

# Attachment B To Exhibit B

## Executive Summary

## **EXECUTIVE SUMMARY**

Lion Oil Company (Lion) is requesting a modification of the Arkansas Water Quality Standards (WQS) set forth in Regulation No. 2 of the Arkansas Pollution Control and Ecology Commission. Lion requests modification of the following:

(a) chloride, sulfate and total dissolved minerals (TDS) criteria of the WQS for (i) Loutre Creek from Hwy 15 South (upstream terminus) to its confluence of Bayou de Loutre (the “Loutre Creek Segment”); and (ii) in Bayou de Loutre from the mouth of Loutre Creek downstream to the discharge from the City of El Dorado south waste water treatment facility;

(b) sulfate and TDS in Bayou de Loutre from the City’s discharge, then downstream to the mouth of Boggy Creek;

(c) sulfate in Bayou de Loutre from the mouth of Gum Creek down stream to the state line;

and, in addition, removal of the designated, but not existing, domestic water supply use for: (a) the Loutre Creek Segment; and (b) Bayou de Loutre from the mouth of Loutre Creek to the mouth of Gum Creek (the domestic water supply use for Bayou de Loutre downstream of the mouth of Gum Creek has been removed by previous rulemaking by ADEQ in 2004.) The specific amendments to Regulation No. 2 requested by Lion are set forth more fully below.

Lion has operated an oil refinery, storage, and distribution center in El Dorado, Union County, Arkansas since 1922. Current refinery capacity is approximately 70,000 barrels/day (bpd).

Storm water runoff and treated process wastewater are discharged from various outfalls (001 thru 007) at the facility as authorized by the Arkansas Department of Environmental Quality (ADEQ) under Lion’s National Pollutant Discharge Elimination System (NPDES) Permit No. AR0000647 (the “Permit.”)

As a result of a 2003 Consent Decree with ADEQ and EPA, recent process and air emission control equipment (scrubbers) have been added to the facility to control air emissions; and hydrotreaters have been installed for the facility to meet newer and more stringent environmental sulfur standards. The required equipment has been responsible for a recent increase in sulfates and TDS in the treated waste water discharged through Outfall 001. In addition, due to increasing need for domestic fuel supplies and limited refinery capacity, Lion anticipates increased production at the facility which will result in a proportional increase in TDS and sulfate. In order to account for the increases due to installation of control equipment and future increased production, the in stream criteria are being proposed as the 95 percentile of historical data plus 20%.

The effluent from Outfalls 001 thru 007 discharges directly into Loutre Creek. The discharge limits contained in the NPDES Permit are based on least disturbed ecoregion

reference dissolved mineral concentrations and the maintenance of a domestic water supply use. The domestic water supply uses for the affected watercourses are designated, but not attainable uses because the natural, ephemeral and low flow conditions prevent the attainment of the use. The aquatic life field studies conducted in May and April 2005 demonstrate that the development of biotic communities, the designated aquatic life use, and the biological integrity of Loutre Creek is being maintained downstream of the discharges; and that those biotic communities are equal to or improved when compared to the biotic condition in Loutre Creek upstream of the facility discharges. Further, historical toxicity testing demonstrates that there is no toxicity resulting from the dissolved mineral concentrations to the affected watercourses. In addition, after a substantive review of the potential affect of the rulemaking on Louisiana's water quality standards and consultation with the Louisiana Department of Environmental Quality (LDEQ), the LDEQ does not expect the proposed rulemaking to have a negative impact on Louisiana's continued compliance with the Louisiana dissolved mineral standards.

Lion requests the Arkansas Pollution Control and Ecology Control Commission to amend Regulation No. 2 to remove the designated domestic drinking water supply use from the following locations:

- Loutre Creek from Hwy 15 South (upstream terminus) to its confluence with Bayou de Loutre
- Bayou de Loutre from the mouth of Loutre Creek to the mouth of Gum Creek. (the domestic water supply use for Bayou de Loutre downstream of the mouth of Gum Creek has been removed by previous rulemaking (ADEQ 2004).

Lion is further asking APCEC to modify the dissolved minerals criteria as follows:

- a. modify the dissolved minerals criteria for the Loutre Creek Segment as follows:
  - Chloride from 14 mg/L to 256 mg/L
  - Sulfate from 31 mg/L to 997 mg/L
  - TDS from 123 mg/L to 1756 mg/L
- b. modify the dissolved minerals criteria for Bayou de Loutre from Loutre Creek to the discharge from the City of El Dorado South Facility as follows:
  - Chloride from 250 mg/L to 264 mg/L
  - Sulfate from 90 mg/L to 635 mg/L
  - TDS from 500 mg/L to 1236 mg/L
- c. modify the dissolved minerals criteria for Bayou de Loutre from the discharge from the City of El Dorado South downstream to the mouth of Gum Creek as follows:
  - Chloride: NO CHANGE
  - Sulfate from 90 mg/L to 431 mg/L
  - TDS from 500 mg/L to 966 mg/L

- d. modify the dissolved minerals criteria for Bayou de Loutre from the mouth of Gum Creek downstream to the mouth of Boggy Creek as follows:
  - Chloride: NO CHANGE
  - Sulfate from 90 mg/L to 345 mg/L
  - TDS from 750 mg/L to 780 mg/L
- e. modify the dissolved minerals criteria for Bayou de Loutre from the mouth of Boggy Creek downstream to the mouth of Hibank Creek as follows:
  - Chloride: NO CHANGE
  - Sulfate from 90 mg/L to 296 mg/L
  - TDS: NO CHANGE
- f. modify the dissolved minerals criteria for Bayou de Loutre from the mouth of Hibank Creek downstream to the mouth of Mill Creek as follows:
  - Chloride: NO CHANGE
  - Sulfate from 90 mg/L to 263 mg/L
  - TDS: NO CHANGE
- g. modify the dissolved minerals criteria for Bayou de Loutre from the mouth of Mill Creek downstream to the mouth of Buckaloo Branch as follows:
  - Chloride: NO CHANGE
  - Sulfate from 90 mg/L to 237 mg/L
  - TDS: NO CHANGE
- h. modify the dissolved minerals criteria for Bayou de Loutre from the mouth of Buckaloo Branch downstream to the mouth of Bear Creek as follows:
  - Chloride: NO CHANGE
  - Sulfate from 90 mg/L to 216 mg/L
  - TDS: NO CHANGE
- i. modify the dissolved minerals criteria for Bayou de Loutre to the final segment of Bayou de Loutre as follows:
  - Chloride: NO CHANGE
  - Sulfate from 90 mg/L to 198 mg/L
  - TDS: NO CHANGE
- j. modify the dissolved minerals criteria for Bayou de Loutre (Final Segment) to the Arkansas/Louisiana State Line as follows:
  - Chloride: NO CHANGE

- Sulfate from 90 mg/L to 171 mg/L
- TDS: NO CHANGE

This request is supported by the following:

- According to state resource agencies, the domestic water supply use designation for Loutre Creek was assigned by default, is not an existing use, and not attainable use due to the natural, ephemeral and low flow conditions which prevent the attainment of such use.
- The aquatic life field studies conducted in April/May 2005 show that, despite the fact that the affected watercourses are small watersheds which limit the development of biotic communities, the designated aquatic life use and the biological integrity of the watercourses are being maintained downstream of the discharge when compared to the upstream condition.
- Recent process and air emission control equipment (scrubbers) have been added to the facility in response to the Consent Decree to control air emissions; and hydrotreaters have been installed in order for the facility to meet newer and more stringent environmental sulfur standards for Tier 2 fuels. The required equipment has been responsible for the recent increase in sulfates and TDS in the treated waste water discharged through Outfall 001.
- As a result of the increasing need for domestic fuel supplies and limited refinery capacity, Lion anticipates increased production at the facility which will result in a proportional increase to TDS and sulfate. In order to account for the increases in sulfates and TDS due to installation of the required equipment and anticipated increase in production, the instream criteria are being proposed as the 95 percentile of the historical data plus 20%.
- Historical toxicity testing in 100% whole effluent from primary discharge Outfall 001 effluent demonstrate that it consistently passes the lethality endpoints of the applicable critical dilution over the last five years; and toxicity testing on the storm water outfalls has not been required during the past five years. Prior to that time, the storm water did not indicate a potential for toxicity in the discharges; the dissolved mineral concentrations show no adverse effect on the aquatic life communities of the affected watercourses.
- There is no current economically feasible treatment technology for the removal of chloride, sulfate, and TDS. Ion exchange and reverse osmosis treatment technologies do exist; however, these methods are not cost effective on a large scale basis, are prohibitively expensive, and generate concentrated brine which is environmentally difficult to dispose of. Such treatment technology is not required to meet the existing uses and would not

add any significant environmental protection.

- Modification to the mineral criteria will not preclude the attainment of other designated and attainable uses.
- The critical flow for mineral criteria is the harmonic mean flow or 4 CFS. Since there is limited flow data for Bayou de Loutre, a harmonic mean flow could not be determined and the 4 CFS default for small streams was utilized in the mass balance modeling.
- LDEQ does not expect the proposed rulemaking to have a negative impact on Louisiana's continued compliance with the dissolved mineral standard.