



BACKGROUND

Damwatch specialist staff ensure that surveillance data is processed, analysed, interpreted and reported to clients in a timely manner, confirming ongoing satisfactory performance or identifying anomalies requiring further investigation.

Damwatch uses a comprehensive computerised Monitoring System for collection, management and analysis of data from monitoring instruments. This system manages, records and reports large volumes of data collected from a range of monitoring instruments.

Data from over 5,000 instruments is currently stored by the monitoring system for monitoring:

- The structure's performance for safety assurance
- Regulatory and environmental compliance of a wide range of water related assets.

PROFESSIONAL DATA REVIEW

- Peace of mind – timely processing, analysis and interpretation of your dam monitoring data
- Expert knowledge applied to interpretation in the wider context of dam design, CSRs and PPRs to confirm ongoing satisfactory performance or to identify anomalies
- Regular, focused reports on your dam performance
- Rigorous data quality assurance procedures
- Surveillance practices tested by time and independently rated world class
- 24 hour on-call emergency response
- Site inspections for collaboration with data
- Monitoring of over 60 dams, intakes, canals and tunnels throughout NZ and the Pacific

MONITORING SYSTEM CAPABILITY

Data management system

- Versatile multi-user system
- Centralised data storage
- Data security including disaster backup systems
- Suits time dependent data acquisition and display.

Web Tool

- Internet access to data processing and data presentation tools
- Secure client access.

Data Collection Features Supported

- Manual readings collected by handheld dataloggers
- Readings collected by site dataloggers
- Automatic remote data acquisition
- Data transfer over Internet, email, trunk radio and modem.

Types of Data Supported Include

- Groundwater monitoring

- Piezometric pressures
- pH
- Turbidity
- Flow measurements
- Deformation (plumbines, tiltmeters and survey)
- Barometric pressure, temperature
- Ability to process all data file formats.

Alarm Management

- Three levels of alarms
- Different types of alarm, including rate of change
- Automatic notification of alarm via pager, SMS, and email.

Presentation Formats Available

- Flexible plot formatting for multiple sites
- Time history graphs and scatter plots
- Spatial display of instrument data including contouring
- Data lists.



DEMONSTRATION SITE

Monitoring system demonstration at:
www.damwatch.co.nz.

TECHNICAL INFORMATION

The Damwatch monitoring system is based on a fully relational Progress 4GL database that controls all modules of the system, with a binary database for fast storage and retrieval of all time-dependent numerical data. The system links to Techbase for spatial display of data. Automatic remote data collection from data loggers utilises modem communication. Handheld data acquisition capable of web/radio transmission. Acceptance of internet and radio transmission from handheld data acquisition devices. Data is accessible through the web interface.

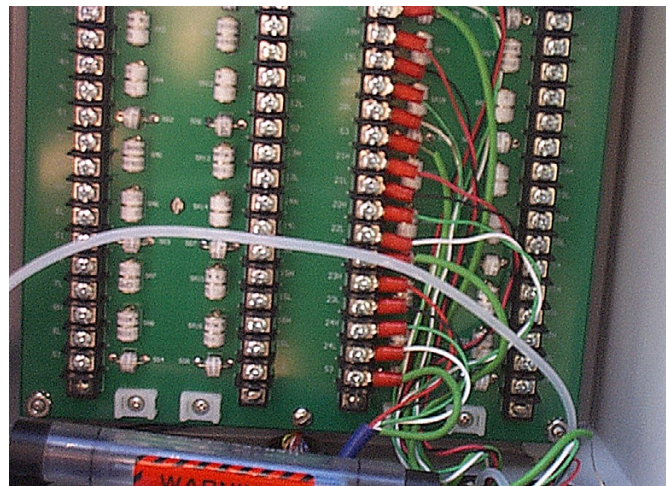
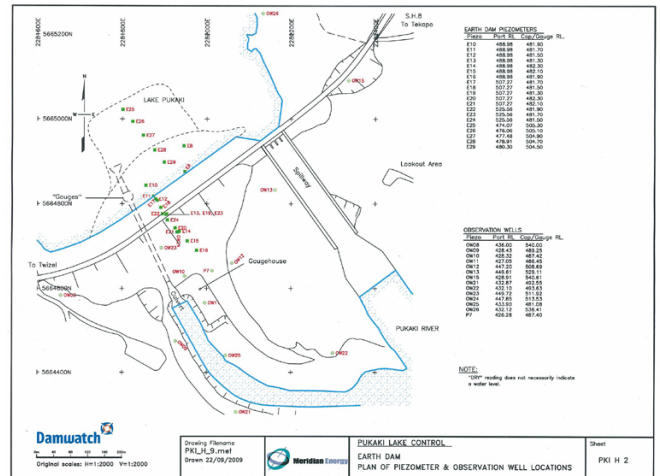
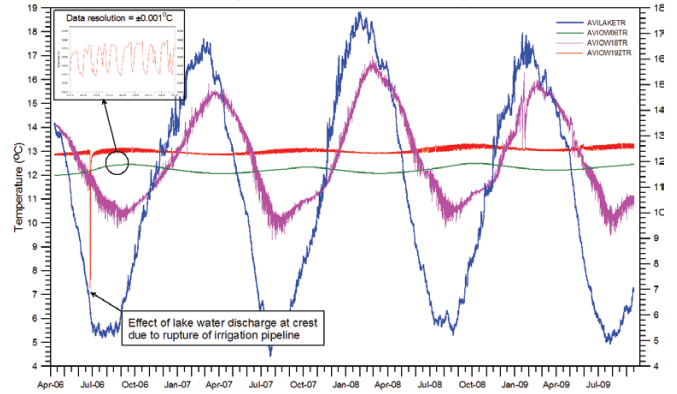
EXAMPLES OF USE OF THE MONITORING SYSTEM

- Monitoring groundwater/piezometric changes
- Monitoring dam foundation uplift pressures
- Monitoring flow rate/temperature/turbidity/pH of seepage flow
- Monitoring seasonal dam deformations using rotation or displacement instruments
- Monitoring landslide stability
- Monitoring environmental parameters.

CLIENTS

The owners of 80% of New Zealand's electricity generation capacity have chosen the Damwatch Monitoring System. Damwatch monitors over 60 dams, intakes, canals and tunnels throughout New Zealand and the Pacific.

Aviemore Dam Post Earthquake Seepage Assessment:
 High Resolution Temperature Monitoring



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