



PROJECT DESCRIPTION SHEET



GEOTECHNICAL AND WATER RESOURCES ENGINEERING



KEY ENGINEERING ELEMENTS:

- Geotechnical investigations
- Seismic evaluation
- Seepage analysis
- Stability analysis
- Ground improvement
- Filter analysis
- Spillway hydrology and hydraulics
- Settlement

CLIENT BENEFITS:

- SEO permitting experience
- Preparation of geotechnical and hydraulic analysis
- Preparation of construction drawings and specifications

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NORTH LAKE DAM, LAS ANIMAS COUNTY, CO CITY OF TRINIDAD

North Lake Dam was constructed in 1964 and is an existing earthen embankment about 70 feet high. Prior to joining RJH Consultants Inc. (RJH), RJH employees worked on multiple dam safety improvement projects including:

- Replaced the three water control valves in the outlet tower.
- Constructed a new stream release facility.
- Performed an underwater survey and developed an elevation-capacity curve for the reservoir.
- Completed upstream slope stability analyses and concluded that the stability of the upstream slope was acceptable.
- Grouted a damaged 15-inch pipe through the dam.
- Completed evaluation of the condition of the spillway and conceptual evaluation of the new spillway located on the left abutment.

Currently RJH is working with the City of Trinidad to make the following safety improvements to the dam:

- Additional underwater grouting of the 15-inch pipe from an existing dam located within the reservoir below normal operating pool.
- Design seepage control measures to control high embankment foundation pressures that exist downstream of the dam resulting in unacceptable seepage and slope stability factors of safety. The current concept is for a seepage collection system and stability berm.
- Design a replacement service spillway because the existing service spillway has structural deficiencies.
- Repair or abandon an exiting upper inlet pipe to the gate tower that is separated from the tower.

In addition to the above dam safety improvements, RJH is evaluating the feasibility of increasing the total storage volume at North Lake Dam by building a new dam downstream of the location of the existing dam.

