

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No. MO-0105732

Owner: Noranda Aluminum, Inc.
Address: PO Box 70, New Madrid, MO 63869

Continuing Authority: Same as above
Address: Same as above

Facility Name: Noranda Aluminum, Inc.
Facility Address: 391 St. Jude Industrial Park, New Madrid, MO 63869

Legal Description: See page two (2)
Latitude/Longitude: See page two (2)

Receiving Stream: See page two (2)
First Classified Stream and ID: See page two (2)
USGS Basin & Sub-watershed No.: See page two (2)

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

See page two (2).

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

April 3, 2009
Effective Date


Mark N. Templeton, Acting Director, Department of Natural Resources

April 2, 2014
Expiration Date


Robert K. Morrison, P.E., Chief, Water Pollution Control Branch

FACILITY DESCRIPTION (continued):

Outfall #001 - Industrial - SIC #3334 & 3355 - No Certified Operator Required

Direct Chill Casting (Metal Products & Services) – INTERNAL COMPLIANCE LOCATION

Treatment for cooling water for direct chill casting consist of flocculation and floatation, and primary treatment from the Noranda Retention Pond (Outfall #004). Sludge disposal is conducted by a contact hauler to landfill. No design flow or design sludge production.

Actual flow is 27472 gallons per day.

Actual sludge production is 20 dry tons/year.

Legal Description: S ½, S ½, Section 29, T22N, R14E, New Madrid County
Latitude/Longitude: +3630440/-8933593
Receiving Stream: Mississippi River (P)
First Classified Stream and ID: Mississippi River (P) (03152) 303(d)
USGS Basin & Sub-watershed No.: (08020204 – 020007)

Outfall #002 - Industrial - SIC #3334 & 3355 - No Certified Operator Required

Anode Contact Cooling Tower (Green Carbon) cooling water – INTERNAL COMPLIANCE LOCATION

No treatment other than primary treatment from the Noranda Retention Pond (Outfall #004). Sludge disposal is conducted by a contact hauler to landfill. No design flow or design sludge production. Discharges approximately twice per year.

Actual flow is 12000 gallons per day (batch discharge)

Actual sludge production is 2 dry tons/year.

Legal Description: S ½, Landgrant 107, T22N, R14E, New Madrid County
Latitude/Longitude: +3630416/-08933422
Receiving Stream: Mississippi River (P)
First Classified Stream and ID: Mississippi River (P) (03152) 303(d)
USGS Basin & Sub-watershed No.: (08020204 – 020007)

Outfall #003 - Industrial - SIC #3334 & 3355 - No Certified Operator Required

Continuous Rod Casting #1 Cooling Water (Rod Mill #1) – INTERNAL COMPLIANCE LOCATION

No treatment other than primary treatment from the Noranda Retention Pond (Outfall #004). Negligible sludge produced. No design flow or design sludge production.

Actual flow is 10081 gallons per day.

Legal Description: E ½, E ½, Landgrant 172, T22N, R14E, New Madrid County
Latitude/Longitude: +33630222/-08933465
Receiving Stream: Mississippi River (P)
First Classified Stream and ID: Mississippi River (P) (03152) 303(d)
USGS Basin & Sub-watershed No.: (08020204 – 020007)

Outfall #004 - Noranda Retention Pond - Industrial, Non-Contact Cooling Water, & Storm Water - SIC #3334 & 3355 - No Certified Operator Required

Compliance Sampling Location. Outfalls #001, #002, #003, and #006 flow to this outfall. Primary Treatment only. No design flow & no sludge produced.

Actual flow is 695,000 gallons per day

Legal Description: N ½, N ½, Landgrant 172, T22N, R14E, New Madrid County
Latitude/Longitude: +3630399/-08934204
Receiving Stream: Mississippi River (P)
First Classified Stream and ID: Mississippi River (P) (03152) 303(d)
USGS Basin & Sub-watershed No.: (08020204 – 020007)

FACILITY DESCRIPTION (continued):

Outfall #005 - Noranda Emergency Overflow Basin - Industrial, Non-Contact Cooling Water, & Storm Water - SIC #3334 & 3355
- No Certified Operator Required

Receives overflow from Outfall #004 during catastrophic storm events (25 year, 24 hour or a 10 year, 10 day storm). Primary Treatment only. No design flow & no sludge produced. The actual flow is based on the only discharge in past five (5) years. Actual flow is dependant upon significant to catastrophic precipitation

Legal Description: N ½, N ½, Landgrant 172, T22N, R14E, New Madrid County
Latitude/Longitude: +3630472/-08934238
Receiving Stream: Drainage Ditch #29
First Classified Stream and ID: Old Channel Little River (C) (03037)
USGS Basin & Sub-watershed No.: (08020204 – 020007)

Outfall #006 - Industrial - SIC #3334 & 3355 - No Certified Operator Required

Continuous Rod Casting #2 Cooling Water (Rod Mill #2) – INTERNAL COMPLIANCE LOCATION

No treatment other than primary treatment from the Noranda Retention Pond (Outfall #004). Negligible sludge produced. No design flow or design sludge production.

Actual flow is 1500 gallons per day.

Legal Description: E ½, E ½, Landgrant 172, T22N, R14E, New Madrid County
Latitude/Longitude: +3630217/-08933479
Receiving Stream: Mississippi River (P)
First Classified Stream and ID: Mississippi River (P) (03152) 303(d)
USGS Basin & Sub-watershed No.: (08020204 – 020007)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

PAGE NUMBER 4 of 13
 PERMIT NUMBER MO-0105732

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

| OUTFALL NUMBER AND EFFLUENT PARAMETER(S) | UNITS | FINAL EFFLUENT LIMITATIONS | | | MONITORING REQUIREMENTS | |
|---|---------|----------------------------|----------------|-----------------|-------------------------|--------------|
| | | DAILY MAXIMUM | WEEKLY AVERAGE | MONTHLY AVERAGE | MEASUREMENT FREQUENCY | SAMPLE TYPE |
| Outfall #001 – Direct Chill Casting | | | | | | |
| Flow | MGD | * | | * | Once/day | 24 hr. total |
| Total Suspended Solids | lbs/day | 2668 | | 1334 | Once/quarter*** | grab |
| pH** | S.U. | 6.0 – 9.0 | | 6.0 – 9.0 | Once/quarter*** | grab |
| Benzo(a)pyrene | lbs/day | 0.0 | | 0.0 | Once/quarter*** | grab |
| Fluoride | lbs/day | 71.1 | | 31.2 | Once/quarter*** | grab |
| Aluminum, Total Recoverable | lbs/day | 7.2 | | 3.2 | Once/quarter*** | grab |
| Antimony, Total Recoverable | lbs/day | 2.3 | | 1.0 | Once/quarter*** | grab |
| Nickel, Total Recoverable | lbs/day | 0.65 | | 0.44 | Once/quarter*** | grab |
| Outfall #002 – Anode Contact Cooling | | | | | | |
| Flow | MGD | * | | * | Once/day | 24 hr. total |
| Total Suspended Solids | lbs/day | 5.13 | | 4.11 | Once/quarter*** | grab |
| Oil & Grease | lbs/day | 3.42 | | 3.42 | Once/quarter*** | grab |
| pH** | S.U. | 7.0 – 10.0 | | 7.0 – 10.0 | Once/quarter*** | grab |
| Benzo(a)pyrene | lbs/day | 0.011 | | 0.005 | Once/quarter*** | grab |
| Fluoride | lbs/day | 20.4 | | 9.05 | Once/quarter*** | grab |
| Aluminum, Total Recoverable | lbs/day | 2.1 | | 0.93 | Once/quarter*** | grab |
| Antimony, Total Recoverable | lbs/day | 0.66 | | 0.3 | Once/quarter*** | grab |
| Nickel, Total Recoverable | lbs/day | 0.19 | | 0.13 | Once/quarter*** | grab |

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE July 28, 2009.

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Part I STANDARD CONDITIONS DATED October 1, 1980, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

PAGE NUMBER 5 of 13

PERMIT NUMBER MO-0105732

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

| OUTFALL NUMBER AND EFFLUENT PARAMETER(S) | UNITS | FINAL EFFLUENT LIMITATIONS | | | MONITORING REQUIREMENTS | |
|--|---------|----------------------------|----------------|-----------------|-------------------------|--------------|
| | | DAILY MAXIMUM | WEEKLY AVERAGE | MONTHLY AVERAGE | MEASUREMENT FREQUENCY | SAMPLE TYPE |
| Outfall #003 – Continuous Rod Casting | | | | | | |
| Flow | MGD | * | | * | Once/day | 24 hr. total |
| Total Suspended Solids | lbs/day | 878 | | 439 | Once/quarter*** | grab |
| pH** | S.U. | 6.0 – 9.0 | | 6.0 – 9.0 | Once/quarter*** | grab |
| Benzo(a)pyrene | lbs/day | 0.0 | | 0.0 | Once/quarter*** | grab |
| Fluoride | lbs/day | 1.81 | | 0.804 | Once/quarter*** | grab |
| Aluminum, Total Recoverable | lbs/day | 0.19 | | 0.083 | Once/quarter*** | grab |
| Antimony, Total Recoverable | lbs/day | 0.06 | | 0.03 | Once/quarter*** | grab |
| Nickel, Total Recoverable | lbs/day | 0.017 | | 0.011 | Once/quarter*** | grab |

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE July 28, 2009.

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Part I STANDARD CONDITIONS DATED October 1, 1980, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

| A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS | | | | | PAGE NUMBER 6 of 13 | |
|--|------------|----------------------------|----------------|-----------------|--------------------------|--------------|
| | | | | | PERMIT NUMBER MO-0105732 | |
| The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below: | | | | | | |
| OUTFALL NUMBER AND EFFLUENT PARAMETER(S) | UNITS | FINAL EFFLUENT LIMITATIONS | | | MONITORING REQUIREMENTS | |
| | | DAILY MAXIMUM | WEEKLY AVERAGE | MONTHLY AVERAGE | MEASUREMENT FREQUENCY | SAMPLE TYPE |
| Outfall #004 – Main Facility Discharge | | | | | | |
| Flow | MGD | * | | * | Once/day | 24 hr. total |
| Total Suspended Solids | mg/L | 100 | | 50 | Once/month | grab |
| pH** | S.U. | 6.5 – 9.0 | | 6.5 – 9.0 | Once/month | grab |
| Temperature | °F | 90 | | 90 | Once/month | grab |
| Oil & Grease | mg/L | 15 | | 10 | Once/month | grab |
| Benzo(a)pyrene | mg/L | * | | * | Once/month | grab |
| Fluoride | mg/L | * | | * | Once/month | grab |
| Cyanide, Amenable to Chlorination | mg/L | * | | * | Once/month | grab |
| Aluminum, Total Recoverable | mg/L | * | | * | Once/month | grab |
| Antimony, Total Recoverable | mg/L | * | | * | Once/month | grab |
| Nickel, Total Recoverable | mg/L | * | | * | Once/month | grab |
| MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>May 28, 2009</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS. | | | | | | |
| Summer (May 1 – October 31) Whole Effluent Toxicity (WET) test | % Survival | See Special Condition #7 | | | Once/year (Note 1) | grab |
| Winter (November 1 – April 30) Whole Effluent Toxicity (WET) test | % Survival | See Special Condition #7 | | | Once/year (Note 1) | grab |
| MONITORING REPORTS SHALL BE SUBMITTED <u>ANNUALLY</u> ; THE FIRST REPORT IS DUE <u>October 28, 2009</u> . | | | | | | |
| B. STANDARD CONDITIONS | | | | | | |
| IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Part I</u> STANDARD CONDITIONS DATED <u>October 1, 1980</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN. | | | | | | |

| A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS | | | | | PAGE NUMBER 7 of 13 | |
|--|------------|----------------------------|----------------|-----------------|--------------------------|--------------|
| | | | | | PERMIT NUMBER MO-0105732 | |
| The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below: | | | | | | |
| OUTFALL NUMBER AND EFFLUENT PARAMETER(S) | UNITS | FINAL EFFLUENT LIMITATIONS | | | MONITORING REQUIREMENTS | |
| | | DAILY MAXIMUM | WEEKLY AVERAGE | MONTHLY AVERAGE | MEASUREMENT FREQUENCY | SAMPLE TYPE |
| Outfall #005 – Emergency Basin Overflow | | | | | | |
| Flow | MGD | * | | * | Once/day**** | 24 hr. total |
| Total Suspended Solids | mg/L | 100 | | 50 | Once/quarter**** | grab |
| pH** | S.U. | 6.5 – 9.0 | | 6.5 – 9.0 | Once/quarter**** | grab |
| Oil & Grease | mg/L | 15 | | 10 | Once/quarter**** | grab |
| Fluoride | mg/L | 6.5 | | 3.3 | Once/quarter**** | grab |
| Benzo(a)pyrene | µg/L | 0.09 | | 0.05 | Once/quarter**** | grab |
| Cyanide, Amenable to Chlorination | µg/L | 22.1 | | 11 | Once/quarter**** | grab |
| Aluminum, Total Recoverable | µg/L | 750 | | 374 | Once/quarter**** | grab |
| Antimony, Total Recoverable | mg/L | 2.0 | | 0.9 | Once/quarter**** | grab |
| Nickel, Total Recoverable | µg/L | 600 | | 374 | Once/quarter**** | grab |
| MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>July 28, 2009</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS. | | | | | | |
| Whole Effluent Toxicity (WET) test | % Survival | See Special Conditions #7 | | | Once/permit cycle | grab |
| MONITORING REPORTS SHALL BE SUBMITTED <u>ONCE PER PERMIT CYCLE</u> ; THE FIRST REPORT IS DUE <u>January 28, 2014</u> . | | | | | | |
| B. STANDARD CONDITIONS | | | | | | |
| IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Part I</u> STANDARD CONDITIONS DATED <u>October 1, 1980</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN. | | | | | | |

| A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS | | | | | PAGE NUMBER 8 of 13 | |
|--|---------|----------------------------|----------------|-----------------|--------------------------|--------------|
| | | | | | PERMIT NUMBER MO-0105732 | |
| The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below: | | | | | | |
| OUTFALL NUMBER AND EFFLUENT PARAMETER(S) | UNITS | FINAL EFFLUENT LIMITATIONS | | | MONITORING REQUIREMENTS | |
| | | DAILY MAXIMUM | WEEKLY AVERAGE | MONTHLY AVERAGE | MEASUREMENT FREQUENCY | SAMPLE TYPE |
| Outfall #006 – Continuous Rod Casting | | | | | | |
| Flow | MGD | * | | * | Once/day | 24 hr. total |
| Total Suspended Solids | lbs/day | 0.3 | | 0.23 | Once/quarter | grab |
| pH** | S.U. | 7.0 – 10.0 | | 7.0 – 10.0 | Once/quarter | grab |
| Oil & Grease | lbs/day | 0.19 | | 0.19 | Once/quarter | grab |
| Benzo(a)pyrene | lbs/day | 0.0 | | 0.0 | Once/quarter | grab |
| Fluoride | lbs/day | 1.13 | | 0.5 | Once/quarter | grab |
| Aluminum, Total Recoverable | lbs/day | 0.12 | | 0.05 | Once/quarter | grab |
| Antimony, Total Recoverable | lbs/day | 0.04 | | 0.02 | Once/quarter | grab |
| Nickel, Total Recoverable | lbs/day | 0.01 | | 0.007 | Once/quarter | grab |
| MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>July 28, 2009</u> . | | | | | | |
| B. STANDARD CONDITIONS | | | | | | |
| IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Part I</u> STANDARD CONDITIONS DATED <u>October 1, 1980</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN. | | | | | | |

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

- * Monitoring requirement only.
- ** pH is measured in pH units and is not to be averaged.
- *** See table below for quarterly sampling:

| Sample discharge at least once for the months of: | Report is due: |
|---|----------------|
| January, February, March (1st Quarter) | April 28 |
| April, May, June (2nd Quarter) | July 28 |
| July, August, September (3rd Quarter) | October 28 |
| October, November, December (4th Quarter) | January 28 |

**** Reporting shall be once per quarter as per (***). If no discharge occurs during the quarter, the report shall state “No Discharge.” Sampling shall be required once per day per continuous event. Discharge from Outfall #005 is allowed only during a storm event exceeding the 25 year, 24-hour storm; or during a ten year, ten-day storm.

Note 1 - WET testing shall be conducted twice annually and the seasonal WET testing shall **NOT** occur within ninety (90) days from each other.

C. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:
 - (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
 - (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
 - (2) controls any pollutant not limited in the permit.
 - (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
 - (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

2. All outfalls must be clearly marked in the field.

3. Changes in Discharges of Toxic Substances

The permittee shall notify the Director as soon as it knows or has reason to believe:

- (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
 - (1) One hundred micrograms per liter (100 µg/L);
 - (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
 - (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
 - (4) The level established in Part A of the permit by the Director.
- (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.

4. Report as no-discharge when a discharge does not occur during the report period.

5. Water Quality Standards

- (a) Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
- (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
 - (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
 - (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
 - (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
 - (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
 - (5) There shall be no significant human health hazard from incidental contact with the water;
 - (6) There shall be no acute toxicity to livestock or wildlife watering;
 - (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
 - (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

D. SPECIAL CONDITIONS (continued)

6. Industrial Sludge Disposal

- (a) Disposal of industrial sludge is not authorized by this permit. Industrial sludge shall be disposed at a permitted waste disposal facility in accordance with 10 CSR 80; or if the sludge is determined to be hazardous waste, shall be disposed at a permitted hazardous waste disposal facility pursuant to 10 CSR 25.
- (b) Non-hazardous sludge that is disposed on site or that is exempted under 10 CSR 80 must obtain applicable permits under 10 CSR 20-6.200.
- (c) Each effluent monitoring report shall also specify the date any sludge is removed from the facility, who removed the sludge and the number of gallons or quantity of sludge removed. The final disposal location shall be reported, including the name of the disposal facility, the solid waste or hazardous waste disposal permit number, and date of permit issuance.
- (d) This permit may (after due process) be modified, or alternatively revoked and reissued, to comply with any applicable sludge disposal standards or limitation issue or approved under Section 405(d) of the Clean Water Act.

7. Whole Effluent Toxicity (WET) Test shall be conducted as follows:

| SUMMARY OF WET TESTING FOR THIS PERMIT | | | | |
|--|--------------------------------|-------------------------------------|-------------|---|
| OUTFALL | A.E.C. % | FREQUENCY | SAMPLE TYPE | MONTH |
| 004 | 50%, 25%, 9.1%, 5%, & 0% | Summer Frequency (May 1 – Oct. 31) | Grab | Any Reports due January 28 th , each year. |
| 004 | 50%, 25%, 9.1%, 5%, & 0% | Winter Frequency (Nov 1 – April 30) | Grab | Any Report due January 28 th , each year. |
| 005 | 100%, 50%, 25%, 12.5%, & 6.25% | Once per Permit Cycle | Grab | Any Report due January 28, 2014 |

(a) Test Schedule and Follow-Up Requirements

- (1) Perform a MULTIPLE-dilution acute WET test in the months and at the frequency specified above. For tests which are successfully passed, submit test results using the Department’s WET test report form #MO-780-1899 along with complete copies of the test reports as received from the laboratory, including copies of chain-of-custody forms within 30 calendar days of availability to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102. If the effluent passes the test, do not repeat the test until the next test period.
 - (a) For discharges of stormwater, samples shall be collected within three hours from when discharge first occurs.
 - (b) Samples submitted for analysis of stormwater discharges shall be collected as a grab.
 - (c) For discharges of non-stormwater, samples shall be collected only when precipitation has not occurred for a period of forty-eight hours prior to sample collection. In no event shall sample collection occur simultaneously with the occurrence of precipitation excepting for stormwater samples.
 - (d) A twenty-four hour composite sample shall be submitted for analysis of non-stormwater discharges.
 - (e) Upstream receiving water samples, where required, shall be collected upstream from any influence of the effluent where downstream flow is clearly evident.
 - (f) Samples submitted for analysis of upstream receiving water may be collected as either a grab or twenty-four-hour composite as appropriate to the nature of the discharge.
 - (g) Chemical and physical analysis of the upstream control and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping.
 - (h) Any and all chemical or physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% Effluent concentration in addition to analyses performed upon any other effluent concentration.
 - (i) All chemical analyses included in the Missouri Department of Natural Resources WET test report form #MO-780-1899 shall be performed and results shall be recorded in the appropriate field of the report form.
 - (j) Where flow-weighted composite sample is required for analysis, the samples shall be composited at the laboratory where the test is to be performed.

D. SPECIAL CONDITIONS (continued)

7. WET testing continued:

- (k) Where in stream testing is required downstream from the discharge, sample collection shall occur immediately below the established Zone of Initial Dilution in conjunction with or immediately following a release or discharge.
 - (l) Samples submitted for analysis of downstream receiving water may be collected as either a grab or twenty-four-hour composite as appropriate to the nature of the discharge.
 - (m) All instream samples, including downstream samples, shall be tested for toxicity at the 100% concentration in addition to any other assigned AEC for in-stream samples.
- (2) All failing test results along with complete copies of the test reports as received from the laboratory, INCLUDING THOSE TESTS CONDUCTED UNDER CONDITION (3) BELOW, shall be reported to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the availability of the results.
 - (3) If the effluent fails the test, a multiple dilution test shall be performed for BOTH test species within 30 calendar days and biweekly thereafter (for storm water, tests shall be performed on the next and subsequent storm water discharges as they occur, but not less than 7 days apart) until one of the following conditions are met:
 - (a) THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.
 - (b) A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.
 - (4) Failure of at least two multiple-dilution tests during any period of accelerated monitoring violates the permit narrative requirement for aquatic life protection.
 - (5) The permittee shall submit a summary of all test results for the test series along with complete copies of the test reports as received from the laboratory to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the third failed test.
 - (6) Additionally, the following shall apply upon failure of the third MULTIPLE DILUTION test: A toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE) is automatically triggered. The permittee shall contact THE WATER PROTECTION PROGRAM within 14 calendar days from availability of the test results to ascertain as to whether a TIE or TRE is appropriate. The permittee shall submit a plan for conducting a TIE or TRE to the WATER PROTECTION PROGRAM within 60 calendar days of the date of DNR's direction to perform either a TIE or TRE. This plan must be approved by DNR before the TIE or TRE is begun. A schedule for completing the TIE or TRE shall be established in the plan approval.
 - (7) Upon DNR's approval, the TIE/TRE schedule may be modified if toxicity is intermittent during the TIE/TRE investigations. A revised WET test schedule may be established by DNR for this period.
 - (8) If a previously completed TIE has clearly identified the cause of toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged and the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in the permit, without the follow-up requirements, will be required during this period.
 - (9) When WET test sampling is required to run over one DMR period, each DMR report shall contain a copy of the Department's WET test report form that was generated during the reporting period.
 - (10) Submit a concise summary in tabular format of all WET test results with the annual report.
- (b) PASS/FAIL procedure and effluent limitations:
 - (1) To pass a multiple-dilution test:
 - (a) For facilities with a computed percent effluent at the edge of the zone of initial dilution, Allowable Effluent Concentration (AEC) OF 30% OR LESS, the AEC must be less than three-tenths (0.3) of the LC_{50} concentration for the most sensitive of the test organisms; **OR**,
 - (b) For facilities with an AEC greater than 30%, the LC_{50} concentration must be greater than 100%; **AND**,
 - (c) all effluent concentrations equal to or less than the AEC must be nontoxic. Mortality observed in all effluent concentrations equal to or less than the AEC shall not be significantly different (at the 95% confidence level; $p = 0.05$) than that observed in the upstream receiving-water control sample. Where upstream receiving water is not available mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level; $p = 0.05$) than that observed in the laboratory control. The appropriate statistical tests of significance shall be consistent with the most current edition of METHODS FOR MEASURING THE ACUTE TOXICITY OF EFFLUENTS AND RECEIVING WATERS TO FRESHWATER AND MARINE ORGANISMS or other federal guidelines as appropriate or required. Failure of one multiple-dilution test may be considered an effluent limit violation.

D. SPECIAL CONDITIONS (continued)

7. WET testing continued:

(c) Test Conditions

- (1) Test Type: Acute Static non-renewal
- (2) All tests, including repeat tests for previous failures, shall include both test species listed below.
- (3) Test species: *Ceriodaphnia dubia* and *Pimephales promelas* (fathead minnow). Organisms used in WET testing shall come from cultures reared for the purpose of conducting toxicity tests and cultured in a manner consistent with the most current USEPA guidelines. All test animals shall be cultured as described in the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms.
- (4) Test period: 48 hours at the "Acceptable Effluent Concentration" (AEC) specified above.
- (5) Upstream receiving stream water shall be used as dilution water. If upstream water is unavailable or if mortality in the upstream water exceeds 10%, "reconstituted" water will be used as dilution water. Procedures for generating reconstituted water will be supplied by the MDNR upon request.
- (6) Multiple-dilution tests will be run with:
 - (a) 100%, 50%, 25%, 12.5%, and 6.25% effluent, unless the AEC is less than 25% effluent, in which case dilutions will be 4 times the AEC, two times the AEC, AEC, 1/2 AEC and 1/4 AEC;
 - (b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and
 - (c) reconstituted water.
- (7) If reconstituted-water control mortality for a test species exceeds 10%, the entire test will be rerun.
- (8) If upstream control mortality exceeds 10%, the entire test will be rerun using reconstituted water as the dilutant.

SUMMARY OF TEST METHODOLOGY FOR ACUTE WHOLE-EFFLUENT TOXICITY TESTS

Whole-effluent-toxicity test required in NPDES permits shall use the following test conditions when performing single or multiple dilution methods. Any future changes in methodology will be supplied to the permittee by the Missouri Department of Natural Resources (MDNR). Unless more stringent methods are specified by the DNR, the procedures shall be consistent with the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms.

Test conditions for Ceriodaphnia dubia:

| | |
|----------------------------------|--|
| Test duration: | 48 h |
| Temperature: | 25 ± 1°C Temperatures shall not deviate by more than 3°C during the test. |
| Light Quality: | Ambient laboratory illumination |
| Photoperiod: | 16 h light, 8 h dark |
| Size of test vessel: | 30 mL (minimum) |
| Volume of test solution: | 15 mL (minimum) |
| Age of test organisms: | <24 h old |
| No. of animals/test vessel: | 5 |
| No. of replicates/concentration: | 4 |
| No. of organisms/concentration: | 20 (minimum) |
| Feeding regime: | None (feed prior to test) |
| Aeration: | None |
| Dilution water: | Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness. |
| Endpoint: | Pass/Fail (Statistically significant Mortality when compared to upstream receiving water control or synthetic control if upstream water was not available at $p \leq 0.05$) |
| Test acceptability criterion: | 90% or greater survival in controls |

Test conditions for Pimephales promelas:

| | |
|----------------------------------|--|
| Test duration: | 48 h |
| Temperature: | 25 ± 1°C Temperatures shall not deviate by more than 3°C during the test. |
| Light Quality: | Ambient laboratory illumination |
| Photoperiod: | 16 h light/ 8 h dark |
| Size of test vessel: | 250 mL (minimum) |
| Volume of test solution: | 200 mL (minimum) |
| Age of test organisms: | 1-14 days (all same age) |
| No. of animals/test vessel: | 10 |
| No. of replicates/concentration: | 4 (minimum) single dilution method 2 (minimum) multiple dilution method |
| No. of organisms/concentration: | 40 (minimum) single dilution method 20 (minimum) multiple dilution method |
| Feeding regime: | None (feed prior to test) |
| Aeration: | None, unless DO concentration falls below 4.0 mg/L; rate should not exceed 100 bubbles/min. |
| Dilution water: | Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness. |
| Endpoint: | Pass/Fail (Statistically significant Mortality when compared to upstream receiving water control or synthetic control if upstream water was not available at $p \leq 0.05$) |
| Test Acceptability criterion: | 90% or greater survival in controls |

Missouri Department of Natural Resources
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0105732
NORANDA ALUMINUM, INC.

The Federal Water Pollution Control Act ("Clean Water Act" Section 402 Public Law 92-500 as amended) established the National Pollution Discharge Elimination System (NPDES) permit program. This program regulates the discharge of pollutants from point sources into the waters of the United States, and the release of storm water from certain point sources. All such discharges are unlawful without a permit (Section 301 of the "Clean Water Act"). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Missouri State Operating Permits (MSOPs) are issued by the Director of the Missouri Department of Natural Resources (department) under an approved program, operating in accordance with federal and state laws (Federal "Clean Water Act" and "Missouri Clean Water Law" Section 644 as amended). MSOPs are issued for a period of five (5) years unless otherwise specified.

As per [40 CFR Part 124.8(a)] and [10 CSR 20-6.020(1)2.] a Factsheet shall be prepared to give pertinent information regarding the applicable regulations, rationale for the development of effluent limitations and conditions, and the public participation process for the Missouri State Operating Permit (operating permit) listed below.

A Factsheet is not an enforceable part of an operating permit.

This Factsheet is for a Major , Minor , Industrial Facility ; Variance ;
Master General Permit ; General Permit Covered Facility ; and/or permit with widespread public interest .

Part I – Facility Information

Facility Type: INDUSTRY
Facility SIC Code(s): 3334 – Primary reduction of Aluminum
3355 – Aluminum rolling and drawing

Facility Description:

The Noranda Aluminum, Inc. (facility) is located in the St. Jude Industrial Park, New Madrid, Missouri. This facility is a primary aluminum smelter which converts purified bauxite ore by electrolytic reduction to elemental aluminum. The elemental molten aluminum is used to produce rod, extrusion billet, sheet ingot or casting ingot. The electrolytic reduction consumes a large number of carbon anodes. Consequently, the anodes are produced on site. These are manufactured from calcined petroleum cake and coal tar pitch. Two types of anodes are made to match the reduction cells. As indicated below for Outfalls #001, 002, 003, and 006 are internal monitoring points or rather locations since they discharge into the facility's storm water basin and then to the Mississippi River via Outfall #004.

The previous state operating permit's Fact Sheet indicated that the previous permit writer decided to continue using the established internal points, mentioned above, for the determination of compliance with the federal regulations. This was done for simplicity sake, since Noranda's basin and Outfall #004 also handles storm water and non-contact cooling water, which may be treatment by dilutions in violation of 10 CSR 20-7.015(9)(B).

Outfall #001 – Direct Chill Casting (Metal Products & Services) INTERNAL COMPLIANCE LOCATION:

Treatment for cooling water for direct chill casting consists of flocculation and floatation. Sludge disposal is conducted by a contract hauler to landfill. Effluent from Outfall #001 discharges to inter-plant ditches and then to the Noranda Retention Pond. From the retention pond, effluent is discharged (Outfall #004) to the Mississippi River or to Outfall #005 (please see Outfalls #004 & #005 description below).

Outfall #002 – Anode Contact Cooling Tower (Green Carbon) cooling water – INTERNAL COMPLIANCE LOCATION:

Other than primary treatment from the Noranda Retention Pond (Outfall #004), this outfall does not receive any treatment for the cleanout of sump anode contact cooling water. Sludge disposal is conducted by a contract hauler to landfill. This outfall only discharges during cleanout of carbon fibers from sump approximately twice a year. Effluent from Outfall #002 discharges to inter-plant ditches and then to the Noranda Retention Pond. From the retention pond, effluent is discharged (Outfall #004) to the Mississippi River or to Outfall #005 (please see Outfall #004 & #005 description below).

Outfall #003 – Continuous Rod Casting #1 Cooling Water (Rod Mill #1) INTERNAL COMPLIANCE LOCATION:

Other than primary treatment from the Noranda Retention Pond (Outfall #004), this outfall does not receive any treatment for the rod casting cooling water. Negligible amounts of sludge is produced by this cooling process. Effluent from Outfall #003 discharges to inter-plant ditches and then to Noranda Retention Pond. From the retention pond, effluent is discharged (Outfall #004) to the Mississippi River or to Outfall #005 (please see Outfall #004 & #005 description below).

Outfall #004 – Noranda Retention Pond:

All wastewater (contact cooling, non-contact cooling, and stormwater run-off) collected by the internal drainage system is collected in this retention pond. Water level at this retention pond is maintained to keep clay liner covered. Pumps run periodically to maintain adequate freeboard. Effluent from this retention pond discharges to the Mississippi River.

Outfall #005 – Noranda Emergency Overflow Basin:

Emergency spillway to prevent catastrophic failure of the Noranda Retention Pond (Outfall #004). Is allowed to discharge only during a storm event exceeding the 25 year, 24 hour or a 10 year, 10 day storm. Effluent from this emergency overflow basin discharges to Drainage Ditch #29, which differs from the existing operating permit that indicates this outfall discharges to the Mississippi River.

Outfall #006 – Continuous Rod Casting #2 Cooling Water (Rod Mill #2) – INTERNAL COMPLIANCE LOCATION:

Other than primary treatment from the Noranda Retention Pond (Outfall #004), this outfall does not receive any treatment for the rod casting cooling water. Negligible amounts of sludge is produced by this cooling process. Effluent from Outfall #006 discharges to inter-plant ditches and then to the Noranda Retention Pond. From the retention pond, effluent is discharged (Outfall #004) to the Mississippi River or to Outfall #005 (please see Outfalls #004 and #005 description above).

Application Date: July 7, 2008
Expiration Date: January 8, 2009
Last Inspection: 12/07/2006 (EPA) Non-Compliance (See WQ History section below)

OUTFALL(S) TABLE:

| OUTFALL | DESIGN FLOW (CFS) | TREATMENT LEVEL | EFFLUENT TYPE | DISTANCE TO CLASSIFIED SEGMENT (MI) |
|---------|------------------------------|------------------------------------|--|-------------------------------------|
| #001 | 0.0426 | Physical: Flotation & Flocculation | Industrial | N/A |
| #002 | 0.0186 | None | Industrial | N/A |
| #003 | 0.0156 | None | Industrial | N/A |
| #004 | 1.077 | Primary: Settling | Industrial, Non-contact cooling, and Storm Water | 0.0 |
| #005 | Dependant upon precipitation | Primary: Settling | Industrial, Non-contact cooling, and Storm Water | 15.53 |
| #006 | 0.0023 | None | Industrial | N/A |

* - based on average flow from January 2003 to present, not design flow.

** - based on one (1) discharge in last 5 years, not an average or design flow.

Outfall #001 – Internal Compliance Location

Legal Description: S ½, S ½, Section 29, T22N, R14E, New Madrid County (via DNR interactive mapping program)

Latitude/Longitude: +3630440/-8933593

Receiving Stream: Mississippi River (P)

First Classified Stream and ID: Mississippi River (P) (03152)

USGS Basin & Sub-watershed No.: (08020204 – 020007)

Outfall #002 – Internal Compliance Location

Legal Description: S ½, Landgrant 107, T22N, R14E, New Madrid County (via DNR interactive mapping program)

Latitude/Longitude: +3630416/-8933422

Receiving Stream: Mississippi River (P)

First Classified Stream and ID: Mississippi River (P) (03152)

USGS Basin & Sub-watershed No.: (08020204 – 020007)
Outfall #003 – Internal Compliance Location
Legal Description: E ½, E ½, Landgrant 172, T22N, R14E, New Madrid County **(via DNR interactive mapping program)**
Latitude/Longitude: +33630222/-08933465
Receiving Stream: Mississippi River (P)
First Classified Stream and ID: Mississippi River (P) (03152)
USGS Basin & Sub-watershed No.: (08020204 – 020007)

Outfall #004 – Compliance Sampling Location.
Legal Description: N ½, N ½, Landgrant 172, T22N, R14E, New Madrid County **(via DNR interactive mapping program)**
Latitude/Longitude: +3630399/-08934204
Receiving Stream: Mississippi River (P)
First Classified Stream and ID: Mississippi River (P) (03152)
USGS Basin & Sub-watershed No.: (08020204 – 020007)

Outfall #005 – Emergency discharge location
Legal Description: N ½, N ½, Landgrant 172, T22N, R14E, New Madrid County **(via DNR interactive mapping program)**
Latitude/Longitude: +3630472/-08934238
Receiving Stream: Drainage Ditch #29 **(via DNR interactive mapping program)**
First Classified Stream and ID: Old Channel Little River (C) (03037) **(via DNR interactive mapping program)**
USGS Basin & Sub-watershed No.: (08020204 – 020007) **(via DNR interactive mapping program)**

Outfall #006 – Internal Compliance Location
Legal Description: E ½, E ½, Landgrant 172, T22N, R14E, New Madrid County **(via DNR interactive mapping program)**
Latitude/Longitude: +3630217/-08933479
Receiving Stream: Mississippi River (P)
First Classified Stream and ID: Mississippi River (P) (03152)
USGS Basin & Sub-watershed No.: (08020204 – 020007)

Water Quality History:

The SERO staff accompanied EPA during a 10/13 -14/2004, inspection of this facility. The EPA issued a Notice of Potential Violation. The EPA then conducted a follow-up inspection on December 7, 2006, and issued a Letter of Warning (LOW), which is the reason that the Non-Compliance is marked above. However, the EPA in their LOW indicated that the EPA plans to take no further action.

Submitted DMRs from January 2003 to present were reviewed to determine the violations below.

Outfall #001: No reported violations.

Outfall #002: Benzo(a)pyrene December 2003; Oil & Grease September 2004 (limited mass absent).

Outfall #003: Aluminum April 2003; November 2003; & December 2006.

Outfall #004: Aluminum June 2003; pH September 2007; WET testing missing reports March 2004 & 2005.

Outfall #005: No reported violations.

Outfall #006: Aluminum March 2004; December 2004, & December 2007; Oil & Grease March 2004 and September 2007; and TSS March and December 2004.

Comments:

Due to the numerous comments regarding ELG for this industry per Outfall, comments will be established in Part V – Effluent Limits Determination for each outfall.

During the review of the renewal applications (specifically Form C & D) staff noticed that the expanded effluent analytical results were the result of analysis conducted in 1996 for the internal monitoring points Outfall #001, #002, #003, & #006. On December 12, 2008, the department sent correspondence to this facility requesting that the effluent testing be conducted. On December 18, 2008, Noranda staff contacted department staff to inquire the reason(s) for requiring the test. Noranda staff indicated that the expanded effluent analytical results from Outfall #004 were from recent testing (March 2008) and that the above mentioned outfalls discharge to the Noranda Retention Pond, which discharges to the Mississippi River via Outfall #004. After an internal department discussion, it was decided that effluent testing to be conducted for Outfalls #001, #002, #003, & #006 should be limited to the permitted parameters based on appropriate Effluent Limit Guidelines (ELGs) specific to this industry. After a subsequent review of the effluent analytical results for these outfalls, it was determined that the permitted parameters were, in fact, up to date. Therefore, staff then sent correspondence to Noranda indicating that the expanded effluent analytical testing is not going to be required.

Comments continued:

However with regards to future renewals, pollutant parameters contained in Forms C & D that are not contained the operating permit or based on ELG (including any revisions to the ELG) will not be required for analytical testing. However, if the permittee modifies these outfalls to discharge to waters of the state, then the pollutant parameters in Forms C & D will be collected and analyzed.

Effluent Limitations contained herein were developed in accordance with the requirements of 40 CFR 122.45(b), that is based on average design production or average flow.

Part II – Operator Certification Requirements

Not Applicable ; This facility is not required to have a certified operator.

Part III – Receiving Stream Information

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:

As per Missouri’s Effluent Regulations [10 CSR 20-7.015], the waters of the state are divided into the below listed seven (7) categories. Each category lists effluent limitations for specific parameters, which are presented in each outfall’s Effluent Limitation Table and further discussed in the Derivation & Discussion of Limits section.

- Missouri or Mississippi River [10 CSR 20-7.015(2)]:
- Lake or Reservoir [10 CSR 20-7.015(3)]:
- Losing [10 CSR 20-7.015(4)]:
- Metropolitan No-Discharge [10 CSR 20-7.015(5)]:
- Special Stream [10 CSR 20-7.015(6)]:
- Subsurface Water [10 CSR 20-7.015(7)]:
- All Other Waters [10 CSR 20-7.015(8)]:

10 CSR 20-7.031 Missouri Water Quality Standards, the department defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1st classified receiving stream’s beneficial water uses to be maintained are located in the Receiving Stream Table located below in accordance with [10 CSR 20-7.031(3)].

RECEIVING STREAM(S) TABLE:

| WATERBODY NAME | CLASS | WBID | DESIGNATED USES* | 8-DIGIT HUC | EDU** |
|--------------------------|-------|-------|---|-------------|---|
| Ditch #29 | U | --- | General Criteria | 08020204 | Mississippi Alluvial/ St. Francis/ Little |
| Old Channel Little River | C | 03037 | LWW, AQL, WBC-B*** | | |
| Mississippi River | P | 03152 | AQL, DWS, IND, IRR, LWW, SCR, WBC-B**** | | |

* - Irrigation (IRR), Livestock & Wildlife Watering (LWW), Protection of Warm Water Aquatic Life and Human Health-Fish Consumption (AQL), Cool Water Fishery(CLF), Cold Water Fishery (CDF), Whole Body Contact Recreation (WBC), Secondary Contact Recreation (SCR), Drinking Water Supply (DWS), Industrial (IND), Groundwater (GRW).

** - Ecological Drainage Unit

*** - UAA conducted in 2005, no determination at this time; therefore WBC-B is retained.

**** - UAA has not been conducted.

RECEIVING STREAM(S) LOW-FLOW VALUES TABLE:

| RECEIVING STREAM (U, C, P) | LOW-FLOW VALUES (CFS) | | |
|----------------------------|-----------------------|--------|--------|
| | 1Q10 | 7Q10 | 30Q10 |
| Ditch #29 | 0.0 | 0.0 | 0.0 |
| Old Channel Little River | 0.0 | 0.0 | 0.1 |
| Mississippi River* | 93874 | 107694 | 126115 |

* - Low-Flow values derived from adding 1Q10, 7Q10, 30Q10 (respectively) from USGS Gauging Station Mississippi River at Thebes #07022000 and Ohio River at Metropolis #03611500.

MIXING CONSIDERATIONS TABLE:

| MIXING ZONE (CFS) [10 CSR 20-7.031(4)(A)4.B.(III)(a)] | | ZONE OF INITIAL DILUTION (CFS) [10 CSR 20-7.031(4)(A)4.B.(III)(b)] | |
|--|---------|---|--------|
| 7Q10 | 30Q10 | 1Q10 | 7Q10 |
| 26923.5 | 31528.8 | 10.77* | 10.77* |

* - Per [10 CSR 20-7.031(4)(A)4.B.(III)(b)], Zone of Initial dilution – one tenth (0.1) of the mixing zone width, cross sectional area or volume of low and no more than ten (10) times the effluent design flow volume unless the use of diffusers or specific mixing zone studies can justify more dilution. Due to the fact that the Noranda Retention Pod does not have a “design flow”, the actual flow (from submitted DMRs) was used as follows:

Actual Flow = 0.695 MGD x 1.55 (conversion from MGD to cfs) = 1.077 cfs

1.077 cfs x 10 (per [10 CSR 20-7.031(4)(A)4.B.(III)(b)]) = 10.77 cfs

1Q10 is used to determine Total Ammonia as Nitrogen’s effluent limitation. Total Ammonia as Nitrogen is not an applicable parameter for this operating permit, at this time; therefore, 1Q10 calculations do not pertain to this facility.

7Q10 ZID (as calculated from low-flow values above) = 2692.4 cfs, which is well over 10 times the design flow (in cfs) multiplied by 10.

RECEIVING STREAM MONITORING REQUIREMENTS:

No receiving water monitoring requirements recommended at this time.

Part IV – Rationale and Derivation of Effluent Limitations & Permit Conditions

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:

As per [10 CSR 20-7.015(4)(A)], discharges to losing streams shall be permitted only after other alternatives including land application, discharges to a gaining stream and connection to a regional wastewater treatment facility have been evaluated and determined to be unacceptable for environmental and/or economic reasons.

Not Applicable ;

The facility does not discharge to a Losing Stream as defined by [10 CSR 20-2.010(36)] & [10 CSR 20-7.031(1)(N)], or is an existing facility.

ANTI-BACKSLIDING:

A provision in the Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(I)] that requires a reissued permit to be as stringent as the previous permit with some exceptions.

- Effluent limitations contained in this operating permit for Outfalls #001, #002, #003, & #006 (and applicable parameters for Outfalls #004 & #005) are production based ELG specific for this Categorical Industry and conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, and 40 CFR Part 122.44.

ANTIDegradation:

In accordance with Missouri’s Water Quality Standard [10 CSR 20-7.031(2)], the department is to document by means of Antidegradation Review that the use of a water body’s available assimilative capacity is justified. Degradation is justified by documenting the socio-economic importance of a discharging activity after determining the necessity of the discharge.

- Renewal no degradation proposed and no further review necessary.

BIO-SOLIDS, SLUDGE, & SEWAGE SLUDGE:

Bio-solids are solid materials resulting from wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). Sludge is any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effect.

Applicable ;

The disposal of industrial sludge is not authorized by this operating permit. Industrial sludge at this facility shall be disposed of in accordance with 10 CSR 80 (solid waste) or 10 CSR 25 (hazardous waste).

COMPLIANCE AND ENFORCEMENT:

Enforcement is the action taken by the Water Protection Program (WPP) to bring an entity into compliance with the Missouri Clean Water Law, its implementing regulations, and/or any terms and conditions of an operating permit. The primary purpose of the enforcement activity in the WPP is to resolve violations and return the entity to compliance.

Not Applicable ;

The permittee/facility is not currently under Water Protection Program enforcement action.

REASONABLE POTENTIAL ANALYSIS (RPA):

Federal regulation [40 CFR Part 122.44(d)(1)(i)] requires effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above narrative or numeric water quality standard.

In accordance with [40 CFR Part 122.44(d)(iii)] if the permit writer determines that any give pollutant has the reasonable potential to cause, or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for that pollutant.

Applicable ;

A RPA was conducted on the following parameters: Cyanide, Amenable to Chlorination; Selenium, Total Recoverable; & Thallium, Total Recoverable. Selenium and Thallium analytical results from the submitted renewal application indicated elevated (above Missouri's Water Quality Standards) results. However, due to the fact that this facility discharges to the Mississippi River (significant mixing considerations), the submitted data in the renewal application neither mean that this facility has "violated" Missouri's Water Quality Standards nor warrants the need for effluent limitations. Therefore, a RPA will be conducted on these pollutants to determine there fate for this operating permit.

A RPA was not conducted on Benzo(a)pyrene; Fluoride, Antimony, Total Recoverable; Nickel, Total Recoverable; and Aluminum, Total Recoverable. These pollutants are required pollutants that are expected to discharge from facilities with this specific industry, and therefore have potential to cause or contribute to an in-stream excursion above Missouri's Water Quality Standards.

Please see **APPENDIX A – RPA RESULTS.**

REMOVAL EFFICIENCY:

Removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (BOD₅) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals. Please see the United States Environmental Protection Agency's (EPA) website for interpretation of percent removal requirements for National Pollutant Discharge Elimination System Permit Application Requirements for Publicly Owned Treatment Works and Other Treatment Works Treating Domestic Sewage @ www.epa.gov/fedrgstr/EPA-WATER/1999/August/Day-04/w18866.htm.

Not Applicable ;

Influent monitoring is not being required to determine percent removal.

SCHEDULE OF COMPLIANCE (SOC):

A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit.

Not Applicable ;

This permit does not contain a SOC.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP):

In accordance with 40 CFR 122.44(k) *Best Management Practices (BMPs)* to control or abate the discharge of pollutants when: (1) Authorized under section 304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities; (2) Authorized under section 402(p) of the CWA for the control of storm water discharges; (3) Numeric effluent limitations are infeasible; or (4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA.

In accordance with the EPA's *Storm Water Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices* [EPA 832-R-92-006] (Storm Water Management), BMPs are measures or practices used to reduce the amount of pollution entering (regarding this operating permit) waters of the state. BMPs may take the form of a process, activity, or physical structure.

Additionally in accordance with the Storm Water Management, a SWPPP is a series of steps and activities to (1) identify sources of pollution or contamination, and (2) select and carry out actions which prevent or control the pollution of storm water discharges.

Not Applicable ;

At this time, the permittee is not required to develop and implement a SWPPP. This is based on the fact that all storm water flows to the Noranda Retention Pond. However, if there is a significant number of permit effluent limit exceedances, the permittee may be required to develop a SWPPP, if appropriate.

VARIANCE:

As per the Missouri Clean Water Law § 644.061.4, variances shall be granted for such period of time and under such terms and conditions as shall be specified by the commission in its order. The variance may be extended by affirmative action of the commission. In no event shall the variance be granted for a period of time greater than is reasonably necessary for complying with the Missouri Clean Water Law §§644.006 to 644.141 or any standard, rule or regulation promulgated pursuant to Missouri Clean Water Law §§644.006 to 644.141.

Not Applicable ;

This operating permit is not drafted under premises of a petition for variance.

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:

As per [10 CSR 20-2.010(78)], the amount of pollutant each discharger is allowed by the department to release into a given stream after the department has determined total amount of pollutant that may be discharged into that stream without endangering its water quality.

Applicable ;

Wasteload allocations were calculated where applicable using water quality criteria or water quality model results and the dilution equation below:

$$C = \frac{(C_s \times Q_s) + (C_e \times Q_e)}{(Q_e + Q_s)} \quad (\text{EPA/505/2-90-001, Section 4.5.5})$$

Where C = downstream concentration
Cs = upstream concentration
Qs = upstream flow
Ce = effluent concentration
Qe = effluent flow

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and stream volume of flow at the edge of the mixing zone (MZ). Acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration) and stream volume of flow at the edge of the zone of initial dilution (ZID).

Water quality based maximum daily and average monthly effluent limitations were calculated using methods and procedures outlined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

WLA MODELING:

There are two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs). If TBELs do not provide adequate protection for the receiving waters, then WQBEL must be used.

Not Applicable ;

A WLA study was either not submitted or determined not applicable by department staff.

WHOLE EFFLUENT TOXICITY (WET) TEST:

A WET test is a quantifiable method of determining if a discharge from a facility may be causing toxicity to aquatic life by itself, in combination with or through synergistic responses when mixed with receiving stream water.

Applicable ;

In accordance with the Clean Water Act (CWA) §101(a)(3), requiring WET testing is reasonably appropriate for site-specific Missouri State Operating Permits for discharges to waters of the state issued under the National Pollutant Discharge Elimination System. Furthermore, WET testing is a means by which the department determines that [10 CSR 20-7.031(3)(D, F, & G)] are being met by the permitted facility. In addition to justification for the WET testing, WET tests are required under [10 CSR 20-6.010(8)(A)4] to be performed by specialists who are properly trained in conducting the test according to the methods prescribed by the Federal Government as referenced in [40 CFR Part 136]. WET test will be required by all facilities meeting the following criteria:

- Facility is a designated Major.
- Facility continuously or routinely exceeds its design flow.
- Facility (industrial) that alters its production process throughout the year.
- Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.
- Facility has Water Quality-based Effluent Limitations for toxic substances (other than NH₃)
- Facility is a municipality or domestic discharger with a Design Flow \geq 22,500 gpd.
- Other – please justify.

303(d) LIST & TOTAL MAXIMUM DAILY LOAD (TMDL):

Section 303(d) of the federal Clean Water Act requires that each state identify waters that are not meeting water quality standards and for which adequate water pollution controls have not been required. Water quality standards protect such beneficial uses of water as whole body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock and wildlife. The 303(d) list helps state and federal agencies keep track of waters that are impaired but not addressed by normal water pollution control programs.

A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is affected. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan will be developed that shall include the TMDL calculation

Applicable ;

The Mississippi River is listed on Missouri's 2002 303(d) Impaired Waters List for chlordane and PCB.

– A review of this facility's Form C & D for Outfalls #004 document that this facility is not a source of neither Chlordane nor PCBs, and therefore, this facility is not the cause or does it contribute to the impairment of the Mississippi River with regards to these pollutants.

Part V – Effluent Limits Determination

Outfall #001 – Direct Chill Casting – Internal Compliance Location

EFFLUENT LIMITATIONS TABLE:

| PARAMETER | UNIT | BASIS FOR LIMITS | DAILY MAXIMUM | WEEKLY AVERAGE | MONTHLY AVERAGE | MODIFIED | PREVIOUS PERMIT LIMITATIONS |
|----------------------|--|------------------|---------------|----------------|-----------------|----------|-----------------------------|
| FLOW | MGD | 1 | * | | * | NO | |
| TSS | LBS/DAY | 1 | 2668 | | 1334 | YES | 2576 / 1288 |
| pH | SU | 1 | 6.0 – 9.0 | | 6.0 – 9.0 | NO | |
| BENZO(A)PYRENE | LBS/DAY | 1 | 0 | | 0 | NO | |
| FLUORIDE | LBS/DAY | 1 | 71.1 | | 31.2 | YES | 67.91 / 30.13 |
| ANTIMONY, TR | LBS/DAY | 1 | 2.3 | | 1.0 | YES | 2.203 / 0.982 |
| NICKEL, TR | LBS/DAY | 1 | 0.65 | | 0.44 | YES | 0.628 / 0.422 |
| ALUMINUM, TR | LBS/DAY | 1 | 7.2 | | 3.2 | YES | 6.97 / 3.09 |
| MONITORING FREQUENCY | Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below. | | | | | | |

* - Monitoring requirement only

Basis for Limitations Codes:

- | | |
|--|------------------------------------|
| 1. State or Federal Regulation/Law | 7. Antidegradation Policy |
| 2. Water Quality Standard (includes RPA) | 8. Water Quality Model |
| 3. Water Quality Based Effluent Limits | 9. Best Professional Judgment |
| 4. Lagoon Policy | 10. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy | 11. WET Test Policy |
| 6. Dissolved Oxygen Policy | |

OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:

This outfall is an internal compliance location from which effluent from this outfall flows to the Noranda Holding Pond prior to discharging from Outfall #004. Therefore, effluent limitations for this facility applicable Technology-based Effluent Limits or rather ELGs specific to this industry type.

As per [40 CFR 122.29(d)] New Source Performance Standards (NSPS) are not applicable to this outfall. NSPS ELG were promulgated on March 8, 1984, and outfall was in operation prior to this date. Meaning, [40 CFR 421.24 Standards of Performance for New Sources] is not applicable.

Therefore, effluent limitations for this internal compliance point shall be based on Best Practical Control Technology (BPT) [40 CFR 421.22]; and Best Available Technology (BAT) [40 CFR 421.23]. If there is conflict for any pollutant parameter between BPT and BAT, then the more protective shall supersede, which should be BAT.

Daily Average Aluminum Produced = 889,410 lbs, per renewal application.

- **Flow.** In accordance with [40 CFR 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.
- **Total Suspended Solids (TSS).** Per BPT [40 CFR 421.22] the Maximum for 1 day is 3.0 lbs/thousand lbs of product; Maximum for monthly average is 1.5 lbs/thousand lbs of product. Calculations as follows:

$$\text{MDL} = (889410 \text{ lbs/day}) \times (3.0 \text{ lbs}/1000 \text{ lbs}) = 2668 \text{ lbs/day}$$

$$\text{AML} = (889410 \text{ lbs/day}) \times (1.5 \text{ lbs}/1000 \text{ lbs}) = 1334 \text{ lbs/day}$$

- **pH.** Effluent limitation for pH of 6.0 to 9.0 (standard pH units), per [40 CFR 421.22].
- **Benzo(a)pyrene.** Per BAT [40 CFR 421.23(q)], there shall be no discharge allowance for this pollutant.

- **Fluoride.** Per BPT [40 CFR 421.22] the Maximum for 1 day is 2.0 lbs/thousand lbs of product; Maximum for monthly average is 1.0 lbs/thousand lbs of product. Additionally, per BAT [40 CFR 421.23(q)] the Maximum for 1 day is 79.080 lbs/million lbs of product; Maximum for monthly average is 35.090 lbs/million lbs of product. Calculations as follows:

BPT

$$\text{MDL} = (889410 \text{ lbs/day}) \times (2.0 \text{ lbs}/1000 \text{ lbs}) = 1779 \text{ lbs/day}$$

$$\text{AML} = (889410 \text{ lbs/day}) \times (1.0 \text{ lbs}/1000 \text{ lbs}) = 889 \text{ lbs/day}$$

BAT

$$\text{MDL} = (889410 \text{ lbs/day}) \times (79.080 \text{ lbs}/1000000 \text{ lbs}) = 71.1 \text{ lbs/day}$$

$$\text{AML} = (889410 \text{ lbs/day}) \times (35.090 \text{ lbs}/1000000 \text{ lbs}) = 31.2 \text{ lbs/day}$$

BAT < BPT. BAT is more protective than BPT; therefore, BAT limitations are applicable.

- **Antimony, Total Recoverable.** Per BAT [40 CFR 421.23(q)] the Maximum for 1 day is 2.565 lbs/million lbs of product; Maximum for monthly average is 1.143 lbs/million lbs of product. Calculations as follows:

$$\text{MDL} = (889410 \text{ lbs/day}) \times (2.565 \text{ lbs}/1000000 \text{ lbs}) = 2.3 \text{ lbs/day}$$

$$\text{AML} = (889410 \text{ lbs/day}) \times (1.143 \text{ lbs}/1000000 \text{ lbs}) = 1.0 \text{ lbs/day}$$

- **Nickel, Total Recoverable.** Per BAT [40 CFR 421.23(q)] the Maximum for 1 day is 0.731 lbs/million lbs of product; Maximum for monthly average is 0.492 lbs/million lbs of product. Calculations as follows:

$$\text{MDL} = (889410 \text{ lbs/day}) \times (0.731 \text{ lbs}/1000000 \text{ lbs}) = 0.65 \text{ lbs/day}$$

$$\text{AML} = (889410 \text{ lbs/day}) \times (0.492 \text{ lbs}/1000000 \text{ lbs}) = 0.44 \text{ lbs/day}$$

- **Aluminum, Total Recoverable.** Per BAT [40 CFR 421.23(q)] the Maximum for 1 day is 8.120 lbs/million lbs of product; Maximum for monthly average is 3.602 lbs/million lbs of product. Calculations as follows:

$$\text{MDL} = (889410 \text{ lbs/day}) \times (8.120 \text{ lbs}/1000000 \text{ lbs}) = 7.2 \text{ lbs/day}$$

$$\text{AML} = (889410 \text{ lbs/day}) \times (3.602 \text{ lbs}/1000000 \text{ lbs}) = 3.2 \text{ lbs/day}$$

- **Minimum Sampling and Reporting Frequency Requirements.** Sampling and reporting frequency requirements have been retained from previous state operating permit except for flow. Flow is being increased to: (1) ensure data entry QA/QC – staff drafting this operating permit and fact sheet have discovered differences between actual DMRs and data entered into WQIS; and (2) to help determine more appropriate and accurate effluent limitations for Outfall #004.

Outfall #002 – Anode Contact Cooling (Batch Discharge) – Internal Compliance Location

EFFLUENT LIMITATIONS TABLE:

| PARAMETER | UNIT | BASIS FOR LIMITS | DAILY MAXIMUM | WEEKLY AVERAGE | MONTHLY AVERAGE | MODIFIED | PREVIOUS PERMIT LIMITATIONS |
|----------------------|--|------------------|---------------|----------------|-----------------|----------|-----------------------------|
| FLOW | MGD | 1 | * | | * | NO | |
| TSS | LBS/DAY | 1 | 5.13 | | 4.11 | YES | 4.740 / 3.792 |
| OIL & GREASE | LBS/DAY | 1 | 3.42 | | 3.42 | YES | 3.160 / 3.160 |
| PH | SU | 1 | 7.0 – 10.0 | | 7.0 -10.0 | NO | |
| BENZO(A)PYRENE | LBS/DAY | 1 | 0.011 | | 0.005 | NO | 0.011 / 0.005 |
| FLUORIDE | LBS/DAY | 1 | 20.4 | | 9.05 | YES | 18.809 / 8.343 |
| ANTIMONY, TR | LBS/DAY | 1 | 0.66 | | 0.3 | YES | 0.609 / 0.272 |
| NICKEL, TR | LBS/DAY | 1 | 0.19 | | 0.13 | YES | 0.174 / 0.116 |
| ALUMINUM, TR | LBS/DAY | 1 | 2.1 | | 0.93 | YES | 1.931 / 0.856 |
| MONITORING FREQUENCY | Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below. | | | | | | |

* - Monitoring requirement only

Basis for Limitations Codes:

- | | |
|--|------------------------------------|
| 1. State or Federal Regulation/Law | 7. Antidegradation Policy |
| 2. Water Quality Standard (includes RPA) | 8. Water Quality Model |
| 3. Water Quality Based Effluent Limits | 9. Best Professional Judgment |
| 4. Lagoon Policy | 10. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy | 11. WET Test Policy |
| 6. Dissolved Oxygen Policy | |

OUTFALL #002 – DERIVATION AND DISCUSSION OF LIMITS:

This outfall is an internal compliance location from which effluent from this outfall flows to the Noranda Holding Pond prior to discharging from Outfall #004. Therefore, effluent limitations for this facility applicable Technology-based Effluent Limits or rather ELGs specific to this industry type.

As per [40 CFR 122.29(d)] New Source Performance Standards (NSPS) are applicable to this facility. NSPS ELG were promulgated on March 8, 1984, and this outfall has been modified (green anode) after this date. Therefore, NSPS [40 CFR 421.24] are applicable.

Maximum Monthly Average Daily Production = 1639182 lbs production of Green Anode, during the month of May per renewal application.

- **Flow.** In accordance with [40 CFR 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.
- **Total Suspended Solids (TSS).** Per NSPS [40 CFR 421.24(b)] the Maximum for 1 day is 3.135 lbs/million lbs of anodes cast; Maximum for monthly average is 2.508 lbs/million lbs of anodes cast. Calculations as follows:

 $MDL = (1639182 \text{ lbs/day}) \times (3.135 \text{ lbs}/1000000 \text{ lbs}) = 5.13 \text{ lbs/day}$
 $AML = (1639182 \text{ lbs/day}) \times (2.508 \text{ lbs}/1000000 \text{ lbs}) = 4.11 \text{ lbs/day}$
- **pH.** Effluent limitation for pH of 7.0 to 10.0 (standard pH units), per [40 CFR 421.24(b)].
- **Oil & Grease** Per NSPS [40 CFR 421.24(b)] the Maximum for 1 day is 2.090 lbs/million lbs of anodes cast; Maximum for monthly average is 2.090 lbs/million lbs of anodes cast. Calculations as follows:

$$MDL \ \& \ AML = (1639182 \text{ lbs/day}) \times (2.090 \text{ lbs}/1000000 \text{ lbs}) = 3.42 \text{ lbs/day}$$

- **Benzo(a)pyrene.** Per NSPS [40 CFR 421.24(b)] the Maximum for 1 day is 0.007 lbs/million lbs of anodes cast; Maximum for monthly average is 0.003 lbs/million lbs of anodes cast. Calculations as follows:

$$\text{MDL} = (1639182 \text{ lbs/day}) \times (0.007 \text{ lbs}/1000000 \text{ lbs}) = 0.011 \text{ lbs/day}$$
$$\text{AML} = (1639182 \text{ lbs/day}) \times (0.003 \text{ lbs}/1000000 \text{ lbs}) = 0.005 \text{ lbs/day}$$

- **Fluoride.** Per NSPS [40 CFR 421.24(b)] the Maximum for 1 day is 12.440 lbs/million lbs of anodes cast; Maximum for monthly average is 5.518 lbs/million lbs of anodes cast. Calculations as follows:

$$\text{MDL} = (1639182 \text{ lbs/day}) \times (12.440 \text{ lbs}/1000000 \text{ lbs}) = 20.4 \text{ lbs/day}$$
$$\text{AML} = (1639182 \text{ lbs/day}) \times (5.518 \text{ lbs}/1000000 \text{ lbs}) = 9.05 \text{ lbs/day}$$

- **Antimony, Total Recoverable.** Per NSPS [40 CFR 421.24(b)] the Maximum for 1 day is 0.403 lbs/million lbs of anodes cast; Maximum for monthly average is 0.180 lbs/million lbs of anodes cast. Calculations as follows:

$$\text{MDL} = (1639182 \text{ lbs/day}) \times (0.403 \text{ lbs}/1000000 \text{ lbs}) = 0.66 \text{ lbs/day}$$
$$\text{AML} = (1639182 \text{ lbs/day}) \times (0.180 \text{ lbs}/1000000 \text{ lbs}) = 0.3 \text{ lbs/day}$$

- **Nickel, Total Recoverable.** Per NSPS [40 CFR 421.24(b)] the Maximum for 1 day is 0.115 lbs/million lbs of anodes cast; Maximum for monthly average is 0.077 lbs/million lbs of anodes cast. Calculations as follows:

$$\text{MDL} = (1639182 \text{ lbs/day}) \times (0.115 \text{ lbs}/1000000 \text{ lbs}) = 0.19 \text{ lbs/day}$$
$$\text{AML} = (1639182 \text{ lbs/day}) \times (0.077 \text{ lbs}/1000000 \text{ lbs}) = 0.13 \text{ lbs/day}$$

- **Aluminum, Total Recoverable.** Per NSPS [40 CFR 421.24(b)] the Maximum for 1 day is 1.277 lbs/million lbs of anodes cast; Maximum for monthly average is 0.566 lbs/million lbs of anodes cast. Calculations as follows:

$$\text{MDL} = (1639182 \text{ lbs/day}) \times (1.277 \text{ lbs}/1000000 \text{ lbs}) = 2.1 \text{ lbs/day}$$
$$\text{AML} = (1639182 \text{ lbs/day}) \times (0.566 \text{ lbs}/1000000 \text{ lbs}) = 0.93 \text{ lbs/day}$$

- **Minimum Sampling and Reporting Frequency Requirements.** Sampling and reporting frequency requirements have been retained from previous state operating permit except for flow. Flow is being increased to: (1) ensure data entry QA/QC – staff drafting this operating permit and fact sheet have discovered differences between actual DMRs and data entered into WQIS; and (2) to help determine more appropriate and accurate effluent limitations for Outfall #004.

Outfall #003 – Continuous Rod Casting(Rod Mill #1) – Internal Compliance Location

EFFLUENT LIMITATIONS TABLE:

| PARAMETER | UNIT | BASIS FOR LIMITS | DAILY MAXIMUM | WEEKLY AVERAGE | MONTHLY AVERAGE | MODIFIED | PREVIOUS PERMIT LIMITATIONS |
|----------------------|--|------------------|---------------|----------------|-----------------|----------|-----------------------------|
| FLOW | MGD | 1 | * | | * | NO | |
| TSS | LBS/DAY | 1 | 878 | | 439 | YES | 850 / 425 |
| pH | SU | 1 | 6.0 – 9.0 | | 6.0 – 9.0 | NO | |
| BENZO(A)PYRENE | LBS/DAY | 1 | 0 | | 0 | NO | |
| FLUORIDE | LBS/DAY | 1 | 1.81 | | 0.804 | YES | 1.752 / 0.778 |
| ANTIMONY, TR | LBS/DAY | 1 | 0.06 | | 0.03 | YES | 0.057 / 0.025 |
| NICKEL, TR | LBS/DAY | 1 | 0.017 | | 0.011 | YES | 0.016 / 0.011 |
| ALUMINUM, TR | LBS/DAY | 1 | 0.19 | | 0.083 | YES | 0.180 / 0.080 |
| MONITORING FREQUENCY | Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below. | | | | | | |

* - Monitoring requirement only

Basis for Limitations Codes:

- | | |
|--|------------------------------------|
| 1. State or Federal Regulation/Law | 7. Antidegradation Policy |
| 2. Water Quality Standard (includes RPA) | 8. Water Quality Model |
| 3. Water Quality Based Effluent Limits | 9. Best Professional Judgment |
| 4. Lagoon Policy | 10. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy | 11. WET Test Policy |
| 6. Dissolved Oxygen Policy | |

OUTFALL #003 – DERIVATION AND DISCUSSION OF LIMITS:

This outfall is an internal compliance location from which effluent from this outfall flows to the Noranda Holding Pond prior to discharging from Outfall #004. Therefore, effluent limitations for this facility applicable Technology-based Effluent Limits or rather ELGs specific to this industry type.

As per [40 CFR 122.29(d)] New Source Performance Standards (NSPS) are not applicable to this outfall. NSPS ELG where promulgated on March 8, 1984, and outfall was in operation prior to this date. Meaning, [40 CFR 421.24 Standards of Performance for New Sources] is not applicable.

Therefore, effluent limitations for this internal compliance point shall be based on Best Practical Control Technology (BPT) [40 CFR 421.22]; and Best Available Technology (BAT) [40 CFR 421.23]. If there is conflict for any pollutant parameter between BPT and BAT, then the more protective shall supersede, which should be BAT.

Maximum Monthly Average Pounds Rod Production = 292813 lbs rods produced October 2005 per renewal application.

- **Flow.** In accordance with [40 CFR 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.
- **Total Suspended Solids (TSS).** Per BPT [40 CFR 421.22] the Maximum for 1 day is 3.0 lbs/thousand lbs of product; Maximum for monthly average is 1.5 lbs/million lbs of anodes cast. Calculations as follows:

$$\text{MDL} = (292813 \text{ lbs/day}) \times (3.0 \text{ lbs}/1000000 \text{ lbs}) = 878 \text{ lbs/day}$$

$$\text{AML} = (292813 \text{ lbs/day}) \times (1.5 \text{ lbs}/1000000 \text{ lbs}) = 439 \text{ lbs/day}$$

- **pH.** Effluent limitation for pH of 6.0 to 9.0 (standard pH units), per [40 CFR 421.22].
- **Benzo(a)pyrene.** Per BAT [40 CFR 421.23(r)], there shall be no discharge allowance for this pollutant.

- **Fluoride.** Per BPT [40 CFR 421.22] the Maximum for 1 day is 2.0 lbs/thousand lbs of product; Maximum for monthly average is 1.0 lbs/thousand lbs of product. Additionally, per BAT [40 CFR 421.23(r)] the Maximum for 1 day is 6.188 lbs/million lbs of rods casted; Maximum for monthly average is 2.746 lbs/million lbs of rods casted. Calculations as follows:

BPT

$$\text{MDL} = (292813 \text{ lbs/day}) \times (2.0 \text{ lbs}/1000 \text{ lbs}) = 586 \text{ lbs/day}$$

$$\text{AML} = (292813 \text{ lbs/day}) \times (1.0 \text{ lbs}/1000 \text{ lbs}) = 293 \text{ lbs/day}$$

BAT

$$\text{MDL} = (292813 \text{ lbs/day}) \times (6.188 \text{ lbs}/1000000 \text{ lbs}) = 1.81 \text{ lbs/day}$$

$$\text{AML} = (292813 \text{ lbs/day}) \times (2.746 \text{ lbs}/1000000 \text{ lbs}) = 0.804 \text{ lbs/day}$$

BAT < BPT. BAT is more protective than BPT; therefore, BAT limitations are applicable.

- **Antimony, Total Recoverable.** Per BAT [40 CFR 421.23(r)] the Maximum for 1 day is 0.201 lbs/million lbs of rods casted; Maximum for monthly average is 0.089 lbs/million lbs of rods casted. Calculations as follows:

$$\text{MDL} = (292813 \text{ lbs/day}) \times (0.201 \text{ lbs}/1000000 \text{ lbs}) = 0.06 \text{ lbs/day}$$

$$\text{AML} = (292813 \text{ lbs/day}) \times (0.089 \text{ lbs}/1000000 \text{ lbs}) = 0.03 \text{ lbs/day}$$

- **Nickel, Total Recoverable.** Per BAT [40 CFR 421.23(r)] the Maximum for 1 day is 0.057 lbs/million lbs of rods casted; Maximum for monthly average is 0.038 lbs/million lbs of rods casted. Calculations as follows:

$$\text{MDL} = (292813 \text{ lbs/day}) \times (0.057 \text{ lbs}/1000000 \text{ lbs}) = 0.017 \text{ lbs/day}$$

$$\text{AML} = (292813 \text{ lbs/day}) \times (0.038 \text{ lbs}/1000000 \text{ lbs}) = 0.011 \text{ lbs/day}$$

- **Aluminum, Total Recoverable.** Per BAT [40 CFR 421.23(r)] the Maximum for 1 day is 0.636 lbs/million lbs of rods casted; Maximum for monthly average is 0.282 lbs/million lbs of rods casted. Calculations as follows:

$$\text{MDL} = (292813 \text{ lbs/day}) \times (0.636 \text{ lbs}/1000000 \text{ lbs}) = 0.19 \text{ lbs/day}$$

$$\text{AML} = (292813 \text{ lbs/day}) \times (0.282 \text{ lbs}/1000000 \text{ lbs}) = 0.083 \text{ lbs/day}$$

- **Minimum Sampling and Reporting Frequency Requirements.** Sampling and reporting frequency requirements have been retained from previous state operating permit except for flow. Flow is being increased to: (1) ensure data entry QA/QC – staff drafting this operating permit and fact sheet have discovered differences between actual DMRs and data entered into WQIS; and (2) to help determine more appropriate and accurate effluent limitations for Outfall #004.

Outfall #004 – Main Facility Outfall

EFFLUENT LIMITATIONS TABLE:

| PARAMETER | UNIT | BASIS FOR LIMITS | DAILY MAXIMUM | WEEKLY AVERAGE | MONTHLY AVERAGE | MODIFIED | PREVIOUS PERMIT LIMITATIONS |
|------------------------------------|--|------------------|---|----------------|-----------------|----------|-----------------------------|
| FLOW | MGD | 1 | * | | * | NO | |
| TSS | mg/L | 1/9 | 100 | | 50 | YES | 120 / 80 |
| pH | SU | 1/3 | 6.5 – 9.0 | | 6.5 – 9.0 | YES | 6.0 – 9.0 |
| TEMPERATURE | °F | 1/3 | 90 | | 90 | NO | |
| OIL & GREASE | mg/L | 1/3 | 15 | | 10 | NO | |
| FLUORIDE | mg/L | 1/3/9 | * | | * | YES | 40 / 27 |
| BENZO(A)PYRENE | mg/L | 1/3/9 | * | | * | YES | 0.0005 / 0.0003 |
| CYANIDE, AMENABLE TO CHLORINATION | mg/L | 2/3 | * | | * | YES | 220 / 147 |
| ANTIMONY, TOTAL RECOVERABLE | mg/L | 1/3/9 | * | | * | YES | 60 / 40 |
| NICKEL, TOTAL RECOVERABLE | mg/L | 1/3/9 | * | | * | YES | 1.0 / 670 |
| ALUMINUM, TOTAL RECOVERABLE | mg/L | 1/2/3 | 7.5 | | 3.5 | YES | 7.5 / 5.0 |
| WHOLE EFFLUENT TOXICITY (WET) TEST | % Survival | 11 | Please see WET Test in the Derivation and Discussion Section below. | | | | |
| MONITORING FREQUENCY | Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below. | | | | | | |

* - Monitoring requirement only.

Basis for Limitations Codes:

- | | |
|--|------------------------------------|
| 1. State or Federal Regulation/Law (includes ELGs) | 7. Antidegradation Policy |
| 2. Water Quality Standard (includes RPA) | 8. Water Quality Model |
| 3. Water Quality Based Effluent Limits | 9. Best Professional Judgment |
| 4. Lagoon Policy | 10. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy | 11. WET Test Policy |
| 6. Dissolved Oxygen Policy | 12. Antidegradation Review |

OUTFALL #004 – DERIVATION AND DISCUSSION OF LIMITS:

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.
- **Total Suspended Solids (TSS).** Effluent limitations of 100 mg/L as a Daily Maximum and 50 mg/L as a Monthly Average are applicable to this facility and are consistent with other facilities with storm water run-off discharges.
- **pH.** pH effluent limitations of 6.5 – 9.0 per [10 CSR 20-7.031(4)(E)] is applicable. In addition, pH has categorical effluent limitation; however, it is staff’s best professional judgment that the pH limitation ranges as established in the Missouri WQS contained herein this discussion is protective of the receiving streams water quality. Therefore, pH will not be compared in the below derivation and discussion section **COMPARISON OF WATER QUALITY BASED EFFLUENT LIMITS VS. CATEGORICAL LIMITS.**
- **Temperature.** 90°F per [10 CSR 20-7.031(4)(D)1.] and retained from the previous state operating permit. However,
- **Oil & Grease.** This is a conventional pollutant, Protection of AQL is 15 mg/L as a MDL and 10 mg/L as an AML. In addition, Oil & Grease has categorical effluent limitations; however, it is staff’s best professional judgment that the Oil & Grease limitation contained herein this discussion is protective of the receiving stream’s water quality. Therefore, Oil & Grease will not be compared in the below derivation and discussion section **COMPARISON OF WATER QUALITY BASED EFFLUENT LIMITS VS. CATEGORICAL LIMITS.**

- **Fluoride.** Protection of DWS and LWW CCC = 4 mg/L. Background Fluoride obtained from USGS Gauging Station Mississippi River @ Thebes = 0.26 mg/L. In addition and as previously discussed, a RPA was not conducted for Fluoride; however, submitted DMR data was utilized to calculate an appropriate and applicable CV value of 0.161.

Chronic WLA: $C_e = ((1.077 + 26923.5)4 - (26923.5 * 0.26))/1.077$
 $C_e = 93499 \text{ mg/L}$

$LTA_c = 93499 (0.832) = 77791 \text{ mg/L}$ [CV = 0.161, 99th Percentile]

MDL = 77791 (1.43) = 111241 mg/L [CV = 0.161, 99th Percentile]
 AML = 77791 (1.14) = 88682 mg/L [CV = 0.161, 95th Percentile, n = 4]

- **Benzo(a)pyrene.** Protection of HHF CCC = 0.049 µg/L. Background could not be determined; therefore, Benzo(a)pyrene = 0.0

Chronic WLA: $C_e = ((1.077 + 26923.5)0.049 - (26923 * 0.0))/1.077$
 $C_e = 1225 \text{ µg/L}$

$LTA_c = 1225 (0.527) = 646 \text{ µg/L}$ [CV = 0.6, 99th Percentile]

MDL = 646 (3.11) = 2009 µg/L [CV = 0.6, 99th Percentile]
 AML = 646 (1.55) = 1001 µg/L [CV = 0.6, 95th Percentile, n = 4]

- **Cyanide, Amenable to Chlorination.** Staff conducted an RPA on Cyanide and determined that Cyanide does not have a reasonable potential to exceed Missouri WQS; therefore, the effluent limitations will be reduced to a monitoring only requirement.

Metals

Effluent limitations for total recoverable metals were developed using methods and procedures outlined in EPA/505/2-90-001 and “The Metals Translator: Guidance For Calculating A Total Recoverable Permit Limit From A Dissolved Criterion” (EPA 823-B-96-007). General warm-water fishery criteria apply and water hardness = 162 mg/L.

Due to the absence of contemporaneous effluent and instream data for total recoverable metals, dissolved metals, hardness, and total suspended solids with which to calculate metals translators, partitioning between the dissolved and absorbed phases was assumed to be minimal (Section 5.7.3, EPA/505/2-90-001). Freshwater criteria conversion factors for dissolved metals were used as the metals translator as recommended in guidance (Section 1.3, 1.5.3, and Table 1, EPA 823-B-96-007). If concurrent site-specific data for total recoverable metals, dissolved metals, hardness, and total suspended solids are provided to the department, partitioning evaluations may be considered and site-specific translators developed.

| METAL | CONVERSION FACTORS | |
|----------|--------------------|---------|
| | ACUTE | CHRONIC |
| Antimony | N/A | N/A |
| Nickel | 0.998 | 0.997 |
| Aluminum | N/A | N/A |

Values calculated using equation found in Section 1.3 of EPA 823-B-96-007 and hardness = 162 mg/L.

- **Antimony, Total Recoverable.** Protection of DWS CCC = 6 µg/L, no Acute Criteria. Background Antimony could not be determined; therefore it is = 0.0 µg/L. In addition and as previously discussed, a RPA was not conducted for Antimony, Total Recoverable because it is a categorical pollutant; however, submitted DMR data was utilized to calculate an appropriate and applicable CV value of 0.381.

$$\text{Chronic WLA: } C_e = ((1.077 + 26923.5)6 - (26923 * 0.0))/1.077$$
$$C_e = 149998 \text{ µg/L}$$

$$LTA_c = 149998 (0.656) = \mathbf{98399 \text{ µg/L}} \quad [\text{CV} = 0.381, 99^{\text{th}} \text{ Percentile}]$$

$$\text{MDL} = 98399 (2.20) = 216478 \text{ µg/L} \quad [\text{CV} = 0.381, 99^{\text{th}} \text{ Percentile}]$$

$$\text{AML} = 98399 (1.34) = 131855 \text{ µg/L} \quad [\text{CV} = 0.381, 95^{\text{th}} \text{ Percentile}, n = 4]$$

- **Nickel, Total Recoverable.** Protection of AQL CCC = 78 µg/L, CMC = 705 µg/L. Background Total Recoverable Nickel obtained from USGS Gauging Station Mississippi River @ Thebes = 33.7 µg/L. In addition and as previously discussed, a RPA was not conducted for Nickel, Total Recoverable because it is a categorical pollutant; however, submitted DMR data was utilized to calculate an appropriate and applicable CV value of 0.983.

$$\text{Chronic} = 78/0.997 = 78.2 \text{ µg/L}$$
$$\text{Acute} = 705/0.998 = 706.4 \text{ µg/L}$$

$$\text{Chronic WLA: } C_e = ((1.077 + 26923.5)78.2 - (26923.5 * 33.7))/1.077$$
$$C_e = 1.1 \times 10^6 \text{ µg/L}$$

$$\text{Acute WLA: } C_e = ((1.077 + 10.77)706.4 - (10.77 * 33.7))/1.077$$
$$C_e = 7433 \text{ µg/L}$$

$$LTA_c = 1.1 \times 10^6 (0.378) = 415800 \text{ µg/L} \quad [\text{CV} = 0.983, 99^{\text{th}} \text{ Percentile}]$$

$$LTA_a = 7433 (0.207) = \mathbf{1538 \text{ µg/L}} \quad [\text{CV} = 0.983, 99^{\text{th}} \text{ Percentile}]$$

Use most protective number of LTA_c or LTA_a .

$$\text{MDL} = 1538 (4.83) = 7428 \text{ µg/L} \quad [\text{CV} = 0.983, 99^{\text{th}} \text{ Percentile}]$$

$$\text{AML} = 1538 (1.93) = 2968 \text{ µg/L} \quad [\text{CV} = 0.983, 95^{\text{th}} \text{ Percentile}, n = 4]$$

- **Aluminum, Total Recoverable.** Protection of AQL CMC = 750 µg/L, no CCC. Background Total Recoverable Aluminum obtained from USGS Gauging Station Mississippi River @ Thebes = 77.4 µg/L. In addition and as previously discussed, a RPA was not conducted for Aluminum, Total Recoverable because it is a categorical pollutant; however, submitted DMR data was utilized to calculate an appropriate and applicable CV value of 0.699.

$$\text{Acute WLA: } C_e = ((1.077 + 10.77)750 - (10.77 * 77.4))/1.077$$
$$C_e = 7476 \text{ µg/L}$$

$$LTA_a = 7476 (0.281) = \mathbf{2101 \text{ µg/L}} \quad [\text{CV} = 0.699, 99^{\text{th}} \text{ Percentile}]$$

$$\text{MDL} = 2101 (3.55) = 7458 \text{ µg/L} \quad [\text{CV} = 0.699, 99^{\text{th}} \text{ Percentile}]$$

$$\text{AML} = 2101 (1.65) = 3466 \text{ µg/L} \quad [\text{CV} = 0.699, 95^{\text{th}} \text{ Percentile}, n = 4]$$

- **WET Test.** WET Testing schedules and intervals are established in accordance with the department’s Permit Manual; Section 5.2 *Effluent Limits / WET Testing for Compliance Bio-monitoring*. It is recommended that WET testing be conducted during the period of lowest stream flow.

- Chronic
- Acute

No less than ONCE/PERMIT CYCLE:

- Municipality or domestic facility with a design flow $\geq 22,500$ gpd, but less than 1.0 MGD.
- Other, please justify.

No less than ONCE/YEAR:

- Facility is designated as a Major facility or has a design flow ≥ 1.0 MGD.
- Facility continuously or routinely exceeds their design flow.
- Facility exceeds its design population equivalent (PE) for BOD₅ whether or not its design flow is being exceeded.
- Facility has Water Quality-based effluent limitations for toxic substances (other than NH₃).

No less than TWICE/YEAR:

- Facility is subject to production processes alterations throughout the year.
- Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.
- Facility has been granted seasonal relief of numeric limitations.

Acute AEC% = $((\text{design flow}_{\text{cfs}} + \text{ZID}_{7\text{Q}10}) / \text{design flow}_{\text{cfs}})^{-1}] \times 100 = \#\%$

Acute AEC% = $((1.077_{\text{cfs}} + 10.77) / 1.077_{\text{cfs}})^{-1}] \times 100 = 9.1\%$

The multiple dilutions shall be as follows: 50%, 25%, **9.1%**, 5%, & 0%.

- **COMPARISON OF WATER QUALITY BASED EFFLUENT LIMITS VS. TECHNOLOGY BASED EFFLUENT LIMITATIONS:**

Outfall #004 collects effluent from three (3) types of sources: (1) industrial process wastewater from Outfalls #001, #002, #003, and #006; (2) storm water run-off from the entire facility; and (3) non-contact cooling water. As indicated above, this outfall discharges to the Mississippi River. Due to the fact that the Technology-based Effluent Limitations (TBELs) are controlled at their respective outfall, ELG will not be applied (i.e. compared) to the above calculated Water Quality-based Effluent Limits (WQBEL). However, the WQBEL will be compared to TBELs to show that TBELs limit (i.e. control) pollutants specific to this type of industry.

TABLE A

| Parameter in lbs/day | OUTFALLS | | | | | | | |
|---------------------------|----------|------|-------|-------|----------|-------|--------|-------|
| | 001 | | 002 | | 003 | | 006 | |
| | MDL | AML | MDL | AML | MDL | AML | MDL | AML |
| TSS | 2668 | 1334 | 5.13 | 4.11 | 878 | 439 | 0.3 | 0.23 |
| Benzo(a) pyrene | 0 | 0 | 0.011 | 0.005 | 0 | 0 | 0 | 0 |
| Fluoride | 71.1 | 31.2 | 20.4 | 9.05 | 1.81 | 0.804 | 1.13 | 0.5 |
| SB, TR | 2.3 | 1 | 0.66 | 0.3 | 0.06 | 0.03 | 0.04 | 0.02 |
| Nl, TR | 0.65 | 0.44 | 0.19 | 0.13 | 0.017 | 0.011 | 0.01 | 0.007 |
| AL, TR | 7.2 | 3.2 | 2.1 | 0.93 | 0.19 | 0.083 | 0.12 | 0.05 |
| Average Flow (MGD) | 0.027472 | | 0.012 | | 0.010081 | | 0.0015 | |

Table A shows each of the applicable TBEL (in lbs/day) for each of the categorical pollutants respective of each outfall.

TABLE B

| Parameter | Sum of MDL (in lbs/day) | Sum of AML (in lbs/day) |
|----------------------|-------------------------|-------------------------|
| TSS | 3551.43 | 1777.34 |
| Benzo(a)pyrene | 0.011 | 0.005 |
| Fluoride | 94.44 | 41.554 |
| SB, TR | 3.06 | 1.35 |
| NI, TR | 0.867 | 0.588 |
| AL, TR | 9.61 | 4.263 |
| Sum of Flow (in MGD) | 0.051053 | |

Table B shows the sum of these TBELs (in lbs/day) for all appropriate outfalls for each categorical pollutant.

TABLE C

| Parameter | Sum of MDLs (in mg/L) | Sum of AMLs (in mg/L) |
|----------------|-----------------------|-----------------------|
| TSS | 8341 | 4174 |
| Benzo(a)pyrene | 0.025 | 0.012 |
| Fluoride | 222 | 97.7 |
| SB, TR | 7.2 | 3.2 |
| NI, TR | 2.0 | 1.4 |
| AL, TR | 22.6 | 10.0 |

Table C documents what these TBELs would be in mg/L by using the following calculations:

Given: Load (lbs/day) = [(Flow_{MGD}) * (Concentration_{mg/L}) * (8.34_{(lb/MG)/mg/L})]

Where: 8.34_{(lb/MG)/mg/L} is the conversion factor from lbs/day to mg/L

Thus: Concentration_{mg/L} = [(Load_{lbs/day}) ÷ ((Flow_{MGD}) * (8.34_{(lb/MG)/mg/L}))]

A comparison must be made of all calculated QBEL and TBEL for the categorical pollutants. The most protective limit shall be established in this operating permit. The limitations highlighted in **bold** will be established in the operating permit.

TABLE D

| Parameter | Water Quality Based Effluent Limits in mg/L (MDL / AML) | Categorical Limits in mg/L (MDL / AML) |
|----------------|---|--|
| TSS | 100 / 50 (note 1) | 2339.73 / 1170.9 |
| Benzo(a)pyrene | 2009 / 1001 | 0.025/0.012 |
| Fluoride | 111241 / 88682 | 222 / 97.7 |
| SB, TR | 216.5 / 131.8 | 7.2 / 3.2 |
| NI, TR | 7.4 / 3.0 | 2.0 / 1.4 |
| AL, TR | 7.5 / 3.5 | 22.6 / 10 |

Note 1 – TSS is not a QBEL, rather it is a storm water run-off effluent limitation

For the parameters who's TBELs are more protective as compared to QBEL, a monitoring only requirement will be established. Aluminum, Total Recoverable shall have an effluent limit.

- **Minimum Sampling and Reporting Frequency Requirements.** The sampling frequency of twice per month shall be reduced to once per month. Based on staff best professional judgment of the development of a Minimum Sampling and Reporting Requirement. At this time, there is no known regulated or guidance requirement for this type of industry and the establishment of a minimum reporting and sampling requirement. Therefore, staff shall implement 10 CSR 20-7.015(2) minimum reporting and sampling requirement, which is based on one sample per 50,000 gpd. Thus:

695,000 gpd / 50,000 = 13.9 ~14 samples per year.

14 samples per year / 12 months per year = 1.2 rounded down to 1.0 sample per month.

Outfall #005 – Emergency Discharge Outfall

EFFLUENT LIMITATIONS TABLE:

| PARAMETER | UNIT | BASIS FOR LIMITS | DAILY MAXIMUM | WEEKLY AVERAGE | MONTHLY AVERAGE | MODIFIED | PREVIOUS PERMIT LIMITATIONS |
|------------------------------------|--|------------------|---|----------------|-----------------|----------|-----------------------------|
| FLOW | MGD | 1 | * | | * | NO | |
| TSS | mg/L | 1/9 | 100 | | 50 | YES | 120 / 80 |
| pH | SU | 1/3 | 6.5 – 9.0 | | 6.5 – 9.0 | YES | 6.0 – 9.0 |
| OIL & GREASE | mg/L | 1/3 | 15 | | 10 | YES | 20 / 15 |
| FLUORIDE | mg/L | 1/2/3 | 6.5 | | 3.3 | YES | * / * |
| BENZO(A)PYRENE | µg/L | 1/2/3 | 0.09 | | 0.05 | YES | * / * |
| CYANIDE, AMENABLE TO CHLORINATION | µg/L | 2/3 | 22.1 | | 11 | YES | * / * |
| ANTIMONY, TOTAL RECOVERABLE | mg/L | 1/2/3 | 7.0 | | 3.5 | YES | * / * |
| NICKEL, TOTAL RECOVERABLE | µg/L | 1/2/3 | 706 | | 352 | YES | * / * |
| ALUMINUM, TOTAL RECOVERABLE | µg/L | 1/2/3 | 750 | | 374 | YES | * / * |
| WHOLE EFFLUENT TOXICITY (WET) TEST | % Survival | 11 | Please see WET Test in the Derivation and Discussion Section below. | | | | |
| MONITORING FREQUENCY | Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below. | | | | | | |

* - Monitoring requirement only.

Basis for Limitations Codes:

- | | |
|--|------------------------------------|
| 1. State or Federal Regulation/Law (includes ELGs) | 7. Antidegradation Policy |
| 2. Water Quality Standard (includes RPA) | 8. Water Quality Model |
| 3. Water Quality Based Effluent Limits | 9. Best Professional Judgment |
| 4. Lagoon Policy | 10. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy | 11. WET Test Policy |
| 6. Dissolved Oxygen Policy | 12. Antidegradation Review |

OUTFALL #005 – DERIVATION AND DISCUSSION OF LIMITS:

There has only been one (1) discharge from this outfall in the past five (5) years. Additionally, the applicant has indicated that the effluent from Outfall #005 is the same as Outfall #004. However, the receiving stream is an unclassified tributary meaning that Mixing Considerations are not applicable. Additionally, WQBEL are applicable vs. TBELs.

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.
- **Total Suspended Solids (TSS).** Effluent limitations of 100 mg/L as a Daily Maximum and 50 mg/L as a Monthly Average are applicable to this facility and are consistent with other facilities with storm water run-off discharges.
- **pH.** pH effluent limitations of 6.5 – 9.0 per [10 CSR 20-7.031(4)(E)] is applicable.
- **Oil & Grease.** This is a conventional pollutant, Protection of AQL is 15 mg/L as a MDL and 10 mg/L as an AML.

- **Fluoride.** Receiving stream is unclassified; therefore, 10 CSR 20-7.031(3) General Criteria is applicable. Per 10 CSR 20-7.031(3)(F) there shall be no acute toxicity to livestock or wildlife watering. Protection of LWW = 4 mg/L. The receiving stream is an unclassified water body; therefore mixing considerations are not allowed. Thus, WLA = appropriate criteria. CV value is the default of 0.6.

$$WLA = 4 \text{ mg/L}$$

$$LTA_{LWW} = 4.0 (0.527) = \mathbf{2.1 \text{ mg/L}} \quad [CV = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$MDL = 2.1 (3.11) = 6.5 \text{ mg/L} \quad [CV = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$AML = 2.1 (1.55) = 3.3 \text{ mg/L} \quad [CV = 0.6, 95^{\text{th}} \text{ Percentile, } n = 4]$$

- **Benzo(a)pyrene.** Receiving stream is unclassified; therefore, 10 CSR 20-7.031(3) General Criteria is applicable. Per 10 CSR 20-7.031(3)(D) waters shall be free from substances or conditions in sufficient amount to result in toxicity to human, animal or aquatic life. The receiving stream flows approximately 15.5 miles before becoming a classified stream with Protection of AQL (including HHF) and LWW. Therefore, Protection of HHF is applicable. HHF = 0.049 $\mu\text{g/L}$. The receiving stream is an unclassified water body; therefore mixing considerations are not allowed. Thus, WLA = appropriate criteria. CV value is the default of 0.6.

$$WLA = 0.049 \text{ } \mu\text{g/L}$$

$$LTA_{HHF} = 0.049 (0.527) = \mathbf{0.03 \text{ } \mu\text{g/L}} \quad [CV = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$MDL = 0.03 (3.11) = 0.09 \text{ } \mu\text{g/L} \quad [CV = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$AML = 0.03 (1.55) = 0.05 \text{ } \mu\text{g/L} \quad [CV = 0.6, 95^{\text{th}} \text{ Percentile, } n = 4]$$

- **Cyanide, Amenable to Chlorination.** Staff conducted an RPA on Cyanide and determined Cyanide has a reasonable potential to exceed Missouri's WQS for appropriate criteria for the Mississippi River. The receiving stream is an unclassified stream with no dilution unlike the Mississippi River; therefore, it is staff best professional judgment that there is a reasonable potential for Cyanide to violate the receiving stream's water quality. 10 CSR 20-7.031(3) General Criteria is applicable and per 10 CSR 20-7.031(3)(D) waters shall be free from substances or conditions in sufficient amount to result in toxicity to human, animal or aquatic life. The receiving stream flows approximately 15.5 miles before becoming a classified stream with Protection of AQL (including HHF) and LWW. Therefore, Protection of AQL (Acute Criteria) is applicable. AQL CMC = 22 $\mu\text{g/L}$. The receiving stream is an unclassified water body; therefore mixing considerations are not allowed. Thus, WLA = appropriate criteria. CV value is the default of 0.6.

$$WLA_a = 22 \text{ } \mu\text{g/L}$$

$$LTA_a = 22 (0.321) = \mathbf{7.1 \text{ } \mu\text{g/L}} \quad [CV = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$MDL = 7.1 (3.11) = 22.1 \text{ } \mu\text{g/L} \quad [CV = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$AML = 7.1 (1.55) = 11.0 \text{ } \mu\text{g/L} \quad [CV = 0.6, 95^{\text{th}} \text{ Percentile, } n = 4]$$

Metals

Effluent limitations for total recoverable metals were developed using methods and procedures outlined in EPA/505/2-90-001 and "The Metals Translator: Guidance For Calculating A Total Recoverable Permit Limit From A Dissolved Criterion" (EPA 823-B-96-007). General warm-water fishery criteria apply and water hardness = 162 mg/L.

Due to the absence of contemporaneous effluent and instream data for total recoverable metals, dissolved metals, hardness, and total suspended solids with which to calculate metals translators, partitioning between the dissolved and absorbed phases was assumed to be minimal (Section 5.7.3, EPA/505/2-90-001). Freshwater criteria conversion factors for dissolved metals were used as the metals translator as recommended in guidance (Section 1.3, 1.5.3, and Table 1, EPA 823-B-96-007). If concurrent site-specific data for total recoverable metals, dissolved metals, hardness, and total suspended solids are provided to the department, partitioning evaluations may be considered and site-specific translators developed.

| METAL | CONVERSION FACTORS | |
|----------|--------------------|---------|
| | ACUTE | CHRONIC |
| Antimony | N/A | N/A |
| Nickel | 0.998 | 0.997 |
| Aluminum | N/A | N/A |

Values calculated using equation found in Section 1.3 of EPA 823-B-96-007 and hardness = 162 mg/L.

- Antimony, Total Recoverable.** Receiving stream is unclassified; therefore, 10 CSR 20-7.031(3) General Criteria is applicable. Per 10 CSR 20-7.031(3)(D) waters shall be free from substances or conditions in sufficient amount to result in toxicity to human, animal or aquatic life. The receiving stream flows approximately 15.5 miles before becoming a classified stream with Protection of AQL (including HHF) and LWW. Therefore, Protection of HHF is applicable. HHF = 4300 µg/L. The receiving stream is an unclassified water body; therefore mixing considerations are not allowed. Thus, WLA = appropriate criteria. CV value is the default of 0.6.

$$WLA = 4300 \mu\text{g/L}$$

$$LTA_{\text{HHF}} = 4300 (0.527) = 2266 \mu\text{g/L} \quad [\text{CV} = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$\text{MDL} = 2266 (3.11) = 7047 \mu\text{g/L} \quad [\text{CV} = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$\text{AML} = 2266 (1.55) = 3512 \mu\text{g/L} \quad [\text{CV} = 0.6, 95^{\text{th}} \text{ Percentile}, n = 4]$$

- Nickel, Total Recoverable.** Receiving stream is unclassified; therefore, 10 CSR 20-7.031(3) General Criteria is applicable. Per 10 CSR 20-7.031(3)(D) waters shall be free from substances or conditions in sufficient amount to result in toxicity to human, animal or aquatic life. The receiving stream flows approximately 15.5 miles before becoming a classified stream with Protection of AQL (including HHF) and LWW. Therefore, Protection of AQL (Acute Criteria) is applicable. AQL CMC = 705 µg/L. The receiving stream is an unclassified water body; therefore mixing considerations are not allowed. Thus, WLA = appropriate criteria. CV value is the default of 0.6.

$$\text{Acute} = 705/0.998 = 706.4 \mu\text{g/L}$$

$$WLA_a = 706.4 \mu\text{g/L}$$

$$LTA_a = 706.4 (0.321) = 227 \mu\text{g/L} \quad [\text{CV} = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$\text{MDL} = 227 (3.11) = 706 \mu\text{g/L} \quad [\text{CV} = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$\text{AML} = 227 (1.55) = 352 \mu\text{g/L} \quad [\text{CV} = 0.6, 95^{\text{th}} \text{ Percentile}, n = 4]$$

- Aluminum, Total Recoverable.** Receiving stream is unclassified; therefore, 10 CSR 20-7.031(3) General Criteria is applicable. Per 10 CSR 20-7.031(3)(D) waters shall be free from substances or conditions in sufficient amount to result in toxicity to human, animal or aquatic life. The receiving stream flows approximately 15.5 miles before becoming a classified stream with Protection of AQL (including HHF) and LWW. Therefore, Protection of AQL (Acute Criteria) is applicable. AQL CMC = 750 µg/L. The receiving stream is an unclassified water body; therefore mixing considerations are not allowed. Thus, WLA = appropriate criteria. CV value is the default of 0.6.

$$WLA_a = 750 \mu\text{g/L}$$

$$LTA_a = 750 (0.321) = 241 \mu\text{g/L} \quad [\text{CV} = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$\text{MDL} = 241 (3.11) = 750 \mu\text{g/L} \quad [\text{CV} = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$\text{AML} = 241 (1.55) = 374 \mu\text{g/L} \quad [\text{CV} = 0.6, 95^{\text{th}} \text{ Percentile}, n = 4]$$

- **WET Test.** WET Testing schedules and intervals are established in accordance with the department's Permit Manual; Section 5.2 *Effluent Limits / WET Testing for Compliance Bio-monitoring*. It is recommended that WET testing be conducted during the period of lowest stream flow.

- Chronic
- Acute

No less than ONCE/PERMIT CYCLE:

- Municipality or domestic facility with a design flow $\geq 22,500$ gpd, but less than 1.0 MGD.
- Other, please justify.

No less than ONCE/YEAR:

- Facility is designated as a Major facility or has a design flow ≥ 1.0 MGD.
- Facility continuously or routinely exceeds their design flow.
- Facility exceeds its design population equivalent (PE) for BOD₅ whether or not its design flow is being exceeded.
- Facility has Water Quality-based effluent limitations for toxic substances (other than NH₃).

No less than TWICE/YEAR:

- Facility is subject to production processes alterations throughout the year.
- Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.
- Facility has been granted seasonal relief of numeric limitations.

$$\text{Acute AEC\%} = ((\text{design flow}_{\text{cfs}} + \text{ZID}_{7\text{Q}10}) / \text{design flow}_{\text{cfs}})^{-1}] \times 100 = \#\#\%$$

$$\text{Acute AEC\%} = ((1.9127_{\text{cfs}} + 0.0_{\text{cfs}}) / 1.9127_{\text{cfs}})^{-1}] \times 100 = 100\%$$

The multiple dilutions shall be as follows: 100%, 50%, 25%, 12.5%, and 6.25%.

A review of the DMRs in WQIS for Outfall #005 from 1994 to present only documented two (2) discharges. Therefore, it is staff best professional judgment that WET testing only be required once per permit cycle.

Outfall #006 – Continuous Rod Casting (Rod Mill #2) – Internal Compliance Location

EFFLUENT LIMITATIONS TABLE:

| PARAMETER | UNIT | BASIS FOR LIMITS | DAILY MAXIMUM | WEEKLY AVERAGE | MONTHLY AVERAGE | MODIFIED | PREVIOUS PERMIT LIMITATIONS |
|----------------------|--|------------------|---------------|----------------|-----------------|----------|-----------------------------|
| FLOW | MGD | 1 | * | | * | NO | |
| TSS | LBS/DAY | 1 | 0.3 | | 0.23 | YES | 0.251 / 0.201 |
| OIL & GREASE | LBS/DAY | 1 | 0.19 | | 0.19 | YES | 0.17 / 0.17 |
| pH | SU | 1 | 7.0 – 10.0 | | 7.0 -10.0 | NO | |
| BENZO(A)PYRENE | LBS/DAY | 1 | 0 | | 0 | NO | ** |
| FLUORIDE | LBS/DAY | 1 | 1.13 | | 0.5 | YES | 0.997 / 0.442 |
| ANTIMONY, TR | LBS/DAY | 1 | 0.04 | | 0.02 | YES | 0.032 / 0.014 |
| NICKEL, TR | LBS/DAY | 1 | 0.01 | | 0.007 | YES | 0.009 / 0.006 |
| ALUMINUM, TR | LBS/DAY | 1 | 0.12 | | 0.05 | YES | 0.102 / 0.045 |
| MONITORING FREQUENCY | Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below. | | | | | | |

* - Monitoring requirement only

** - Not established in previous operating permit

Basis for Limitations Codes:

- | | |
|--|------------------------------------|
| 1. State or Federal Regulation/Law | 7. Antidegradation Policy |
| 2. Water Quality Standard (includes RPA) | 8. Water Quality Model |
| 3. Water Quality Based Effluent Limits | 9. Best Professional Judgment |
| 4. Lagoon Policy | 10. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy | 11. WET Test Policy |
| 6. Dissolved Oxygen Policy | |

OUTFALL #006 – DERIVATION AND DISCUSSION OF LIMITS:

This outfall is an internal compliance location from which effluent from this outfall flows to the Noranda Holding Pond prior to discharging from Outfall #004. Therefore, effluent limitations for this facility applicable Technology-based Effluent Limits or rather ELGs specific to this industry type.

As per [40 CFR 122.29(d)] New Source Performance Standards (NSPS) are applicable to this outfall. NSPS ELG where promulgated on March 8, 1984, and this outfall was proposed during the previous renewal application. Specifically, [40 CFR 421.24(1)], is applicable.

Maximum Monthly Average Pounds Rod Production = 182217 lbs rods produced per renewal application.

- Flow.** In accordance with [40 CFR 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.
- Total Suspended Solids (TSS).** Per NSPS [40 CFR 421.24(1)] the Maximum for 1 day is 1.560 lbs/million lbs of rod casting; Maximum for monthly average is 1.248 lbs/million lbs of rod casting. Calculations as follows:

 $MDL = (182217 \text{ lbs/day}) \times (1.560 \text{ lbs}/1000000 \text{ lbs}) = 0.3 \text{ lbs/day}$
 $AML = (182217 \text{ lbs/day}) \times (1.248 \text{ lbs}/1000000 \text{ lbs}) = 0.23 \text{ lbs/day}$
- Oil & Grease.** Per NSPS [40 CFR 421.24(1)] the Maximum for 1 day is 1.040 lbs/million lbs of rod casting; Maximum for monthly average is 1.040 lbs/million lbs of rod casting. Calculations as follows:

 $MDL \ \& \ AML = (182217 \text{ lbs/day}) \times (1.040 \text{ lbs}/1000000 \text{ lbs}) = 0.19 \text{ lbs/day}$
- pH.** Effluent limitation for pH of 6.0 to 9.0 (standard pH units), per [40 CFR 421.22].
- Benzo(a)pyrene.** Per BAT [40 CFR 421.23(r)], there shall be no discharge allowance for this pollutant.

- **Fluoride.** Per NSPS [40 CFR 421.24(l)] the Maximum for 1 day is 6.188 lbs/million lbs of rod casting; Maximum for monthly average is 2.746 lbs/million lbs of rod casting. Calculations as follows:

$$\text{MDL} = (182217 \text{ lbs/day}) \times (6.188 \text{ lbs}/1000000 \text{ lbs}) = 1.13 \text{ lbs/day}$$

$$\text{AML} = (182217 \text{ lbs/day}) \times (2.746 \text{ lbs}/1000000 \text{ lbs}) = 0.5 \text{ lbs/day}$$

- **Antimony, Total Recoverable.** Per NSPS [40 CFR 421.24(l)] the Maximum for 1 day is 0.201 lbs/million lbs of rod casting; Maximum for monthly average is 0.089 lbs/million lbs of rod casting. Calculations as follows:

$$\text{MDL} = (182217 \text{ lbs/day}) \times (0.201 \text{ lbs}/1000000 \text{ lbs}) = 0.04 \text{ lbs/day}$$

$$\text{AML} = (182217 \text{ lbs/day}) \times (0.089 \text{ lbs}/1000000 \text{ lbs}) = 0.02 \text{ lbs/day}$$

- **Nickel, Total Recoverable.** Per NSPS [40 CFR 421.24(l)] the Maximum for 1 day is 0.057 lbs/million lbs of rod casting; Maximum for monthly average is 0.038 lbs/million lbs of rod casting. Calculations as follows:

$$\text{MDL} = (182217 \text{ lbs/day}) \times (0.057 \text{ lbs}/1000000 \text{ lbs}) = 0.01 \text{ lbs/day}$$

$$\text{AML} = (182217 \text{ lbs/day}) \times (0.038 \text{ lbs}/1000000 \text{ lbs}) = 0.007 \text{ lbs/day}$$

- **Aluminum, Total Recoverable.** Per NSPS [40 CFR 421.24(l)] the Maximum for 1 day is 0.636 lbs/million lbs of rod casting; Maximum for monthly average is 0.282 lbs/million lbs of rod casting. Calculations as follows:

$$\text{MDL} = (182217 \text{ lbs/day}) \times (0.636 \text{ lbs}/1000000 \text{ lbs}) = 0.12 \text{ lbs/day}$$

$$\text{AML} = (182217 \text{ lbs/day}) \times (0.282 \text{ lbs}/1000000 \text{ lbs}) = 0.05 \text{ lbs/day}$$

- **Minimum Sampling and Reporting Frequency Requirements.** Sampling and reporting frequency requirements have been retained from previous state operating permit except for flow. Flow is being increased to: (1) ensure data entry QA/QC – staff drafting this operating permit and fact sheet have discovered differences between actual DMRs and data entered into WQIS; and (2) to help determine more appropriate and accurate effluent limitations for Outfall #004.

Part VI – Administrative Requirements

On the basis of preliminary staff review and the application of applicable standards and regulations, the Department, as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions contained herein and within the operating permit. The proposed determinations are tentative pending public comment.

PUBLIC NOTICE:

As per the Missouri Clean Water Law, the Missouri Clean Water Commission, and the federal Clean Water Act, persons wishing to comment on Missouri State Operating Permits are directed to do so by a department approved Public Notice coversheet. This Public Notice coversheet is attached to a Missouri State Operating Permit during the Public Notice period.

- The Public Notice period for this operating permit is tentatively schedule to begin on January 30, 2009, or is in process. The below revision date of January 21, 2009, was due to comments received from Noranda during the drafting of this operating permit.

DATE OF FACT SHEET: DECEMBER 29, 2008; REVISED JANUARY 21, 2009

COMPLETED BY:

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Part VII – Appendices

APPENDIX A – RPA RESULTS:

OUTFALL #004 – MISSISSIPPI RIVER

| CONSTITUENT | CMC* | RWC ACUTE* | CCC* | RWC CHRONIC* | REASONABLE POTENTIAL | # OF SAMPLES** | CV*** |
|---------------------------------|------|------------|------|--------------|----------------------|----------------|-------|
| CYANIDE, TOTAL RECOVERABLE | 22 | 17.1 | 5 | 0.0 | NO | 35 | 5.548 |
| SELENIUM, TOTAL RECOVERABLE | N/A | N/A | 5 | 0.0 | NO | 1 | 0.6 |
| THALLIUM, TOTAL RECOVERABLE**** | N/A | N/A | 2 | 0.0 | NO | 1 | 0.6 |

N/A – Not Applicable

* - Units are (µg/L) unless otherwise noted.

** - If the number of samples is greater than 10, then the CV value must be used in the WQBEL for the applicable constituent.

*** - Coefficient of Variation (CV) is calculated by dividing the Mean of the sample by the Standard Deviation of the sample.

**** - The CCC for Thallium is actually a Protection of Drinking Water Supply criteria as there is no Protection of Aquatic Life Criteria and DWS is more stringent than HHF.

Reasonable Potential Analysis is conducted as per (TSD, EPA/505/2-90-001, Section 3.3.2).

A more detailed version including calculations of this RPA is available upon request.