

### GEODAQ DELIVERED:

- ▶ A digital network of over 1500 MEMS accelerometer sensors to measure earth movement, with redundant tilt measurements at 12-inch spacing, at lower cost than conventional single-tilt systems at 8-foot spacing.
- ▶ 10 piezometers for groundwater monitoring, connected to the same digital network.
- ▶ Wireless remote monitoring station with GCM controller module and wireless internet modem in protective casing.
- ▶ Dedicated server, secure database, and redundant backup for data storage.
- ▶ Real-time data analysis, including evaluation of inclinometer displacement, groundwater level, and rate of change in both. Data was instantaneously compared to three-tiered threshold criteria established by DWR.
- ▶ Automated email and voicemail messaging triggered by data exceeding threshold.
- ▶ Password-protected web interface for real-time data monitoring and analysis.

*"Geodaq gives us high-resolution data in real time, so our engineers can quickly assess current conditions and respond to problems as soon as they come up."*

John Compagnone,  
Operations Manager  
Condon-Johnson & Associates

## Riverside County, California

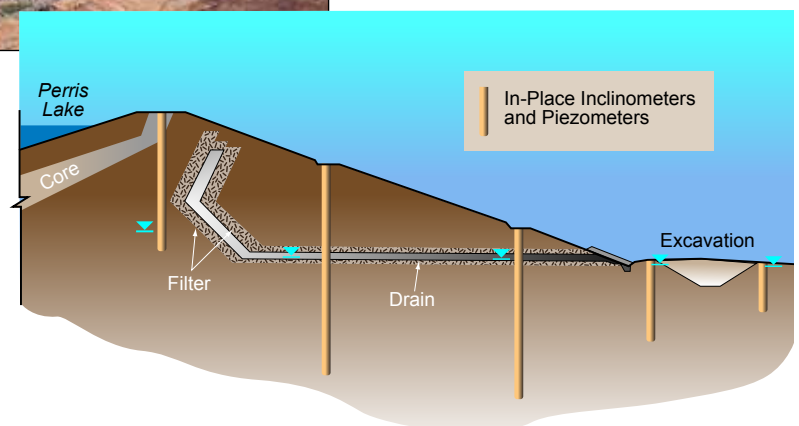
# WEB-BASED REAL-TIME MONITORING AT PERRIS DAM

### OVERVIEW

Perris Dam is an earthen dam 125 feet high and 2.2 miles long, in Riverside County, California. Thin sandy layers in its foundation could liquefy during a large earthquake, potentially causing dam failure and flooding the residential neighborhood immediately below the dam. The remediation plan worked out by California Department of Water Resources and the Division of Safety of Dams includes a test construction phase, with excavation and dewatering at the dam toe. DWR requested rigorous monitoring of groundwater and subsurface movements to ensure public safety.

### SOLUTION

GEODAQ was selected by Condon-Johnson and Associates, contractor for the test phase, to install one of the largest networks of monitoring sensors ever accomplished for an earth dam, at a lower cost than conventional systems. Data was evaluated in real time and an automated email and telephone system was triggered if threshold criteria for displacement or groundwater level were exceeded.



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