

RECLAMATION

Managing Water in the West

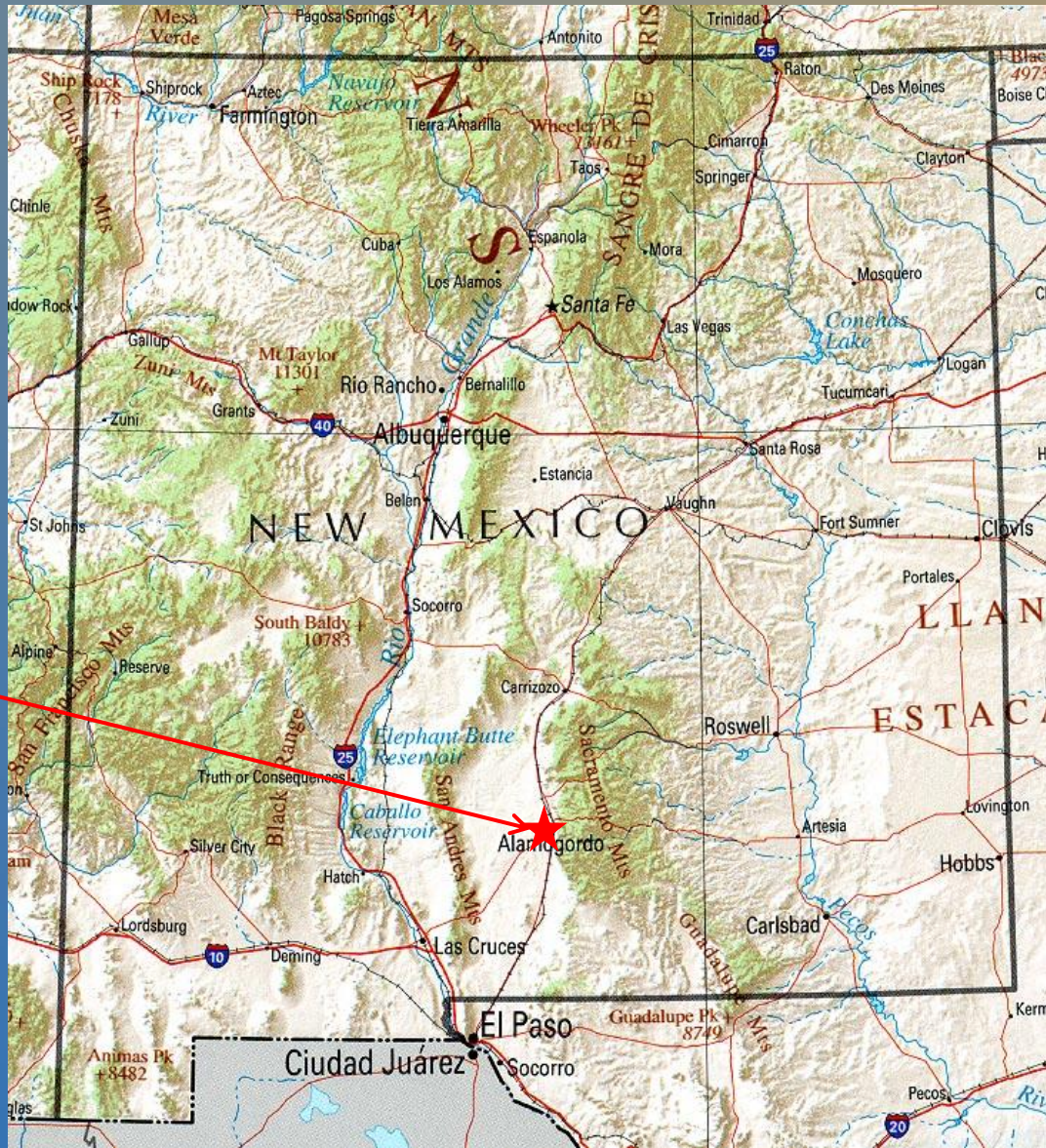
Brackish Groundwater National Desalination Research Facility (BGNDRF)

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U.S. Department of the Interior
Bureau of Reclamation





BGNDRF

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The BGNDRF Complex



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BGNDRF Grand Opening 2007



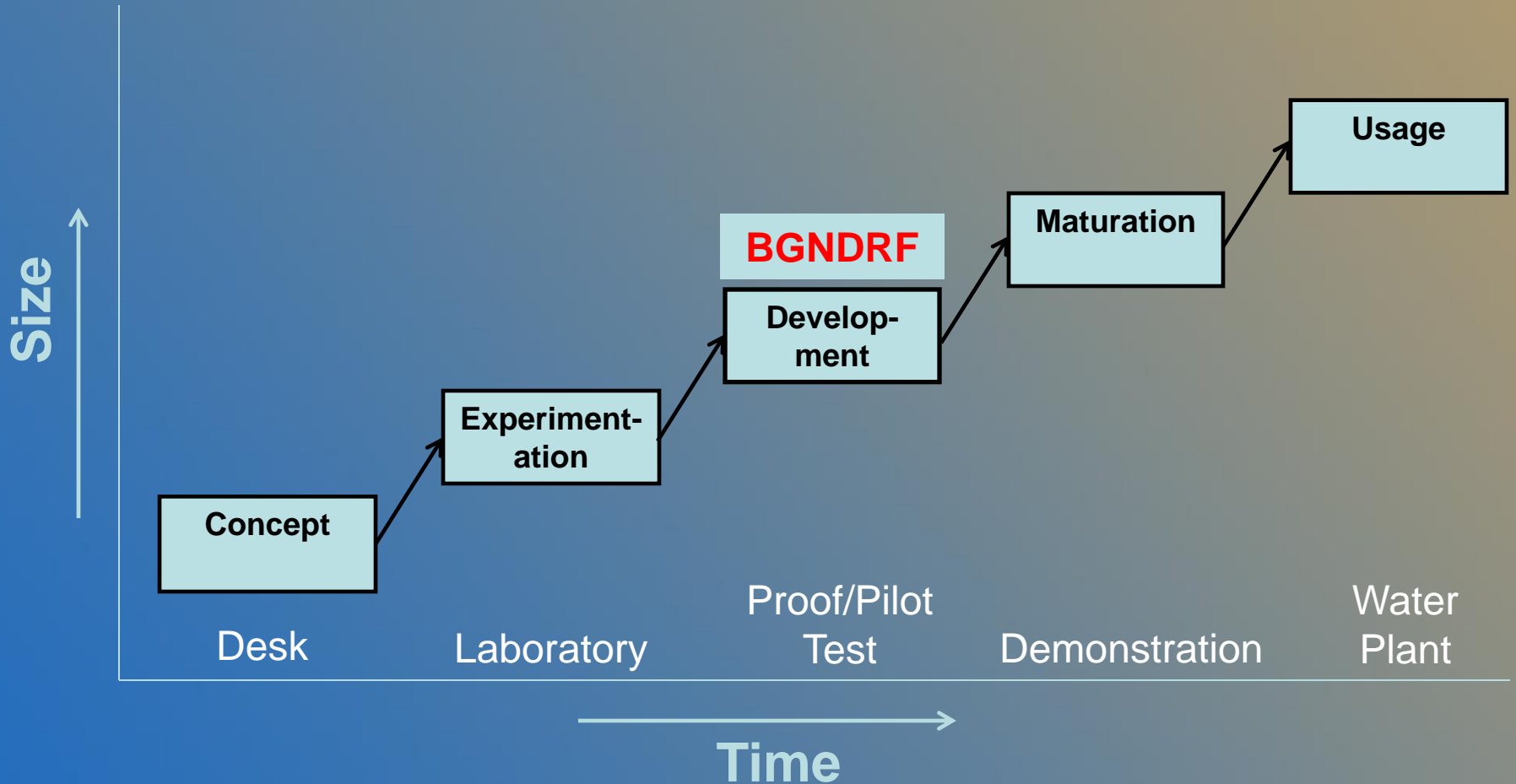
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BGNDRF's Focus

1. Concentrate Management
2. Renewable Energy/Desalination Hybrids
3. Produced Water Desalination Technologies
4. Small Scale Systems
5. Public Outreach and Education

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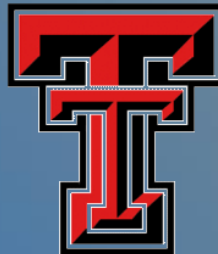
BGNDRF's Niche in Technology Progression



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BGNDRF Clients

- Government Agencies
- Universities
- Private Sector



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General Service Levels

| Service Level | Category | Goal | Client's Role | Reclamation's Role |
|---------------|----------------------------------------------|----------------------------------------|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| 1 | Fully Developed Process and Equipment | Performance Verification | Provide staff to monitor and operate the system. | Connect equipment to BGNDRF system. |
| 2 | | Performance Verification | Hire Reclamation staff for all aspects of testing, analysis and reporting. | Develop test plan, perform testing, analyze data and report results. |
| 3 | | Certified Claims for Technology | Client supplies equipment and claim to be certified. | Work with NSF Intl and EPA oversight to develop a test plan and serve as the testing organization. |
| 4 | Research and Development | Evolve an Idea to a Marketable Product | Client supplies resources for Reclamation experts to work cooperatively with client. | Work cooperatively with the client |

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BGNDRF Fee Schedule

2012 Fee Schedule (subject to change)

| | Price | Unit |
|----------------------------------------|------------|---------------|
| Level 3 Engineer/Scientist | 976 | \$/Staff Day |
| Level 2 Engineer/Scientist | 800 | \$/ Staff Day |
| Level 1 Technicians | 592 | \$/ Staff Day |
| Interior Bay Rental | 250 | \$/week |
| Exterior Bay Rental | 400 | \$/week |
| Power | 0.15 | \$/kWhr |
| Water RO Permeate (Set up fees vary) + | 10 | \$/kgal |
| On-site groundwater | 2 | \$/kgal |
| Imported (Depends on source) | | TBD |
| ETV Testing Coordination with NSF | ~\$100,000 | Per report |
| International | | |
| Potable Water | TBD | |

Water quality analysis available for staff time charge: conductivity, pH, ORP, Temperature, Colorimetric analyses, Particle counts, Turbidity, Silt Density Index

General Process for New Client

- Initial Inquiry
- Tour of the Facility
- Complete Facility Use Forms (6 ea; 3 hrs)
- Safety Orientation (2 hrs)
- Commence Work at BGNDRF

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Reclamation Staff



- Assist with connecting client's equipment to power and water.
- Provide occasional assistance with troubleshooting, equipment monitoring, equipment operations etc.

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Capacitive Deionization



UTEP and Voltea

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Reverse Osmosis (Patented Control)



Water Standard; Houston, TX

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Zero Discharge Desalination (ZDD)



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Solar Distillation



KII Inc. Suns River Solar Still

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The Desal Prize



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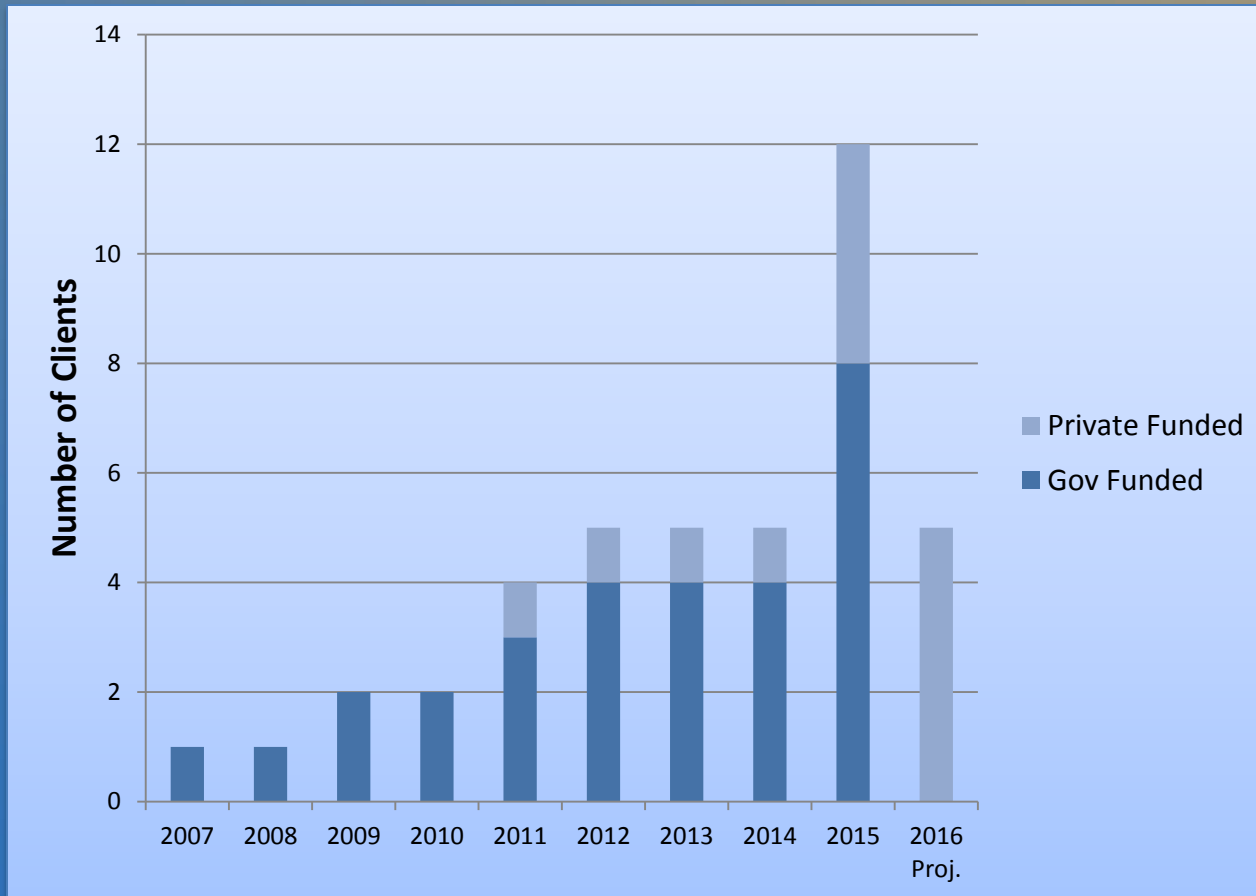
450 Third Graders



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Major Challenge for Success

- Client Utilization of the Facility



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Major Challenge for Success

- Client Utilization of the Facility
- Why is Client Utilization a Problem?
 - Funding
 - Lack of Awareness of BGNDRF's Existence
 - Lack of Awareness of BGNDRF's Business Model
 - Cumbersome Slow Bureaucracy

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Keys to Success

- Federal Long Term Plan for Funding R&D
- Robust Marketing
 - Newsletter
 - Exhibition Booths
 - “Can Do” Attitude
 - No Bad Experiences
- Customer Friendly Philosophy
 - 24 hr/day; 7 days/week
 - Currently Waiving Fees
 - Local Technicians
- Broadening the Appeal

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Questions



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<http://hiddenunseen.blogspot.com/2012/04/top-9-unusual-deserts.html>

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