NIXON FORK MINE

QUARTERLY MONITORING REPORT

Fourth Quarter

ANNUAL REPORT 2012

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1.0 INTRODUCTION

This report presents the Fourth Quarter 2012 monitoring and sampling activity results for the Nixon Fork Mine project, and also serves as the 2012 Annual Report. The monitoring and sampling activities presented in this report were performed as stipulated in Alaska Department of Environmental Conservation (ADEC) Waste Management Permit 2012-DB0001 and the Nixon Fork Plan of Operations & Reclamation Plan, Version 2, Volume I of II (November 2012), and Nixon Fork Plan of Operations & Reclamation Plan, Version 2, Volume II of II (November 2012). Activities were conducted per the approved Nixon Fork Monitoring Plan (November 2011), which is incorporated into the Waste Management Permit by reference.

1.1 BACKGROUND

The Nixon Fork Mine is an underground gold and copper mine located approximately 30 miles northeast of McGrath, Alaska (Figure 1). The mine is currently being operated by Mystery Creek Resources, Inc. (MCRI), a wholly owned subsidiary of Fire River Gold Corporation (FAU). The mine is located on unpatented federal claims administered by the Bureau of Land Management (BLM). Mine startup activities began in November of 2006. Commercial production officially began on April 1, 2007. Pacific North West Capital Corp of Vancouver, B.C. sold 100% of its interest in MCRI to FAU in September, 2009. It is the continuing goal of MCRI to maintain the Nixon Fork Mine in a manner that will assure the protection of air, surface, and groundwater quality.

2.0 QUARTER OF RECORD

The Quarter of Record for this report is October 1, 2012 through December 31, 2012 (Fourth Quarter). The following activities and events occurred during the Fourth Quarter:

- Ongoing Mine and Milling Operations.
- Performed one separate Land Application Disposal (LAD) of excess storm-water from the Tailings Storage Facility (TSF) as a means to manage water level.
- The removal and hauling of tailings from the TSF to the Mill as an emergency-action plan to increase TSF storage-capacity for storm-water and spring-melt water.

The following sections present the results of monitoring and sampling activities conducted during the Fourth Quarter of 2012.

3.0 SURFACE WATER MONITORING

The surface water monitoring sample collection intended for the Fourth Quarter 2012 occurred on January 14, 2013, when it was determined that an abruptly departed former employee had not submitted the samples in December as directed. Separate samples will be collected in March 2013 to satisfy 1st Quarter 2013 requirements. MCRI mine personnel will ensure that all future surface water quality sampling takes place within the quarter of record. The monitoring plan calls for sampling surface water four times per year, once during the winter and three times during the thawed season. Due to conditions at the site and the dates of the quarters in the monitoring plan, it is more likely that two of the samples will be during the winter and two will be during thawed conditions. Surface water sample results for the Quarter of Record and all past data on file are presented in Appendix B, and the laboratory reports for these samples are included in Appendix I of this report.

For the Fourth Quarter of 2012, samples, including one duplicate (MCA), were successfully collected at MC-2 and MC-1, and RC-1. Due to frozen conditions, no samples were collected at RC-2 or the Encino sampling sites. Surface water sample stations are shown in Figures 1-4 in Appendix A.

3.1 Ruby Creek

The down-gradient baseline sample location (RC-1) for Ruby Creek monitors water quality below the current mining activities and historic mining impacts as discussed below. A second Ruby Creek sampling site (RC-2) is located farther up the Ruby Creek drainage as shown on Figure 4 (Appendix A), just below the spring near the historic stamp mill. This sample location, though up-gradient of the current mining activities, is impacted by historic mining activities. Due to the historic mining activity and deposition of tailings in Crystal Gulch, there is no continuous stream flow above human influence in this drainage. Even the springs that flow periodically at the head of the drainage contact tailings from pre-1990 mining operations.

Due to influence of the historic mining activities, Ruby Creek samples have consistently high Mercury results. Photograph 1 below, shows the RC-1 sample site on January 14, 2013.

Photograph 1- RC-1

Ruby Creek Sampling Location RC-1

Sample location RC-1 is the downstream location along Ruby Creek. For the Fourth Quarter of 2012, a sample was collected on January 14, 2013. The sample collected exceeded water quality standards for the Ruby Creek drainage for the following parameters shown in the table below.

Parameter	Water Quality Standard for Ruby Creek	RC-1
Copper	4.51/3.89 µg/L	22.4 µg/L
Alkalinity	Minimum of 20	10.0 U

Ruby Creek Sampling Location RC-2

Sample location RC-2 is the upstream location along Ruby Creek and is influenced by historic mining activities. For the Fourth Quarter of 2012, no sample was collected for RC-2. Two and a half to three feet of snow were removed to reveal no water present at the site.

3.2 Mystery Creek

There are two sampling locations on Mystery Creek: one (MC-1) approximately 250 meters downstream, and one (MC-2) approximately 200 meters upstream of the mine drinking water intake structure shown on Figure 4 (Appendix A). Nixon Fork Mine Project monthly and annual water usage amounts for water drawn from this Mystery Creek water source intake are provided in Appendix J. Samples are collected at stations MC-1 and MC-2 in accordance with the procedures outlined in Appendix A, Section 2.2., Nixon Fork Mine Monitoring Plan. The MC-2 sampling location has the most reliable stream flow throughout the year. Photographs 2 and 3 below show the sample sites, MC-1 and MC-2, respectively, on January 14, 2013.

Mystery Creek Sampling Location MC-1

The Fourth Quarter 2012 sample collected at MC-1 exceeded water quality standards for arsenic, with a concentration of arsenic of 62.7 µg/L. The Alaska water quality standard for arsenic is based on the allowable level from drinking water: 10 µg/L. The creek has naturally high levels of arsenic and has exceeded water quality standards in every sampling event.

Photograph 2- MC-1

Photograph 3- MC-2

Mystery Creek Sampling Location MC-2

For the Fourth Quarter of 2012, samples (MC-2) and duplicates (MC-A) were collected at this location. Mystery Creek is narrow and deeply incised (approximately four feet deep during high-water flow) at the sampling location. The sample collected at MC-2 exceeded water quality standards for arsenic and aluminum, and the MC-A sample for copper. The Alaska water quality standard for arsenic is based on the allowable level from drinking water: 10 µg/L. The potential regulatory limit for aluminum and copper is 87.0 µg/L and 3.05 µg/L, respectively (based on the calculated hardness for the Ruby Creek drainage). The creek has naturally high levels of arsenic and has exceeded water quality standards in every sampling event. This sampling event the average concentration of arsenic was 64.2 µg/L. The average concentration of aluminum was 151.0 µg/L and the MC-A concentration for copper was 3.86 µg/L. The MC-2 concentration of copper was below the potential regulatory limit at 1.27 µg/L

3.3 Nixon Fork

The Nixon Fork of the Takotna River located approximately 4.5 miles downstream receives flow from both Ruby and Mystery Creek. To assess the baseline water quality of the first significant receiving water body, samples are to be collected from the Nixon Fork of the Takotna River upstream (NF-1) and downstream (NF-2) of the confluence with Ruby Creek. The approximate sampling locations are shown on Figure 2 (Appendix A). A sample was not collected from the Nixon Fork sites. The sampling sites are approximately five miles from the mine facility. The facility was not able to secure appropriate and safe transportation to take these samples.

3.4 Intermittent Spring at Encino Gulch

An intermittent spring in Encino Gulch located below the FTDS is to be sampled if flowing water is present at the time other baseline samples are collected. The Encino Spring sampling location is located at a level area on a hill sloping down from the runway. No sample was taken for the Fourth Quarter of 2012 because there was no flowing water present to sample.

4.0 OPERATION AND CLOSURE MONITORING

Monitoring activities related to operation of the project is based on the November 2011 (*v* 2) Monitoring Plan, and include the following:

- Visual Monitoring of the Filtered Tailings Disposal Site (FTDS), Tailings Impoundment also known as the Tailings Storage Facility (TSF) or Tailings Pond, Development Rock Dump, Solid Waste Landfill, Wildlife, and Air Quality. See Appendix E.

- Geotechnical Monitoring of the FTDS, TSF, Development Rock Dump, Seeps and Groundwater Monitoring, and Solid Waste Landfill. See Appendix G.

- Geochemical Monitoring of the FTDS, TSF, Development Rock Dump, and Solid Waste Landfill. See Appendix D.

- Monitoring of the FTDS, Development Rock Dump, and Infrastructure, in compliance with the Multi-Sector General Permit for Storm-water Discharges Associated with Industrial Activity (MSGP).

- Monitoring associated with the Spill Prevention Control and Countermeasure (SPCC) plan. See Appendix F.

- Closure and Reclamation Monitoring.

- Other Monitoring - Geochemical Monitoring of Tailings Impoundment Water prior to a Land Application Disposal (LAD). See Appendix H.

4.1 Visual Monitoring Program

Facilities operating under the solid waste and/or dam safety permits that have formally scheduled visual monitoring include: the FTDS, Tailings Impoundment, development rock dump and solid waste landfill. The following sections described the results of visual monitoring by site feature.

4.1.1 Filtered Tailings Disposal Site

Daily inspections of the FTDS were performed during the Quarter of Record. Detoxified CN-contacted tails were placed onto the lined FTDS during the Quarter of Record. Visual Monitoring Records for the FTDS are provided in Appendix E.

4.1.2 Tailings Storage Facility

Visual monitoring records for the TSF are provided in Appendix E. Visual monitoring of the TSF is to be performed daily while operational. Daily monitoring should note any activity, waterfowl, or any abnormalities at the TSF. Daily inspections were performed throughout the Fourth Quarter of 2012.

4.1.3 Development Rock Dump

Visual monitoring of the Development Rock Dump is to occur daily while material is added. During the Quarter of Record, no abnormalities were noted in the development rock dumps. Visual monitoring records for the development rock dump are provided in Appendix E.

4.1.4 Solid Waste Landfill

The solid waste landfill visual monitoring is to be performed by operation personnel each time waste is placed and covered in the landfill. Operation personnel are instructed to look for unusual signs of settlement, seeps, or erosion, as well as any unusual water color or sheens. No abnormalities were noted. Visual monitoring records for the Solid Waste Landfill are provided in Appendix E.

4.1.5 Wildlife

Operations personnel are required to report any wildlife mortality observed at any of the mine waste and solid waste facilities at the mine. A log is maintained of wildlife sightings in the project area that include bear, moose, caribou and larger furbearers such as wolves. Operations personnel are not required to log birds (except on the tailings pond) and other smaller wildlife typically observed in the project area. Wildlife observations were recorded throughout the Fourth Quarter of 2012 and can be found in Appendix E.

4.1.6 Air Quality

Nixon Fork Mine is required to perform visual emission monitoring in accordance with their air quality permit AQ0837TVP01 issued on November 23, 2010. During the Fourth Quarter, visible emissions monitoring took place on November 05, 2012. Results from those visible emission observations can be found in Appendix E.

4.2 Geotechnical Monitoring

4.2.1 Filtered Tailings Disposal Site

Detoxified CN-contacted tailings were placed into the FTDS facility during the Quarter of Record. Tailings were monitored following section 3.2.1 of the MCRI November 2011 Monitoring Plan, in which tails placed into the FTDS are not to exceed 15% moisture content. The Percent moisture of tailings that were placed in the FTDS during Fourth Quarter can be found in Appendix G. Data from the monitoring wells below the FTDS retention pond abutment were collected weekly and results can be found in Appendix G, as well.

The table below shows the sampling events in which tailings exceeded 15% moisture in 4th Quarter:

Sample ID	Date	Total Solids %
Mill Tails	10/09/2012	83.2
Mill Tails	10/11/2012	81.2
Mill Tails A	10/11/2012	81
Mill Tails	10/16/2012	81.3
Mill Tails A	10/16/2012	81.8
Mill Tails	10/19/2012	79.6
Mill Tails	10/23/2012	78.9
Mill Tails A	10/23/2012	78.3
Mill Tails	10/25/2012	81.8
Mill Tails	10/27/2012	79.2
Mill Tails	11/03/2012	78.8
Mill Tails A	11/16/2012	84.1
Sp Mill Tails	11/16/2012	75.8
Sp Mill Tails A	11/16/2012	81.5
Mill tails	11/17/2012	81
Sp Mill Tails	11/17/2012	81.7
Sp Mill Tails	11/21/2012	74
Sp Mill Tails A	11/21/2012	70.2
Mill Tails	11/23/2012	80.8
Sp Mill Tails	11/23/2012	78.1
Mill Tails	11/28/2012	83.6
Mill Tails A	11/28/2012	83.4
Sp Mill Tails	11/28/2012	80.1
Sp Mill Tails A	11/28/2012	80.1

4.2.2 Tailings Storage Facility

During the Fourth Quarter, 930 tonnes of tailings were removed from the TSF and taken to the Mill via haul-truck. This operation was approved as an emergency-action plan to increase the TSF storage-capacity for storm-water and spring-melt water. Data from the thermistors, installed in boreholes G04-1 and G04-2, are to be read and recorded monthly. Data from boreholes G04-1, G04-2 were collected and recorded monthly during the Fourth Quarter of 2012. Data from the ground-water monitoring wells below the TSF dam was collected weekly throughout the Fourth Quarter. The ground-water monitoring well readings and all monthly thermistor readings for the Quarter of Record are included in Appendix G.

4.2.3 Development Rock Dump and Solid Waste Landfill

Geotechnical monitoring of the Development Rock Dump and Solid Waste Landfill is not anticipated. If visual monitoring reveals signs of instability or erosion, this information will be reported to a qualified engineer for consideration of further testing. No geotechnical monitoring was conducted for the Development Rock Dump and the Solid Waste Landfill during the Quarter of Record.

4.3 Geochemical Monitoring

4.3.1 Filtered Tailings Disposal Site

Geochemical monitoring was followed as outlined in section 3.3.1 of the 2011 Nixon Fork Mine Monitoring Plan. Samples were analyzed for total CN, total WAD CN, acid generating potential, trace metals, and leaching potential. See Appendix D

4.3.1.1 Solids

During mill operation, mill tailings were monitored in accordance with the frequency outlined in the 2011 monitoring plan.

Samples of the tailings were to be analyzed for the following:

- Modified Acid Base Accounting (ABA),
- Meteoric Water Mobility Procedure (MWMP) if the Neutralization Potential Ratio was greater than 3, and
- Total Cyanide (CN) and Weak Acid Dissociable (WAD) CN.

MWMP is a leaching test of solids. Leachate resulting from the test is compared to water quality standards.

ABA compares the acid generation potential (AP) of selected solids to their neutralization potential (NP). According to W.A. Price 1997 Draft Guidelines and Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Mine sites in British Columbia, material with a Neutralization Potential Ratio (NP/AP) greater than 4 has no potential to generate acidity.

ABA and MWMP

Mill Tailings samples were collected on the following dates for ABA and MWMP analyses:

- October 8th, 16th, and 27th of 2012
- November 17th, 2012

- December 14th, 2012

Mill Tails samples collected during the October through December period were analyzed with ABA: the NP/AP ranged from 17.7 – 349. Sample analysis shows the effects of sulfide ore to the mill.

Mill Tails samples collected during the October through December period also were analyzed by MWMP: materials potentially would leach several parameters in exceedance of the strictest water quality standards.

Sample Name	**Mystery Mill Tails 1**	**Mystery Mill Tails 2**	**Mystery Mill Tails**	**Mystery Mill Tails A**	**Mill Tails**	**Mill Tails A**	**Mill Tails**	**Mill Tails A**	**Mill Tails A**
Date	10/08/12	10/08/12	10/16/12	10/16/12	10/27/12	10/27/12	11/17/12	11/17/12	12/14/12
Sulfate < 250 mg/L	2,700 mg/L	2,300 mg/L	2,800 mg/L	2,700 mg/L	2,400 mg/L	2,600 mg/L	1,700 mg/L	1,600 mg/L	1,800 mg/L
Nitrite 1 mg/L	< 0.5 mg/L	< 0.5 mg/L	1.34 mg/L	1.33 mg/L	1.71 mg/L	1.66 mg/L	< 0.06 mg/L	< 0.06 mg/L	1.09 mg/L
Nitrate 10 mg/L	26.1 mg/L	25.5 mg/L	36.0 mg/L	35.2 mg/L	44.4 mg/L	43.8 mg/L	41.0 mg/L	39.3 mg/L	34.5 mg/L
WAD CN 0.0052 mg/L	0.04 mg/L	0.08 mg/L	69.8 mg/L	40.3 mg/L	6.95 mg/L	8.76 mg/L	104 mg/L	112 mg/L	0.04 mg/L
Mercury 0.00005 mg/L	0.0039 mg/L	0.0033 mg/L	0.00542 mg/L	0.0062 mg/L	0.03577 mg/L	0.03653 mg/L	0.00855 mg/L	0.00826 mg/L	0.00067 mg/L
Silver 0.00087 mg/L	0.00471 mg/L	0.00487 mg/L	0.00326 mg/L	0.125 mg/L	0.0446 mg/L	0.0443 mg/L	0.014 mg/L	0.0234 mg/L	0.0109 mg/L
Aluminum 0.087 mg/L	0.1 mg/L	0.106 mg/L	0.0743 mg/L	0.0678 mg/L	0.0465 mg/L	0.0483 mg/L	0.0584 mg/L	0.0594 mg/L	0.216 mg/L
Copper 0.00451 mg/L	0.0782 mg/L	0.0764 mg/L	64.5 mg/L	55.1 mg/L	14.9 mg/L	18.3 mg/L	96.5 mg/L	119 mg/L	0.0144 mg/L
Manganese 0.05 mg/L	-	-	-	-	0.122 mg/L	0.108 mg/L	-	-	-
Nickel 0.02639 mg/L	-	-	0.0713 mg/L	0.1 mg/L	0.0018 mg/L	-	0.0.434 mg/L	-	-
Antimony 0.006 mg/L	0.0131 mg/L	0.0129 mg/L	0.0104 mg/L	0.0095 mg/L	0.0082 mg/L	0.0079 mg/L	0.009 mg/L	0.0093 mg/L	0.0365 mg/L
Selenium 0.0046 mg/L	0.008 mg/L	0.009 mg/L	0.023 mg/L	0.029 mg/L	0.017 mg/L	0.017 mg/L	0.008 mg/L	0.008 mg/L	0.011 mg/L

Total CN and WAD CN

Mill Tailings samples were collected on the following dates for Total CN and WAD CN:

10/07/2012	11/03/2012	11/21/2012
10/07/2012	11/03/2012	11/23/2012
10/09/2012	11/03/2012	11/23/2012
10/11/2012	11/16/2012	11/28/2012
10/11/2012	11/16/2012	11/28/2012
10/16/2012	11/16/2012	11/28/2012
10/16/2012	11/16/2012	11/28/2012
10/19/2012	11/17/2012	12/03/2012
10/23/2012	11/17/2012	12/03/2012
10/23/2012	11/21/2012	12/14/2012
10/25/2012	11/21/2012	12/15/2012
10/27/2012	11/21/2012	12/19/2012

Results can be found in Appendix D.

4.3.1.2 Water

With storm-water entering the FTDS retention pond after CN-contacted tailings were placed into the facility, geochemical monitoring was followed as outlined in section 3.6.1 of the 2011 Monitoring Plan. Photograph 4 shows the FTDS retention pond on November 22, 2012. There were two samples taken from the FTDS retention pond at two different times. The analysis results indicated that the water exceeded the following strictest water quality standards:

Sample Same	**FTDS 1**	**FTDS 2**
Date	11/11/2012	1/16/2013
Total Dissolved Solids 500 mg/L	1560 mg/L	184 mg/L
Turbidity 5 NTU	-	50 NTU
Sulfate < 250 mg/L	-	1,060 mg/L
Total Nitrite/Nitrate 10 mg/L	15.9 mg/L	19.56 mg/L
WAD CN 0.0052 mg/L	1.6 mg/L	1.6 mg/L
Aluminum 87 ug/L	1,700 ug/L	1,210 ug/L
Arsenic 10 ug/L	33.1 ug/L	33.9 ug/L
Copper 3.05 ug/L	3,030 ug/L	4,220 ug/L
Lead 0.62 ug/L	8.57 ug/L	7.2 ug/L
Manganese 50 ug/L	134.0 ug/L	113.0 ug/L
Silver 0.39 ug/L	19.7 ug/L	31.5 ug/L
Mercury 50 ng/L	-	1,390 ng/L

Photograph 4- FTDS Retention Pond

4.3.2 Tailings Storage Facility

4.3.2.1 Solids

No new solids were deposited into the TSF during the Quarter of Record, so no monitoring of historic tailings was performed. All tailings were placed in the FTDS.

4.3.2.2 Water

No sample was taken during the Fourth Quarter. Due to low water-levels leading into winter, the water in the pond was frozen solid. Photo 5 shows the condition of the TSF on November 21, 2012.

Photograph 5- TSF

4.3.3 Development Rock Dump

During operation, development waste rock samples were collected in accordance with the frequency outlined in the 2011Monitoring plan. See Appendix D

Samples of the development waste rock were to be analyzed for the following:

- ABA, and
- MWMP- if the Neutralization Potential Ratio was greater than 3

Development Waste Rock samples were collected the following dates for ABA and MWMP analyses:

- October 16th, 2012; ABA and MWMP
- November 17th, 2012, ABA and MWMP
- December 19th, 2012, MWMP

For the Development Waste Rock samples collected and analyzed with ABA, the NP/AP ranged between 15.8 and 2,870. The wider range of NP/AP ratio is due to analysis of sulfide ore.

For Development Waste Rock samples analyzed by MWMP, materials could potentially leach contaminants in exceedance of the strictest water quality standards. The following table shows exceedances:

Parameter	Water Quality Standard for Ruby Creek	Crystal Waste Rock #1 10/16/12	Crystal Waste Rock #2 10/16/12	Mystery Waste Rock #1 10/16/12	Mystery Waste Rock #2 10/16/12	Crystal Waste Rock#1 11/17/12	Crystal Waste Rock #2 11/17/12	Mystery Waste Rock #1 11/17/12	Mystery Waste Rock #2 11/17/12	Crystal Waste Rock 12/19/12	Mystery Waste Rock 12/19/12
Nitrate	10 mg/L	79.7 mg/L	64.8 mg/L	-	12.6 mg/L	39.7 mg/L	45.6 mg/L	-	-	33.9 mg/L	13.3 mg/L
Arsenic	0.010 mg/L	-	0.01 mg/L	0.848 mg/L	1.21 mg/L	-	-	1.27 mg/L	1.06 mg/L	-	0.0194 mg/L
Copper	0.00451 mg/L	-	-	-	-	-	-	0.0066 mg/L	0.0056 mg/L	-	-
Antimony	0.006 mg/L	-	-	0.0324 mg/L	0.0542 mg/L	-	-	0.0215 mg/L	0.0183 mg/L	-	-

4.4 Groundwater Monitoring

Groundwater monitoring of the two wells at the toe of the tailings dam are to occur monthly. These wells should be checked for groundwater. If water is present it will be sampled and analyzed for the parameters that apply to quarterly surface water monitoring. The wells did not contain water during any of the monitoring activities of the Fourth Quarter. Monitoring well records are attached in Appendix G.

4.5 Storm Water Pollution Prevention Plan (SWPPP) Monitoring

Nixon Fork Mine has a SWPPP detailing requirements and activities related to compliance with the Multi-Sector General Permit for Storm water Discharge Associated with Industrial Activity. As per section 3.6.1 of the MCRI November 2011 Monitoring Plan, sampling of the FTDS Storm-Water Retention Pond occurred during the Fourth Quarter. See Appendix D

4.6 Spill Prevention Control and Countermeasure (SPCC) Monitoring

Nixon Fork Mine has a SPCC plan in accordance with 40 CFR Part 112. The plan is designed to prevent oil discharges and help the mine respond in a safe, effective, and timely manner if a discharge should occur. Mine personnel conduct daily informal inspections of equipment during regular operations. Once a month there are more comprehensive inspections of each tank. A copy of the monthly inspection summary coversheet is included in Appendix F. Spills and leaks are reported in accordance with ADEC Prevention and Emergency Response (PERP) protocol. Spill and leak reports are included in Appendix F.

4.7 Closure and Reclamation Monitoring

Operational monitoring of surface water and storm-water was conducted on site, as outlined in the Nov. 2011 Monitoring Plan.

4.8 Other Monitoring and Reporting

4.8.1 Land Application Disposal (LAD)

As part of the management of the Tailings Storage Facility (TSF), land applications of waste-water are necessary to maintain required freeboard. The water from the TSF was under all limiting parameters for land application as stated in Table 1 of the Waste Management Permit No. 2012DB0001. Cumulative loading rates for each land application were calculated using the Third Quarter water quality results. Maps and water-quality information can be found in Appendix H.

The LAD was approved to be moved 100 feet up-slope from the previous location (Please see photo in Appendix H). Loading rates were calculated using third quarter's sampling results collected August 12, 2012. The LAD performed during the Fourth Quarter was conducted October 4th-9th, a total of six days. A total of 321,700 gallons was dispersed over 1.8 acres for a hydraulic loading rate of 20.7 gallons per minute per acre (gpm/acre). Total accumulative metals loading (kg/acre) for all land applications on record can be found in Appendix H.

Fourth Quarter Total metals loading per acre (kg/acre)

The table below summarizes the total metals loading (kg/acre) for each parameter listed in Table 1 of the 2012 Waste Management Permit No. (2012DB0001). Loading rates were calculated using data from samples collected August 12, 2012 (Third Quarter Sampling event):

Analyte	Units	TSF	Total Loading
		10/09/2012	
Mercury	kg/acre	2.74446E-11	**2.74446E-11**
Aluminum	kg/acre	3.61966E-08	**3.61966E-08**
Antimony	kg/acre	1.87286E-09	**1.87286E-09**
Arsenic	kg/acre	9.8325E-09	**9.8325E-09**
Cadmium	kg/acre	0	**0**
Chromium	kg/acre	0	**0**
Copper	kg/acre	3.30631E-08	**3.30631E-08**
Lead	kg/acre	0	**0**
Nickel	kg/acre	0	**0**
Selenium	kg/acre	0	**0**
Silver	kg/acre	0	**0**
Zinc	kg/acre	7.95965E-09	**7.95965E-09**
pH		8.61	**8.61**
Nitrite and Nitrate as N	kg/acre	4.39401E-06	**4.39401E-06**
Weak Acid Dissociable CN	kg/acre	0	**0**
Notes:	N/A = Analyte was not tested for 0 = Analyte was tested for and not detected pH = mean for all events 3.785 liters/gallon		

5.0 Permit Management

The Waste Management Permit was approved and went into effect on May 15, 2012. All monitoring and reporting activities were tracked through MCRI personnel. Laboratory data was managed using in-house personnel with assistance from a MCRI consultant. Copies of inspection and sampling logs will be filed in the MCRI project files for a minimum of five years.

6.0 Summary

All relevant monitoring was conducted in the Fourth Quarter. Nixon Fork Mine environmental personnel will work to continue to improve their monitoring and record keeping.