

Project: Remote Monitoring and Control of Water System
Client: Utah DNR - State Parks/Gramoll Construction
Location: East Canyon Reservoir, UT
Year: 2006



Application Notes:

The Utah Dept of Natural Resources - State Parks had contracted with Gramoll Construction Company to put in a new campground and RV area at East Canyon Reservoir near Morgan, Utah. Part of this project was to install a larger water storage tank that would be used for supplying fresh water to the campground area. The Utah DNR wanted the tank filling process to be automated. They needed the ability to monitor the tank level remotely and also to be able to remotely turn on or off the pump that filled the water tank.



Looking from the water tank towards the campground and the pump control house with the reservoir in the background.

Installation and System Design:

Intermountain Environmental, Inc. was contracted by Gramoll Construction (the prime contractor) to come up with a low cost and reliable way to monitor the tank level, turn on the pump when the tank dropped to a user selected set point, turn off the pump when the water level reached a full set point, and to send the information to a PC at the new park entry and management building. A Campbell Scientific CR510 Measurement and Control System with a PS12LA Rechargeable Power Supply was installed in the pump control building. The power supply was charged using a 9591 Wall Mount Charger that was plugged into the 110 VDC outlets in the building. An RF401 Spread Spectrum Radio was attached to the system and a small 6dB YAGI antenna was mounted on the outside of the pump building.



The pump house control building with antenna mounted on the edge of the roof

At the water tank, a 10 ft pole was mounted to the side of the tank and a CR206 Wireless Sensor with a rechargeable power supply was mounted in an enclosure that was attached to the pole. A Druck Pressure Transducer was connected to the CR206 and was installed inside the water tank. A 5-watt Solar Panel was attached to the pole and connected to the rechargeable power supply. Another 6 dB YAGI antenna was attached to the top of the pole and connected to the CR206. This configuration allows the unit at the pump building to interrogate the unit at the tank so that it knows the water level in the tank. Based on the program setup in the unit at the pump building, the pump will be turned on and off as needed to maintain a certain level of water in the tank.



When the management building at the entrance to the State Park was completed, we installed a Base Station, which consisted of an RF401 Spread Spectrum Radio with a small Dipole antenna. The RF401 is connected to a local desktop PC. The PC is running LoggerNet software. The Park Service personnel can see what the current tank water level is and if they need to, they can turn on or off the pump in the pump building remotely, without leaving their office.

*The CR510 Data logger and PS12LA Powers Supply
inside the pump control building.*

For Information on this project or these products please contact:

Intermountain Environmental, Inc.
601 W. 1700 S. Logan, UT 84321
Phone # 435-755-0774
www.inmtn.com