LPDES PERMIT NO. LA0005606, AI No. 3420

LPDES FACT SHEET and RATIONALE
FOR THE DRAFT LOUISIANA POLLUTANT DISCHARGE ELIMINATION SYSTEM
(LPDES) PERMIT TO DISCHARGE TO WATERS OF LOUISIANA

I. Company/Facility Name: Ormet Primary Aluminum Corporation
Burnside Alumina Division
P.O. Box 1629
Burnside, Louisiana 70707-1629

II. Issuing Office: Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services
Post Office Box 4313
Baton Rouge, Louisiana 70821-4313

III. Prepared By: Christy Clark
Industrial Permits Section
Water Permits Division
Phone #: 225-219-3401
E-mail: christy.clark@la.gov

Date Prepared: August 10, 2009

IV. Permit Action/Status:

A. Reason For Permit Action:

Proposed reissuance of an existing Louisiana Pollutant Discharge Elimination System (LPDES) permit for a 5-year term following regulations promulgated at LAC 33:IX.2711/40 CFR 122.46*.

LAC 33:IX Citations: Unless otherwise stated, citations to LAC 33:IX refer to promulgated regulations listed at Louisiana Administrative Code, Title 33, Part IX.

40 CFR Citations: Unless otherwise stated, citations to 40 CFR refer to promulgated regulations listed at Title 40, Code of Federal Regulations in accordance with the dates specified at LAC 33:IX.2301, 4901, and 4903.

B. NPDES permit - NPDES permit effective date: N/A
NPDES permit expiration date: N/A
EPA has not retained enforcement authority.

C. LPDES permit - LPDES permit effective date: October 1, 2004
LPDES permit expiration date: September 30, 2009

D. Application received on March 6, 2009.

V. Facility Information:

A. Location - 41237 Highway 22, Burnside
(Latitude 30°09'0.5", Longitude 90°54'48")

B. Applicant Activity -

According to the application, Ormet Primary Aluminum Corporation, Burnside Alumina Division utilizes the Bayer process to recover reduction grade aluminum oxide (alumina) and alumina trihydrate (hydrate) from bauxite ore.

C. Technology Basis - (40 CFR Chapter 1, Subchapter N/Parts 401, 405-415, and 417-471 have been adopted by reference at LAC 33:IX.4903)

Guideline	Reference
Bauxite Refining	40 CFR 421.13, Subpart A

Other sources of technology based limits:
Light Commercial General Permit LAG480000 (Schedule E)
Multi-Sector General Permit For Storm Water Discharges Associated With Industrial Activities
Current LPDES permit (effective October 1, 2004)
Best Professional Judgment (BPJ)

D. Fee Rate -
1. Fee Rating Facility Type: major
2. Complexity Type: IV
3. Wastewater Type: II
4. SIC code: 2819

E. Continuous Facility Effluent Flow - 2.632 MGD.

VI. Receiving Waters: Blind River via Conway Canal and Panama Canal (Outfall 001) and the Mississippi River (Outfalls 002 and 003)

A. Blind River via Conway Canal and Panama Canal (Outfall 001)

1. TSS (15%), mg/L: 21
2. Average Hardness, mg/L $CaCO_3$: 248.4
3. Critical Flow, cfs: 1.3
4. Mixing Zone Fraction: 1
5. Harmonic Mean Flow, cfs: 3.9
6. River Basin: Lake Pontchartrain, Segment No. 040403
7. Designated Uses:
   The designated uses are primary contact recreation, secondary contact recreation, fish and wildlife propagation, and outstanding natural resource waters.

* Outstanding Natural Resource is listed as a designated use of Subsegment 040403 (Blind River - From headwaters to Amite River Diversion Canal). However, this designated use is applicable only if the discharge is directly into the named waterbody and not into a tributary or distributary of the waterbody, per LAC 33:IX.1111.A. Furthermore, the effluent must flow through the Conway

Canal for 1.04 miles then through the Panama Canal for 11.62 miles prior to reaching the Blind River.

Information based on the following: LAC 33:IX Chapter 11. Hardness and 15% TSS data come from monitoring station 2548 (Panama Canal near Burnside, Louisiana at the bridge on LA Highway 44, 1.4 miles west of I-10) listed in Hardness and TSS Data for All LDEQ Ambient Stations for the Period of Record as of March 1998, LeBlanc. This information was provided in a Memorandum from Todd Franklin to Christy Clark dated August 11, 2009. (See Appendix A)

B. Mississippi River (Outfalls 002 and 003)

1. TSS (15%), mg/L: 32
2. Average Hardness, mg/L $CaCO_3$: 153.4
3. Critical Flow, cfs: 141955
4. Mixing Zone Fraction: 0.3333
5. Harmonic Mean Flow, cfs: 366748
6. River Basin: Mississippi River, Segment No. 070301
7. Designated Uses:
   The designated uses are primary contact recreation, secondary contact recreation, fish and wildlife propagation, and drinking water supply.

Information based on the following: LAC 33:IX Chapter 11. Hardness and 15% TSS data come from monitoring station 319 (the Mississippi River east of Plaquemine, Louisiana at the Plaquemine ferry landing, midstream) listed in Hardness and TSS Data for All LDEQ Ambient Stations for the Period of Record as of March 1998, LeBlanc. This information was provided in a Memorandum from Todd Franklin to Christy Clark dated August 11, 2009. (See Appendix A)

VII. Outfall Information:

Outfall 001(Interim and Final Schedules)

A. Type of wastewater - The continuous discharge of filtration area condensate, caustic heater area steam condensate, power house once-through non-contact cooling water, low-contamination potential stormwater runoff, coal pile stormwater runoff (Internal Outfall 101), and treated sanitary wastewater (Internal Outfall 201).

B. Location - (1) Flow - at the individual contributing discharge points prior to reaching Conway Canal (contributing discharge points include power house once-through non-contact cooling water, process area condensates, stormwater ditches and Internal Outfalls 101 and 201); (2) Other parameters - at Conway Canal Prior to discharge into Panama Canal and after commingling of all contributing streams. Discharge to Conway Canal, thence to the Panama Canal, thence to the Blind River (Latitude 30°09'05", Longitude 90°54'05").

C. Treatment - Neutralization of potential caustic spills stormwater.

D. Flow - Continuous, 2.59 MGD

E. Receiving waters - Conway Canal, thence to Panama Canal, thence to Blind River

F. Basin and segment - Lake Pontchartrain Basin, Segment 040403

Internal Outfall 101

A. Type of wastewater - The intermittent discharge of coal pile stormwater runoff.

B. Location - At the ditch leading from the coal pile storage prior to combining with other waters (Latitude 30°08'10", Longitude 90°55'15").

C. Treatment - Silt screens

D. Flow - Intermittent, 0.341 MGD

E. Receiving waters - Combines with the effluent from Outfall 001, thence to Conway Canal, thence to Panama Canal, thence to Blind River.

F. Basin and segment - Lake Pontchartrain Basin, Segment 040403

Internal Outfall 201

A. Type of wastewater - The continuous discharge of treated sanitary wastewater.

B. Location - At the point of discharge from the sanitary treatment facility prior to combining with other waters (Latitude 30°08'06", Longitude 90°54'45").

C. Treatment - treatment consists of:
- trickling filtration
- chlorination

D. Flow - Continuous, 0.042 MGD

E. Receiving waters - Combines with the effluent from Outfall 001, thence to Conway Canal, thence to Panama Canal, thence to Blind River.

F. Basin and segment - Lake Pontchartrain Basin, Segment 040403

Outfall 002

A. Type of wastewater - The intermittent discharge of boiler blowdown, non-chromate cooling tower blowdown, demineralizer regeneration blowdown, and river water clarifier underflow.

B. Location - After commingling of all contributing streams prior to discharging to the Mississippi River (Latitude 30°07'54", Longitude 90°55'09").

C. Treatment - Neutralization

D. Flow - Intermittent, 0.004 MGD

E. Receiving waters - Mississippi River via effluent pipe

F. Basin and segment - Mississippi River, Segment 070301

Outfall 003

A. Type of wastewater - The intermittent overflow discharge of excess process wastewater/stormwater from the Red Mud Impoundment System.

B. Location - At the Red Mud Impoundment System discharge line prior to combining with other waters (Latitude 30°07'59", Longitude 90°55'14").

C. Treatment - treatment consists of:
- settling

D. Flow - Intermittent, 3.19 MGD

E. Receiving waters - Mississippi River via effluent pipe

F. Basin and segment - Mississippi River, Segment 070301

VIII. Proposed Permit Limits:

The specific effluent limitations and/or conditions will be found in the draft permit. Development and calculation of permit limits are detailed in the Permit Limit Rationale section below.

Summary of Proposed Changes From the Current LPDES Permit:

A. The discharges from Outfall 001 were previously identified as discharging into subsegment 040404 of the Lake Pontchartrain Basin in the current LPDES permit. However, after a review of the subsegment lines, LDEQ has determined that this facility is located in subsegment 040403 of the Lake Pontchartrain Basin.

B. Per the Biomonitoring Frequency Recommendation and Rationale, a Whole Effluent Toxicity (WET) Limit with a three year compliance schedule has been added to Outfall 001. (See Appendix B)

C. Internal Outfall 201 - The statistical basis has been changed to a daily maximum in lieu of a weekly average for all parameters at this Outfall. This change has been made to be consistent with the new LDEQ guidance for sanitary wastewaters.

D. Internal Outfall 201 - The facility's request for monitoring frequency reductions of BOD_5, TSS and Fecal Coliform has been partially granted. Due to excursions

during the current permit, Fecal Coliform is ineligible for a monitoring frequency reduction and will retain a monitoring frequency of 1/month. The monitoring frequencies for BOD_5 and TSS have been reduced to 1/2 months.

E. In accordance with LAC 33:IX.1113.C.1., pH requirements have been established at Outfall 002. The monitoring frequency has been set at 1/month based on BPJ and to be consistent with the other parameters at this outfall.

F. Outfall 002 - The monitoring frequency for flow has been reduced from 1/week to 1/month based on BPJ.

G. Outfall 002 - The inventory calculation for clarifying agents will no longer be required to be submitted with the quarterly DMRs. These records shall be maintained onsite and be made available upon request.

H. Outfall 003 - The monitoring frequency for pH has been reduced from 3/day to 1/day based on BPJ.

IX. Permit Limit Rationale:

The following section sets forth the principal facts and the significant factual, legal, methodological, and policy questions considered in preparing the draft permit. Also set forth are any calculations or other explanations of the derivation of specific effluent limitations and conditions, including a citation to the applicable effluent limitation guideline or performance standard provisions as required under LAC 33:IX.2707/40 CFR Part 122.44 and reasons why they are applicable or an explanation of how the alternate effluent limitations were developed.

A. <u>TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS-BASED EFFLUENT LIMITATIONS AND CONDITIONS</u>

Following regulations promulgated at LAC 33:IX.2707.L.2.b/40 CFR Part 122.44(l)(2)(ii), the draft permit limits are based on either technology-based effluent limits pursuant to LAC 33:IX.2707.A/40 CFR Part 122.44(a) or on State water quality standards and requirements pursuant to LAC 33:IX.2707.D/40 CFR Part 122.44(d), whichever are more stringent.

B. <u>TECHNOLOGY-BASED EFFLUENT LIMITATIONS, CONDITIONS, AND MONITORING REQUIREMENTS</u>

Regulations promulgated at LAC 33:IX.2707.A/40 CFR Part 122.44(a) require technology-based effluent limitations to be placed in LPDES permits based on effluent limitations guidelines where applicable, on BPJ (best professional judgment) in the absence of guidelines, or on a combination of the two. The following is a rationale for types of wastewaters. See outfall information descriptions for associated outfall(s) in Section VII. Regulations also require permits to establish monitoring requirements to yield data representative of the monitored activity [LAC 33:IX.2715/40 CFR 122.48(b)] and to assure compliance with permit limitations [LAC 33:IX.2707.I./40 CFR 122.44(i)].

1. **Outfall 001 (Interim and Final Schedules)** - The continuous discharge of filtration area condensate, caustic heater area steam condensate, power house once-through non-contact cooling water, low-contamination potential stormwater runoff, coal pile stormwater runoff (Internal Outfall 101), and treated sanitary wastewater (Internal Outfall 201).

PARAMETER(S)	MASS, LBS/DAY unless otherwise stated		CONCENTRATION, MG/L unless otherwise stated		MEASUREMENT FREQUENCY
	MONTHLY AVERAGE	DAILY MAXIMUM	MONTHLY AVERAGE	DAILY MAXIMUM	
Flow, MGD (*1)	Report	Report	---	---	Continuous
pH Range Excursions No. of Events >60 minutes	---	---	---	0 (*2)	Continuous
pH Range Excursions Monthly Total Accumulated Time in Minutes	---	---	---	446 (*2)	Continuous
pH (Standard Units)	---	---	Report (*2) (Min)	Report (*2) (Max)	Continuous
Temperature °F	---	---	---	Report	Continuous
Biomonitoring (Interim Schedule)	See Section IX.D.	---	---	---	1/quarter
Biomonitoring (Final Schedule)	See Section IX.E.	---	---	---	1/quarter

(*1) The daily flow shall be the arithmetic sum of the daily flows of the individual contributing internal wastewater streams. All contributing internal discharge streams except Internal Outfalls 101 and 201 shall be continuously monitored.

(*2) The pH shall be within the range of 6.0 - 9.0 standard units at all times subject to the continuous monitoring pH range excursion provisions at Part II.H.

Flow - This requirement has been established in accordance with LAC 33:IX.2707.I.1.b. and retained from the current LPDES permit. The continuous monitoring frequency has also been retained.

pH - This requirement has been established in accordance with LAC 33:IX.1113.C.1. and retained from the current LPDES permit. The continuous monitoring frequency has also been retained.

Temperature - This report requirement has been established in accordance with the Light Commercial General Permit (LAG480000, Schedule E) and BPJ based on current once-through cooling water guidance. The report requirement and continuous monitoring frequency have been retained from the current LPDES permit.

2. **Internal Outfall 101** - The intermittent discharge of coal pile stormwater runoff.

PARAMETER(S)	MASS, LBS/DAY unless otherwise stated		CONCENTRATION, MG/L unless otherwise stated		MEASUREMENT FREQUENCY (*1)
	MONTHLY AVERAGE	DAILY MAXIMUM	MONTHLY AVERAGE	DAILY MAXIMUM	
Flow, MGD	Report	Report	---	---	1/week
TSS	---	---	---	50 (*2)	1/week

(*1) When discharging.

(*2) A discharge from the coal pile (in excess of coal pile flush water) associated with a 10-year, 24-hour precipitation event at the plant site shall not be subject to the effluent limitation (see definition at Part II, Paragraph J of the draft permit). The permittee shall monitor precipitation at the plant site in order to apply the provisions of this section.

Flow - This requirement has been established in accordance with LAC 33:IX.2707.I.1.b. and retained from the current LPDES permit. The monitoring frequency of 1/week has also been retained.

TSS - The limitation of 50 mg/L is consistent with the current Multi-Sector General Permit For Storm Water Discharges Associated With Industrial Activities (Coal Pile Stormwater Discharges). The monitoring frequency of 1/week has been established based on BPJ and retained from the current LPDES permit.

3. **Internal Outfall 201** - The continuous discharge of treated sanitary wastewater.

PARAMETER(S)	MASS, LBS/DAY unless otherwise stated		CONCENTRATION, MG/L unless otherwise stated		MEASUREMENT FREQUENCY
	MONTHLY AVERAGE	DAILY MAXIMUM	MONTHLY AVERAGE	DAILY MAXIMUM	
Flow, MGD	Report	Report	---	---	1/month
BOD_5	---	---	30	45	1/2 months

PARAMETER(S)	MASS, LBS/DAY unless otherwise stated		CONCENTRATION, MG/L unless otherwise stated		MEASUREMENT FREQUENCY
	MONTHLY AVERAGE	DAILY MAXIMUM	MONTHLY AVERAGE	DAILY MAXIMUM	
TSS	---	---	30	45	1/2 months
Fecal Coliform colonies/100ml (*1)	---	---	200	400	1/month

(*1) Future water quality studies may indicate potential toxicity from the presence of residual chlorine in the treatment facility's effluent. Therefore, the permittee is hereby advised that a future Total Residual Chlorine Limit may be required if chlorine is used as a method of disinfection. In many cases, this becomes a NO MEASURABLE Total Residual Chlorine Limit.

Flow - This requirement has been established in accordance with LAC 33:IX.2707.I.1.b. and retained from the current LPDES permit. The monitoring frequency of 1/month has been retained.

BOD_5 and TSS - Limitations have been retained from the current LPDES permit and are based upon LAC 33:IX.711.D.1.c. The statistical basis has been changed to a daily maximum in lieu of a weekly average for BOD_5 and TSS at this Outfall. This change has been made to be consistent with the new LDEQ guidance for sanitary wastewaters. The monitoring frequencies have also been reduced to 1/2 months based on BPJ.

Fecal Coliform - Requirement has been retained from the current LPDES permit and is based upon LAC 33:IX.1113.C.5. The monitoring frequency of 1/month has also been retained.

4. **Outfall 002** - The intermittent discharge of boiler blowdown, non-chromate cooling tower blowdown, demineralizer regeneration blowdown, and river water clarifier underflow.

PARAMETER(S)	MASS, LBS/DAY unless otherwise stated		CONCENTRATION, MG/L unless otherwise stated		MEASUREMENT FREQUENCY
	MONTHLY AVERAGE	DAILY MAXIMUM	MONTHLY AVERAGE	DAILY MAXIMUM	
Flow, MGD	Report	Report	---	---	1/month
Clarifying Agents (*1)	Report	---	---	---	1/month
pH Standard Units	---	---	6.0 (min) (*2)	9.0 (max) (*2)	1/month

PARAMETER(S)	MASS, LBS/DAY unless otherwise stated		CONCENTRATION, MG/L unless otherwise stated		MEASUREMENT FREQUENCY
	MONTHLY AVERAGE	DAILY MAXIMUM	MONTHLY AVERAGE	DAILY MAXIMUM	
Biomonitoring	See Section IX.F.	---	---	---	1/year

(*1) Keep inventory records of the quantity and type of each clarifying agent used in the intake raw river water treatment clarification system and a Material Safety Data Sheet (MSDS) for each material used. Retain inventory records and the MSDSs at the facility for three years. No DMR reporting is required for clarifying agents [LAC 33:IX.2701.J.2]; therefore, do not report clarifying agents on the quarterly DMR form that is used to report lab analysis for other parameters (flow and pH).

(*2) The permittee shall report on the Discharge Monitoring Reports both the minimum and maximum instantaneous pH values measured.

Flow - This requirement has been established in accordance with LAC 33:IX.2707.I.1.b. and retained from the current LPDES permit. The monitoring frequency has been reduced to 1/month based on BPJ.

pH - This requirement has been established in accordance with LAC 33:IX.1113.C.1. The monitoring frequency has been set at 1/month based on BPJ and to be consistent with the other parameters at this outfall.

Clarifying Agents - Report requirement and monitoring frequency of 1/month have been retained from the current LPDES permit and are consistent with similar discharges for other facilities.

5. **Outfall 003** - The intermittent overflow discharge of excess process wastewater/stormwater from the Red Mud Impoundment System.

Ormet Primary Aluminum Corporation, Burnside Alumina Division is subject to Best Practicable Control Technology Currently Available (BPT) and Best Available Technology Economically Achievable (BAT) effluent limitation guidelines listed below:

Manufacturing Operation	Guideline
Bauxite Refining	40 CFR 421, Subpart A

PARAMETER(S)	MASS, LBS/DAY unless otherwise stated		CONCENTRATION, MG/L unless otherwise stated		MEASUREMENT FREQUENCY (*1)
	MONTHLY AVERAGE	DAILY MAXIMUM	MONTHLY AVERAGE	DAILY MAXIMUM	
Flow, MGD (*2)	Report	Report	---	---	Continuous

PARAMETER(S)	MASS, LBS/DAY unless otherwise stated		CONCENTRATION, MG/L unless otherwise stated		MEASUREMENT FREQUENCY (*1)
	MONTHLY AVERAGE	DAILY MAXIMUM	MONTHLY AVERAGE	DAILY MAXIMUM	
Precipitation, MGD, Net Monthly Accumulated	---	---	Report	---	1/month
Flow, MGD, Net Monthly Process Wastewater	---	---	0	---	1/month
pH Standard Units	---	---	Report (*3)	Report (*3)	1/day
Biomonitoring	See Section IX.F.	---	---	---	1/year

(*1) When discharging.

(*2) Total outfall flow.

(*3) The permittee shall report on the Discharge Monitoring Reports both the minimum and maximum instantaneous pH values measured during the sampling month

Flow - This requirement has been established in accordance with LAC 33:IX.2707.I.1.b. and retained from the current LPDES permit.

pH - Report requirement has been retained from the current LPDES permit. This report requirement was initially established in the July 2, 1987 NPDES permit. The permit states: "In the 3/3/87 company letter, Ormet reports the results of a dispersion model study used to demonstrate the impact of disposing un-neutralized excess rainwater to the Mississippi River. The results of this study used show that the water quality criteria is met within a distance of less that one meter of the discharge under normal conditions. It is, therefore, the BPJ of the permit writer that draft modified permit conditions established at Outfall 003 are in compliance with regulations promulgated at 40 CFR Part 122.4(d)." The frequency has been reduced to 1/day based on BPJ.

Precipitation - Requirement established in accordance with 40 CFR 421.13 (b) and retained from the current LPDES permit.

Flow (Net Monthly Process Wastewater) - Limitation and requirement established in accordance with 40 CFR 421.13 (a) and retained from the current LPDES permit.

C. WATER QUALITY-BASED EFFLUENT LIMITATIONS

In accordance with LAC 33:IX.2707.D.1/40 CFR § 122.44(d)(1), the existing (or potential) discharge (s) was evaluated in accordance with the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, April 16, 2008, to determine whether pollutants would be discharged "at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard." Based on this evaluation, the following pollutants received water quality based effluent limits:

POLLUTANT(S)
None

TMDL Waterbodies

Outfall 001
The discharges from Outfall 001 which includes the continuous discharge of filtration area condensate, caustic heater area steam condensate, power house once-through non-contact cooling water, low-contamination potential stormwater runoff, coal pile stormwater runoff (Internal Outfall 101), and treated sanitary wastewater (Internal Outfall 201) discharge to the Blind River via Conway Canal and Panama Canal Segment No. 040403. The Blind River is listed on the 303(d) report as being impaired with Nutrients (Nitrate + Nitrite as N), Phosphorus, Sedimentation/Siltation, Organic enrichment/low DO, Mercury, Non-Native Aquatic Plants, and Turbidity. To date, no TMDLs have been completed for this subsegment.

Nutrients (Nitrate/Nitrite) and Phosphorus
USEPA's 1997 document *Technical Guidance Manual for Developing TMDLs (Table A-17)*, describes median and mean phosphorus and nitrogen concentrations in wastewater effluents following four conventional treatment processes. In this document, median total phosphorus concentrations after treatment fall between 5.2 and 6.6 mg/L and median total nitrogen concentrations fall between 11.5 and 22.4 mg/L. The values presented in the March 6, 2009 LPDES permit renewal application for Outfall 001 were 0.70 mg/L of total nitrogen and 0.037 mg/L of total phosphorus which are well below the median values presented for treated wastewater effluent in EPA's guidance manual. Therefore, based on the type of facility, types of discharges from this outfall, and analytical data provided in the application, it has been determined that stormwater and washwater from this outfall are not reasonably expected to cause further nitrate/nitrite and/or phosphorus impairments in the receiving water body.

Additionally, concentration levels for total phosphorus and total nitrogen as reported in the application were compared to (in absence of state numeric criteria) EPA's Gold Book Criteria and EPA's Ecoregion criteria. Because the existing effluent quality does not exceed EPA's national water quality criteria for total nitrogen and total phosphorus at the end-of-pipe (point of discharge), EPA believes there is no reasonable potential for the discharge to cause or contribute to violation of water quality standards. Therefore, no additional monitoring requirements are established in the draft permit.

Sedimentation/Siltation
To protect against further impairment of the sedimentation/siltation causes, TSS limits will remain in the permit.

Organic Enrichment/Low DO
It has been determined that this facility does have the potential to discharge pollutants which may contribute to the organic enrichment/low DO impairments due to the treated sanitary wastewater discharged through Internal Outfall 201 and Final Outfall 001. To control these impairments, the BOD_5 limitations established at Internal Outfall 201 will remain in the permit.

Mercury
Due to the nature of the discharges, it is not anticipated that Mercury will be discharged from the facility's Outfall 001 at levels that will cause or contribute to further impairment of the receiving waterbody. No limitations or monitoring requirements have been established in this permit as a result of the Mercury impairment at this time.

Non-Native Aquatic Plants
Non-native aquatic plants are introduced into a waterbody through discharges such as ship ballast water, where the ballast water originates from a different area. Outfall 001 does not contain ship water, therefore, it is not anticipated that these discharges will cause further impairment to the receiving waterbody. No additional requirements have been established in this permit as a result of the non-native aquatic plant impairment.

Turbidity
Turbidity impairments are typically caused by areas with disturbed soils associated with construction activities. Outfall 001 is an existing outfall with no areas under construction and/or requested changes from the current LPDES permit. Therefore, these discharges are not reasonably expected to cause or contribute to further turbidity impairments. No additional requirements have been added to the permit.

Outfalls 002 and 003
The discharges from Outfalls 002 and 003 include boiler blowdown, non-chromate cooling tower blowdown, demineralizer regeneration blowdown, river water clarifier underflow (Outfall 002), and overflow discharge of excess process wastewater/stormwater from the Red Mud Impoundment System (Outfall 003) to the Mississippi River, Subsegment 070301. The Mississippi River is not listed

on the 2006 Final Integrated Report as being impaired. Therefore, no additional requirements have been established in this permit.

A reopener clause will be established in the permit to allow for the requirement of more stringent effluent limitations and requirements as imposed by a TMDL.

D. Biomonitoring Requirements (Interim Schedule Outfall 001)

It has been determined that there may be pollutants present in the effluent which may have the potential to cause toxic conditions in the receiving stream. The State of Louisiana has established a narrative criteria which states, "toxic substances shall not be present in quantities that alone or in combination will be toxic to plant or animal life." The Office of Environmental Services requires the use of the most recent EPA biomonitoring protocols.

Whole effluent biomonitoring is the most direct measure of potential toxicity which incorporates both the effects of synergism of effluent components and receiving stream water quality characteristics. Biomonitoring of the effluent is, therefore, required as a condition of this permit to assess potential toxicity. The biomonitoring procedures stipulated as a condition of this permit for Outfall 001 are as follows:

TOXICITY TESTS	FREQUENCY
Chronic static renewal 7-day survival and reproduction test using *Ceriodaphnia dubia* [Method 1002.0]	1/quarter
Chronic static renewal 7-day larval survival and growth test using fathead minnow (*Pimephales promelas*) [Method 1000.0]	1/quarter

Toxicity tests shall be performed in accordance with protocols described in the latest revision of the "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, EPA/600/4-89/001, March 1989." The stipulated test species are appropriate to measure the toxicity of the effluent consistent with the requirements of the State water quality standards. The biomonitoring frequency has been established to reflect the likelihood of ambient toxicity and to provide data representative of the toxic potential of the facility's discharge in accordance with regulations promulgated at LAC 33:IX.2715/40 CFR Part 122.48.

Results of all dilutions as well as the associated chemical monitoring of pH, temperature, hardness, dissolved oxygen, conductivity, and alkalinity shall be documented in a full report according to the test method publication mentioned in the previous paragraph. The permittee shall submit a copy of the first full report to the Office of Environmental Compliance. The full report and

subsequent reports are to be retained for three (3) years following the provisions of Part III.C.3 of this permit. The permit requires the submission of certain toxicity testing information as an attachment to the Discharge Monitoring Report.

This permit may be reopened to require effluent limits, additional testing, and/or other appropriate actions to address toxicity if biomonitoring data show actual or potential ambient toxicity to be the result of the permittee's discharge to the receiving stream or water body. Modification or revocation of the permit is subject to the provisions of LAC 33:IX.3105/40 CFR 124.5. Accelerated or intensified toxicity testing may be required in accordance with Section 308 of the Clean Water Act.

Dilution Series

The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests. These additional effluent concentrations shall be 24%, 32%, 42%, 57%, and 76%. The low-flow effluent concentration (critical dilution) is defined as 76% effluent.

E. Whole Effluent Toxicity Limits (Final Schedule Outfall 001)

1. General Comments

The provisions of this section apply to Outfall 001

Whole effluent toxicity testing conducted by the permittee has shown potential ambient toxicity to be the result of the permittee's discharge to the receiving stream or water body, at the appropriate instream critical dilution. Pursuant to LAC 33:IX.2707.D.1.e/40 CFR 122.44(d)(1)(v), this Office has determined that the discharge from this facility does have the reasonable potential to cause, or contribute to an instream excursion above the narrative criterion within the applicable State water quality standards, in violation of Section 101(a)(3) of the Clean Water Act. Furthermore, this Office has determined that chemical specific limitations alone are not sufficient to maintain the applicable numeric and narrative State water quality standards. The State has established a narrative water quality criteria which, in part, states that

"No substances shall be present in the waters of the state or the sediments underlying said waters in quantities that alone or in combination will be toxic to human, plant, or animal life or significantly increase health risks due to exposure to the substances or consumption of contaminated fish or other aquatic life." (Louisiana Surface Water Quality Standards, LAC Title 33, Part IX, Chapter 11, Section 1113.B.5.)

The following summarizes toxicity test failures submitted by the permittee during the current term of the permit:

TOXICITY TESTS	DATES CONDUCTED
Chronic static renewal 7-day survival and reproduction test using Ceriodaphnia dubia	N/A
Chronic static renewal 7-day larval survival and growth test using fathead minnow (Pimephales promelas)	10/1/04 to 12/31/04 01/1/05 to 01/31/05 04/1/06 to 06/30/06 07/1/06 to 09/30/06

2. Permit Action

a. Testing and Reporting Requirements

The draft permit establishes the following testing and reporting requirements:

TOXICITY TESTS	FREQUENCY
Chronic static renewal 7-day survival and reproduction test using Ceriodaphnia dubia [Method 1002.0]	1/quarter
Chronic static renewal 7-day larval survival and growth test using fathead minnow (Pimephales promelas) [Method 1000.0]	1/quarter

The draft permit additionally requires the reporting of the coefficient of variation (larger of the low flow and control dilutions) for each test species.

Toxicity tests shall be performed in accordance with protocols described in the latest revision of the "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, EPA/600/4-89/001, March 1989." The stipulated test species are appropriate to measure the toxicity of the effluent consistent with the requirements of the State water quality standards. The biomonitoring frequency has been established to provide data representative of the facility's discharge in accordance with regulations listed at LAC 33:IX.2715/40 CFR 122.48 and to assure compliance with permit limitations following regulations listed at LAC 33:IX.2707.I.1/40 CFR 122.44(i)(1).

Results of all dilutions as well as the associated chemical monitoring of pH, temperature, hardness, dissolved oxygen, conductivity, and alkalinity shall be documented in a full report according to the test method publication mentioned in the previous paragraph. The permittee shall submit a copy of the first full report to the Office of Environmental Compliance. The full report and subsequent reports are to be retained for three (3) years following the provisions of Part III.C.3 of this permit.

b. Dilution Series

The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests. These additional effluent concentrations shall be 24%, 32%, 42%, 57%, and 76%. The low-flow effluent concentration (critical dilution) is defined as 76% effluent.

c. Effluent Limitations and/or Conditions

(1) Final Requirements

The draft permit establishes final whole effluent toxicity limitations and monitoring requirements beginning three years after the effective date of this permit.

(2) Discussion

Chronic freshwater biomonitoring was established in the final LPDES permit no. LA0005606, issued September 3, 2004, with an effective date of October 1, 2004, and an expiration date of September 30, 2009. for Outfall(s) 001. On February 4, 2005, Ormet Primary Aluminum Corporation sent a letter informing LDEQ that Outfall 001 fathead minnow (*Pimephales promelas*) chronic toxicity test exhibited toxicity at all effluent concentrations tested per verbal notification from the outside testing lab, C-K & Associates. Because of this failure, the TRE provisions of the permit were invoked. During the TRE, the permittee was required to submit quarterly reports. The permittee has not yet submitted the required TRE final report that was required by the Agency on June 17, 2005, 28 months after the confirmation date of the TRE. Based on the 2 lethal and 4 sub-lethal test failures for the fathead minnow (*Pimephales promelas*), and the reasonable potential for future lethal and/or sub-lethal toxicity, the Agency has concluded to incorporate WET limits.

Therefore, the LPDES permit is being reissued at this time, under the authority of Section 301(b)(1)(C) of the Clean Water Act, to incorporate effluent limits for whole effluent toxicity.

F. Biomonitoring Requirements (Outfalls 002 and 003)

It has been determined that there may be pollutants present in the effluent which may have the potential to cause toxic conditions in the receiving stream. The State of Louisiana has established a narrative criteria which states, "toxic substances shall not be present in quantities that alone or in combination will be toxic to plant or animal life." The Office of Environmental Services requires the use of the most recent EPA biomonitoring protocols.

Whole effluent biomonitoring is the most direct measure of potential toxicity which incorporates both the effects of synergism of effluent components and receiving stream water quality characteristics. Biomonitoring of the effluent is, therefore, required as a condition of this permit to assess potential toxicity. The biomonitoring procedures stipulated as a condition of this permit for Outfall(s) 002 and 003 are as follows:

TOXICITY TESTS	FREQUENCY
Acute static renewal 48-hour definitive toxicity test using *Daphnia pulex*	1/year
Acute static renewal 48-hour definitive toxicity test using fathead minnow (*Pimephales promelas*)	1/year

Toxicity tests shall be performed in accordance with protocols described in the latest revision of the "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms." The stipulated test species are appropriate to measure the toxicity of the effluent consistent with the requirements of the State water quality standards. The biomonitoring frequency has been established to reflect the likelihood of ambient toxicity and to provide data representative of the toxic potential of the facility's discharge in accordance with regulations promulgated at LAC 33:IX.2715/40 CFR Part 122.48.

Results of all dilutions as well as the associated chemical monitoring of pH, temperature, hardness, dissolved oxygen, conductivity, and alkalinity shall be documented in a full report according to the test method publication mentioned in the previous paragraph. The permittee shall submit a copy of the first full report to the Office of Environmental Compliance. The full report and subsequent reports are to be retained for three (3) years following the provisions

of Part III.C.3 of this permit. The permit requires the submission of certain toxicity testing information as an attachment to the Discharge Monitoring Report.

This permit may be reopened to require effluent limits, additional testing, and/or other appropriate actions to address toxicity if biomonitoring data show actual or potential ambient toxicity to be the result of the permittee's discharge to the receiving stream or water body. Modification or revocation of the permit is subject to the provisions of LAC 33:IX.3105/40 CFR 124.5. Accelerated or intensified toxicity testing may be required in accordance with Section 308 of the Clean Water Act.

Dilution Series

The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests. These additional effluent concentrations shall be 0.044%, 0.059%, 0.078%, 0.10%, and 0.14%. The low-flow effluent concentration (critical dilution) is defined as 0.10% effluent.

X. Compliance History/DMR Review:

A. LDEQ records were reviewed for the period of January 2006 through July 2009.

B. Based on a review of DMR data for the period of January 2007 through July 2009, the facility has reported the following effluent excursions:

DATE	PARAMETER	OUTFALL	REPORTED VALUE		PERMIT LIMITS	
			MONTHLY AVERAGE	DAILY MAXIMUM	MONTHLY AVERAGE	DAILY MAXIMUM
06/07	TSS	101	---	192 mg/L	---	50 mg/L
10/07	TSS	101	---	244 mg/L	---	50 mg/L
01/08	TSS	101	---	139 mg/L	---	50 mg/L
05/09	Fecal Coliform COL/100 mL	201	420 COL/100 mL	570 COL/100 mL (weekly avg)	200 COL/100 mL	400 COL/100 mL (weekly avg)
06/09	Fecal Coliform COL/100 mL	201	>2000 COL/100 mL	>2000 COL/100 mL (weekly avg)	200 COL/100 mL	400 COL/100 mL (weekly avg)

C. Enforcement Actions

Air - No open Enforcement Actions

Hazardous Waste - No open Enforcement Actions
Solid Waste - No open Enforcement Actions
Water - No open Enforcement Actions

D. Facility Inspections

1) Date performed: 07/31/2007
Inspector: Joseph Burris
Findings: areas of concern noted - permit excursions for TSS and pH.

2) Date performed: 08/13/2009
Inspector: Margaret Milazzo and Daron Suggs
Findings: areas of concern noted - permit excursions for TSS, fecal coliform, and pH; permit requirements not being met for continuous recording of flow at Outfall 001; in line flow recorder not properly maintained or calibrated; parshall flumes not being maintained and vegetation growing in the flume; and vegetative debris collected on bridge of weir indicates that it is not adequate to handle heavy rainfall events.

XI. "IT" Questions - Applicant's Responses

The "IT" Questions along with the applicant's responses can be found in the Permit Application (dated March 5, 2009).

XII. Stormwater Requirements

In accordance with LAC 33:IX.2707.I.3 and 4 [40 CFR 122.44(I)(3) and (4)], a Part II condition is proposed for applicability to all storm water discharges from the facility, either through permitted outfalls or through outfalls which are not listed in the permit or as sheet flow. **For first time permit issuance,** the Part II condition requires a Storm Water Pollution Prevention Plan (SWP3) within six (6) months of the effective date of the final permit. **For renewal permit issuance,** the Part II condition requires that the Storm Water Pollution Prevention Plan (SWP3) be reviewed and updated, if necessary, within six (6) months of the effective date of the final permit. If the permittee maintains other plans that contain duplicative information, those plans could be incorporated by reference to the SWP3. Examples of these type plans include, but are not limited to: Spill Prevention Control and Countermeasures Plan (SPCC), Best Management Plan (BMP), Response Plans, etc. The conditions will be found in the draft permit. Including Best Management Practice (BMP) controls in the form of a SWP3 is consistent with other LPDES and EPA permits regulating similar discharges of stormwater associated with industrial activity, as defined in LAC 33:IX.2511.B.14 [40 CFR 122.26(b)(14)].

XIII. Endangered Species:

Outfall 001

The receiving waterbody, Subsegment 040403 of the Lake Pontchartrain Basin, has been identified by the U.S. Fish and Wildlife Service (FWS) as habitat for the West Indian Manatee, which is listed as a threatened and/or endangered species. LDEQ has not submitted this draft permit to the FWS for review in accordance with a letter dated 11/17/08 from Rieck (FWS) to Nolan (LDEQ). As set forth in the Memorandum of Understanding between the LDEQ and the FWS, and based on information provided by the FWS, LDEQ has determined that the issuance of the LPDES permit is not likely to have an adverse effect upon the Pallid Sturgeon. The effluent limitations established in the permit ensure protection of aquatic life and maintenance of the receiving water as aquatic habitat. Therefore, the issuance of the LPDES permit is not likely to have an adverse effect on any endangered or candidate species or the critical habitat.

Outfalls 002 and 003

The receiving waterbody, Subsegment 070301 of the Mississippi River Basin, has been identified by the U.S. Fish and Wildlife Service (FWS) as habitat for the Pallid Sturgeon, which is/are listed as threatened and/or endangered species. LDEQ has not submitted this draft permit to the FWS for review in accordance with a letter dated 11/17/08 from Rieck (FWS) to Nolan (LDEQ). As set forth in the Memorandum of Understanding between the LDEQ and the FWS, and based on information provided by the FWS, LDEQ has determined that the issuance of the LPDES permit is not likely to have an adverse effect upon the Pallid Sturgeon. The effluent limitations established in the permit ensure protection of aquatic life and maintenance of the receiving water as aquatic habitat. Therefore, the issuance of the LPDES permit is not likely to have an adverse effect on any endangered or candidate species or the critical habitat.

XIV. Historic Sites:

The discharge is from an existing facility location, which does not include an expansion on undisturbed soils. Therefore, there should be no potential effect to sites or properties on or eligible for listing on the National Register of Historic Places, and in accordance with the "Memorandum of Understanding for the Protection of Historic Properties in Louisiana Regarding LPDES Permits" no consultation with the Louisiana State Historic Preservation Officer is required.

XV. Tentative Determination:

On the basis of preliminary staff review, the Department of Environmental Quality has made a tentative determination to reissue a permit for the discharge described in the application.

XVI. Variances:

No requests for variances have been received by this Office.

XVII. Public Notices:

Upon publication of the public notice, a public comment period shall begin on the date of publication and last for at least 30 days thereafter. During this period, any interested persons may submit written comments on the draft permit and may request a public hearing to clarify issues involved in the permit decision at this Office's address on the first page of the fact sheet. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing.

Public notice published in:

Local newspaper of general circulation

Office of Environmental Services Public Notice Mailing List

Appendix A
(Stream Flow Data)

MEMORANDUM

TO: Christy Clark

FROM: Todd Franklin

DATE: August 11, 2009

RE: Stream Flow and Water Quality Characteristics for Panama Canal and the Mississippi River, receiving waters for Ormet Primary Aluminum Corporation / Burnside Alumina Division (Permit No. LA0005606, AI 3420)

The discharge from Outfall 001 flows into Conway Canal; thence into Panama Canal. Determination of the water quality characteristics for Outfall 001 was taken from random site number 2548 (Panama Canal near Burnside, Louisiana at the bridge on LA Highway 44, 1.4 miles west of I-10). The following TSS and hardness results were obtained from five separate samples.

Average hardness = 248.4 mg/l
15th percentile TSS = 21 mg/l

The following flow data was based on a previous determination performed by Max Forbes and summarized in a memo dated July 20, 2001:

7Q10 = 1.3 cfs
Harmonic Mean Flow = 3.9 cfs

The discharges from Outfall 002 & 003 flow into the Mississippi River. Determinations of the water quality characteristics for the two outfalls were taken from ambient site number 319 (Mississippi River east of Plaquemine, Louisiana at the Plaquemine ferry landing, midstream). The following TSS and hardness results were obtained:

Average hardness = 153.4 mg/l
15th percentile TSS = 32 mg/l

The following was based on historical flow data obtain from the USGS regarding the Mississippi River:

7Q10 = 141,955 cfs
Harmonic Mean Flow = 366,748 cfs

If you have additional questions or comments, please contact me at 2-3102.

Appendix B
(Biomonitoring Recommendation and Rationale)

BIOMONITORING FREQUENCY RECOMMENDATION AND RATIONALE FOR ADDITIONAL REQUIREMENTS

Permit Number: **LA0005606**
Facility Name: **Ormet Primary Aluminum Corporation/Burnside (*Outfall 001*)**
Previous Critical Biomonitoring Dilution: **59%**
Proposed Critical Dilution Biomonitoring: **76% (WET limit)**
Date of Review: **8/17/09**
Name of Reviewer: **Laura Thompson**

Recommended Frequency by Species for Outfall 001:

***Pimephales promelas* (Fathead minnow): Once / Quarter[1]**
***Ceriodaphnia dubia* (water flea): Once / Quarter[1]**

Recommended Dilution Series: **24%, 32%, 42%, 57%, and 76%**

Number of Tests Performed during previous 5 years by Species:

***Pimephales promelas* (Fathead minnow): 22**
***Daphnia pulex* (water flea): N/A – Testing of species was not required**
***Ceriodaphnia dubia* (water flea): 20**

Number of Failed Tests during previous 5 years by Species:

***Pimephales promelas* (Fathead minnow): 2 lethal, 4 sub-lethal**
***Daphnia pulex* (water flea): N/A – Testing of species was not required**
***Ceriodaphnia dubia* (water flea): No failures on file during the past five years**

Failed Test Dates during previous 5 years by Species:

***Pimephales promelas* (Fathead minnow): Testing periods of: 10/1/04-12/31/04 (lethal & sub-lethal); 1/1/05-1/31/05 (lethal & sub-lethal); 4/1/06-6/30/06 (sub-lethal); 7/1/06-9/30/06 (sub-lethal)**
***Daphnia pulex* (water flea): N/A – Testing of species was not required**
***Ceriodaphnia dubia* (water flea): No failures on file during the past five years**

[1] This facility will have a three year compliance schedule to meet toxicity testing requirements implemented into the permit renewal. The biomonitoring frequency shall be quarterly for the life of the permit.

Previous TRE Activities:

A routine quarterly biomonitoring test failed lethal and sub-lethal endpoints for *Pimephales promelas* during the monitoring period of 10/1/04-12/31/04. The second required retest (1/1/05-1/31/05) also failed both lethal and sub-lethal endpoints. The facility submitted a TRE Action Plan to LDEQ on April 29, 2005. The Final Report was submitted along with the Action Plan, citing ammonia to be the toxicant. LDEQ responded with a letter dated June 17, 2005 accepting the TRE Action Plan. However, LDEQ determined the Final Report to be premature and was not accepted at that time. The facility was instructed to continue quarterly testing and, pending no lethal or sub-lethal failures within a year of testing, re-submit a Final Report containing their findings. According to data on file, Ormet has experienced no lethal or sub-lethal failures since the TRE was implemented, but has not yet officially completed the TRE by submittal of a Final Report.

Additional Requirements (including WET Limits) Rationale / Comments Concerning Permitting:

The Ormet Primary Aluminum Corporation/Burnside Alumina Division owns and operates an alumina extraction facility in Burnside, Ascension Parish, Louisiana. LPDES Permit LA0005606, effective October 1, 2004, contained freshwater chronic biomonitoring as an effluent characteristic of Outfall 001 for *Ceriodaphnia dubia* and *Pimephales promelas*. The effluent series consisted of 25%, 33%, 44%, 59%, and 78% concentrations, with the critical dilution being defined as the 59% effluent concentration. The testing was to be performed quarterly. Data on file indicate that the permittee has experienced 2 lethal and 4 sub-lethal failures to the *Pimephales promelas* during the last five years.

This facility has experienced lethal and sub-lethal biomonitoring test failures during the previous permit cycle. A reasonable potential analysis also shows that reasonable potential for future lethal and/or sub-lethal toxicity exists for the Ormet Primary Aluminum Corporation/Burnside Alumina Division. LDEQ does not recommend a Whole Effluent Toxicity (WET) Limit be implemented immediately upon permit reissuance. Rather, LDEQ recommends that a three year compliance schedule be incorporated into LA0005606. The purpose of this compliance schedule is to attain compliance with the WET limit. After this three year period expires, the WET limit stated in Part I of LA0005606 shall become effective.

It is recommended that freshwater chronic biomonitoring be an effluent characteristic of Outfall 001 [2.59 mgd of filtration area condensate, caustic heater area steam condensate, power house once-through non-contact cooling water, low-contamination potential stormwater runoff, coal pile stormwater (Internal Outfall 101), and treated sanitary wastewater (Internal Outfall 201)] in LA0005606. The effluent dilution series shall be 24%, 32%, 42%, 57%, and 76% concentrations, with 76% being defined as the critical biomonitoring dilution and/or WET limit. The biomonitoring frequency shall be once per quarter for *Ceriodaphnia dubia* and *Pimephales promelas* for the term of the permit.

This recommendation is in accordance with the LDEQ/OES Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, Water Quality Management Plan Volume 3. Version 6 (April 16, 2008), and the Best Professional Judgment (BPJ) of the reviewer.

BIOMONITORING FREQUENCY RECOMMENDATION AND RATIONALE FOR ADDITIONAL REQUIREMENTS

Permit Number: **LA0005606**
Facility Name: **Ormet Primary Aluminum Corporation/Burnside (*Outfalls 002&003*)**
Previous Critical Biomonitoring Dilution: **0.099%**
Proposed Critical Dilution Biomonitoring: **0.10%**
Date of Review: **8/17/09**
Name of Reviewer: **Laura Thompson**

Recommended Frequency by Species for Outfalls 002&003:

***Pimephales promelas* (Fathead minnow): Once / Year[1]**
***Ceriodaphnia dubia* (water flea): Once / Year[1]**

Recommended Dilution Series: **0.044%, 0.059%, 0.078%, 0.10%, and 0.14%**

Number of Tests Performed during previous 5 years by Species:

***Pimephales promelas* (Fathead minnow): 5**
***Daphnia pulex* (water flea): 5**
***Ceriodaphnia dubia* (water flea): N/A – Testing of species was not required**

Number of Failed Tests during previous 5 years by Species:

***Pimephales promelas* (Fathead minnow): No failures on file during the past 5 years**
***Daphnia pulex* (water flea): No failures on file during the past 5 years**
***Ceriodaphnia dubia* (water flea): N/A – Testing of species was not required**

Failed Test Dates during previous 5 years by Species:

***Pimephales promelas* (Fathead minnow): No failures on file during the past 5 years**
***Daphnia pulex* (water flea): No failures on file during the past 5 years**
***Ceriodaphnia dubia* (water flea): N/A – Testing of species was not required**

Previous TRE Activities: **N/A – No previous TRE Activities**

[1] An acute biomonitoring critical dilution of less than 1% shall have an established biomonitoring frequency of once per year.

Additional Requirements (including WET Limits) Rationale / Comments Concerning Permitting:

The Ormet Primary Aluminum Corporation/Burnside Alumina Division owns and operates an alumina extraction facility in Burnside, Ascension Parish, Louisiana. LPDES Permit LA0005606, effective October 1, 2004, contained freshwater acute biomonitoring as an effluent characteristic of combined Outfalls 002&003 for *Daphnia pulex* and *Pimephales promelas*. The effluent series consisted of 0.042%, 0.056%, 0.074%, 0.099%, and 0.132% concentrations, with the critical dilution being defined as the 0.099% effluent concentration. The testing was to be performed annually. Data on file indicate that the permittee has complied with the requirements in LA0005606 with no toxicity failures during the past five years.

It is recommended that freshwater acute biomonitoring continue to be an effluent characteristic of combined Outfalls 002 (0.004 mgd of boiler blowdown, non chromate cooling tower blowdown, demineralizer regeneration blowdown, and river water clarifier underflow) and 003 (3.19 mgd of overflow discharge of excess process wastewater/stormwater from the red mud impoundment system) in LA0005606. The samples shall be taken as a flow- weighted composite of Outfalls 002 and 003. The effluent dilution series shall be 0.044%, 0.059%, 0.078%, 0.10%, and 0.14% concentrations, with 0.10% being defined as the critical biomonitoring dilution (the 10:1 Acute-to-Chronic ratio has been implemented). Since the proposed critical biomonitoring dilution is less than 1% (10:1 ACR), the biomonitoring frequency shall be once per year for *Daphnia pulex* and *Pimephales promelas*.

This recommendation is in accordance with the LDEQ/OES Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, Water Quality Management Plan Volume 3. Version 6 (April 16, 2008), and the Best Professional Judgment (BPJ) of the reviewer.