ATTACHMENT B
TO EXHIBIT B

EXECUTIVE SUMMARY OF PROPOSED AMENDMENTS TO REGULATION 6

EXECUTIVE SUMMARY

CAW supplies drinking water to 17 cities and communities in central Arkansas. CAW currently serves a population of nearly 400,000 people and estimates that it will serve a population of 575,000 by the year 2050. Lake Maumelle is one of two principal sources of drinking water for CAW. It was built in the late 1950's for a cost in 2006 dollars of $34 million. However, the cost to replace this high quality source of drinking water today would greatly exceed the original cost. Lake Maumelle is one of the cleanest water supply lakes in this region of the country. One of the primary reasons for the high quality of the water is that much of the watershed has remained undeveloped. However, potentially up to 53 percent of the land area of the watershed is developable. Lake Maumelle is in close proximity to the City of Little Rock and adjacent to the Highway 10 corridor, which adds to development pressure. The impact of future development on the Lake Maumelle watershed is a significant concern to CAW and to those citizens whose health and safety depend on the quality of its water.

To address these concerns, in 2004 CAW convened a Task Group for Watershed Management. The Task Group comprised governmental and non-governmental organizations representing both state and local interests. The Task Group reviewed the existing watershed management plan and recommended that CAW contract with an expert watershed management consulting firm to assist in developing and implementing a scientifically-based watershed management plan. CAW selected Tetra Tech, Inc. to provided the necessary consulting services. The final result of efforts of CAW, stakeholders, and state and local agencies and institutions was the Lake Maumelle Watershed Management Plan issued in February 2007.

The Lake Maumelle Watershed Management Plan was developed with extensive participation by citizens groups, rate payers, elected officials, property owners, and

environmental and recreational groups. A panel of technical advisors, whose members included local, state and federal governmental entities, planning agencies and universities, provided input on technical issues. Four public meetings provided information to interested parties and allowed direct participation in the planning process.

Tetra Tech developed extensive watershed and lake models to evaluate and predict how the water quality would respond to various management initiatives. The models allowed a determination of allowable pollutant loads to the lake. Based on research and review of the watershed, consultation with resource agency and academic experts, and best professional judgment, Tetra Tech selected key indicators for evaluation in Lake Maumelle: chlorophyll *a* concentration, total organic carbon (TOC) concentration, Secchi disk depth, and fecal coliform concentration. Key watershed loading parameters related to the lake conditions included the phosphorus series, nitrogen series, sediment, organic material, and bacteria.

Following a thorough model selection process, Tetra Tech developed a linked watershed model (HSPF) and lake response model (CE-QUAL-W2) framework to conduct the baseline analysis. After consultation with technical and policy advisers, Tetra Tech developed two scenarios describing potential future development: Scenario 1 – characterized by large lot development and, Scenario 2 – characterized by denser development near the lake. In order to simulate the impact of future point and non-point source contaminants on Lake Maumelle, Tetra Tech worked closely with local planners, engineers, and agency resource staff to establish representative assumptions for the parameters that would drive the analyses: population increase, residential and commercial development patterns, type of waste treatment, roads, and land cover characteristics. Input from local planners and engineers helped to identify where the future development would occur and at what density levels.

Under either scenario, future water quality conditions would not meet target water quality levels. Excessive levels of sediment, phosphorus, nitrogen and total organic carbon loading from future land use changes and new sources would threaten public health, water supply operations and recreation. There would be an increased risk of disease-causing organisms and an increased risk of toxic substances entering the water supply. The greatest impacts would be from increased algae blooms, increased complex organic materials, and increased turbidity. Algae blooms may emit toxins, foul equipment and cause taste and odor problems. The excessive presence of complex organic materials contributes to disinfection byproducts (toxic and cancer causing substances) and may threaten human health. Increased turbidity indicates that the water supply will be more difficult and costly to treat to ensure that disease causing organisms do not threaten human health.

As a result of the modeling studies and discussions with the Technical Advisory Council, a number of measures were developed to control sediment, phosphorus, TOC and pathogen loading in the watershed. However, the largest potential sources are those associated with new developments and the wastewater from those new residences and significant management methods must be directed to those sources. Tetra Tech evaluated the total additional pollutants from new developments that could be loaded into the lake while still meeting target water quality levels. **Direct surface wastewater discharges were found to pose the most greatest threat. Significantly, if any direct wastewater discharges are allowed into the lake, it will be impossible to meet lake water quality targets.** Non-point source loading and stormwater require 100 percent of the allowable load for new developments. Accordingly, the preferred option to allow a reasonable level of development in the watershed while protecting the quality of the drinking water supply is a complete prohibition on the direct surface discharge of

wastewater other than stormwater into the Lake Maumelle Basin.