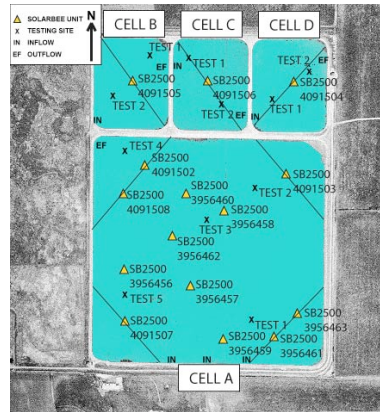


**Key Words:** municipal, sludge reduction, odor, TSS, BOD, algae control, pH



**Photo:** Photo is an aerial view of the four-pond wastewater treatment system with SolarBee placements indicated with triangles.

**Reservoir or Lake Use:** Municipal wastewater treatment system for a city with a population of 10,200.

**System Overview and Reservoir:** This is a four-pond system, with 100% of the flow first going to the primary pond, then to the secondary pond, then to the tertiary pond, and then to a polishing pond. Cell A (the primary pond) is 68.5 acres, 5 ft deep, 90 MG capacity, loading is about 40 lbs/acre/day, and has no grid aeration. Cells B, C, and D (the secondary, tertiary, and polishing ponds, respectively) are approximately 8.6 acres, 5 ft deep, 15.7 MG capacity, and have no grid aeration. The flow rate is 1 MGD up to 2 MGD in the summer. System has controlled periodic discharges. Total detention time is 62 days. Most critical discharge permit limits are 30 mg/L BOD and 45 mg/L TSS; there are no current ammonia discharge limits.

**Reported Problem Before SolarBee Installation:** Main issues were sludge accumulation to the point of mounds near the surface of the primary pond, bad odors, and meeting BOD and TSS limits.

**SolarBee Installation:** Date: July 2001, installed in Cell A twelve (12) units equal to SB2500\*, and in Cells B, C, and D one (1) unit equal to SB2500 into each pond. In September 2001, 24-hour electrical kits were added to 6 units in the Cell A and to the units in Cells B, C, and D.

**Results:** Odors were greatly reduced soon after installation. The 3-foot sludge depth in the primary pond was reduced about 40% after one year, and around 60% after two years. All discharge limits are now being met, with effluent BODs now around 15 mg/L, or half of the discharge limit. Severe algal blooms and associated high pH events are now controlled better than ever before. Spring odor events also have been greatly reduced. The city is very happy with the SolarBee system and customer service, and pleased that they are one of the larger wastewater installations.

*Last updated: 3-6-07*

\* SolarBee, Inc. (formerly a division of Pump Systems, Inc.) developed, manufactured, and installed this equipment, and adopted the name "SolarBee" for this technology in Sept, 2001.