



Winslow Arizona Upgrades 2.2 MGD Wastewater Plant

The City of Winslow, AZ recently upgraded its 2.2 MGD wastewater plant which will increase the efficiency of its operations, replace its clarifiers and headworks, upgrade its oxidation ditch, and upgrade many plant support components in this \$7 million construction project completed by Integrated Water Services, Inc. (IWS).

The City of Winslow, AZ currently owns and operates the City of Winslow Wastewater Treatment Plant (WWTP), which is located northeast of the City along the Little Colorado River. Since its inception in the late 1950s, the facility has undergone several process modifications and expansions. The treatment process is an extended aeration activated sludge process utilizing oxidation ditches with internal boat clarifiers capable of providing biological nutrient removal. The WWTP was operating at 50% of its 2.2 MGD design capacity but was having difficulty maintaining its water quality permit requirements.



Fine Screening and Grit Removal Packaged System



Aerial view of site

The plant improvements made by IWS included: a) the construction of the new flow equalization basins; b) installation of the fine bubble diffusers and aeration system; c) construction of external clarifiers; d) construction of the RAS/WAS pump station; e) complete replacement of the instrumentation and control system; and f) various safety upgrades.

The specific IWS scope of work included:

- Structural rehabilitation to the existing manholes and Lift Station Wet Well vault
- Modifications to the existing influent channels, grinders and gates
- East and West Basin Oxidation Ditch dewatering and cleaning in preparation for construction and implementation of aeration grid system and other equipment
- Installation of one new Lift Station Pump and new VFDs on all four pumps
- Installation of a new Fine Screening and Grit Removal Packaged System
- Construction of a new 0.7 MG Flow Equalization Basin (FEB), complete with a lining system and piping, FEB Pump Station vault, pumps, valves
- Removal and disposal of the existing Oxidation Ditches (OD) components
- Installation of new Fine Bubble Diffusers Grids and piping for each of the existing ODs
- Construction of a new Blower/Aeration Supply Building and Supply System
- Installation of new Submersible Mixers complete with related improvements
- Modifications to existing and installation of new access platforms and handrails
- Construction of two new 60-ft diameter reinforced concrete secondary clarifiers and installation of process mechanical, structural, electrical, and instrumentation
- Construction of a new secondary feed and RAS/WAS pump station
- Construction of a new scum pumps station/Precast MH
- Construction of new perimeter wall around the Effluent Storage Basin



Effluent flowing in Oxidation Ditch



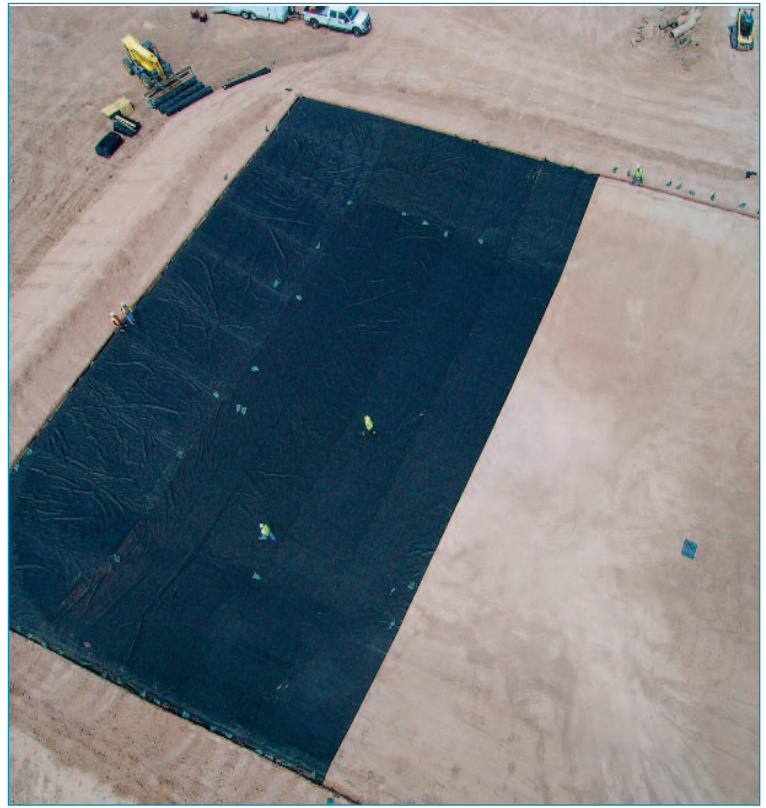
Fine Bubble Diffuser Grid for Oxidation Ditches



Pouring base of 60 ft diameter clarifier



Completed Lift Station



Installing liner on Equalization Basin

- Modifications to the existing Thickeners and Sludge Dewatering feed pumps and piping
- Installation of new sump pumps, piping, and valving; and Civil yard piping
- Demolition and disposal
- Sub grade and asphalt paving for access roads
- Construction of concrete slabs and foundations for equipment and process tanks
- Testing, commissioning, and startup of the new equipment and improved process areas within the plant, including seeding and testing of the new WWTP

The improvements will not change the 2.2 MGD average design capacity or the overall treatment process, but will improve the effluent water quality such that it exceeds the best available demonstrated control technology (BADCT) and meets Class A+ Reclaimed Water Quality Standards.



Assembling Clarifier Components

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