The Al Abyad dam is currently being constructed on a tributary of the Orontes river near to Jisr Al Shurghur, between Aleppo and Latakia in Syria. The dam will provide water storage, primarily for irrigation, in this agricultural area.

The project includes a conventional clay core dam supported by rockfill shoulders. Also included is a large spillway structure with plunge pool and water intake tower with associated discharge culvert.

The dam has a grouting, drainage and monitoring gallery running the full length of the core foundation with access at both abutments and the downstream toe.

Built on a severely faulted rock foundation, this structure has been highlighted for geotechnical monitoring.

**Project Summary**

- **NAME:** Al Abyad Dam
- **YEAR:** 2010 - ongoing
- **CLIENT:** Directorate of Water Resources Hama Governora
- **MAIN CONTRACTOR:** General Company for Hydro Projects (GCHP)
- **INSTRUMENTATION:** Al Mutawasset
- **CONSULTANT:** Agrocomplect SA

**Overview**

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**Monitoring**

Monitoring of the dam construction integrity and long term safety is carried out by recording measurements in the following key areas:

- **Main dam body**
  - Pore water pressures in the core
  - Settlement in the core
- **Dam gallery**
  - Seepage
  - Pressure relief
  - Foundation pore pressures
- **Dam abutments**
  - Groundwater levels
- **Intake tower**
  - Reservoir water level

**Products used**

- **VW piezometers**
  - Measurement of pore water pressure.
- **Standpipe piezometers**
  - Simple measurement of groundwater levels.
- **V-notch weirs**
  - Measurement of seepage flows.
- **V-notch weir monitor**
  - Used in combination with V-notch weirs.
- **Staff gauges**
  - For measuring water level in dam reservoir.
- **GEO-XM**
  - Magnetic system for measuring ground settlement.
- **Reed switch probe**
  - For use with GEO-XM system.
- **Data loggers**
  - Multi-channel remote reading and logging with solar panel and back-up battery.
- **GeoViewer**
  - Data visualisation software which retrieves data from the data logger in near real time and processes the information in either map, profile or graph formats. Trigger levels & alarms can also be set.