



OTT Application Notes / Success Stories

Groundwater Monitoring in the national measuring network of the Free State of Saxony / Germany

OTT Orpheus Mini & OTT ITC

Compact Water Level Measurement System with mobile telephone communication via GSM / SMS



Background

During the hundred-year flood in 2002 in Eastern Germany the river "Elbe" and a lot of rivers in the catchment area exceeded the banks and caused damages of millions within a short period of time. Often unnoticed, the groundwater level was rising extremely after a certain time.

The time of rising groundwater took considerably longer than the actual flood, and caused enormous consequential damages to the building substances in the concerned regions.

Owing to the specified measuring intervals at the measuring sites of the national groundwater monitoring authority the groundwater peaks could hardly be monitored, so that the public could not be informed satisfactorily.

Task

Under the supervision of the „Umweltbetriebsgesellschaft“ (UBG) Radebeul the Free State of Saxony builds up a nationally owned groundwater monitoring network, which is especially planned for the problematic of a flood situation.

- Monitoring of groundwater levels and supervision of the thresholds
- Telemetry of the measured values by GMS data transmission
- Construction of under-ground and above-ground measuring sites

Monitoring Solution

- In the first phase 88 measuring sites were equipped with OTT Orpheus Mini Data Loggers.
- In the second phase 52 of these measuring sites were extended by an intelligent top cap OTT ITC for telemetry via mobile phone network (GSM).
- In order to offer the best service, the installation and commissioning was carried out by a partner company of OTT on site, the company Meier NT.
- Implementation of the telemetry into the IT structure of the state authorities

The advantages:

- The compact and modular design allows a high flexibility in the operation and installation.
- Remote data transmission with alarm functionality
- Open IT interfaces for simple integration in existing structures



Summary / Look-Out

The new measurement network with state-of-the-art OTT equipment will allow fast and reliable information to the public in case of a flood in the future, and it will help to limit consequential damage as far as possible.

- The following sites were equipped:
22 under-ground groundwater sites
35 above-ground groundwater sites
31 wells
- The measuring equipment is in use since autumn 2006.
- Owing to the professional service the measuring stations could start working in due time.

You will find more information about OTT solutions and products on www.ott-hydrometry.com.



Technology

GW Data Logger **OTT Orpheus Mini**
Lithium or Alkaline battery supply
Ceramic-capacitive measuring cell
Use in measuring sites from 1"

Communication Unit **OTT ITC**
GSM / SMS
Active data transmission (SMS sensing) /
passive (data polling from the central station)
Use in measuring sites from 2"