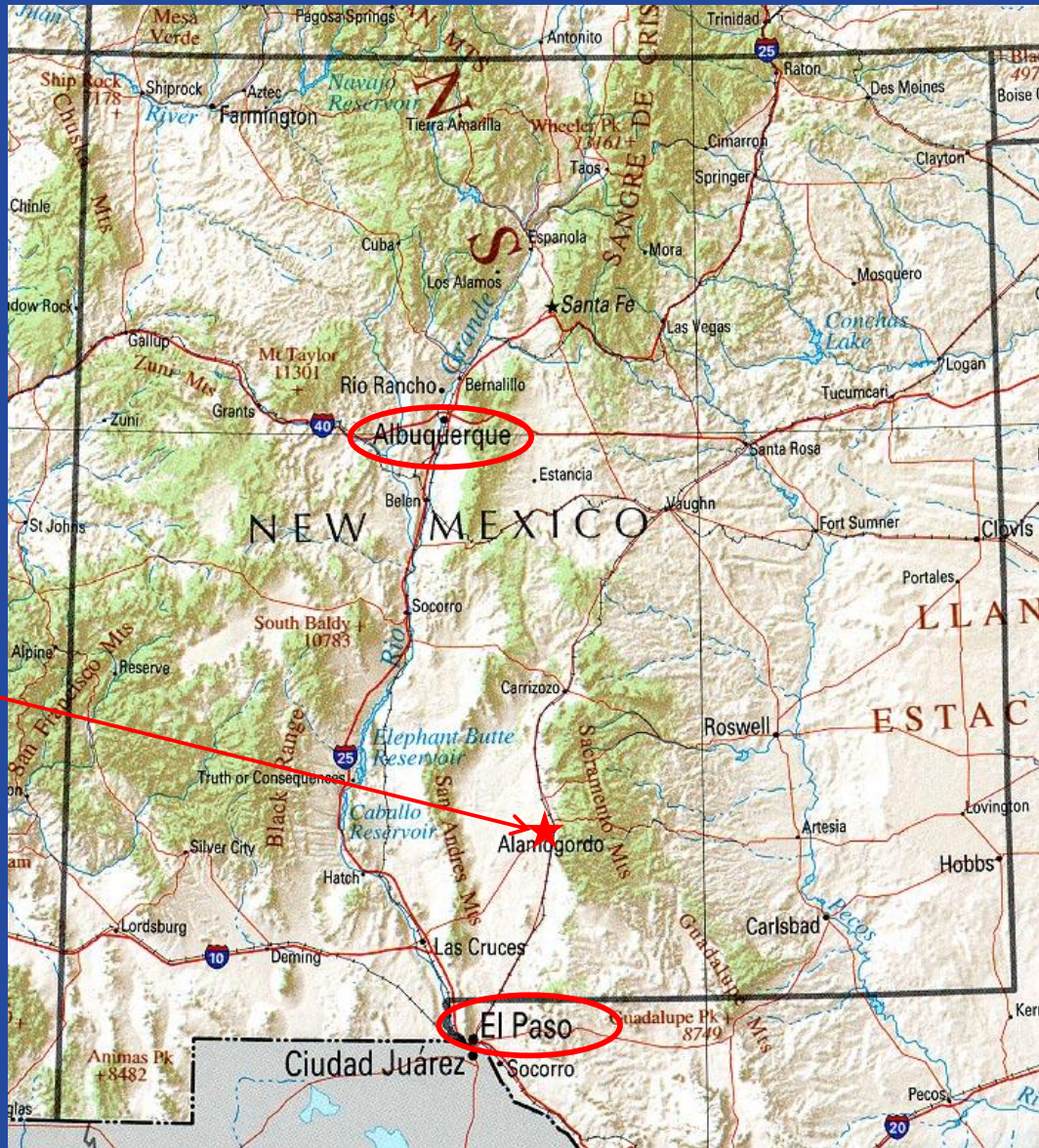


# The Brackish Groundwater National Desalination Research Facility (BGNDRF)

**Randy Shaw, PE**  
**Research Facility Manager**

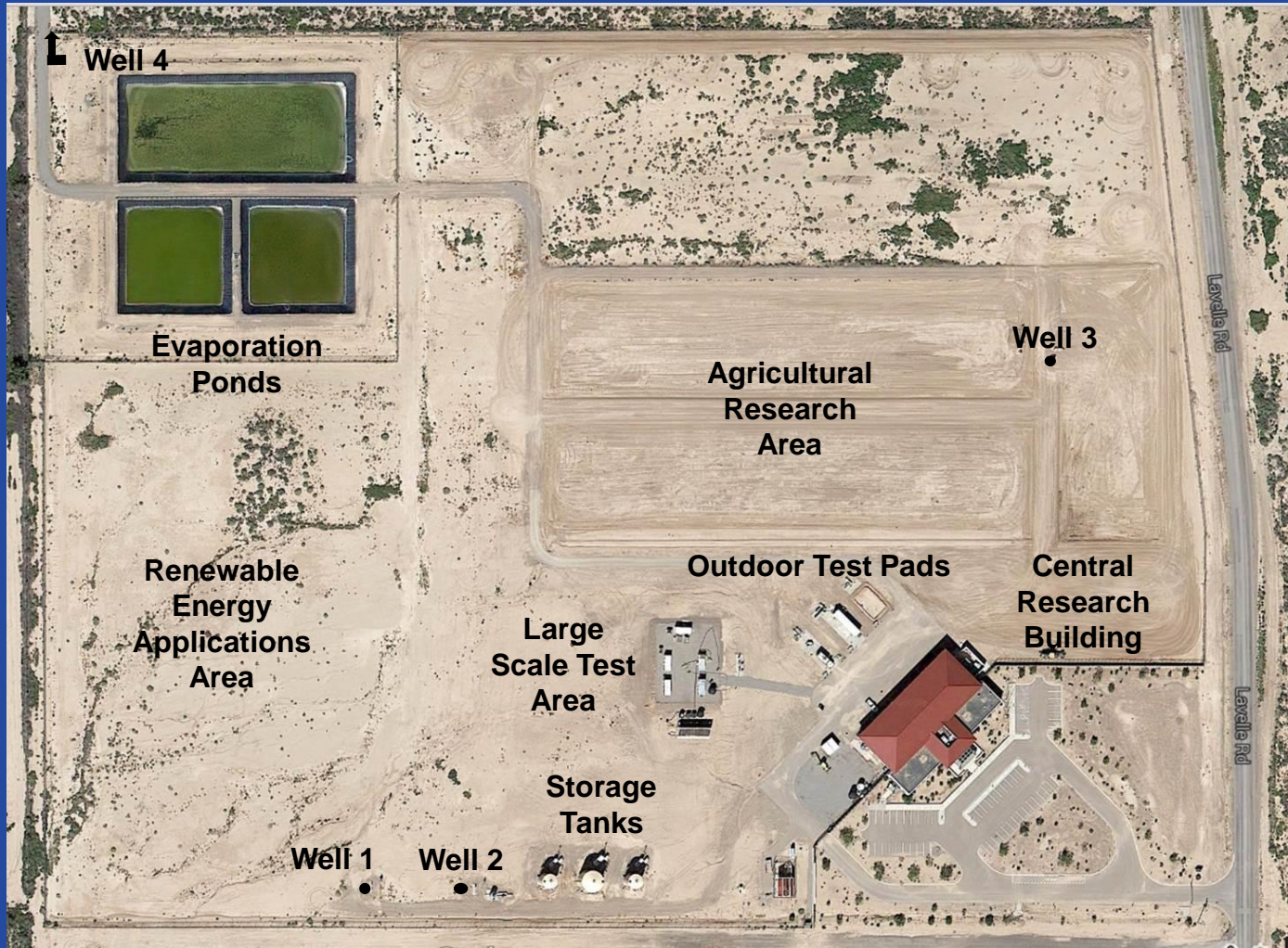


BGNDRF





# The BGNDRF 43-Acre Complex





















# Sampling of BGNDRF Clients

- Universities
- Businesses
- Entrepreneurs





# Types of Testing

- **Proof of Concept**
- **Research and Development (R&D)**
- **Third Party Validation**
- **Demonstration**

# Source Water for Testing

- **4 Brackish Groundwater Wells**
  - TDS: 1,200 to 5,900 mg/L
  - Warm Groundwater: 104 deg F, TDS of 1,200 mg/L
- **Evaporation Pond Concentrate**
  - 20,000 to 150,000 mg/L
- **Special Water Shipped to BGNDRF Including:**
  - Produced Water
  - Septage and Wastewater
  - Other



# BGNDRF Facility Use Fees

<b>2012 Fee Schedule (subject to change)</b>	<b>Price</b>	<b>Unit</b>
Level 3 Engineer/Scientist	976	\$/Staff Day
Level 2 Engineer/Scientist	800	\$/ Staff Day
Level 1 Technicians	592	\$/ Staff Day
<del>Interior Bay Rental</del>	<del>250</del>	<del>\$/week</del>
<del>Exterior Bay Rental</del>	<del>400</del>	<del>\$/week</del>
<del>Power</del>	<del>0.15</del>	<del>\$/kWhr</del>
<del>Water RO Permeate (Set up fees vary) †</del>	<del>10</del>	<del>\$/kgal</del>
<del>On-site groundwater</del>	<del>2</del>	<del>\$/kgal</del>
<del>Imported (Depends on source)</del>		<del>TBD</del>

**WAIVED**

# Why Test at BGNDRF

1. **A Wide Variety of Source Waters at a Single Location**
2. **Currently Waiving Facility Use Fees**
3. **Discharge Permit for Concentrate Discharge to Ponds and Land Application of Concentrate**
4. **24 hr/day; 7 days/week**
5. **Local Affordable Technician Pool**



# General Process for New Customers

- Initial Inquiry
- Tour of the Facility
- Complete Facility Use Forms (7 ea; ~3 hrs)
- Safety Orientation (~2 hrs)
- Commence Work at BGNDRF

# BGNDRF Website

The screenshot shows a web browser window with the URL <https://www.usbr.gov/research/bgndrf/>. The page features the Reclamation logo with the tagline "Managing Water in the West" and a search bar. A navigation menu includes "Water & Power", "Resources & Research", "About Us", "Recreation & Public Use", and "News & Multimedia". The main content area is titled "Research and Development Office" and includes a breadcrumb trail: "Reclamation / R&D / S&T / Labs & Facilities / BGNDRF". A sidebar lists various programs and centers. The main article is titled "Brackish Groundwater National Desalination Research Facility" and includes a photograph of the facility's sign, a descriptive paragraph, and contact information.

**RECLAMATION**  
*Managing Water in the West*

Water & Power | Resources & Research | About Us | Recreation & Public Use | News & Multimedia

Research and Development Office

Reclamation / R&D / S&T / Labs & Facilities / BGNDRF

**RESEARCH AND DEVELOPMENT OFFICE**

- Research and Development Office
- Science and Technology (S&T) Program
- Desalination and Water Purification Research (DWPR) Program
- Water Prize Competition Center
- Technology Transfer
- About

## Brackish Groundwater National Desalination Research Facility



The Brackish Groundwater National Desalination Research Facility (BGNDRF) is a focal point for developing technologies for the desalination of brackish and impaired groundwater found in the inland states.

Located in Alamogordo, New Mexico, the facility opened on August 16, 2007. BGNDRF brings together researchers from other Federal government agencies, universities, the private sector, research organizations, and state and local agencies to work collaboratively and in partnership.

*Facility Address:* 500 La Velle Road, Alamogordo, NM 88310

*Contact:* Randall Shaw, Facility Manager, [rshaw@usbr.gov](mailto:rshaw@usbr.gov), 575.443.6553

**FEATURED RESOURCES**

- About
- History
- Newsletters
- Water Analysis
- Soil Report

Google "BGNDRF" and it will be the first hit in the search.

# BGNDRF Newsletter

## RECLAMATION Managing Water in the West

Vol 1 Issue 2  
June 2012

### Brackish Groundwater National Desalination Research Facility (BGNDRF) Newsletter



*From the Manager:* We are pleased to present the second issue of our periodic newsletter. It is designed to be a brief, information-filled page that will be of interest to our customers and friends. Feedback is welcome. Please contact me at (575) 443-6553 or email me at: [rshaw@usbr.gov](mailto:rshaw@usbr.gov).  
Kind Regards, Randy Shaw, PE

#### Highlights of Current Research

##### Water Standard:

Water Standard, is piloting its H2Ocean Spectrum™ Technology for water-based enhanced oil recovery (EOR). "The H2Ocean Spectrum™ Technology allows producers to customize water quality in real time to further optimize EOR performance once in the field, and meet challenging water requirements." "Water Standard is also piloting and evaluating a new generation of experimental and commercial reverse osmosis and nanofiltration membrane technologies." Water Standard's pilot tests use artificial seawater using RO permeate provided by BGNDRF. This is unique for BGNDRF where feed water is typically brackish water from one of four source water wells. For more information go to: <http://waterstandard.com/>

##### KII, Inc.:

Mr. Hill Kemp of KII, Inc. is testing his recently patented Suns-River Solar Still. The still is a departure from the classic still by incorporating a falling film of water on a tilted adsorption surface almost normal to incident solar radiation. Condensation is enhanced through heat exchanger tubing cooled by the brackish feed water. For more information go to: <http://suns-river.com/>

##### More Information About BGNDRF:

<http://www.usbr.gov/research/AWT/BGNDRF/index.html>

NMSU – New Mexico State University  
GE – General Electric  
UNR – University of Nevada at Reno  
DOE – Department of Energy

UTEP – University of Texas at El Paso  
UNR – University of Nevada at Reno  
TTU – Texas Tech University  
DOI – Department of Interior

#### More Current Research at BGNDRF

**NMSU/GE:** Electro-Dialysis Reversal (EDR) and Reverse Osmosis (RO) with Nanofiltration (NF)

**UNR:** Pressure Retarded Osmosis Assisted Desalination

**TTU:** Small Scale RO with High Recovery

##### Up-Coming Research at BGNDRF

**UTEP/Veolia:** Zero Discharge Desalination

#### OTHER NEWS

**BGNDRF:**  
Top 8 Finalist



President Obama challenged the private and public sectors to make rapid investments in creating a more sustainable, energy-efficient workplace. Associated with that challenge, the White House and DOE challenged Federal agencies to nominate competitors for this year's Better Buildings Award. BGNDRF was selected as a finalist representing the DOI. Mr. Steve Holland, BGNDRF Electronic Technician, is to be commended for his work in making this possible. For more information about the top 8 finalists go to: <http://www1.eere.energy.gov/femp/services/betterbuildings.html>



# 2<sup>nd</sup> Annual WIN Workshop



- **Water Innovations and Networking**
- **October 28-29, 2019**
- **Presentations**
  - **Clients of BGNDRF**
  - **Funding Opportunities**
  - **3-Minute Pitches from the Audience**
- **Partnering with AMTA in Cross Promoting Events**
  - **AMTA Workshop in Albuquerque October 30-31, 2019**
  - **Primary Focus: Enhanced Recovery Processes for NF/RO**