

Lifestream Watersystems inc. has provided three brackish water desalination systems to a major oil producing company to yield 255,000 gallons per day of high quality water for a new community of up to 3000 people to support a decade long project of oil production in a remote area. These systems will also provide a reliable supply of high purity industrial process water to the operations of the oil production units.

Lifestream was chosen because of other projects engineered by the company with similar needs for reliable high quality water in remote locations. Lifestream has worked on an oil field project in Kazakhstan, has purified highly brackish water in methane gas fields, and is a major supplier of desalination systems for oil drilling platforms worldwide. The need for reliable pure water supply on a twenty four seven, 365 day basis was the main driving factor for all these installations. In each case the customer felt confident that Lifestream was the right company to trust with these important assignments. This assignment resulted in a number of specialty features.

High Recovery System: The local feed water supply is from a group of wells which have limited capacity and thus the recovery rate of the Lifestream systems is very high so no usable water is wasted. Also the feed water is very highly contaminated with tannins and iron which need to be removed for health and aesthetic reasons. These factors meant that the careful design of the reverse osmosis system as well as the pre and post treatment processes was necessary. Lifestream used the water analysis provided by the oil company to design the RIO and companion iron removal skids, which are integrated with the RIO, for easy operation.

Redundancy: Because of the remoteness of the location as well as the fail safe needs of the equipment, the systems include redundant, duplicate pumps and key components. If any major equipment issues arise, the system can continue to operate and the components be replaced or maintained without loss of water supply.

PLC Operation: To implement this complex system of three desalinators and pretreatment systems and the water needs of the facility, a fully integrated PLC system was designed as the main controller for the units.

The Lifestream PLC systems on the individual desalinators also interface with the main computer system which operates the entire production facility. This allows the main control room to decide what the water needs are and to maintain full storage tanks and have all needed water available and make most efficient use of the Lifestream units.



Engineering Cooperation: Lifestream's in-house engineering staff worked closely with the customer and the customer's designated engineering company along with the local Lifestream engineering representatives to develop the overall plan for the system and be certain that all needs were met and taken into consideration before fabrication was begun.

Once the system parameters were approved by the customer, fabrication was begun. All through the manufacturing process, the customer was kept informed and the technical documentation was modified to implement small modifications required by the end user. There was a good deal of interaction between the engineering staffs as the design progressed on the customer's side to be certain that many of the added key interface items were included.

Certification: When the equipment was completed, a full system third party UL and CSA electrical inspection was done as required by the customer, and the equipment was certified to be in compliance with CSA and UL standards prior to shipment.

An additional third party inspector was present and worked closely with Lifestream's QA and Engineering personnel throughout manufacturing and at the time of functional testing on behalf of the customer. This rigorous full functional test was passed with excellent results and a release note was issued by the customer.

Export Shipment: The system had to be specially prepared for shipment due to the possibility that the units would experience sub freezing conditions prior to installation.

The equipment was shipped on six dedicated trucks from Lifestream's facility in Huntington Beach, CA direct to the job site. Lifestream's team of export experts coordinated all shipping logistics. This is a case of Lifestream's custom engineering, design and manufacturing capabilities providing a solid high quality answer to the stringent and urgent needs of a major customer.