

CASE STUDY

An Affordable Wastewater Treatment Solution for Institutions and Small Municipalities

Elma, Washington

Problem

Aging infrastructure was preventing the business park from planned expansion.

Solution

EarthTek was selected to assist with the design, and to supply a 20,000 gpd SABRE sequencing batch reactor (SBR) with total nitrogen reduction, and dual trains.

Satsop business park, a state-of-the-art industrial center and technology campus, is located in beautiful scenic Elma, Washington. The business park's directors began planning for the future, and soon realized the existing package wastewater treatment plant would need to be replaced.

The business park hired the consulting firm of Gibbs and Olson to develop a plan for a new plant. The firm's project engineer, Mike Marshall, P.E. evaluated several options, eventually selecting EarthTek of Batesville, Indiana to assist with the design, and to supply a package sequencing batch reactor (SBR) treatment plant for the project. The plant was initially designed to treat 20,000 gpd with total nitrogen reduction, utilizing one SBR online, and one standby. However, treatment of flows of 40,000 gpd or more are achievable with both SBR's online.

Message from the President

"Our goal is to create the best solution for our client's specific needs, not just provide an off-the-shelf plant."
-Kevin Chaffee, P.E.

Institutional Market

Project Overview

Elma, Washington



Annual OM&R

- \$10,294

Primary Treatment

- One 25,000-gallon primary FRP tank

Secondary Treatment

- Two 25,000-gallon EarthTek SABRE SBR's

Dispersal

- Surface water discharge with NPDES permit

Operation

- Full-time operator

Influent Quality

- ave. 360 mg/l BOD5
- ave. 440 mg/l TSS

EarthTek SABRE

Effluent Quality

- < 30 mg/l BOD5
- < 30 mg/l TSS

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Elma, Washington

Institutional
Market

EarthTek's SABRE SBR system was selected due to:

- Being split into multiple treatment units so one tank could be taken off-line if not needed
- Utilizing buried fiberglass tanks to be aesthetic, while minimizing odors due to the plant being installed near existing park buildings
- Simple to operate and maintain with minimal ongoing expense
- Provides simple denitrification to reduce total nitrogen
- Cost-effective compared to other systems

The package wastewater treatment system included an influent screen, one 25,000-gallon, 10' diameter, buried primary fiberglass (FRP) treatment tank, two 25,000-gallon, 10' diameter, single-compartment buried FRP SBR tanks for secondary treatment, and a liquid magnesium hydroxide chemical feed system for alkalinity adjustment.

The treated effluent has met the regulatory discharge permit limits of 30 mg/l BOD5 and 30 mg/l TSS since it was put into operation in the summer of 2015. The plant is designed to nitrify/denitrify if required.



For more information about EarthTek SBR systems, contact EarthTek, at 800-972-9940.



info@earthtek.com