

Surface Aerator Retrofit

LANDY-7 Slow Speed Surface Aerators



CASE STUDY

Location: Park City, Utah

Owner: Snyderville Basin Water Reclamation District (SBWRD)

Premature Aerator Failure

The Silver Creek Water Reclamation Facility, which is located in Park City, Utah and owned by the Snyderville Basin Water Reclamation District (SBWRD) was commissioned in 1987. The facility treats up to 2 MGD of municipal wastewater from the Park City, Promontory, and Eastern Snyderville Basin areas. Following treatment, the effluent is discharged into the Silver Creek.

The biological treatment system employed at the Silver Creek WRF is a single oxidation ditch with two (2) slow speed surface aerators. In 1996, the original surface aerators were replaced with larger, 100-HP slow speed surface aerators to increase the aeration capacity of the system. After only nine years of operation, one of the newer aerators failed prematurely.

For the most efficient and economical solution, Snyderville Basin selected the LANDY-7 surface aerator from WesTech to get their system up and running at capacity.

As there is a single oxidation ditch, all site work had to be done without impacting the effluent of the treatment plant potentially leading to a permit violation. For the installation, SBWRD hired a local contractor to complete the site work. Under Westech's direction, the contractor was able to install the equipment in less than 4 hours without any impact to the treatment performance of the plant.

LANDY-7 Surface Aerator

The LANDY-7 impellers incorporate a sturdy design with zero failures due to cracked, sheared, or broken impeller blades. The latest LANDY-7 impeller increases oxygen transfer efficiency and reduces axial and radial loads applied to the aerator gear reducer.

The LANDY-7 provides a guaranteed minimum oxygen transfer efficiency of 3.8 lbs. O₂/HP-hr. when used in an oxidation ditch arrangement. This 10% improvement in efficiency saves significant operational costs over the life of the equipment. The reduced axial and radial loads allows the owner to potentially reuse existing gearboxes and motors.

Customer Satisfaction

In 2009, the other existing aerator failed and SBWRD contracted with WesTech to upgrade their second aerator with the LANDY-7 due to customer satisfaction and proven aerator performance.

Currently, both aerators at the Silver Creek WRF are LANDY-7 units by WesTech. The Operators are pleased with the performance of the system. Larry Smith, Treatment Supervisor, said that the aerators have "met expectations while running 24 hours per day and are more efficient than the previous equipment." With reliable equipment, Silver Creek WRF continues to meet discharge limit requirements and provides the highest quality of treatment to its customers and the environment.



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