



City of Salmon FY12 Wastewater Facility Project

SRF #WW1204

\$3,500,000

Final Business Case GPR Documentation

INSTALLS SCADA FOR REMOTE MONITORING/CONTROL (Energy Efficiency). Business Case GPR per 3.5-8: *SCADA systems can be justified based on substantial energy savings (\$75,000).*

SCADA CONTROL TECHNOLOGY¹

Summary

- Energy efficiency results from the remote electronic sensing and control of the treatment plant and lift stations.
- Total SRF loan amount = \$3,500,000
- Estimated energy efficiency (green) portion of loan \cong 2% (\$75,000)
- Estimated annual savings \$11,600 per year.

Background/ Results

- The SCADA system is part of the project both at the plant and for the lift station.
- FILTER FEED PUMPS and BACKWASH PUMPS: The feed pumps to the effluent filter and backwash pumps will be controlled through a PLC (programmable logic controller which is part of the SCADA system) that is both tied to a level sensor and VFD's (variable frequency drives) on the pumps. The SCADA PLC on the feed pumps and VFDs will significantly reduce feed pump cycling, thereby greatly reducing energy consumption.
- PLANT: Through a computer based Graphical User Interface (GUI) program the plant's processes will be monitored and observed remotely. The SCADA GUI will save energy through reduced travel to and from the plant.

Energy Efficiency Improvements

- FEED PUMPS: For the feed pumps it is estimated that a 10% reduction of power use over a typical float / on-off system. Utilizing 12 HP feed pumps and 5 HP backwash pumps, the savings would be approximately \$2,000 per year.
- PLANT: Remote SCADA control saves labor and travel costs = 1 person one trip per day at 6 miles per day = \$8,750 per year in labor costs; travel cost @ \$0.51 per mile = \$850 per year = total saving of \$9,600/yr.

Conclusion

- Total SCADA savings would be around \$11,600 per year in energy and labor costs = payback of 6.5 years, therefore SCADA system costs are GPR-eligible.
- **GPR Costs²:** SCADA = Equipment & Installation: \$57,000
SCADA Installation: \$18,000
\$75,000
- **GPR Justification:** SCADA system costs are GPR-eligible by a Business Case per 3.5-8: *SCADA systems can be justified based on substantial energy savings³.*

¹ December 2012 Keller Engineers - IDEQ

² September, 2014 Keller Engineers - IDEQ

³ Attachment 2. 2011 Clean Water & Drinking Water SRF 20% GPR: EPA Guidance for Determining Project Eligibility