

## EXECUTIVE SUMMARY

The City of Huntsville (“Huntsville”) operates a municipal wastewater treatment facility (“WWTP”) on Highway 23 North of Huntsville in Madison County, Arkansas. Treated municipal wastewater is discharged from Outfall 001, as authorized by the Arkansas Department of Environmental Quality (ADEQ) under National Pollutant Discharge Elimination System (NPDES) Permit No. AR0022004 that was effective on June 1, 2011 (“the Permit”). Outfall 001 discharges to Town Branch, which flows into Holman Creek, which flows War Eagle Creek. The Permit requires Huntsville to monitor and report the concentration of TDS in its effluent, and includes a condition that Huntsville undertake a study to evaluate all options for achieving compliance with water quality standards for dissolved minerals; i.e. Chlorides (“Cl”), Sulfates (“SO<sub>4</sub>”) and Total Dissolved Solids (“TDS”).

Huntsville submitted the required work plan, which was approved by ADEQ. Huntsville implemented the work plan and issued a report, which recommended establishing site specific criteria for dissolved minerals for certain stream segments downstream of the Huntsville WWTP. Following the initial comment period and extensive discussions with ADEQ, Huntsville limited the scope of the stream segments for which site specific criteria were requested, and issued a revised report entitled *Revised City of Huntsville, Arkansas Section 2.306 Site Specific Water Quality Study: Town Branch, Holman Creek, and War Eagle Creek* (“the Study”).

Based upon discussions with ADEQ and the Study, Huntsville is requesting the following modifications to APCEC Regulation No. 2 for the stream segments identified below (the “Stream Segments”):

Establish site specific Cl, SO<sub>4</sub> and TDS criteria for Town Branch from Point of Discharge of the City of Huntsville WWTP downstream to the confluence with Holman Creek as follows: 223 mg/L Cl, 61 mg/L SO<sub>4</sub> and 779 mg/L TDS

Establish site specific Cl, SO<sub>4</sub> and TDS criteria for Holman Creek from the confluence with Town Branch downstream to the confluence with War Eagle Creek as follows: 180 mg/L Cl, 48 mg/L SO<sub>4</sub> and 621 mg/L TDS

Establish site specific Cl, SO<sub>4</sub> and TDS criteria for War Eagle Creek from the confluence with Holman Creek Downstream to Clifty Creek as follows: 39 mg/L Cl and 248 mg/L TDS

Removal of the Domestic Water Supply use for Town Branch beginning at Latitude 36.112330°, Longitude- 93.732833° and extending downstream to its confluence with Holman Creek at Latitude 36.0118158°, Longitude-93.736039°; (OH-1, #6) and for Holman Creek beginning at its confluence with Town Branch at Latitude 36.118158°, Longitude -93.736039° and extending downstream to its confluence with War Eagle Creek at Latitude 36.140824°, Longitude -93.729594° (OH-1, #7)

Huntsville’s proposed site-specific criteria and use removal are supported by the following:

- Huntsville is not seeking a change from historical water quality conditions in or removal of a designated aquatic life use or the removal of an existing or attainable domestic water supply use in the Stream Segments; rather Huntsville seeks the establishment of site specific criteria and designated but not existing or attainable uses in the Stream Segments, which allow Huntsville to be compliant with its NPDES Permit while making certain that its effluent does not limit the attainment of any of the designated aquatic life uses of the Stream Segments or any of the uses in Beaver Lake, including the domestic water supply use.

- The Study established that:
  - Setting the chloride, sulfate and total dissolved solids at the site specific levels requested will not cause acute or chronic toxicity in the Stream Segments;
  - Setting the chloride, sulfate and total dissolved solids at the site specific levels requested will not impair existing or attainable designated uses, including aquatic life in the Stream Segments; and
  - Setting the chloride, sulfate and total dissolved solids at the site specific levels requested will not impair Beaver Lake; and
  - Removing the domestic water supply use from the stream segments will not impair an existing or attainable use in the Stream Segments and will not impair Beaver Lake.
  
- The fish collections for the Stream Segments were typical of Ozark Highlands Ecoregion fisheries. The habitat quality of the Stream segments is adequate to support the designated aquatic life uses. The biological assessment upstream and downstream of the Stream Segments supports the determination of full attainment of the fishery use. All sampling locations influenced by Huntsville WWTP's discharge showed the presence of ecoregion key and indicator species and species composition consistent with the attainment of a Ozark Highlands fishery designated use. The requested site specific criteria will have no adverse effect on the aquatic life communities;
  
- Toxicity testing on *Ceriodaphnia dubia* and *Pimphales promelas* using Huntsville WWTP effluent showed no significant lethal or sublethal toxicity in either test organism at concentrations exceeding the site specific criteria requested herein;
  
- There are no current economically feasible treatment technologies for the removal of the minerals. Reverse osmosis treatment technology does exist; however, this technology is not cost effective and generates a concentrated brine which is environmentally difficult to dispose of. The technology is not required to meet the designated aquatic life uses and even if implemented would produce no significantly increased environmental protection;
  
- There has been no historical and there is no existing domestic water supply use on the Stream Segments and the Stream Segments are not capable of supporting a domestic water supply use;
  
- Establishing site specific criteria for Cl, SO<sub>4</sub> and TDS, and removal of the domestic water supply use for the Stream Segments are necessary to accommodate important economic and social development in the Huntsville area.
  
- The basis for site-specific standards is provided in 40 CFR 131.10(g). Huntsville's request for the modifications to APCEC Regulation No. 2 set forth above is supported by 40 CFR 131.10(g)(6) which provides that the state may establish less stringent criteria if controls more stringent than those required by section 301(b) and 306 of the Clean Water Act would result in substantial and widespread economic and social impact.
  
- 40 CFR 131.11(b)(1)(ii) provides states with the opportunity to adopt water quality standards that are "modified to reflect site-specific conditions."