

EXECUTIVE SUMMARY

Great Lakes Chemical Corporation (GLCC) is requesting a modification of the Arkansas Water Quality Standards (WQS), Regulation No.2 of the Arkansas Pollution Control and Ecology Commission in relation to the temperature criterion for an approximate one-half mile reach of the upper headwaters of Bayou de Loutre in Union County, Arkansas.

Specifically, through this Petition, GLCC is requesting that the current 86°F ecoregion-based temperature criterion be modified to 96°F. There is no request to change any of the designated uses of that reach of Bayou de Loutre.

GLCC operates an industrial facility, known as the Central Plant (GLCC-Central), near El Dorado, Arkansas. This facility began operations in 1965 and produces specialty chemicals including halogenated compounds, brominated organics, and inorganic chemicals. There is no bromine production related process wastewater discharged from the facility as the wastewater from that source is re-injected into the source formation. Water not directly associated with bromine production is discharged into Bayou de Loutre from Outfall 001. The discharge is authorized by the Arkansas Department of Environmental Quality (ADEQ), under National Pollution Discharge Elimination System (NPDES) Permit No. AR0001171. Water discharged through Outfall 001 consists mainly of non-contact cooling water, flows associated with roof drains, boiler blowdown, steam condensate, air conditioning drains, reactor jacket water and sanitary. The source of this non-contact cooling water is ground water from the Sparta Aquifer, which has been designated as a critical ground water area by the Arkansas Soil and Water Conservation Commission.

The reach of Bayou de Loutre under consideration is designated as a Seasonal Gulf Coastal Fishery, with an associated ecoregion water quality criterion for temperature of 86°F (30°C). As noted previously, the facility has been operating for over 30 years and the thermal discharge predates the ecoregion-based temperature criterion by many years.

Historically, GLCC-Central's Outfall 001 discharge was continuous; however, in an effort to be responsive to the NPDES permit limit for temperature and conservation of the Sparta Aquifer, GLCC developed and implemented a project to transfer the Outfall 001 effluent to Lion Oil for their re-use. The initial transfer of the Outfall 001 effluent was completed during November 1999. The operational transfer of the GLCC-Central Outfall 001 discharge was accomplished during January 2000.

This project has essentially eliminated the discharge from GLCC-Central Outfall 001 and provides Lion Oil with water, which reduces the amount of water Lion Oil must pump from the Sparta Aquifer. This project is environmentally valuable as a conservation measure associated with the Sparta Aquifer. The joint project has received substantial recognition for water conservation efforts.

Despite the water re-use and conservation project, there are, and will continue to be, occasions when the transfer to Lion Oil cannot be completed (e.g., electrical outages, pump malfunction, Lion Oil plant shutdown). Therefore, GLCC-Central must maintain its ability to discharge through Outfall 001 on an intermittent basis. Currently, it discharges approximately 58% of the time. Approximately 85% of these discharge events are less than 2500 gallons; however, the discharge volumes range from less than 500 gallons per day to approximately 1.8 million gallons per day.

Pursuant to Section 2.308 of the WQS, GLCC is requesting that a site specific temperature criterion of 96⁰F be promulgated for Bayou de Loutre from the point where GLCC-Central's Outfall 001 discharges to the confluence with Loutre Creek. This request is supported by the following:

- 1) A study was conducted pre- and post-diversion operations. The study involved long term instream temperature measurements and water quality, biological, and habitat evaluations. The study documented that the designated Gulf Coastal Ecoregion fishery was maintained in the reach of Bayou de Loutre.
- 2) The proposed site specific temperature criterion of 96⁰F (which maintains the designated Gulf Coastal Ecoregion fishery) was developed using the same statistical approach used by the ADEQ to develop the current temperature criterion of 86⁰F.
- 3) There are no feasible cooling technologies due to the flow variations resulting from the water transfer project and operational requirements inherent to the facilities involved.