

**Project: SCADA System for Water Supply System**  
**Client: Woodfords Indian Colony**  
**Location: Woodfords Indian Colony, California**  
**Year: 2004**

Intermountain Environmental was contracted to install a SCADA system to monitor and control the water treatment and supply system for a small Indian community located just north of Carson City, Nevada.

**Application Notes:**

The Woodfords Indian Colony is located on the eastern side of the Sierra Nevada Mountains about 40 miles north of Carson City, Nevada. The Colonies water supply was being completely redone. Two new wells were drilled, a new pump and treatment house was constructed and a new water storage tank was erected. The Colony needed a system to monitor the water level in the two wells and in the storage tank. Based on the water level in the tank the system needed to turn on the pumps in each of the wells and monitor the flow from each well while it was on. The water quality of the second well had trace amounts of contaminants and therefore could not be used on a continuous basis. It could only run for 30 minutes a day and must run at the same time as the first well in order to dilute the contaminants enough so that they didn't cause any health threat. The Colony's operations center is actually located in Gardnerville, Nevada, which is about 20 minutes to the East and North of Woodfords, California. The operations people needed a way to have remote access to the system and wanted to have both local and a remote alarm capability. The alarms would tell them if the pumps had failed, if the water level in the storage tank was too low or high, and if the telemetry system had failed.



*Remote Telemetry Unit installed on top of water storage tank*



*SCADA Measurement and Control Unit (right) with Display and Pump Panel (left)*



*Pipes from supply well #1 and supply well #2 with in-line flow meters.*

### **Installation and System Design:**

Intermountain Environmental, put together a small SCADA system using the Campbell Scientific CR10X Datalogger as the central processing unit. The CR10X is located in the Control Building and is directly connected to the pump control panel and the two in-line flow meters that are located in the pipes coming from the two supply wells.

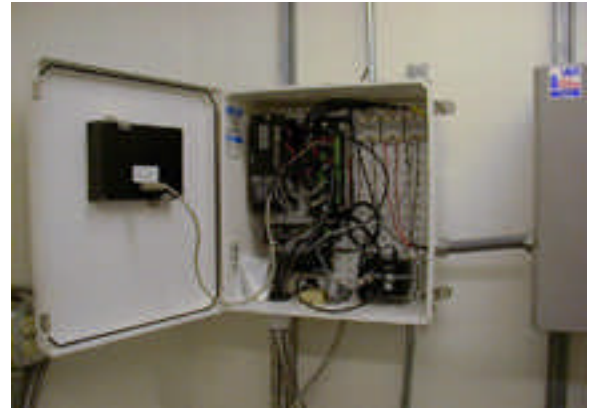
The CR10X also has an RF400 spread spectrum radio connected to it. The radio allows the CR10X to communicate with remote units at the two well sites and at the storage tank site. Every 1-5 minutes the CR10X will interrogate the remote units and get the water level information that is needed to determine when to turn on or off the pumps.

A local display is attached to the CR10X's communication port, so that an operator on site can view the current system status and also make changes to various set points that determine when the pumps turn on or off and when the alarms are triggered.

A PS12LA 12VDC 7-amp hour battery, which is recharged by an AC wall charger. This insures that the system will continue to operate even if the AC power goes off.

And finally, by incorporating a COM310 Voice Phone Modem Package the system can provide both remote access for real-time monitoring, historical data download, and remote alarm capability. PC208W Data logger Support Software is used at the Gardnerville office to collect data and remotely monitor the system.

The two supply wells and the water storage tank are instrumented with CR200 Wireless Sensor Units that have Druck PDCR 1230 Pressure Transducers attached. The Remote Units are powered by a PS100 Rechargeable Battery Pack, which is charged by an SX-10 Solar Panel.



*Inside view of the SCAD Control Unit enclosure. CR10X Unit, PS12LA Rechargeable Power Supply, Solid State Relays for pump control and COM310 Voice Phone Modem.*

Intermountain Environmental personnel spent two weeks developing and testing the program for the system and another two weeks installing and testing the hardware under real life operating conditions. Additionally, a half-day of training personnel from the Colonies Operation Center was provided.

For Information on this project or these products please contact:

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