

## PROJECT PROFILE

## An Affordable Wastewater Treatment Solution for Commercial Properties

## ERBIL, IRAQ

**Problem** BGP International, a seismic surveying firm, needed portable, turn-key wastewater systems for a series of 500-person remote camps in Kurdistan, Iraq. Units needed to be robust enough to meet treatment limits with minimal maintenance and be simple to operate.

**Solution** After viewing a similar system in operation at a mining site in Texas, U.S.A., BGP chose two AX-Mobile™ portable wastewater treatment systems. The AX-Mobile is a plug-and-play system that produces effluent suitable for re-use (subject to local regulations) and is easy to ship, set, operate, and move.

## Remote Camps Use Portable Wastewater System



Portable AdvanTex AX-Mobile™ Wastewater Treatment Systems have been installed in remote areas of Kurdistan. They serve 500-person surveying camps.

Erbil, the capital of Iraq's autonomous province of Kurdistan, is known as one of the oldest continuously inhabited places in the world. Until recently, the region has been comparatively free of the strife that has plagued the rest of Iraq. The government has worked hard to stabilize the area and has signed contracts with international companies to develop Erbil's oil and gas reserves. One such company is ExxonMobil, which contracted with BGP International to conduct seismic surveys.

In October of 2012, BGP's Houston office contacted Orenco® looking for mobile wastewater treatment systems for a series of surveying camps around Erbil. These camps would each serve about 500 people and would include residence trailers, laundry facilities, kitchen facilities, and toilets for day laborers.

Orenco research and development engineer Tristian Bounds, P.E., suggested that BGP visit an Orenco AX-Mobile installation at a mining site in Catarina, Texas, to learn more about the company's technologies and products. After

## Commercial — Mobile Market

## Project Overview

## ERBIL, IRAQ



## Design Parameters

- Peak flow: 20,000 gpd (75.7 m<sup>3</sup>/day)
- Actual flow: 11,000 gpd (41.6 m<sup>3</sup>/day)

## Initial Installation Date

- April, 2013

## Project Cost

- \$550,000 per system

## Collection System

- Gravity collection to an Orenco® lift station, with 36-inch (900-mm) filament-wound basin

## Primary Treatment

- (2) T-Max™ collection tanks
- Eco MAT® dewatering unit

## Secondary Treatment

- (3) AdvanTex AX-Mobile™ treatment units
- UV Pure® UV disinfection unit

## Dispersal

- Subsurface dispersal

## Operation and Maintenance

- 1 hour per week

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seeing the AX-Mobile system in action, BGP gave Orenco the go-ahead to begin configuring wastewater systems for their camps in Erbil province.

Bounds spoke with BGP's consulting engineer and personnel in-country about the design parameters for each installation. The engineer said that what they really needed was a "black box": a turn-key system that could be started up and left for 3-18 months with minimal operation and maintenance ... yet still meet required treatment level limits. In fact, that's how the system was shown on the camp's engineering plans — as a black box.

Says Bounds, "Since none of the sites had personnel available who were experienced in maintaining wastewater treatment equipment, we had to build a system that was basically 'hands off' after start-up." Orenco developed a customized AX-Mobile treatment package to meet BGP's needs for a simple-to-operate, relatively maintenance-free wastewater solution. The system includes gravity collection to an Orenco lift station with a 36-inch (900-mm) filament-wound basin. Effluent is pumped from the lift station to a Bluewater Technologies Eco MAT® dewatering unit, then to (2) T-Max™ collection tanks followed by (3) AX-Mobile treatment units. Finally, treated effluent runs through a UV Pure® disinfection unit and is pumped out for subsurface dispersal. The resulting effluent is clear and almost odorless. The camps are on generator power, so components were selected for their ability to withstand power fluctuations.

BGP conducts seismic surveys in a variety of areas around Erbil province, so the company needed to make sure each system could be quickly and easily disconnected, then transported to a new camp when necessary. "We used quick-disconnect fittings and removable access equipment for rapid deployment and set-up," says Bounds. "These features helped make moving the system as simple as possible."

BGP has successfully moved two of the systems from their initial locations to other camps. Orenco is currently quoting additional AX-Mobile systems for other companies in the region that need a robust, low-maintenance, portable wastewater solution.

According to Huangfu Lizhi of BGP, "The [AX-Mobile] sewage treatment plant is a very good system for sewage processing, especially for a seismic crew camp. It is a turn-key start-up, and the operation is simple. As long as you take good care of it, it will work normally and you don't have to worry about anything. I would highly recommend the system to my colleagues. These advanced sewage treatment systems cost money — and spare parts and maintenance cost money — but I think it is really worth it."

Nearly 3,000 years ago, Northern Iraq was home to engineers who built a sophisticated canal system to transport water from the Zagros Mountains to King Sennacherib's "Hanging Gardens," thought to be one of the Seven Wonders of the Ancient World. Orenco is very proud to have supplied another innovative engineered water system to this cradle of civilization.

*Data used by Orenco to derive the representations and conclusions contained within this Project Profile were current as of July, 2014.*

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— Huangfu Lizhi  
BGP International, Erbil, Iraq



*AX-Mobile units are completely pre-packaged and built inside a durable, insulated fiberglass tank that is easy to ship and set.*

For more information about effluent sewers, Orenco Sewers™ and AdvanTex® Treatment Systems, contact Orenco Systems®, Inc.

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