

**Appendix 4K**  
**Engineering Evaluation of the Dams for Mountain Creek Reservoir and Lake Scarborough**



## MEMORANDUM

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**TO:** File

**FROM:** RHW

**SUBJECT:** Engineering Evaluation of the Dams for Mountain Creek Reservoir and Lake Scarborough

**DATE:** March 7, 2005

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Pursuant to a verbal request from JSA for an engineering evaluation of the dams for the subject reservoirs, I traveled to Robert Lee and Coleman Texas on March 1, 2005 and performed a site visit at Mountain Creek and Lake Scarborough Dams. The findings of these site visits for both dams are provided below:

- A. **Mountain Creek Reservoir Dam** - Mountain Creek Reservoir is located at the north east edge of the town of Robert Lee in Coke County Texas. At the time of the site visit the lake appeared to be slightly below the normal pool level. The surface area of the reservoir looks to be approximately 25 acres and based on the estimated depth of the water at normal pool, should have a storage volume of approximately 250 acre-feet. Mountain Creek Dam is U shaped earthen dam with a maximum height above Mountain Creek stream bed of approximately 40 feet. The upstream slope is protected from wave erosion by 8 to 10 inch diameter rock riprap. The downstream slope has grass cover for slope protection. The brush and trees had been recently cut from the upstream and downstream slopes. The embankment crest is 8 to 10 feet wide and approximately 1,300 feet long. At the right abutment the dam has a 400-foot wide earthen emergency spillway which has a concrete chute and stilling basin to transition the flood discharge downstream. The chute concrete looks to be in excellent condition with relatively little cracking or spalling. The dam has at least one low flow outlet which is visible in the pond some 50 feet from the bank. This pipe services as a source of water for the water supply for the City of Robert Lee. Overall the dam looks to be in good condition although the condition of the outlet pipe was not observed except from a distance. Based on the location and size of this dam it is classified as a small high hazard dam and is required to pass 100 percent of the PFM. The hydrology of the dam was not determined as part of this site visit. Present at this inspection was Mr. Joe White, Mayor of Robert Lee and Mr. Dan Williams, the City Water Superintendent.
- B. **Lake Scarborough Dam** – Lake Scarborough is located approximately 10 miles north of Coleman Texas in Coleman County Texas. At the time of the site visit the lake appeared to be slightly above the normal pool level. The surface area of the reservoir

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looks to be approximately 103 acres and based on the estimated depth of the water at normal pool, should have a storage volume of approximately 1,600 acre-feet. Scarborough Dam is earthen dam with a maximum height above stream bed of approximately 50 feet. The upstream slope is protected from wave erosion by 8 to 10 inch diameter rock riprap. The downstream slope has grass cover for slope protection. The brush and trees had been recently cut from the upstream and downstream slopes. The embankment crest is 8 to 10 feet wide and approximately 900 feet long. At the right abutment the dam has a 150-foot wide reinforced concrete ogee spillway which has a concrete chute and stilling basin to transition the flood discharge downstream. The chute concrete looks to be in fair condition with some cracking and spalling. The left half of the spillway crest appears to be approximately 6 inch lower than the right half indicates that some differential settlement has occurred in the spillway. The dam has at least one low flow outlet which is visible in the pond some 100 feet from the bank. This pipe services as a source of water the City of Coleman and a low flow release outlet. Overall the dam looks to be in good condition although the condition of the outlet pipe was not observed except from a distance. The dam appears to be an intermediate category low hazard dam and based on its height would be required to pass 30 percent of the PMF. The hydrology of this is site and the capacity of the service spillway was not looked at for this site visit.

Photos and sketches of both dam sites are available in the project files.