



## PROJECT PROFILE

# Upper Highline Dam

Dam Stability and Seepage Evaluation and Mitigation | Mesa County, CO



### CLIENT

Colorado Parks and Wildlife and John P. Clark, P.E.

### BACKGROUND

Upper Highline Dam is located on a tributary of Mack Wash in Mesa County, Colorado. Highline Lake, formed by Upper Highline Dam, is used for recreational purposes. Highline Lake State Park is owned by The Colorado Division of Parks and Wildlife (CPW). Construction of the zoned earth-fill dam was completed in 1967. The Colorado Division of Water Resources - Office of the State Engineer (SEO) classifies the structure as a high-hazard dam. In 1989, CPW began operating a long-term monitoring and evaluation program to assess the stability of the dam and to monitor water pressure conditions, seepage flow rates, and ground movement.

Michael W. West & Associates, Inc. (MWWAI)—now joined with WJE—was hired as the lead firm on a team with SGM, Inc., Olson Engineering, Inc., and Canary Systems for the Upper Highline Dam monitoring project.

### SOLUTION

The monitoring system included piezometers, inclinometers, movement monuments, and flow measurements taken at toe drain discharge pipes and v-notch weirs. Work on this project included reading piezometers and obtaining flow measurements, installation of new survey monuments, surveying movement monuments, and preparation of monitoring reports. Additional work may include installation of an automated data acquisition system, investigation of the condition of the toe drains, and other miscellaneous engineering services.

