

**Water and Environmental Programs  
Engineering Success Stories**

**State:** Oregon

**Borrower Name:** City of Condon

**Engineering Firm:** Anderson - Perry & Associates, Inc.

**Rural Development Contact:** Joseph W. Sahlfeld, P.E. (503) 414-3356

**Congressional Information:** Congressional District # 2 Bob Smith

**County:** Gilliam

**Keywords:** Summer irrigation

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## **Wastewater System Improvement**

### **DESCRIPTION OF PROBLEM/ISSUE:**

The existing wastewater collection and activated sludge treatment system was constructed in 1951 and upgraded three times in the ensuing years. Recently, during the warm summer months, algae growth in the polishing ponds increased the suspended solids in the effluent to levels above those permitted by Oregon Department Of Environmental Quality (DEQ). The effluent was discharged into Condon Canyon Creek. The dilution levels required to maintain instream water quality could not be maintained and the City was cited for violating its NPDES Permit by discharging excessive solids into the creek. The city was required by DEQ to provide a detailed Mixing Zone Study of the creek or provide alternatives to discharging into the creek.

### **SOLUTION:**

The engineering firm completed the require Mixing Zone Study and evaluated the existing treatment facility. Several alternative solutions for meeting DEQ and NPDES Permit requirement were developed and analyzed . The selected alternative abandoned the existing treatment facility and constructed a lagoon treatment system using winter storage and summer irrigation of treated effluent.

The system includes a treatment lagoon consisting of a 2.6 acre primary cell and a 3.3 acre secondary cell. After treatment the water passes to a 7 acre winter holding lagoon. All lagoons are sized to hold normal winter precipitation plus one foot of emergency storage and lined with a high density polyethylene linear to prevent leakage into the groundwater.

The stored effluent is applied to approximately 40 acres of farm land during the growing season using a center-pivot irrigation system. The City may realize a small profit from the crops.