

# RECLAMATION

*Managing Water in the West*

## **Solar Evaporation and Water Recovery Unit**

**Desalination and Water Purification Program**



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## **Contract and Work**

The Environmental Ingenuity Group (EIG) conducted research testing of a low-temperature brine concentrator (evaporation) unit at the El Paso solar pond test facility.

Under a cooperative agreement, the Environmental Ingenuity Group (EIG) was awarded a cost-shared contract. The cooperative agreement with the University of Texas at El Paso (UTEP) was extended for operation and maintenance (O&M) services at the El Paso site.

## **Test Equipment**

The EIG test plan included instrumentation requirements and the water chemistry and operational requirements of the solar pond. The solar pond was lined, and test equipment included:

- a brine concentrator/crystallizer
- spray nozzle and piping system for the EIG cascade evaporator
- condenser stack
- interface heat exchanger
- related hardware

A Licon MEMS vacuum evaporator was installed and interfaced to operate off the solar pond as a baseline test unit. The instrumentation to monitor performance was installed. The EIG unit was flow tested with the pond heat recovery system.

## **Use**

This testing equipment was used for the Brine Concentrator and Recovery System (BRCS). See University of Texas at El Paso, 2002. Zero Discharge Waste Brine Management for Desalination Plants. DWPR Report 89.

<https://www.usbr.gov/research/dwpr/reportpdfs/report089.pdf>