



Remote CA School Selects ENR Denitrification Solution

The Big River Elementary School, located in Needles, CA, needed a wastewater solution to service the newly constructed school that would be appropriate for the harsh desert weather conditions and its remote location. IWS was awarded a contract to construct the treatment system, which included a state of the art denitrification technology to meet the regulatory requirements of the environmentally sensitive area.

The Needles Unified School District (NUSD) is located in eastern San Bernardino County, California, bordering the states of Arizona and Nevada. With an attendance area of 6,000 square miles, the NUSD serves the largest geographical area of any school district in the continental United States. The Needles Unified School District has five schools with an aggregate enrollment of approximately 1,000 students.

The 7,000 gpd onsite wastewater treatment system was designed by Kevin Poffenbarger, PE of EPD Consultants (www.epd-net.com) and includes the SeptiTech Recirculating Media Filtration Unit (www.septitech.com) in combination with the ENR, LLC (www.enrdenite.com) denitrification upflow filter. The site is located near the environmentally sensitive Colorado River and within the permitting jurisdiction

of the State of California - Colorado River Basin Regional Water Quality Control Board (CRBRWQCB). The discharge requirements for the permit included a Total Nitrogen Limit of 10 mg/l, which required a denitrification technology.

During the design phase, EPD was looking for a denitrification solution that could comfortably meet the 10 mg/l limit, was cost effective, required minimal maintenance (due to the remote location), and was able to handle fluctuating nitrate loading. EPD selected the ENR Upflow Filter, which was configured in two, 12,000 gallon Xerxes tanks (www.xerxes.com) and installed below grade.

The IWS scope of work for the overall project included installing: a) 15,000 gallon equalization tank; b) two, SeptiTech M3000 processor tanks configured in Containment Solution Tanks (www.csiproducs.com); c) two, ENR denitrification tanks; d) an Alkalinity and Carbon Feed System; e) UV Disinfection; and f) 18,000 ft² of Geoflow drip dispersal. All the treatment system components were installed below grade to avoid the extreme temperature swings that impact the desert region. The treatment system controls were connected to a telemetry system to enable remote monitoring and operation.



The new Big River Elementary School Campus



Off-loading the Septitech Treatment Vessel



The two ENR Denite units are set in the foreground in the Xerxes tanks

Robert Olin of Brutoco Construction Management Group, Inc. (Brutoco) was the Construction Manager for the project and IWS contracted with Brutoco (www.bcmg.us). The overall construction schedule was 8 weeks and included work during the early summer months where temperatures reached over 110 degrees during the day.

Kevin Poffenbarger, PE enjoyed working with the IWS team, "It was a pleasure working with IWS – they executed the scope of work to meet the schedule and quality goals of the project. They delivered what they promised and were great to work with." ●



The tank area backfilled with risers installed

About Us

Integrated Water Services, Inc. (IWS) provides services to municipalities, developers, communities, and businesses to address their water and wastewater needs. IWS leverages its extensive experience in permitting, engineering, construction, project management, site development, and project finance to provide a range of services to its clients with the ultimate objective of providing a solution that meets all the stakeholders' needs. IWS teams with engineering firms, consultants, suppliers, and other contractors to provide the client best value for their specific project needs.

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