/09 10:21	7440-41-7	
Manganese, Dissolved	**0.78**	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 10:21	7439-96-5	
Sodium, Dissolved	**242**	mg/L	1.0	0.50	1	01/30/09 11:28	02/03/09 10:21	7440-23-5	
Vanadium, Dissolved	**0.034**	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 10:21	7440-62-2	
8260 MSV	Analytical Method: EPA 8260								
Tetrachloroethene	ND	mg/L	0.0050	0.00050	1		02/03/09 06:21	127-18-4	
4-Bromofluorobenzene (S)	102	%	70-130		1		02/03/09 06:21	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	70-130		1		02/03/09 06:21	17060-07-0	
Toluene-d8 (S)	99	%	70-130		1		02/03/09 06:21	2037-26-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**117**	mg/L	1.0	0.64	1		02/03/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**9.3**	Std. Units	1.0	1.0	1		01/29/09 20:46		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**1710**	umhos/cm	1.0	1.0	1		02/05/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**36.7**	mg/L	1.2	0.78	25		02/09/09 19:24	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**36.6**	mg/L	0.0050	0.0031	1		02/10/09 23:35	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

Sample: MW-31 **Lab ID: 304557004** Collected: 01/28/09 13:00 Received: 01/29/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.039**	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 10:25	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	01/30/09 11:28	02/03/09 10:25	7440-41-7	
Manganese, Dissolved	**0.74**	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 10:25	7439-96-5	
Sodium, Dissolved	**195**	mg/L	1.0	0.50	1	01/30/09 11:28	02/03/09 10:25	7440-23-5	
Vanadium, Dissolved	**0.043**	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 10:25	7440-62-2	
8260 MSV	Analytical Method: EPA 8260								
Tetrachloroethene	**0.038**	mg/L	0.0050	0.00050	1		02/03/09 06:47	127-18-4	
4-Bromofluorobenzene (S)	98	%	70-130		1		02/03/09 06:47	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130		1		02/03/09 06:47	17060-07-0	
Toluene-d8 (S)	93	%	70-130		1		02/03/09 06:47	2037-26-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**63.4**	mg/L	1.0	0.64	1		02/03/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**9.5**	Std. Units	1.0	1.0	1		01/29/09 20:46		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**1350**	umhos/cm	1.0	1.0	1		02/05/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**7.4**	mg/L	0.25	0.16	50		02/09/09 19:24	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**7.3**	mg/L	0.0050	0.0031	1		02/10/09 23:35	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

Sample: MW-12 **Lab ID: 304557005** Collected: 01/28/09 13:30 Received: 01/29/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3510								
PCB-1016 (Aroclor 1016)	ND	mg/L	0.00052	0.000087	1	01/30/09 15:18	02/02/09 19:28	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	mg/L	0.00052	0.000080	1	01/30/09 15:18	02/02/09 19:28	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	mg/L	0.00052	0.000076	1	01/30/09 15:18	02/02/09 19:28	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	mg/L	0.00052	0.000085	1	01/30/09 15:18	02/02/09 19:28	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	mg/L	0.00052	0.000056	1	01/30/09 15:18	02/02/09 19:28	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	mg/L	0.00052	0.000034	1	01/30/09 15:18	02/02/09 19:28	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	mg/L	0.00052	0.000042	1	01/30/09 15:18	02/02/09 19:28	11096-82-5	
Tetrachloro-m-xylene (S)	81	%	30-150		1	01/30/09 15:18	02/02/09 19:28	877-09-8	
Decachlorobiphenyl (S)	93	%	30-150		1	01/30/09 15:18	02/02/09 19:28	2051-24-3	
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	ND	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 10:28	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	01/30/09 11:28	02/03/09 10:28	7440-41-7	
Manganese, Dissolved	**2.2**	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 10:28	7439-96-5	
Sodium, Dissolved	**29.8**	mg/L	1.0	0.50	1	01/30/09 11:28	02/03/09 10:28	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 10:28	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**0.68**	mg/L	0.10	0.064	1		02/03/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.4**	Std. Units	1.0	1.0	1		01/29/09 20:46		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**558**	umhos/cm	1.0	1.0	1		02/05/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0050	0.0031	1		02/09/09 19:24	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

Sample: MW-16 **Lab ID: 304557006** Collected: 01/28/09 11:45 Received: 01/29/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.020**	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 11:06	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	01/30/09 11:28	02/03/09 11:06	7440-41-7	
Manganese, Dissolved	**0.54**	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 11:06	7439-96-5	
Sodium, Dissolved	**118**	mg/L	1.0	0.50	1	01/30/09 11:28	02/03/09 11:06	7440-23-5	
Vanadium, Dissolved	**0.020**	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 11:06	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**107**	mg/L	1.0	0.64	1		02/03/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.8**	Std. Units	1.0	1.0	1		01/29/09 20:46		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**921**	umhos/cm	1.0	1.0	1		02/05/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**3.7**	mg/L	0.25	0.16	50		02/09/09 19:24	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**3.7**	mg/L	0.0050	0.0031	1		02/10/09 23:35	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

Sample: MW-28 **Lab ID: 304557007** Collected: 01/28/09 12:15 Received: 01/29/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	ND	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 11:10	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	01/30/09 11:28	02/03/09 11:10	7440-41-7	
Manganese, Dissolved	**0.090**	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 11:10	7439-96-5	
Sodium, Dissolved	**53.0**	mg/L	1.0	0.50	1	01/30/09 11:28	02/03/09 11:10	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 11:10	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**0.15**	mg/L	0.10	0.064	1		02/03/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**6.0**	Std. Units	1.0	1.0	1		01/29/09 20:46		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**339**	umhos/cm	1.0	1.0	1		02/05/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0050	0.0031	1		02/09/09 19:24	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

Sample: MW-32 **Lab ID: 304557008** Collected: 01/28/09 14:50 Received: 01/29/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.051**	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 11:13	7440-38-2	
Beryllium, Dissolved	**0.0010**	mg/L	0.0010	0.00050	1	01/30/09 11:28	02/03/09 11:13	7440-41-7	
Manganese, Dissolved	**1.7**	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 11:13	7439-96-5	
Sodium, Dissolved	**198**	mg/L	1.0	0.50	1	01/30/09 11:28	02/03/09 11:13	7440-23-5	
Vanadium, Dissolved	**0.085**	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 11:13	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**69.7**	mg/L	1.0	0.64	1		02/03/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**9.8**	Std. Units	1.0	1.0	1		01/29/09 20:46		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**1380**	umhos/cm	1.0	1.0	1		02/05/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**5.9**	mg/L	0.25	0.16	50		02/09/09 19:24	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**5.9**	mg/L	0.0050	0.0031	1		02/10/09 23:35	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

Sample: MW-35 **Lab ID: 304557009** Collected: 01/28/09 13:50 Received: 01/29/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.016**	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 11:16	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	01/30/09 11:28	02/03/09 11:16	7440-41-7	
Manganese, Dissolved	**1.1**	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 11:16	7439-96-5	
Sodium, Dissolved	**72.1**	mg/L	1.0	0.50	1	01/30/09 11:28	02/03/09 11:16	7440-23-5	
Vanadium, Dissolved	**0.012**	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 11:16	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**24.0**	mg/L	1.0	0.64	1		02/03/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.7**	Std. Units	1.0	1.0	1		01/29/09 20:46		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**635**	umhos/cm	1.0	1.0	1		02/05/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**19.3**	mg/L	0.50	0.31	100		02/09/09 19:24	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**19.3**	mg/L	0.0050	0.0031	1		02/10/09 23:35	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

Sample: MW-36 **Lab ID: 304557010** Collected: 01/28/09 14:30 Received: 01/29/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.0059**	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 11:20	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	01/30/09 11:28	02/03/09 11:20	7440-41-7	
Manganese, Dissolved	**0.16**	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 11:20	7439-96-5	
Sodium, Dissolved	**75.8**	mg/L	1.0	0.50	1	01/30/09 11:28	02/03/09 11:20	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 11:20	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**19.0**	mg/L	1.0	0.64	1		02/03/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.4**	Std. Units	1.0	1.0	1		01/29/09 20:46		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**625**	umhos/cm	1.0	1.0	1		02/05/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**3.3**	mg/L	0.25	0.16	50		02/09/09 19:24	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**3.3**	mg/L	0.0050	0.0031	1		02/10/09 23:35	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

Sample: MW-37 **Lab ID: 304557011** Collected: 01/28/09 14:00 Received: 01/29/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	ND	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 11:23	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	01/30/09 11:28	02/03/09 11:23	7440-41-7	
Manganese, Dissolved	**0.050**	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 11:23	7439-96-5	
Sodium, Dissolved	**43.8**	mg/L	1.0	0.50	1	01/30/09 11:28	02/03/09 11:23	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 11:23	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**4.1**	mg/L	0.10	0.064	1		02/03/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**6.3**	Std. Units	1.0	1.0	1		01/29/09 20:46		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**332**	umhos/cm	1.0	1.0	1		02/05/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**0.71**	mg/L	0.12	0.078	25		02/09/09 19:24	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**0.71**	mg/L	0.0050	0.0031	1		02/10/09 23:35	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

Sample: MW-39S **Lab ID: 304557012** Collected: 01/28/09 13:15 Received: 01/29/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.014**	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 11:35	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	01/30/09 11:28	02/03/09 11:35	7440-41-7	
Manganese, Dissolved	**0.083**	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 11:35	7439-96-5	
Sodium, Dissolved	**585**	mg/L	1.0	0.50	1	01/30/09 11:28	02/03/09 11:35	7440-23-5	
Vanadium, Dissolved	**0.0051**	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 11:35	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**162**	mg/L	1.0	0.64	1		02/03/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.9**	Std. Units	1.0	1.0	1		01/29/09 20:46		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**3300**	umhos/cm	1.0	1.0	1		02/05/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**4.0**	mg/L	0.25	0.16	50		02/09/09 19:24	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**4.0**	mg/L	0.0050	0.0031	1		02/10/09 23:35	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

Sample: MW-56 **Lab ID: 304557013** Collected: 01/28/09 14:45 Received: 01/29/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.0053**	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 11:38	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	01/30/09 11:28	02/03/09 11:38	7440-41-7	
Manganese, Dissolved	**0.15**	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 11:38	7439-96-5	
Sodium, Dissolved	**75.5**	mg/L	1.0	0.50	1	01/30/09 11:28	02/03/09 11:38	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	01/30/09 11:28	02/03/09 11:38	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**20.4**	mg/L	0.10	0.064	1		02/03/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.4**	Std. Units	1.0	1.0	1		01/29/09 20:46		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**629**	umhos/cm	1.0	1.0	1		02/05/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0050	0.0031	1		02/09/09 19:24	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

Sample: MW-44S **Lab ID: 304557014** Collected: 01/28/09 10:45 Received: 01/29/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3510								
PCB-1016 (Aroclor 1016)	ND	mg/L	0.00053	0.000090	1	01/30/09 15:18	02/02/09 19:51	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	mg/L	0.00053	0.000082	1	01/30/09 15:18	02/02/09 19:51	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	mg/L	0.00053	0.000078	1	01/30/09 15:18	02/02/09 19:51	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	mg/L	0.00053	0.000088	1	01/30/09 15:18	02/02/09 19:51	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	mg/L	0.00053	0.000058	1	01/30/09 15:18	02/02/09 19:51	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	mg/L	0.00053	0.000035	1	01/30/09 15:18	02/02/09 19:51	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	mg/L	0.00053	0.000044	1	01/30/09 15:18	02/02/09 19:51	11096-82-5	
Tetrachloro-m-xylene (S)	93	%	30-150		1	01/30/09 15:18	02/02/09 19:51	877-09-8	
Decachlorobiphenyl (S)	94	%	30-150		1	01/30/09 15:18	02/02/09 19:51	2051-24-3	

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ANALYTICAL RESULTS

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

Sample: MW-44D **Lab ID: 304557015** Collected: 01/28/09 10:50 Received: 01/29/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3510								
PCB-1016 (Aroclor 1016)	ND	mg/L	0.00052	0.000087	1	01/30/09 15:18	02/02/09 20:13	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	mg/L	0.00052	0.000079	1	01/30/09 15:18	02/02/09 20:13	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	mg/L	0.00052	0.000075	1	01/30/09 15:18	02/02/09 20:13	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	mg/L	0.00052	0.000085	1	01/30/09 15:18	02/02/09 20:13	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	mg/L	0.00052	0.000056	1	01/30/09 15:18	02/02/09 20:13	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	mg/L	0.00052	0.000034	1	01/30/09 15:18	02/02/09 20:13	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	mg/L	0.00052	0.000042	1	01/30/09 15:18	02/02/09 20:13	11096-82-5	
Tetrachloro-m-xylene (S)	87	%	30-150		1	01/30/09 15:18	02/02/09 20:13	877-09-8	
Decachlorobiphenyl (S)	84	%	30-150		1	01/30/09 15:18	02/02/09 20:13	2051-24-3	

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QUALITY CONTROL DATA

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

QC Batch: OEXT/1404 Analysis Method: EPA 8082
QC Batch Method: EPA 3510 Analysis Description: 8082 GCS PCB
Associated Lab Samples: 304557005, 304557014, 304557015

METHOD BLANK: 23655 Matrix: Water
Associated Lab Samples: 304557005, 304557014, 304557015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	mg/L	ND	0.00050	02/03/09 01:48	
PCB-1221 (Aroclor 1221)	mg/L	ND	0.00050	02/03/09 01:48	
PCB-1232 (Aroclor 1232)	mg/L	ND	0.00050	02/03/09 01:48	
PCB-1242 (Aroclor 1242)	mg/L	ND	0.00050	02/03/09 01:48	
PCB-1248 (Aroclor 1248)	mg/L	ND	0.00050	02/03/09 01:48	
PCB-1254 (Aroclor 1254)	mg/L	ND	0.00050	02/03/09 01:48	
PCB-1260 (Aroclor 1260)	mg/L	ND	0.00050	02/03/09 01:48	
Decachlorobiphenyl (S)	%	98	30-150	02/03/09 01:48	
Tetrachloro-m-xylene (S)	%	88	30-150	02/03/09 01:48	

LABORATORY CONTROL SAMPLE & LCSD: 23656 23657

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
PCB-1016 (Aroclor 1016)	mg/L	.0025	0.0022	0.0020	87	80	55-145	8	25	
PCB-1221 (Aroclor 1221)	mg/L		ND	ND					25	
PCB-1232 (Aroclor 1232)	mg/L		ND	ND					25	
PCB-1242 (Aroclor 1242)	mg/L		ND	ND					25	
PCB-1248 (Aroclor 1248)	mg/L		ND	ND					25	
PCB-1254 (Aroclor 1254)	mg/L		ND	ND					25	
PCB-1260 (Aroclor 1260)	mg/L	.0025	0.0027	0.0027	108	106	55-145	1	25	
Decachlorobiphenyl (S)	%				96	92	30-150			
Tetrachloro-m-xylene (S)	%				92	88	30-150			

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QUALITY CONTROL DATA

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

QC Batch: MPRP/1435 Analysis Method: EPA 6010
QC Batch Method: EPA 3005 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 304557001, 304557002, 304557003, 304557004, 304557005, 304557006, 304557007, 304557008, 304557009, 304557010, 304557011, 304557012, 304557013

METHOD BLANK: 23617 Matrix: Water
Associated Lab Samples: 304557001, 304557002, 304557003, 304557004, 304557005, 304557006, 304557007, 304557008, 304557009, 304557010, 304557011, 304557012, 304557013

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	mg/L	ND	0.0050	02/03/09 09:52	
Beryllium, Dissolved	mg/L	ND	0.0010	02/03/09 09:52	
Manganese, Dissolved	mg/L	ND	0.0050	02/03/09 09:52	
Sodium, Dissolved	mg/L	ND	1.0	02/03/09 09:52	
Vanadium, Dissolved	mg/L	ND	0.0050	02/03/09 09:52	

LABORATORY CONTROL SAMPLE: 23618

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	mg/L	.5	0.51	102	80-120	
Beryllium, Dissolved	mg/L	.5	0.51	103	80-120	
Manganese, Dissolved	mg/L	.5	0.51	102	80-120	
Sodium, Dissolved	mg/L	5	4.8	95	80-120	
Vanadium, Dissolved	mg/L	.5	0.50	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 23620 23621

Parameter	Units	304557001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	mg/L	0.043	.5	.5	0.56	0.56	103	104	75-125	1	20	
Beryllium, Dissolved	mg/L	ND	.5	.5	0.51	0.51	102	103	75-125	.9	20	
Manganese, Dissolved	mg/L	0.39	.5	.5	0.90	0.91	102	103	75-125	.6	20	
Sodium, Dissolved	mg/L	174	5	5	179	181	96	128	75-125	.9	20	M0
Vanadium, Dissolved	mg/L	0.022	.5	.5	0.52	0.53	100	101	75-125	.6	20	

MATRIX SPIKE SAMPLE: 23623

Parameter	Units	304557011 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	mg/L	ND	.5	0.51	101	75-125	
Beryllium, Dissolved	mg/L	ND	.5	0.51	102	75-125	
Manganese, Dissolved	mg/L	0.050	.5	0.56	102	75-125	
Sodium, Dissolved	mg/L	43.8	5	49.5	113	75-125	
Vanadium, Dissolved	mg/L	ND	.5	0.50	100	75-125	

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QUALITY CONTROL DATA

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

SAMPLE DUPLICATE: 23619

Parameter	Units	304557001 Result	Dup Result	RPD	Max RPD	Qualifiers
Arsenic, Dissolved	mg/L	0.043	0.041	4	20	
Beryllium, Dissolved	mg/L	ND	ND		20	
Manganese, Dissolved	mg/L	0.39	0.39	.7	20	
Sodium, Dissolved	mg/L	174	175	.5	20	
Vanadium, Dissolved	mg/L	0.022	0.022	.7	20	

SAMPLE DUPLICATE: 23622

Parameter	Units	304557011 Result	Dup Result	RPD	Max RPD	Qualifiers
Arsenic, Dissolved	mg/L	ND	.0029J		20	
Beryllium, Dissolved	mg/L	ND	ND		20	
Manganese, Dissolved	mg/L	0.050	0.049	1	20	
Sodium, Dissolved	mg/L	43.8	43.6	.5	20	
Vanadium, Dissolved	mg/L	ND	.0034J		20	

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QUALITY CONTROL DATA

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

QC Batch: MSV/1587 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV
Associated Lab Samples: 304557001, 304557002, 304557003, 304557004

METHOD BLANK: 23821 Matrix: Water
Associated Lab Samples: 304557001, 304557002, 304557003, 304557004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Tetrachloroethene	mg/L	ND	0.0050	02/02/09 22:32	
1,2-Dichloroethane-d4 (S)	%	99	70-130	02/02/09 22:32	
4-Bromofluorobenzene (S)	%	99	70-130	02/02/09 22:32	
Toluene-d8 (S)	%	95	70-130	02/02/09 22:32	

LABORATORY CONTROL SAMPLE: 23822

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Tetrachloroethene	mg/L	.02	0.023	115	70-130	
1,2-Dichloroethane-d4 (S)	%			101	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	
Toluene-d8 (S)	%			98	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 23823 23824

Parameter	Units	304278001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Tetrachloroethene	mg/L	ND	.02	.02	0.021	0.020	103	100	70-130	3	30	
1,2-Dichloroethane-d4 (S)	%						103	98	70-130			
4-Bromofluorobenzene (S)	%						101	100	70-130			
Toluene-d8 (S)	%						99	99	70-130			

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(724)850-5600

QUALITY CONTROL DATA

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

QC Batch: WET/1637 | Analysis Method: SM 4500F/C
QC Batch Method: SM 4500F/C | Analysis Description: SM4500FC Fluoride Water
Associated Lab Samples: 304557001, 304557002, 304557003, 304557004, 304557005, 304557006, 304557007, 304557008, 304557009, 304557010, 304557011, 304557012, 304557013

METHOD BLANK: 24175 | Matrix: Water
Associated Lab Samples: 304557001, 304557002, 304557003, 304557004, 304557005, 304557006, 304557007, 304557008, 304557009, 304557010, 304557011, 304557012, 304557013

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	02/03/09 00:00	

LABORATORY CONTROL SAMPLE: 24176

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2	2.0	102	85-115	

MATRIX SPIKE SAMPLE: 24177

Parameter	Units	304557007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	0.15	4	4.6	111	85-115	

SAMPLE DUPLICATE: 24178

Parameter	Units	304557013 Result	Dup Result	RPD	Max RPD	Qualifiers
Fluoride	mg/L	20.4	20.7	1	20	

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QUALITY CONTROL DATA

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

QC Batch: WET/1619 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 304557001, 304557002, 304557003, 304557004, 304557005, 304557006, 304557007, 304557008, 304557009, 304557010, 304557011, 304557012, 304557013

SAMPLE DUPLICATE: 23525

Parameter	Units	304522001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	4.8	4.8	.4	10	H6

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QUALITY CONTROL DATA

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

QC Batch: WET/1671 Analysis Method: EPA 9050
QC Batch Method: EPA 9050 Analysis Description: 9050 Specific Conductance
Associated Lab Samples: 304557001, 304557002, 304557003, 304557004, 304557005, 304557006, 304557007, 304557008, 304557009, 304557010, 304557011, 304557012, 304557013

METHOD BLANK: 25153 Matrix: Water
Associated Lab Samples: 304557001, 304557002, 304557003, 304557004, 304557005, 304557006, 304557007, 304557008, 304557009, 304557010, 304557011, 304557012, 304557013

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Specific Conductance	umhos/cm	ND	1.0	02/05/09 00:00	

LABORATORY CONTROL SAMPLE: 25154

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Specific Conductance	umhos/cm	1410	1360	96	85-115	

SAMPLE DUPLICATE: 25156

Parameter	Units	304715001 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	1810	1820	.2	20	

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QUALITY CONTROL DATA

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

QC Batch: WETA/1427 | Analysis Method: SM 4500-CN-E
QC Batch Method: SM 4500-CN-E | Analysis Description: 4500CNE Cyanide, Total
Associated Lab Samples: 304557001, 304557002, 304557003, 304557004, 304557005, 304557006, 304557007, 304557008, 304557009, 304557010, 304557011, 304557012, 304557013

METHOD BLANK: 26438 | Matrix: Water
Associated Lab Samples: 304557001, 304557002, 304557003, 304557004, 304557005, 304557006, 304557007, 304557008, 304557009, 304557010, 304557011, 304557012, 304557013

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide	mg/L	ND	0.0050	02/09/09 15:34	

LABORATORY CONTROL SAMPLE: 26439

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	.2	0.20	102	90-110	

MATRIX SPIKE SAMPLE: 26441

Parameter	Units	304557013 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	ND	.1	ND	0	90-110	M3

SAMPLE DUPLICATE: 26440

Parameter	Units	304557012 Result	Dup Result	RPD	Max RPD	Qualifiers
Cyanide	mg/L	4.0	4.2	4	20	

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QUALITY CONTROL DATA

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

QC Batch: WETA/1435 Analysis Method: SM 4500-CN-G
QC Batch Method: SM 4500-CN-G Analysis Description: 4500CNG Cyanide, Amenable
Associated Lab Samples: 304557001, 304557002, 304557003, 304557004, 304557006, 304557008, 304557009, 304557010, 304557011, 304557012

METHOD BLANK: 26766 Matrix: Water
Associated Lab Samples: 304557001, 304557002, 304557003, 304557004, 304557006, 304557008, 304557009, 304557010, 304557011, 304557012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Amenable Cyanide	mg/L	ND	0.0050	02/10/09 23:35	

SAMPLE DUPLICATE: 26769

Parameter	Units	304557012 Result	Dup Result	RPD	Max RPD	Qualifiers
Amenable Cyanide	mg/L	4.0	4.0	.2	20	

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QUALIFIERS

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

U - Indicates the compound was analyzed for, but not detected.

LABORATORIES

PASI-PA	Pace Analytical Services - Greensburg

BATCH QUALIFIERS

Batch: OEXT/1404

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

H6	Analysis initiated more than 15 minutes after sample collection.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M3	Matrix spike recovery was outside laboratory control limits due to matrix interferences.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
304557005	**MW-12**	EPA 3510	OEXT/1404	EPA 8082	GCSV/1179
304557014	**MW-44S**	EPA 3510	OEXT/1404	EPA 8082	GCSV/1179
304557015	**MW-44D**	EPA 3510	OEXT/1404	EPA 8082	GCSV/1179
304557001	**MW-2**	EPA 3005	MPRP/1435	EPA 6010	ICP/1375
304557002	**MW-5**	EPA 3005	MPRP/1435	EPA 6010	ICP/1375
304557003	**MW-18**	EPA 3005	MPRP/1435	EPA 6010	ICP/1375
304557004	**MW-31**	EPA 3005	MPRP/1435	EPA 6010	ICP/1375
304557005	**MW-12**	EPA 3005	MPRP/1435	EPA 6010	ICP/1375
304557006	**MW-16**	EPA 3005	MPRP/1435	EPA 6010	ICP/1375
304557007	**MW-28**	EPA 3005	MPRP/1435	EPA 6010	ICP/1375
304557008	**MW-32**	EPA 3005	MPRP/1435	EPA 6010	ICP/1375
304557009	**MW-35**	EPA 3005	MPRP/1435	EPA 6010	ICP/1375
304557010	**MW-36**	EPA 3005	MPRP/1435	EPA 6010	ICP/1375
304557011	**MW-37**	EPA 3005	MPRP/1435	EPA 6010	ICP/1375
304557012	**MW-39S**	EPA 3005	MPRP/1435	EPA 6010	ICP/1375
304557013	**MW-56**	EPA 3005	MPRP/1435	EPA 6010	ICP/1375
304557001	**MW-2**	EPA 8260	MSV/1587		
304557002	**MW-5**	EPA 8260	MSV/1587		
304557003	**MW-18**	EPA 8260	MSV/1587		
304557004	**MW-31**	EPA 8260	MSV/1587		
304557001	**MW-2**	SM 4500F/C	WET/1637		
304557002	**MW-5**	SM 4500F/C	WET/1637		
304557003	**MW-18**	SM 4500F/C	WET/1637		
304557004	**MW-31**	SM 4500F/C	WET/1637		
304557005	**MW-12**	SM 4500F/C	WET/1637		
304557006	**MW-16**	SM 4500F/C	WET/1637		
304557007	**MW-28**	SM 4500F/C	WET/1637		
304557008	**MW-32**	SM 4500F/C	WET/1637		
304557009	**MW-35**	SM 4500F/C	WET/1637		
304557010	**MW-36**	SM 4500F/C	WET/1637		
304557011	**MW-37**	SM 4500F/C	WET/1637		
304557012	**MW-39S**	SM 4500F/C	WET/1637		
304557013	**MW-56**	SM 4500F/C	WET/1637		
304557001	**MW-2**	SM 4500-H+B	WET/1619		
304557002	**MW-5**	SM 4500-H+B	WET/1619		
304557003	**MW-18**	SM 4500-H+B	WET/1619		
304557004	**MW-31**	SM 4500-H+B	WET/1619		
304557005	**MW-12**	SM 4500-H+B	WET/1619		
304557006	**MW-16**	SM 4500-H+B	WET/1619		
304557007	**MW-28**	SM 4500-H+B	WET/1619		
304557008	**MW-32**	SM 4500-H+B	WET/1619		
304557009	**MW-35**	SM 4500-H+B	WET/1619		
304557010	**MW-36**	SM 4500-H+B	WET/1619		
304557011	**MW-37**	SM 4500-H+B	WET/1619		
304557012	**MW-39S**	SM 4500-H+B	WET/1619		
304557013	**MW-56**	SM 4500-H+B	WET/1619		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Ormet 09 Sampling HM00326
Pace Project No.: 304557

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
304557001	**MW-2**	EPA 9050	WET/1671		
304557002	**MW-5**	EPA 9050	WET/1671		
304557003	**MW-18**	EPA 9050	WET/1671		
304557004	**MW-31**	EPA 9050	WET/1671		
304557005	**MW-12**	EPA 9050	WET/1671		
304557006	**MW-16**	EPA 9050	WET/1671		
304557007	**MW-28**	EPA 9050	WET/1671		
304557008	**MW-32**	EPA 9050	WET/1671		
304557009	**MW-35**	EPA 9050	WET/1671		
304557010	**MW-36**	EPA 9050	WET/1671		
304557011	**MW-37**	EPA 9050	WET/1671		
304557012	**MW-39S**	EPA 9050	WET/1671		
304557013	**MW-56**	EPA 9050	WET/1671		
304557001	**MW-2**	SM 4500-CN-E	WETA/1427		
304557002	**MW-5**	SM 4500-CN-E	WETA/1427		
304557003	**MW-18**	SM 4500-CN-E	WETA/1427		
304557004	**MW-31**	SM 4500-CN-E	WETA/1427		
304557005	**MW-12**	SM 4500-CN-E	WETA/1427		
304557006	**MW-16**	SM 4500-CN-E	WETA/1427		
304557007	**MW-28**	SM 4500-CN-E	WETA/1427		
304557008	**MW-32**	SM 4500-CN-E	WETA/1427		
304557009	**MW-35**	SM 4500-CN-E	WETA/1427		
304557010	**MW-36**	SM 4500-CN-E	WETA/1427		
304557011	**MW-37**	SM 4500-CN-E	WETA/1427		
304557012	**MW-39S**	SM 4500-CN-E	WETA/1427		
304557013	**MW-56**	SM 4500-CN-E	WETA/1427		
304557001	**MW-2**	SM 4500-CN-G	WETA/1435		
304557002	**MW-5**	SM 4500-CN-G	WETA/1435		
304557003	**MW-18**	SM 4500-CN-G	WETA/1435		
304557004	**MW-31**	SM 4500-CN-G	WETA/1435		
304557006	**MW-16**	SM 4500-CN-G	WETA/1435		
304557008	**MW-32**	SM 4500-CN-G	WETA/1435		
304557009	**MW-35**	SM 4500-CN-G	WETA/1435		
304557010	**MW-36**	SM 4500-CN-G	WETA/1435		
304557011	**MW-37**	SM 4500-CN-G	WETA/1435		
304557012	**MW-39S**	SM 4500-CN-G	WETA/1435		

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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

1298935

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: HYDROSYSTEMS MGMT, INC.	Report To: BOB FARGO	Attention: BOB FARGO
Address: P.O. BOX 789 WASHINGTON, PA 15301	Copy To:	Company Name: SAME
		Address:
Email To: rfargo@hmiconsulting.com	Purchase Order No.:	Pace Quote Reference:
Phone: 724-228-4310 Fax:	Project Name: ORMET-CERCLA	Pace Project Manager: AMY WELLS
Requested Due Date/TAT: STD.	Project Number: HM00326	Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☒ OTHER CERCLA

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)	TOTAL/AMEN. CN	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 3013531
1	MW-A	WT	G			7-30	1030		2					2					X		001
2	MW-B	↓	↓				1040		↓					↓					X		002
3	MW-C	↓	↓				1115		↓					↓					X		003
4	MW-D	↓	↓				1125		↓					↓					X		004
5	MW-E	↓	↓				1145		↓					↓					X		005
6	MW-F	↓	↓				1130		↓					↓					X		006
7	MW-G	↓	↓				1245		↓					↓					X		007
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)
	R F Fargo	7-31-09		C Urbowitz Pace	7-31-09	1128	7.1	Y	N	Y

ORIGINAL

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.

F-ALL-Q-020rev.07, 15-May-2007

Sample Condition Upon Receipt

Pace Analytical

Client Name: HMI Project # 3013531

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☒ Client ☐ Commercial ☐ Pace Other _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Optional:
Proj. Due Date:
Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other _____

Thermometer Used 3 4 Type of Ice: Wet Blue None ☒ Samples on ice, cooling process has begun

Cooler Temperature 7.1 Biological Tissue is Frozen: Yes No

Date and initials of person examining contents: CAW 7.31

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☐Yes ☒No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☒No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☒No ☐N/A	7.
Sufficient Volume:	☒Yes ☐No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No ☐N/A	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
Containers Intact:	☒Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☒No ☐N/A	11.
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: WT		
All containers needing preservation have been checked.	☒Yes ☐No ☒N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☒Yes ☐No ☐N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☒No	Initial when completed CAW / Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☒N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☒No ☐N/A	15.
Trip Blank Present:	☐Yes ☒No ☐N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☐N/A	
Pace Trip Blank Lot # (if purchased): _____		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [signature] **Date:** 7/31/09

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

F-ALLC003-3, 11September2006

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

August 07, 2009

Mr. Robert L. Fargo
Hydro Systems Managment, Inc.
PO Box 789
Washington, PA 15301

RE: Project: Ormet-Cercla
Pace Project No.: 3013531

Dear Mr. Fargo:
Enclosed are the analytical results for sample(s) received by the laboratory on July 31, 2009. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Amy Wells

amy.wells@pacelabs.com
Project Manager

Enclosures

cc: Mr. John Reggi, Ormet Primary Aluminum Corporation

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Greensburg, PA 15601
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CERTIFICATIONS

Project:	Ormet-Cercla
Pace Project No.:	3013531

Pennsylvania Certification IDs

Wyoming Certification #: 8TMS-Q
Wisconsin/PADEP Certification
West Virginia Certification #: 143
Washington Certification #: C1941
Virginia Certification #: 00112
Virgin Island/PADEP Certification
Utah/NELAC Certification #: ANTE
Texas/NELAC Certification #: T104704188-09 TX
Tennessee Certification #: TN2867
South Dakota Certification
Puerto Rico Certification #: PA01457
Pennsylvania/NELAC Certification #: 65-282
Oregon/NELAC Certification #: PA200002
North Carolina Certification #: 42706
New York/NELAC Certification #: 10888
New Mexico Certification
New Jersey/NELAC Certification #: PA 051
New Hampshire/NELAC Certification #: 2976
Nevada Certification
Montana Certification #: Cert 0082
Missouri Certification #: 235
Minnesota Certification #: 042-999-425
Michigan/PADEP Certification
Massachusetts Certification #: M-PA1457
Maryland Certification #: 308
Maine Certification #: PA0091
Louisiana/NELAC Certification #: LA080002
Louisiana/NELAC Certification #: 4086
Kentucky Certification #: 90133
Kansas/NELAC Certification #: E-10358
Iowa Certification #: 391
Indiana/PADEP Certification
Illinois/PADEP Certification
Idaho Certification
Hawaii/PADEP Certification
Guam/PADEP Certification
Georgia Certification #: 968
Florida/NELAC Certification #: E87683
Delaware Certification
Connecticut Certification #: PH 0694
Colorado Certification
California/NELAC Certification #: 04222CA
Arkansas Certification
Arizona Certification #: AZ0734
Alabama Certification #: 41590

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Greensburg, PA 15601
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SAMPLE SUMMARY

Project: Ormet-Cercla
Pace Project No.: 3013531

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3013531001	**MW-A**	Water	07/30/09 10:30	07/31/09 11:28
3013531002	**MW-B**	Water	07/30/09 10:40	07/31/09 11:28
3013531003	**MW-C**	Water	07/30/09 11:15	07/31/09 11:28
3013531004	**MW-D**	Water	07/30/09 11:25	07/31/09 11:28
3013531005	**MW-E**	Water	07/30/09 11:45	07/31/09 11:28
3013531006	**MW-F**	Water	07/30/09 11:30	07/31/09 11:28
3013531007	**MW-G**	Water	07/30/09 12:45	07/31/09 11:28

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SAMPLE ANALYTE COUNT

Project: Ormet-Cercla
Pace Project No.: 3013531

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3013531001	**MW-A**	SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3013531002	**MW-B**	SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3013531003	**MW-C**	SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3013531004	**MW-D**	SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3013531005	**MW-E**	SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3013531006	**MW-F**	SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3013531007	**MW-G**	SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA

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PROJECT NARRATIVE

Project: Ormet-Cercla
Pace Project No.: 3013531

Method: **SM 4500-CN-E**
Description: 4500CNE Cyanide, Total
Client: Ormet Primary Aluminum Corporation
Date: August 07, 2009

General Information:
7 samples were analyzed for SM 4500-CN-E. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormet-Cercla
Pace Project No.: 3013531

Method: **SM 4500-CN-G**
Description: 4500CNG Cyanide, Amenable
Client: Ormet Primary Aluminum Corporation
Date: August 07, 2009

General Information:
7 samples were analyzed for SM 4500-CN-G. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3013531

Sample: MW-A **Lab ID: 3013531001** Collected: 07/30/09 10:30 Received: 07/31/09 11:28 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0050	0.0035	1		08/05/09 15:32	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	ND	mg/L	0.0050	0.0031	1		08/06/09 14:34	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3013531

Sample: MW-B **Lab ID: 3013531002** Collected: 07/30/09 10:40 Received: 07/31/09 11:28 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0050	0.0035	1		08/05/09 15:32	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	ND	mg/L	0.0050	0.0031	1		08/06/09 14:34	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3013531

Sample: MW-C **Lab ID: 3013531003** Collected: 07/30/09 11:15 Received: 07/31/09 11:28 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**0.025**	mg/L	0.0050	0.0035	1		08/05/09 15:32	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	ND	mg/L	0.0050	0.0031	1		08/06/09 14:34	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3013531

Sample: MW-D **Lab ID: 3013531004** Collected: 07/30/09 11:25 Received: 07/31/09 11:28 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**0.026**	mg/L	0.0050	0.0035	1		08/05/09 15:32	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	ND	mg/L	0.0050	0.0031	1		08/06/09 14:34	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3013531

Sample: MW-E **Lab ID: 3013531005** Collected: 07/30/09 11:45 Received: 07/31/09 11:28 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**3.1**	mg/L	0.12	0.088	25		08/05/09 15:32	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	ND	mg/L	0.0050	0.0031	1		08/06/09 14:34	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3013531

Sample: MW-F **Lab ID: 3013531006** Collected: 07/30/09 11:30 Received: 07/31/09 11:28 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**4.7**	mg/L	0.12	0.088	25		08/05/09 15:32	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	ND	mg/L	0.0050	0.0031	1		08/06/09 14:34	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3013531

Sample: MW-G **Lab ID: 3013531007** Collected: 07/30/09 12:45 Received: 07/31/09 11:28 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**7.4**	mg/L	2.5	1.8	500		08/05/09 15:32	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	ND	mg/L	0.0050	0.0031	1		08/06/09 14:34	57-12-5	

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QUALITY CONTROL DATA

Project: Ormet-Cercla
Pace Project No.: 3013531

QC Batch: WETA/2454 | Analysis Method: SM 4500-CN-E
QC Batch Method: SM 4500-CN-E | Analysis Description: 4500CNE Cyanide, Total
Associated Lab Samples: 3013531001, 3013531002, 3013531003, 3013531004, 3013531005, 3013531006, 3013531007

METHOD BLANK: 81693 | Matrix: Water
Associated Lab Samples: 3013531001, 3013531002, 3013531003, 3013531004, 3013531005, 3013531006, 3013531007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide	mg/L	ND	0.0050	08/05/09 15:32	

LABORATORY CONTROL SAMPLE: 81694

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	.2	0.22	109	90-110	

MATRIX SPIKE SAMPLE: 81695

Parameter	Units	3013158005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	ND	.1	0.099	98	90-110	

SAMPLE DUPLICATE: 81696

Parameter	Units	3013158005 Result	Dup Result	RPD	Max RPD	Qualifiers
Cyanide	mg/L	ND	ND		20	

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QUALITY CONTROL DATA

Project: Ormet-Cercla
Pace Project No.: 3013531

QC Batch: WETA/2468 Analysis Method: SM 4500-CN-G
QC Batch Method: SM 4500-CN-G Analysis Description: 4500CNG Cyanide, Amenable
Associated Lab Samples: 3013531001, 3013531002, 3013531003, 3013531004, 3013531005, 3013531006, 3013531007

METHOD BLANK: 82181 Matrix: Water
Associated Lab Samples: 3013531001, 3013531002, 3013531003, 3013531004, 3013531005, 3013531006, 3013531007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Amenable Cyanide	mg/L	ND	0.0050	08/06/09 14:34	

SAMPLE DUPLICATE: 82182

Parameter	Units	3013531003 Result	Dup Result	RPD	Max RPD	Qualifiers
Amenable Cyanide	mg/L	ND	ND		20	

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QUALIFIERS

Project: Ormet-Cercla
Pace Project No.: 3013531

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

U - Indicates the compound was analyzed for, but not detected.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Ormet-Cercla
Pace Project No.: 3013531

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
3013531001	**MW-A**	SM 4500-CN-E	WETA/2454		
3013531002	**MW-B**	SM 4500-CN-E	WETA/2454		
3013531003	**MW-C**	SM 4500-CN-E	WETA/2454		
3013531004	**MW-D**	SM 4500-CN-E	WETA/2454		
3013531005	**MW-E**	SM 4500-CN-E	WETA/2454		
3013531006	**MW-F**	SM 4500-CN-E	WETA/2454		
3013531007	**MW-G**	SM 4500-CN-E	WETA/2454		
3013531001	**MW-A**	SM 4500-CN-G	WETA/2468		
3013531002	**MW-B**	SM 4500-CN-G	WETA/2468		
3013531003	**MW-C**	SM 4500-CN-G	WETA/2468		
3013531004	**MW-D**	SM 4500-CN-G	WETA/2468		
3013531005	**MW-E**	SM 4500-CN-G	WETA/2468		
3013531006	**MW-F**	SM 4500-CN-G	WETA/2468		
3013531007	**MW-G**	SM 4500-CN-G	WETA/2468		

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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 |

1298294

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: 724-228-4343
Requested Due Date/TAT: STD.

Section B Required Project Information:

Report To: Bob Fargo
Copy To: N/A
Purchase Order No.: HM003326
Project Name: ORMET CERCLA
Project Number: HM003326

Section C Invoice Information:

Attention: Bob Fargo
Company Name: Hydrosystems Mgmt. Inc.
Address: P.O. Box 789 Washington, PA 15301
Pace Quote Reference:
Pace Project Manager: Rachael Christner
Pace Profile #:

REGULATORY AGENCY: ☐ NPDES ☒ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: Ohio

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	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N) Gen. Chem.	Metals	Total/Amen. CN	VOCs	PCBs	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-7	WT	G	5/19	1400				3	X		X		X				1	1	1				001
2	MW-5	↓	↓	↓	1430				6	X		X	X	X				1	1	1	3			002
3	MW-11	↓	↓	↓	1445				3	X		X		X				1	1	1				003
4	MW-8	↓	↓	↓	1510				3	X		X		X				1	1	1				004
5	MW-10	↓	↓	↓	1535				3	X		X		X				1	1	1				005
6	MW-44D	↓	↓	↓	1600				1	X												1		006
7	MW-44S	↓	↓	↓	1615				1	X												1		007
8	MW-2	↓	↓	↓	1650				6	X		X	X	X				1	1	1	3			008
9	MW-40D	↓	↓	↓	1715				3	X		X		X				1	1	1				009
10	MW-40S	↓	↓	↓	1730				3	X		X		X				1	1	1				010
11																								
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Erik Fargo HMI	5/20	10:00	Justin [illegible]	5/20/09	1000	4.6	Y	Y	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: R.L. FARGO
SIGNATURE of SAMPLER: R.L. Fargo
DATE Signed (MM/DD/YY): 5/19/09

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.

Sample Condition Upon Receipt

Pace Analytical

Client Name: Hydrosystems Mgmt Project # 3010170

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☑ Client ☐ Commercial ☐ Pace Other _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no

Optional
Proj. Due Date:
Proj. Name:

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other _____

Thermometer Used 3 4 Type of Ice: Wet Blue None ☑ Samples on ice, cooling process has begun

Cooler Temperature 4.6 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: CAW 5-20

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☐No ☐N/A	6. Not written on COC.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☑No ☐N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: WT		
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☑Yes ☐No	Initial when completed CAW / Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☑No ☐N/A	15.
Trip Blank Present:	☐Yes ☑No ☐N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☐N/A	
Pace Trip Blank Lot # (if purchased): _____		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Amy Wells **Date:** 5/20/09

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

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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

1298296

Section A Required Client Information:

Company: HYDROSYSTEMS MGMT.
Address: P.O. BOX 789
WASHINGTON, PA 15301
Email To: rango@hmiconsulting.com
Phone: 724-228-9310 Fax:
Requested Due Date/TAT: STD.

Section B Required Project Information:

Report To: BOB FARGO
Copy To:
Purchase Order No.:
Project Name: ORMET CERCLA
Project Number: HM00326

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	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N) GEN. CHEM.	TOT. AMEN. CN	METALS	VOCs	PCBs	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 3010288
1	MW-1	WT	G			5/20	950		3	1		1		1				X	X	X				001
2	MW-29D						1015		3	1		1		1				X	X	X				002
3	MW-29S						1030		3	1		1		1				X	X	X				003
4	MW-16						1050		3	1		1		1				X	X	X				004
5	MW-46						1100		3	1		1		1				X	X	X				005
6	MW-30						1130		6	1		1	3	1				X	X	X	X			006
7	MW-28						1410		3	1		1		1				X	X	X				007
8	MW-18						1430		6	1		1	3	1				X	X	X	X			008
9	MW-31						1500		6	1		1	3	1				X	X	X	X			009
10	MW-51						1515		6	1		1	3	1				X	X	X	X			010
11	MW-35						1530		3	1		1		1				X	X	X				011
12	MW-37						1600		3	1		1		1				X	X	X				012

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Bob Fargo HMI	5/21	10:20	[signature]	5/21/08	1020	4.1	Y	Y	Y

ORIGINAL

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: 2 of 2

1298295

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: HYDROSYSTEMS MGMT.	Report To: BOB FARGO	Attention:
Address: P.O. BOX 789	Copy To:	Company Name: SAME
WASHINGTON, PA 15301		Address:
Email To: rfargo@hmiconsulting.com	Purchase Order No.:	Pace Quote Reference:
Phone: 724-228-4310 Fax:	Project Name: ORMET-CERCLA	Pace Project Manager: R. CHRISTNER
Requested Due Date/TAT: STD.	Project Number: HM00326	Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☒ 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	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N)	GEN. CHEM.	TOT. / AMEN. CN	METALS	VOCS	PCBS	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 3010288
1	MW-12	WT	G			5/20	1630		4	2		1		1					X	X	X		X		013
2	MW-52	↓	↓			↓	1640		1	1													X		014
3	MW-15	↓	↓			↓	1645		3	1		1		1					X	X	X				015
4	MW-36	↓	↓			↓	1700		3	1		1		1					X	X	X				016
5	MW-32	↓	↓			↓	1715		3	1		1		1					X	X	X				017
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)
	Erik Fargo HMI	5/21	10:20	Samantha Bayne	5/21/07	1020	4.1	Y	Y SMB 5/21/07	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: R. L. FARGO

SIGNATURE of SAMPLER: R F Fargo

DATE Signed (MM/DD/YY): 5/20/09

*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

Sample Condition Upon Receipt

Pace Analytical

Client Name: Hydrosystems Ornet Project # 3010288

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☒ Client ☐ Commercial ☐ Pace Other _____

Tracking #: _____

Optional
Proj. Due Date:
Proj. Name:

Custody Seal on Cooler/Box Present: ☒ yes ☐ no Seals intact: ☒ yes ☐ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other _____

Thermometer Used 3 (4) Type of Ice: (Wet) Blue None ☒ Samples on ice, cooling process has begun

Cooler Temperature 4.1 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: SMB 5/27/09

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☐Yes ☒No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☒Yes ☐No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☒No ☐N/A	7.
Sufficient Volume:	☒Yes ☐No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No ☐N/A	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
Containers Intact:	☒Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: Ag		
All containers needing preservation have been checked.	☒Yes ☐No ☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☒Yes ☐No ☐N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☒No	Initial when completed SMB / Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☒N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☒N/A	15.
Trip Blank Present:	☐Yes ☒No ☐N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased): _____		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Amy L Dell **Date:** 5/28/09

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

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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 1

1298297

Section A Required Client Information:

Company: HYDROSYSTEMS MGMT, INC.
Address: P.O. BOX 789
WASHINGTON, PA 15301
Email To: rfargo@hmiconsulting.com
Phone: 724-228-9310 Fax:
Requested Due Date/TAT: STD.

Section B Required Project Information:

Report To: BOB FARGO
Copy To:
Purchase Order No.:
Project Name: ORMET-CERCLA
Project Number: HM00326

Section C Invoice Information:

Attention:
Company Name: SAME
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY: NPDES [ ] GROUND WATER [X] 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)	GEN. CHEM.	TOT./AMEN. CN	METALS	VOCS	PCBS	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-14	WT	G			5/21	930		3	1		1		1					X	X	X				001
2	MW-42D	↓	↓			↓	945		3	1		1		1					X	X	X				002
3	MW-42S						1000		3	1		1		1					X	X	X				003
4	MW-39D						1015		3	1		1		1					X	X	X				004
5	MW-39S						1030		3	1		1		1					X	X	X				005
6	MW-19						1110		3	1		1		1					X	X	X				006
7	MW-17						1130		3	1		1		1					X	X	X				007
8	MW-47						1145		3	1		1		1					X	X	X				008
9	MW-34D						1150		3	1		1		1					X	X	X				009
10	MW-34S						1210		3	1		1		1					X	X	X				010
11	FB-1						1230		7	2		1	3	1					X	X	X	X	X		011
12	TRIP BLANK								2				2									X			012

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Erik Fargo HMI	5/22	9:10	Samantha Bryan	5/22/09	0910	5.8	Y	Y	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: R.L. FARGO

SIGNATURE of SAMPLER: RL Fargo

DATE Signed (MM/DD/YY): 5/21/09

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.

Sample Condition Upon Receipt

Pace Analytical

Client Name: HMI Project # 30103320

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☑ Client ☐ Commercial ☐ Pace Other _____

Tracking #: _____

Optional
Proj. Due Date:
Proj. Name:

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other _____

Thermometer Used 3 4 Type of Ice: Wet Blue None ☑ Samples on ice, cooling process has begun

Cooler Temperature 5.8 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: CAW 5-22

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☑Yes ☐No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☑No ☐N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: WT		
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☑Yes ☐No	Initial when completed CAW Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☑No ☐N/A	15.
Trip Blank Present:	☑Yes ☐No ☐N/A	16.
Trip Blank Custody Seals Present	☑Yes ☐No ☐N/A	
Pace Trip Blank Lot # (if purchased): _____		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Amy Wells **Date:** 5/22/09

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

F-ALLC003-3, 11September2006

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

June 08, 2009

Mr. Robert L. Fargo
Hydro Systems Managment, Inc.
PO Box 789
Washington, PA 15301

RE: Project: Ormet-Cercla
Pace Project No.: 3010320

Dear Mr. Fargo:
Enclosed are the analytical results for sample(s) received by the laboratory on May 22, 2009. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Rachel D Christner

Rachel Christner for
Amy Wells
amy.wells@pacelabs.com
Project Manager

Enclosures

cc: Mr. John Reggi, Ormet Primary Aluminum Corporation

REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project:	Ormet-Cercla
Pace Project No.:	3010320

Pennsylvania Certification IDs

Wyoming Certification #: 8TMS-Q
Wisconsin/PADEP Certification
West Virginia Certification #: 143
Washington Certification #: C1941
Virginia Certification #: 00112
Virgin Island/PADEP Certification
Utah/NELAC Certification #: ANTE
Texas/NELAC Certification #: T104704188-09 TX
Tennessee Certification #: TN2867
South Dakota Certification
Puerto Rico Certification #: PA01457
Pennsylvania/NELAC Certification #: 65-282
Oregon/NELAC Certification #: PA200002
North Carolina Certification #: 42706
New York/NELAC Certification #: 10888
New Mexico Certification
New Jersey/NELAC Certification #: PA 051
New Hampshire/NELAC Certification #: 2976
Nevada Certification
Montana Certification #: Cert 0082
Missouri Certification #: 235
Minnesota Certification #: 042-999-425
Michigan/PADEP Certification
Massachusetts Certification #: M-PA1457
Maryland Certification #: 308
Maine Certification #: PA0091
Louisiana/NELAC Certification #: LA080002
Louisiana/NELAC Certification #: 4086
Kentucky Certification #: 90133
Kansas/NELAC Certification #: E-10358
Iowa Certification #: 391
Indiana/PADEP Certification
Illinois/PADEP Certification
Idaho Certification
Hawaii/PADEP Certification
Guam/PADEP Certification
Georgia Certification #: 968
Florida/NELAC Certification #: E87683
Delaware Certification
Connecticut Certification #: PH 0694
Colorado Certification
California/NELAC Certification #: 04222CA
Arkansas Certification
Arizona Certification #: AZ0734
Alabama Certification #: 41590

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Greensburg, PA 15601
(724)850-5600

SAMPLE SUMMARY

Project: Ormet-Cercla
Pace Project No.: 3010320

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3010320001	**MW-14**	Water	05/21/09 09:30	05/22/09 09:10
3010320002	**MW-42D**	Water	05/21/09 09:45	05/22/09 09:10
3010320003	**MW-42S**	Water	05/21/09 10:00	05/22/09 09:10
3010320004	**MW-39D**	Water	05/21/09 10:15	05/22/09 09:10
3010320005	**MW-39S**	Water	05/21/09 10:30	05/22/09 09:10
3010320006	**MW-19**	Water	05/21/09 11:10	05/22/09 09:10
3010320007	**MW-17**	Water	05/21/09 11:30	05/22/09 09:10
3010320008	**MW-47**	Water	05/21/09 11:45	05/22/09 09:10
3010320009	**MW-34D**	Water	05/21/09 11:50	05/22/09 09:10
3010320010	**MW-34S**	Water	05/21/09 12:10	05/22/09 09:10
3010320011	**FB-1**	Water	05/21/09 12:30	05/22/09 09:10
3010320012	**Trip Blank**	Water		05/22/09 09:10

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SAMPLE ANALYTE COUNT

Project: Ormet-Cercla
Pace Project No.: 3010320

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3010320001	**MW-14**	EPA 6010	CTS	5	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
3010320002	**MW-42D**	EPA 6010	CTS	5	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
3010320003	**MW-42S**	EPA 6010	CTS	5	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
3010320004	**MW-39D**	EPA 6010	CTS	5	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
3010320005	**MW-39S**	EPA 6010	CTS	5	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
3010320006	**MW-19**	EPA 6010	CTS	5	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
3010320007	**MW-17**	EPA 6010	CTS	5	PASI-PA

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Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: Ormet-Cercla
Pace Project No.: 3010320

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
3010320008	**MW-47**	EPA 6010	CTS	5	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
3010320009	**MW-34D**	EPA 6010	CTS	5	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
3010320010	**MW-34S**	EPA 6010	CTS	5	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
3010320011	**FB-1**	EPA 6010	CTS	5	PASI-PA
		EPA 8082	SJG	9	PASI-PA
		EPA 8260	JAS	4	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
3010320012	**Trip Blank**	EPA 8260	JAS	1	PASI-PA

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Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: Ormet-Cercla
Pace Project No.: 3010320

Method: **EPA 8082**
Description: 8082 GCS PCB
Client: Ormet Primary Aluminum Corporation
Date: June 08, 2009

General Information:
1 sample was analyzed for EPA 8082. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: GCSV/1452

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormet-Cercla
Pace Project No.: 3010320

Method: **EPA 6010**
Description: 6010 MET ICP,Dissolved
Client: Ormet Primary Aluminum Corporation
Date: June 08, 2009

General Information:
11 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3005 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MPRP/2030

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 3010320005

M0: Matrix spike recovery was outside laboratory control limits.

- MS (Lab ID: 59498)
  - Sodium, Dissolved

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormet-Cercla
Pace Project No.: 3010320

Method: **EPA 8260**
Description: 8260 MSV
Client: Ormet Primary Aluminum Corporation
Date: June 08, 2009

General Information:
2 samples were analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormet-Cercla
Pace Project No.: 3010320

Method: **EPA 9050**
Description: 9050 Specific Conductance
Client: Ormet Primary Aluminum Corporation
Date: June 08, 2009

General Information:
11 samples were analyzed for EPA 9050. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormet-Cercla
Pace Project No.: 3010320

Method: **SM 4500-H+B**
Description: 4500H+ pH, Electrometric
Client: Ormet Primary Aluminum Corporation
Date: June 08, 2009

General Information:
11 samples were analyzed for SM 4500-H+B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H6: Analysis initiated more than 15 minutes after sample collection.
- FB-1 (Lab ID: 3010320011)
- MW-14 (Lab ID: 3010320001)
- MW-17 (Lab ID: 3010320007)
- MW-19 (Lab ID: 3010320006)
- MW-34D (Lab ID: 3010320009)
- MW-34S (Lab ID: 3010320010)
- MW-39D (Lab ID: 3010320004)
- MW-39S (Lab ID: 3010320005)
- MW-42D (Lab ID: 3010320002)
- MW-42S (Lab ID: 3010320003)
- MW-47 (Lab ID: 3010320008)

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormet-Cercla
Pace Project No.: 3010320

Method: **SM 4500F/C**
Description: 4500FC Fluoride
Client: Ormet Primary Aluminum Corporation
Date: June 08, 2009

General Information:
11 samples were analyzed for SM 4500F/C. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormet-Cercla
Pace Project No.: 3010320

Method: **SM 4500-CN-E**
Description: 4500CNE Cyanide, Total
Client: Ormet Primary Aluminum Corporation
Date: June 08, 2009

General Information:
11 samples were analyzed for SM 4500-CN-E. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: WETA/2056

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 3010288015

M3: Matrix spike recovery was outside laboratory control limits due to matrix interferences.

- MS (Lab ID: 58685)
  - Cyanide

QC Batch: WETA/2087

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 3010488002

M3: Matrix spike recovery was outside laboratory control limits due to matrix interferences.

- MS (Lab ID: 60572)
  - Cyanide

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: WETA/2056

- DUP (Lab ID: 58686)
  - Cyanide

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PROJECT NARRATIVE

Project: Ormet-Cercla
Pace Project No.: 3010320

Method: **SM 4500-CN-G**
Description: 4500CNG Cyanide, Amenable
Client: Ormet Primary Aluminum Corporation
Date: June 08, 2009

General Information:
11 samples were analyzed for SM 4500-CN-G. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3010320

Sample: MW-14 **Lab ID: 3010320001** Collected: 05/21/09 09:30 Received: 05/22/09 09:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	ND	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 09:45	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/28/09 13:30	06/02/09 09:45	7440-41-7	
Manganese, Dissolved	**1.2**	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 09:45	7439-96-5	
Sodium, Dissolved	**56.3**	mg/L	1.0	0.50	1	05/28/09 13:30	06/02/09 09:45	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 09:45	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**2.3**	mg/L	0.10	0.064	1		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.4**	Std. Units	1.0	1.0	1		05/22/09 20:43		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**581**	umhos/cm	1.0	1.0	1		05/28/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**5.6**	mg/L	0.12	0.078	25		05/22/09 15:07	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**0.087**	mg/L	0.0050	0.0031	1		06/03/09 14:37	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3010320

Sample: MW-42D **Lab ID: 3010320002** Collected: 05/21/09 09:45 Received: 05/22/09 09:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.0058**	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 09:48	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/28/09 13:30	06/02/09 09:48	7440-41-7	
Manganese, Dissolved	**0.84**	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 09:48	7439-96-5	
Sodium, Dissolved	**877**	mg/L	1.0	0.50	1	05/28/09 13:30	06/02/09 09:48	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 09:48	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**24.1**	mg/L	0.10	0.064	1		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.7**	Std. Units	1.0	1.0	1		05/22/09 20:43		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**2660**	umhos/cm	1.0	1.0	1		05/28/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**5.8**	mg/L	0.12	0.078	25		05/22/09 15:07	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	ND	mg/L	0.0050	0.0031	1		06/03/09 14:37	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3010320

Sample: MW-42S **Lab ID: 3010320003** Collected: 05/21/09 10:00 Received: 05/22/09 09:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.0053**	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 09:52	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/28/09 13:30	06/02/09 09:52	7440-41-7	
Manganese, Dissolved	**0.25**	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 09:52	7439-96-5	
Sodium, Dissolved	**1010**	mg/L	10.0	5.0	10	05/28/09 13:30	06/02/09 18:41	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 09:52	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**60.1**	mg/L	1.0	0.64	10		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.9**	Std. Units	1.0	1.0	1		05/22/09 20:43		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**3280**	umhos/cm	1.0	1.0	1		05/28/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**7.9**	mg/L	0.25	0.16	50		05/22/09 15:07	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**0.033**	mg/L	0.0050	0.0031	1		06/03/09 14:37	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3010320

Sample: MW-39D **Lab ID: 3010320004** Collected: 05/21/09 10:15 Received: 05/22/09 09:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	ND	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 09:55	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/28/09 13:30	06/02/09 09:55	7440-41-7	
Manganese, Dissolved	**1.1**	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 09:55	7439-96-5	
Sodium, Dissolved	**230**	mg/L	1.0	0.50	1	05/28/09 13:30	06/02/09 09:55	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 09:55	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**6.5**	mg/L	0.10	0.064	1		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.4**	Std. Units	1.0	1.0	1		05/22/09 20:43		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**1350**	umhos/cm	1.0	1.0	1		05/28/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**1.1**	mg/L	0.025	0.016	5		05/29/09 14:29	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	ND	mg/L	0.0050	0.0031	1		06/03/09 14:37	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3010320

Sample: MW-39S **Lab ID: 3010320005** Collected: 05/21/09 10:30 Received: 05/22/09 09:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.016**	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 09:58	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/28/09 13:30	06/02/09 09:58	7440-41-7	
Manganese, Dissolved	**0.12**	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 09:58	7439-96-5	
Sodium, Dissolved	**1200**	mg/L	10.0	5.0	10	05/28/09 13:30	06/02/09 18:59	7440-23-5	
Vanadium, Dissolved	**0.0094**	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 09:58	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**115**	mg/L	1.0	0.64	10		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.9**	Std. Units	1.0	1.0	1		05/22/09 20:43		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**2980**	umhos/cm	1.0	1.0	1		05/28/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**3.6**	mg/L	0.12	0.078	25		05/29/09 14:29	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**0.11**	mg/L	0.0050	0.0031	1		06/03/09 14:37	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3010320

Sample: MW-19 **Lab ID: 3010320006** Collected: 05/21/09 11:10 Received: 05/22/09 09:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	ND	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 10:11	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/28/09 13:30	06/02/09 10:11	7440-41-7	
Manganese, Dissolved	ND	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 10:11	7439-96-5	
Sodium, Dissolved	**13.4**	mg/L	1.0	0.50	1	05/28/09 13:30	06/02/09 10:11	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 10:11	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**1.4**	mg/L	0.10	0.064	1		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.1**	Std. Units	1.0	1.0	1		05/22/09 20:43		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**695**	umhos/cm	1.0	1.0	1		05/28/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0050	0.0031	1		05/29/09 14:29	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	ND	mg/L	0.0050	0.0031	1		06/03/09 14:37	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3010320

Sample: MW-17 **Lab ID: 3010320007** Collected: 05/21/09 11:30 Received: 05/22/09 09:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	ND	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 10:14	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/28/09 13:30	06/02/09 10:14	7440-41-7	
Manganese, Dissolved	**1.6**	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 10:14	7439-96-5	
Sodium, Dissolved	**93.2**	mg/L	1.0	0.50	1	05/28/09 13:30	06/02/09 10:14	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 10:14	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**6.4**	mg/L	0.10	0.064	1		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.5**	Std. Units	1.0	1.0	1		05/22/09 20:43		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**712**	umhos/cm	1.0	1.0	1		05/28/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**2.0**	mg/L	0.050	0.031	10		05/29/09 14:29	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**0.19**	mg/L	0.0050	0.0031	1		06/03/09 14:37	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3010320

Sample: MW-47 **Lab ID: 3010320008** Collected: 05/21/09 11:45 Received: 05/22/09 09:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	ND	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 10:32	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/28/09 13:30	06/02/09 10:32	7440-41-7	
Manganese, Dissolved	**1.6**	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 10:32	7439-96-5	
Sodium, Dissolved	**92.9**	mg/L	1.0	0.50	1	05/28/09 13:30	06/02/09 10:32	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 10:32	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**6.2**	mg/L	0.10	0.064	1		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.4**	Std. Units	1.0	1.0	1		05/22/09 20:43		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**650**	umhos/cm	1.0	1.0	1		05/28/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**2.0**	mg/L	0.050	0.031	10		05/29/09 14:29	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**0.19**	mg/L	0.0050	0.0031	1		06/03/09 14:37	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3010320

Sample: MW-34D **Lab ID: 3010320009** Collected: 05/21/09 11:50 Received: 05/22/09 09:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.0056**	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 10:35	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/28/09 13:30	06/02/09 10:35	7440-41-7	
Manganese, Dissolved	**0.20**	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 10:35	7439-96-5	
Sodium, Dissolved	**198**	mg/L	1.0	0.50	1	05/28/09 13:30	06/02/09 10:35	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 10:35	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**17.0**	mg/L	0.10	0.064	1		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.7**	Std. Units	1.0	1.0	1		05/22/09 20:43		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**829**	umhos/cm	1.0	1.0	1		05/28/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**1.4**	mg/L	0.025	0.016	5		05/29/09 14:29	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**0.29**	mg/L	0.0050	0.0031	1		06/03/09 14:37	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3010320

Sample: MW-34S **Lab ID: 3010320010** Collected: 05/21/09 12:10 Received: 05/22/09 09:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.011**	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 10:39	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/28/09 13:30	06/02/09 10:39	7440-41-7	
Manganese, Dissolved	**0.29**	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 10:39	7439-96-5	
Sodium, Dissolved	**269**	mg/L	1.0	0.50	1	05/28/09 13:30	06/02/09 10:39	7440-23-5	
Vanadium, Dissolved	**0.014**	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 10:39	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**21.1**	mg/L	1.0	0.64	10		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.0**	Std. Units	1.0	1.0	1		05/22/09 20:43		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**982**	umhos/cm	1.0	1.0	1		05/28/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**3.1**	mg/L	0.12	0.078	25		05/29/09 14:29	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**0.12**	mg/L	0.0050	0.0031	1		06/03/09 14:37	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3010320

Sample: FB-1 **Lab ID: 3010320011** Collected: 05/21/09 12:30 Received: 05/22/09 09:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3510								
PCB-1016 (Aroclor 1016)	ND	mg/L	0.52	0.000087	1	05/22/09 10:40	05/28/09 03:36	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	mg/L	0.52	0.000079	1	05/22/09 10:40	05/28/09 03:36	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	mg/L	0.52	0.000075	1	05/22/09 10:40	05/28/09 03:36	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	mg/L	0.52	0.000085	1	05/22/09 10:40	05/28/09 03:36	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	mg/L	0.52	0.000056	1	05/22/09 10:40	05/28/09 03:36	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	mg/L	0.52	0.000034	1	05/22/09 10:40	05/28/09 03:36	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	mg/L	0.52	0.000042	1	05/22/09 10:40	05/28/09 03:36	11096-82-5	
Tetrachloro-m-xylene (S)	93	%	30-150		1	05/22/09 10:40	05/28/09 03:36	877-09-8	
Decachlorobiphenyl (S)	86	%	30-150		1	05/22/09 10:40	05/28/09 03:36	2051-24-3	
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	ND	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 10:42	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/28/09 13:30	06/02/09 10:42	7440-41-7	
Manganese, Dissolved	ND	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 10:42	7439-96-5	
Sodium, Dissolved	ND	mg/L	1.0	0.50	1	05/28/09 13:30	06/02/09 10:42	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	05/28/09 13:30	06/02/09 10:42	7440-62-2	
8260 MSV	Analytical Method: EPA 8260								
Tetrachloroethene	ND	mg/L	0.0050	0.00050	1		05/22/09 23:34	127-18-4	
4-Bromofluorobenzene (S)	97	%	70-130		1		05/22/09 23:34	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	70-130		1		05/22/09 23:34	17060-07-0	
Toluene-d8 (S)	97	%	70-130		1		05/22/09 23:34	2037-26-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	ND	mg/L	0.10	0.064	1		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**5.3**	Std. Units	1.0	1.0	1		05/22/09 20:43		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**1.1**	umhos/cm	1.0	1.0	1		05/28/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0050	0.0031	1		05/29/09 14:29	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	ND	mg/L	0.0050	0.0031	1		06/03/09 14:37	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3010320

Sample: Trip Blank **Lab ID: 3010320012** Collected: Received: 05/22/09 09:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Tetrachloroethene	ND	mg/L	0.0010	0.00050	1		05/22/09 23:08	127-18-4	

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QUALITY CONTROL DATA

Project: Ormet-Cercla
Pace Project No.: 3010320

QC Batch: OEXT/2090 | Analysis Method: EPA 8082
QC Batch Method: EPA 3510 | Analysis Description: 8082 GCS PCB
Associated Lab Samples: 3010320011

METHOD BLANK: 58165 | Matrix: Water
Associated Lab Samples: 3010320011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	mg/L	ND	0.50	05/27/09 23:31	
PCB-1221 (Aroclor 1221)	mg/L	ND	0.50	05/27/09 23:31	
PCB-1232 (Aroclor 1232)	mg/L	ND	0.50	05/27/09 23:31	
PCB-1242 (Aroclor 1242)	mg/L	ND	0.50	05/27/09 23:31	
PCB-1248 (Aroclor 1248)	mg/L	ND	0.50	05/27/09 23:31	
PCB-1254 (Aroclor 1254)	mg/L	ND	0.50	05/27/09 23:31	
PCB-1260 (Aroclor 1260)	mg/L	ND	0.50	05/27/09 23:31	
Decachlorobiphenyl (S)	%	92	30-150	05/27/09 23:31	
Tetrachloro-m-xylene (S)	%	83	30-150	05/27/09 23:31	

LABORATORY CONTROL SAMPLE: 58166

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	mg/L	.0025	.0021J	85	55-145	
PCB-1221 (Aroclor 1221)	mg/L		ND			
PCB-1232 (Aroclor 1232)	mg/L		ND			
PCB-1242 (Aroclor 1242)	mg/L		ND			
PCB-1248 (Aroclor 1248)	mg/L		ND			
PCB-1254 (Aroclor 1254)	mg/L		ND			
PCB-1260 (Aroclor 1260)	mg/L	.0025	.0022J	87	55-145	
Decachlorobiphenyl (S)	%			66	30-150	
Tetrachloro-m-xylene (S)	%			73	30-150	

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QUALITY CONTROL DATA

Project: Ormet-Cercla
Pace Project No.: 3010320

QC Batch: MSV/2570 | Analysis Method: EPA 8260
QC Batch Method: EPA 8260 | Analysis Description: 8260 MSV
Associated Lab Samples: 3010320011, 3010320012

METHOD BLANK: 58419 | Matrix: Water
Associated Lab Samples: 3010320011, 3010320012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Tetrachloroethene	mg/L	ND	0.0050	05/22/09 22:43	
1,2-Dichloroethane-d4 (S)	%	105	70-130	05/22/09 22:43	
4-Bromofluorobenzene (S)	%	97	70-130	05/22/09 22:43	
Toluene-d8 (S)	%	99	70-130	05/22/09 22:43	

LABORATORY CONTROL SAMPLE: 58420

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Tetrachloroethene	mg/L	.02	0.021	107	70-130	
1,2-Dichloroethane-d4 (S)	%			104	70-130	
4-Bromofluorobenzene (S)	%			98	70-130	
Toluene-d8 (S)	%			99	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 58421 58422

Parameter	Units	3010170002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Tetrachloroethene	mg/L	ND	.02	.02	0.021	0.019	99	89	70-130	10	30	
1,2-Dichloroethane-d4 (S)	%						112	111	70-130			
4-Bromofluorobenzene (S)	%						95	95	70-130			
Toluene-d8 (S)	%						96	85	70-130			

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QUALITY CONTROL DATA

Project: Ormet-Cercla
Pace Project No.: 3010320

QC Batch: WET/2571 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 3010320001, 3010320002, 3010320003, 3010320004, 3010320005, 3010320006, 3010320007, 3010320008, 3010320009, 3010320010, 3010320011

SAMPLE DUPLICATE: 58481

Parameter	Units	3010316001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.3	6.3	.2	10	H6

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QUALITY CONTROL DATA

Project: Ormet-Cercla
Pace Project No.: 3010320

QC Batch: WETA/2056 | Analysis Method: SM 4500-CN-E
QC Batch Method: SM 4500-CN-E | Analysis Description: 4500CNE Cyanide, Total
Associated Lab Samples: 3010320001, 3010320002, 3010320003

METHOD BLANK: 58683 | Matrix: Water
Associated Lab Samples: 3010320001, 3010320002, 3010320003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide	mg/L	ND	0.0050	05/22/09 15:07	

LABORATORY CONTROL SAMPLE: 58684

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	.2	0.21	105	90-110	

MATRIX SPIKE SAMPLE: 58685

Parameter	Units	3010288015 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	5.6	.1	5.6	-51	90-110	M3

SAMPLE DUPLICATE: 58686

Parameter	Units	3010288015 Result	Dup Result	RPD	Max RPD	Qualifiers
Cyanide	mg/L	5.6	5.3	5	20	

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QUALITY CONTROL DATA

Project: Ormet-Cercla
Pace Project No.: 3010320

QC Batch: WET/2591 | Analysis Method: SM 4500F/C
QC Batch Method: SM 4500F/C | Analysis Description: SM4500FC Fluoride Water
Associated Lab Samples: 3010320001, 3010320002, 3010320003, 3010320004, 3010320005, 3010320006, 3010320007, 3010320009, 3010320010

METHOD BLANK: 59178 | Matrix: Water
Associated Lab Samples: 3010320001, 3010320002, 3010320003, 3010320004, 3010320005, 3010320006, 3010320007, 3010320009, 3010320010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	05/27/09 00:00	

LABORATORY CONTROL SAMPLE: 59179

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2	2.0	98	85-115	

MATRIX SPIKE SAMPLE: 59180

Parameter	Units	3010320009 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	17.0	4	21.0	100	85-115	

SAMPLE DUPLICATE: 59181

Parameter	Units	3010320009 Result	Dup Result	RPD	Max RPD	Qualifiers
Fluoride	mg/L	17.0	17.2	1	20	

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QUALITY CONTROL DATA

Project: Ormet-Cercla
Pace Project No.: 3010320

QC Batch: WET/2592 | Analysis Method: SM 4500F/C
QC Batch Method: SM 4500F/C | Analysis Description: SM4500FC Fluoride Water
Associated Lab Samples: 3010320008, 3010320011

METHOD BLANK: 59212 | Matrix: Water
Associated Lab Samples: 3010320008, 3010320011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	05/27/09 00:00	

LABORATORY CONTROL SAMPLE: 59213

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2	2.0	102	85-115	

MATRIX SPIKE SAMPLE: 59214

Parameter	Units	3010320008 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	6.2	4	10.2	100	85-115	

SAMPLE DUPLICATE: 59215

Parameter	Units	3010320008 Result	Dup Result	RPD	Max RPD	Qualifiers
Fluoride	mg/L	6.2	6.2	.5	20	

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QUALITY CONTROL DATA

Project: Ormet-Cercla
Pace Project No.: 3010320

QC Batch: MPRP/2030 | Analysis Method: EPA 6010
QC Batch Method: EPA 3005 | Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 3010320001, 3010320002, 3010320003, 3010320004, 3010320005, 3010320006, 3010320007, 3010320008, 3010320009, 3010320010, 3010320011

METHOD BLANK: 59495 | Matrix: Water
Associated Lab Samples: 3010320001, 3010320002, 3010320003, 3010320004, 3010320005, 3010320006, 3010320007, 3010320008, 3010320009, 3010320010, 3010320011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	mg/L	ND	0.0050	06/02/09 08:48	
Beryllium, Dissolved	mg/L	ND	0.0010	06/02/09 08:48	
Manganese, Dissolved	mg/L	ND	0.0050	06/02/09 08:48	
Sodium, Dissolved	mg/L	ND	1.0	06/02/09 08:48	
Vanadium, Dissolved	mg/L	ND	0.0050	06/02/09 08:48	

LABORATORY CONTROL SAMPLE: 59496

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	mg/L	.5	0.50	100	80-120	
Beryllium, Dissolved	mg/L	.5	0.51	101	80-120	
Manganese, Dissolved	mg/L	.5	0.50	101	80-120	
Sodium, Dissolved	mg/L	5	4.6	91	80-120	
Vanadium, Dissolved	mg/L	.5	0.50	99	80-120	

MATRIX SPIKE SAMPLE: 59498

Parameter	Units	3010320005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	mg/L	0.016	.5	0.54	105	75-125	
Beryllium, Dissolved	mg/L	ND	.5	0.50	99	75-125	
Manganese, Dissolved	mg/L	0.12	.5	0.62	99	75-125	
Sodium, Dissolved	mg/L	1200	5	1200	-62	75-125	M0
Vanadium, Dissolved	mg/L	0.0094	.5	0.50	99	75-125	

SAMPLE DUPLICATE: 59497

Parameter	Units	3010320005 Result	Dup Result	RPD	Max RPD	Qualifiers
Arsenic, Dissolved	mg/L	0.016	0.015	4	20	
Beryllium, Dissolved	mg/L	ND	ND		20	
Manganese, Dissolved	mg/L	0.12	0.12	2	20	
Sodium, Dissolved	mg/L	1200	1180	2	20	
Vanadium, Dissolved	mg/L	0.0094	0.0095	1	20	

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QUALITY CONTROL DATA

Project: Ormet-Cercla
Pace Project No.: 3010320

QC Batch: WET/2604 | Analysis Method: EPA 9050
QC Batch Method: EPA 9050 | Analysis Description: 9050 Specific Conductance
Associated Lab Samples: 3010320001, 3010320002, 3010320003

METHOD BLANK: 59553 | Matrix: Water
Associated Lab Samples: 3010320001, 3010320002, 3010320003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Specific Conductance	umhos/cm	ND	1.0	05/28/09 00:00	

LABORATORY CONTROL SAMPLE: 59554

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Specific Conductance	umhos/cm	1410	1340	95	85-115	

SAMPLE DUPLICATE: 59555

Parameter	Units	3010288010 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	1360	1340	1	20	

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QUALITY CONTROL DATA

Project: Ormet-Cercla
Pace Project No.: 3010320

QC Batch: WET/2605 | Analysis Method: EPA 9050
QC Batch Method: EPA 9050 | Analysis Description: 9050 Specific Conductance
Associated Lab Samples: 3010320004, 3010320005, 3010320006, 3010320007, 3010320008, 3010320009, 3010320010, 3010320011

METHOD BLANK: 59557 | Matrix: Water
Associated Lab Samples: 3010320004, 3010320005, 3010320006, 3010320007, 3010320008, 3010320009, 3010320010, 3010320011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Specific Conductance	umhos/cm	ND	1.0	05/28/09 00:00	

LABORATORY CONTROL SAMPLE: 59558

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Specific Conductance	umhos/cm	1410	1330	94	85-115	

SAMPLE DUPLICATE: 59559

Parameter	Units	3010484001 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	3530	3550	.6	20	

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QUALITY CONTROL DATA

Project: Ormet-Cercla
Pace Project No.: 3010320

QC Batch: WETA/2087 — Analysis Method: SM 4500-CN-E
QC Batch Method: SM 4500-CN-E — Analysis Description: 4500CNE Cyanide, Total
Associated Lab Samples: 3010320004, 3010320005, 3010320006, 3010320007, 3010320008, 3010320009, 3010320010, 3010320011

METHOD BLANK: 60570 — Matrix: Water
Associated Lab Samples: 3010320004, 3010320005, 3010320006, 3010320007, 3010320008, 3010320009, 3010320010, 3010320011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide	mg/L	ND	0.0050	05/29/09 14:29	

LABORATORY CONTROL SAMPLE: 60571

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	.2	0.21	103	90-110	

MATRIX SPIKE SAMPLE: 60572

Parameter	Units	3010488002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	0.0055	.1	0.027	22	90-110	M3

SAMPLE DUPLICATE: 60573

Parameter	Units	3010488002 Result	Dup Result	RPD	Max RPD	Qualifiers
Cyanide	mg/L	0.0055	ND		20	

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QUALITY CONTROL DATA

Project: Ormet-Cercla
Pace Project No.: 3010320

QC Batch: WETA/2119 | Analysis Method: SM 4500-CN-G
QC Batch Method: SM 4500-CN-G | Analysis Description: 4500CNG Cyanide, Amenable
Associated Lab Samples: 3010320001, 3010320002, 3010320003, 3010320004, 3010320005, 3010320006, 3010320007, 3010320008, 3010320009, 3010320010, 3010320011

METHOD BLANK: 62822 | Matrix: Water
Associated Lab Samples: 3010320001, 3010320002, 3010320003, 3010320004, 3010320005, 3010320006, 3010320007, 3010320008, 3010320009, 3010320010, 3010320011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Amenable Cyanide	mg/L	ND	0.0050	06/03/09 14:37	

SAMPLE DUPLICATE: 62824

Parameter	Units	3010320010 Result	Dup Result	RPD	Max RPD	Qualifiers
Amenable Cyanide	mg/L	0.12	0.12	3	20	

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QUALIFIERS

Project: Ormet-Cercla
Pace Project No.: 3010320

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

U - Indicates the compound was analyzed for, but not detected.

LABORATORIES

PASI-PA	Pace Analytical Services - Greensburg

BATCH QUALIFIERS

Batch: OEXT/2090

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

H6	Analysis initiated more than 15 minutes after sample collection.
M0	Matrix spike recovery was outside laboratory control limits.
M3	Matrix spike recovery was outside laboratory control limits due to matrix interferences.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Ormet-Cercla
Pace Project No.: 3010320

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
3010320011	**FB-1**	EPA 3510	OEXT/2090	EPA 8082	GCSV/1452
3010320011	**FB-1**	EPA 8260	MSV/2570		
3010320012	**Trip Blank**	EPA 8260	MSV/2570		
3010320001	**MW-14**	SM 4500-H+B	WET/2571		
3010320002	**MW-42D**	SM 4500-H+B	WET/2571		
3010320003	**MW-42S**	SM 4500-H+B	WET/2571		
3010320004	**MW-39D**	SM 4500-H+B	WET/2571		
3010320005	**MW-39S**	SM 4500-H+B	WET/2571		
3010320006	**MW-19**	SM 4500-H+B	WET/2571		
3010320007	**MW-17**	SM 4500-H+B	WET/2571		
3010320008	**MW-47**	SM 4500-H+B	WET/2571		
3010320009	**MW-34D**	SM 4500-H+B	WET/2571		
3010320010	**MW-34S**	SM 4500-H+B	WET/2571		
3010320011	**FB-1**	SM 4500-H+B	WET/2571		
3010320001	**MW-14**	SM 4500-CN-E	WETA/2056		
3010320002	**MW-42D**	SM 4500-CN-E	WETA/2056		
3010320003	**MW-42S**	SM 4500-CN-E	WETA/2056		
3010320001	**MW-14**	SM 4500F/C	WET/2591		
3010320002	**MW-42D**	SM 4500F/C	WET/2591		
3010320003	**MW-42S**	SM 4500F/C	WET/2591		
3010320004	**MW-39D**	SM 4500F/C	WET/2591		
3010320005	**MW-39S**	SM 4500F/C	WET/2591		
3010320006	**MW-19**	SM 4500F/C	WET/2591		
3010320007	**MW-17**	SM 4500F/C	WET/2591		
3010320009	**MW-34D**	SM 4500F/C	WET/2591		
3010320010	**MW-34S**	SM 4500F/C	WET/2591		
3010320008	**MW-47**	SM 4500F/C	WET/2592		
3010320011	**FB-1**	SM 4500F/C	WET/2592		
3010320001	**MW-14**	EPA 3005	MPRP/2030	EPA 6010	ICP/1857
3010320002	**MW-42D**	EPA 3005	MPRP/2030	EPA 6010	ICP/1857
3010320003	**MW-42S**	EPA 3005	MPRP/2030	EPA 6010	ICP/1857
3010320004	**MW-39D**	EPA 3005	MPRP/2030	EPA 6010	ICP/1857
3010320005	**MW-39S**	EPA 3005	MPRP/2030	EPA 6010	ICP/1857
3010320006	**MW-19**	EPA 3005	MPRP/2030	EPA 6010	ICP/1857
3010320007	**MW-17**	EPA 3005	MPRP/2030	EPA 6010	ICP/1857
3010320008	**MW-47**	EPA 3005	MPRP/2030	EPA 6010	ICP/1857
3010320009	**MW-34D**	EPA 3005	MPRP/2030	EPA 6010	ICP/1857
3010320010	**MW-34S**	EPA 3005	MPRP/2030	EPA 6010	ICP/1857
3010320011	**FB-1**	EPA 3005	MPRP/2030	EPA 6010	ICP/1857
3010320001	**MW-14**	EPA 9050	WET/2604		
3010320002	**MW-42D**	EPA 9050	WET/2604		
3010320003	**MW-42S**	EPA 9050	WET/2604		
3010320004	**MW-39D**	EPA 9050	WET/2605		
3010320005	**MW-39S**	EPA 9050	WET/2605		
3010320006	**MW-19**	EPA 9050	WET/2605		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Ormet-Cercla
Pace Project No.: 3010320

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
3010320007	**MW-17**	EPA 9050	WET/2605		
3010320008	**MW-47**	EPA 9050	WET/2605		
3010320009	**MW-34D**	EPA 9050	WET/2605		
3010320010	**MW-34S**	EPA 9050	WET/2605		
3010320011	**FB-1**	EPA 9050	WET/2605		
3010320004	**MW-39D**	SM 4500-CN-E	WETA/2087		
3010320005	**MW-39S**	SM 4500-CN-E	WETA/2087		
3010320006	**MW-19**	SM 4500-CN-E	WETA/2087		
3010320007	**MW-17**	SM 4500-CN-E	WETA/2087		
3010320008	**MW-47**	SM 4500-CN-E	WETA/2087		
3010320009	**MW-34D**	SM 4500-CN-E	WETA/2087		
3010320010	**MW-34S**	SM 4500-CN-E	WETA/2087		
3010320011	**FB-1**	SM 4500-CN-E	WETA/2087		
3010320001	**MW-14**	SM 4500-CN-G	WETA/2119		
3010320002	**MW-42D**	SM 4500-CN-G	WETA/2119		
3010320003	**MW-42S**	SM 4500-CN-G	WETA/2119		
3010320004	**MW-39D**	SM 4500-CN-G	WETA/2119		
3010320005	**MW-39S**	SM 4500-CN-G	WETA/2119		
3010320006	**MW-19**	SM 4500-CN-G	WETA/2119		
3010320007	**MW-17**	SM 4500-CN-G	WETA/2119		
3010320008	**MW-47**	SM 4500-CN-G	WETA/2119		
3010320009	**MW-34D**	SM 4500-CN-G	WETA/2119		
3010320010	**MW-34S**	SM 4500-CN-G	WETA/2119		
3010320011	**FB-1**	SM 4500-CN-G	WETA/2119		

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May 18, 2010

Mr. Robert L. Fargo
Hydro Systems Managment, Inc.
PO Box 789
Washington, PA 15301

RE: Project: Ormeet Cercla
Pace Project No.: 3010170

Dear Mr. Fargo:
Enclosed are the analytical results for sample(s) received by the laboratory on May 20, 2009. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Amy Wells

amy.wells@pacelabs.com
Project Manager

Enclosures

cc: Mr. John Reggi, Ormet Primary Aluminum Corporation

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CERTIFICATIONS

Project:	Ormeet Cercla
Pace Project No.:	3010170

Pennsylvania Certification IDs
1638 Roseytown Road Suites 2,3&4 Greensburg, PA 15601
Wyoming Certification #: 8TMS-Q
Wisconsin/PADEP Certification
West Virginia Certification #: 143
Washington Certification #: C1941
Virginia Certification #: 00112
Virgin Island/PADEP Certification
Utah/NELAC Certification #: ANTE
Texas/NELAC Certification #: T104704188-09 TX
Tennessee Certification #: TN2867
South Dakota Certification
Puerto Rico Certification #: PA01457
Pennsylvania/NELAC Certification #: 65-00282
Oregon/NELAC Certification #: PA200002
North Carolina Certification #: 42706
New York/NELAC Certification #: 10888
New Mexico Certification
New Jersey/NELAC Certification #: PA 051
New Hampshire/NELAC Certification #: 2976
Nevada Certification
Montana Certification #: Cert 0082
Missouri Certification #: 235
Michigan/PADEP Certification
Massachusetts Certification #: M-PA1457
Maryland Certification #: 308
Maine Certification #: PA0091
Louisiana/NELAC Certification #: LA080002
Louisiana/NELAC Certification #: 4086
Kentucky Certification #: 90133
Kansas/NELAC Certification #: E-10358
Iowa Certification #: 391
Indiana/PADEP Certification
Illinois/PADEP Certification
Idaho Certification
Hawaii/PADEP Certification
Guam/PADEP Certification
Florida/NELAC Certification #: E87683
Delaware Certification
Connecticut Certification #: PH 0694
Colorado Certification
California/NELAC Certification #: 04222CA
Arkansas Certification
Arizona Certification #: AZ0734
Alabama Certification #: 41590

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SAMPLE SUMMARY

Project: Ormeet Cercla
Pace Project No.: 3010170

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3010170001	**MW-7**	Water	05/19/09 14:00	05/20/09 10:00
3010170002	**MW-5**	Water	05/19/09 14:30	05/20/09 10:00
3010170003	**MW-11**	Water	05/19/09 14:45	05/20/09 10:00
3010170004	**MW-8**	Water	05/19/09 15:10	05/20/09 10:00
3010170005	**MW-10**	Water	05/19/09 15:35	05/20/09 10:00
3010170006	**MW-44D**	Water	05/19/09 16:00	05/20/09 10:00
3010170007	**MW-44S**	Water	05/19/09 16:15	05/20/09 10:00
3010170008	**MW-2**	Water	05/19/09 16:50	05/20/09 10:00
3010170009	**MW-40D**	Water	05/19/09 17:15	05/20/09 10:00
3010170010	**MW-40S**	Water	05/19/09 17:30	05/20/09 10:00

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SAMPLE ANALYTE COUNT

Project: Ormeet Cercla
Pace Project No.: 3010170

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3010170001	**MW-7**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3010170002	**MW-5**	EPA 6010	CTS	5	PASI-PA
		EPA 8260	JAS	4	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3010170003	**MW-11**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3010170004	**MW-8**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3010170005	**MW-10**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3010170006	**MW-44D**	EPA 8082	SJG	9	PASI-PA
3010170007	**MW-44S**	EPA 8082	SJG	9	PASI-PA
3010170008	**MW-2**	EPA 6010	CTS	5	PASI-PA
		EPA 8260	JAS	4	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA

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SAMPLE ANALYTE COUNT

Project: Ormeet Cercla
Pace Project No.: 3010170

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3010170009	**MW-40D**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3010170010	**MW-40S**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA

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PROJECT NARRATIVE

Project: Ormeet Cercla
Pace Project No.: 3010170

Method: **EPA 8082**
Description: 8082 GCS PCB
Client: Ormet Primary Aluminum Corporation
Date: May 18, 2010

General Information:
2 samples were analyzed for EPA 8082. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: GCSV/1440

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormeet Cercla
Pace Project No.: 3010170

Method: **EPA 6010**
Description: 6010 MET ICP,Dissolved
Client: Ormet Primary Aluminum Corporation
Date: May 18, 2010

General Information:
8 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3005 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MPRP/2006

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 3010096001,3010170004

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 57784)
  - Sodium, Dissolved
- MS (Lab ID: 57787)
  - Sodium, Dissolved
- MSD (Lab ID: 57785)
  - Sodium, Dissolved

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormeet Cercla
Pace Project No.: 3010170

Method: **EPA 8260**
Description: 8260 MSV
Client: Ormet Primary Aluminum Corporation
Date: May 18, 2010

General Information:
2 samples were analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MSV/2570

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 3010170002

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 58421)
  - Bromomethane
  - Chloromethane
  - Dichlorodifluoromethane
  - Iodomethane
  - Vinyl acetate
- MSD (Lab ID: 58422)
  - Bromomethane
  - Chloromethane
  - Dichlorodifluoromethane
  - Iodomethane
  - Vinyl acetate

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PROJECT NARRATIVE

Project: Ormeet Cercla
Pace Project No.: 3010170

Method: **EPA 8260**
Description: 8260 MSV
Client: Ormet Primary Aluminum Corporation
Date: May 18, 2010

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormeet Cercla
Pace Project No.: 3010170

Method: **SM 4500F/C**
Description: 4500FC Fluoride
Client: Ormet Primary Aluminum Corporation
Date: May 18, 2010

General Information:
8 samples were analyzed for SM 4500F/C. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormeet Cercla
Pace Project No.: 3010170

Method: **SM 4500-H+B**
Description: 4500H+ pH, Electrometric
Client: Ormet Primary Aluminum Corporation
Date: May 18, 2010

General Information:
8 samples were analyzed for SM 4500-H+B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H6: Analysis initiated more than 15 minutes after sample collection.
- MW-10 (Lab ID: 3010170005)
- MW-11 (Lab ID: 3010170003)
- MW-2 (Lab ID: 3010170008)
- MW-40D (Lab ID: 3010170009)
- MW-40S (Lab ID: 3010170010)
- MW-5 (Lab ID: 3010170002)
- MW-7 (Lab ID: 3010170001)
- MW-8 (Lab ID: 3010170004)

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormeet Cercla
Pace Project No.: 3010170

Method: **EPA 9050**
Description: 9050 Specific Conductance
Client: Ormet Primary Aluminum Corporation
Date: May 18, 2010

General Information:
8 samples were analyzed for EPA 9050. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormeet Cercla
Pace Project No.: 3010170

Method: **SM 4500-CN-E**
Description: 4500CNE Cyanide, Total
Client: Ormet Primary Aluminum Corporation
Date: May 18, 2010

General Information:
8 samples were analyzed for SM 4500-CN-E. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: WETA/2055

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 3010170010

M2: Matrix spike recovery was below QC limits due to sample dilution. Data acceptance based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 58670)
  - Cyanide

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormeet Cercla
Pace Project No.: 3010170

Method: **SM 4500-CN-G**
Description: 4500CNG Cyanide, Amenable
Client: Ormet Primary Aluminum Corporation
Date: May 18, 2010

General Information:
8 samples were analyzed for SM 4500-CN-G. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: Ormeet Cercla
Pace Project No.: 3010170

Sample: MW-7 **Lab ID: 3010170001** Collected: 05/19/09 14:00 Received: 05/20/09 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.030**	mg/L	0.0050	0.0025	1	05/21/09 09:43	05/27/09 09:20	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/21/09 09:43	05/27/09 09:20	7440-41-7	
Manganese, Dissolved	**2.2**	mg/L	0.0050	0.0025	1	05/21/09 09:43	05/27/09 09:20	7439-96-5	
Sodium, Dissolved	**82.4**	mg/L	1.0	0.50	1	05/21/09 09:43	05/27/09 09:20	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	05/21/09 09:43	05/27/09 09:20	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**0.10**	mg/L	0.10	0.064	1		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**5.7**	Std. Units	1.0	1.0	1		05/20/09 18:20		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**728**	umhos/cm	1.0	1.0	1		05/21/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0050	0.0031	1		05/22/09 13:42	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	ND	mg/L	0.0050	0.0031	1		06/01/09 13:41	57-12-5	

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ANALYTICAL RESULTS

Project: Ormeet Cercla
Pace Project No.: 3010170

Sample: MW-5 **Lab ID: 3010170002** Collected: 05/19/09 14:30 Received: 05/20/09 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	ND	mg/L	0.0050	0.0025	1	05/21/09 09:43	05/27/09 09:24	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/21/09 09:43	05/27/09 09:24	7440-41-7	
Manganese, Dissolved	**0.52**	mg/L	0.0050	0.0025	1	05/21/09 09:43	05/27/09 09:24	7439-96-5	
Sodium, Dissolved	**332**	mg/L	1.0	0.50	1	05/21/09 09:43	05/27/09 09:24	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	05/21/09 09:43	05/27/09 09:24	7440-62-2	
8260 MSV	Analytical Method: EPA 8260								
Tetrachloroethene	ND	mg/L	0.0050	0.00050	1		05/23/09 01:18	127-18-4	
4-Bromofluorobenzene (S)	94	%	70-130		1		05/23/09 01:18	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	70-130		1		05/23/09 01:18	17060-07-0	
Toluene-d8 (S)	96	%	70-130		1		05/23/09 01:18	2037-26-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**26.2**	mg/L	0.20	0.13	2		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.9**	Std. Units	1.0	1.0	1		05/20/09 18:20		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**1170**	umhos/cm	1.0	1.0	1		05/21/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**6.0**	mg/L	0.12	0.078	25		05/22/09 13:42	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	ND	mg/L	0.0050	0.0031	1		06/01/09 13:41	57-12-5	

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ANALYTICAL RESULTS

Project: Ormeet Cercla
Pace Project No.: 3010170

Sample: MW-11 **Lab ID: 3010170003** Collected: 05/19/09 14:45 Received: 05/20/09 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	ND	mg/L	0.0050	0.0025	1	05/21/09 09:43	05/27/09 09:27	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/21/09 09:43	05/27/09 09:27	7440-41-7	
Manganese, Dissolved	**0.83**	mg/L	0.0050	0.0025	1	05/21/09 09:43	05/27/09 09:27	7439-96-5	
Sodium, Dissolved	**238**	mg/L	1.0	0.50	1	05/21/09 09:43	05/27/09 09:27	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	05/21/09 09:43	05/27/09 09:27	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**0.99**	mg/L	0.10	0.064	1		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.6**	Std. Units	1.0	1.0	1		05/20/09 18:20		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**1130**	umhos/cm	1.0	1.0	1		05/21/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**0.74**	mg/L	0.025	0.016	5		05/22/09 13:42	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	ND	mg/L	0.0050	0.0031	1		06/01/09 13:41	57-12-5	

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ANALYTICAL RESULTS

Project: Ormeet Cercla
Pace Project No.: 3010170

Sample: MW-8 **Lab ID: 3010170004** Collected: 05/19/09 15:10 Received: 05/20/09 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	ND	mg/L	0.0050	0.0025	1	05/21/09 09:43	05/27/09 09:30	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/21/09 09:43	05/27/09 09:30	7440-41-7	
Manganese, Dissolved	**0.16**	mg/L	0.0050	0.0025	1	05/21/09 09:43	05/27/09 09:30	7439-96-5	
Sodium, Dissolved	**198**	mg/L	1.0	0.50	1	05/21/09 09:43	05/27/09 09:30	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	05/21/09 09:43	05/27/09 09:30	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**7.0**	mg/L	0.10	0.064	1		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.4**	Std. Units	1.0	1.0	1		05/20/09 18:20		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**1100**	umhos/cm	1.0	1.0	1		05/21/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**0.83**	mg/L	0.025	0.016	5		05/22/09 13:42	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	ND	mg/L	0.0050	0.0031	1		06/01/09 13:41	57-12-5	

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ANALYTICAL RESULTS

Project: Ormeet Cercla
Pace Project No.: 3010170

Sample: MW-10 **Lab ID: 3010170005** Collected: 05/19/09 15:35 Received: 05/20/09 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	ND	mg/L	0.0050	0.0025	1	05/21/09 09:43	05/27/09 09:43	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/21/09 09:43	05/27/09 09:43	7440-41-7	
Manganese, Dissolved	ND	mg/L	0.0050	0.0025	1	05/21/09 09:43	05/27/09 09:43	7439-96-5	
Sodium, Dissolved	**19.7**	mg/L	1.0	0.50	1	05/21/09 09:43	05/27/09 09:43	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	05/21/09 09:43	05/27/09 09:43	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**0.23**	mg/L	0.10	0.064	1		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.0**	Std. Units	1.0	1.0	1		05/20/09 18:20		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**721**	umhos/cm	1.0	1.0	1		05/21/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0050	0.0031	1		05/22/09 13:42	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	ND	mg/L	0.0050	0.0031	1		06/01/09 13:41	57-12-5	

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ANALYTICAL RESULTS

Project: Ormeet Cercla
Pace Project No.: 3010170

Sample: MW-44D **Lab ID: 3010170006** Collected: 05/19/09 16:00 Received: 05/20/09 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3510								
PCB-1016 (Aroclor 1016)	ND	mg/L	0.00051	0.000086	1	05/20/09 12:30	05/20/09 18:08	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	mg/L	0.00051	0.000079	1	05/20/09 12:30	05/20/09 18:08	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	mg/L	0.00051	0.000074	1	05/20/09 12:30	05/20/09 18:08	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	mg/L	0.00051	0.000084	1	05/20/09 12:30	05/20/09 18:08	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	mg/L	0.00051	0.000055	1	05/20/09 12:30	05/20/09 18:08	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	mg/L	0.00051	0.000034	1	05/20/09 12:30	05/20/09 18:08	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	mg/L	0.00051	0.000042	1	05/20/09 12:30	05/20/09 18:08	11096-82-5	
Tetrachloro-m-xylene (S)	90	%	30-150		1	05/20/09 12:30	05/20/09 18:08	877-09-8	
Decachlorobiphenyl (S)	93	%	30-150		1	05/20/09 12:30	05/20/09 18:08	2051-24-3	

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ANALYTICAL RESULTS

Project: Ormeet Cercla
Pace Project No.: 3010170

Sample: MW-44S **Lab ID: 3010170007** Collected: 05/19/09 16:15 Received: 05/20/09 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3510								
PCB-1016 (Aroclor 1016)	ND	mg/L	0.00052	0.000087	1	05/20/09 12:30	05/20/09 18:31	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	mg/L	0.00052	0.000080	1	05/20/09 12:30	05/20/09 18:31	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	mg/L	0.00052	0.000076	1	05/20/09 12:30	05/20/09 18:31	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	mg/L	0.00052	0.000085	1	05/20/09 12:30	05/20/09 18:31	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	mg/L	0.00052	0.000056	1	05/20/09 12:30	05/20/09 18:31	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	mg/L	0.00052	0.000034	1	05/20/09 12:30	05/20/09 18:31	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	mg/L	0.00052	0.000042	1	05/20/09 12:30	05/20/09 18:31	11096-82-5	
Tetrachloro-m-xylene (S)	86	%	30-150		1	05/20/09 12:30	05/20/09 18:31	877-09-8	
Decachlorobiphenyl (S)	93	%	30-150		1	05/20/09 12:30	05/20/09 18:31	2051-24-3	

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ANALYTICAL RESULTS

Project: Ormeet Cercla
Pace Project No.: 3010170

Sample: MW-2 **Lab ID: 3010170008** Collected: 05/19/09 16:50 Received: 05/20/09 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.038**	mg/L	0.0050	0.0025	1	05/21/09 09:43	05/27/09 09:46	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/21/09 09:43	05/27/09 09:46	7440-41-7	
Manganese, Dissolved	**0.53**	mg/L	0.0050	0.0025	1	05/21/09 09:43	05/27/09 09:46	7439-96-5	
Sodium, Dissolved	**359**	mg/L	1.0	0.50	1	05/21/09 09:43	05/27/09 09:46	7440-23-5	
Vanadium, Dissolved	**0.027**	mg/L	0.0050	0.0025	1	05/21/09 09:43	05/27/09 09:46	7440-62-2	
8260 MSV	Analytical Method: EPA 8260								
Tetrachloroethene	**0.056**	mg/L	0.0050	0.00050	1		05/23/09 01:44	127-18-4	
4-Bromofluorobenzene (S)	94	%	70-130		1		05/23/09 01:44	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	70-130		1		05/23/09 01:44	17060-07-0	
Toluene-d8 (S)	96	%	70-130		1		05/23/09 01:44	2037-26-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**33.6**	mg/L	1.0	0.64	10		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**9.2**	Std. Units	1.0	1.0	1		05/20/09 18:20		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**1180**	umhos/cm	1.0	1.0	1		05/21/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**8.8**	mg/L	0.25	0.16	50		05/22/09 13:42	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	ND	mg/L	0.0050	0.0031	1		06/01/09 13:41	57-12-5	

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ANALYTICAL RESULTS

Project: Ormeet Cercla
Pace Project No.: 3010170

Sample: MW-40D **Lab ID: 3010170009** Collected: 05/19/09 17:15 Received: 05/20/09 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	ND	mg/L	0.0050	0.0025	1	05/21/09 09:43	05/27/09 09:49	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/21/09 09:43	05/27/09 09:49	7440-41-7	
Manganese, Dissolved	**0.82**	mg/L	0.0050	0.0025	1	05/21/09 09:43	05/27/09 09:49	7439-96-5	
Sodium, Dissolved	**225**	mg/L	1.0	0.50	1	05/21/09 09:43	05/27/09 09:49	7440-23-5	
Vanadium, Dissolved	**0.0061**	mg/L	0.0050	0.0025	1	05/21/09 09:43	05/27/09 09:49	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**19.8**	mg/L	1.0	0.64	10		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.7**	Std. Units	1.0	1.0	1		05/20/09 18:20		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**975**	umhos/cm	1.0	1.0	1		05/21/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**7.8**	mg/L	0.25	0.16	50		05/22/09 13:42	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	ND	mg/L	0.0050	0.0031	1		06/01/09 13:41	57-12-5	

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ANALYTICAL RESULTS

Project: Ormeet Cercla
Pace Project No.: 3010170

Sample: MW-40S **Lab ID: 3010170010** Collected: 05/19/09 17:30 Received: 05/20/09 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	ND	mg/L	0.0050	0.0025	1	05/21/09 09:43	05/27/09 10:07	7440-38-2	
Beryllium, Dissolved	**0.0012**	mg/L	0.0010	0.00050	1	05/21/09 09:43	05/27/09 10:07	7440-41-7	
Manganese, Dissolved	**0.65**	mg/L	0.0050	0.0025	1	05/21/09 09:43	05/27/09 10:07	7439-96-5	
Sodium, Dissolved	**280**	mg/L	1.0	0.50	1	05/21/09 09:43	05/27/09 10:07	7440-23-5	
Vanadium, Dissolved	**0.029**	mg/L	0.0050	0.0025	1	05/21/09 09:43	05/27/09 10:07	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**37.5**	mg/L	1.0	0.64	10		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.0**	Std. Units	1.0	1.0	1		05/20/09 18:20		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**1020**	umhos/cm	1.0	1.0	1		05/21/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**8.9**	mg/L	0.25	0.16	50		05/22/09 13:42	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**0.019**	mg/L	0.0050	0.0031	1		06/01/09 13:41	57-12-5	

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QUALITY CONTROL DATA

Project: Ormeet Cercla
Pace Project No.: 3010170

QC Batch: OEXT/2073 | Analysis Method: EPA 8082
QC Batch Method: EPA 3510 | Analysis Description: 8082 GCS PCB
Associated Lab Samples: 3010170006, 3010170007

METHOD BLANK: 57497 | Matrix: Water
Associated Lab Samples: 3010170006, 3010170007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	mg/L	ND	0.00050	05/20/09 17:01	
PCB-1221 (Aroclor 1221)	mg/L	ND	0.00050	05/20/09 17:01	
PCB-1232 (Aroclor 1232)	mg/L	ND	0.00050	05/20/09 17:01	
PCB-1242 (Aroclor 1242)	mg/L	ND	0.00050	05/20/09 17:01	
PCB-1248 (Aroclor 1248)	mg/L	ND	0.00050	05/20/09 17:01	
PCB-1254 (Aroclor 1254)	mg/L	ND	0.00050	05/20/09 17:01	
PCB-1260 (Aroclor 1260)	mg/L	ND	0.00050	05/20/09 17:01	
Decachlorobiphenyl (S)	%	86	30-150	05/20/09 17:01	
Tetrachloro-m-xylene (S)	%	86	30-150	05/20/09 17:01	

LABORATORY CONTROL SAMPLE: 57498

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	mg/L	.0025	0.0023	91	55-145	
PCB-1221 (Aroclor 1221)	mg/L		ND			
PCB-1232 (Aroclor 1232)	mg/L		ND			
PCB-1242 (Aroclor 1242)	mg/L		ND			
PCB-1248 (Aroclor 1248)	mg/L		ND			
PCB-1254 (Aroclor 1254)	mg/L		ND			
PCB-1260 (Aroclor 1260)	mg/L	.0025	0.0024	97	55-145	
Decachlorobiphenyl (S)	%			91	30-150	
Tetrachloro-m-xylene (S)	%			89	30-150	

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QUALITY CONTROL DATA

Project: Ormeet Cercla
Pace Project No.: 3010170

QC Batch: MPRP/2006 | Analysis Method: EPA 6010
QC Batch Method: EPA 3005 | Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 3010170001, 3010170002, 3010170003, 3010170004, 3010170005, 3010170008, 3010170009, 3010170010

METHOD BLANK: 57781 | Matrix: Water
Associated Lab Samples: 3010170001, 3010170002, 3010170003, 3010170004, 3010170005, 3010170008, 3010170009, 3010170010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	mg/L	ND	0.0050	05/27/09 08:24	
Beryllium, Dissolved	mg/L	ND	0.0010	05/27/09 08:24	
Manganese, Dissolved	mg/L	ND	0.0050	05/27/09 08:24	
Sodium, Dissolved	mg/L	ND	1.0	05/27/09 08:24	
Vanadium, Dissolved	mg/L	ND	0.0050	05/27/09 08:24	

LABORATORY CONTROL SAMPLE: 57782

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	mg/L	.5	0.51	102	80-120	
Beryllium, Dissolved	mg/L	.5	0.52	103	80-120	
Manganese, Dissolved	mg/L	.5	0.51	101	80-120	
Sodium, Dissolved	mg/L	5	4.5	89	80-120	
Vanadium, Dissolved	mg/L	.5	0.50	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 57784 57785

Parameter	Units	3010096001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	mg/L	5.6 ug/L	.5	.5	0.53	0.52	105	104	75-125	1	20	
Beryllium, Dissolved	mg/L	ND	.5	.5	0.51	0.51	102	102	75-125	.08	20	
Manganese, Dissolved	mg/L	564 ug/L	.5	.5	1.1	1.1	100	101	75-125	.5	20	
Sodium, Dissolved	mg/L	232000 ug/L	5	5	241	243	173	212	75-125	.8	20	M0
Vanadium, Dissolved	mg/L	ND	.5	.5	0.50	0.50	100	100	75-125	.2	20	

MATRIX SPIKE SAMPLE: 57787

Parameter	Units	3010170004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	mg/L	ND	.5	0.52	103	75-125	
Beryllium, Dissolved	mg/L	ND	.5	0.51	102	75-125	
Manganese, Dissolved	mg/L	0.16	.5	0.66	100	75-125	
Sodium, Dissolved	mg/L	198	5	205	154	75-125	M0
Vanadium, Dissolved	mg/L	ND	.5	0.50	100	75-125	

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QUALITY CONTROL DATA

Project: Ormeet Cercla
Pace Project No.: 3010170

SAMPLE DUPLICATE: 57783

Parameter	Units	3010096001 Result	Dup Result	RPD	Max RPD	Qualifiers
Arsenic, Dissolved	mg/L	5.6 ug/L	.0026J		20	
Beryllium, Dissolved	mg/L	ND	ND		20	
Manganese, Dissolved	mg/L	564 ug/L	0.57	1	20	
Sodium, Dissolved	mg/L	232000 ug/L	235	1	20	
Vanadium, Dissolved	mg/L	ND	ND		20	

SAMPLE DUPLICATE: 57786

Parameter	Units	3010170004 Result	Dup Result	RPD	Max RPD	Qualifiers
Arsenic, Dissolved	mg/L	ND	ND		20	
Beryllium, Dissolved	mg/L	ND	ND		20	
Manganese, Dissolved	mg/L	0.16	0.16	.05	20	
Sodium, Dissolved	mg/L	198	197	.06	20	
Vanadium, Dissolved	mg/L	ND	ND		20	

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QUALITY CONTROL DATA

Project: Ormeet Cercla
Pace Project No.: 3010170

QC Batch: MSV/2570 | Analysis Method: EPA 8260
QC Batch Method: EPA 8260 | Analysis Description: 8260 MSV
Associated Lab Samples: 3010170002, 3010170008

METHOD BLANK: 58419 | Matrix: Water
Associated Lab Samples: 3010170002, 3010170008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Tetrachloroethene	mg/L	ND	0.0050	05/22/09 22:43	
1,2-Dichloroethane-d4 (S)	%	105	70-130	05/22/09 22:43	
4-Bromofluorobenzene (S)	%	97	70-130	05/22/09 22:43	
Toluene-d8 (S)	%	99	70-130	05/22/09 22:43	

LABORATORY CONTROL SAMPLE: 58420

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Tetrachloroethene	mg/L	.02	0.021	107	70-130	
1,2-Dichloroethane-d4 (S)	%			104	70-130	
4-Bromofluorobenzene (S)	%			98	70-130	
Toluene-d8 (S)	%			99	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 58421 58422

Parameter	Units	3010170002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Tetrachloroethene	mg/L	ND	.02	.02	0.021	0.019	99	89	70-130	10	30	
1,2-Dichloroethane-d4 (S)	%						112	111	70-130			
4-Bromofluorobenzene (S)	%						95	95	70-130			
Toluene-d8 (S)	%						96	85	70-130			

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QUALITY CONTROL DATA

Project: Ormeet Cercla
Pace Project No.: 3010170

QC Batch: WET/2590 | Analysis Method: SM 4500F/C
QC Batch Method: SM 4500F/C | Analysis Description: SM4500FC Fluoride Water
Associated Lab Samples: 3010170001, 3010170002, 3010170003, 3010170004, 3010170005, 3010170008, 3010170009, 3010170010

METHOD BLANK: 59157 | Matrix: Water
Associated Lab Samples: 3010170001, 3010170002, 3010170003, 3010170004, 3010170005, 3010170008, 3010170009, 3010170010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	05/27/09 00:00	

LABORATORY CONTROL SAMPLE: 59158

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2	1.8	92	85-115	

MATRIX SPIKE SAMPLE: 59165

Parameter	Units	3010287003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	6.8	4	10.8	101	85-115	

SAMPLE DUPLICATE: 59166

Parameter	Units	3010287003 Result	Dup Result	RPD	Max RPD	Qualifiers
Fluoride	mg/L	6.8	6.7	.6	20	

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QUALITY CONTROL DATA

Project: Ormeet Cercla
Pace Project No.: 3010170

QC Batch: WET/2543 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 3010170001, 3010170002, 3010170003, 3010170004, 3010170005, 3010170008, 3010170009, 3010170010

SAMPLE DUPLICATE: 57729

Parameter	Units	3010203001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.3	7.3	0	10	H6

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QUALITY CONTROL DATA

Project: Ormeet Cercla
Pace Project No.: 3010170

QC Batch: WET/2548 Analysis Method: EPA 9050
QC Batch Method: EPA 9050 Analysis Description: 9050 Specific Conductance
Associated Lab Samples: 3010170001, 3010170002, 3010170003, 3010170004, 3010170005, 3010170008, 3010170009, 3010170010

METHOD BLANK: 57812 Matrix: Water
Associated Lab Samples: 3010170001, 3010170002, 3010170003, 3010170004, 3010170005, 3010170008, 3010170009, 3010170010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Specific Conductance	umhos/cm	ND	1.0	05/21/09 00:00	

LABORATORY CONTROL SAMPLE: 57813

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Specific Conductance	umhos/cm	1410	1400	100	85-115	

SAMPLE DUPLICATE: 57814

Parameter	Units	3010170003 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	1130	1130	0	20	

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QUALITY CONTROL DATA

Project: Ormeet Cercla
Pace Project No.: 3010170

QC Batch: WETA/2055 | Analysis Method: SM 4500-CN-E
QC Batch Method: SM 4500-CN-E | Analysis Description: 4500CNE Cyanide, Total
Associated Lab Samples: 3010170001, 3010170002, 3010170003, 3010170004, 3010170005, 3010170008, 3010170009, 3010170010

METHOD BLANK: 58668 | Matrix: Water
Associated Lab Samples: 3010170001, 3010170002, 3010170003, 3010170004, 3010170005, 3010170008, 3010170009, 3010170010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide	mg/L	ND	0.0050	05/22/09 13:42	

LABORATORY CONTROL SAMPLE: 58669

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	.2	0.21	107	90-110	

MATRIX SPIKE SAMPLE: 58670

Parameter	Units	3010170010 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	8.9	.1	9.5	635	90-110	M2

SAMPLE DUPLICATE: 58671

Parameter	Units	3010170010 Result	Dup Result	RPD	Max RPD	Qualifiers
Cyanide	mg/L	8.9	8.7	2	20	

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QUALITY CONTROL DATA

Project: Ormeet Cercla
Pace Project No.: 3010170

QC Batch: WETA/2096 | Analysis Method: SM 4500-CN-G
QC Batch Method: SM 4500-CN-G | Analysis Description: 4500CNG Cyanide, Amenable
Associated Lab Samples: 3010170001, 3010170002, 3010170003, 3010170004, 3010170005, 3010170008, 3010170009, 3010170010

METHOD BLANK: 60913 | Matrix: Water
Associated Lab Samples: 3010170001, 3010170002, 3010170003, 3010170004, 3010170005, 3010170008, 3010170009, 3010170010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Amenable Cyanide	mg/L	ND	0.0050	06/01/09 13:41	

SAMPLE DUPLICATE: 60914

Parameter	Units	3010288017 Result	Dup Result	RPD	Max RPD	Qualifiers
Amenable Cyanide	mg/L	0.16	0.16	.8	20	

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QUALIFIERS

Project: Ormeet Cercla
Pace Project No.: 3010170

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

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U - Indicates the compound was analyzed for, but not detected.

LABORATORIES

PASI-PA	Pace Analytical Services - Greensburg

BATCH QUALIFIERS

Batch: OEXT/2073

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

H6	Analysis initiated more than 15 minutes after sample collection.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M2	Matrix spike recovery was below QC limits due to sample dilution. Data acceptance based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Ormeet Cercla
Pace Project No.: 3010170

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
3010170006	**MW-44D**	EPA 3510	OEXT/2073	EPA 8082	GCSV/1440
3010170007	**MW-44S**	EPA 3510	OEXT/2073	EPA 8082	GCSV/1440
3010170001	**MW-7**	EPA 3005	MPRP/2006	EPA 6010	ICP/1837
3010170002	**MW-5**	EPA 3005	MPRP/2006	EPA 6010	ICP/1837
3010170003	**MW-11**	EPA 3005	MPRP/2006	EPA 6010	ICP/1837
3010170004	**MW-8**	EPA 3005	MPRP/2006	EPA 6010	ICP/1837
3010170005	**MW-10**	EPA 3005	MPRP/2006	EPA 6010	ICP/1837
3010170008	**MW-2**	EPA 3005	MPRP/2006	EPA 6010	ICP/1837
3010170009	**MW-40D**	EPA 3005	MPRP/2006	EPA 6010	ICP/1837
3010170010	**MW-40S**	EPA 3005	MPRP/2006	EPA 6010	ICP/1837
3010170002	**MW-5**	EPA 8260	MSV/2570		
3010170008	**MW-2**	EPA 8260	MSV/2570		
3010170001	**MW-7**	SM 4500F/C	WET/2590		
3010170002	**MW-5**	SM 4500F/C	WET/2590		
3010170003	**MW-11**	SM 4500F/C	WET/2590		
3010170004	**MW-8**	SM 4500F/C	WET/2590		
3010170005	**MW-10**	SM 4500F/C	WET/2590		
3010170008	**MW-2**	SM 4500F/C	WET/2590		
3010170009	**MW-40D**	SM 4500F/C	WET/2590		
3010170010	**MW-40S**	SM 4500F/C	WET/2590		
3010170001	**MW-7**	SM 4500-H+B	WET/2543		
3010170002	**MW-5**	SM 4500-H+B	WET/2543		
3010170003	**MW-11**	SM 4500-H+B	WET/2543		
3010170004	**MW-8**	SM 4500-H+B	WET/2543		
3010170005	**MW-10**	SM 4500-H+B	WET/2543		
3010170008	**MW-2**	SM 4500-H+B	WET/2543		
3010170009	**MW-40D**	SM 4500-H+B	WET/2543		
3010170010	**MW-40S**	SM 4500-H+B	WET/2543		
3010170001	**MW-7**	EPA 9050	WET/2548		
3010170002	**MW-5**	EPA 9050	WET/2548		
3010170003	**MW-11**	EPA 9050	WET/2548		
3010170004	**MW-8**	EPA 9050	WET/2548		
3010170005	**MW-10**	EPA 9050	WET/2548		
3010170008	**MW-2**	EPA 9050	WET/2548		
3010170009	**MW-40D**	EPA 9050	WET/2548		
3010170010	**MW-40S**	EPA 9050	WET/2548		
3010170001	**MW-7**	SM 4500-CN-E	WETA/2055		
3010170002	**MW-5**	SM 4500-CN-E	WETA/2055		
3010170003	**MW-11**	SM 4500-CN-E	WETA/2055		
3010170004	**MW-8**	SM 4500-CN-E	WETA/2055		
3010170005	**MW-10**	SM 4500-CN-E	WETA/2055		
3010170008	**MW-2**	SM 4500-CN-E	WETA/2055		
3010170009	**MW-40D**	SM 4500-CN-E	WETA/2055		
3010170010	**MW-40S**	SM 4500-CN-E	WETA/2055		
3010170001	**MW-7**	SM 4500-CN-G	WETA/2096		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Ormeet Cercla
Pace Project No.: 3010170

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
3010170002	**MW-5**	SM 4500-CN-G	WETA/2096		
3010170003	**MW-11**	SM 4500-CN-G	WETA/2096		
3010170004	**MW-8**	SM 4500-CN-G	WETA/2096		
3010170005	**MW-10**	SM 4500-CN-G	WETA/2096		
3010170008	**MW-2**	SM 4500-CN-G	WETA/2096		
3010170009	**MW-40D**	SM 4500-CN-G	WETA/2096		
3010170010	**MW-40S**	SM 4500-CN-G	WETA/2096		

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May 18, 2010

Mr. Robert L. Fargo
Hydro Systems Managment, Inc.
PO Box 789
Washington, PA 15301

RE: Project: Ormet Cercla
Pace Project No.: 3010288

Dear Mr. Fargo:
Enclosed are the analytical results for sample(s) received by the laboratory on May 21, 2009. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Amy Wells

amy.wells@pacelabs.com
Project Manager

Enclosures

cc: Mr. John Reggi, Ormet Primary Aluminum Corporation

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CERTIFICATIONS

Project:	Ormet Cercla
Pace Project No.:	3010288

Pennsylvania Certification IDs
1638 Roseytown Road Suites 2,3&4 Greensburg, PA 15601
Wyoming Certification #: 8TMS-Q
Wisconsin/PADEP Certification
West Virginia Certification #: 143
Washington Certification #: C1941
Virginia Certification #: 00112
Virgin Island/PADEP Certification
Utah/NELAC Certification #: ANTE
Texas/NELAC Certification #: T104704188-09 TX
Tennessee Certification #: TN2867
South Dakota Certification
Puerto Rico Certification #: PA01457
Pennsylvania/NELAC Certification #: 65-00282
Oregon/NELAC Certification #: PA200002
North Carolina Certification #: 42706
New York/NELAC Certification #: 10888
New Mexico Certification
New Jersey/NELAC Certification #: PA 051
New Hampshire/NELAC Certification #: 2976
Nevada Certification
Montana Certification #: Cert 0082
Missouri Certification #: 235
Michigan/PADEP Certification
Massachusetts Certification #: M-PA1457
Maryland Certification #: 308
Maine Certification #: PA0091
Louisiana/NELAC Certification #: LA080002
Louisiana/NELAC Certification #: 4086
Kentucky Certification #: 90133
Kansas/NELAC Certification #: E-10358
Iowa Certification #: 391
Indiana/PADEP Certification
Illinois/PADEP Certification
Idaho Certification
Hawaii/PADEP Certification
Guam/PADEP Certification
Florida/NELAC Certification #: E87683
Delaware Certification
Connecticut Certification #: PH 0694
Colorado Certification
California/NELAC Certification #: 04222CA
Arkansas Certification
Arizona Certification #: AZ0734
Alabama Certification #: 41590

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SAMPLE SUMMARY

Project: Ormet Cercla
Pace Project No.: 3010288

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3010288001	**MW-1**	Water	05/20/09 09:50	05/21/09 12:00
3010288002	**MW-29D**	Water	05/20/09 10:15	05/21/09 10:20
3010288003	**MW-29S**	Water	05/20/09 10:30	05/21/09 10:20
3010288004	**MW-16**	Water	05/20/09 10:50	05/21/09 10:20
3010288005	**MW-46**	Water	05/20/09 11:00	05/21/09 10:20
3010288006	**MW-30**	Water	05/20/09 11:30	05/21/09 10:20
3010288007	**MW-28**	Water	05/20/09 14:10	05/21/09 10:20
3010288008	**MW-18**	Water	05/20/09 14:30	05/21/09 10:20
3010288009	**MW-31**	Water	05/20/09 15:00	05/21/09 10:20
3010288010	**MW-51**	Water	05/20/09 15:15	05/21/09 10:20
3010288011	**MW-35**	Water	05/20/09 15:30	05/21/09 10:20
3010288012	**MW-37**	Water	05/20/09 16:00	05/21/09 10:20
3010288013	**MW-12**	Water	05/20/09 16:30	05/21/09 10:20
3010288014	**MW-52**	Water	05/20/09 16:40	05/21/09 10:20
3010288015	**MW-15**	Water	05/20/09 16:45	05/21/09 10:20
3010288016	**MW-36**	Water	05/20/09 17:00	05/21/09 10:20
3010288017	**MW-32**	Water	05/20/09 17:15	05/21/09 10:20

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SAMPLE ANALYTE COUNT

Project: Ormet Cercla
Pace Project No.: 3010288

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3010288001	**MW-1**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3010288002	**MW-29D**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3010288003	**MW-29S**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3010288004	**MW-16**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3010288005	**MW-46**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3010288006	**MW-30**	EPA 6010	CTS	5	PASI-PA
		EPA 8260	JAS	4	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA

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SAMPLE ANALYTE COUNT

Project: Ormet Cercla
Pace Project No.: 3010288

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3010288007	**MW-28**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3010288008	**MW-18**	EPA 6010	CTS	5	PASI-PA
		EPA 8260	JAS	4	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3010288009	**MW-31**	EPA 6010	CTS	5	PASI-PA
		EPA 8260	JAS	4	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3010288010	**MW-51**	EPA 6010	CTS	5	PASI-PA
		EPA 8260	JAS	4	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3010288011	**MW-35**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3010288012	**MW-37**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA

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SAMPLE ANALYTE COUNT

Project: Ormet Cercla
Pace Project No.: 3010288

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 4500-CN-G	DLD	1	PASI-PA
3010288013	**MW-12**	EPA 8082	SJG	9	PASI-PA
		EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3010288014	**MW-52**	EPA 8082	SJG	9	PASI-PA
3010288015	**MW-15**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3010288016	**MW-36**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3010288017	**MW-32**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA

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PROJECT NARRATIVE

Project: Ormet Cercla
Pace Project No.: 3010288

Method: **EPA 8082**
Description: 8082 GCS PCB
Client: Ormet Primary Aluminum Corporation
Date: May 18, 2010

General Information:
2 samples were analyzed for EPA 8082. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: GCSV/1452

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormet Cercla
Pace Project No.: 3010288

Method: **EPA 6010**
Description: 6010 MET ICP,Dissolved
Client: Ormet Primary Aluminum Corporation
Date: May 18, 2010

General Information:
16 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3005 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormet Cercla
Pace Project No.: 3010288

Method: **EPA 8260**
Description: 8260 MSV
Client: Ormet Primary Aluminum Corporation
Date: May 18, 2010

General Information:
4 samples were analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormet Cercla
Pace Project No.: 3010288

Method: **SM 4500F/C**
Description: 4500FC Fluoride
Client: Ormet Primary Aluminum Corporation
Date: May 18, 2010

General Information:
16 samples were analyzed for SM 4500F/C. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormet Cercla
Pace Project No.: 3010288

Method: **SM 4500-H+B**
Description: 4500H+ pH, Electrometric
Client: Ormet Primary Aluminum Corporation
Date: May 18, 2010

General Information:
16 samples were analyzed for SM 4500-H+B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H6: Analysis initiated more than 15 minutes after sample collection.
- MW-1 (Lab ID: 3010288001)
- MW-12 (Lab ID: 3010288013)
- MW-15 (Lab ID: 3010288015)
- MW-16 (Lab ID: 3010288004)
- MW-18 (Lab ID: 3010288008)
- MW-28 (Lab ID: 3010288007)
- MW-29D (Lab ID: 3010288002)
- MW-29S (Lab ID: 3010288003)
- MW-30 (Lab ID: 3010288006)
- MW-31 (Lab ID: 3010288009)
- MW-32 (Lab ID: 3010288017)
- MW-35 (Lab ID: 3010288011)
- MW-36 (Lab ID: 3010288016)
- MW-37 (Lab ID: 3010288012)
- MW-46 (Lab ID: 3010288005)
- MW-51 (Lab ID: 3010288010)

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormet Cercla
Pace Project No.: 3010288

Method: **EPA 9050**
Description: 9050 Specific Conductance
Client: Ormet Primary Aluminum Corporation
Date: May 18, 2010

General Information:
16 samples were analyzed for EPA 9050. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormet Cercla
Pace Project No.: 3010288

Method: **SM 4500-CN-E**
Description: 4500CNE Cyanide, Total
Client: Ormet Primary Aluminum Corporation
Date: May 18, 2010

General Information:
15 samples were analyzed for SM 4500-CN-E. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: WETA/2056

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 3010288015

M3: Matrix spike recovery was outside laboratory control limits due to matrix interferences.

- MS (Lab ID: 58685)
  - Cyanide

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: WETA/2056

- DUP (Lab ID: 58686)
  - Cyanide

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PROJECT NARRATIVE

Project: Ormet Cercla
Pace Project No.: 3010288

Method: **SM 4500-CN-G**
Description: 4500CNG Cyanide, Amenable
Client: Ormet Primary Aluminum Corporation
Date: May 18, 2010

General Information:
16 samples were analyzed for SM 4500-CN-G. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: Ormet Cercla
Pace Project No.: 3010288

Sample: MW-1 **Lab ID: 3010288001** Collected: 05/20/09 09:50 Received: 05/21/09 12:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	ND	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 15:54	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/22/09 10:05	05/22/09 15:54	7440-41-7	
Manganese, Dissolved	**0.47**	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 15:54	7439-96-5	
Sodium, Dissolved	**51.2**	mg/L	1.0	0.50	1	05/22/09 10:05	05/22/09 15:54	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 15:54	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**0.26**	mg/L	0.10	0.064	1		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**6.0**	Std. Units	1.0	1.0	1		05/21/09 22:27		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**562**	umhos/cm	1.0	1.0	1		05/28/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**0.090**	mg/L	0.0050	0.0031	1		05/22/09 15:07	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**0.087**	mg/L	0.0050	0.0031	1		06/01/09 13:41	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet Cercla
Pace Project No.: 3010288

Sample: MW-29D **Lab ID: 3010288002** Collected: 05/20/09 10:15 Received: 05/21/09 10:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	ND	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 16:10	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/22/09 10:05	05/22/09 16:10	7440-41-7	
Manganese, Dissolved	**2.4**	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 16:10	7439-96-5	
Sodium, Dissolved	**153**	mg/L	1.0	0.50	1	05/22/09 10:05	05/22/09 16:10	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 16:10	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**3.9**	mg/L	0.10	0.064	1		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.7**	Std. Units	1.0	1.0	1		05/21/09 22:27		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**1010**	umhos/cm	1.0	1.0	1		05/28/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**0.21**	mg/L	0.0050	0.0031	1		05/22/09 15:07	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	ND	mg/L	0.0050	0.0031	1		06/01/09 13:41	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet Cercla
Pace Project No.: 3010288

Sample: MW-29S **Lab ID: 3010288003** Collected: 05/20/09 10:30 Received: 05/21/09 10:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	ND	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 16:28	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/22/09 10:05	05/22/09 16:28	7440-41-7	
Manganese, Dissolved	**0.50**	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 16:28	7439-96-5	
Sodium, Dissolved	**300**	mg/L	1.0	0.50	1	05/22/09 10:05	05/22/09 16:28	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 16:28	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**22.8**	mg/L	0.10	0.064	1		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.6**	Std. Units	1.0	1.0	1		05/21/09 22:27		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**1230**	umhos/cm	1.0	1.0	1		05/28/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0050	0.0031	1		05/22/09 15:07	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	ND	mg/L	0.0050	0.0031	1		06/01/09 13:41	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet Cercla
Pace Project No.: 3010288

Sample: MW-16 **Lab ID: 3010288004** Collected: 05/20/09 10:50 Received: 05/21/09 10:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.045**	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 16:32	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/22/09 10:05	05/22/09 16:32	7440-41-7	
Manganese, Dissolved	**0.85**	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 16:32	7439-96-5	
Sodium, Dissolved	**266**	mg/L	1.0	0.50	1	05/22/09 10:05	05/22/09 16:32	7440-23-5	
Vanadium, Dissolved	**0.049**	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 16:32	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**35.8**	mg/L	1.0	0.64	10		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**9.0**	Std. Units	1.0	1.0	1		05/21/09 22:27		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**1040**	umhos/cm	1.0	1.0	1		05/28/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0050	0.0031	1		05/22/09 15:07	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	ND	mg/L	0.0050	0.0031	1		06/01/09 13:41	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet Cercla
Pace Project No.: 3010288

Sample: MW-46 **Lab ID: 3010288005** Collected: 05/20/09 11:00 Received: 05/21/09 10:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.048**	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 16:35	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/22/09 10:05	05/22/09 16:35	7440-41-7	
Manganese, Dissolved	**0.85**	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 16:35	7439-96-5	
Sodium, Dissolved	**268**	mg/L	1.0	0.50	1	05/22/09 10:05	05/22/09 16:35	7440-23-5	
Vanadium, Dissolved	**0.049**	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 16:35	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**35.7**	mg/L	1.0	0.64	10		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**9.0**	Std. Units	1.0	1.0	1		05/21/09 22:27		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**1040**	umhos/cm	1.0	1.0	1		05/28/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**1.2**	mg/L	0.025	0.016	5		05/22/09 15:07	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**0.077**	mg/L	0.0050	0.0031	1		06/01/09 13:41	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet Cercla
Pace Project No.: 3010288

Sample: MW-30 **Lab ID: 3010288006** Collected: 05/20/09 11:30 Received: 05/21/09 10:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	ND	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 16:38	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/22/09 10:05	05/22/09 16:38	7440-41-7	
Manganese, Dissolved	**0.62**	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 16:38	7439-96-5	
Sodium, Dissolved	**81.9**	mg/L	1.0	0.50	1	05/22/09 10:05	05/22/09 16:38	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 16:38	7440-62-2	
8260 MSV	Analytical Method: EPA 8260								
Tetrachloroethene	**0.0096**	mg/L	0.0050	0.00050	1		05/23/09 02:10	127-18-4	
4-Bromofluorobenzene (S)	93	%	70-130		1		05/23/09 02:10	460-00-4	
1,2-Dichloroethane-d4 (S)	108	%	70-130		1		05/23/09 02:10	17060-07-0	
Toluene-d8 (S)	94	%	70-130		1		05/23/09 02:10	2037-26-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**12.6**	mg/L	0.10	0.064	1		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**6.4**	Std. Units	1.0	1.0	1		05/21/09 22:27		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**593**	umhos/cm	1.0	1.0	1		05/28/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**4.2**	mg/L	0.12	0.078	25		05/22/09 15:07	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	ND	mg/L	0.0050	0.0031	1		06/01/09 13:41	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet Cercla
Pace Project No.: 3010288

Sample: MW-28 **Lab ID: 3010288007** Collected: 05/20/09 14:10 Received: 05/21/09 10:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	ND	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 16:42	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/22/09 10:05	05/22/09 16:42	7440-41-7	
Manganese, Dissolved	**0.018**	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 16:42	7439-96-5	
Sodium, Dissolved	**74.0**	mg/L	1.0	0.50	1	05/22/09 10:05	05/22/09 16:42	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 16:42	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**0.15**	mg/L	0.10	0.064	1		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**5.9**	Std. Units	1.0	1.0	1		05/21/09 22:27		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**383**	umhos/cm	1.0	1.0	1		05/28/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**4.1**	mg/L	0.12	0.078	25		05/22/09 15:07	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**0.062**	mg/L	0.0050	0.0031	1		06/01/09 13:41	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet Cercla
Pace Project No.: 3010288

Sample: MW-18 **Lab ID: 3010288008** Collected: 05/20/09 14:30 Received: 05/21/09 10:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.060**	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 16:45	7440-38-2	
Beryllium, Dissolved	**0.0014**	mg/L	0.0010	0.00050	1	05/22/09 10:05	05/22/09 16:45	7440-41-7	
Manganese, Dissolved	**0.56**	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 16:45	7439-96-5	
Sodium, Dissolved	**805**	mg/L	10.0	5.0	10	05/22/09 10:05	05/27/09 17:57	7440-23-5	
Vanadium, Dissolved	**0.021**	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 16:45	7440-62-2	
8260 MSV	Analytical Method: EPA 8260								
Tetrachloroethene	ND	mg/L	0.0050	0.00050	1		05/23/09 02:36	127-18-4	
4-Bromofluorobenzene (S)	93	%	70-130		1		05/23/09 02:36	460-00-4	
1,2-Dichloroethane-d4 (S)	111	%	70-130		1		05/23/09 02:36	17060-07-0	
Toluene-d8 (S)	96	%	70-130		1		05/23/09 02:36	2037-26-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**206**	mg/L	1.0	0.64	10		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**9.5**	Std. Units	1.0	1.0	1		05/21/09 22:27		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**3580**	umhos/cm	1.0	1.0	1		05/28/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**0.88**	mg/L	0.025	0.016	5		05/22/09 15:07	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**0.033**	mg/L	0.0050	0.0031	1		06/03/09 14:37	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet Cercla
Pace Project No.: 3010288

Sample: MW-31 **Lab ID: 3010288009** Collected: 05/20/09 15:00 Received: 05/21/09 10:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.045**	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 16:48	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/22/09 10:05	05/22/09 16:48	7440-41-7	
Manganese, Dissolved	**1.4**	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 16:48	7439-96-5	
Sodium, Dissolved	**406**	mg/L	1.0	0.50	1	05/22/09 10:05	05/22/09 16:48	7440-23-5	
Vanadium, Dissolved	**0.065**	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 16:48	7440-62-2	
8260 MSV	Analytical Method: EPA 8260								
Tetrachloroethene	**0.030**	mg/L	0.0050	0.00050	1		05/23/09 03:01	127-18-4	
4-Bromofluorobenzene (S)	94	%	70-130		1		05/23/09 03:01	460-00-4	
1,2-Dichloroethane-d4 (S)	111	%	70-130		1		05/23/09 03:01	17060-07-0	
Toluene-d8 (S)	96	%	70-130		1		05/23/09 03:01	2037-26-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**50.0**	mg/L	1.0	0.64	10		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**9.5**	Std. Units	1.0	1.0	1		05/21/09 22:27		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**1350**	umhos/cm	1.0	1.0	1		05/28/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**5.1**	mg/L	0.12	0.078	25		05/22/09 15:07	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**0.016**	mg/L	0.0050	0.0031	1		06/03/09 14:37	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet Cercla
Pace Project No.: 3010288

Sample: MW-51 **Lab ID: 3010288010** Collected: 05/20/09 15:15 Received: 05/21/09 10:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.043**	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 16:52	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/22/09 10:05	05/22/09 16:52	7440-41-7	
Manganese, Dissolved	**1.4**	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 16:52	7439-96-5	
Sodium, Dissolved	**407**	mg/L	1.0	0.50	1	05/22/09 10:05	05/22/09 16:52	7440-23-5	
Vanadium, Dissolved	**0.065**	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 16:52	7440-62-2	
8260 MSV	Analytical Method: EPA 8260								
Tetrachloroethene	**0.029**	mg/L	0.0050	0.00050	1		05/23/09 03:27	127-18-4	
4-Bromofluorobenzene (S)	95	%	70-130		1		05/23/09 03:27	460-00-4	
1,2-Dichloroethane-d4 (S)	111	%	70-130		1		05/23/09 03:27	17060-07-0	
Toluene-d8 (S)	95	%	70-130		1		05/23/09 03:27	2037-26-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**49.7**	mg/L	1.0	0.64	10		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**9.5**	Std. Units	1.0	1.0	1		05/21/09 22:27		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**1360**	umhos/cm	1.0	1.0	1		05/28/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**0.13**	mg/L	0.0050	0.0031	1		05/22/09 15:07	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	ND	mg/L	0.0050	0.0031	1		06/01/09 13:41	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet Cercla
Pace Project No.: 3010288

Sample: MW-35 **Lab ID: 3010288011** Collected: 05/20/09 15:30 Received: 05/21/09 10:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.011**	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 16:55	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/22/09 10:05	05/22/09 16:55	7440-41-7	
Manganese, Dissolved	**1.1**	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 16:55	7439-96-5	
Sodium, Dissolved	**88.4**	mg/L	1.0	0.50	1	05/22/09 10:05	05/22/09 16:55	7440-23-5	
Vanadium, Dissolved	**0.0076**	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 16:55	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**10.7**	mg/L	1.0	0.64	10		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.8**	Std. Units	1.0	1.0	1		05/21/09 22:27		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**520**	umhos/cm	1.0	1.0	1		05/28/09 00:00		
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	ND	mg/L	0.0050	0.0031	1		06/03/09 14:37	57-12-5	
	Analytical Method: SM 4500-CN-E								
Cyanide	**12.2**	mg/L	2.5	1.8	500		05/26/09 00:00	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet Cercla
Pace Project No.: 3010288

Sample: MW-37 **Lab ID: 3010288012** Collected: 05/20/09 16:00 Received: 05/21/09 10:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	ND	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 17:24	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/22/09 10:05	05/22/09 17:24	7440-41-7	
Manganese, Dissolved	**0.21**	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 17:24	7439-96-5	
Sodium, Dissolved	**53.8**	mg/L	1.0	0.50	1	05/22/09 10:05	05/22/09 17:24	7440-23-5	
Vanadium, Dissolved	**0.0084**	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 17:24	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**3.3**	mg/L	0.10	0.064	1		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**6.3**	Std. Units	1.0	1.0	1		05/21/09 22:27		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**337**	umhos/cm	1.0	1.0	1		05/28/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**7.1**	mg/L	0.12	0.078	25		05/22/09 15:07	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**0.27**	mg/L	0.0050	0.0031	1		06/03/09 14:37	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet Cercla
Pace Project No.: 3010288

Sample: MW-12 **Lab ID: 3010288013** Collected: 05/20/09 16:30 Received: 05/21/09 10:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3510								
PCB-1016 (Aroclor 1016)	ND	mg/L	0.00051	0.000086	1	05/22/09 10:20	05/28/09 01:22	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	mg/L	0.00051	0.000079	1	05/22/09 10:20	05/28/09 01:22	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	mg/L	0.00051	0.000075	1	05/22/09 10:20	05/28/09 01:22	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	mg/L	0.00051	0.000084	1	05/22/09 10:20	05/28/09 01:22	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	mg/L	0.00051	0.000055	1	05/22/09 10:20	05/28/09 01:22	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	mg/L	0.00051	0.000034	1	05/22/09 10:20	05/28/09 01:22	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	mg/L	0.00051	0.000042	1	05/22/09 10:20	05/28/09 01:22	11096-82-5	
Tetrachloro-m-xylene (S)	88	%	30-150		1	05/22/09 10:20	05/28/09 01:22	877-09-8	
Decachlorobiphenyl (S)	96	%	30-150		1	05/22/09 10:20	05/28/09 01:22	2051-24-3	
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	ND	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 17:27	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/22/09 10:05	05/22/09 17:27	7440-41-7	
Manganese, Dissolved	**2.2**	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 17:27	7439-96-5	
Sodium, Dissolved	**27.5**	mg/L	1.0	0.50	1	05/22/09 10:05	05/22/09 17:27	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 17:27	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**0.57**	mg/L	0.10	0.064	1		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.4**	Std. Units	1.0	1.0	1		05/21/09 22:27		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**579**	umhos/cm	1.0	1.0	1		05/28/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**7.1**	mg/L	0.12	0.078	25		05/22/09 15:07	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**0.052**	mg/L	0.0050	0.0031	1		06/01/09 13:41	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet Cercla
Pace Project No.: 3010288

Sample: MW-52 **Lab ID: 3010288014** Collected: 05/20/09 16:40 Received: 05/21/09 10:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3510								
PCB-1016 (Aroclor 1016)	ND	mg/L	0.00052	0.000088	1	05/22/09 10:20	05/28/09 02:30	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	mg/L	0.00052	0.000080	1	05/22/09 10:20	05/28/09 02:30	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	mg/L	0.00052	0.000076	1	05/22/09 10:20	05/28/09 02:30	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	mg/L	0.00052	0.000085	1	05/22/09 10:20	05/28/09 02:30	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	mg/L	0.00052	0.000056	1	05/22/09 10:20	05/28/09 02:30	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	mg/L	0.00052	0.000034	1	05/22/09 10:20	05/28/09 02:30	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	mg/L	0.00052	0.000043	1	05/22/09 10:20	05/28/09 02:30	11096-82-5	
Tetrachloro-m-xylene (S)	88	%	30-150		1	05/22/09 10:20	05/28/09 02:30	877-09-8	
Decachlorobiphenyl (S)	92	%	30-150		1	05/22/09 10:20	05/28/09 02:30	2051-24-3	

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ANALYTICAL RESULTS

Project: Ormet Cercla
Pace Project No.: 3010288

Sample: MW-15 **Lab ID: 3010288015** Collected: 05/20/09 16:45 Received: 05/21/09 10:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	ND	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 17:30	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/22/09 10:05	05/22/09 17:30	7440-41-7	
Manganese, Dissolved	**0.072**	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 17:30	7439-96-5	
Sodium, Dissolved	**232**	mg/L	1.0	0.50	1	05/22/09 10:05	05/22/09 17:30	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 17:30	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**17.1**	mg/L	0.10	0.064	1		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.7**	Std. Units	1.0	1.0	1		05/21/09 22:27		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**946**	umhos/cm	1.0	1.0	1		05/28/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**5.6**	mg/L	0.12	0.078	25		05/22/09 15:07	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**0.012**	mg/L	0.0050	0.0031	1		06/01/09 13:41	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet Cercla
Pace Project No.: 3010288

Sample: MW-36 **Lab ID: 3010288016** Collected: 05/20/09 17:00 Received: 05/21/09 10:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	ND	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 17:34	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/22/09 10:05	05/22/09 17:34	7440-41-7	
Manganese, Dissolved	**0.20**	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 17:34	7439-96-5	
Sodium, Dissolved	**163**	mg/L	1.0	0.50	1	05/22/09 10:05	05/22/09 17:34	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 17:34	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**26.2**	mg/L	1.0	0.64	10		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.3**	Std. Units	1.0	1.0	1		05/21/09 22:27		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**699**	umhos/cm	1.0	1.0	1		05/28/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**13.5**	mg/L	0.25	0.16	50		05/22/09 15:07	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**0.10**	mg/L	0.0050	0.0031	1		06/03/09 14:37	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet Cercla
Pace Project No.: 3010288

Sample: MW-32 **Lab ID: 3010288017** Collected: 05/20/09 17:15 Received: 05/21/09 10:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.047**	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 17:37	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	05/22/09 10:05	05/22/09 17:37	7440-41-7	
Manganese, Dissolved	**1.5**	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 17:37	7439-96-5	
Sodium, Dissolved	**398**	mg/L	1.0	0.50	1	05/22/09 10:05	05/22/09 17:37	7440-23-5	
Vanadium, Dissolved	**0.075**	mg/L	0.0050	0.0025	1	05/22/09 10:05	05/22/09 17:37	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**43.6**	mg/L	1.0	0.64	10		05/27/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**9.7**	Std. Units	1.0	1.0	1		05/21/09 22:27		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**1330**	umhos/cm	1.0	1.0	1		05/28/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**5.8**	mg/L	0.12	0.078	25		05/22/09 15:07	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**0.16**	mg/L	0.0050	0.0031	1		06/01/09 13:41	57-12-5	

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QUALITY CONTROL DATA

Project: Ormet Cercla
Pace Project No.: 3010288

QC Batch: OEXT/2090 | Analysis Method: EPA 8082
QC Batch Method: EPA 3510 | Analysis Description: 8082 GCS PCB
Associated Lab Samples: 3010288013, 3010288014

METHOD BLANK: 58165 | Matrix: Water
Associated Lab Samples: 3010288013, 3010288014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	mg/L	ND	0.00050	05/27/09 23:31	
PCB-1221 (Aroclor 1221)	mg/L	ND	0.00050	05/27/09 23:31	
PCB-1232 (Aroclor 1232)	mg/L	ND	0.00050	05/27/09 23:31	
PCB-1242 (Aroclor 1242)	mg/L	ND	0.00050	05/27/09 23:31	
PCB-1248 (Aroclor 1248)	mg/L	ND	0.00050	05/27/09 23:31	
PCB-1254 (Aroclor 1254)	mg/L	ND	0.00050	05/27/09 23:31	
PCB-1260 (Aroclor 1260)	mg/L	ND	0.00050	05/27/09 23:31	
Decachlorobiphenyl (S)	%	92	30-150	05/27/09 23:31	
Tetrachloro-m-xylene (S)	%	83	30-150	05/27/09 23:31	

LABORATORY CONTROL SAMPLE: 58166

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	mg/L	.0025	0.0021	85	55-145	
PCB-1221 (Aroclor 1221)	mg/L		ND			
PCB-1232 (Aroclor 1232)	mg/L		ND			
PCB-1242 (Aroclor 1242)	mg/L		ND			
PCB-1248 (Aroclor 1248)	mg/L		ND			
PCB-1254 (Aroclor 1254)	mg/L		ND			
PCB-1260 (Aroclor 1260)	mg/L	.0025	0.0022	87	55-145	
Decachlorobiphenyl (S)	%			66	30-150	
Tetrachloro-m-xylene (S)	%			73	30-150	

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QUALITY CONTROL DATA

Project: Ormet Cercla
Pace Project No.: 3010288

QC Batch: MPRP/2014 — Analysis Method: EPA 6010
QC Batch Method: EPA 3005 — Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 3010288001, 3010288002, 3010288003, 3010288004, 3010288005, 3010288006, 3010288007, 3010288008, 3010288009, 3010288010, 3010288011, 3010288012, 3010288013, 3010288015, 3010288016, 3010288017

METHOD BLANK: 58195 — Matrix: Water
Associated Lab Samples: 3010288001, 3010288002, 3010288003, 3010288004, 3010288005, 3010288006, 3010288007, 3010288008, 3010288009, 3010288010, 3010288011, 3010288012, 3010288013, 3010288015, 3010288016, 3010288017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	mg/L	ND	0.0050	05/22/09 15:45	
Beryllium, Dissolved	mg/L	ND	0.0010	05/22/09 15:45	
Manganese, Dissolved	mg/L	ND	0.0050	05/22/09 15:45	
Sodium, Dissolved	mg/L	ND	1.0	05/22/09 15:45	
Vanadium, Dissolved	mg/L	ND	0.0050	05/22/09 15:45	

LABORATORY CONTROL SAMPLE: 58196

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	mg/L	.5	0.51	102	80-120	
Beryllium, Dissolved	mg/L	.5	0.53	105	80-120	
Manganese, Dissolved	mg/L	.5	0.51	102	80-120	
Sodium, Dissolved	mg/L	5	4.6	91	80-120	
Vanadium, Dissolved	mg/L	.5	0.50	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 58198 58199

Parameter	Units	3010288001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	mg/L	ND	.5	.5	0.52	0.52	103	104	75-125	.7	20	
Beryllium, Dissolved	mg/L	ND	.5	.5	0.52	0.52	104	104	75-125	.5	20	
Manganese, Dissolved	mg/L	0.47	.5	.5	0.97	0.98	100	101	75-125	.7	20	
Sodium, Dissolved	mg/L	51.2	5	5	57.0	57.4	117	125	75-125	.7	20	
Vanadium, Dissolved	mg/L	ND	.5	.5	0.50	0.51	101	102	75-125	.8	20	

MATRIX SPIKE SAMPLE: 58201

Parameter	Units	3010288011 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	mg/L	0.011	.5	0.53	104	75-125	
Beryllium, Dissolved	mg/L	ND	.5	0.53	105	75-125	
Manganese, Dissolved	mg/L	1.1	.5	1.6	98	75-125	
Sodium, Dissolved	mg/L	88.4	5	94.0	112	75-125	
Vanadium, Dissolved	mg/L	0.0076	.5	0.51	101	75-125	

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QUALITY CONTROL DATA

Project: Ormet Cercla
Pace Project No.: 3010288

SAMPLE DUPLICATE: 58197

Parameter	Units	3010288001 Result	Dup Result	RPD	Max RPD	Qualifiers
Arsenic, Dissolved	mg/L	ND	ND		20	
Beryllium, Dissolved	mg/L	ND	ND		20	
Manganese, Dissolved	mg/L	0.47	0.48	.5	20	
Sodium, Dissolved	mg/L	51.2	51.6	.8	20	
Vanadium, Dissolved	mg/L	ND	ND		20	

SAMPLE DUPLICATE: 58200

Parameter	Units	3010288011 Result	Dup Result	RPD	Max RPD	Qualifiers
Arsenic, Dissolved	mg/L	0.011	0.010	11	20	
Beryllium, Dissolved	mg/L	ND	ND		20	
Manganese, Dissolved	mg/L	1.1	1.1	2	20	
Sodium, Dissolved	mg/L	88.4	87.9	.5	20	
Vanadium, Dissolved	mg/L	0.0076	0.0069	9	20	

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QUALITY CONTROL DATA

Project: Ormet Cercla
Pace Project No.: 3010288

QC Batch: MSV/2570 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV
Associated Lab Samples: 3010288006, 3010288008, 3010288009, 3010288010

METHOD BLANK: 58419 Matrix: Water
Associated Lab Samples: 3010288006, 3010288008, 3010288009, 3010288010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Tetrachloroethene	mg/L	ND	0.0050	05/22/09 22:43	
1,2-Dichloroethane-d4 (S)	%	105	70-130	05/22/09 22:43	
4-Bromofluorobenzene (S)	%	97	70-130	05/22/09 22:43	
Toluene-d8 (S)	%	99	70-130	05/22/09 22:43	

LABORATORY CONTROL SAMPLE: 58420

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Tetrachloroethene	mg/L	.02	0.021	107	70-130	
1,2-Dichloroethane-d4 (S)	%			104	70-130	
4-Bromofluorobenzene (S)	%			98	70-130	
Toluene-d8 (S)	%			99	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 58421 58422

Parameter	Units	3010170002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Tetrachloroethene	mg/L	ND	.02	.02	0.021	0.019	99	89	70-130	10	30	
1,2-Dichloroethane-d4 (S)	%						112	111	70-130			
4-Bromofluorobenzene (S)	%						95	95	70-130			
Toluene-d8 (S)	%						96	85	70-130			

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QUALITY CONTROL DATA

Project: Ormet Cercla
Pace Project No.: 3010288

QC Batch: WET/2590 | Analysis Method: SM 4500F/C
QC Batch Method: SM 4500F/C | Analysis Description: SM4500FC Fluoride Water
Associated Lab Samples: 3010288001, 3010288002, 3010288003, 3010288004, 3010288005, 3010288006

METHOD BLANK: 59157 | Matrix: Water
Associated Lab Samples: 3010288001, 3010288002, 3010288003, 3010288004, 3010288005, 3010288006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	05/27/09 00:00	

LABORATORY CONTROL SAMPLE: 59158

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2	1.8	92	85-115	

MATRIX SPIKE SAMPLE: 59165

Parameter	Units	3010287003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	6.8	4	10.8	101	85-115	

SAMPLE DUPLICATE: 59166

Parameter	Units	3010287003 Result	Dup Result	RPD	Max RPD	Qualifiers
Fluoride	mg/L	6.8	6.7	.6	20	

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QUALITY CONTROL DATA

Project: Ormet Cercla
Pace Project No.: 3010288

QC Batch: WET/2591 | Analysis Method: SM 4500F/C
QC Batch Method: SM 4500F/C | Analysis Description: SM4500FC Fluoride Water
Associated Lab Samples: 3010288007, 3010288008, 3010288009, 3010288010, 3010288011, 3010288012, 3010288013, 3010288015, 3010288016, 3010288017

METHOD BLANK: 59178 | Matrix: Water
Associated Lab Samples: 3010288007, 3010288008, 3010288009, 3010288010, 3010288011, 3010288012, 3010288013, 3010288015, 3010288016, 3010288017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	05/27/09 00:00	

LABORATORY CONTROL SAMPLE: 59179

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2	2.0	98	85-115	

MATRIX SPIKE SAMPLE: 59180

Parameter	Units	3010320009 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	17.0	4	21.0	100	85-115	

SAMPLE DUPLICATE: 59181

Parameter	Units	3010320009 Result	Dup Result	RPD	Max RPD	Qualifiers
Fluoride	mg/L	17.0	17.2	1	20	

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QUALITY CONTROL DATA

Project: Ormet Cercla
Pace Project No.: 3010288

QC Batch: WET/2563 | Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B | Analysis Description: 4500H+B pH
Associated Lab Samples: 3010288001, 3010288002, 3010288003, 3010288004, 3010288005, 3010288006, 3010288007, 3010288008, 3010288009, 3010288010, 3010288011, 3010288012, 3010288013, 3010288015, 3010288016, 3010288017

SAMPLE DUPLICATE: 58154

Parameter	Units	3010284001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	4.4	4.4	.2	10	H6

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QUALITY CONTROL DATA

Project: Ormet Cercla
Pace Project No.: 3010288

QC Batch: WET/2604 | Analysis Method: EPA 9050
QC Batch Method: EPA 9050 | Analysis Description: 9050 Specific Conductance
Associated Lab Samples: 3010288001, 3010288002, 3010288003, 3010288004, 3010288005, 3010288006, 3010288007, 3010288008, 3010288009, 3010288010, 3010288011, 3010288012, 3010288013, 3010288015, 3010288016, 3010288017

METHOD BLANK: 59553 | Matrix: Water
Associated Lab Samples: 3010288001, 3010288002, 3010288003, 3010288004, 3010288005, 3010288006, 3010288007, 3010288008, 3010288009, 3010288010, 3010288011, 3010288012, 3010288013, 3010288015, 3010288016, 3010288017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Specific Conductance	umhos/cm	ND	1.0	05/28/09 00:00	

LABORATORY CONTROL SAMPLE: 59554

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Specific Conductance	umhos/cm	1410	1340	95	85-115	

SAMPLE DUPLICATE: 59555

Parameter	Units	3010288010 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	1360	1340	1	20	

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QUALITY CONTROL DATA

Project: Ormet Cercla
Pace Project No.: 3010288

QC Batch: WETA/2056 | Analysis Method: SM 4500-CN-E
QC Batch Method: SM 4500-CN-E | Analysis Description: 4500CNE Cyanide, Total
Associated Lab Samples: 3010288001, 3010288002, 3010288003, 3010288004, 3010288005, 3010288006, 3010288007, 3010288008, 3010288009, 3010288010, 3010288011, 3010288012, 3010288013, 3010288015, 3010288016, 3010288017

METHOD BLANK: 58683 | Matrix: Water
Associated Lab Samples: 3010288001, 3010288002, 3010288003, 3010288004, 3010288005, 3010288006, 3010288007, 3010288008, 3010288009, 3010288010, 3010288011, 3010288012, 3010288013, 3010288015, 3010288016, 3010288017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide	mg/L	ND	0.0050	05/22/09 15:07	

LABORATORY CONTROL SAMPLE: 58684

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	.2	0.21	105	90-110	

MATRIX SPIKE SAMPLE: 58685

Parameter	Units	3010288015 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	5.6	.1	5.6	-51	90-110	M3

SAMPLE DUPLICATE: 58686

Parameter	Units	3010288015 Result	Dup Result	RPD	Max RPD	Qualifiers
Cyanide	mg/L	5.6	5.3	5	20	

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QUALITY CONTROL DATA

Project: Ormet Cercla
Pace Project No.: 3010288

QC Batch: WETA/2096 | Analysis Method: SM 4500-CN-G
QC Batch Method: SM 4500-CN-G | Analysis Description: 4500CNG Cyanide, Amenable
Associated Lab Samples: 3010288001, 3010288002, 3010288003, 3010288004, 3010288005, 3010288006, 3010288007, 3010288010, 3010288013, 3010288015, 3010288017

METHOD BLANK: 60913 | Matrix: Water
Associated Lab Samples: 3010288001, 3010288002, 3010288003, 3010288004, 3010288005, 3010288006, 3010288007, 3010288010, 3010288013, 3010288015, 3010288017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Amenable Cyanide	mg/L	ND	0.0050	06/01/09 13:41	

SAMPLE DUPLICATE: 60914

Parameter	Units	3010288017 Result	Dup Result	RPD	Max RPD	Qualifiers
Amenable Cyanide	mg/L	0.16	0.16	.8	20	

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QUALITY CONTROL DATA

Project: Ormet Cercla
Pace Project No.: 3010288

QC Batch: WETA/2119 | Analysis Method: SM 4500-CN-G
QC Batch Method: SM 4500-CN-G | Analysis Description: 4500CNG Cyanide, Amenable
Associated Lab Samples: 3010288008, 3010288009, 3010288011, 3010288012, 3010288016

METHOD BLANK: 62822 | Matrix: Water
Associated Lab Samples: 3010288008, 3010288009, 3010288011, 3010288012, 3010288016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Amenable Cyanide	mg/L	ND	0.0050	06/03/09 14:37	

SAMPLE DUPLICATE: 62824

Parameter	Units	3010320010 Result	Dup Result	RPD	Max RPD	Qualifiers
Amenable Cyanide	mg/L	0.12	0.12	3	20	

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QUALIFIERS

Project: Ormet Cercla
Pace Project No.: 3010288

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

U - Indicates the compound was analyzed for, but not detected.

LABORATORIES

PASI-PA	Pace Analytical Services - Greensburg

BATCH QUALIFIERS

Batch: OEXT/2090

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

H6	Analysis initiated more than 15 minutes after sample collection.
M3	Matrix spike recovery was outside laboratory control limits due to matrix interferences.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Ormet Cercla
Pace Project No.: 3010288

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
3010288013	**MW-12**	EPA 3510	OEXT/2090	EPA 8082	GCSV/1452
3010288014	**MW-52**	EPA 3510	OEXT/2090	EPA 8082	GCSV/1452
3010288001	**MW-1**	EPA 3005	MPRP/2014	EPA 6010	ICP/1843
3010288002	**MW-29D**	EPA 3005	MPRP/2014	EPA 6010	ICP/1843
3010288003	**MW-29S**	EPA 3005	MPRP/2014	EPA 6010	ICP/1843
3010288004	**MW-16**	EPA 3005	MPRP/2014	EPA 6010	ICP/1843
3010288005	**MW-46**	EPA 3005	MPRP/2014	EPA 6010	ICP/1843
3010288006	**MW-30**	EPA 3005	MPRP/2014	EPA 6010	ICP/1843
3010288007	**MW-28**	EPA 3005	MPRP/2014	EPA 6010	ICP/1843
3010288008	**MW-18**	EPA 3005	MPRP/2014	EPA 6010	ICP/1843
3010288009	**MW-31**	EPA 3005	MPRP/2014	EPA 6010	ICP/1843
3010288010	**MW-51**	EPA 3005	MPRP/2014	EPA 6010	ICP/1843
3010288011	**MW-35**	EPA 3005	MPRP/2014	EPA 6010	ICP/1843
3010288012	**MW-37**	EPA 3005	MPRP/2014	EPA 6010	ICP/1843
3010288013	**MW-12**	EPA 3005	MPRP/2014	EPA 6010	ICP/1843
3010288015	**MW-15**	EPA 3005	MPRP/2014	EPA 6010	ICP/1843
3010288016	**MW-36**	EPA 3005	MPRP/2014	EPA 6010	ICP/1843
3010288017	**MW-32**	EPA 3005	MPRP/2014	EPA 6010	ICP/1843
3010288006	**MW-30**	EPA 8260	MSV/2570		
3010288008	**MW-18**	EPA 8260	MSV/2570		
3010288009	**MW-31**	EPA 8260	MSV/2570		
3010288010	**MW-51**	EPA 8260	MSV/2570		
3010288001	**MW-1**	SM 4500F/C	WET/2590		
3010288002	**MW-29D**	SM 4500F/C	WET/2590		
3010288003	**MW-29S**	SM 4500F/C	WET/2590		
3010288004	**MW-16**	SM 4500F/C	WET/2590		
3010288005	**MW-46**	SM 4500F/C	WET/2590		
3010288006	**MW-30**	SM 4500F/C	WET/2590		
3010288007	**MW-28**	SM 4500F/C	WET/2591		
3010288008	**MW-18**	SM 4500F/C	WET/2591		
3010288009	**MW-31**	SM 4500F/C	WET/2591		
3010288010	**MW-51**	SM 4500F/C	WET/2591		
3010288011	**MW-35**	SM 4500F/C	WET/2591		
3010288012	**MW-37**	SM 4500F/C	WET/2591		
3010288013	**MW-12**	SM 4500F/C	WET/2591		
3010288015	**MW-15**	SM 4500F/C	WET/2591		
3010288016	**MW-36**	SM 4500F/C	WET/2591		
3010288017	**MW-32**	SM 4500F/C	WET/2591		
3010288001	**MW-1**	SM 4500-H+B	WET/2563		
3010288002	**MW-29D**	SM 4500-H+B	WET/2563		
3010288003	**MW-29S**	SM 4500-H+B	WET/2563		
3010288004	**MW-16**	SM 4500-H+B	WET/2563		
3010288005	**MW-46**	SM 4500-H+B	WET/2563		
3010288006	**MW-30**	SM 4500-H+B	WET/2563		
3010288007	**MW-28**	SM 4500-H+B	WET/2563		
3010288008	**MW-18**	SM 4500-H+B	WET/2563		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Ormet Cercla
Pace Project No.: 3010288

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
3010288009	**MW-31**	SM 4500-H+B	WET/2563		
3010288010	**MW-51**	SM 4500-H+B	WET/2563		
3010288011	**MW-35**	SM 4500-H+B	WET/2563		
3010288012	**MW-37**	SM 4500-H+B	WET/2563		
3010288013	**MW-12**	SM 4500-H+B	WET/2563		
3010288015	**MW-15**	SM 4500-H+B	WET/2563		
3010288016	**MW-36**	SM 4500-H+B	WET/2563		
3010288017	**MW-32**	SM 4500-H+B	WET/2563		
3010288001	**MW-1**	EPA 9050	WET/2604		
3010288002	**MW-29D**	EPA 9050	WET/2604		
3010288003	**MW-29S**	EPA 9050	WET/2604		
3010288004	**MW-16**	EPA 9050	WET/2604		
3010288005	**MW-46**	EPA 9050	WET/2604		
3010288006	**MW-30**	EPA 9050	WET/2604		
3010288007	**MW-28**	EPA 9050	WET/2604		
3010288008	**MW-18**	EPA 9050	WET/2604		
3010288009	**MW-31**	EPA 9050	WET/2604		
3010288010	**MW-51**	EPA 9050	WET/2604		
3010288011	**MW-35**	EPA 9050	WET/2604		
3010288012	**MW-37**	EPA 9050	WET/2604		
3010288013	**MW-12**	EPA 9050	WET/2604		
3010288015	**MW-15**	EPA 9050	WET/2604		
3010288016	**MW-36**	EPA 9050	WET/2604		
3010288017	**MW-32**	EPA 9050	WET/2604		
3010288001	**MW-1**	SM 4500-CN-E	WETA/2056		
3010288002	**MW-29D**	SM 4500-CN-E	WETA/2056		
3010288003	**MW-29S**	SM 4500-CN-E	WETA/2056		
3010288004	**MW-16**	SM 4500-CN-E	WETA/2056		
3010288005	**MW-46**	SM 4500-CN-E	WETA/2056		
3010288006	**MW-30**	SM 4500-CN-E	WETA/2056		
3010288007	**MW-28**	SM 4500-CN-E	WETA/2056		
3010288008	**MW-18**	SM 4500-CN-E	WETA/2056		
3010288009	**MW-31**	SM 4500-CN-E	WETA/2056		
3010288010	**MW-51**	SM 4500-CN-E	WETA/2056		
3010288012	**MW-37**	SM 4500-CN-E	WETA/2056		
3010288013	**MW-12**	SM 4500-CN-E	WETA/2056		
3010288015	**MW-15**	SM 4500-CN-E	WETA/2056		
3010288016	**MW-36**	SM 4500-CN-E	WETA/2056		
3010288017	**MW-32**	SM 4500-CN-E	WETA/2056		
3010288001	**MW-1**	SM 4500-CN-G	WETA/2096		
3010288002	**MW-29D**	SM 4500-CN-G	WETA/2096		
3010288003	**MW-29S**	SM 4500-CN-G	WETA/2096		
3010288004	**MW-16**	SM 4500-CN-G	WETA/2096		
3010288005	**MW-46**	SM 4500-CN-G	WETA/2096		
3010288006	**MW-30**	SM 4500-CN-G	WETA/2096		
3010288007	**MW-28**	SM 4500-CN-G	WETA/2096		
3010288008	**MW-18**	SM 4500-CN-G	WETA/2119		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Ormet Cercla
Pace Project No.: 3010288

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
3010288009	**MW-31**	SM 4500-CN-G	WETA/2119		
3010288010	**MW-51**	SM 4500-CN-G	WETA/2096		
3010288011	**MW-35**	SM 4500-CN-G	WETA/2119		
3010288012	**MW-37**	SM 4500-CN-G	WETA/2119		
3010288013	**MW-12**	SM 4500-CN-G	WETA/2096		
3010288015	**MW-15**	SM 4500-CN-G	WETA/2096		
3010288016	**MW-36**	SM 4500-CN-G	WETA/2119		
3010288017	**MW-32**	SM 4500-CN-G	WETA/2096		

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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.

1295858

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: ORMET-CERCLA
Project Number: HM00326

Section C Invoice Information:

Attention: BOB FARGO
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager: AMY WELLS
Pace Profile #:

REGULATORY AGENCY: ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☒ OTHER CERCLA

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	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: 8260-PCE	PCBs	pH, Cond, F	METALS (DISS.)	TOTAL/AMEN. CN	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-2	WT	G			9-24	1015		6	1		1	3	1				X		X	X	X		001
2	MW-5					9-24	945		6	1		1	3	1				X		X	X	X		002
3	MW-12					9-24	1330		4	2		1		1					X	X	X	X		003
4	MW-16					9-23	1515		3	1		1		1						X	X	X		004
5	MW-18					9-24	1100		6	1		1	3	1				X		X	X	X		005
6	MW-28					9-23	1545		3	1		1		1						X	X	X		006
7	MW-31					9-24	1130		6	1		1	3	1				X		X	X	X		~~007~~
8	MW-32					9-24	1520		3	1		1		1						X	X	X		008
9	MW-35					9-24	1415		3	1		1		1						X	X	X		009
10	MW-36					9-24	1500		3	1		1		1						X	X	X		010
11	MW-37					9-24	1430		3	1		1		1						X	X	X		011
12	MW-39S					9-24	1345		3	1		1		1						X	X	X		012

3016038

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
METALS SAMPLES	R Fargo / HMI	9/25	900	[signature]	9-25	1310	5.4	Y	Y	Y
FIELD FILTERED										

ORIGINAL

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: ROBERT L. FARGO
SIGNATURE of SAMPLER: R Fargo
DATE Signed (MM/DD/YY): 9/25/09

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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Page: 2 of 2

1295859

Section A Required Client Information:
Company: HYDROSYSTEMS MGMT, INC
Address: P.O. BOX 789
WASHINGTON, PA 15301
Email To: rfargo@hmicorsu
Phone: 724-228-4310
Requested Due Date/TAT: STD.

Section B Required Project Information:
Report To: BOB FARGO
Copy To:
Purchase Order No.: SING-20M
Project Name: ORMET-CERCLA
Project Number: HM00326

Section C Invoice Information:
Attention: BOB FARGO
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager: AMY WELLS
Pace Profile #:

REGULATORY AGENCY: ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☒ OTHER CERCLA

Site Location STATE: OH

Requested Analysis Filtered (Y/N)

ITEM #	Section D Required Client Information: 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	PCBS	PCE	pH, COND., F	METALS (DISS.)	TOT. AMEN., CN	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-44S	WT	G			9-23	1440		1	1									X						013
2	MW-44D					9-23	1430		1	1									X						014
3	MW-48					9-23	1545		3	1		1		1							X	X	X		015
4	~~MW-31~~ MW-51 RLF					9-24	1145		6	1		1	3	1						X	X	X	X		016
5	MW-52					9-24	1200		1			1											X		017
6																									
7																									
8								(1145) RLF																	
9																									
10																									
11																									
12																									

30160356

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
METALS SAMPLES FIELD FILTERED	R Fargo/HMS	9/25	900		9-25	1310	5.4	Y	Y	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: ROBERT L. FARGO
SIGNATURE of SAMPLER: R Fargo
DATE Signed (MM/DD/YY): 9/25/09

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.

Sample Condition Upon Receipt

Pace Analytical

Client Name: Hydro Systems HMI Project # 30160038

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no

Optional
Proj. Due Date:
Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other _____

Thermometer Used (3) 4 Type of Ice: (Wet) Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 5.4 Biological Tissue is Frozen: Yes No

Date and initials of person examining contents: 9/25/09 [illegible]

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☑Yes ☐No ☐N/A	6. PH
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☑Yes ☐No ☐N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: Aq	☐Yes ☑No ☐N/A	12. See Below
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	
exceptions: (VOA) coliform, TOC, O&G, WI-DRO (water)	☑Yes ☐No	Initial when completed / Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☑No ☐N/A	15.
Trip Blank Present:	☑Yes ☐No ☐N/A	16.
Trip Blank Custody Seals Present	☑Yes ☐No ☐N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Bob Fargo via Email Date/Time: _____

Comments/ Resolution: Trip Blank received, but not listed on the COC.
MW-5 Cyanide sample time matches bottle ord time for MW-2 missing bottle
MW-5 missing 1 VOA vial
MW-31 is on COC twice → 2nd MW-31 should be MW-51. Collected 9/24/09 @ 11:45
MW-52 is preserved with NaOH. Per client run for total & Amenable Cyanide anyway. See Email for further Instruction

Project Manager Review: [illegible] Date: 9/29/09

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

F-ALL003-3, 11September2006

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

May 13, 2010

Mr. Robert L. Fargo
Hydro Systems Managment, Inc.
PO Box 789
Washington, PA 15301

RE: Project: Ormet-Cercla
Pace Project No.: 3016038

Dear Mr. Fargo:
Enclosed are the analytical results for sample(s) received by the laboratory on September 25, 2009. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Amy Wells

amy.wells@pacelabs.com
Project Manager

Enclosures

cc: Mr. John Reggi, Ormet Primary Aluminum Corporation

REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Ormet-Cercla
Pace Project No.: 3016038

Pennsylvania Certification IDs
1638 Roseytown Road Suites 2,3&4 Greensburg, PA 15601
Wyoming Certification #: 8TMS-Q
Wisconsin/PADEP Certification
West Virginia Certification #: 143
Washington Certification #: C1941
Virginia Certification #: 00112
Virgin Island/PADEP Certification
Utah/NELAC Certification #: ANTE
Texas/NELAC Certification #: T104704188-09 TX
Tennessee Certification #: TN2867
South Dakota Certification
Puerto Rico Certification #: PA01457
Pennsylvania/NELAC Certification #: 65-00282
Oregon/NELAC Certification #: PA200002
North Carolina Certification #: 42706
New York/NELAC Certification #: 10888
New Mexico Certification
New Jersey/NELAC Certification #: PA 051
New Hampshire/NELAC Certification #: 2976
Nevada Certification
Montana Certification #: Cert 0082
Missouri Certification #: 235
Michigan/PADEP Certification
Massachusetts Certification #: M-PA1457
Maryland Certification #: 308
Maine Certification #: PA0091
Louisiana/NELAC Certification #: LA080002
Louisiana/NELAC Certification #: 4086
Kentucky Certification #: 90133
Kansas/NELAC Certification #: E-10358
Iowa Certification #: 391
Indiana/PADEP Certification
Illinois/PADEP Certification
Idaho Certification
Hawaii/PADEP Certification
Guam/PADEP Certification
Florida/NELAC Certification #: E87683
Delaware Certification
Connecticut Certification #: PH 0694
Colorado Certification
California/NELAC Certification #: 04222CA
Arkansas Certification
Arizona Certification #: AZ0734
Alabama Certification #: 41590

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SAMPLE SUMMARY

Project: Ormet-Cercla
Pace Project No.: 3016038

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3016038001	**MW-2**	Water	09/24/09 10:15	09/25/09 13:10
3016038002	**MW-5**	Water	09/24/09 09:45	09/25/09 13:10
3016038003	**MW-12**	Water	09/24/09 13:30	09/25/09 13:10
3016038004	**MW-16**	Water	09/23/09 15:15	09/25/09 13:10
3016038005	**MW-18**	Water	09/24/09 11:00	09/25/09 13:10
3016038006	**MW-28**	Water	09/23/09 15:45	09/25/09 13:10
3016038007	**MW-31**	Water	09/24/09 11:30	09/25/09 13:10
3016038008	**MW-32**	Water	09/24/09 15:20	09/25/09 13:10
3016038009	**MW-35**	Water	09/24/09 14:15	09/25/09 13:10
3016038010	**MW-36**	Water	09/24/09 15:00	09/25/09 13:10
3016038011	**MW-37**	Water	09/24/09 14:30	09/25/09 13:10
3016038012	**MW-39S**	Water	09/24/09 13:45	09/25/09 13:10
3016038013	**MW-44S**	Water	09/23/09 14:40	09/25/09 13:10
3016038014	**MW-44D**	Water	09/23/09 14:30	09/25/09 13:10
3016038015	**MW-48**	Water	09/23/09 15:45	09/25/09 13:10
3016038016	**MW-51**	Water	09/24/09 11:45	09/25/09 13:10
3016038017	**MW-52**	Water	09/24/09 12:00	09/25/09 13:10
3016038018	**TRIP BLANK**	Water		09/25/09 19:06

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SAMPLE ANALYTE COUNT

Project: Ormet-Cercla
Pace Project No.: 3016038

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3016038001	**MW-2**	EPA 6010	CTS	5	PASI-PA
		EPA 8260	EAC	4	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3016038002	**MW-5**	EPA 6010	CTS	5	PASI-PA
		EPA 8260	EAC	4	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3016038003	**MW-12**	EPA 8082	CWB	9	PASI-PA
		EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3016038004	**MW-16**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3016038005	**MW-18**	EPA 6010	CTS	5	PASI-PA
		EPA 8260	EAC	4	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3016038006	**MW-28**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA

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Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: Ormet-Cercla
Pace Project No.: 3016038

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3016038007	**MW-31**	EPA 6010	CTS	5	PASI-PA
		EPA 8260	EAC	4	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3016038008	**MW-32**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3016038009	**MW-35**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3016038010	**MW-36**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3016038011	**MW-37**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3016038012	**MW-39S**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA

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SAMPLE ANALYTE COUNT

Project: Ormet-Cercla
Pace Project No.: 3016038

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3016038013	**MW-44S**	EPA 8082	CWB	9	PASI-PA
3016038014	**MW-44D**	EPA 8082	CWB	9	PASI-PA
3016038015	**MW-48**	EPA 6010	CTS	5	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3016038016	**MW-51**	EPA 6010	CTS	5	PASI-PA
		EPA 8260	EAC	4	PASI-PA
		SM 4500F/C	DJT	1	PASI-PA
		SM 4500-H+B	SAB	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3016038017	**MW-52**	SM 4500-CN-E	DLD	1	PASI-PA
		SM 4500-CN-G	DLD	1	PASI-PA
3016038018	**TRIP BLANK**	EPA 8260	EAC	1	PASI-PA

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Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: Ormet-Cercla
Pace Project No.: 3016038

Method: **EPA 8082**
Description: 8082 GCS PCB
Client: Ormet Primary Aluminum Corporation
Date: May 13, 2010

General Information:
3 samples were analyzed for EPA 8082. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: GCSV/1860

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: Ormet-Cercla
Pace Project No.: 3016038

Method: **EPA 6010**
Description: 6010 MET ICP,Dissolved
Client: Ormet Primary Aluminum Corporation
Date: May 13, 2010

General Information:
14 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3005 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MPRP/2638

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 3016038001,3016038011

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 98544)
  - Sodium, Dissolved
- MSD (Lab ID: 98545)
  - Sodium, Dissolved

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormet-Cercla
Pace Project No.: 3016038

Method: **EPA 8260**
Description: 8260 MSV
Client: Ormet Primary Aluminum Corporation
Date: May 13, 2010

General Information:
6 samples were analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormet-Cercla
Pace Project No.: 3016038

Method: **SM 4500F/C**
Description: 4500FC Fluoride
Client: Ormet Primary Aluminum Corporation
Date: May 13, 2010

General Information:
14 samples were analyzed for SM 4500F/C. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormet-Cercla
Pace Project No.: 3016038

Method: **SM 4500-H+B**
Description: 4500H+ pH, Electrometric
Client: Ormet Primary Aluminum Corporation
Date: May 13, 2010

General Information:
14 samples were analyzed for SM 4500-H+B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H6: Analysis initiated more than 15 minutes after sample collection.

- MW-12 (Lab ID: 3016038003)
- MW-16 (Lab ID: 3016038004)
- MW-18 (Lab ID: 3016038005)
- MW-2 (Lab ID: 3016038001)
- MW-28 (Lab ID: 3016038006)
- MW-31 (Lab ID: 3016038007)
- MW-32 (Lab ID: 3016038008)
- MW-35 (Lab ID: 3016038009)
- MW-36 (Lab ID: 3016038010)
- MW-37 (Lab ID: 3016038011)
- MW-39S (Lab ID: 3016038012)
- MW-48 (Lab ID: 3016038015)
- MW-5 (Lab ID: 3016038002)
- MW-51 (Lab ID: 3016038016)

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormet-Cercla
Pace Project No.: 3016038

Method: **EPA 9050**
Description: 9050 Specific Conductance
Client: Ormet Primary Aluminum Corporation
Date: May 13, 2010

General Information:
14 samples were analyzed for EPA 9050. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Ormet-Cercla
Pace Project No.: 3016038

Method: **SM 4500-CN-E**
Description: 4500CNE Cyanide, Total
Client: Ormet Primary Aluminum Corporation
Date: May 13, 2010

General Information:
15 samples were analyzed for SM 4500-CN-E. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: WETA/2772

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 3016038001

M3: Matrix spike recovery was outside laboratory control limits due to matrix interferences.

- MS (Lab ID: 97657)
  - Cyanide

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: WETA/2772

1c: Additional Sulfamic Acid was added to this sample due to the nitric acid preservation. High nitrtite levels can form HCN when reacting with organic compounds. SM 4500 CN

- MW-52 (Lab ID: 3016038017)
  - Cyanide

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PROJECT NARRATIVE

Project: Ormet-Cercla
Pace Project No.: 3016038

Method: **SM 4500-CN-G**
Description: 4500CNG Cyanide, Amenable
Client: Ormet Primary Aluminum Corporation
Date: May 13, 2010

General Information:
15 samples were analyzed for SM 4500-CN-G. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3016038

Sample: MW-2 **Lab ID: 3016038001** Collected: 09/24/09 10:15 Received: 09/25/09 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.045**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 10:37	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	10/01/09 14:09	10/02/09 10:37	7440-41-7	
Manganese, Dissolved	**0.59**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 10:37	7439-96-5	
Sodium, Dissolved	**332**	mg/L	1.0	0.50	1	10/01/09 14:09	10/02/09 10:37	7440-23-5	
Vanadium, Dissolved	**0.026**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 10:37	7440-62-2	
8260 MSV	Analytical Method: EPA 8260								
Tetrachloroethene	**0.037**	mg/L	0.0050	0.00017	1		09/30/09 11:31	127-18-4	
4-Bromofluorobenzene (S)	98	%	70-130		1		09/30/09 11:31	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130		1		09/30/09 11:31	17060-07-0	
Toluene-d8 (S)	102	%	70-130		1		09/30/09 11:31	2037-26-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**43.7**	mg/L	1.0	0.74	10		10/09/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**9.4**	Std. Units	1.0	1.0	1		09/25/09 20:24		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**1310**	umhos/cm	1.0	1.0	1		10/06/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**11.1**	mg/L	0.25	0.18	50		09/28/09 17:34	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**0.40**	mg/L	0.0050	0.0031	1		09/30/09 18:20	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3016038

Sample: MW-5 **Lab ID: 3016038002** Collected: 09/24/09 09:45 Received: 09/25/09 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.0076**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 10:54	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	10/01/09 14:09	10/02/09 10:54	7440-41-7	
Manganese, Dissolved	**0.46**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 10:54	7439-96-5	
Sodium, Dissolved	**307**	mg/L	1.0	0.50	1	10/01/09 14:09	10/02/09 10:54	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 10:54	7440-62-2	
8260 MSV	Analytical Method: EPA 8260								
Tetrachloroethene	ND	mg/L	0.0050	0.00017	1		09/30/09 11:56	127-18-4	
4-Bromofluorobenzene (S)	98	%	70-130		1		09/30/09 11:56	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130		1		09/30/09 11:56	17060-07-0	
Toluene-d8 (S)	101	%	70-130		1		09/30/09 11:56	2037-26-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**23.7**	mg/L	0.10	0.074	1		10/09/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.0**	Std. Units	1.0	1.0	1		09/25/09 20:24		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**1340**	umhos/cm	1.0	1.0	1		10/06/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**4.6**	mg/L	0.12	0.088	25		09/28/09 17:34	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**0.51**	mg/L	0.0050	0.0031	1		09/30/09 18:20	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3016038

Sample: MW-12 **Lab ID: 3016038003** Collected: 09/24/09 13:30 Received: 09/25/09 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3510								
PCB-1016 (Aroclor 1016)	ND	mg/L	0.00052	0.000088	1	09/28/09 17:23	10/01/09 19:02	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	mg/L	0.00052	0.000080	1	09/28/09 17:23	10/01/09 19:02	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	mg/L	0.00052	0.000076	1	09/28/09 17:23	10/01/09 19:02	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	mg/L	0.00052	0.000085	1	09/28/09 17:23	10/01/09 19:02	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	mg/L	0.00052	0.000056	1	09/28/09 17:23	10/01/09 19:02	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	mg/L	0.00052	0.000034	1	09/28/09 17:23	10/01/09 19:02	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	mg/L	0.00052	0.000043	1	09/28/09 17:23	10/01/09 19:02	11096-82-5	
Tetrachloro-m-xylene (S)	73	%	30-150		1	09/28/09 17:23	10/01/09 19:02	877-09-8	
Decachlorobiphenyl (S)	95	%	30-150		1	09/28/09 17:23	10/01/09 19:02	2051-24-3	
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.0051**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 10:57	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	10/01/09 14:09	10/02/09 10:57	7440-41-7	
Manganese, Dissolved	**2.1**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 10:57	7439-96-5	
Sodium, Dissolved	**26.2**	mg/L	1.0	0.50	1	10/01/09 14:09	10/02/09 10:57	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 10:57	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**0.71**	mg/L	0.10	0.074	1		10/09/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.5**	Std. Units	1.0	1.0	1		09/25/09 20:24		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**590**	umhos/cm	1.0	1.0	1		10/06/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0050	0.0035	1		09/28/09 17:34	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	ND	mg/L	0.0050	0.0031	1		09/30/09 18:20	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3016038

Sample: MW-16 **Lab ID: 3016038004** Collected: 09/23/09 15:15 Received: 09/25/09 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.028**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 11:00	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	10/01/09 14:09	10/02/09 11:00	7440-41-7	
Manganese, Dissolved	**0.67**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 11:00	7439-96-5	
Sodium, Dissolved	**232**	mg/L	1.0	0.50	1	10/01/09 14:09	10/02/09 11:00	7440-23-5	
Vanadium, Dissolved	**0.028**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 11:00	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**31.9**	mg/L	1.0	0.74	10		10/09/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**9.0**	Std. Units	1.0	1.0	1		09/25/09 20:24		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**1040**	umhos/cm	1.0	1.0	1		10/06/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**5.0**	mg/L	0.12	0.088	25		09/28/09 17:34	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**0.38**	mg/L	0.0050	0.0031	1		09/30/09 18:20	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3016038

Sample: MW-18 **Lab ID: 3016038005** Collected: 09/24/09 11:00 Received: 09/25/09 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.065**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 11:03	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	10/01/09 14:09	10/02/09 11:03	7440-41-7	
Manganese, Dissolved	**0.13**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 11:03	7439-96-5	
Sodium, Dissolved	**384**	mg/L	1.0	0.50	1	10/01/09 14:09	10/02/09 11:03	7440-23-5	
Vanadium, Dissolved	**0.016**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 11:03	7440-62-2	
8260 MSV	Analytical Method: EPA 8260								
Tetrachloroethene	ND	mg/L	0.0050	0.00017	1		09/30/09 12:22	127-18-4	
4-Bromofluorobenzene (S)	97	%	70-130		1		09/30/09 12:22	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	70-130		1		09/30/09 12:22	17060-07-0	
Toluene-d8 (S)	101	%	70-130		1		09/30/09 12:22	2037-26-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**98.6**	mg/L	1.0	0.74	10		10/09/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**9.6**	Std. Units	1.0	1.0	1		09/25/09 21:14		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**1480**	umhos/cm	1.0	1.0	1		10/06/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**26.5**	mg/L	1.2	0.88	250		09/28/09 17:34	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**10.7**	mg/L	0.0050	0.0031	1		09/30/09 18:20	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3016038

Sample: MW-28 **Lab ID: 3016038006** Collected: 09/23/09 15:45 Received: 09/25/09 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	ND	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 11:20	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	10/01/09 14:09	10/02/09 11:20	7440-41-7	
Manganese, Dissolved	**0.0079**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 11:20	7439-96-5	
Sodium, Dissolved	**74.9**	mg/L	1.0	0.50	1	10/01/09 14:09	10/02/09 11:20	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 11:20	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**0.24**	mg/L	0.10	0.074	1		10/09/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**6.3**	Std. Units	1.0	1.0	1		09/25/09 21:14		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**400**	umhos/cm	1.0	1.0	1		10/06/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**0.14**	mg/L	0.0050	0.0035	1		09/28/09 17:34	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**0.021**	mg/L	0.0050	0.0031	1		09/30/09 18:20	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3016038

Sample: MW-31 **Lab ID: 3016038007** Collected: 09/24/09 11:30 Received: 09/25/09 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.039**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 11:24	7440-38-2	
Beryllium, Dissolved	**0.0013**	mg/L	0.0010	0.00050	1	10/01/09 14:09	10/02/09 11:24	7440-41-7	
Manganese, Dissolved	**0.89**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 11:24	7439-96-5	
Sodium, Dissolved	**393**	mg/L	1.0	0.50	1	10/01/09 14:09	10/02/09 11:24	7440-23-5	
Vanadium, Dissolved	**0.056**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 11:24	7440-62-2	
8260 MSV	Analytical Method: EPA 8260								
Tetrachloroethene	**0.040**	mg/L	0.0050	0.00017	1		09/30/09 12:47	127-18-4	
4-Bromofluorobenzene (S)	98	%	70-130		1		09/30/09 12:47	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130		1		09/30/09 12:47	17060-07-0	
Toluene-d8 (S)	99	%	70-130		1		09/30/09 12:47	2037-26-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**56.5**	mg/L	1.0	0.74	10		10/09/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**9.6**	Std. Units	1.0	1.0	1		09/25/09 21:14		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**1430**	umhos/cm	1.0	1.0	1		10/06/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**7.4**	mg/L	0.12	0.088	25		09/28/09 17:34	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**0.10**	mg/L	0.0050	0.0031	1		09/30/09 18:20	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3016038

Sample: MW-32 **Lab ID: 3016038008** Collected: 09/24/09 15:20 Received: 09/25/09 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.045**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 11:27	7440-38-2	
Beryllium, Dissolved	**0.0016**	mg/L	0.0010	0.00050	1	10/01/09 14:09	10/02/09 11:27	7440-41-7	
Manganese, Dissolved	**1.7**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 11:27	7439-96-5	
Sodium, Dissolved	**443**	mg/L	1.0	0.50	1	10/01/09 14:09	10/02/09 11:27	7440-23-5	
Vanadium, Dissolved	**0.085**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 11:27	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**66.2**	mg/L	1.0	0.74	10		10/09/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**9.8**	Std. Units	1.0	1.0	1		09/25/09 21:14		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**1600**	umhos/cm	1.0	1.0	1		10/06/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**8.0**	mg/L	0.25	0.18	50		09/28/09 17:34	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**0.28**	mg/L	0.0050	0.0031	1		09/30/09 18:20	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3016038

Sample: MW-35 **Lab ID: 3016038009** Collected: 09/24/09 14:15 Received: 09/25/09 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.0092**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 11:30	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	10/01/09 14:09	10/02/09 11:30	7440-41-7	
Manganese, Dissolved	**0.93**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 11:30	7439-96-5	
Sodium, Dissolved	**52.0**	mg/L	1.0	0.50	1	10/01/09 14:09	10/02/09 11:30	7440-23-5	
Vanadium, Dissolved	**0.0052**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 11:30	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**3.3**	mg/L	0.10	0.074	1		10/09/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.6**	Std. Units	1.0	1.0	1		09/25/09 21:14		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**402**	umhos/cm	1.0	1.0	1		10/06/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**3.9**	mg/L	0.12	0.088	25		09/28/09 17:34	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**0.13**	mg/L	0.0050	0.0031	1		09/30/09 18:20	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3016038

Sample: MW-36 **Lab ID: 3016038010** Collected: 09/24/09 15:00 Received: 09/25/09 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.0057**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 11:34	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	10/01/09 14:09	10/02/09 11:34	7440-41-7	
Manganese, Dissolved	**0.18**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 11:34	7439-96-5	
Sodium, Dissolved	**199**	mg/L	1.0	0.50	1	10/01/09 14:09	10/02/09 11:34	7440-23-5	
Vanadium, Dissolved	**0.0064**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 11:34	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**21.8**	mg/L	0.10	0.074	1		10/09/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.5**	Std. Units	1.0	1.0	1		09/25/09 21:14		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**908**	umhos/cm	1.0	1.0	1		10/06/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**1.2**	mg/L	0.025	0.018	5		09/28/09 17:34	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**0.021**	mg/L	0.0050	0.0031	1		09/30/09 18:20	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3016038

Sample: MW-37 **Lab ID: 3016038011** Collected: 09/24/09 14:30 Received: 09/25/09 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	ND	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 11:37	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	10/01/09 14:09	10/02/09 11:37	7440-41-7	
Manganese, Dissolved	**0.11**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 11:37	7439-96-5	
Sodium, Dissolved	**55.3**	mg/L	1.0	0.50	1	10/01/09 14:09	10/02/09 11:37	7440-23-5	
Vanadium, Dissolved	**0.012**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 11:37	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**2.8**	mg/L	0.10	0.074	1		10/09/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**6.4**	Std. Units	1.0	1.0	1		09/25/09 21:14		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**361**	umhos/cm	1.0	1.0	1		10/06/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**0.37**	mg/L	0.025	0.018	5		09/28/09 17:34	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**0.31**	mg/L	0.0050	0.0031	1		09/30/09 18:20	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3016038

Sample: MW-39S **Lab ID: 3016038012** Collected: 09/24/09 13:45 Received: 09/25/09 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.011**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 11:49	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	10/01/09 14:09	10/02/09 11:49	7440-41-7	
Manganese, Dissolved	**0.13**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 11:49	7439-96-5	
Sodium, Dissolved	**982**	mg/L	1.0	0.50	1	10/01/09 14:09	10/02/09 11:49	7440-23-5	
Vanadium, Dissolved	**0.013**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 11:49	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**109**	mg/L	1.0	0.74	10		10/09/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**9.0**	Std. Units	1.0	1.0	1		09/25/09 21:14		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**3050**	umhos/cm	1.0	1.0	1		10/06/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**3.5**	mg/L	0.12	0.088	25		09/28/09 17:34	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	ND	mg/L	0.0050	0.0031	1		09/30/09 18:20	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3016038

Sample: MW-44S **Lab ID: 3016038013** Collected: 09/23/09 14:40 Received: 09/25/09 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3510								
PCB-1016 (Aroclor 1016)	ND	mg/L	0.00051	0.000085	1	09/28/09 17:23	10/01/09 18:44	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	mg/L	0.00051	0.000078	1	09/28/09 17:23	10/01/09 18:44	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	mg/L	0.00051	0.000074	1	09/28/09 17:23	10/01/09 18:44	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	mg/L	0.00051	0.000083	1	09/28/09 17:23	10/01/09 18:44	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	mg/L	0.00051	0.000055	1	09/28/09 17:23	10/01/09 18:44	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	mg/L	0.00051	0.000034	1	09/28/09 17:23	10/01/09 18:44	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	mg/L	0.00051	0.000042	1	09/28/09 17:23	10/01/09 18:44	11096-82-5	
Tetrachloro-m-xylene (S)	68	%	30-150		1	09/28/09 17:23	10/01/09 18:44	877-09-8	
Decachlorobiphenyl (S)	103	%	30-150		1	09/28/09 17:23	10/01/09 18:44	2051-24-3	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3016038

Sample: MW-44D **Lab ID: 3016038014** Collected: 09/23/09 14:30 Received: 09/25/09 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3510								
PCB-1016 (Aroclor 1016)	ND	mg/L	0.00052	0.000087	1	09/28/09 17:23	10/01/09 18:53	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	mg/L	0.00052	0.000080	1	09/28/09 17:23	10/01/09 18:53	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	mg/L	0.00052	0.000076	1	09/28/09 17:23	10/01/09 18:53	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	mg/L	0.00052	0.000085	1	09/28/09 17:23	10/01/09 18:53	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	mg/L	0.00052	0.000056	1	09/28/09 17:23	10/01/09 18:53	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	mg/L	0.00052	0.000034	1	09/28/09 17:23	10/01/09 18:53	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	mg/L	0.00052	0.000042	1	09/28/09 17:23	10/01/09 18:53	11096-82-5	
Tetrachloro-m-xylene (S)	67	%	30-150		1	09/28/09 17:23	10/01/09 18:53	877-09-8	
Decachlorobiphenyl (S)	100	%	30-150		1	09/28/09 17:23	10/01/09 18:53	2051-24-3	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3016038

Sample: MW-48 **Lab ID: 3016038015** Collected: 09/23/09 15:45 Received: 09/25/09 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	ND	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 11:52	7440-38-2	
Beryllium, Dissolved	ND	mg/L	0.0010	0.00050	1	10/01/09 14:09	10/02/09 11:52	7440-41-7	
Manganese, Dissolved	**0.020**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 11:52	7439-96-5	
Sodium, Dissolved	**76.0**	mg/L	1.0	0.50	1	10/01/09 14:09	10/02/09 11:52	7440-23-5	
Vanadium, Dissolved	ND	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 11:52	7440-62-2	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**0.21**	mg/L	0.10	0.074	1		10/09/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**6.2**	Std. Units	1.0	1.0	1		09/25/09 21:14		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**448**	umhos/cm	1.0	1.0	1		10/06/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**0.13**	mg/L	0.0050	0.0035	1		09/28/09 17:34	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	ND	mg/L	0.0050	0.0031	1		09/30/09 18:20	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3016038

Sample: MW-51 **Lab ID: 3016038016** Collected: 09/24/09 11:45 Received: 09/25/09 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP,Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3005								
Arsenic, Dissolved	**0.038**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 12:10	7440-38-2	
Beryllium, Dissolved	**0.0013**	mg/L	0.0010	0.00050	1	10/01/09 14:09	10/02/09 12:10	7440-41-7	
Manganese, Dissolved	**0.92**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 12:10	7439-96-5	
Sodium, Dissolved	**409**	mg/L	1.0	0.50	1	10/01/09 14:09	10/02/09 12:10	7440-23-5	
Vanadium, Dissolved	**0.058**	mg/L	0.0050	0.0025	1	10/01/09 14:09	10/02/09 12:10	7440-62-2	
8260 MSV	Analytical Method: EPA 8260								
Tetrachloroethene	**0.047**	mg/L	0.0050	0.00017	1		09/30/09 13:13	127-18-4	
4-Bromofluorobenzene (S)	99	%	70-130		1		09/30/09 13:13	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130		1		09/30/09 13:13	17060-07-0	
Toluene-d8 (S)	101	%	70-130		1		09/30/09 13:13	2037-26-5	
4500FC Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**53.6**	mg/L	1.0	0.74	10		10/09/09 00:00	16984-48-8	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**9.6**	Std. Units	1.0	1.0	1		09/25/09 21:14		H6
9050 Specific Conductance	Analytical Method: EPA 9050								
Specific Conductance	**1480**	umhos/cm	1.0	1.0	1		10/06/09 00:00		
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**7.6**	mg/L	0.25	0.18	50		09/28/09 17:34	57-12-5	
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	**0.85**	mg/L	0.0050	0.0031	1		09/30/09 18:20	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3016038

Sample: MW-52 **Lab ID: 3016038017** Collected: 09/24/09 12:00 Received: 09/25/09 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**6.0**	mg/L	0.12	0.088	25		09/28/09 17:34	57-12-5	1c
4500CNG Cyanide, Amenable	Analytical Method: SM 4500-CN-G								
Amenable Cyanide	ND	mg/L	0.0050	0.0031	1		09/30/09 18:20	57-12-5	

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ANALYTICAL RESULTS

Project: Ormet-Cercla
Pace Project No.: 3016038

Sample: TRIP BLANK **Lab ID: 3016038018** Collected: Received: 09/25/09 19:06 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Tetrachloroethene	ND	mg/L	0.0010	0.00017	1		09/30/09 11:05	127-18-4	

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QUALITY CONTROL DATA

Project: Ormet-Cercla
Pace Project No.: 3016038

QC Batch: OEXT/3171 Analysis Method: EPA 8082
QC Batch Method: EPA 3510 Analysis Description: 8082 GCS PCB
Associated Lab Samples: 3016038003, 3016038013, 3016038014

METHOD BLANK: 97304 Matrix: Water
Associated Lab Samples: 3016038003, 3016038013, 3016038014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	mg/L	ND	0.00050	10/01/09 18:18	
PCB-1221 (Aroclor 1221)	mg/L	ND	0.00050	10/01/09 18:18	
PCB-1232 (Aroclor 1232)	mg/L	ND	0.00050	10/01/09 18:18	
PCB-1242 (Aroclor 1242)	mg/L	ND	0.00050	10/01/09 18:18	
PCB-1248 (Aroclor 1248)	mg/L	ND	0.00050	10/01/09 18:18	
PCB-1254 (Aroclor 1254)	mg/L	ND	0.00050	10/01/09 18:18	
PCB-1260 (Aroclor 1260)	mg/L	ND	0.00050	10/01/09 18:18	
Decachlorobiphenyl (S)	%	103	30-150	10/01/09 18:18	
Tetrachloro-m-xylene (S)	%	75	30-150	10/01/09 18:18	

LABORATORY CONTROL SAMPLE: 97305

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	mg/L	.0025	0.0021	86	55-145	
PCB-1221 (Aroclor 1221)	mg/L		ND			
PCB-1232 (Aroclor 1232)	mg/L		ND			
PCB-1242 (Aroclor 1242)	mg/L		ND			
PCB-1248 (Aroclor 1248)	mg/L		ND			
PCB-1254 (Aroclor 1254)	mg/L		ND			
PCB-1260 (Aroclor 1260)	mg/L	.0025	0.0024	98	55-145	
Decachlorobiphenyl (S)	%			103	30-150	
Tetrachloro-m-xylene (S)	%			72	30-150	

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QUALITY CONTROL DATA

Project: Ormet-Cercla
Pace Project No.: 3016038

QC Batch: MPRP/2638 | Analysis Method: EPA 6010
QC Batch Method: EPA 3005 | Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 3016038001, 3016038002, 3016038003, 3016038004, 3016038005, 3016038006, 3016038007, 3016038008, 3016038009, 3016038010, 3016038011, 3016038012, 3016038015, 3016038016

METHOD BLANK: 98541 | Matrix: Water
Associated Lab Samples: 3016038001, 3016038002, 3016038003, 3016038004, 3016038005, 3016038006, 3016038007, 3016038008, 3016038009, 3016038010, 3016038011, 3016038012, 3016038015, 3016038016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	mg/L	ND	0.0050	10/02/09 10:28	
Beryllium, Dissolved	mg/L	ND	0.0010	10/02/09 10:28	
Manganese, Dissolved	mg/L	ND	0.0050	10/02/09 10:28	
Sodium, Dissolved	mg/L	ND	1.0	10/02/09 10:28	
Vanadium, Dissolved	mg/L	ND	0.0050	10/02/09 10:28	

LABORATORY CONTROL SAMPLE: 98542

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	mg/L	.5	0.46	92	80-120	
Beryllium, Dissolved	mg/L	.5	0.46	93	80-120	
Manganese, Dissolved	mg/L	.5	0.46	92	80-120	
Sodium, Dissolved	mg/L	5	4.1	82	80-120	
Vanadium, Dissolved	mg/L	.5	0.45	90	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 98544 98545

Parameter	Units	3016038001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	mg/L	0.045	.5	.5	0.55	0.54	101	98	75-125	2	20	
Beryllium, Dissolved	mg/L	ND	.5	.5	0.50	0.48	101	97	75-125	4	20	
Manganese, Dissolved	mg/L	0.59	.5	.5	1.1	1.1	106	98	75-125	4	20	
Sodium, Dissolved	mg/L	332	5	5	364	348	634	320	75-125	4	20	M0
Vanadium, Dissolved	mg/L	0.026	.5	.5	0.52	0.50	98	95	75-125	4	20	

MATRIX SPIKE SAMPLE: 98547

Parameter	Units	3016038011 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	mg/L	ND	.5	0.51	102	75-125	
Beryllium, Dissolved	mg/L	ND	.5	0.52	104	75-125	
Manganese, Dissolved	mg/L	0.11	.5	0.62	104	75-125	
Sodium, Dissolved	mg/L	55.3	5	61.4	122	75-125	
Vanadium, Dissolved	mg/L	0.012	.5	0.53	103	75-125	

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QUALITY CONTROL DATA

Project: Ormet-Cercla
Pace Project No.: 3016038

SAMPLE DUPLICATE: 98543

Parameter	Units	3016038001 Result	Dup Result	RPD	Max RPD	Qualifiers
Arsenic, Dissolved	mg/L	0.045	0.046	2	20	
Beryllium, Dissolved	mg/L	ND	.00076J		20	
Manganese, Dissolved	mg/L	0.59	0.60	1	20	
Sodium, Dissolved	mg/L	332	335	1	20	
Vanadium, Dissolved	mg/L	0.026	0.027	3	20	

SAMPLE DUPLICATE: 98546

Parameter	Units	3016038011 Result	Dup Result	RPD	Max RPD	Qualifiers
Arsenic, Dissolved	mg/L	ND	0.0061		20	
Beryllium, Dissolved	mg/L	ND	.00059J		20	
Manganese, Dissolved	mg/L	0.11	0.10	5	20	
Sodium, Dissolved	mg/L	55.3	53.5	3	20	
Vanadium, Dissolved	mg/L	0.012	0.012	.7	20	

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QUALITY CONTROL DATA

Project: Ormet-Cercla
Pace Project No.: 3016038

QC Batch: MSV/3780 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV
Associated Lab Samples: 3016038001, 3016038002, 3016038005, 3016038007, 3016038016, 3016038018

METHOD BLANK: 97903 Matrix: Water
Associated Lab Samples: 3016038001, 3016038002, 3016038005, 3016038007, 3016038016, 3016038018

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Tetrachloroethene	mg/L	ND	0.0050	09/30/09 10:21	
1,2-Dichloroethane-d4 (S)	%	102	70-130	09/30/09 10:21	
4-Bromofluorobenzene (S)	%	97	70-130	09/30/09 10:21	
Toluene-d8 (S)	%	102	70-130	09/30/09 10:21	

LABORATORY CONTROL SAMPLE: 97904

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Tetrachloroethene	mg/L	.02	0.021	103	70-130	
1,2-Dichloroethane-d4 (S)	%			102	70-130	
4-Bromofluorobenzene (S)	%			100	70-130	
Toluene-d8 (S)	%			104	70-130	

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QUALITY CONTROL DATA

Project: Ormet-Cercla
Pace Project No.: 3016038

QC Batch: WET/3690 | Analysis Method: SM 4500F/C
QC Batch Method: SM 4500F/C | Analysis Description: SM4500FC Fluoride Water
Associated Lab Samples: 3016038001, 3016038002, 3016038003, 3016038004, 3016038005, 3016038006, 3016038007, 3016038008, 3016038009, 3016038010, 3016038011, 3016038012, 3016038015, 3016038016

METHOD BLANK: 101300 | Matrix: Water
Associated Lab Samples: 3016038001, 3016038002, 3016038003, 3016038004, 3016038005, 3016038006, 3016038007, 3016038008, 3016038009, 3016038010, 3016038011, 3016038012, 3016038015, 3016038016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	10/09/09 00:00	

LABORATORY CONTROL SAMPLE: 101301

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2	2.1	106	85-115	

MATRIX SPIKE SAMPLE: 101302

Parameter	Units	3016038015 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	0.21	4	4.7	112	85-115	

SAMPLE DUPLICATE: 101303

Parameter	Units	3016038015 Result	Dup Result	RPD	Max RPD	Qualifiers
Fluoride	mg/L	0.21	0.23	7	20	

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QUALITY CONTROL DATA

Project: Ormet-Cercla
Pace Project No.: 3016038

QC Batch: WET/3560 Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B Analysis Description: 4500H+B pH
Associated Lab Samples: 3016038001, 3016038002, 3016038003, 3016038004

SAMPLE DUPLICATE: 97112

Parameter	Units	3015985001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.7	5.8	1	10	H6

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QUALITY CONTROL DATA

Project: Ormet-Cercla
Pace Project No.: 3016038

QC Batch: WET/3561 | Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B | Analysis Description: 4500H+B pH
Associated Lab Samples: 3016038005, 3016038006, 3016038007, 3016038008, 3016038009, 3016038010, 3016038011, 3016038012, 3016038015, 3016038016

SAMPLE DUPLICATE: 97113

Parameter	Units	3016038005 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	9.6	9.6	.1	10	H6

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QUALITY CONTROL DATA

Project: Ormet-Cercla
Pace Project No.: 3016038

QC Batch: WET/3651 | Analysis Method: EPA 9050
QC Batch Method: EPA 9050 | Analysis Description: 9050 Specific Conductance
Associated Lab Samples: 3016038001, 3016038002, 3016038003, 3016038004, 3016038005, 3016038006, 3016038007, 3016038008, 3016038009

METHOD BLANK: 99842 | Matrix: Water
Associated Lab Samples: 3016038001, 3016038002, 3016038003, 3016038004, 3016038005, 3016038006, 3016038007, 3016038008, 3016038009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Specific Conductance	umhos/cm	ND	1.0	10/06/09 00:00	

LABORATORY CONTROL SAMPLE: 99843

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Specific Conductance	umhos/cm	1410	1500	106	85-115	

SAMPLE DUPLICATE: 99844

Parameter	Units	3016122008 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	9020	9310	3	20	

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QUALITY CONTROL DATA

Project: Ormet-Cercla
Pace Project No.: 3016038

QC Batch: WET/3652 | Analysis Method: EPA 9050
QC Batch Method: EPA 9050 | Analysis Description: 9050 Specific Conductance
Associated Lab Samples: 3016038010, 3016038011, 3016038012, 3016038015, 3016038016

METHOD BLANK: 99845 | Matrix: Water
Associated Lab Samples: 3016038010, 3016038011, 3016038012, 3016038015, 3016038016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Specific Conductance	umhos/cm	ND	1.0	10/06/09 00:00	

LABORATORY CONTROL SAMPLE: 99846

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Specific Conductance	umhos/cm	1410	1540	109	85-115	

SAMPLE DUPLICATE: 99847

Parameter	Units	3016204002 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	3220	3010	6	20	

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QUALITY CONTROL DATA

Project: Ormet-Cercla
Pace Project No.: 3016038

QC Batch: WETA/2772 — Analysis Method: SM 4500-CN-E
QC Batch Method: SM 4500-CN-E — Analysis Description: 4500CNE Cyanide, Total
Associated Lab Samples: 3016038001, 3016038002, 3016038003, 3016038004, 3016038005, 3016038006, 3016038007, 3016038008, 3016038009, 3016038010, 3016038011, 3016038012, 3016038015, 3016038016, 3016038017

METHOD BLANK: 97655 — Matrix: Water
Associated Lab Samples: 3016038001, 3016038002, 3016038003, 3016038004, 3016038005, 3016038006, 3016038007, 3016038008, 3016038009, 3016038010, 3016038011, 3016038012, 3016038015, 3016038016, 3016038017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide	mg/L	ND	0.0050	09/28/09 17:34	

LABORATORY CONTROL SAMPLE: 97656

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	.2	0.20	102	90-110	

MATRIX SPIKE SAMPLE: 97657

Parameter	Units	3016038001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	11.1	.1	11.1	0	90-110	M3

SAMPLE DUPLICATE: 97658

Parameter	Units	3016038001 Result	Dup Result	RPD	Max RPD	Qualifiers
Cyanide	mg/L	11.1	10	11	20	

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QUALITY CONTROL DATA

Project: Ormet-Cercla
Pace Project No.: 3016038

QC Batch: WETA/2789 | Analysis Method: SM 4500-CN-G
QC Batch Method: SM 4500-CN-G | Analysis Description: 4500CNG Cyanide, Amenable
Associated Lab Samples: 3016038001, 3016038002, 3016038003, 3016038004, 3016038005, 3016038006, 3016038007, 3016038008, 3016038009, 3016038010, 3016038011, 3016038012, 3016038015, 3016038016, 3016038017

METHOD BLANK: 98132 | Matrix: Water
Associated Lab Samples: 3016038001, 3016038002, 3016038003, 3016038004, 3016038005, 3016038006, 3016038007, 3016038008, 3016038009, 3016038010, 3016038011, 3016038012, 3016038015, 3016038016, 3016038017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Amenable Cyanide	mg/L	ND	0.0050	09/30/09 18:20	

SAMPLE DUPLICATE: 98133

Parameter	Units	3016038001 Result	Dup Result	RPD	Max RPD	Qualifiers
Amenable Cyanide	mg/L	0.40	ND		20	

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QUALIFIERS

Project: Ormet-Cercla
Pace Project No.: 3016038

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

U - Indicates the compound was analyzed for, but not detected.

LABORATORIES

PASI-PA	Pace Analytical Services - Greensburg

BATCH QUALIFIERS

Batch: OEXT/3171

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1c	Additional Sulfamic Acid was added to this sample due to the nitric acid preservation. High nitrtite levels can form HCN when reacting with organic compounds. SM 4500 CN
H6	Analysis initiated more than 15 minutes after sample collection.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M3	Matrix spike recovery was outside laboratory control limits due to matrix interferences.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Ormet-Cercla
Pace Project No.: 3016038

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
3016038003	**MW-12**	EPA 3510	OEXT/3171	EPA 8082	GCSV/1860
3016038013	**MW-44S**	EPA 3510	OEXT/3171	EPA 8082	GCSV/1860
3016038014	**MW-44D**	EPA 3510	OEXT/3171	EPA 8082	GCSV/1860
3016038001	**MW-2**	EPA 3005	MPRP/2638	EPA 6010	ICP/2362
3016038002	**MW-5**	EPA 3005	MPRP/2638	EPA 6010	ICP/2362
3016038003	**MW-12**	EPA 3005	MPRP/2638	EPA 6010	ICP/2362
3016038004	**MW-16**	EPA 3005	MPRP/2638	EPA 6010	ICP/2362
3016038005	**MW-18**	EPA 3005	MPRP/2638	EPA 6010	ICP/2362
3016038006	**MW-28**	EPA 3005	MPRP/2638	EPA 6010	ICP/2362
3016038007	**MW-31**	EPA 3005	MPRP/2638	EPA 6010	ICP/2362
3016038008	**MW-32**	EPA 3005	MPRP/2638	EPA 6010	ICP/2362
3016038009	**MW-35**	EPA 3005	MPRP/2638	EPA 6010	ICP/2362
3016038010	**MW-36**	EPA 3005	MPRP/2638	EPA 6010	ICP/2362
3016038011	**MW-37**	EPA 3005	MPRP/2638	EPA 6010	ICP/2362
3016038012	**MW-39S**	EPA 3005	MPRP/2638	EPA 6010	ICP/2362
3016038015	**MW-48**	EPA 3005	MPRP/2638	EPA 6010	ICP/2362
3016038016	**MW-51**	EPA 3005	MPRP/2638	EPA 6010	ICP/2362
3016038001	**MW-2**	EPA 8260	MSV/3780		
3016038002	**MW-5**	EPA 8260	MSV/3780		
3016038005	**MW-18**	EPA 8260	MSV/3780		
3016038007	**MW-31**	EPA 8260	MSV/3780		
3016038016	**MW-51**	EPA 8260	MSV/3780		
3016038018	**TRIP BLANK**	EPA 8260	MSV/3780		
3016038001	**MW-2**	SM 4500F/C	WET/3690		
3016038002	**MW-5**	SM 4500F/C	WET/3690		
3016038003	**MW-12**	SM 4500F/C	WET/3690		
3016038004	**MW-16**	SM 4500F/C	WET/3690		
3016038005	**MW-18**	SM 4500F/C	WET/3690		
3016038006	**MW-28**	SM 4500F/C	WET/3690		
3016038007	**MW-31**	SM 4500F/C	WET/3690		
3016038008	**MW-32**	SM 4500F/C	WET/3690		
3016038009	**MW-35**	SM 4500F/C	WET/3690		
3016038010	**MW-36**	SM 4500F/C	WET/3690		
3016038011	**MW-37**	SM 4500F/C	WET/3690		
3016038012	**MW-39S**	SM 4500F/C	WET/3690		
3016038015	**MW-48**	SM 4500F/C	WET/3690		
3016038016	**MW-51**	SM 4500F/C	WET/3690		
3016038001	**MW-2**	SM 4500-H+B	WET/3560		
3016038002	**MW-5**	SM 4500-H+B	WET/3560		
3016038003	**MW-12**	SM 4500-H+B	WET/3560		
3016038004	**MW-16**	SM 4500-H+B	WET/3560		
3016038005	**MW-18**	SM 4500-H+B	WET/3561		
3016038006	**MW-28**	SM 4500-H+B	WET/3561		
3016038007	**MW-31**	SM 4500-H+B	WET/3561		
3016038008	**MW-32**	SM 4500-H+B	WET/3561		
3016038009	**MW-35**	SM 4500-H+B	WET/3561		

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Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Ormet-Cercla
Pace Project No.: 3016038

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
3016038010	**MW-36**	SM 4500-H+B	WET/3561		
3016038011	**MW-37**	SM 4500-H+B	WET/3561		
3016038012	**MW-39S**	SM 4500-H+B	WET/3561		
3016038015	**MW-48**	SM 4500-H+B	WET/3561		
3016038016	**MW-51**	SM 4500-H+B	WET/3561		
3016038001	**MW-2**	EPA 9050	WET/3651		
3016038002	**MW-5**	EPA 9050	WET/3651		
3016038003	**MW-12**	EPA 9050	WET/3651		
3016038004	**MW-16**	EPA 9050	WET/3651		
3016038005	**MW-18**	EPA 9050	WET/3651		
3016038006	**MW-28**	EPA 9050	WET/3651		
3016038007	**MW-31**	EPA 9050	WET/3651		
3016038008	**MW-32**	EPA 9050	WET/3651		
3016038009	**MW-35**	EPA 9050	WET/3651		
3016038010	**MW-36**	EPA 9050	WET/3652		
3016038011	**MW-37**	EPA 9050	WET/3652		
3016038012	**MW-39S**	EPA 9050	WET/3652		
3016038015	**MW-48**	EPA 9050	WET/3652		
3016038016	**MW-51**	EPA 9050	WET/3652		
3016038001	**MW-2**	SM 4500-CN-E	WETA/2772		
3016038002	**MW-5**	SM 4500-CN-E	WETA/2772		
3016038003	**MW-12**	SM 4500-CN-E	WETA/2772		
3016038004	**MW-16**	SM 4500-CN-E	WETA/2772		
3016038005	**MW-18**	SM 4500-CN-E	WETA/2772		
3016038006	**MW-28**	SM 4500-CN-E	WETA/2772		
3016038007	**MW-31**	SM 4500-CN-E	WETA/2772		
3016038008	**MW-32**	SM 4500-CN-E	WETA/2772		
3016038009	**MW-35**	SM 4500-CN-E	WETA/2772		
3016038010	**MW-36**	SM 4500-CN-E	WETA/2772		
3016038011	**MW-37**	SM 4500-CN-E	WETA/2772		
3016038012	**MW-39S**	SM 4500-CN-E	WETA/2772		
3016038015	**MW-48**	SM 4500-CN-E	WETA/2772		
3016038016	**MW-51**	SM 4500-CN-E	WETA/2772		
3016038017	**MW-52**	SM 4500-CN-E	WETA/2772		
3016038001	**MW-2**	SM 4500-CN-G	WETA/2789		
3016038002	**MW-5**	SM 4500-CN-G	WETA/2789		
3016038003	**MW-12**	SM 4500-CN-G	WETA/2789		
3016038004	**MW-16**	SM 4500-CN-G	WETA/2789		
3016038005	**MW-18**	SM 4500-CN-G	WETA/2789		
3016038006	**MW-28**	SM 4500-CN-G	WETA/2789		
3016038007	**MW-31**	SM 4500-CN-G	WETA/2789		
3016038008	**MW-32**	SM 4500-CN-G	WETA/2789		
3016038009	**MW-35**	SM 4500-CN-G	WETA/2789		
3016038010	**MW-36**	SM 4500-CN-G	WETA/2789		
3016038011	**MW-37**	SM 4500-CN-G	WETA/2789		
3016038012	**MW-39S**	SM 4500-CN-G	WETA/2789		
3016038015	**MW-48**	SM 4500-CN-G	WETA/2789		

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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Ormet-Cercla
Pace Project No.: 3016038

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
3016038016	**MW-51**	SM 4500-CN-G	WETA/2789		
3016038017	**MW-52**	SM 4500-CN-G	WETA/2789		

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APPENDIX C

DATA VALIDATION SUMMARY REPORT FOR 2009 MONITORING EVENTS

APPENDIX C

2009 Data Validation Summary

Ormet Primary Aluminum Corporation

Hannibal, Ohio

Pace Analytical Services, Inc. Project Numbers: January 2009 = 304557; May 2009 = 3010170, 3010288 and 3010320; July 2009 = 3013531; September 2009 = 3016038.

The following apply to all samples collected during 2009 unless specific sampling events are indicated.

General

Holding Times: With exception of pH, all sample holding times were met.

Field Duplicate Relative Percent Differences (RPDs): RPD values for field duplicate sample results within +/- 20% except for the following:

January 2009: MW-36 total cyanide, 3.3 mg/L vs. <0.005 mg/L (3.3 mg/L most consistent with previous data and applied in data evaluations); <0.005 mg/L bracketed as anomalous

May 2009: MW-16 total cyanide, <0.005 mg/L vs. 1.2 mg/L (1.2 mg/L most consistent with previous data and applied in data evaluations); <0.005 mg/L bracketed as anomalous

MW-16 amenable cyanide, <0.005 mg/L vs. 0.077 mg/L (both values well below cleanup goal; no data qualification applied)

MW-31 total cyanide, 5.1 mg/L vs. 0.13 mg/L (5.1 mg/L most consistent with previous data and applied in data evaluations); 0.13 mg/L bracketed as anomalous

MW-31 amenable cyanide, 0.016 mg/L vs. <0.005 mg/L (both values well below cleanup goal ; no data qualification applied)

September 2009: MW-28 manganese, 0.0079 mg/L vs. 0.020 mg/L, RPD = 86.7% (both values well below background; no data qualification applied)
MW-28 amenable cyanide, 0.021 mg/L vs. <0.005 mg/L (both values well below cleanup goal ; no data qualification applied)
MW-31 amenable cyanide, 0.10 mg/L vs. 0.85 mg/L (both values within historical range)

Field Blanks: Field blank submitted with May 2009 samples; all results below detection.

PCBs (EPA 8082; 01/09 – three samples analyzed; 05/09 – five samples analyzed; 09/09 – three samples analyzed)

Initial Calibration: All criteria within method requirements.
Continuing Calibration: All criteria within method requirements.
Surrogates: All surrogates within QC limits.
Method Blank: All analytes below the report limit.
Laboratory Control Spike (LCS): All LCS compounds within QC limits.
Matrix Spikes (MS)/ Matrix Spike Duplicate (MSD) : Not performed due to insufficient sample volume ; 01/09, 05/09 and 09/09 samples
Duplicate Sample: All results within method acceptance criteria.

Metals (EPA 6010; 01/09 – 13 samples analyzed; 05/09 – 35 samples analyzed; 09/09 – 14 samples analyzed)

Initial Calibration: All criteria within method requirements.
Continuing Calibration: All criteria within method requirements.
Method Blank: All analyses below the report limit.
Laboratory Control Spike (LCS): All LCS compounds within QC limits.
Matrix Spike (MS)/ Matrix Spike Duplicate (MSD) : MS/MSD % recovery outside laboratory control limits for dissolved sodium (% recovery limits = 75-125); 01/09 QC Batch MPRP/1435 MSD % recovery = 128; 05/09 QC Batch MPRP/2006 MS % recovery = 173, MS % recovery = 154, MSD % recovery = 212; 05/09 QC Batch MPRP/2030 MS % recovery = -62; 09/09 QC Batch MPRP/2638 MS % recovery = 634, MSD % recovery = 320.

Duplicate Sample: All results within method acceptance criteria.

VOCs (PCE) (EPA 8260; 01/09 – four samples analyzed; 05/09 – 8 samples analyzed; 09/09 – 6 samples analyzed)

Initial Calibration: All criteria within method requirements.
Continuing Calibration: All criteria within method requirements.
Internal Standards (IS): All IS within QC limits.
Surrogates: All surrogates within QC limits.
Method Blank: All analyses below the report limit.
Laboratory Control Spike (LCS): All LCS compounds within QC limits.
Matrix Spike (MS)/ Matrix Spike Duplicate (MSD): All % recoveries and RPDs within acceptance criteria.
Duplicate Samples (DS): All DS results within method acceptance criteria.
Trip Blanks for VOCs submitted with May and September 2009 samples; no VOCs detected.

Specific Conductance (EPA 9050; 01/09 – 13 samples analyzed; 05/09 – 35 samples analyzed; 09/09 – 14 samples analyzed)

Method Blank: All analyses below the report limit.
Laboratory Control Spike (LCS): All LCS compounds within QC limits.
Matrix Spikes (MS): All % recoveries and RPDs within acceptance criteria.
Duplicate Samples (DS): All DS results within method acceptance criteria.

pH (SM 4500 – H&B; 01/09 – 13 samples analyzed; 05/09 – 35 samples analyzed; 09/09 – 14 samples analyzed)

Hold Time: Analyses initiated more than 15 minutes after sample collection; all samples. pH also analyzed in field at time of sample collection.
Method Blank: All analytes below report limit.
Laboratory Central Spike (LCS): All LCS compounds within QC limits.
Matrix Spike (MS): All % recoveries and RDPs within acceptance criteria.
Duplicate Samples (DS): All DS results within method acceptance criteria.

Fluoride (SM 4500 F/C; 01/09 – 13 samples analyzed; 05/09 – 35 samples analyzed; 09/09 – 14 samples analyzed)

Method Blank: All analytes below report limit.
Laboratory Control Spike (LCS): All LCS compounds within QC limits.
Matrix Spikes (MS)/ Matrix Spike Duplicates (MSD): All % recoveries and RPDs within acceptance criteria.
Duplicate Samples (DS): All DS results within method acceptance criteria.

Total Cyanide (SM 4500-CN-E; 01/09 – 13 samples analyzed; 05/09 – 35 samples analyzed; 07/09 – 7 samples analyzed; 09/09 – 14 samples analyzed)

Initial Calibrations: All criteria within method requirements.
Continuing Calibration: All criteria within method requirements.
Method Blank: All analytes below report limits.
Laboratory Control Spike (LCS): All LCS compounds within QC limits.
Matrix Spike (MS)/ Matrix Spike Duplicates (MSD): MS recovery outside laboratory control limits (% recovery limits = 90-100); 01/09 – QC Batch WETA/1427 total cyanide MS % recovery data = 0 due to matrix interferences; 05/09 – QC Batch WETA 2055 MS % recovery = 635 due to sample dilution (data acceptance based on LCS recovery), QC Batch WETA/2056 MS % recovery = -51 due to matrix interferences, QC Batch WETA 2087 MS % recovery = 22 due to matrix interferences; 09/09 – QC Batch WETA/2772 MS % recovery = 0 due to matrix interferences).
Duplicate Sample (DS): All DS results within method acceptance criteria.

Cyanide Amenable to Chlorination (SM 4500-CN-G; 01/09 – 13 samples analyzed; 05/09 – 35 samples analyzed; 07/09 – 7 samples analyzed; 09/09 – 14 samples analyzed)

Initial Calibration: All criteria within method requirements.
Continuing Calibration: All criteria within method requirements.
Method Blank: All analyses below the report limit.
Laboratory Control Spike (LCS): All LCS compounds within QC limits.

Matrix Spike (MS)/ Matrix Spike Duplicate (MSD): All % recoveries and RPDs within acceptance criteria.
Duplicate Sample (DS): All DS results within method acceptance criteria.

Additional Comments: 05/09 results for total cyanide and cyanide amenable to chlorination for samples from several wells were inconsistent with previous results. Re-analysis of additional samples collected during 07/09 were performed to resolve data inconsistencies. As a result, the following 05/09 results were bracketed as anomalous: MW-12 total cyanide [7.1 mg/L] and amenable cyanide [0.052 mg/L]; MW-14 total cyanide [5.6 mg/L] and amenable cyanide [0.087 mg/L]; MW-42S total cyanide [7.9 mg/L]; MW-18 total cyanide [0.88 mg/L].

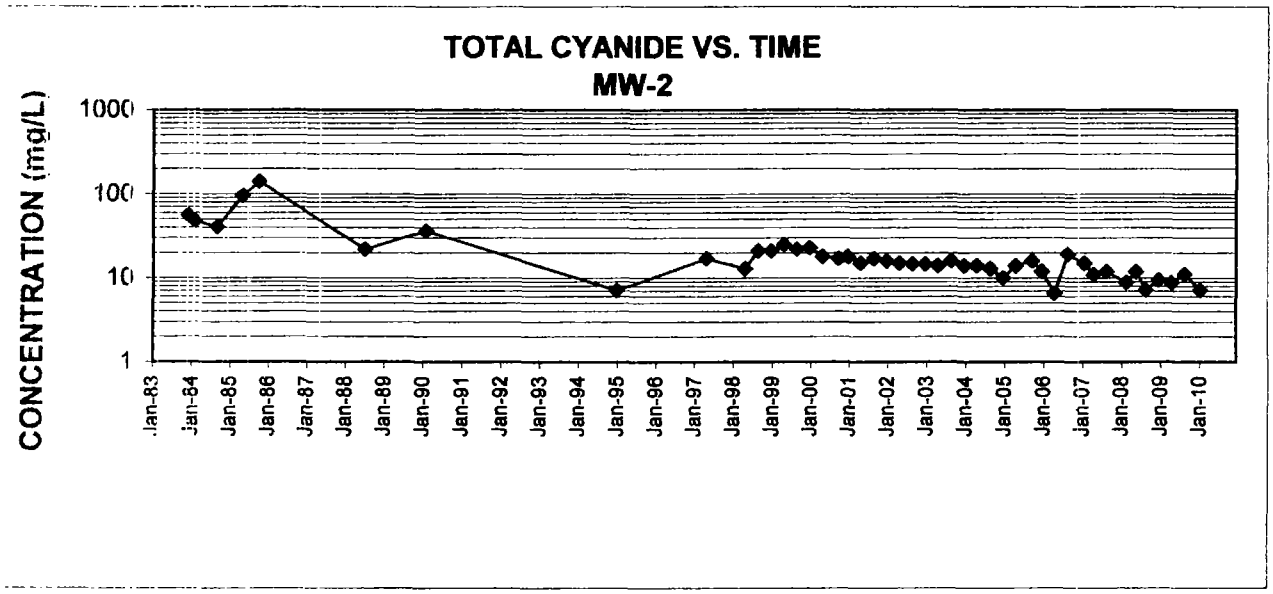
APPENDIX D

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
CONCENTRATION (mg/L)
1000
100
10
1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
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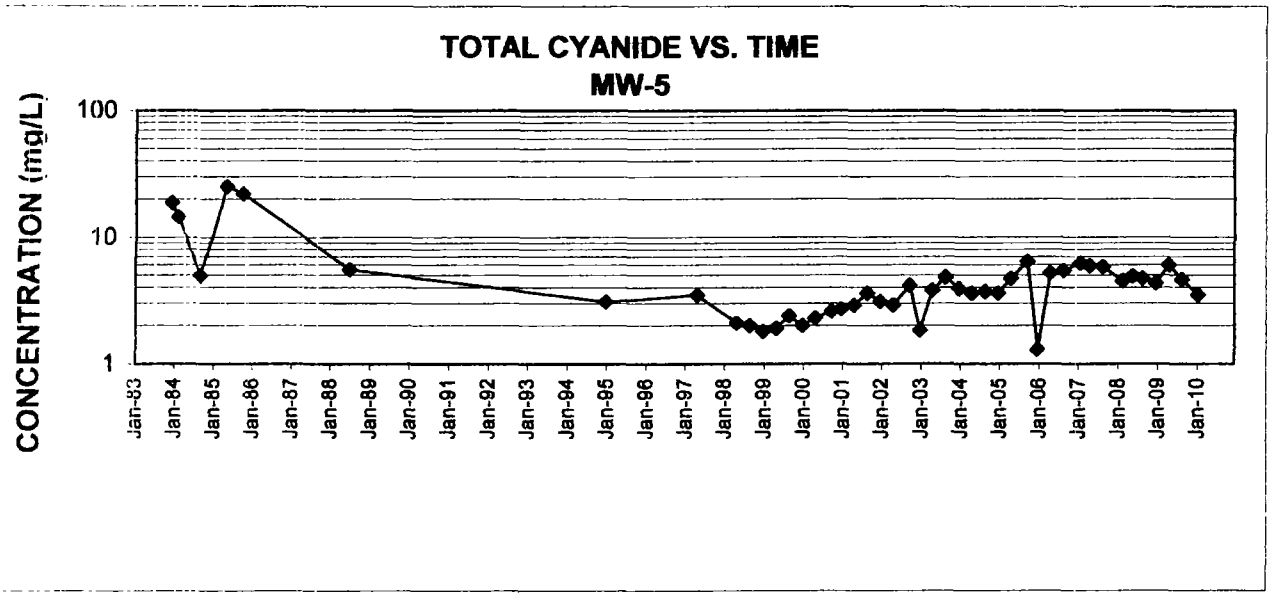
Jan-07
Jan-08
Jan-09
Jan-10


TOTAL CYANIDE VS. TIME
MW-5
CONCENTRATION (mg/L)
100
10
1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
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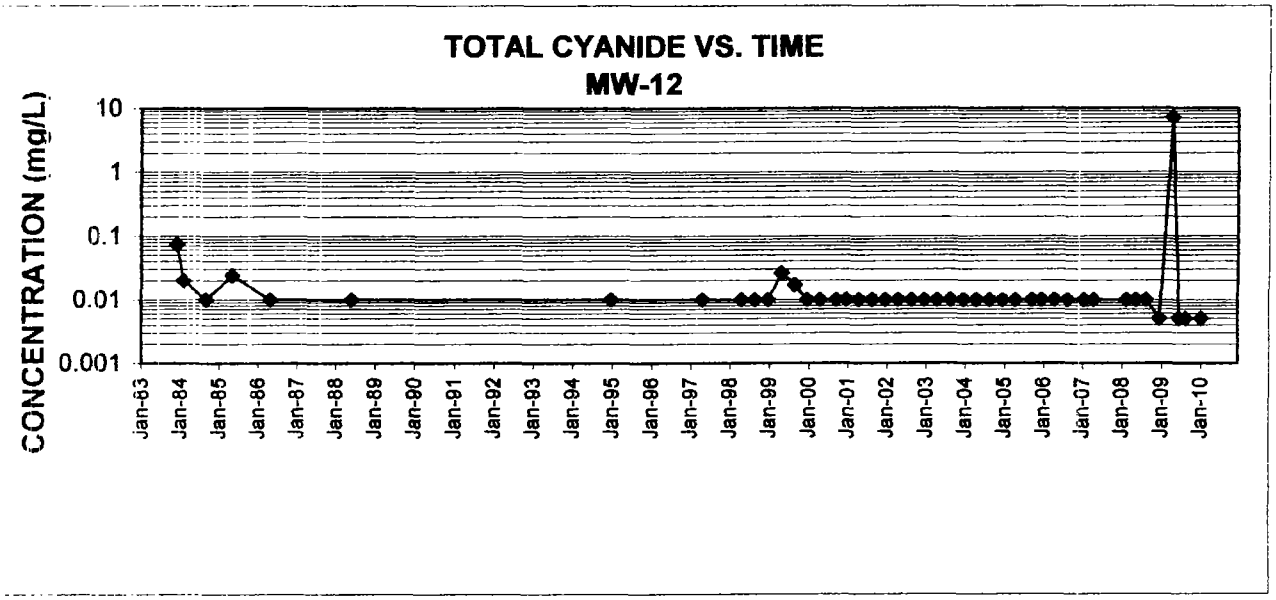
Jan-07
Jan-08
Jan-09
Jan-10


TOTAL CYANIDE VS. TIME
MW-12
CONCENTRATION (mg/L)
10
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
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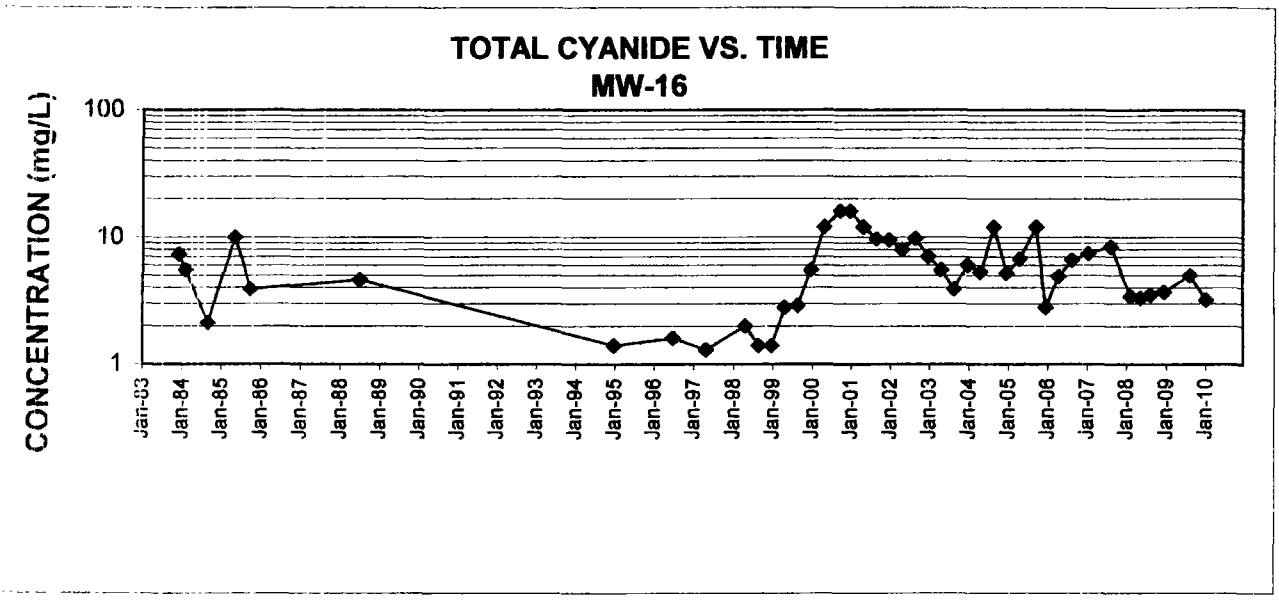
Jan-07
Jan-08
Jan-09
Jan-10


TOTAL CYANIDE VS. TIME
MW-16
CONCENTRATION (mg/L)
100
10
1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
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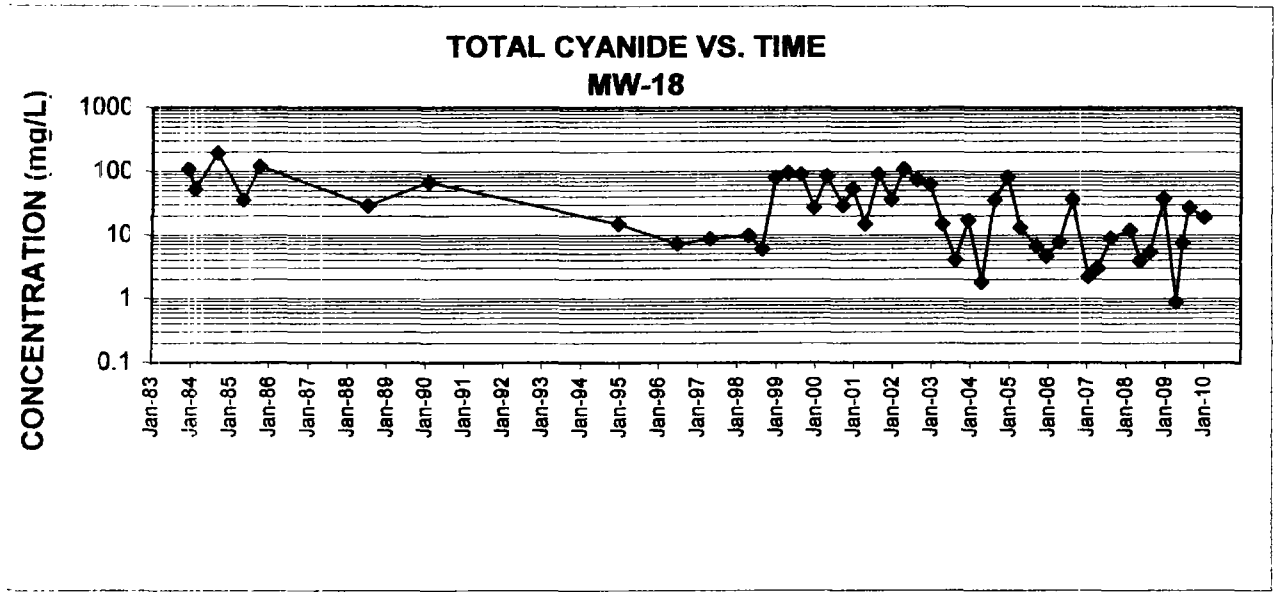
Jan-07
Jan-08
Jan-09
Jan-10


TOTAL CYANIDE VS. TIME
MW-18
CONCENTRATION (mg/L)
1000
100
10
1
0.1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
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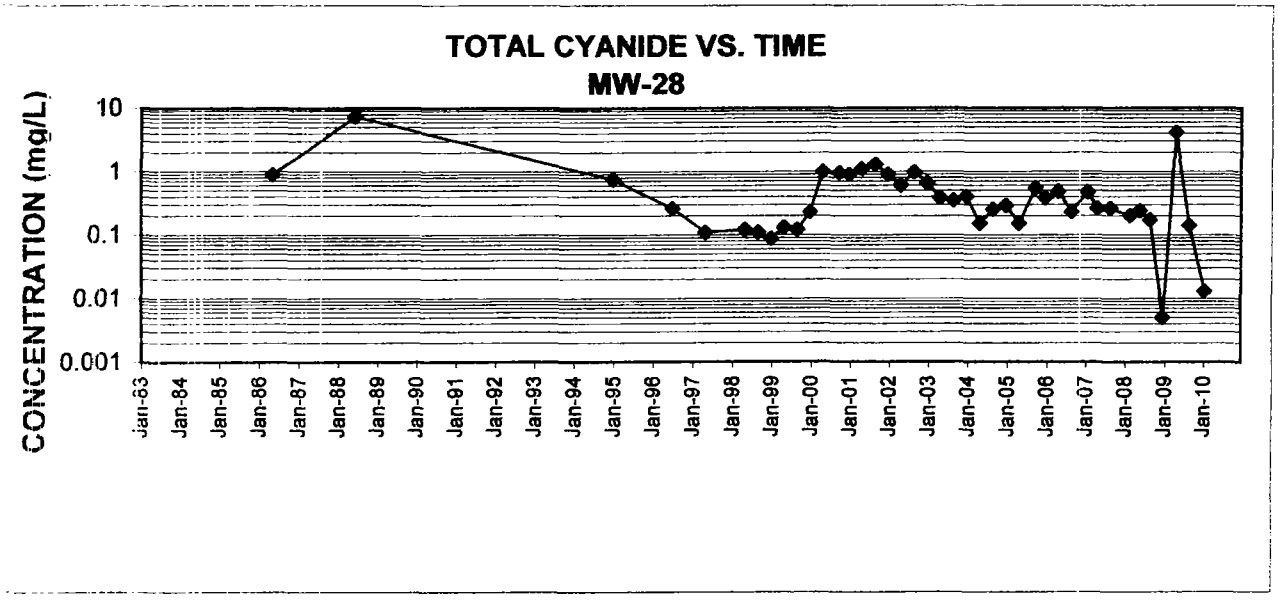
Jan-07
Jan-08
Jan-09
Jan-10


TOTAL CYANIDE VS. TIME
MW-28
CONCENTRATION (mg/L)
10
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
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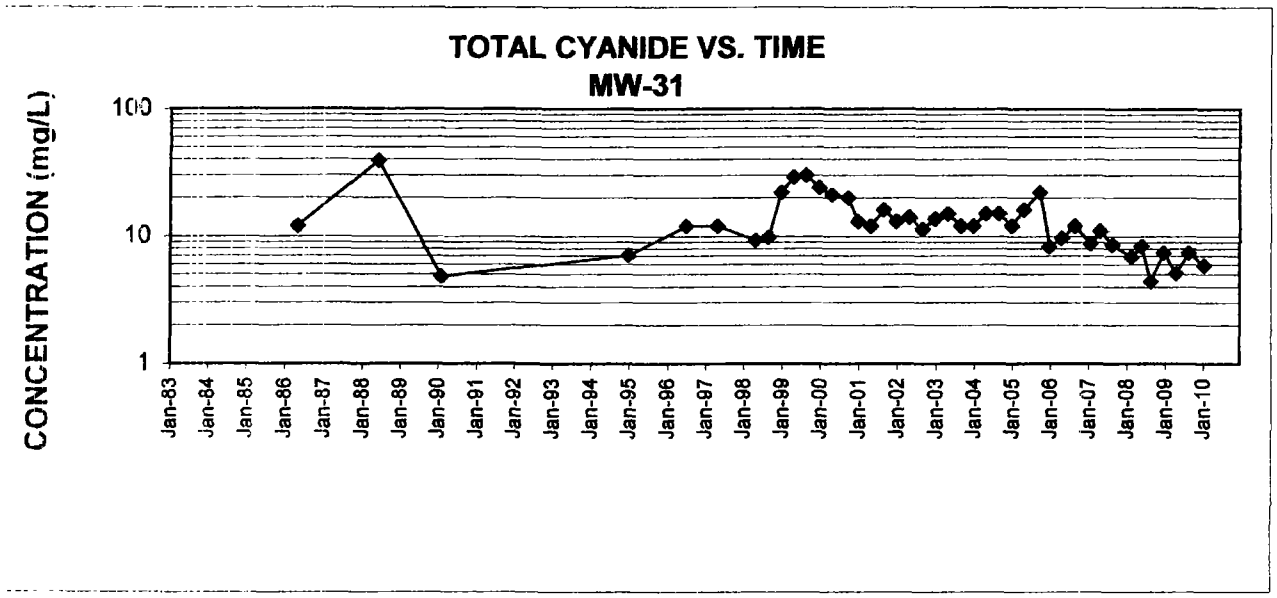
Jan-08
Jan-09
Jan-10


TOTAL CYANIDE VS. TIME
MW-31
CONCENTRATION (mg/L)
100
10
1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
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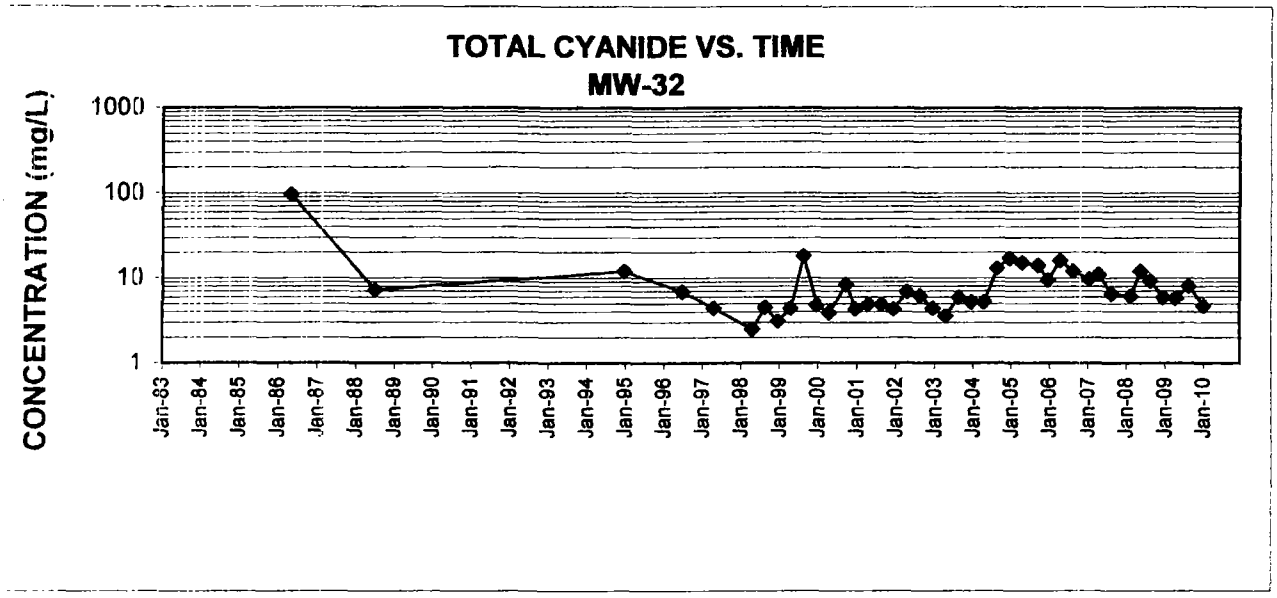
Jan-07
Jan-08
Jan-09
Jan-10


TOTAL CYANIDE VS. TIME
MW-32
CONCENTRATION (mg/L)
1000
100
10
1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
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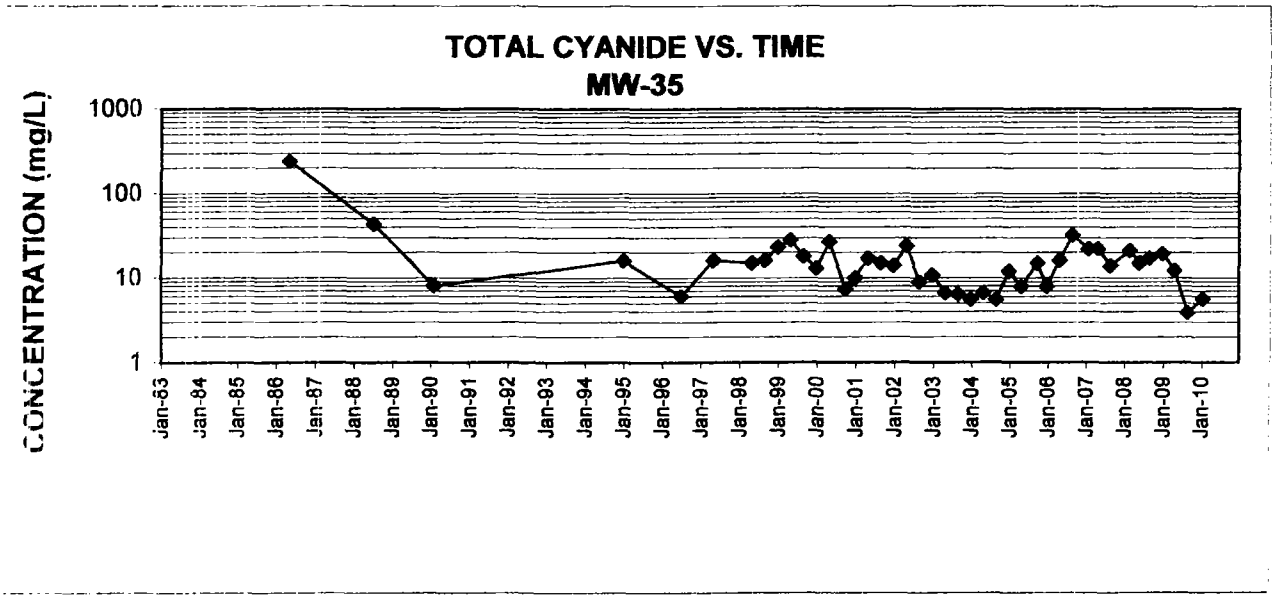
Jan-07
Jan-08
Jan-09
Jan-10


TOTAL CYANIDE VS. TIME
MW-35
CONCENTRATION (mg/L)
1000
100
10
1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
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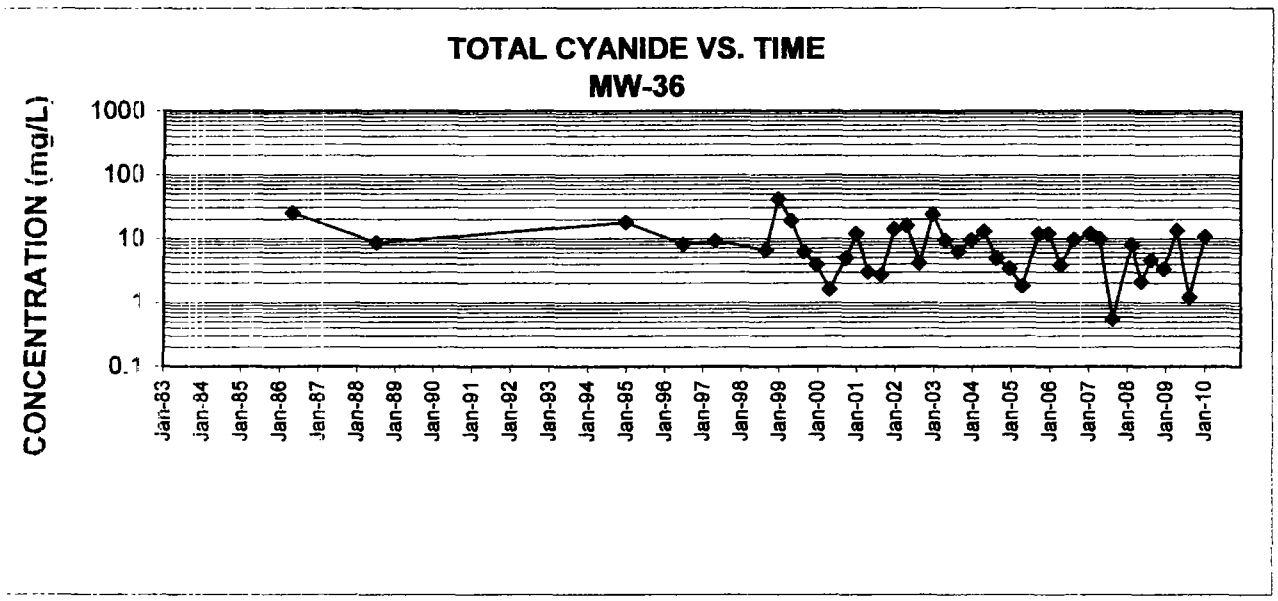
Jan-08
Jan-09
Jan-10


TOTAL CYANIDE VS. TIME
MW-36
CONCENTRATION (mg/L)
1000
100
10
1
0.1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
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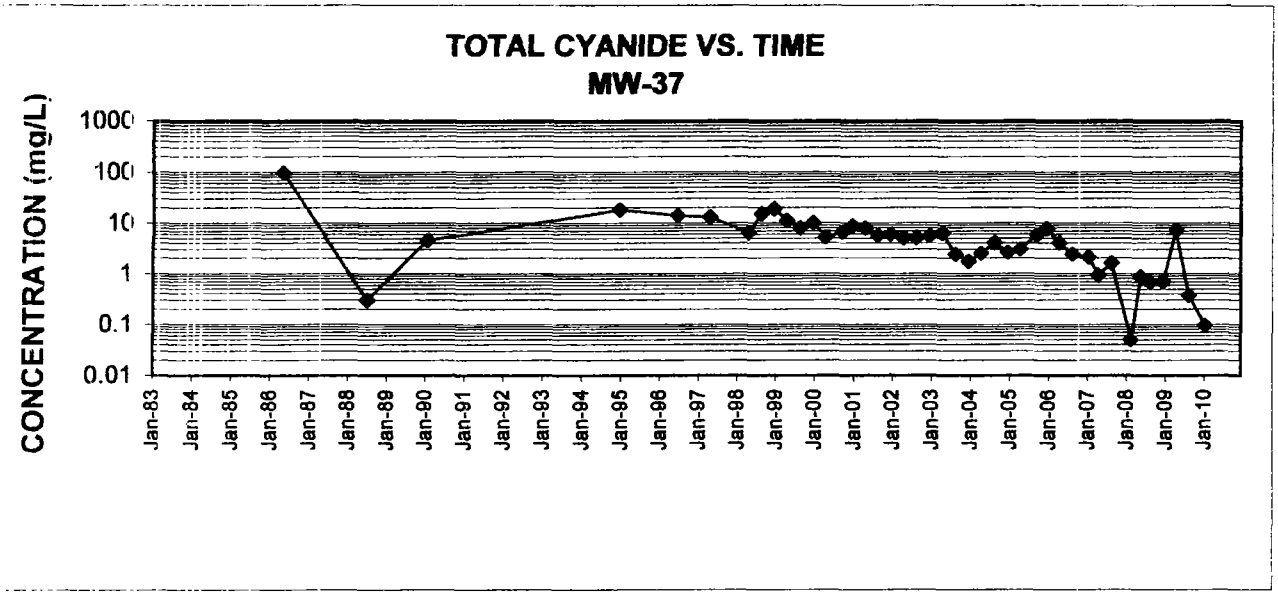
Jan-10


TOTAL CYANIDE VS. TIME
MW-37
CONCENTRATION (mg/L)
1000
100
10
1
0.1
0.01
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
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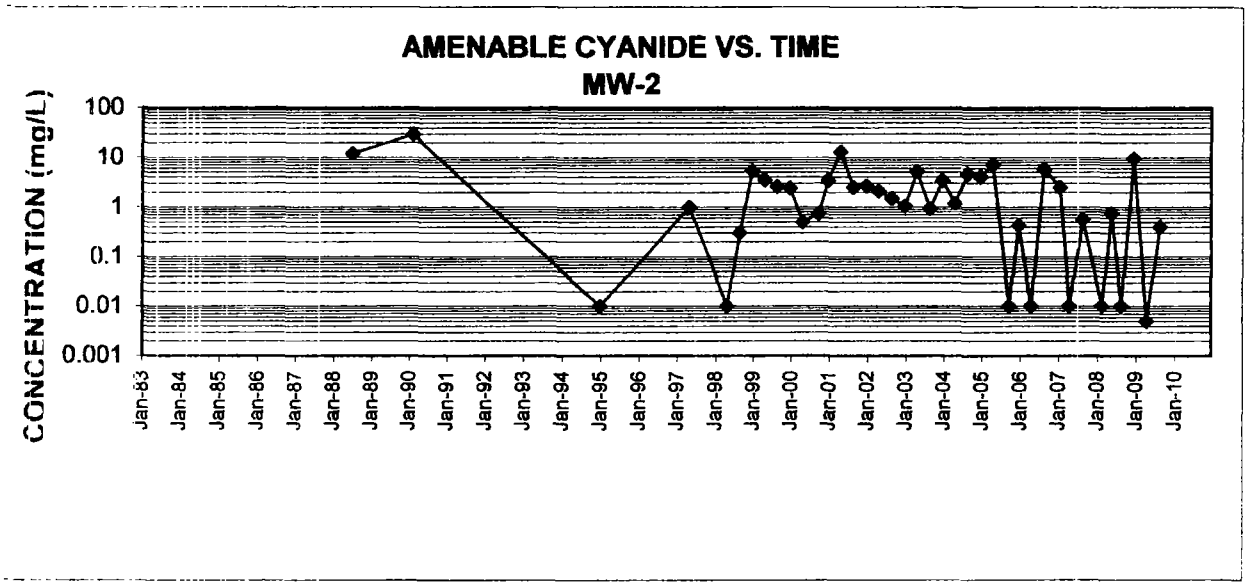
Jan-08
Jan-09
Jan-10

APPENDIX D-2

CYANIDE AMENABLE TO CHLORINATION


AMENABLE CYANIDE VS. TIME
MW-2
CONCENTRATION (mg/L)
100
10
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
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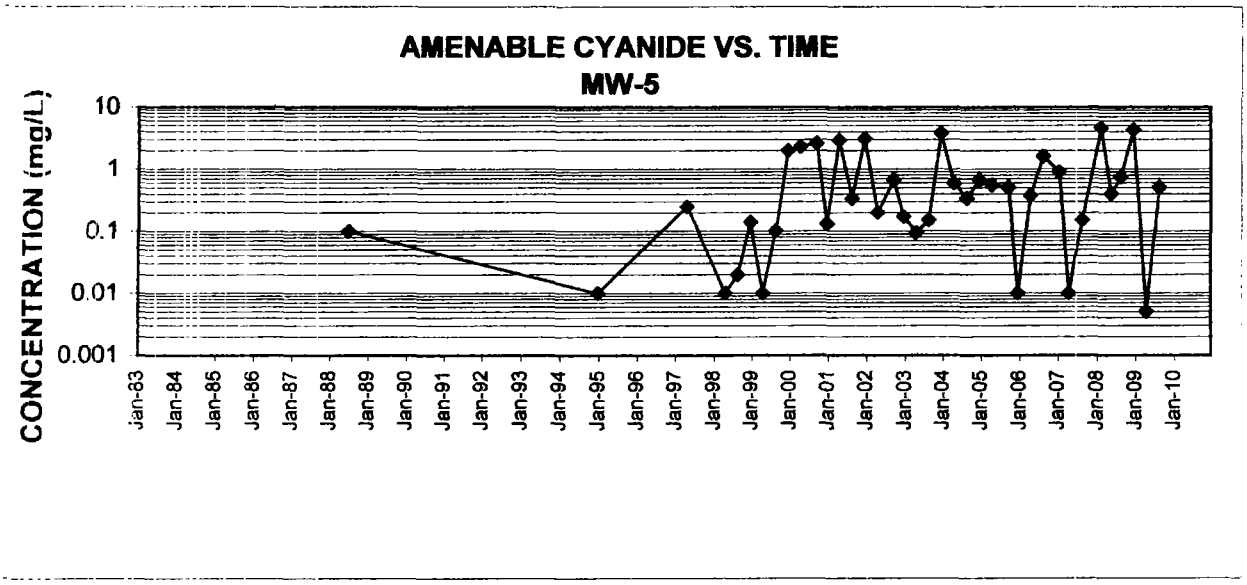
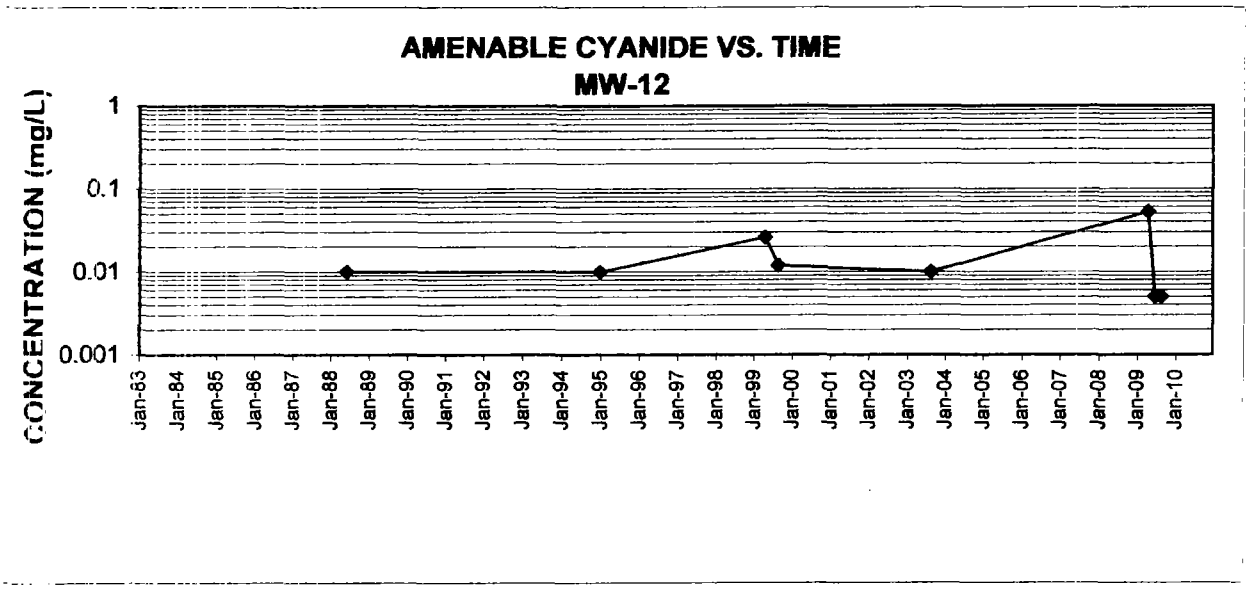
Jan-08
Jan-09
Jan-10


AMENABLE CYANIDE VS. TIME
MW-5
CONCENTRATION (mg/L)
10
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10


AMENABLE CYANIDE VS. TIME
MW-12
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
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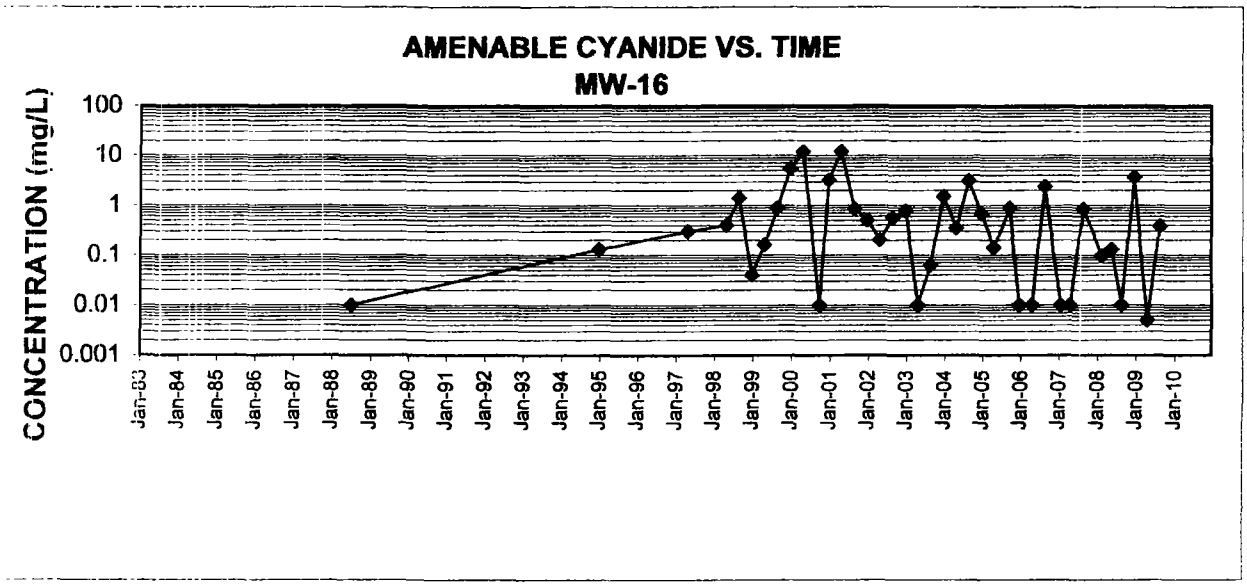
Jan-08
Jan-09
Jan-10


AMENABLE CYANIDE VS. TIME
MW-16
CONCENTRATION (mg/L)
100
10
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
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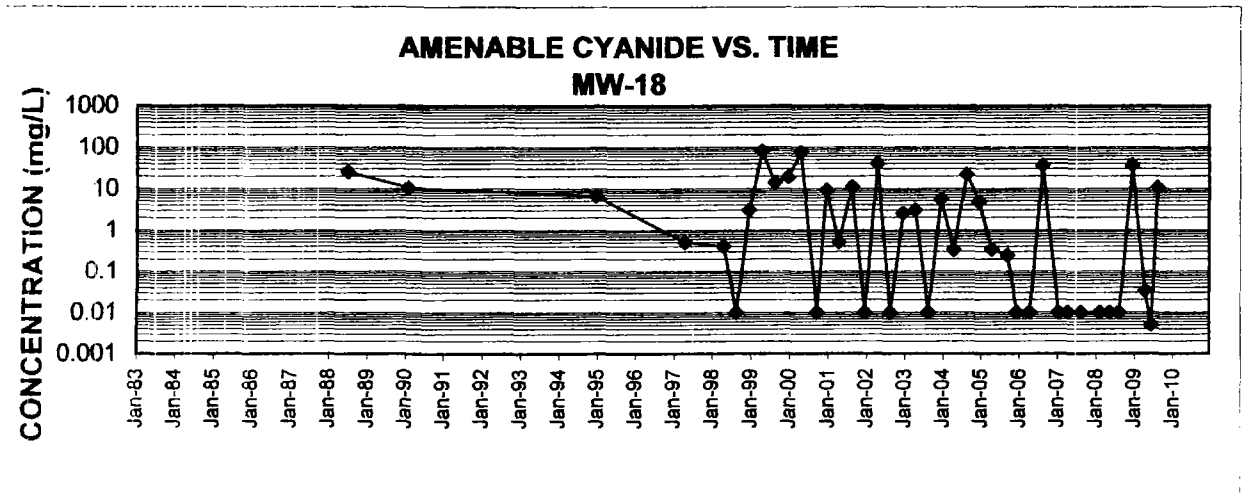
Jan-09
Jan-10


AMENABLE CYANIDE VS. TIME
MW-18
CONCENTRATION (mg/L)
1000
100
10
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
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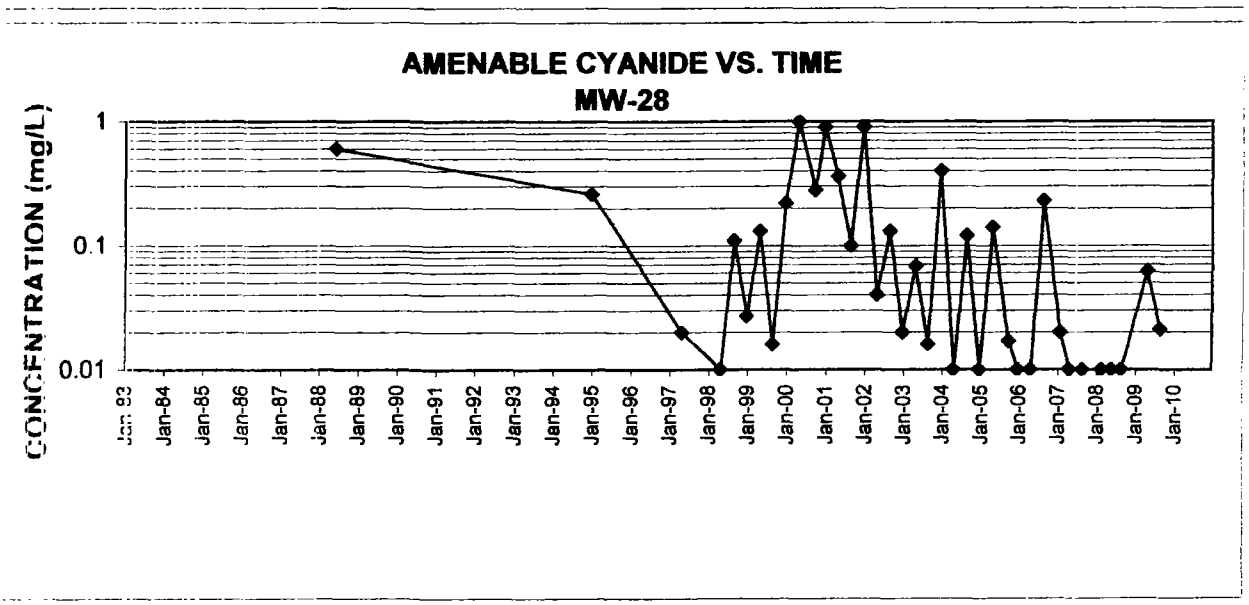
Jan-09
Jan-10


AMENABLE CYANIDE VS. TIME
MW-28
CONCENTRATION (mg/L)
1
0.1
0.01
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
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Jan-06
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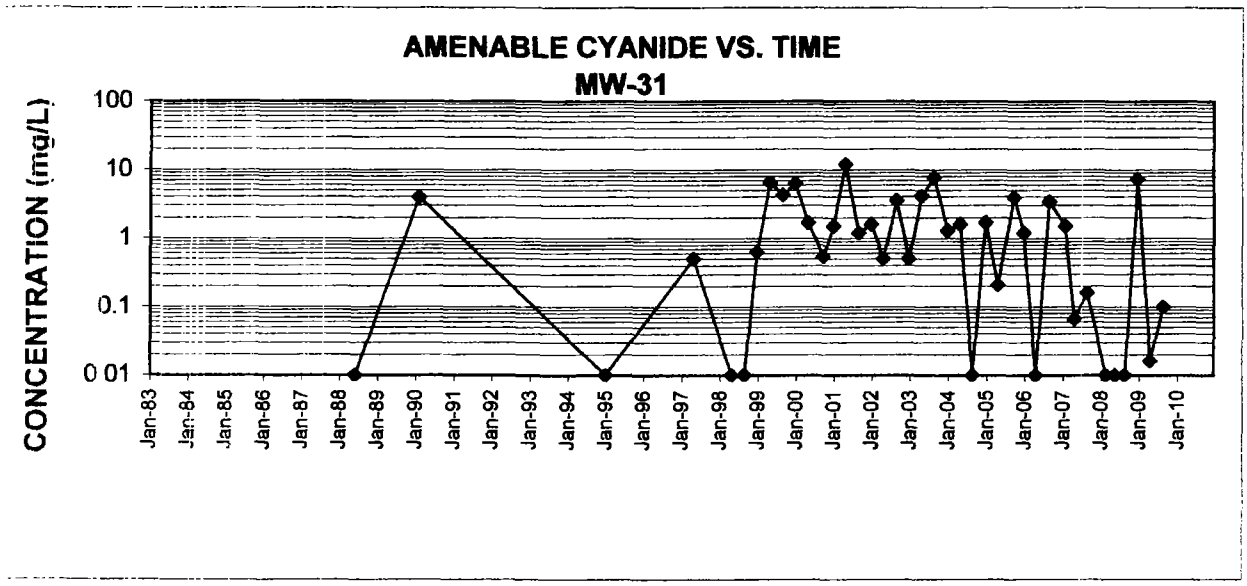
Jan-08
Jan-09
Jan-10


AMENABLE CYANIDE VS. TIME
MW-31
CONCENTRATION (mg/L)
100
10
1
0.1
0.01
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
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Jan-02
Jan-03
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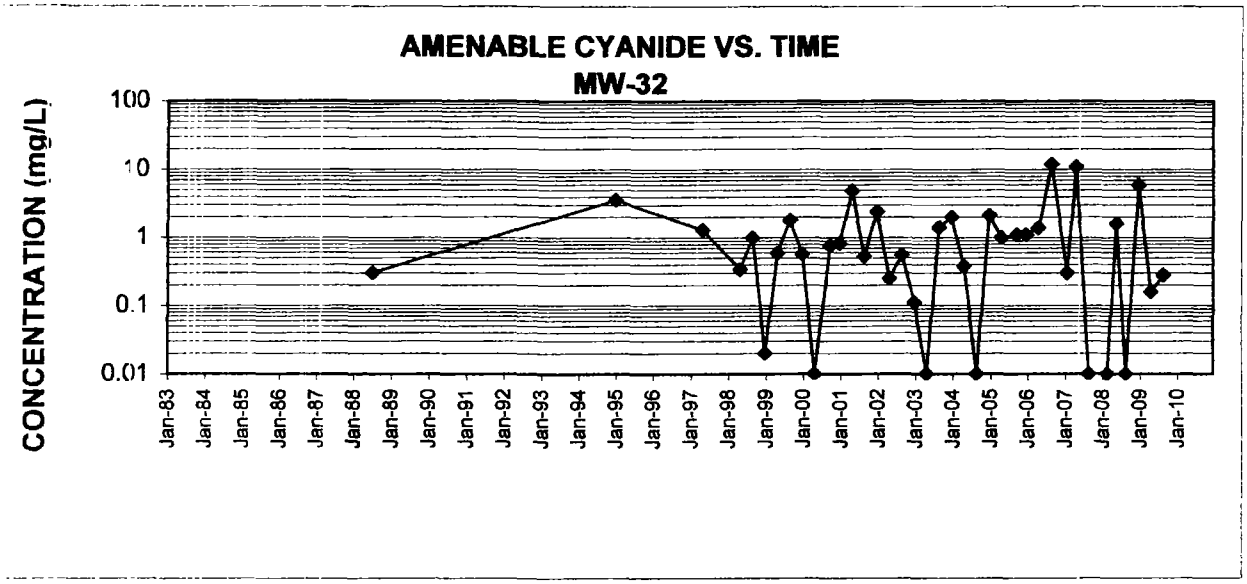
Jan-08
Jan-09
Jan-10


AMENABLE CYANIDE VS. TIME
MW-32
CONCENTRATION (mg/L)
100
10
1
0.1
0.01
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
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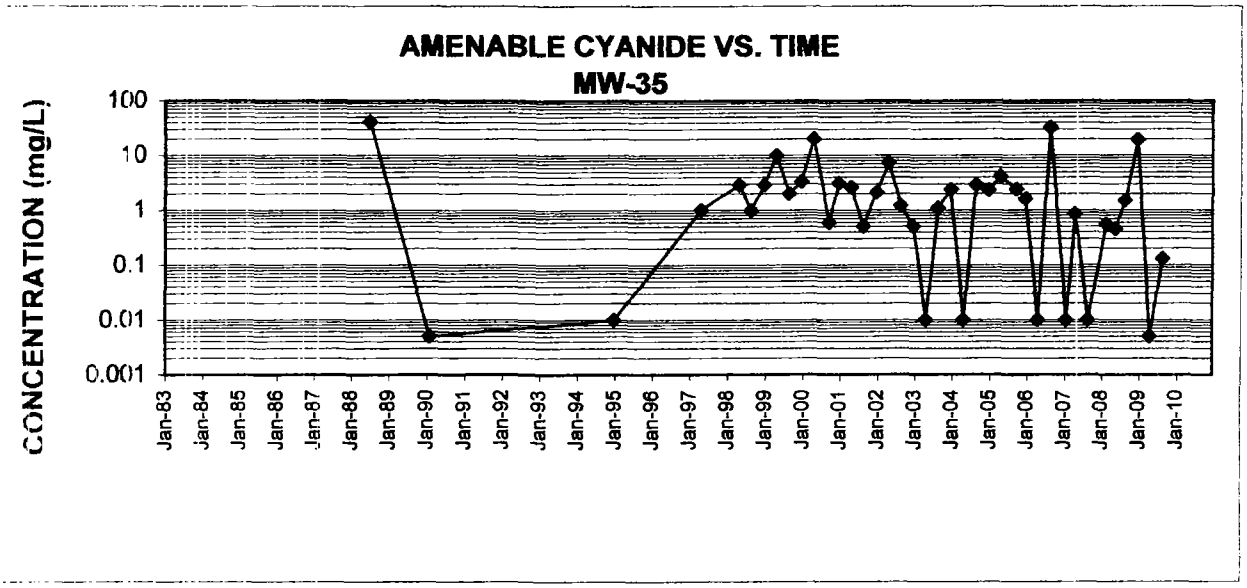
Jan-08
Jan-09
Jan-10


AMENABLE CYANIDE VS. TIME
MW-35
CONCENTRATION (mg/L)
100
10
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
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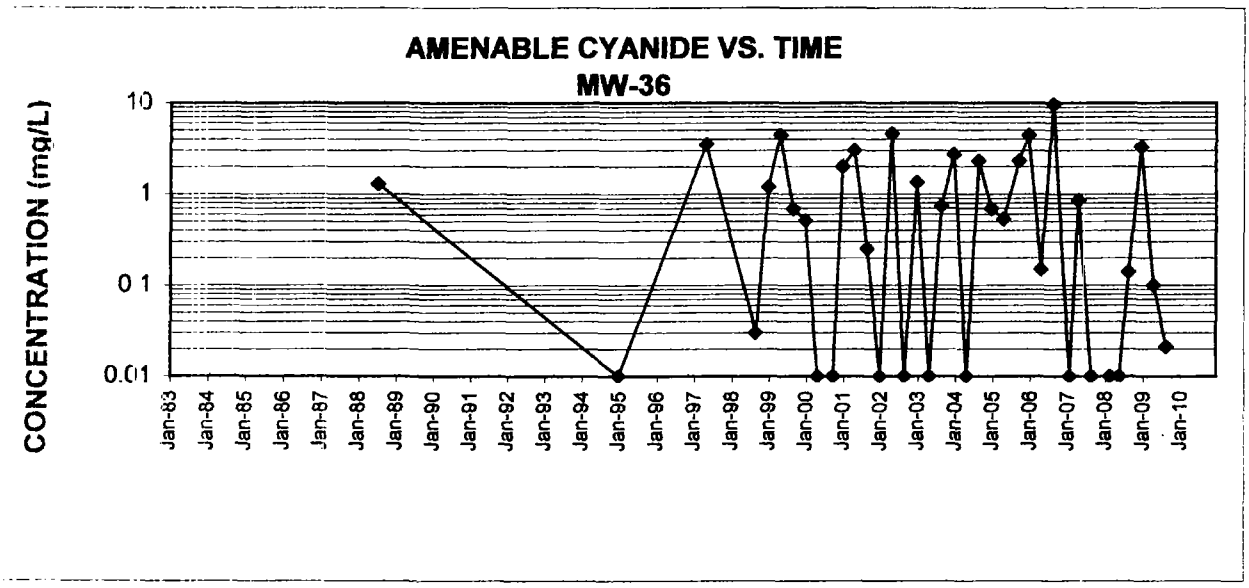
Jan-07
Jan-08
Jan-09
Jan-10


AMENABLE CYANIDE VS. TIME
MW-36
CONCENTRATION (mg/L)
10
1
0.1
0.01
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
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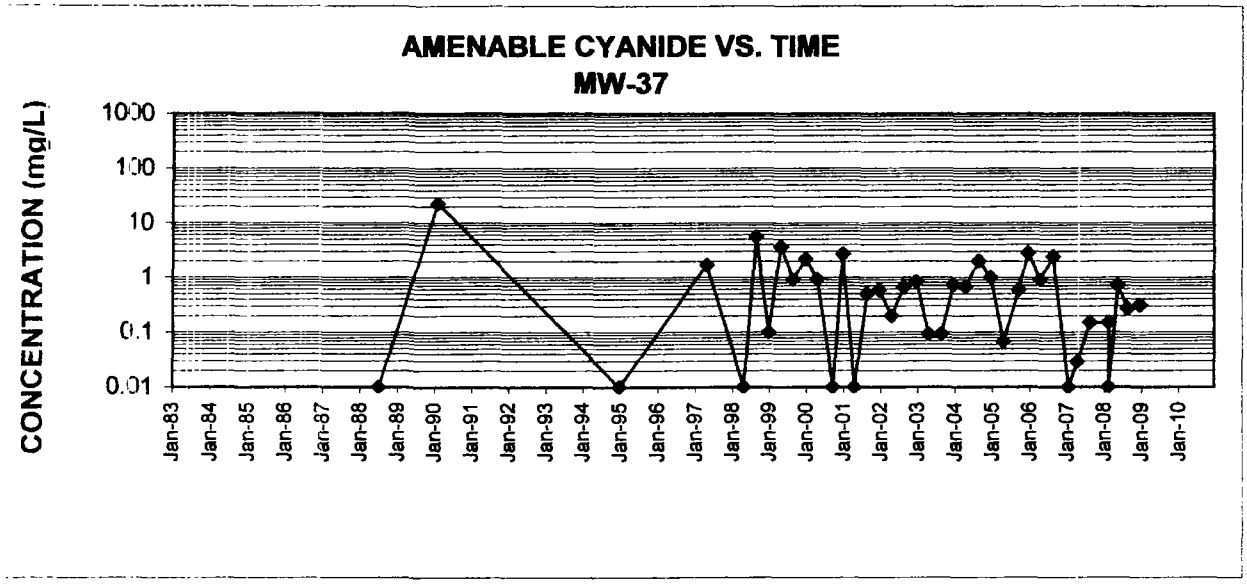
Jan-07
Jan-08
Jan-09
Jan-10


AMENABLE CYANIDE VS. TIME
MW-37
CONCENTRATION (mg/L)
1000
100
10
1
0.1
0.01
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
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Jan-03
Jan-04
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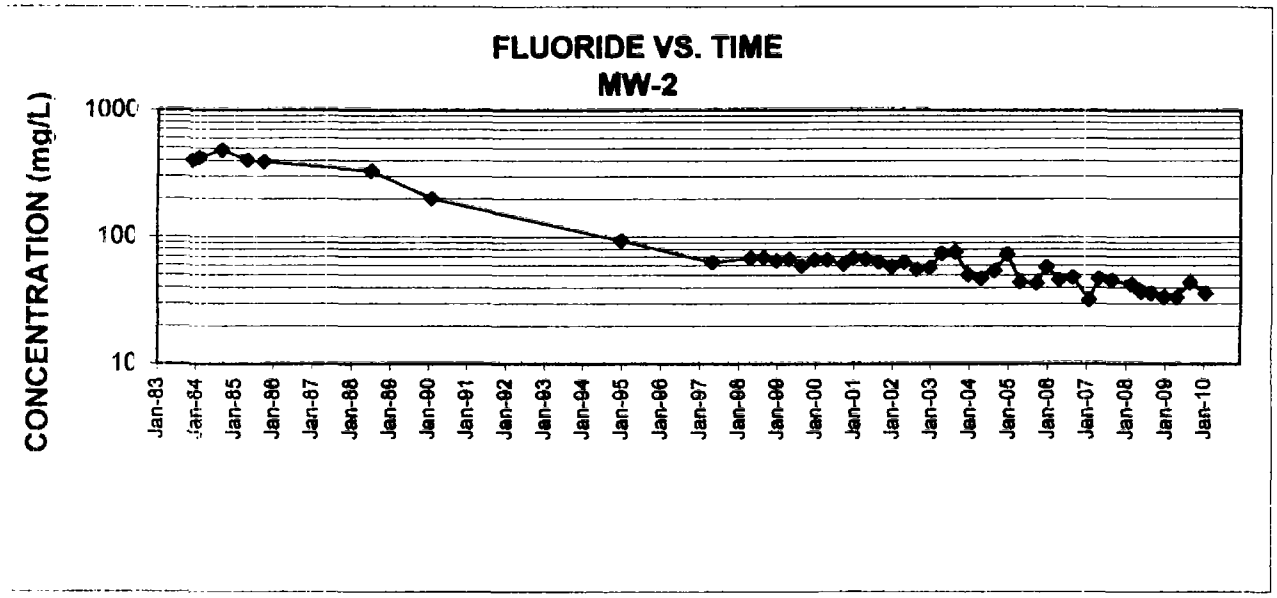
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10

APPENDIX D-3

FLUORIDE


FLUORIDE VS. TIME
MW-2
CONCENTRATION (mg/L)
1000
100
10
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
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Jan-02
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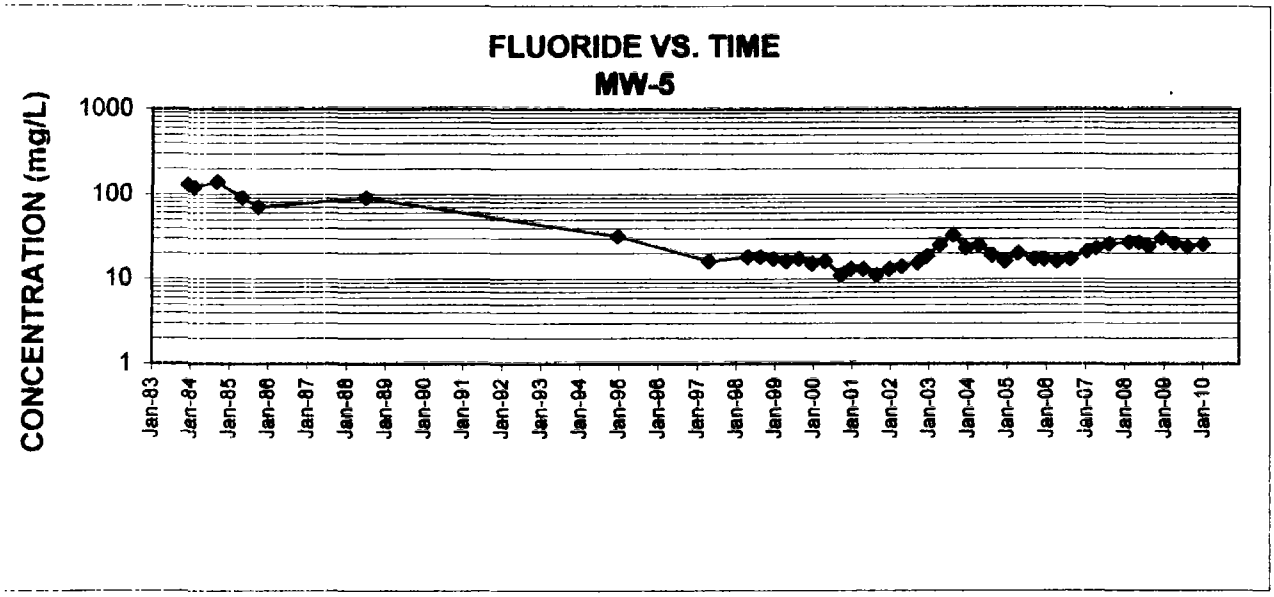
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10


FLUORIDE VS. TIME
MW-5
CONCENTRATION (mg/L)
1000
100
10
1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
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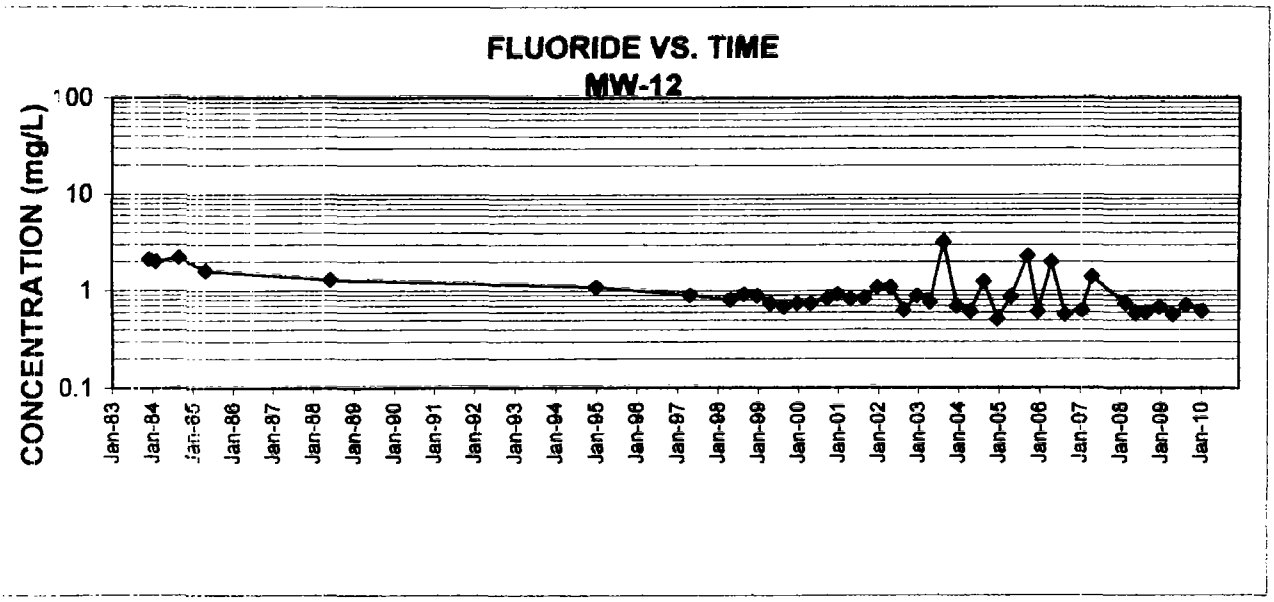
Jan-07
Jan-08
Jan-09
Jan-10


FLUORIDE VS. TIME
MW-12
CONCENTRATION (mg/L)
100
10
1
0.1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
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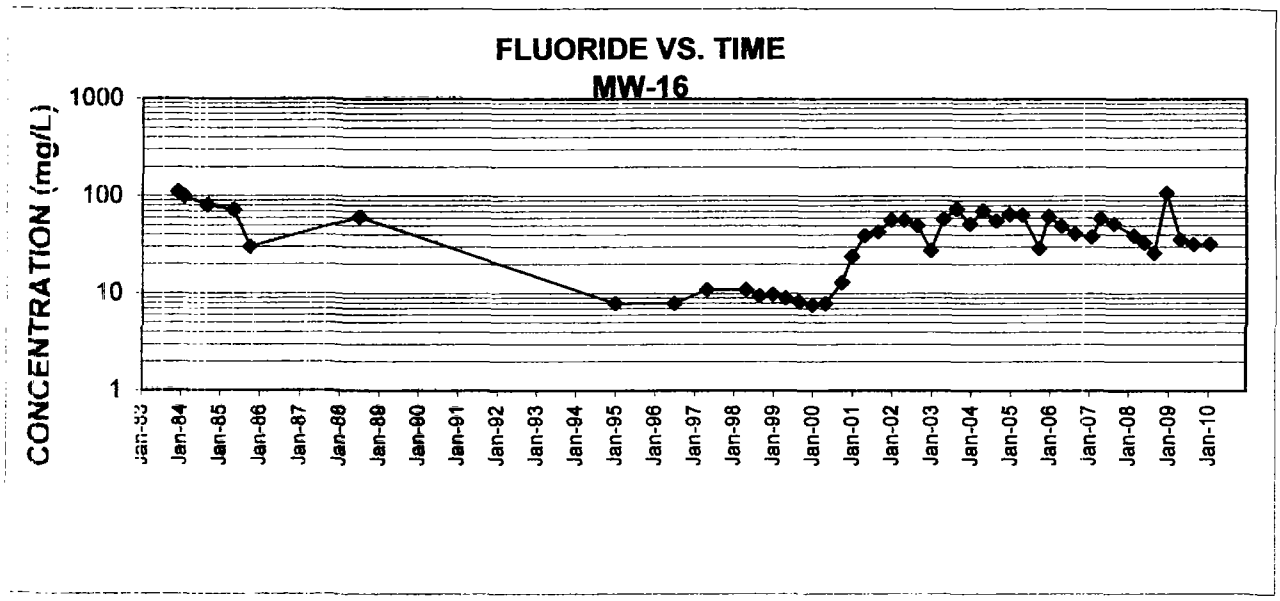
Jan-08
Jan-09
Jan-10


FLUORIDE VS. TIME
MW-16
CONCENTRATION (mg/L)
1000
100
10
1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
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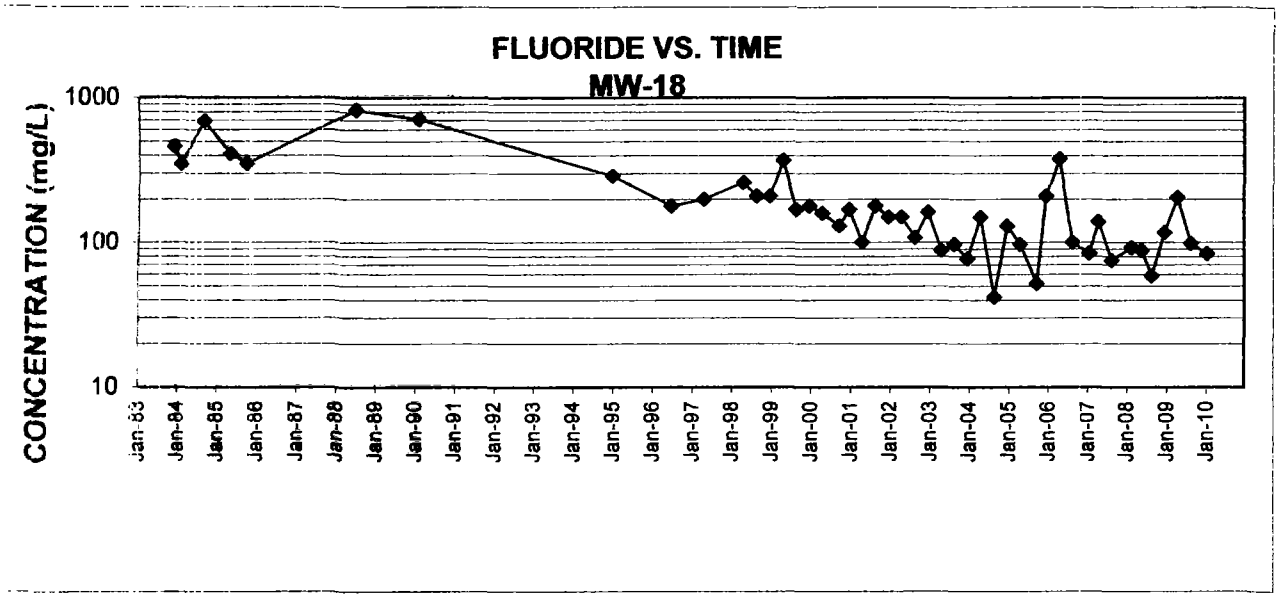
Jan-10


FLUORIDE VS. TIME
MW-18
CONCENTRATION (mg/L)
1000
100
10
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
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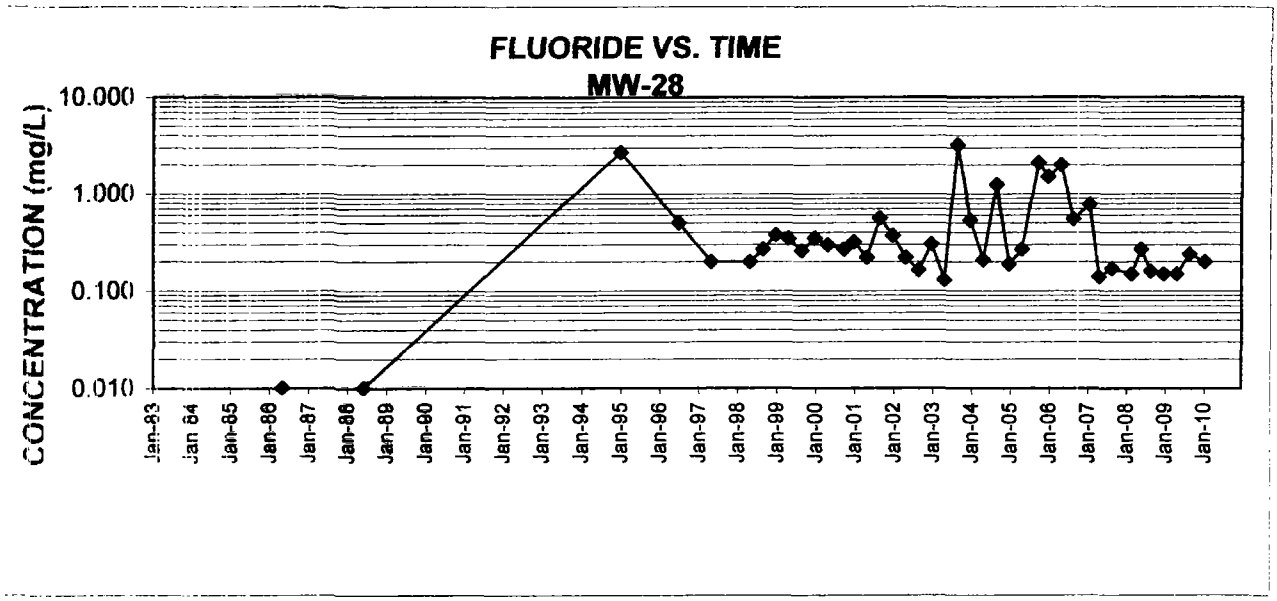
Jan-08
Jan-09
Jan-10


FLUORIDE VS. TIME
MW-28
CONCENTRATION (mg/L)
10.000
1.000
0.100
0.010
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
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Jan-96
Jan-97
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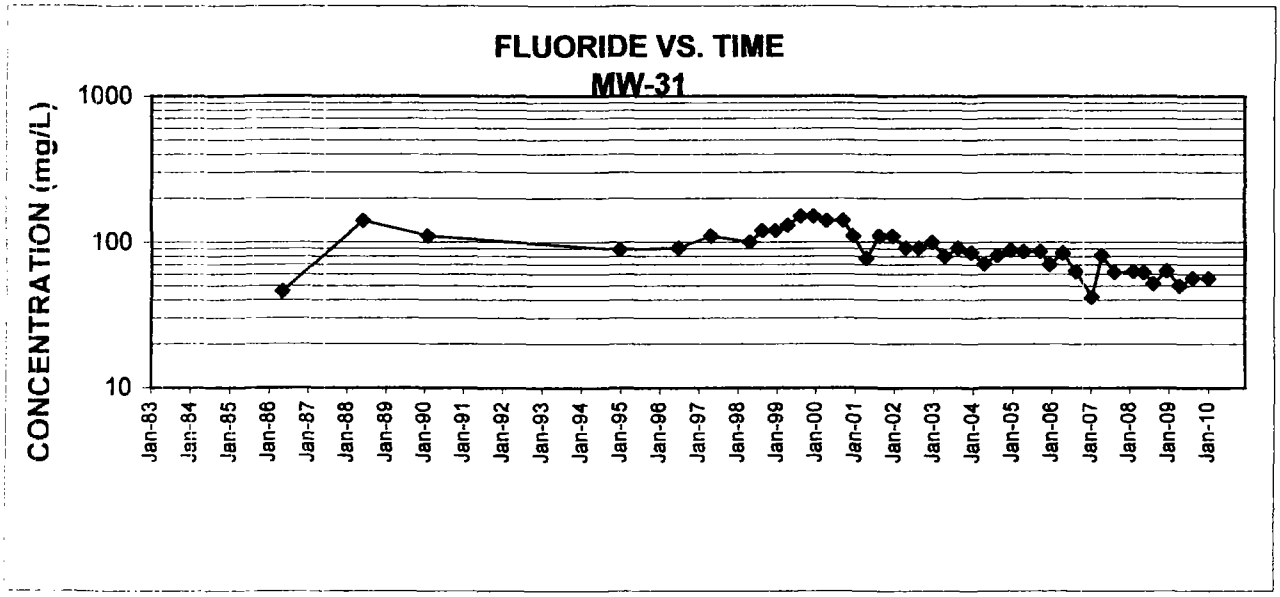
Jan-08
Jan-09
Jan-10


FLUORIDE VS. TIME
MW-31
CONCENTRATION (mg/L)
1000
100
10
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
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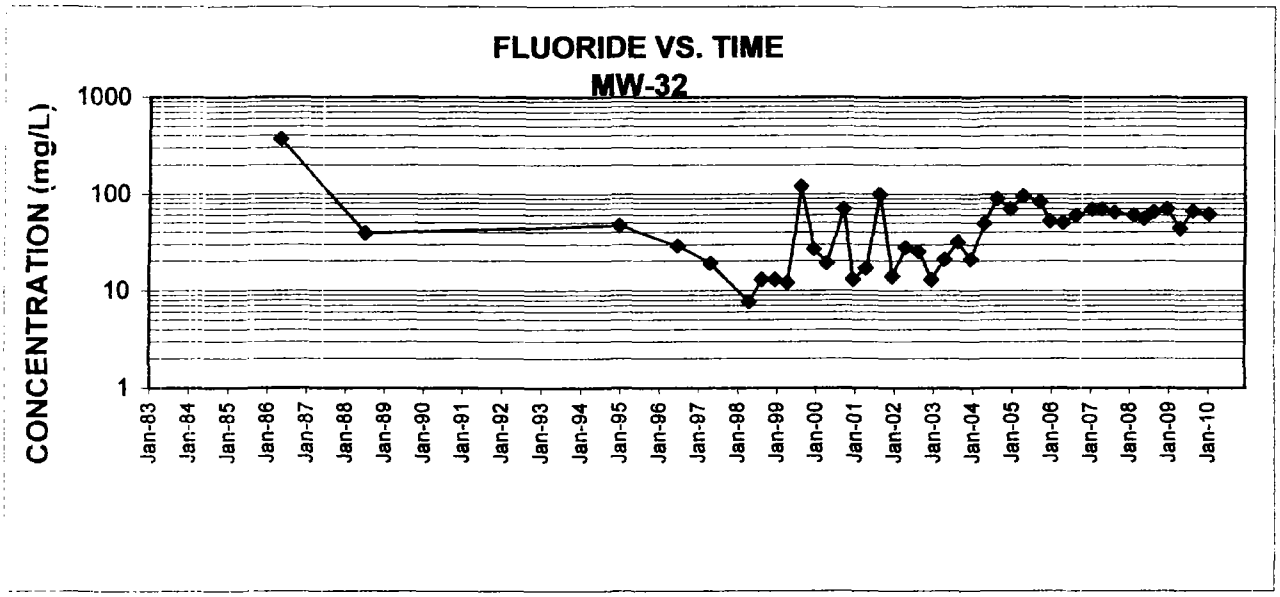
Jan-10


FLUORIDE VS. TIME
MW-32
CONCENTRATION (mg/L)
1000
100
10
1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
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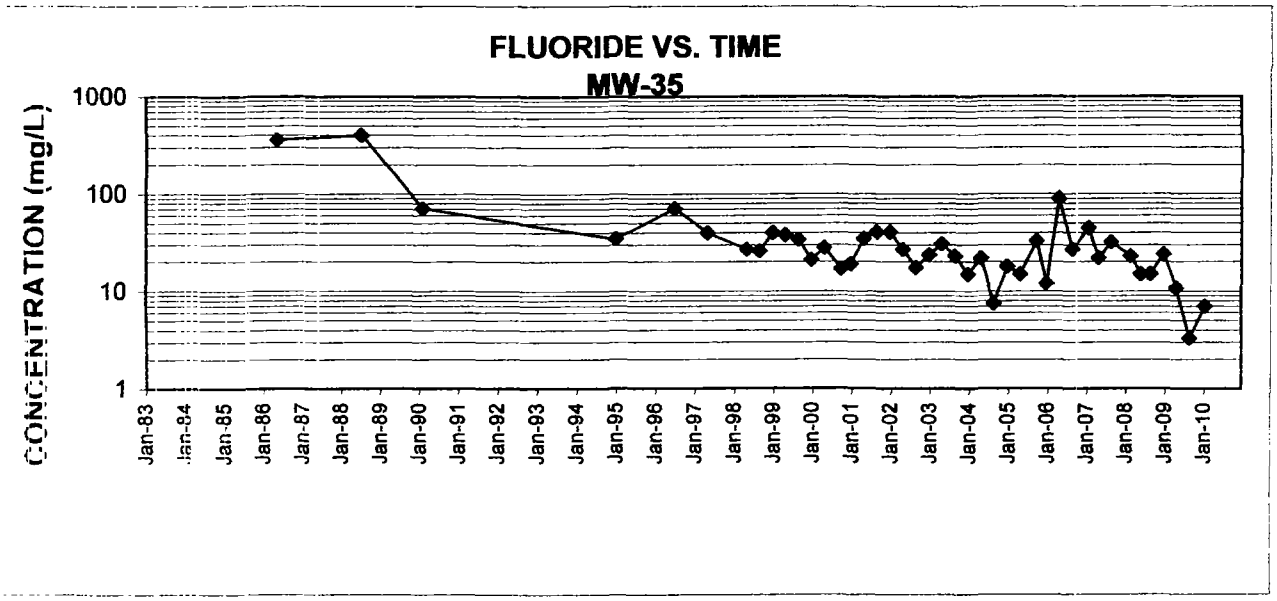
Jan-08
Jan-09
Jan-10


FLUORIDE VS. TIME
MW-35
CONCENTRATION (mg/L)
1000
100
10
1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
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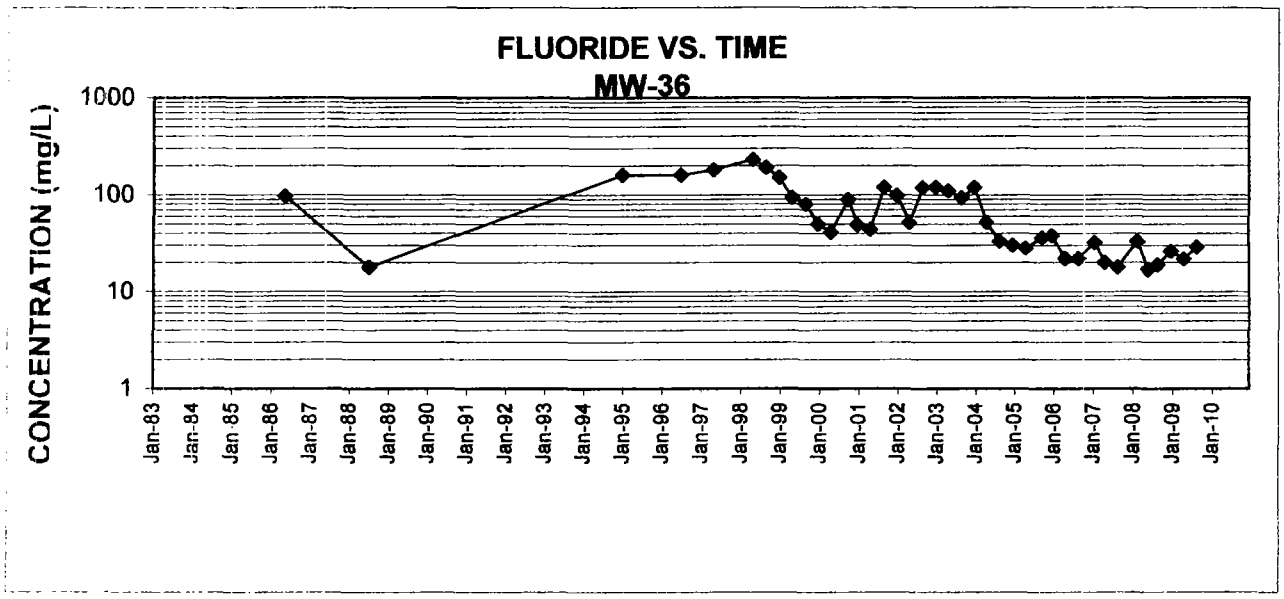
Jan-09
Jan-10


FLUORIDE VS. TIME
MW-36
CONCENTRATION (mg/L)
1000
100
10
1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
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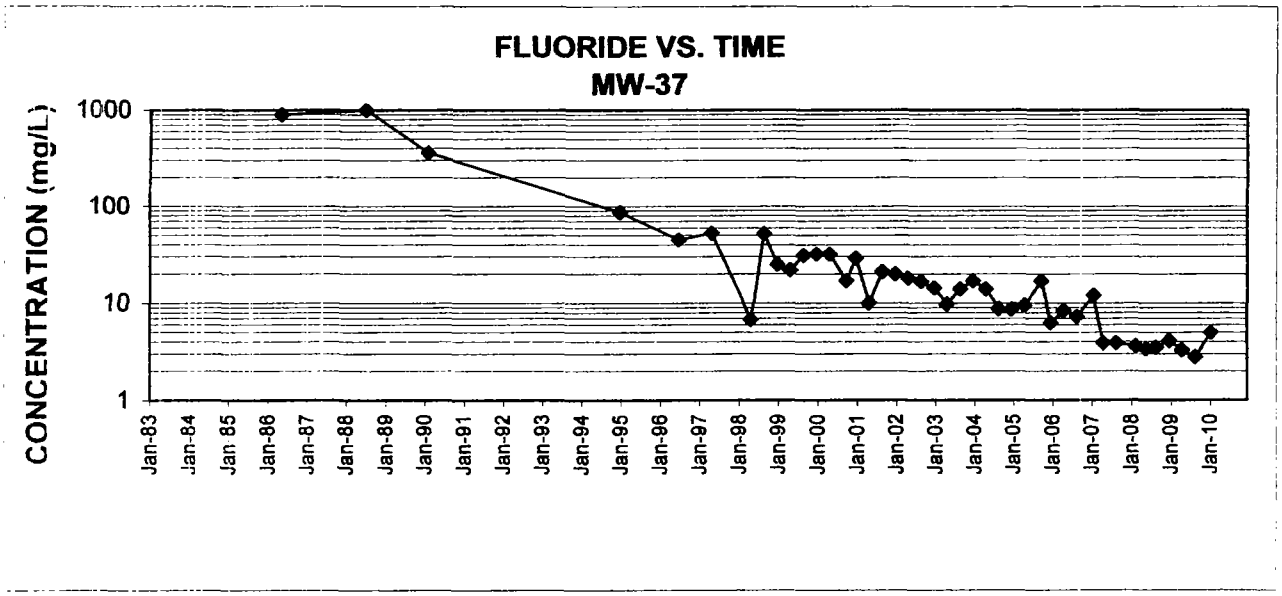
Jan-09
Jan-10


FLUORIDE VS. TIME
MW-37
CONCENTRATION (mg/L)
1000
100
10
1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
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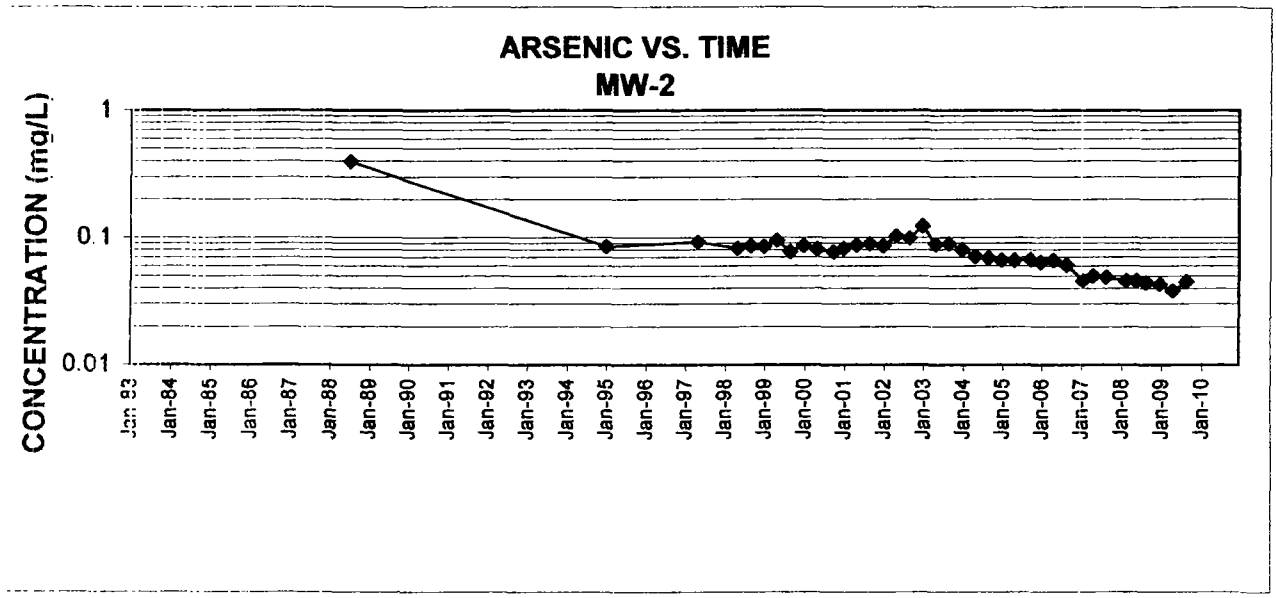
Jan-09
Jan-10

APPENDIX D-4

ARSENIC


ARSENIC VS. TIME
MW-2
CONCENTRATION (mg/L)
1
0.1
0.01
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
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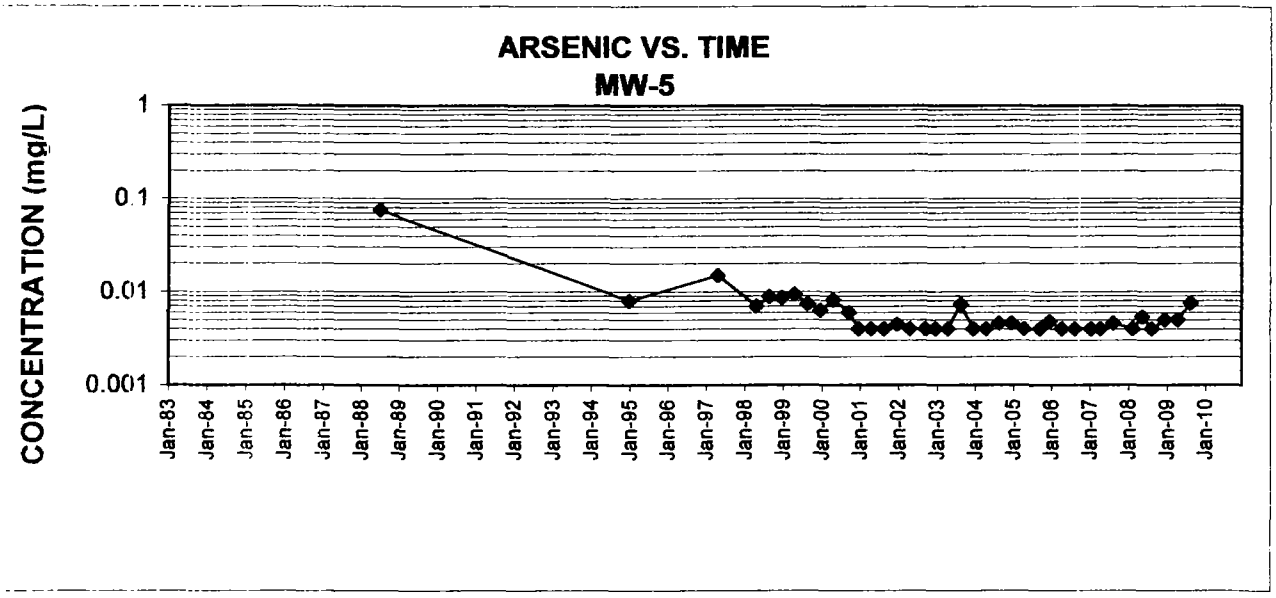
Jan-09
Jan-10


ARSENIC VS. TIME
MW-5
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
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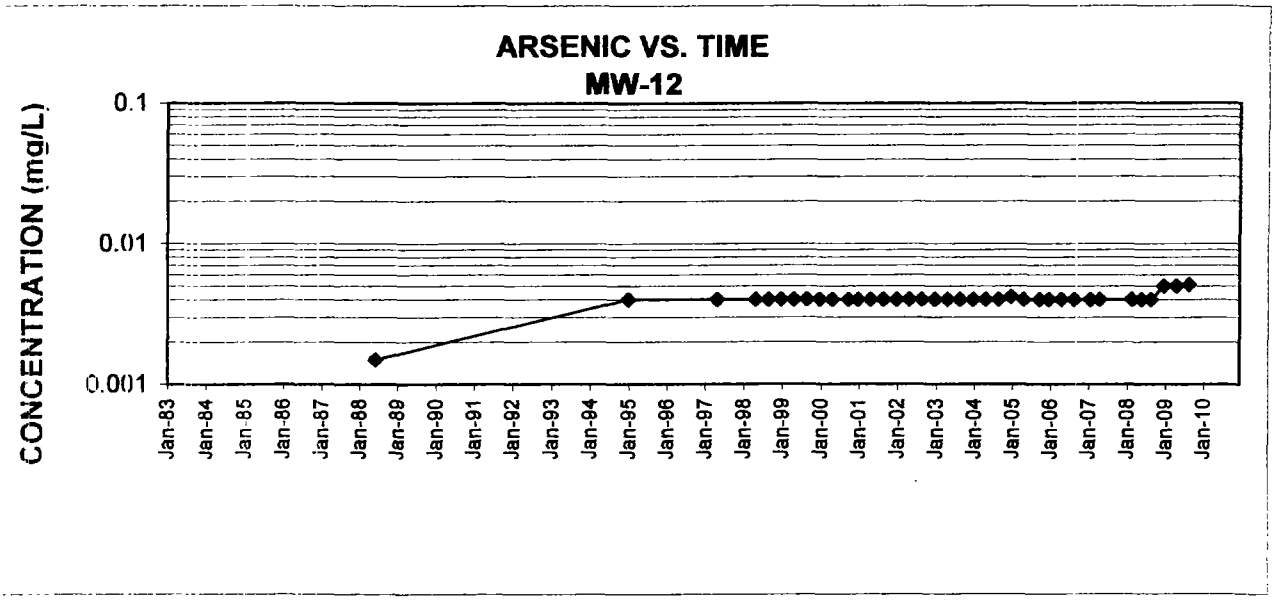
Jan-09
Jan-10


ARSENIC VS. TIME
MW-12
CONCENTRATION (mg/L)
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
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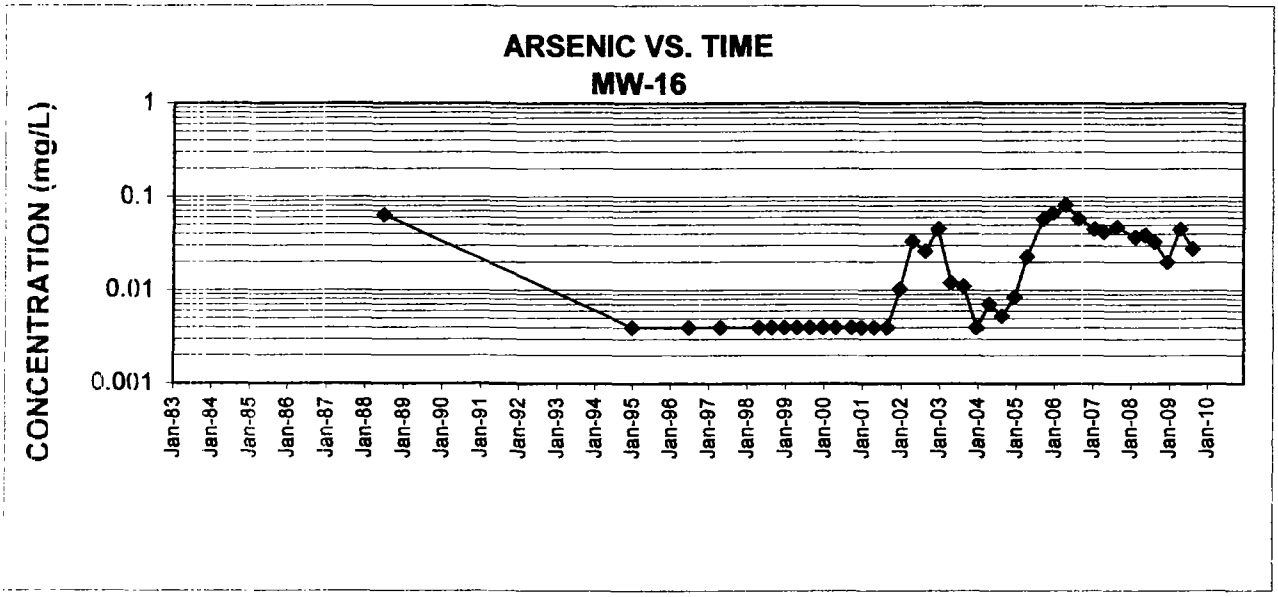
Jan-08
Jan-09
Jan-10


ARSENIC VS. TIME
MW-16
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
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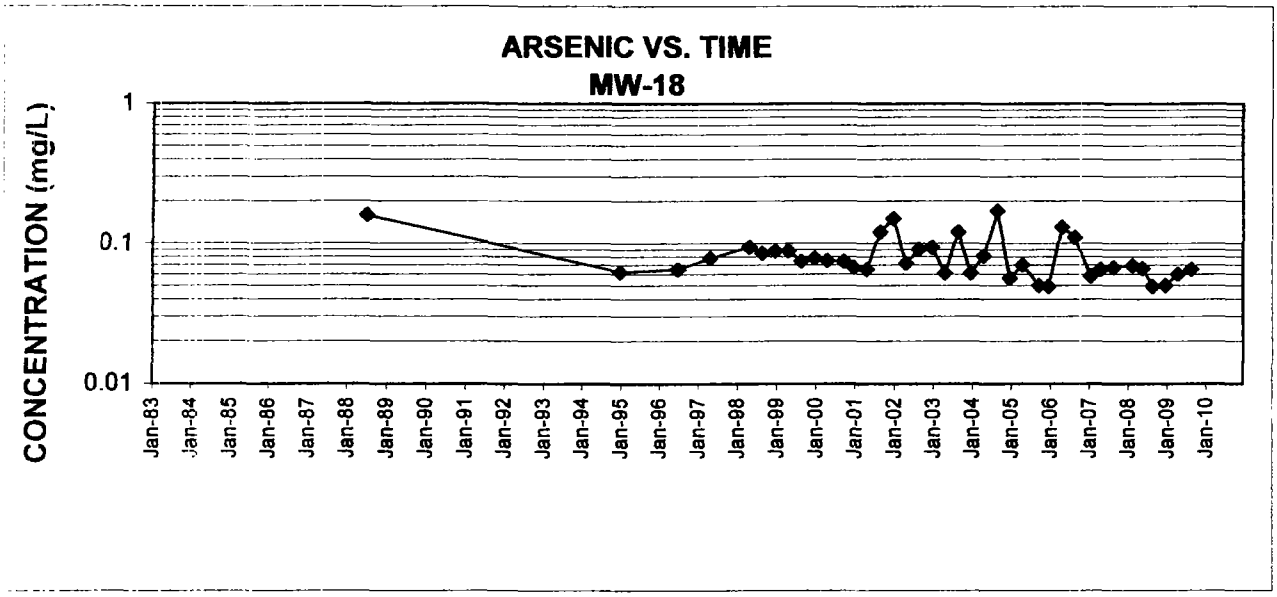
Jan-08
Jan-09
Jan-10


ARSENIC VS. TIME
MW-18
CONCENTRATION (mg/L)
1
0.1
0.01
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
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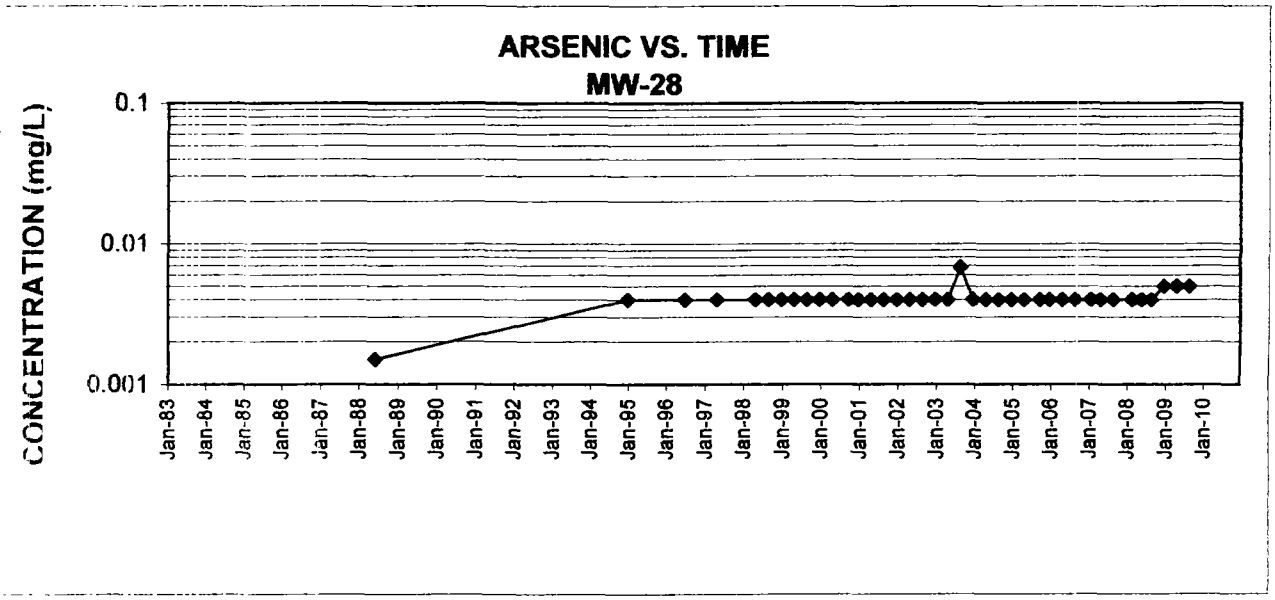
Jan-09
Jan-10


ARSENIC VS. TIME
MW-28
CONCENTRATION (mg/L)
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
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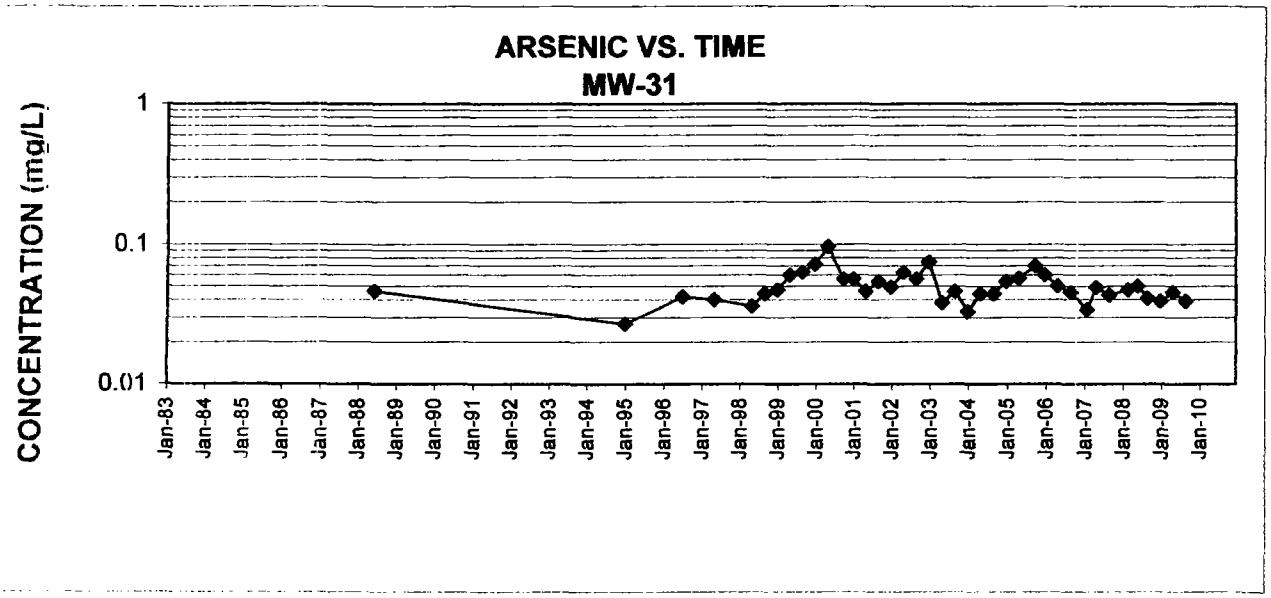
Jan-09
Jan-10


ARSENIC VS. TIME
MW-31
CONCENTRATION (mg/L)
1
0.1
0.01
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
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Jan-01
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Jan-06
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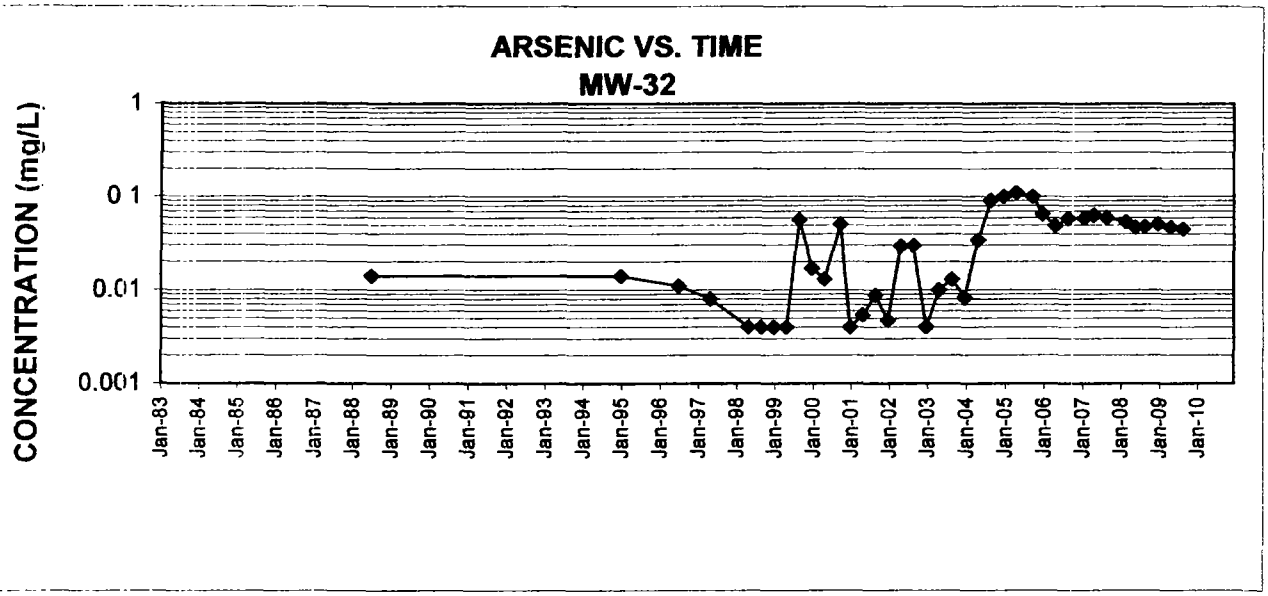
Jan-08
Jan-09
Jan-10


ARSENIC VS. TIME
MW-32
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
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Jan-06
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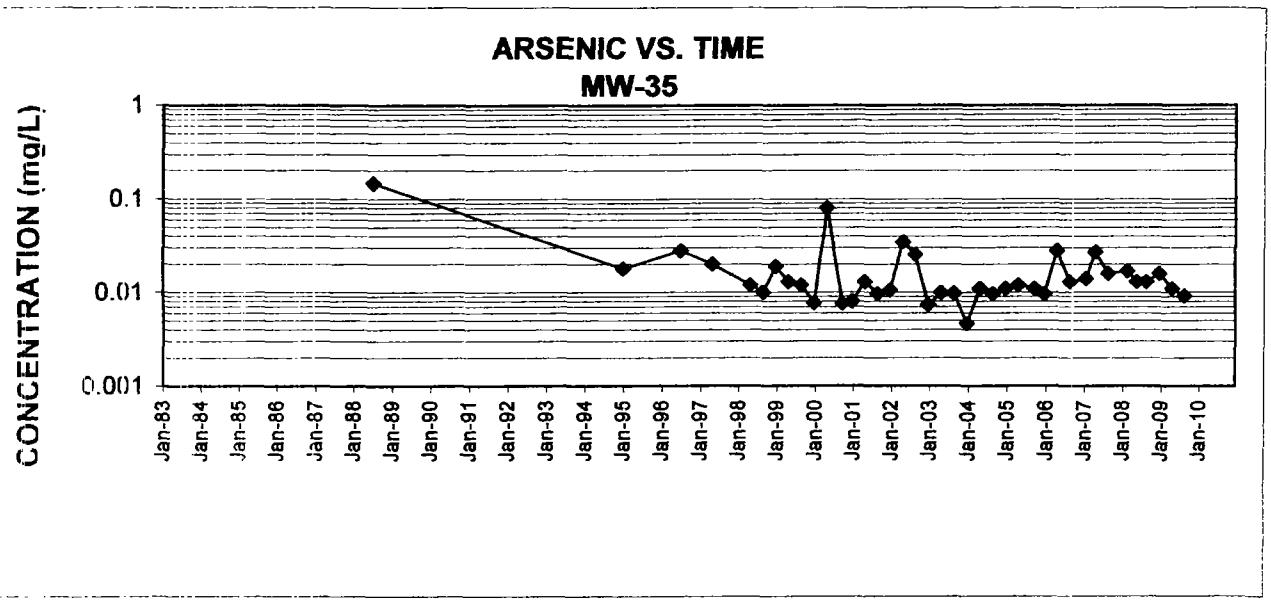
Jan-08
Jan-09
Jan-10


ARSENIC VS. TIME
MW-35
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
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Jan-04
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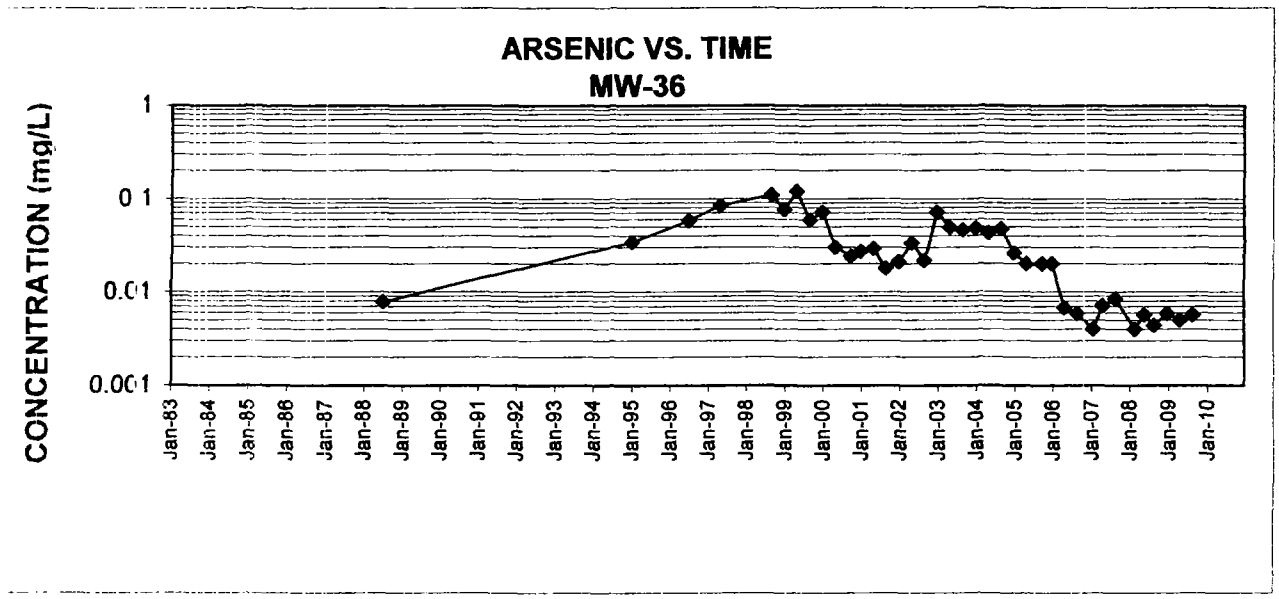
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10


ARSENIC VS. TIME
MW-36
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
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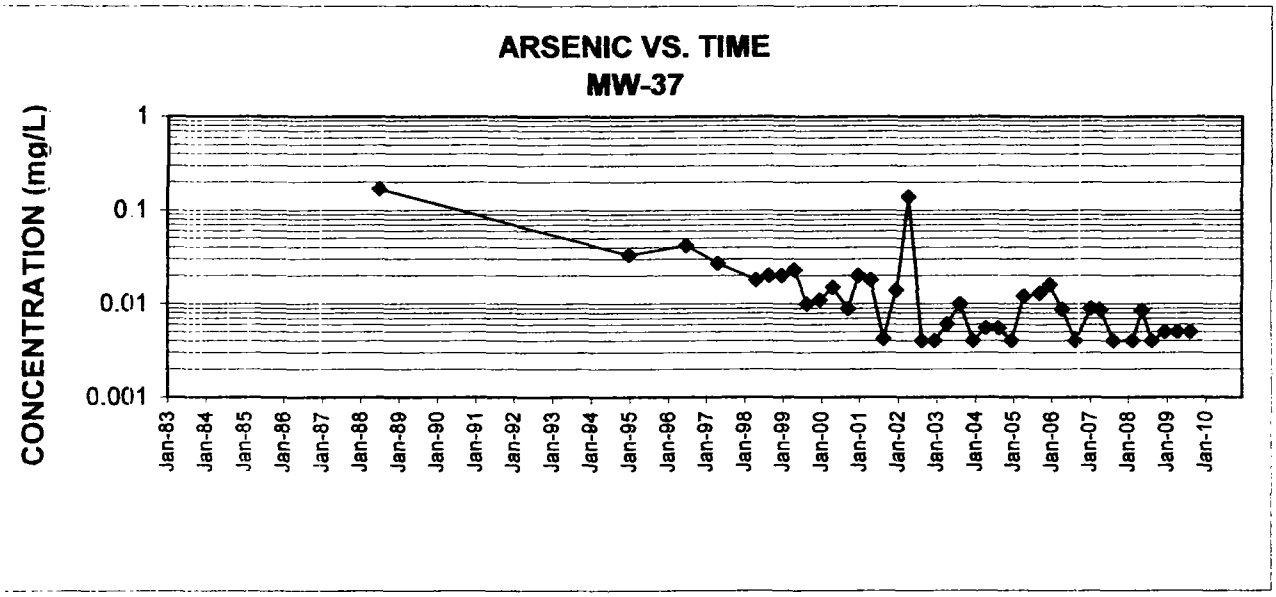
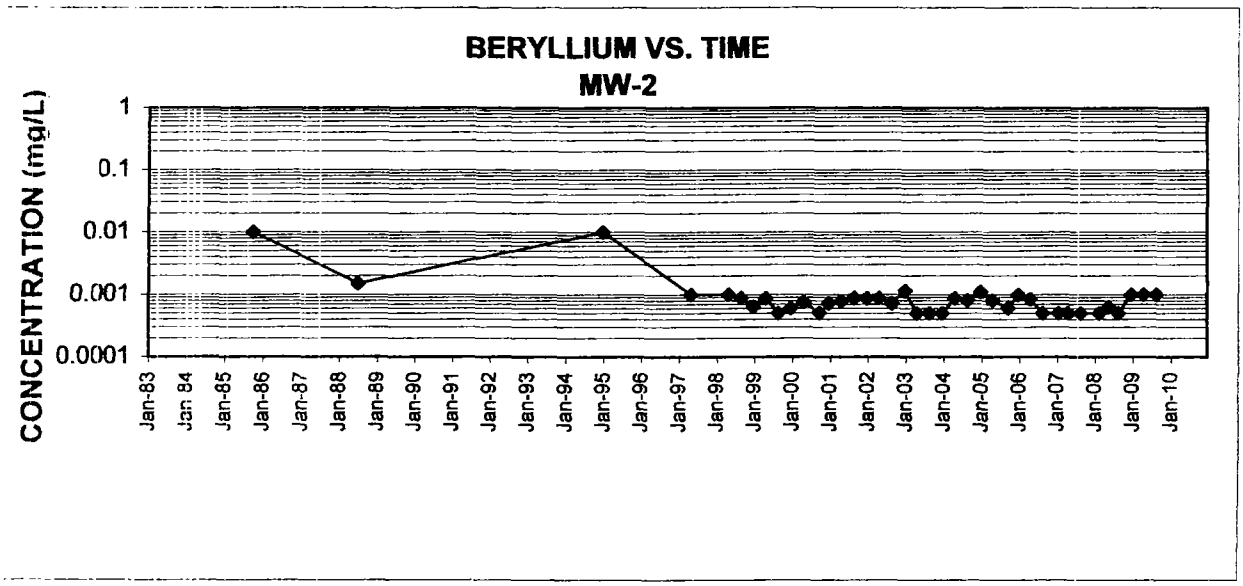
Jan-07
Jan-08
Jan-09
Jan-10


ARSENIC VS. TIME
MW-37
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10

APPENDIX D-5

BERYLLIUM


BERYLLIUM VS. TIME
MW-2
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
0.0001
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
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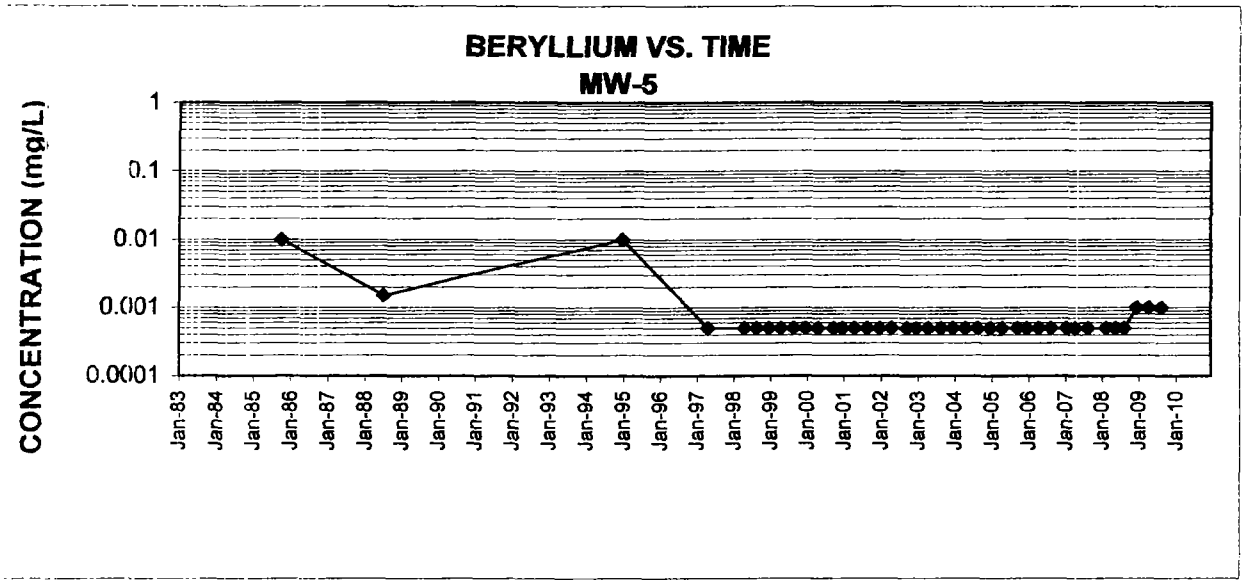
Jan-07
Jan-08
Jan-09
Jan-10


BERYLLIUM VS. TIME
MW-5
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
0.0001
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
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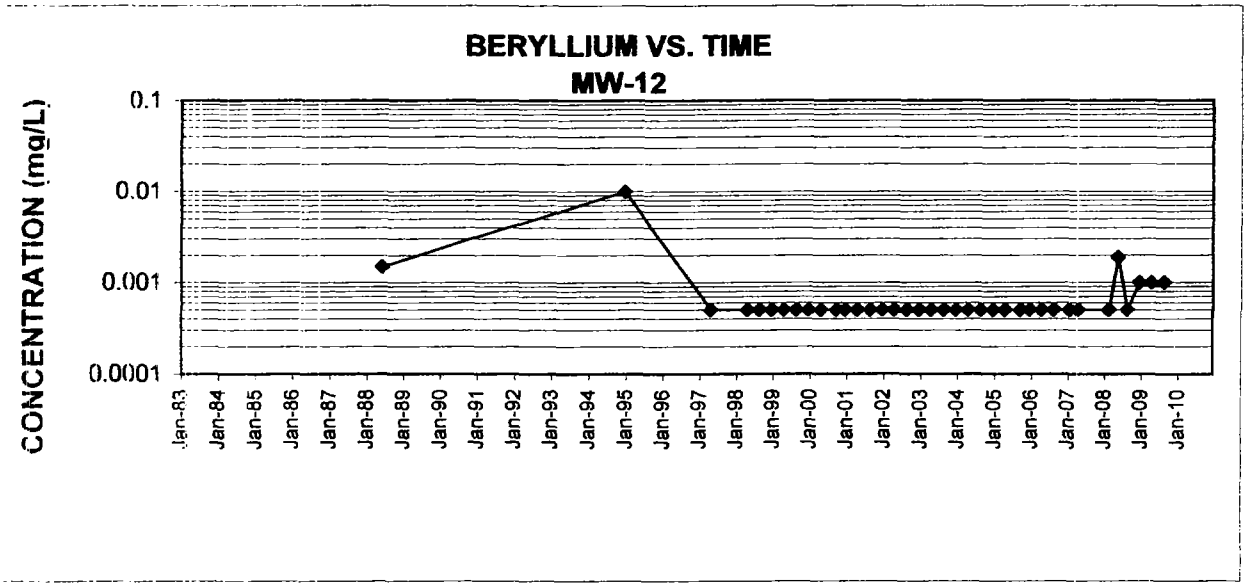
Jan-07
Jan-08
Jan-09
Jan-10


BERYLLIUM VS. TIME
MW-12
CONCENTRATION (mg/L)
0.1
0.01
0.001
0.0001
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
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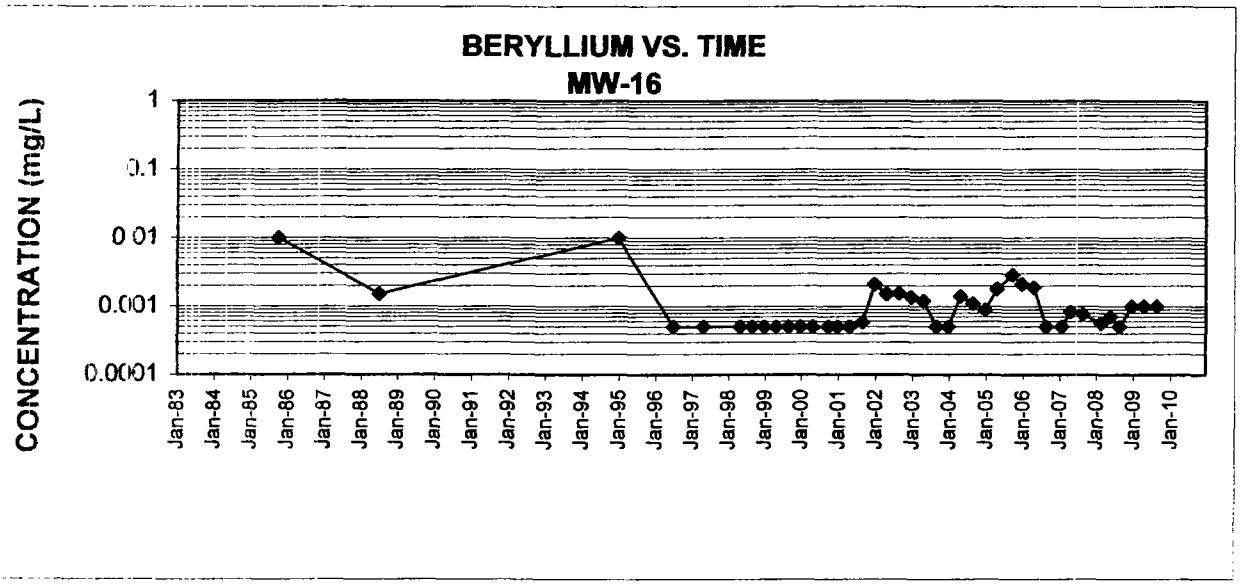
Jan-07
Jan-08
Jan-09
Jan-10


BERYLLIUM VS. TIME
MW-16
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
0.0001
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
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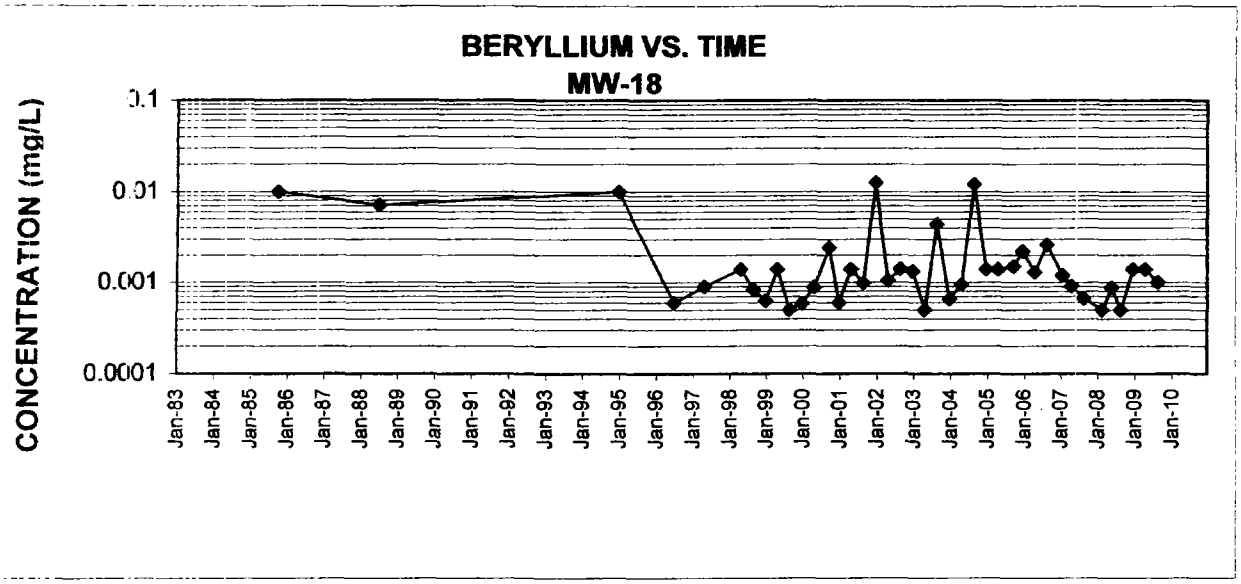
Jan-08
Jan-09
Jan-10


BERYLLIUM VS. TIME
MW-18
CONCENTRATION (mg/L)
0.1
0.01
0.001
0.0001
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
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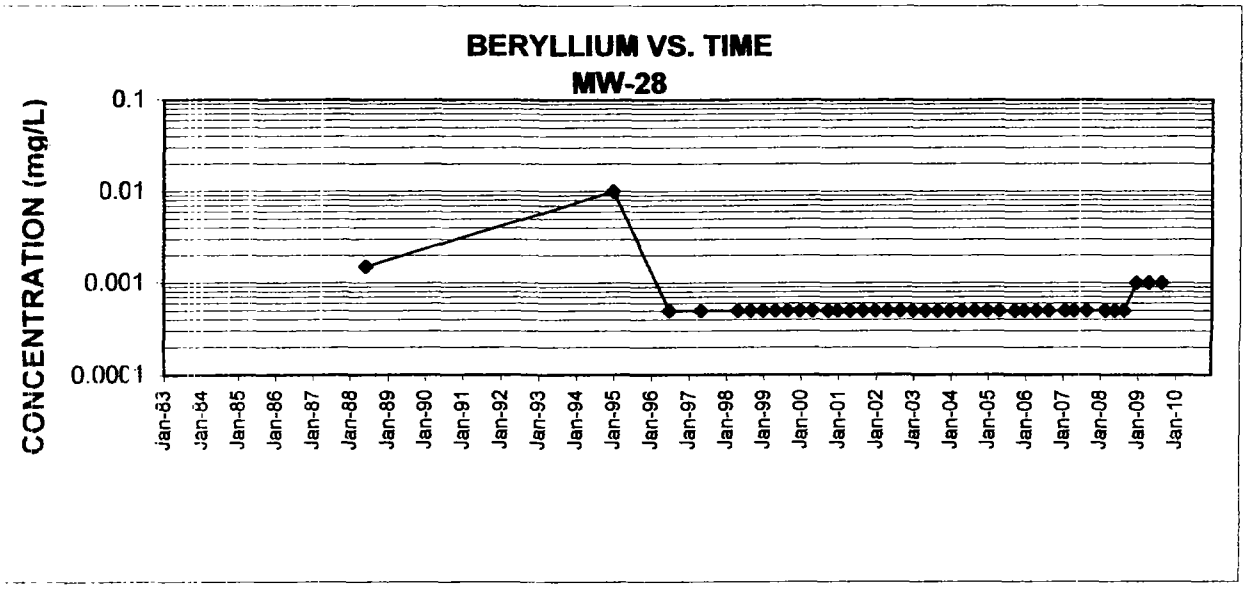
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10


BERYLLIUM VS. TIME
MW-28
CONCENTRATION (mg/L)
0.1
0.01
0.001
0.0001
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
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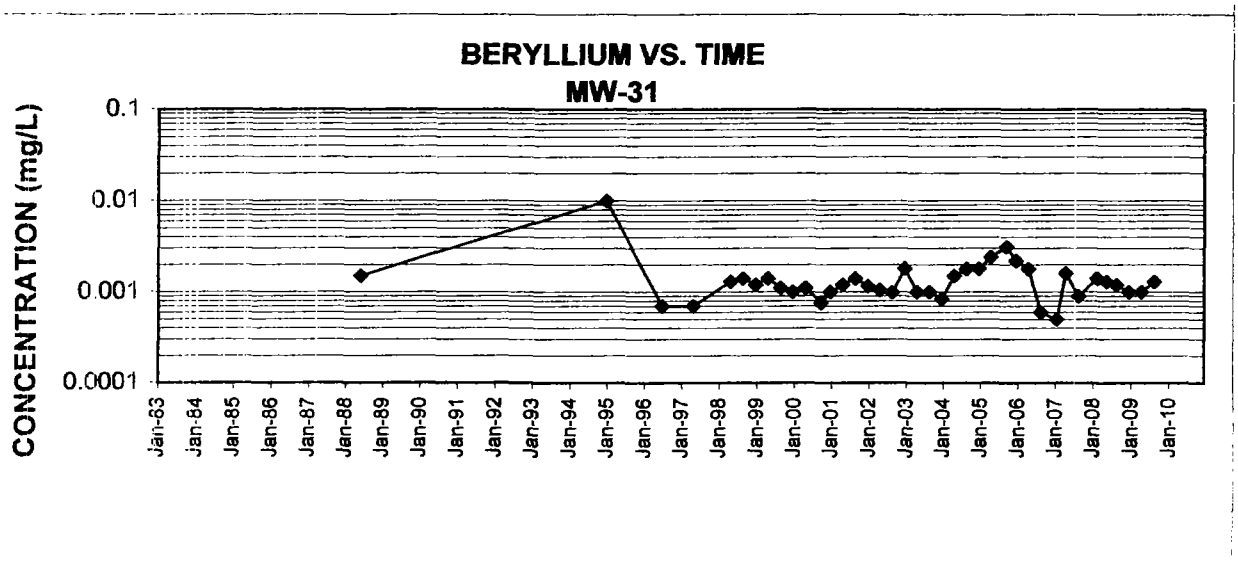
Jan-07
Jan-08
Jan-09
Jan-10


BERYLLIUM VS. TIME
MW-31
CONCENTRATION (mg/L)
0.1
0.01
0.001
0.0001
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
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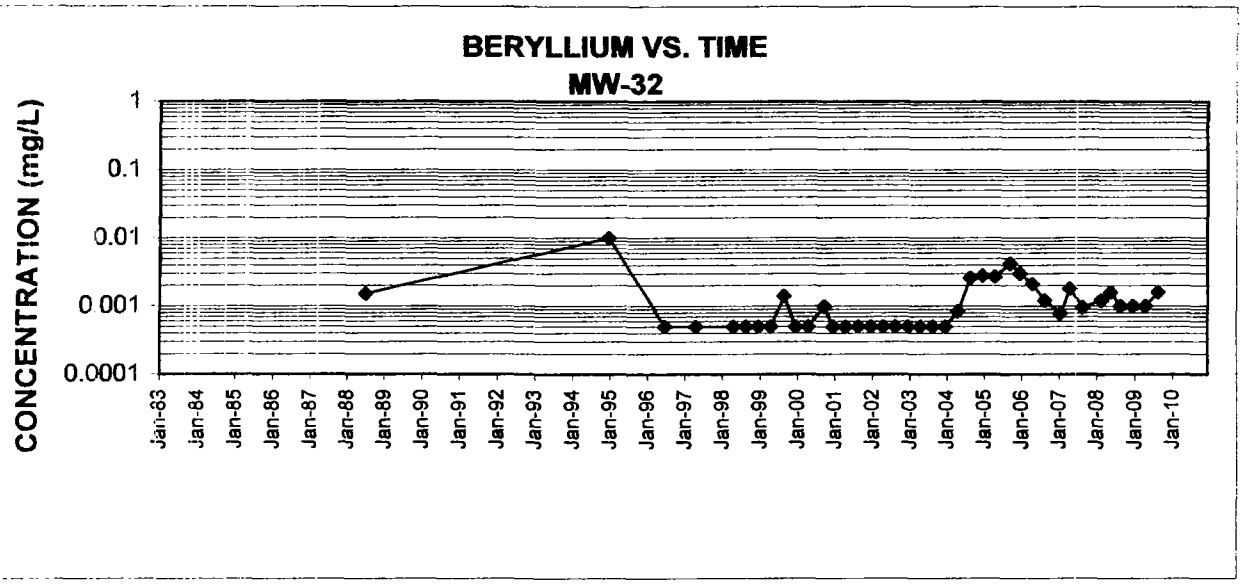
Jan-07
Jan-08
Jan-09
Jan-10


BERYLLIUM VS. TIME
MW-32
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
0.0001
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
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Jan-06
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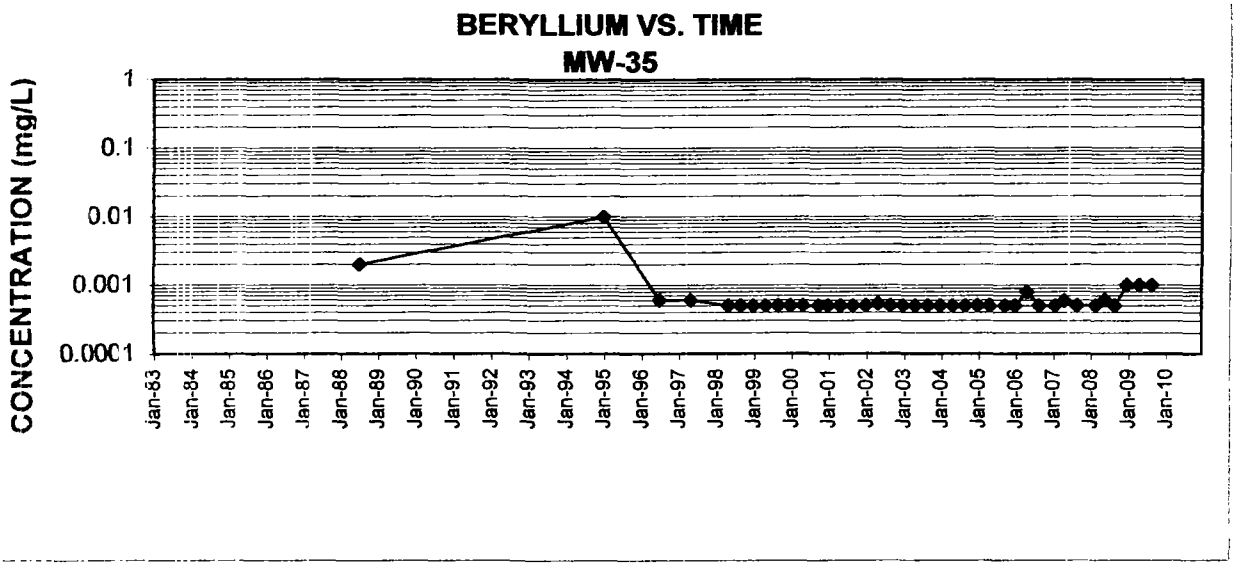
Jan-09
Jan-10


BERYLLIUM VS. TIME
MW-35
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
0.0001
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
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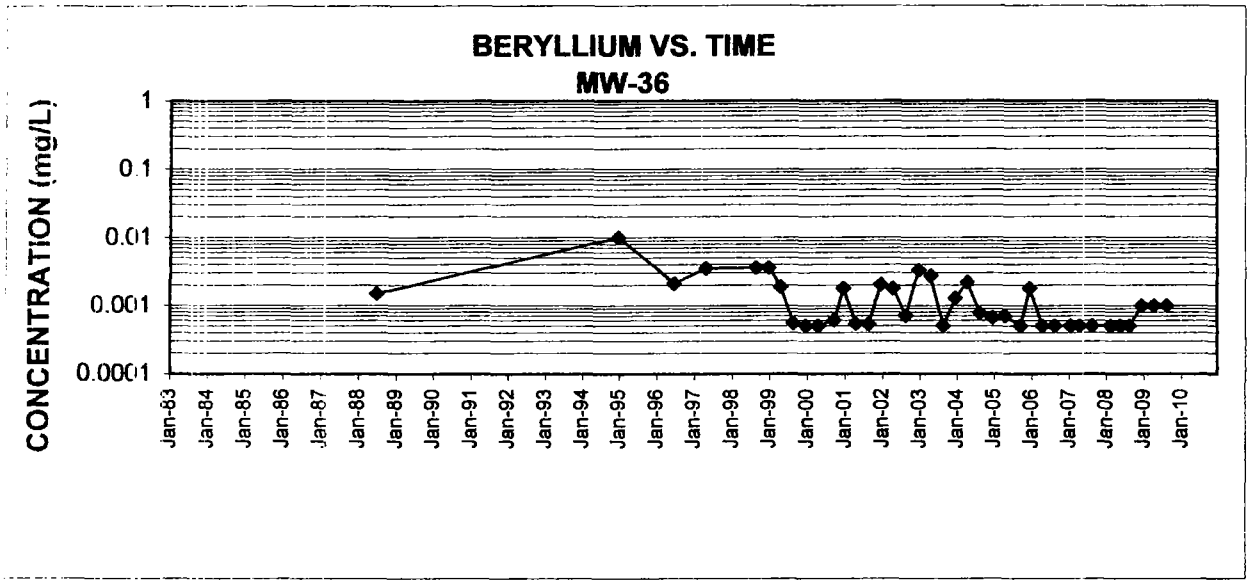
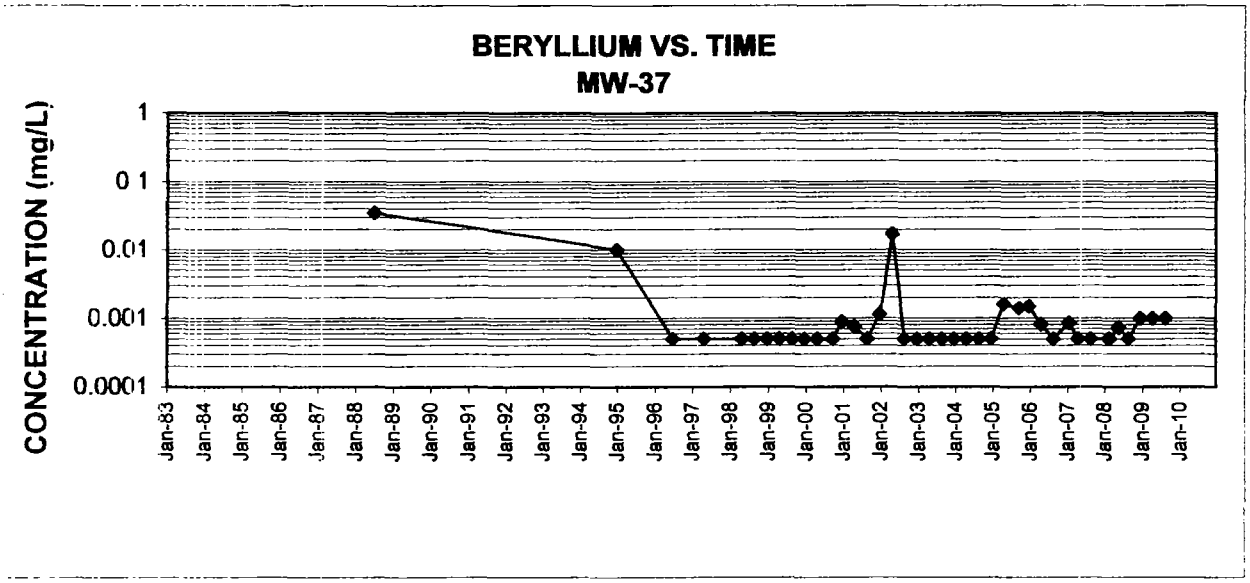
Jan-07
Jan-08
Jan-09
Jan-10


BERYLLIUM VS. TIME
MW-36
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
0.0001
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
Jan-10


BERYLLIUM VS. TIME
MW-37
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
0.0001
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
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Jan-06
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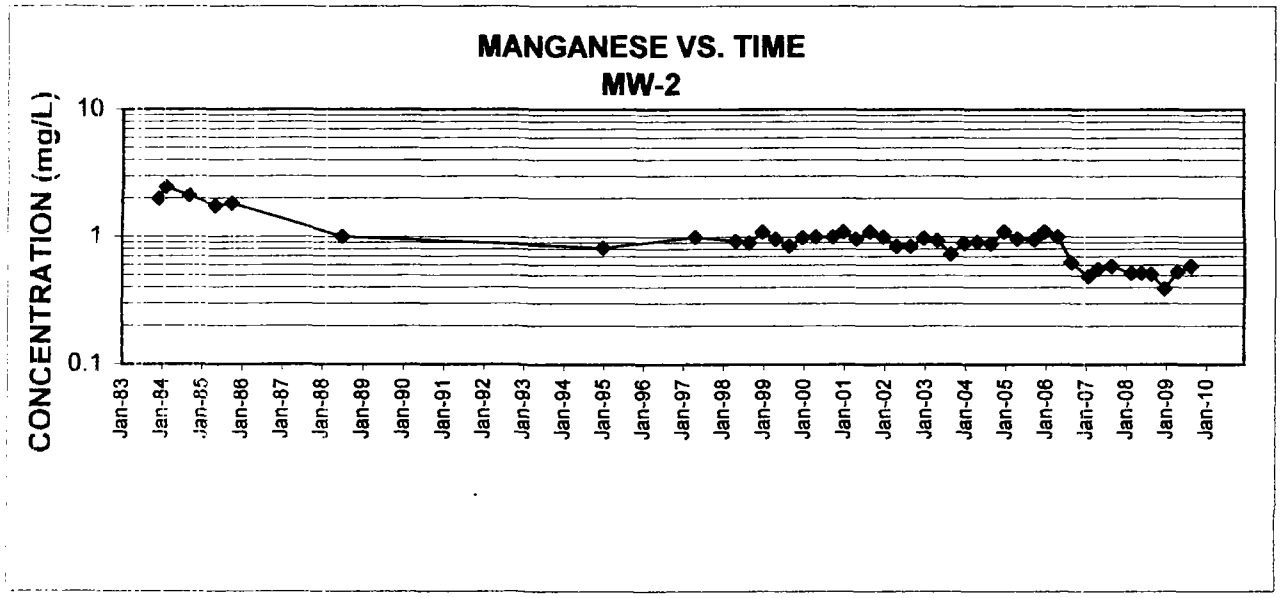
Jan-08
Jan-09
Jan-10

APPENDIX D-6

MANGANESE


MANGANESE VS. TIME
MW-2
CONCENTRATION (mg/L)
10
1
0.1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
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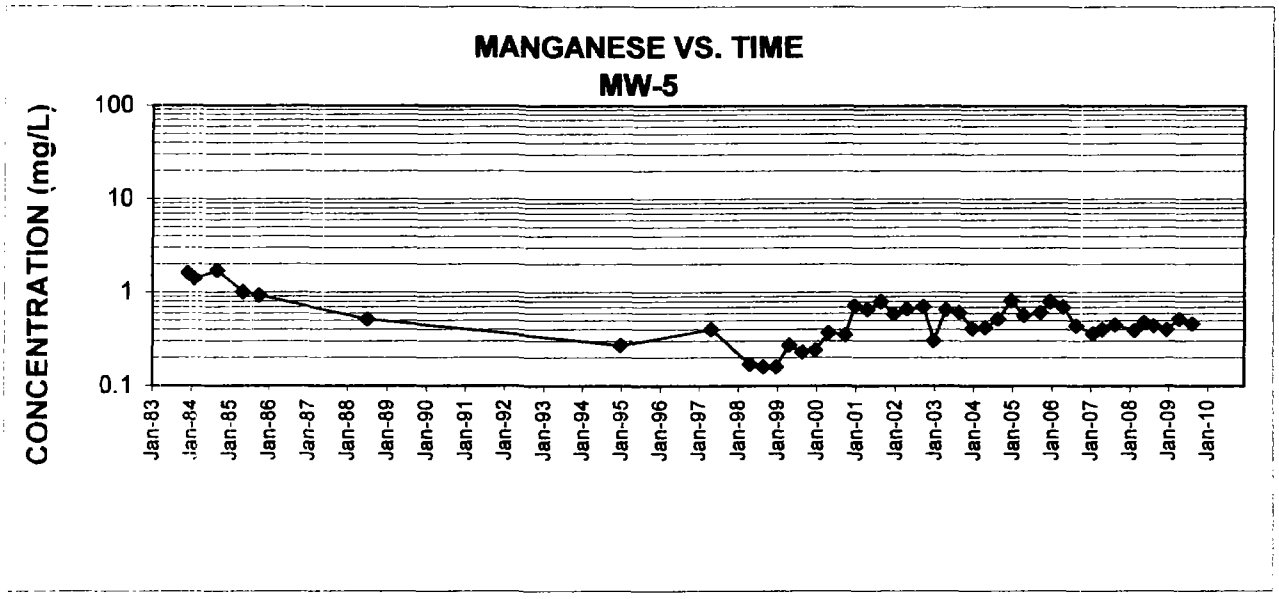
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10


MANGANESE VS. TIME
MW-5
CONCENTRATION (mg/L)
100
10
1
0.1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
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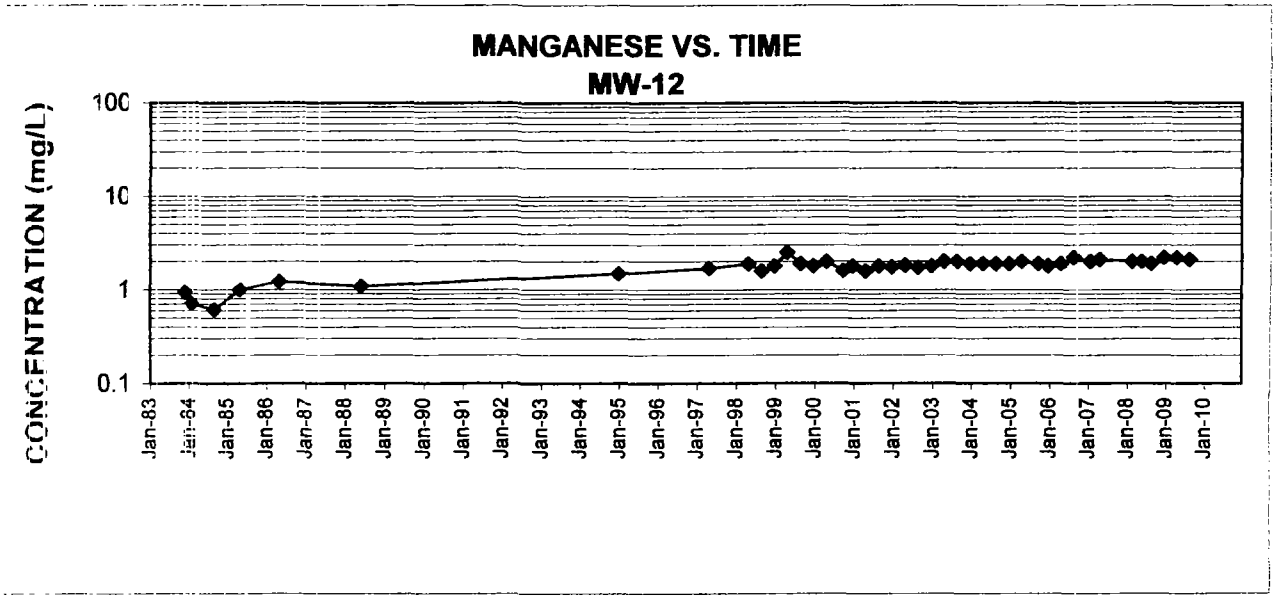
Jan-07
Jan-08
Jan-09
Jan-10


MANGANESE VS. TIME
MW-12
CONCENTRATION (mg/L)
100
10
1
0.1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
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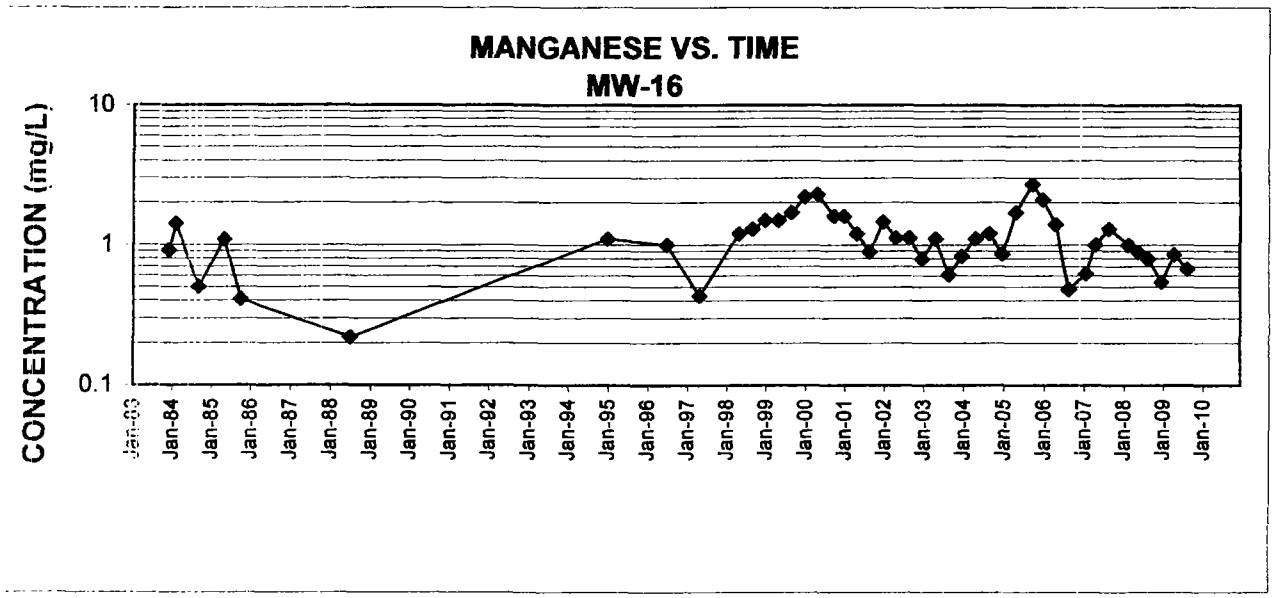
Jan-08
Jan-09
Jan-10


MANGANESE VS. TIME
MW-16
CONCENTRATION (mg/L)
10
1
0.1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
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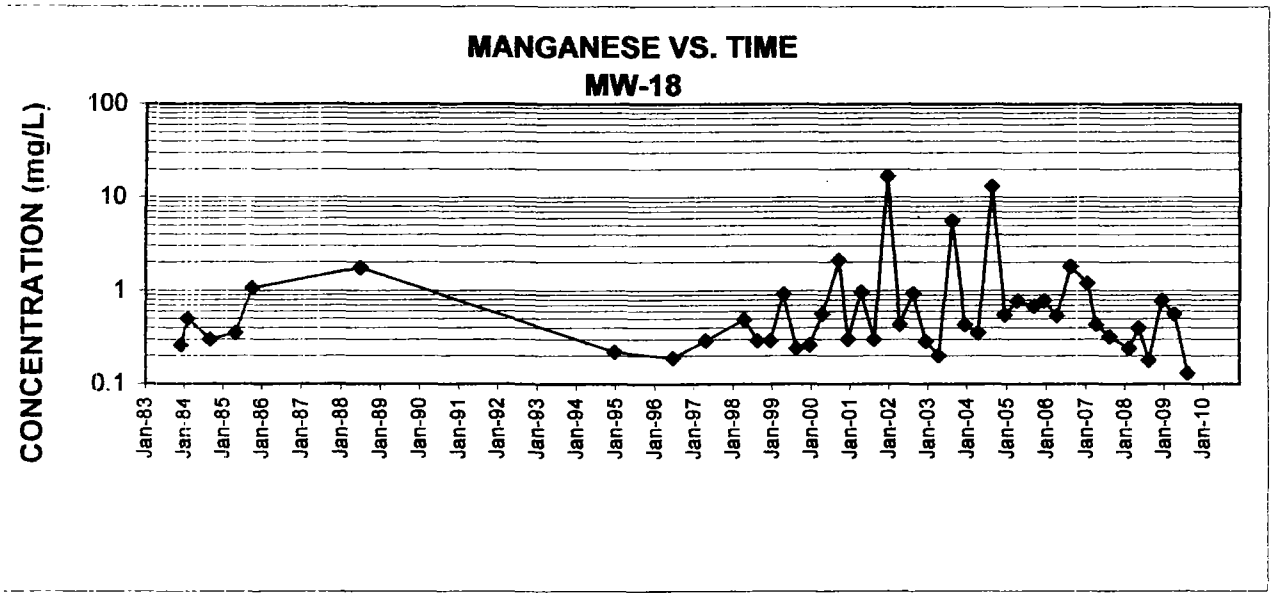
Jan-08
Jan-09
Jan-10


MANGANESE VS. TIME
MW-18
CONCENTRATION (mg/L)
100
10
1
0.1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
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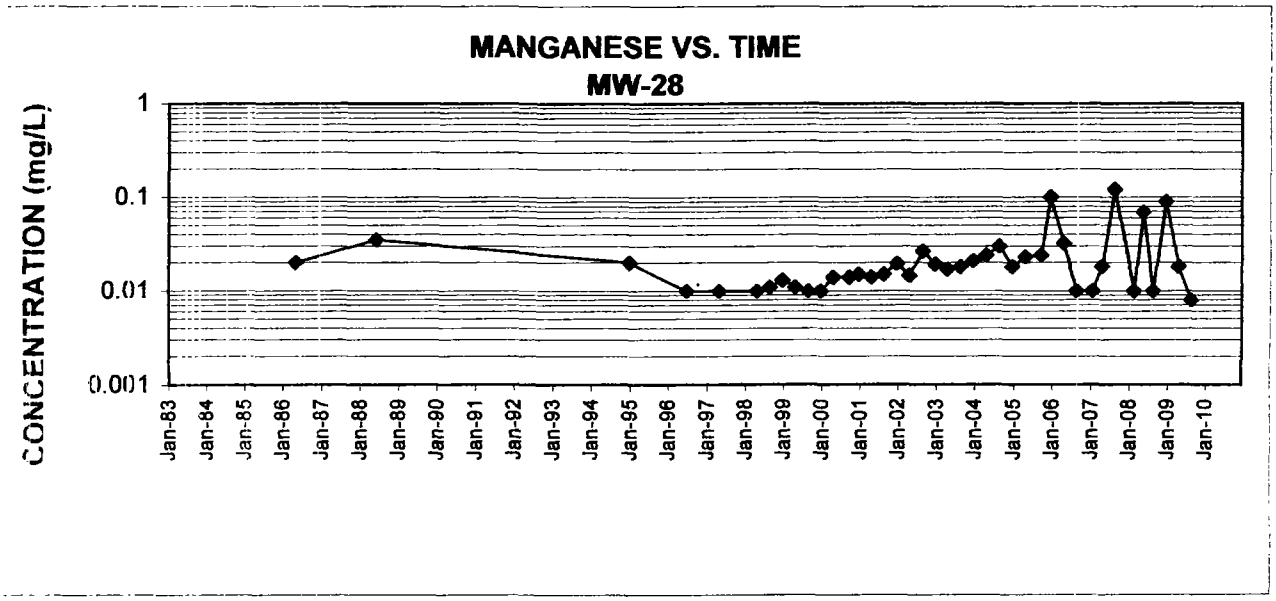
Jan-07
Jan-08
Jan-09
Jan-10


MANGANESE VS. TIME
MW-28
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
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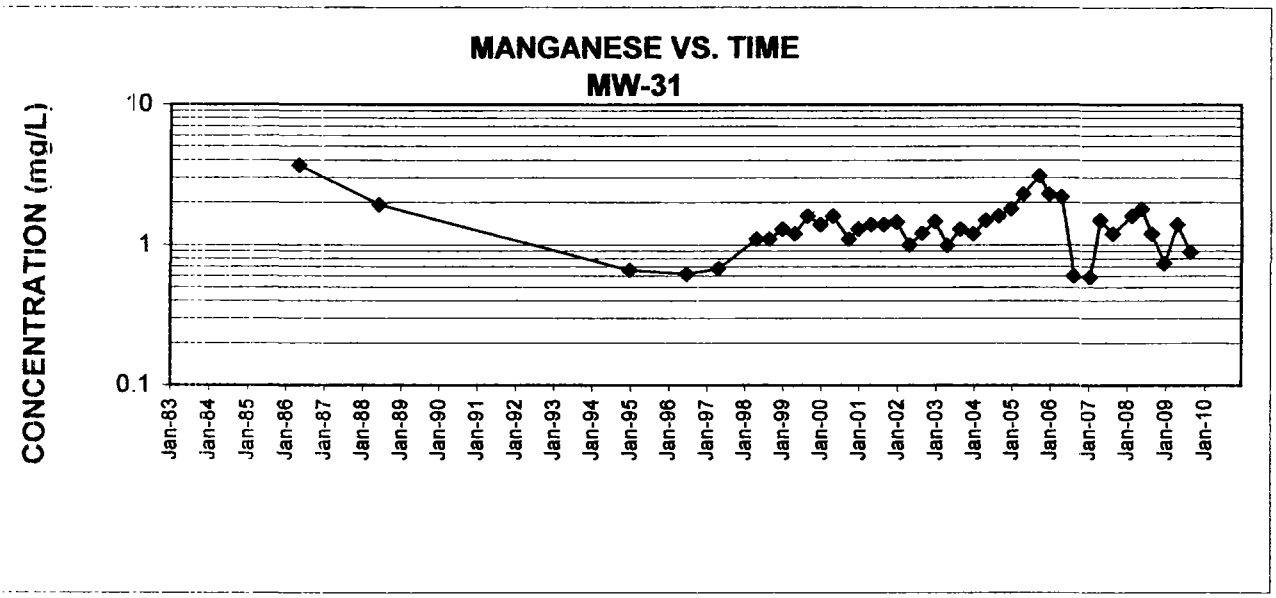
Jan-07
Jan-08
Jan-09
Jan-10


MANGANESE VS. TIME
MW-31
CONCENTRATION (mg/L)
10
1
0.1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
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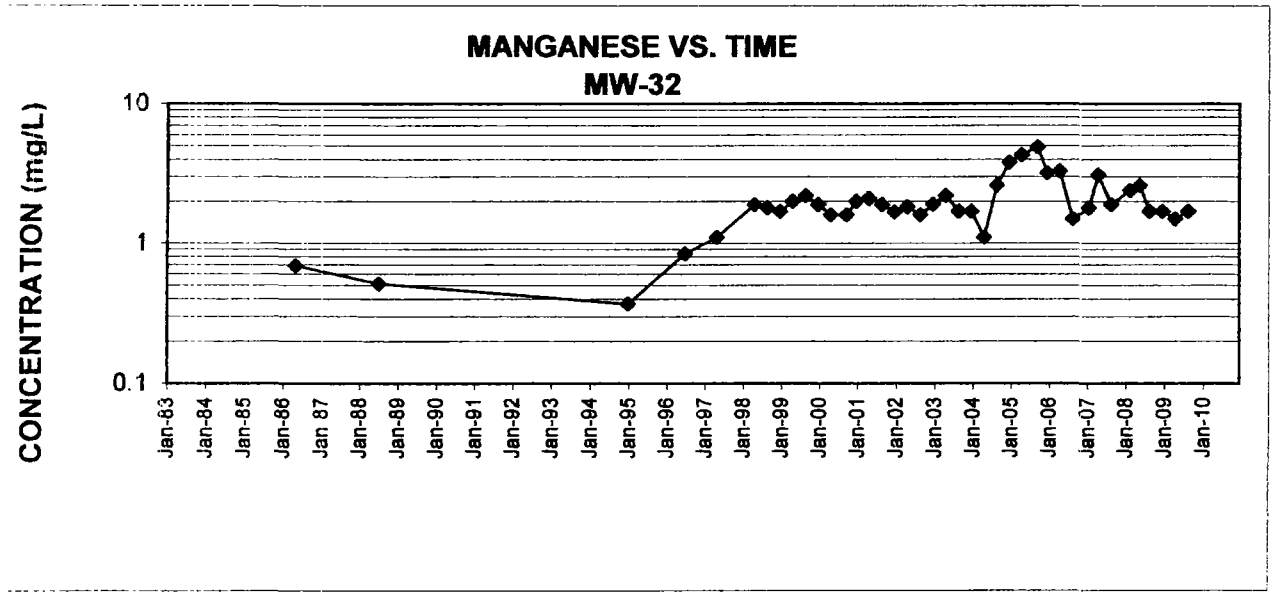
Jan-08
Jan-09
Jan-10


MANGANESE VS. TIME
MW-32
CONCENTRATION (mg/L)
10
1
0.1
Jan-83
Jan-84
Jan-85
Jan-86
Jan 87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
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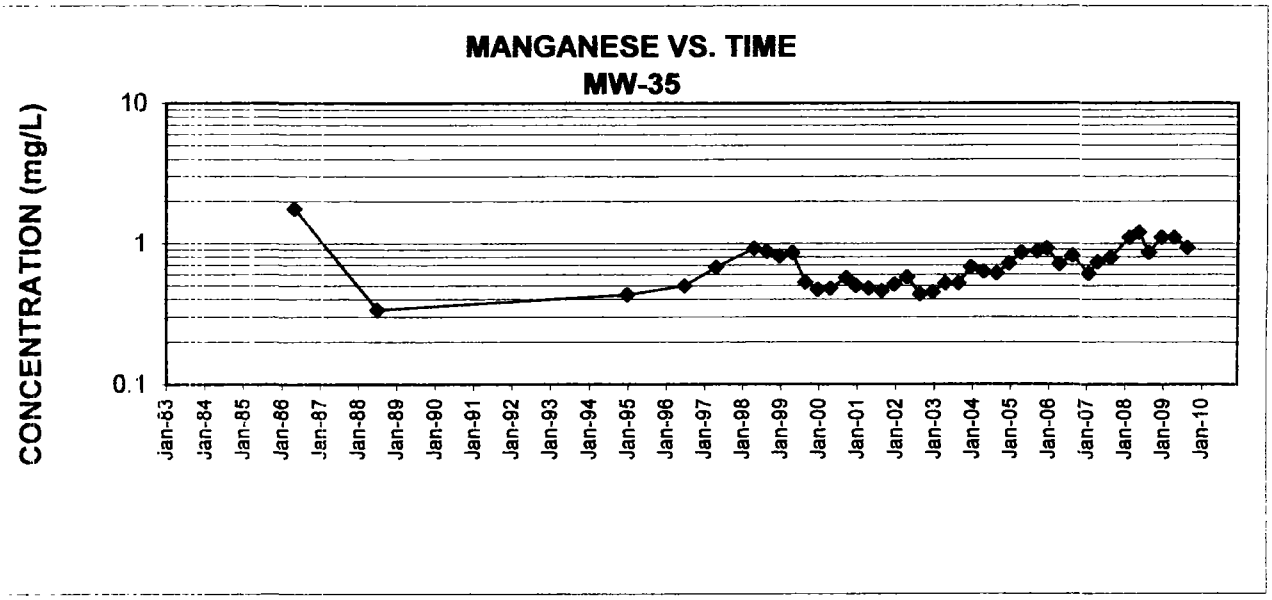
Jan-08
Jan-09
Jan-10


MANGANESE VS. TIME
MW-35
CONCENTRATION (mg/L)
10
1
0.1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
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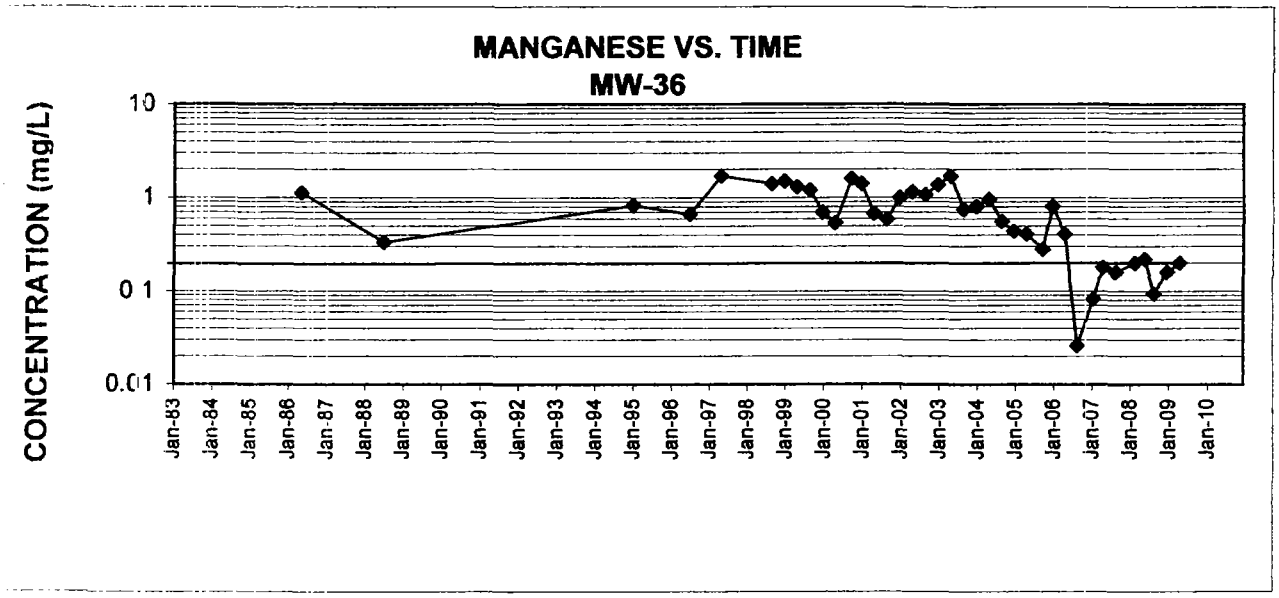
Jan-08
Jan-09
Jan-10


MANGANESE VS. TIME
MW-36
CONCENTRATION (mg/L)
10
1
0.1
0.01
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
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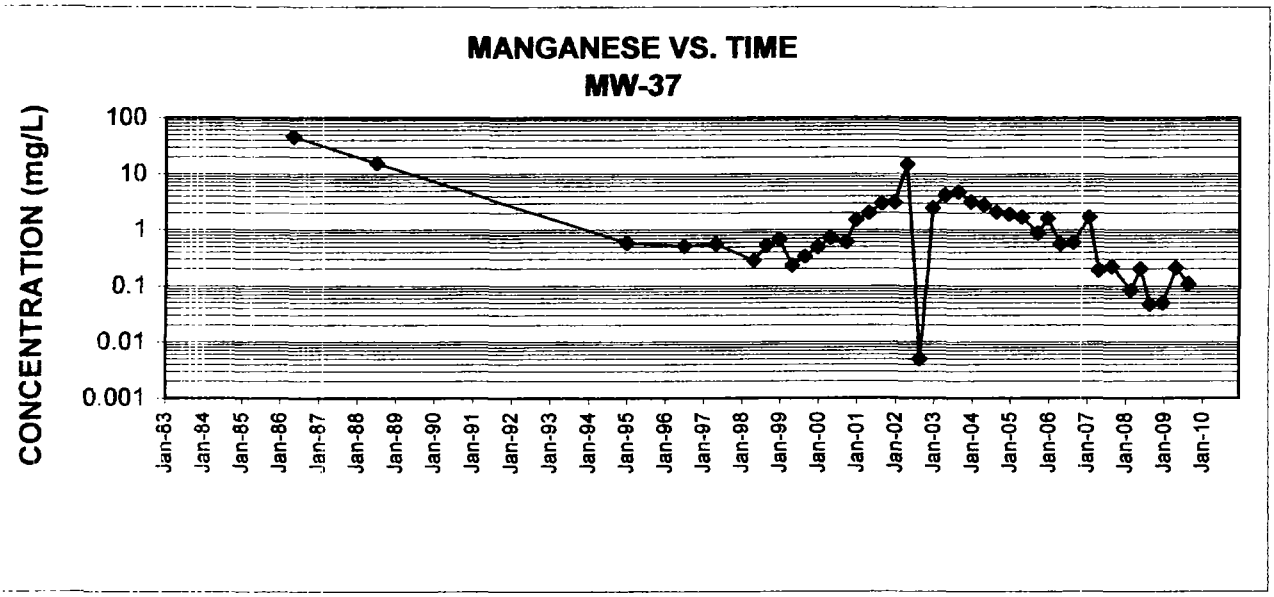
Jan-08
Jan-09
Jan-10


MANGANESE VS. TIME
MW-37
CONCENTRATION (mg/L)
100
10
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
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Jan-04
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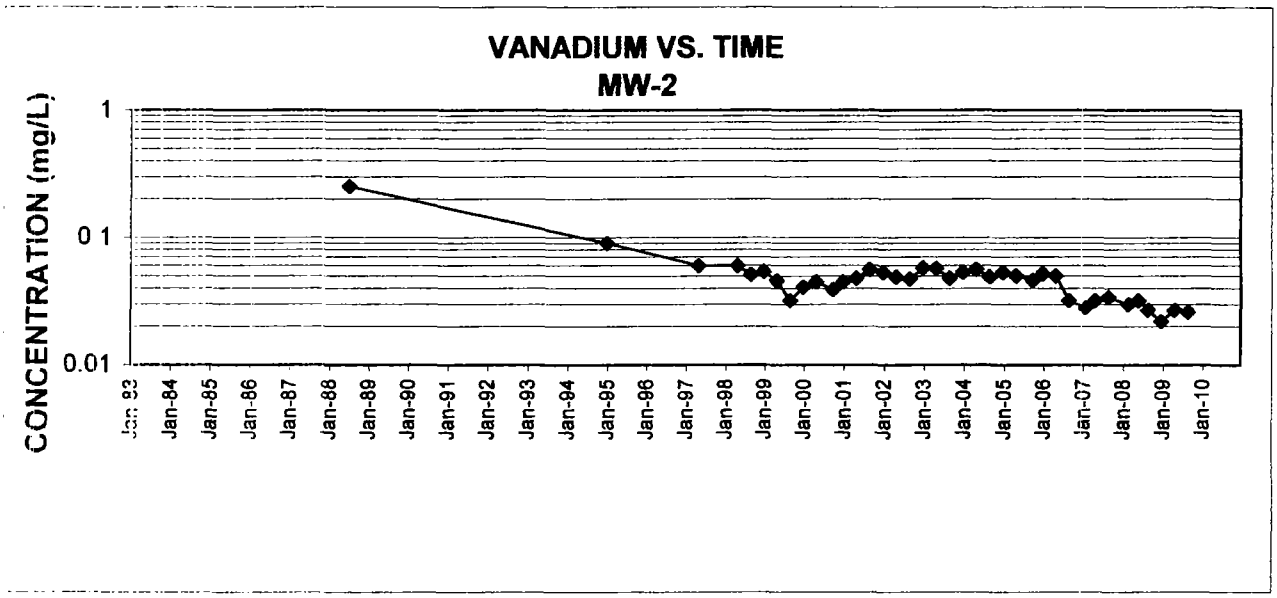
Jan-07
Jan-08
Jan-09
Jan-10

APPENDIX D-7

VANADIUM


VANADIUM VS. TIME
MW-2
CONCENTRATION (mg/L)
1
0.1
0.01
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
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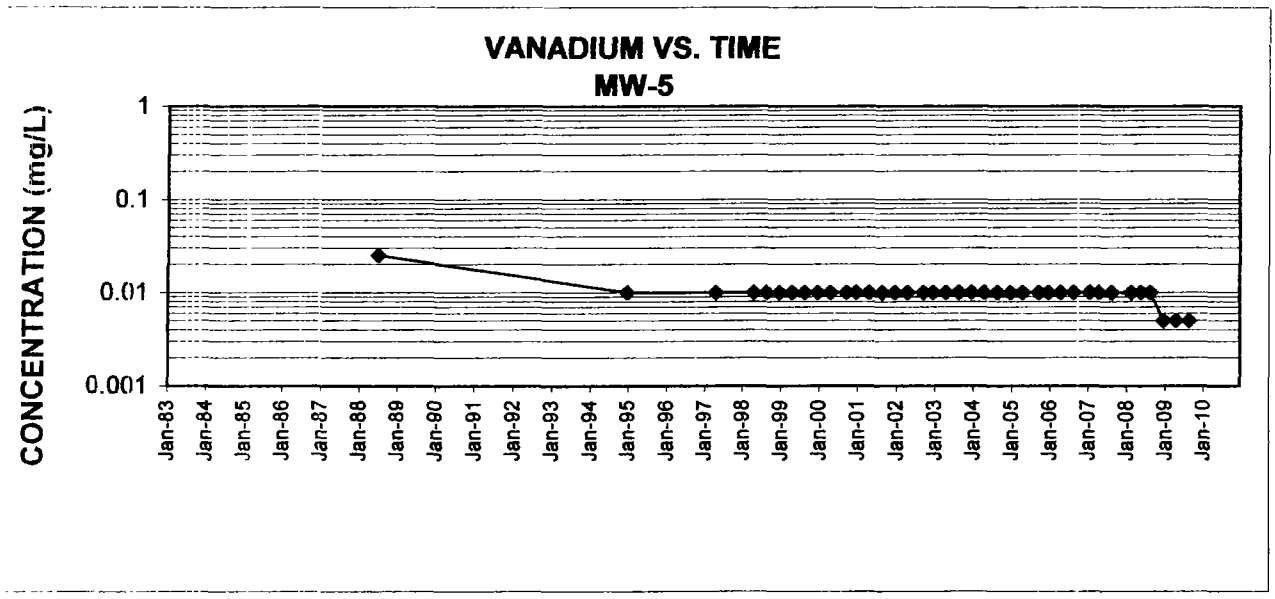
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10


VANADIUM VS. TIME
MW-5
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
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Jan-06
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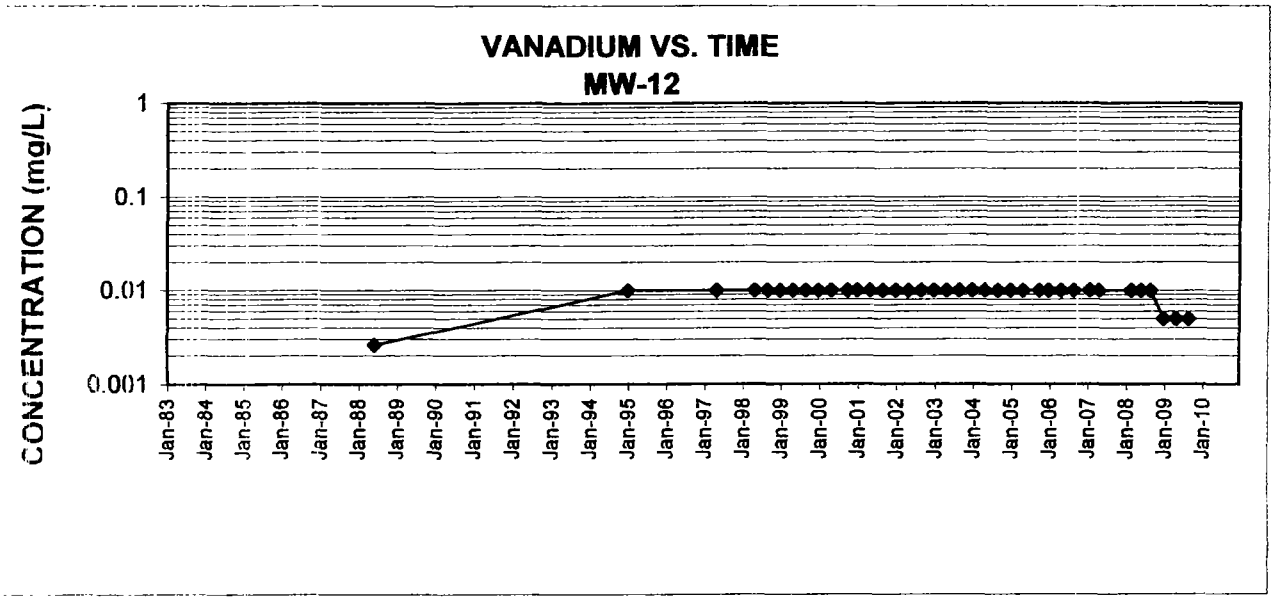
Jan-08
Jan-09
Jan-10


VANADIUM VS. TIME
MW-12
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
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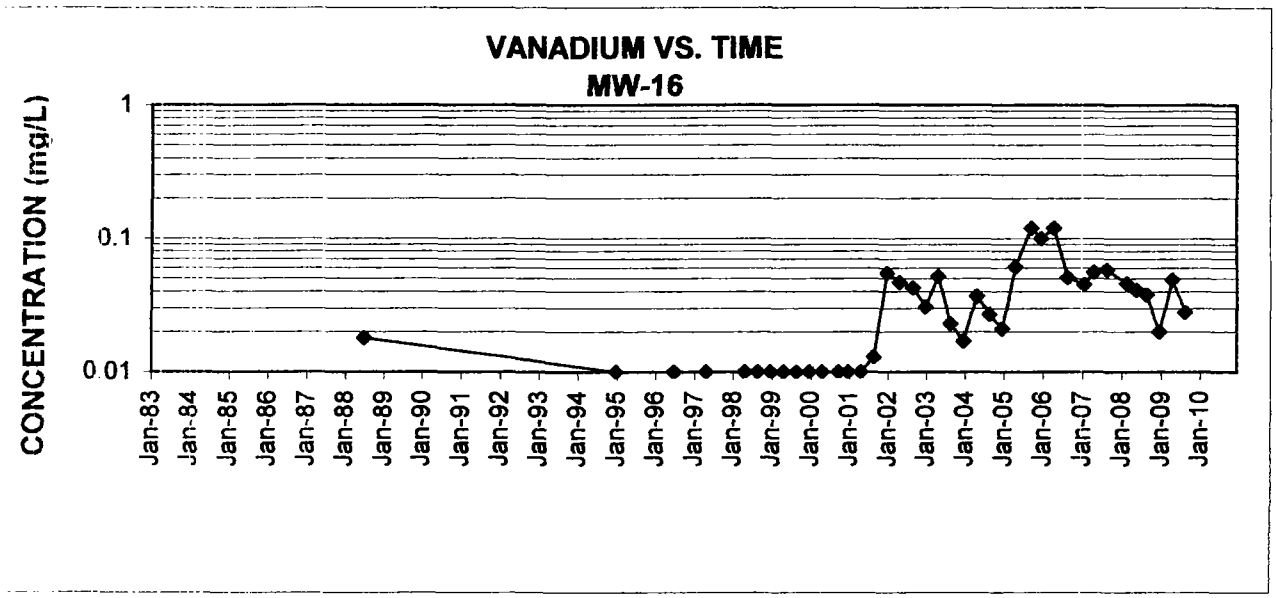
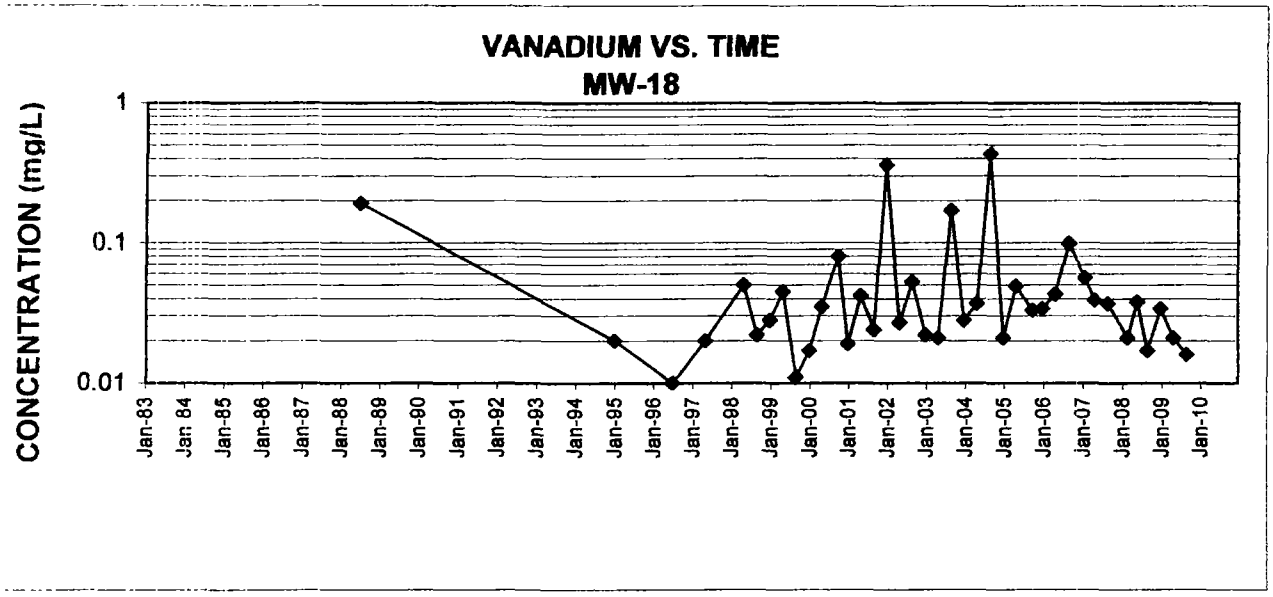
Jan-07
Jan-08
Jan-09
Jan-10


VANADIUM VS. TIME
MW-16
CONCENTRATION (mg/L)
1
0.1
0.01
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
Jan-10


VANADIUM VS. TIME
MW-18
CONCENTRATION (mg/L)
1
0.1
0.01
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
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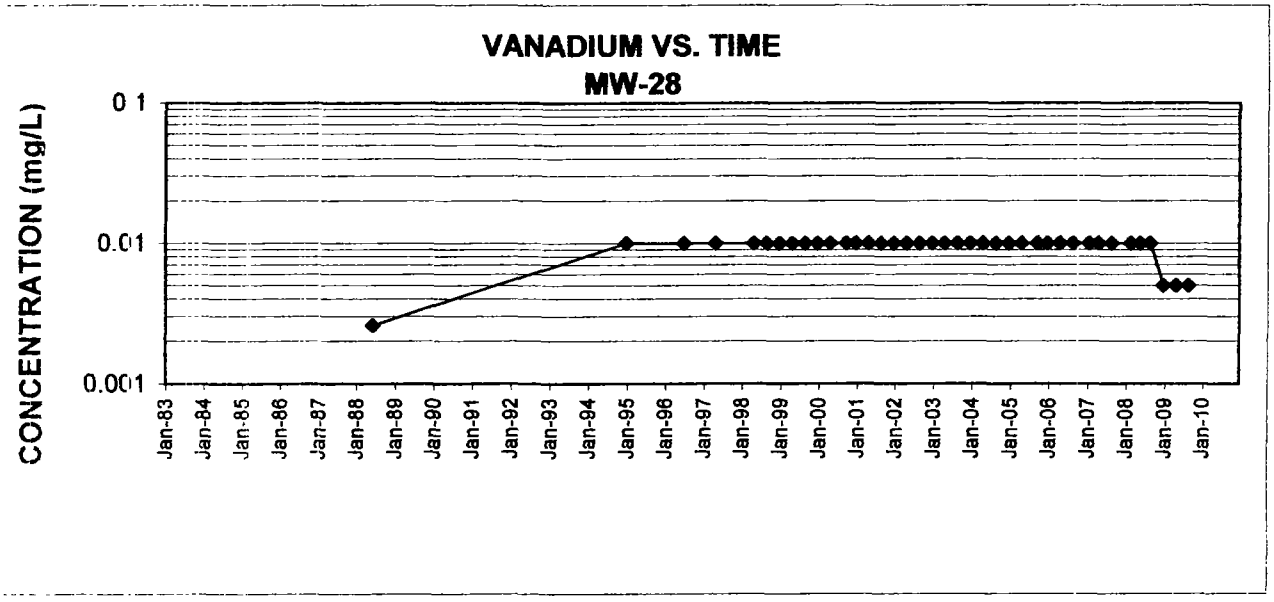
Jan-07
Jan-08
Jan-09
Jan-10


VANADIUM VS. TIME
MW-28
CONCENTRATION (mg/L)
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
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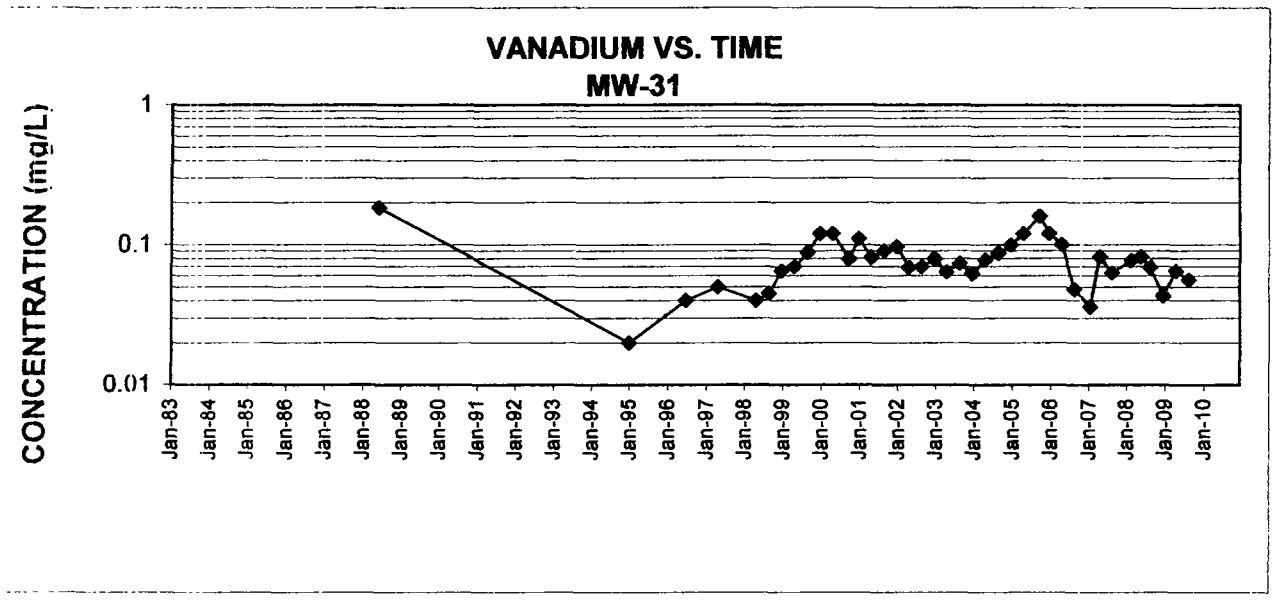
Jan-07
Jan-08
Jan-09
Jan-10


VANADIUM VS. TIME
MW-31
CONCENTRATION (mg/L)
1
0.1
0.01
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
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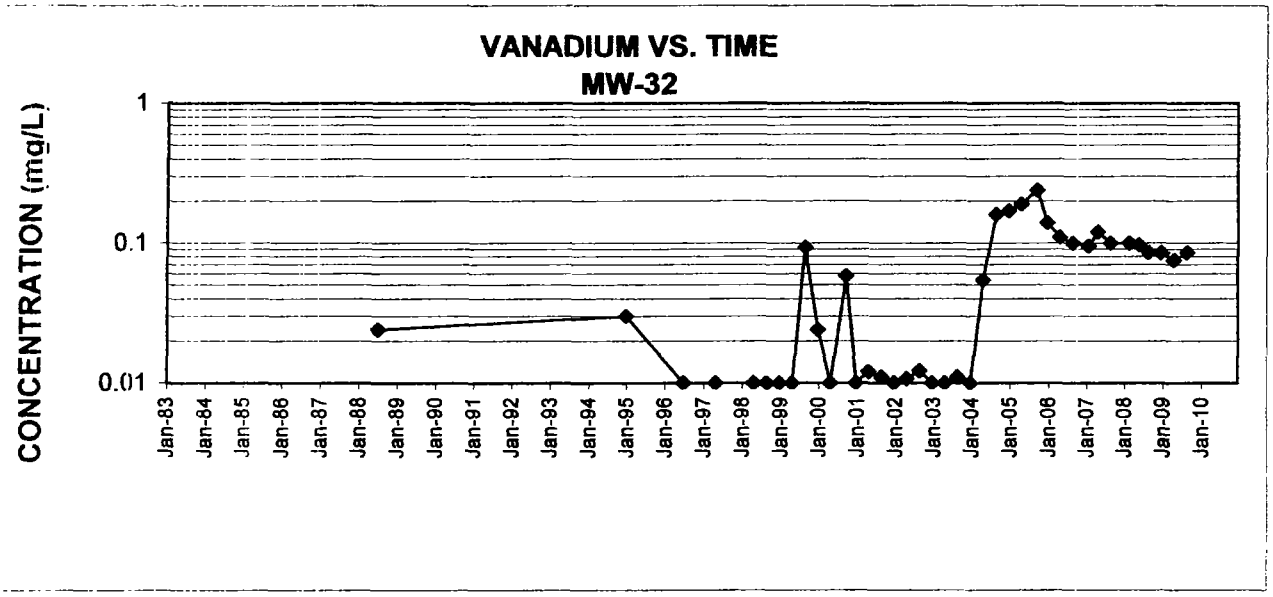
Jan-07
Jan-08
Jan-09
Jan-10


VANADIUM VS. TIME
MW-32
CONCENTRATION (mg/L)
1
0.1
0.01
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
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Jan-02
Jan-03
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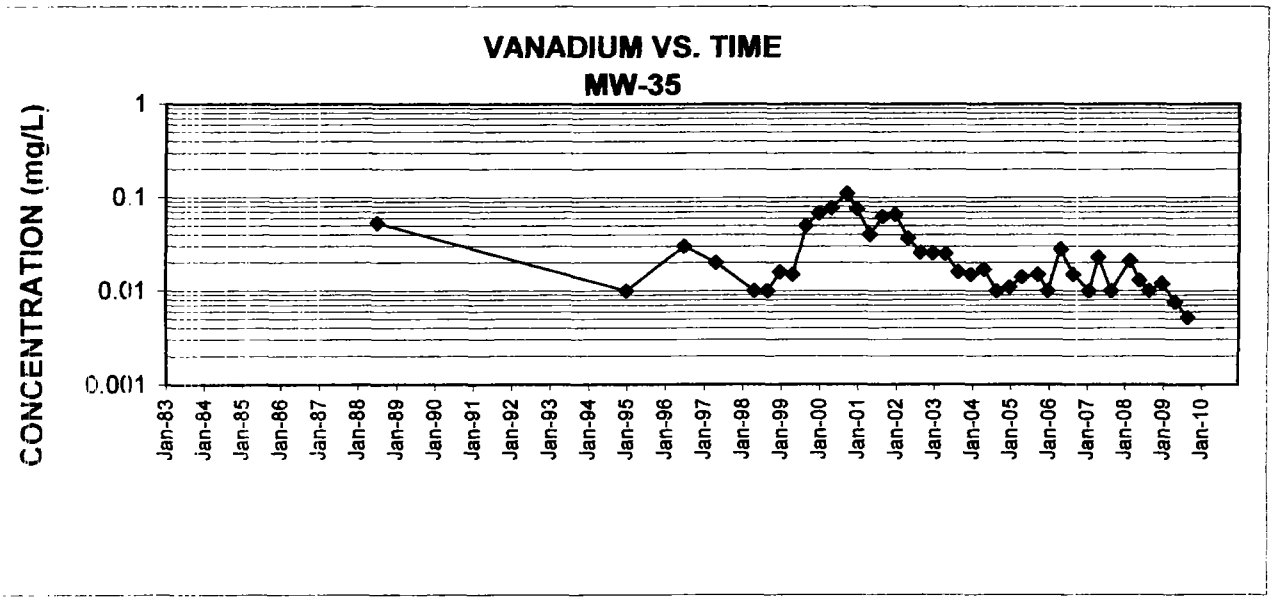
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10


VANADIUM VS. TIME
MW-35
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
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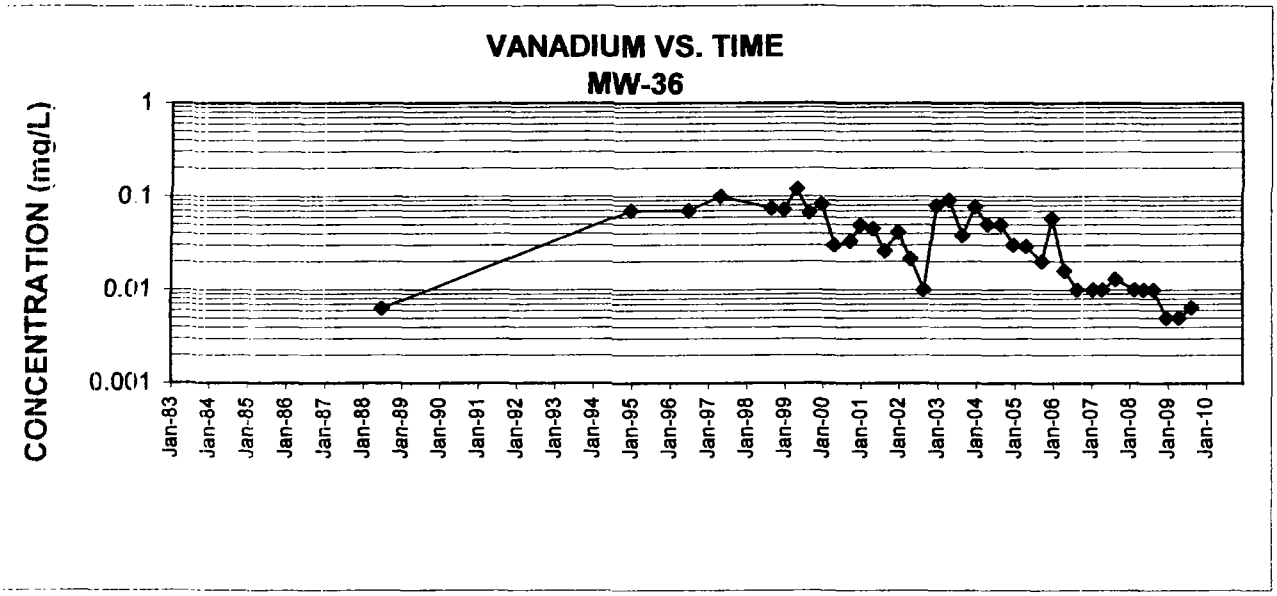
Jan-07
Jan-08
Jan-09
Jan-10


VANADIUM VS. TIME
MW-36
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
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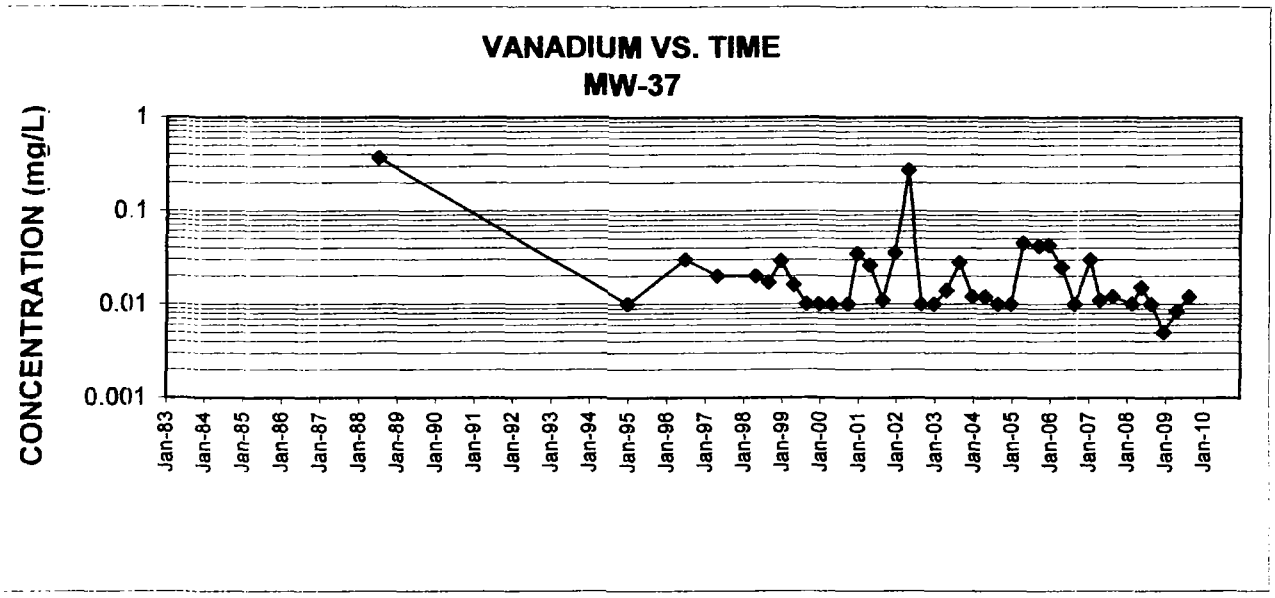
Jan-07
Jan-08
Jan-09
Jan-10


VANADIUM VS. TIME
MW-37
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
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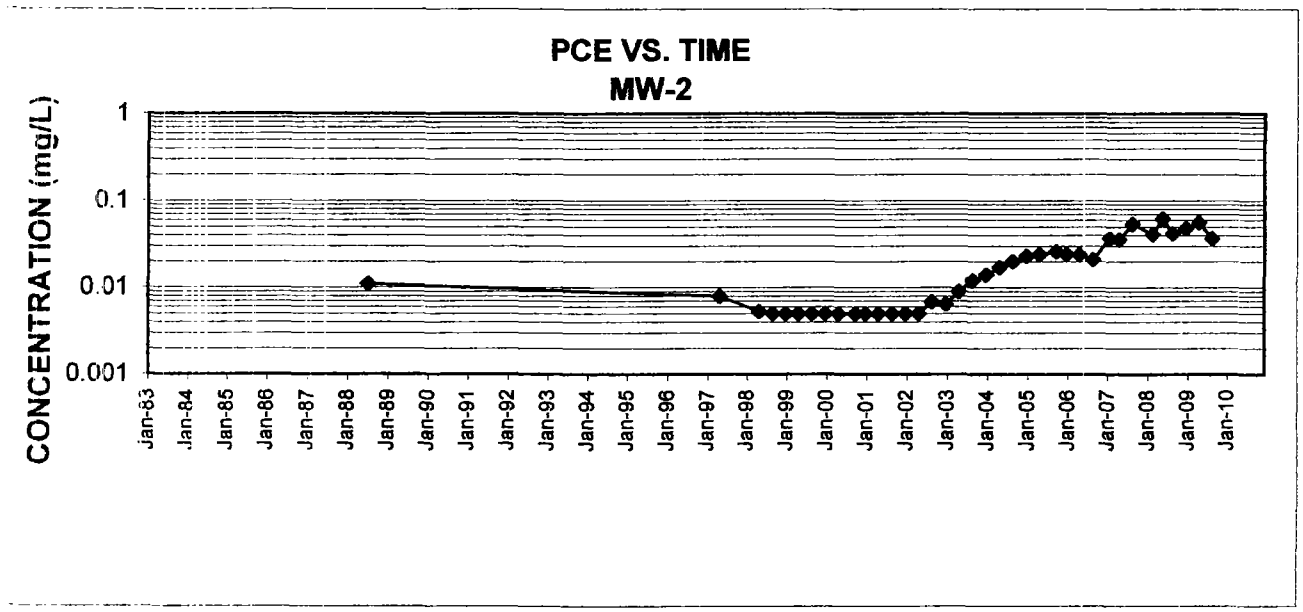
Jan-08
Jan-09
Jan-10

APPENDIX D-8

TETRACHLOROETHENE


PCE VS. TIME
MW-2
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
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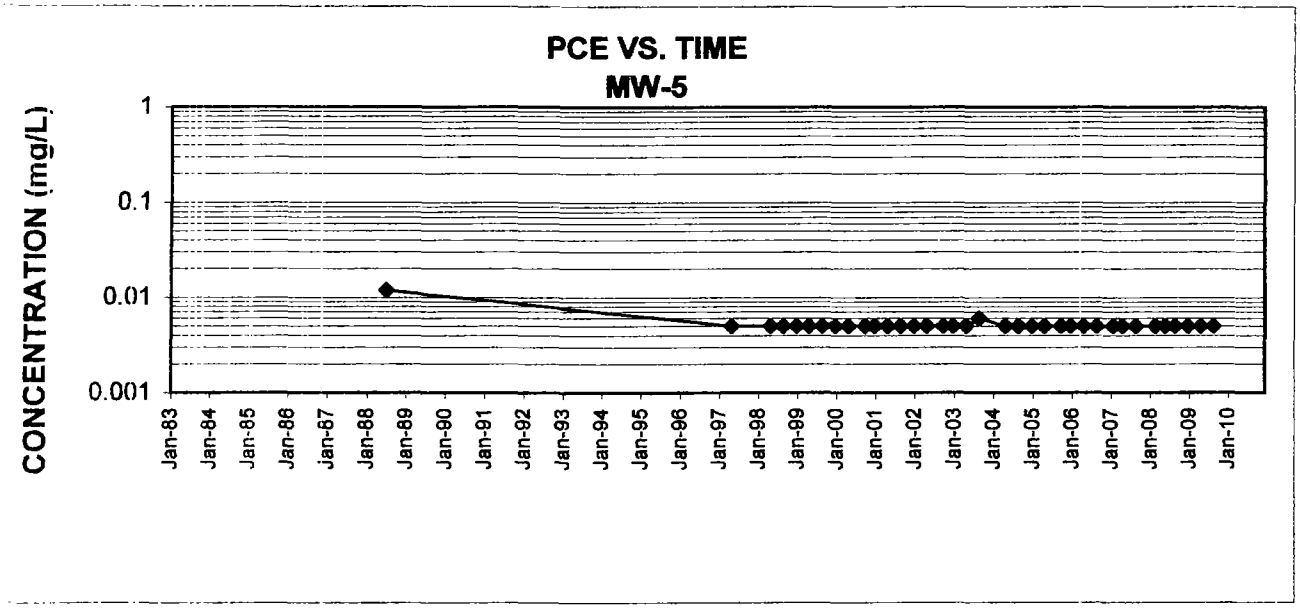
Jan-08
Jan-09
Jan-10


PCE VS. TIME
MW-5
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
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Jan-02
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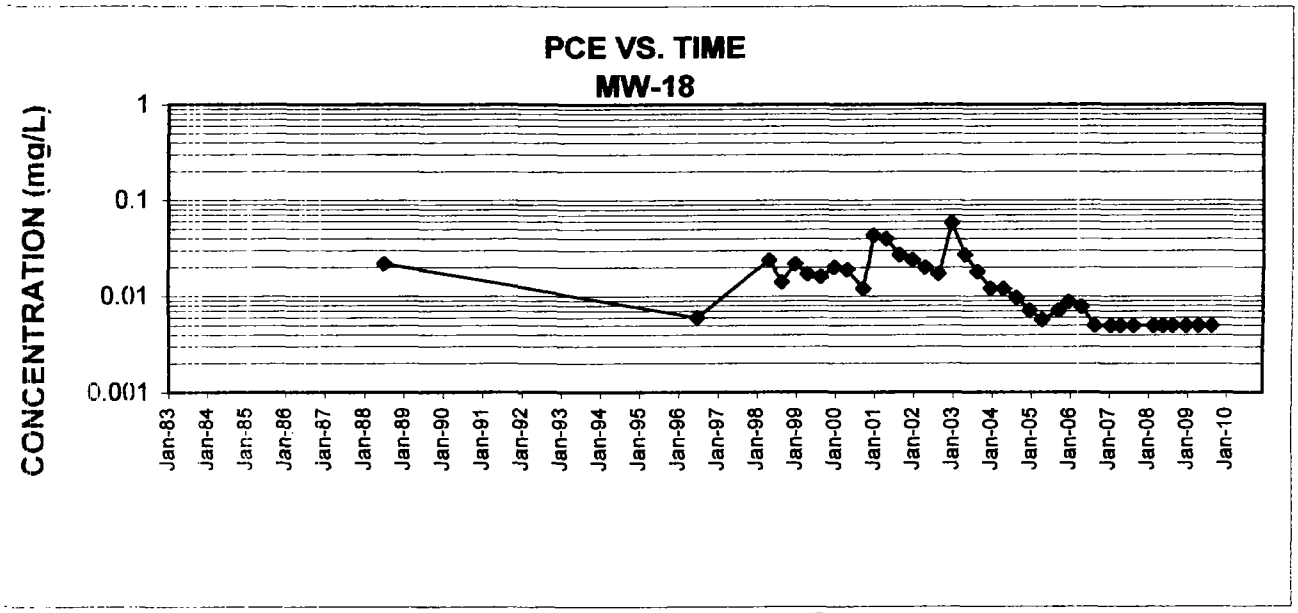
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10


PCE VS. TIME
MW-18
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
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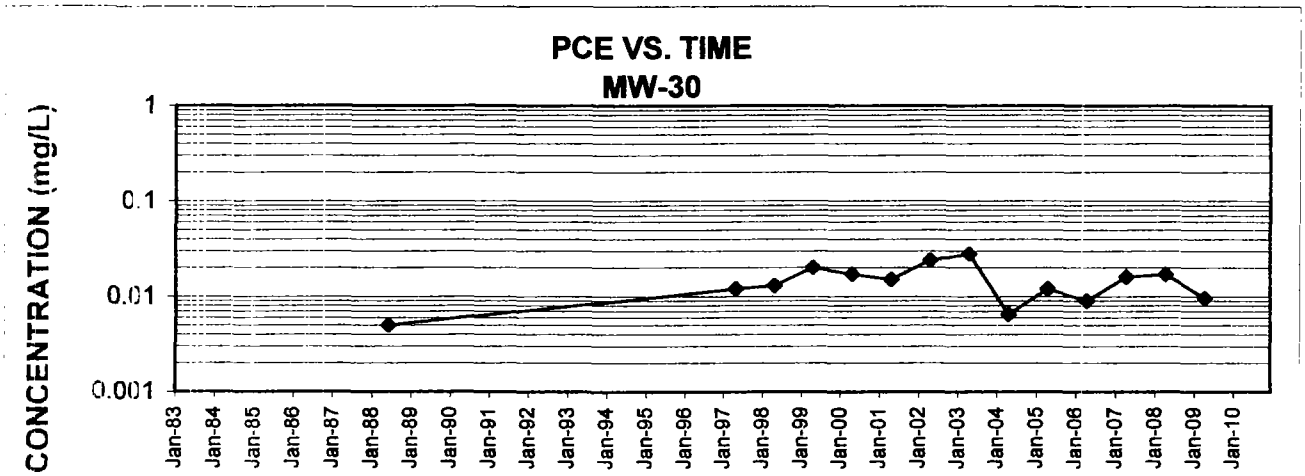
Jan-07
Jan-08
Jan-09
Jan-10


PCE VS. TIME
MW-30
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
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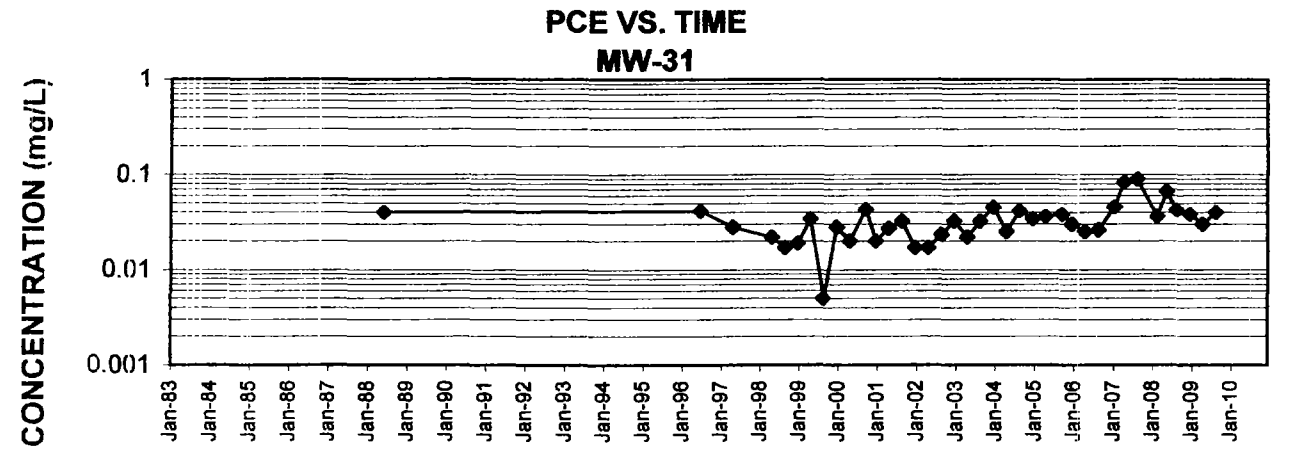
Jan-07
Jan-08
Jan-09
Jan-10


PCE VS. TIME
MW-31
CONCENTRATION (mg/L)
1
0.1
0.01
0.001
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
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Jan-06
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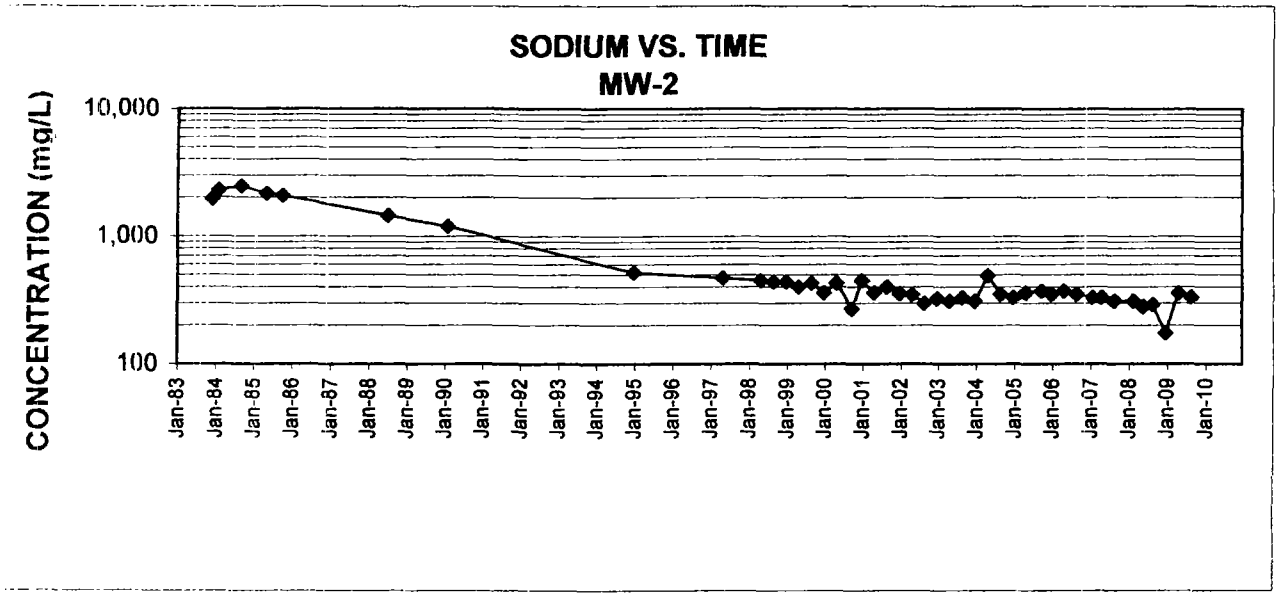
Jan-08
Jan-09
Jan-10

APPENDIX D-9

SODIUM


SODIUM VS. TIME
MW-2
CONCENTRATION (mg/L)
10,000
1,000
100
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
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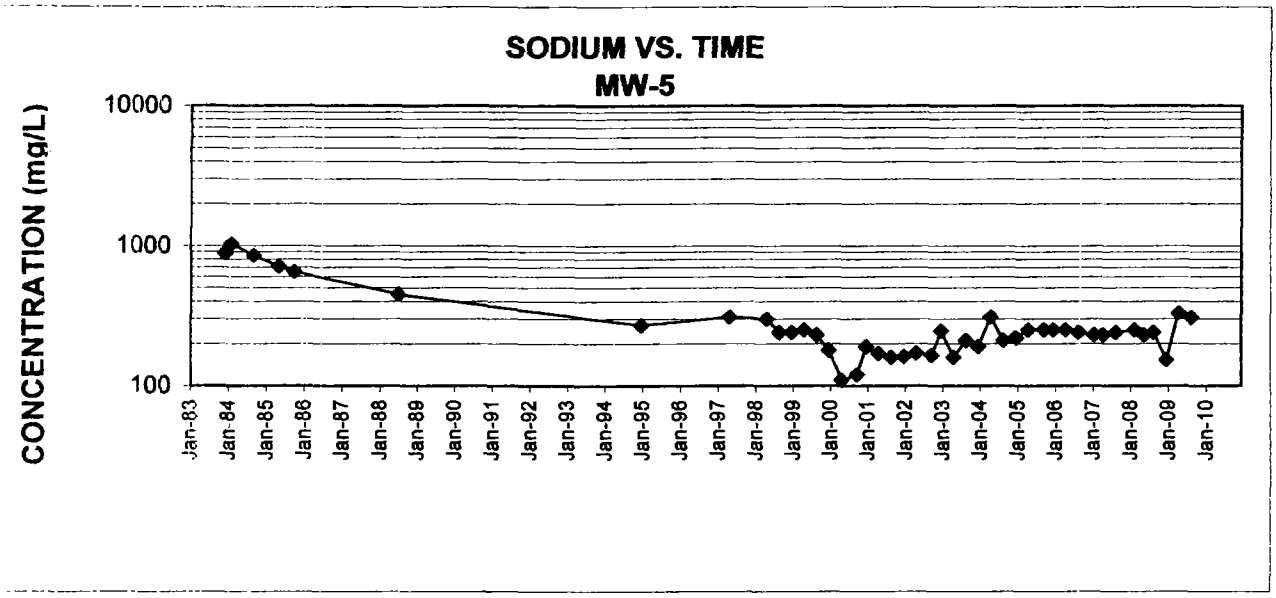
Jan-07
Jan-08
Jan-09
Jan-10


SODIUM VS. TIME
MW-5
CONCENTRATION (mg/L)
10000
1000
100
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
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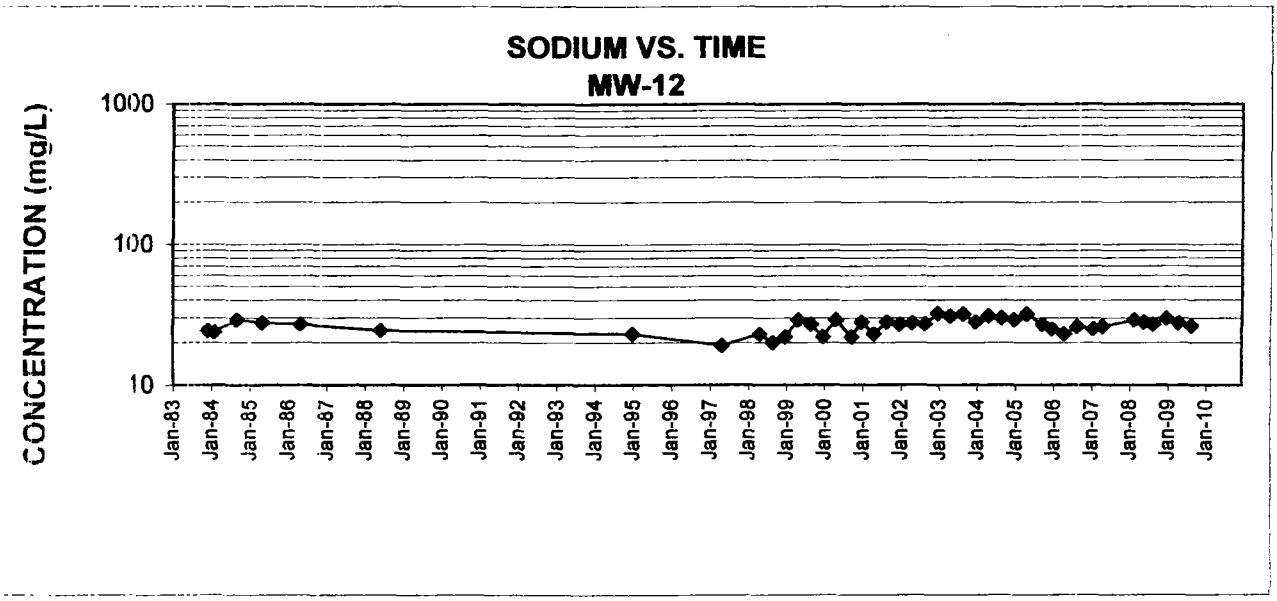
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10


SODIUM VS. TIME
MW-12
CONCENTRATION (mg/L)
1000
100
10
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
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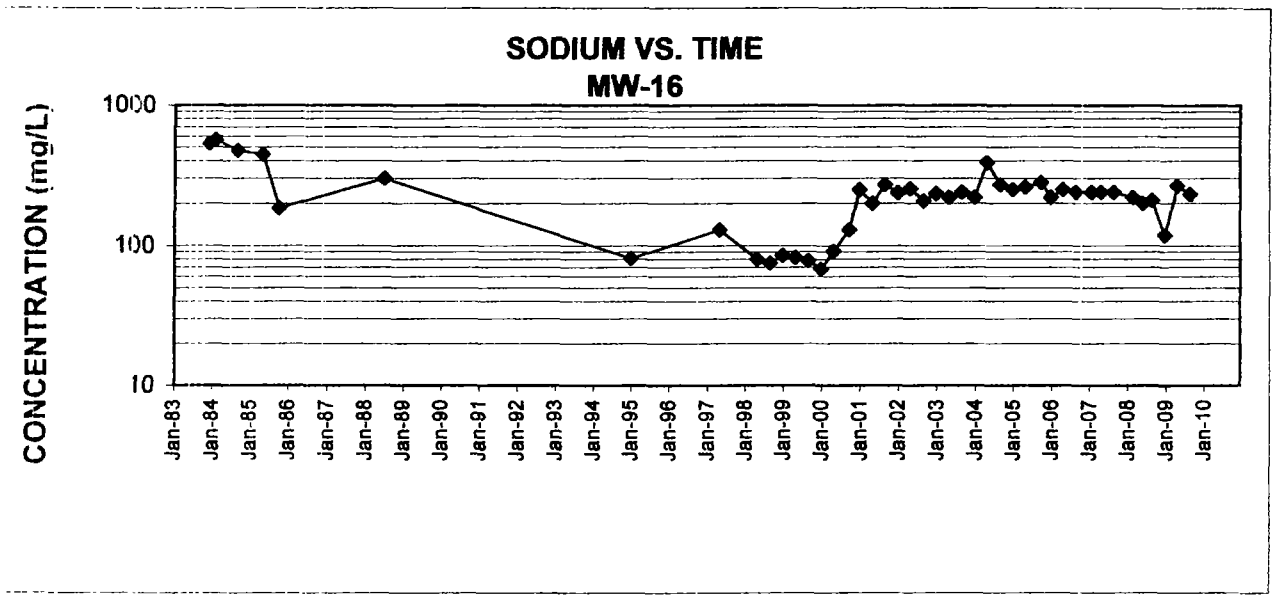
Jan-07
Jan-08
Jan-09
Jan-10


SODIUM VS. TIME
MW-16
CONCENTRATION (mg/L)
1000
100
10
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
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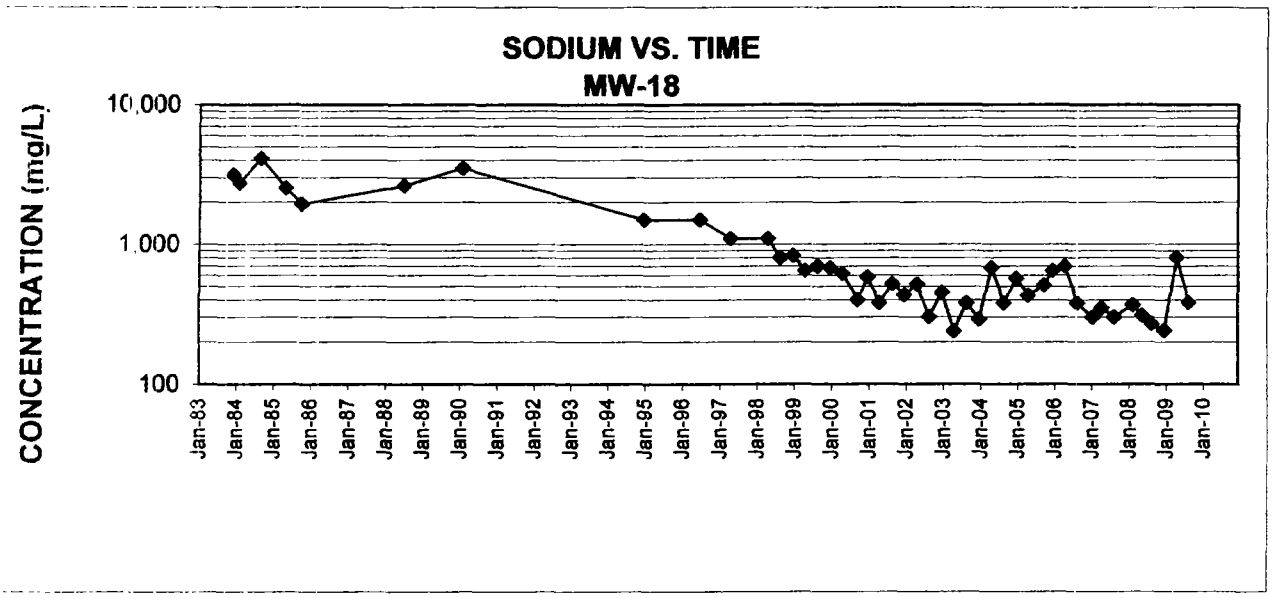
Jan-08
Jan-09
Jan-10


SODIUM VS. TIME
MW-18
CONCENTRATION (mg/L)
10,000
1,000
100
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
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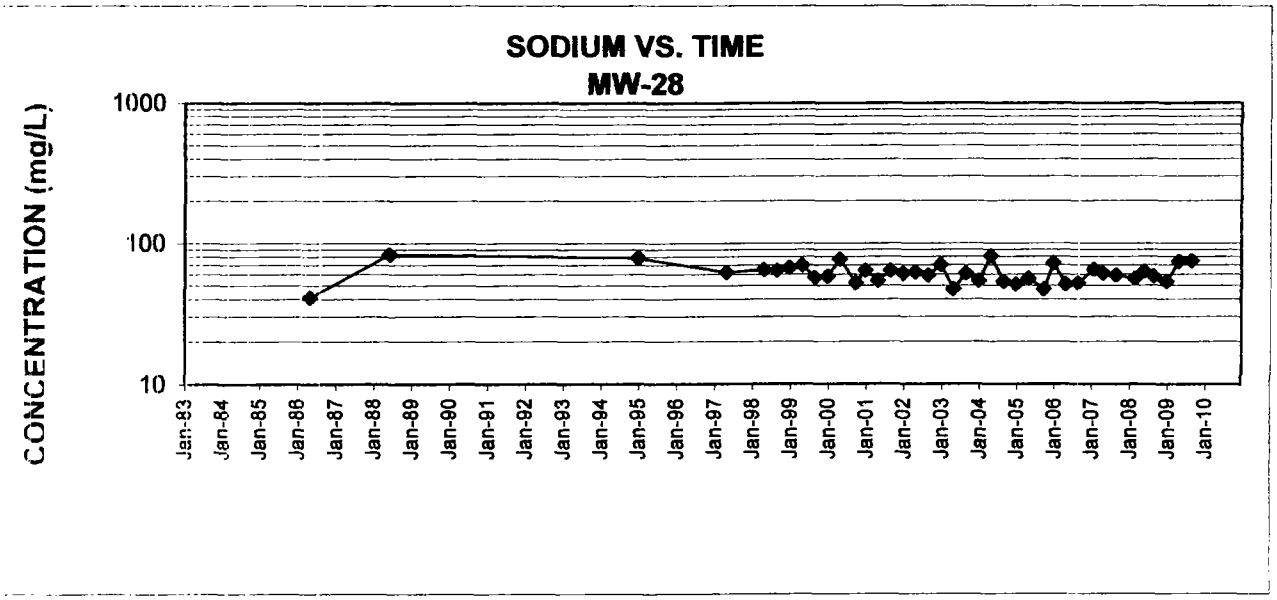
Jan-07
Jan-08
Jan-09
Jan-10


SODIUM VS. TIME
MW-28
CONCENTRATION (mg/L)
1000
100
10
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
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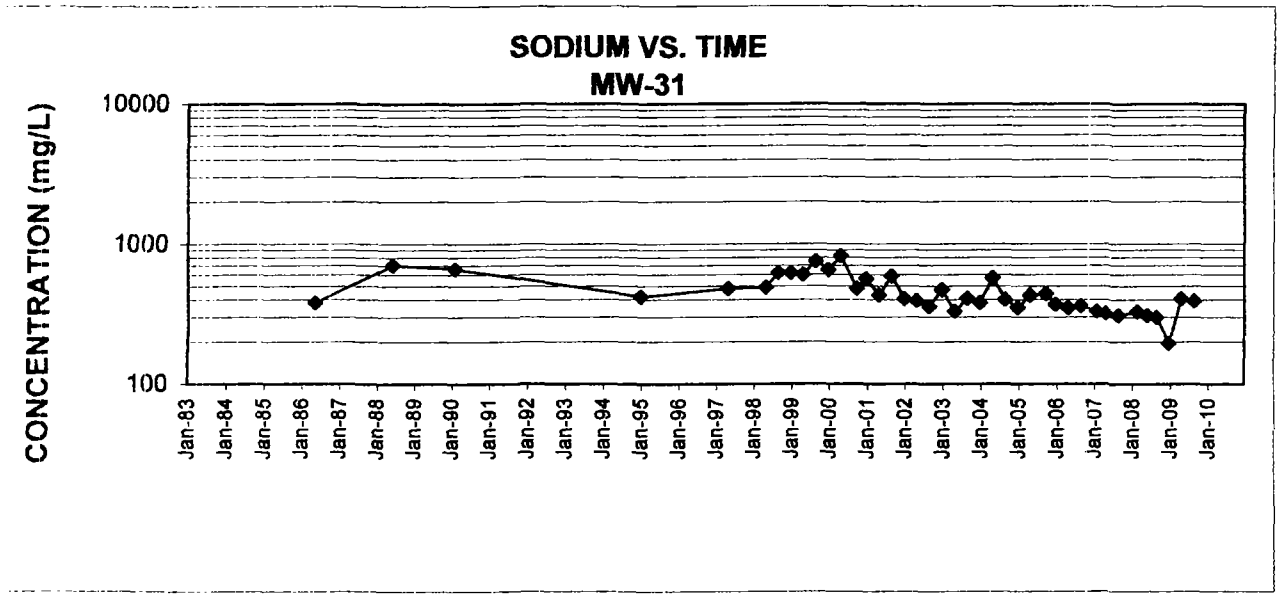
Jan-09
Jan-10


SODIUM VS. TIME
MW-31
CONCENTRATION (mg/L)
10000
1000
100
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
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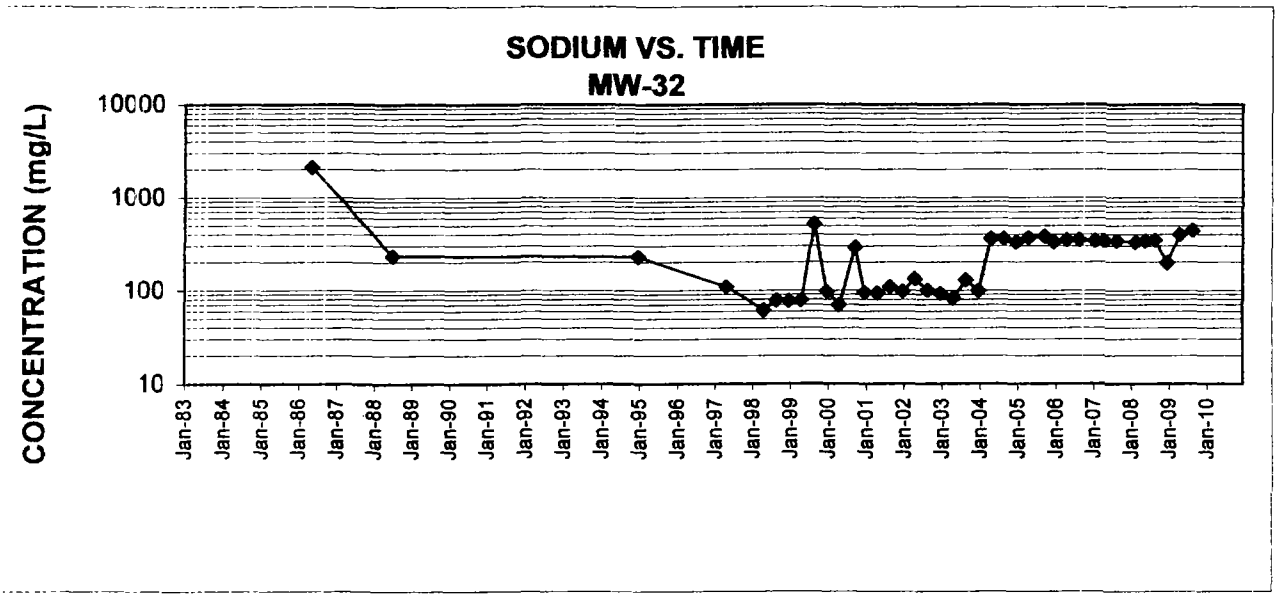
Jan-08
Jan-09
Jan-10


SODIUM VS. TIME
MW-32
CONCENTRATION (mg/L)
10000
1000
100
10
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
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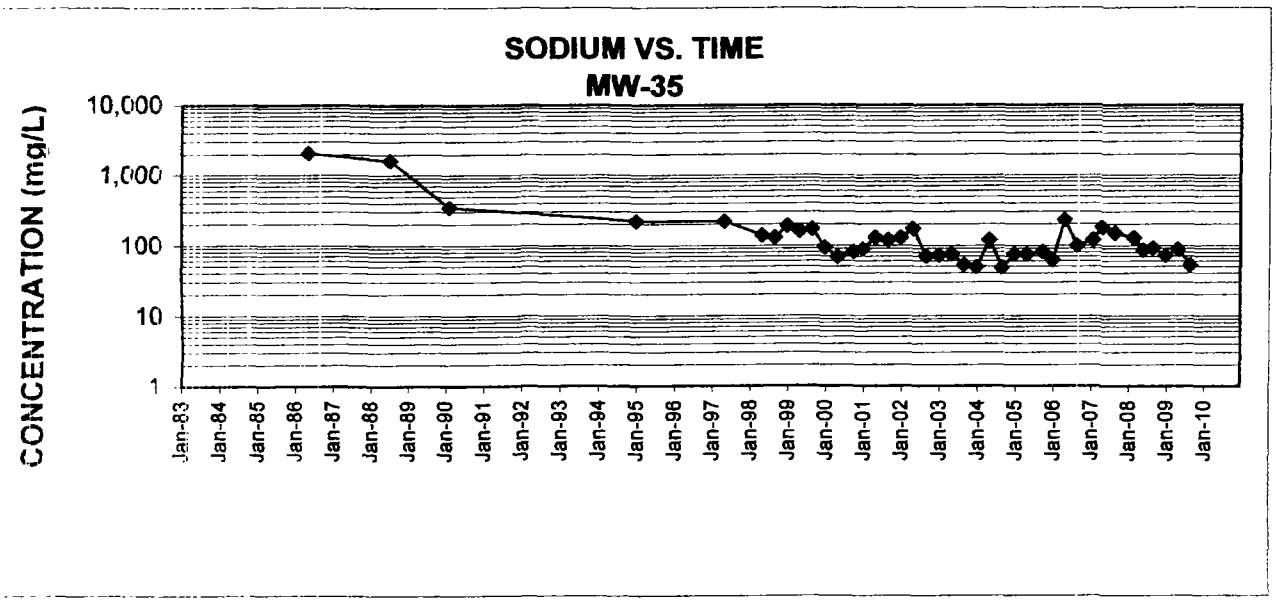
Jan-07
Jan-08
Jan-09
Jan-10


SODIUM VS. TIME
MW-35
CONCENTRATION (mg/L)
10,000
1,000
100
10
1
Jan-83
Jan-84
Jan-85
Jan-86
Jan-87
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
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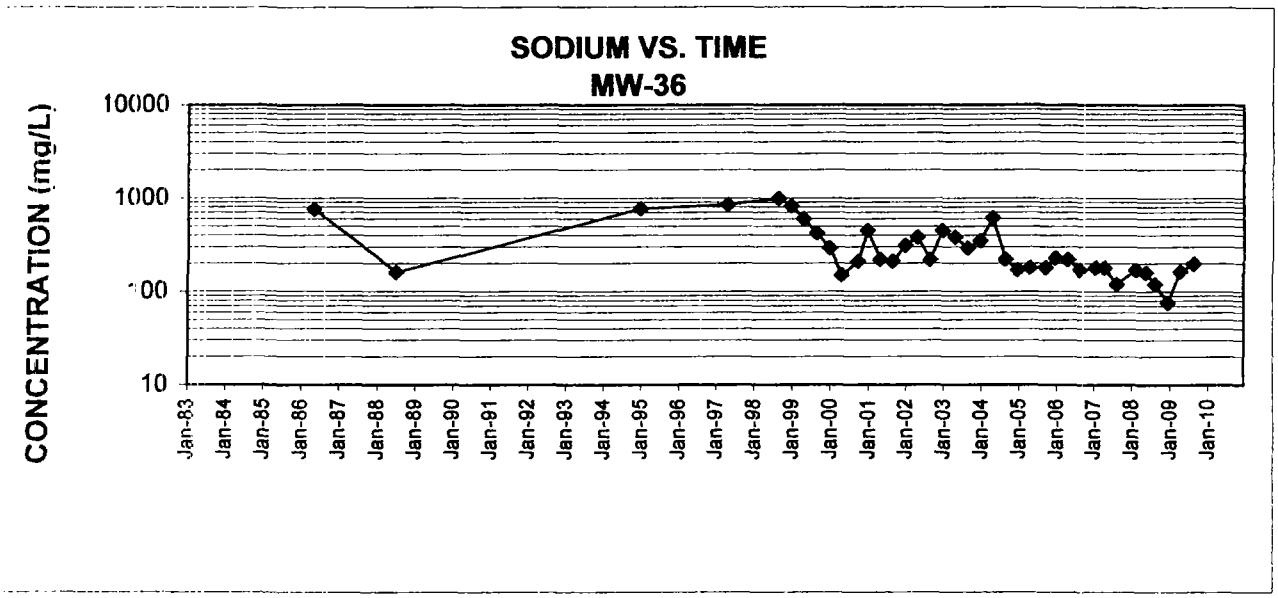
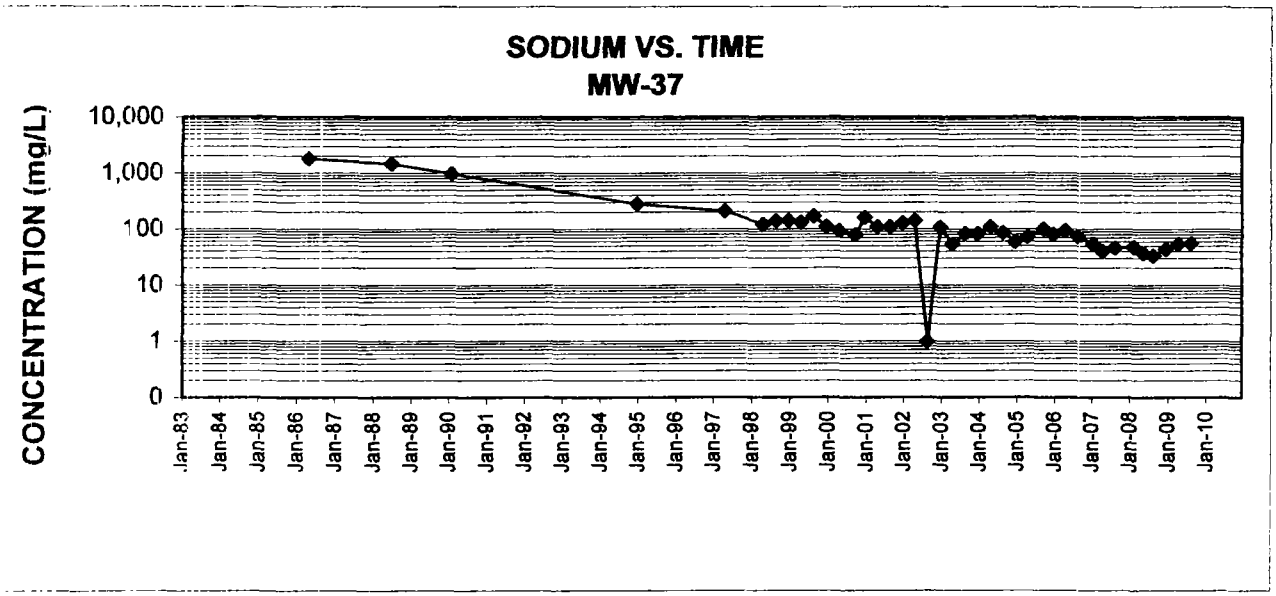
Jan-08
Jan-09
Jan-10


SODIUM VS. TIME
MW-36
CONCENTRATION (mg/L)
10000
1000
100
10
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
Jan-10


SODIUM VS. TIME
MW-37
CONCENTRATION (mg/L)
10,000
1,000
100
10
1
0
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
Jan-10

APPENDIX E

CONTAMINANT MASS-IN-PLACE ESTIMATION AND SUPPORTING DATA BASED ON MAY 2009 MONITORING EVENT

APPENDIX E-1
ANALYTICAL RESULTS FOR GROUND-WATER SAMPLES
COLLECTED MAY 2009*

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	0.09	8.88	6.0	<0.005	0.83	<0.005	0.74	<0.005	0.026	5.6	1.2	2.0/2.0
Fluoride	0.26	33.6	26.2	0.10	7.0	0.23	0.99	0.57	2.3	17.1	35.8	6.4/6.2

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	7.4	<0.005	4.1	<0.005	0.21	4.2	5.1/0.13	5.8	3.1	1.4	12.25	13.5
Fluoride	206	1.4	0.15	22.8	3.9	12.6	50/49.7	43.6	21.1	17	10.7	26.2

SAMPLE I.D.:	MW-37	MW-39S	MW-39D	MW-40S	MW-40D	MW-42S	MW-42D
Cyanide, Total	7.1	3.6	1.1	8.9	7.8	3.1	4.7
Fluoride	3.3	115	6.5	37.5	19.8	60.1	24.1

NOTE: All results in mg/L.

5.9/6.2 - Primary sample and duplicate sample.

* May 2009 total cyanide data for wells MW-12, MW-14, MW-18, MW-42S and MW-42D were anomolous by comparison to previous results; data from resampling performed in July 2009 were used in the above table and on the total cyanide isopleth map (Figure 4).

APPENDIX E-1 (CONT.)
PLUME CONTOUR AREA CALCULATIONS
FOR TOTAL CYANIDE AND FLUORIDE
BASED ON RESULTS OF SAMPLING CONDUCTED MAY 2009

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	307,208
	1 - 5 mg/L	749,307
	5 - 10 mg/L	1,005,535
	10 mg/L	117,889

TOTAL FLUORIDE	CONTOUR INTERVAL (from Figure 3)	CONTOUR AREA in sqare feet (estimated using CAD* software)
	4 - 10 mg/L	280,871
	10 - 15 mg/L	264,598
	15 - 25 mg/L	293,379
	25 - 50 mg/L	765,466
	50 mg/L	17,549
	50 - 100 mg/L	163,074
	100 - 200 mg/L	24,085
	200 mg/L	8,347

* CAD - Computer Aided Drafting

APPENDIX E-1 (CONT.)
AVERAGE AQUIFER THICKNESS CALCULATIONS
WITHIN EACH PLUME CONTOUR INTERVAL
BASED ON RESULTS OF SAMPLING CONDUCTED MAY 2009

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	0.83	46.08	46.07
	MW-11	0.74	46.05	
1 - 5 mg/L	MW-16	1.2	42.61	37.38
	MW-17	2	45.75	
	MW-28	4.1	24.01	
	MW-30	4.2	14.98	
	MW-34S&D	2.3*	36.93	
	MW-39S&D	2.4*	45.39	
	MW-42S&D	3.9*	51.97	
5 - 10 mg/L	MW-2	8.8	36.30	28.86
	MW-5	6.0	40.07	
	MW-15	5.6	24.25	
	MW-18	7.4	19.23	
	MW-31	5.1	27.73	
	MW-32	5.8	23.28	
	MW-37	7.1	14.62	
	MW-40S&D	8.4*	45.37	
10 mg/L	MW-35	12.3	10.75	14.77
	MW-36	13.5	18.78	

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 MAY 2009

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-17 [MW-37]	7.0 6.4 NA	46.08 45.75 14.62	35.48
10 - 15 mg/L	[MW-5] MW-29S&D MW-30 MW-35	NA 13.4* 12.6 10.7	40.07 49.86 14.98 10.75	28.92
15 - 25 mg/L	MW-15 [MW-17] MW-34S&D	17.1 NA 19.1*	24.25 45.75 36.93	35.64
25 - 50 mg/L	MW-2 MW-5 MW-16 MW-32 MW-36 MW-40S&D MW-42S&D	33.6 26.2 35.8 43.6 26.2 28.7* 42.1*	36.30 40.07 42.61 23.28 18.78 45.37 51.97	36.91
50 mg/L	MW-39S&D	60.8*	45.39	45.39
50 - 100 mg/L	[MW-18] MW-31	NA 50	19.23 27.73	23.48
100 - 200 mg/L	[MW-18]	NA	19.23	19.23
200 mg/L	MW-18	206	19.23	19.23

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 MAY 2009

ORMET CORPORATION

HANNIBAL, OHIO

	Contour Interval (from Figure 4)	Contour Interval Area (in square feet) A	Average Aquifer Thickness (in feet) b	1. Aquifer Volume (in cubic feet) VA	Aquifer Porosity n	2. Volume of Ground Water (in cubic feet) Vgw	3. Volume of Ground Water (in Liters) Vgw	Average Concentration (mg/L) Cwi	4. Mass-in-Place for each interval (in mg) Mi	5. Mass-in-Place for each interval (in lbs) Mi
TOTAL CYANIDE	10 mg/L	117,889	14.77	1,741,221	0.25	435,305	12,327,841	13	160,261,938	353
	5 - 10 mg/L	1,005,535	28.86	29,019,740	0.25	7,254,935	205,459,760	8.0	1,643,678,079	3,624
	1 - 5 mg/L	749,307	37.38	28,009,096	0.25	7,002,274	198,304,397	3.0	594,913,192	1,312
	0.2 - 1 mg/L	307,208	46.07	14,153,073	0.25	3,538,268	100,203,754	0.6	60,122,252	133
									Total Cyanide Mw:	5,422
FLUORIDE	(From Figure 3)									
	200 mg/L	8,347	19.23	160,513	0.25	40,128	1,136,431	206	234,104,723	516
	100 - 200 mg/L	24,085	19.23	463,155	0.25	115,789	3,279,134	150	491,870,132	1,085
	50 - 100 mg/L	163,074	23.48	3,828,978	0.25	957,244	27,109,161	75	2,033,187,063	4,483
	50 mg/L	17,549	45.39	796,549	0.25	199,137	5,639,568	61	344,013,630	759
	25-50 mg/L	765,466	36.91	28,253,350	0.25	7,063,338	200,033,718	38	7,601,281,300	16,761
	15 - 25 mg/L	293,379	35.64	10,456,028	0.25	2,614,007	74,028,675	20	1,480,573,502	3,265
	10 - 15 mg/L	264,598	28.92	7,652,174	0.25	1,913,044	54,177,393	13	704,306,110	1,553
	4 - 10 mg/L	280,871	35.48	9,965,303	0.25	2,491,326	70,554,346	7	493,880,421	1,089
									Total Fluoride Mw:	29,510

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