

Study 3
**Enhanced Water Conservation, Drought
Management, and Land Stewardship**

2011 South Central Texas Regional Water Plan First Biennium

Study 3 – Condensation Collection

Status Report

November 6, 2008



Study 3 – Task 2: Condensation Collection

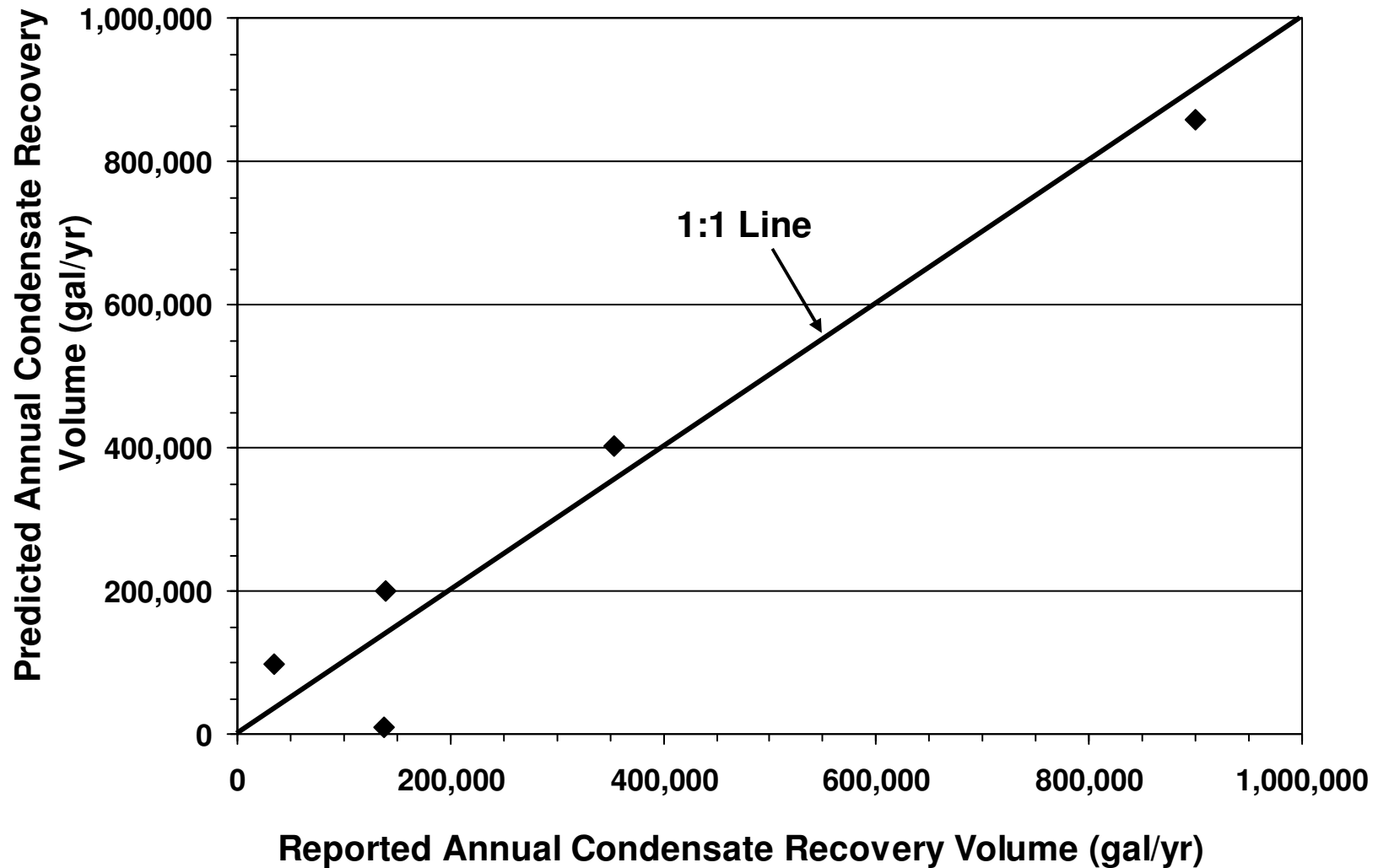
- *Prepare preliminary cost estimates to install air-conditioning systems with condensate collection facilities and plumbing to deliver the water for use either as landscape irrigation or for other uses, such as toilet flushing and sanitation.*

Condensation Collection Facility Data

| Condensate Collection Project | Project Status | Location | Building Area (ft ²) | Average Summer Afternoon Humidity | Average High Summer Temperature (deg F) | Annual Condensate Recovery Volume (gal/yr) |
|---|----------------|-----------------|----------------------------------|-----------------------------------|---|--|
| Sea World Game Center | Existing | San Antonio, TX | 28,000 | 57% | 91 | 140,000 |
| Sea World Restaurant | Existing | San Antonio, TX | 12,000 | 57% | 91 | 35,000 |
| Houston EPA Laboratory | Existing | Houston, TX | 39,408 | 62% | 88 | 138,333 |
| Emory University Winship Cancer Institute | Existing | Atlanta, GA | 268,000 | 57% | 80 | 900,000 |
| Fulton County Health Center | Existing | Wauseon, OH | 281,500 | 56% | 73 | 353,000 |

Condensate Volume vs Area & Temperature

$$\text{Condensate Volume} = (6.4 * \text{Area}) + (77,174.8 * \text{Temperature}) - 7,033,910.1$$



Cost Estimates

- Very limited data available on costs for new construction installation
 - ~\$45,000 in Capital Costs
- Hypothetical “Big Box” store in Bexar County
 - 130,000 sq ft Example
 - Could produce about 2.6 acft/yr of water
- Amortized over 30 years = \$1,700/acft/yr
- Note: Smaller Systems (Sea World San Antonio) could cost as much as \$4,300/acft/yr