



**AES** Water  
Solutions

Oilfield Water Management Solutions



**Texas Railroad  
Commission**

**Texas Oil and Gas Water Conservation and Recycling Symposium**

**Commissioner Christi Craddick**

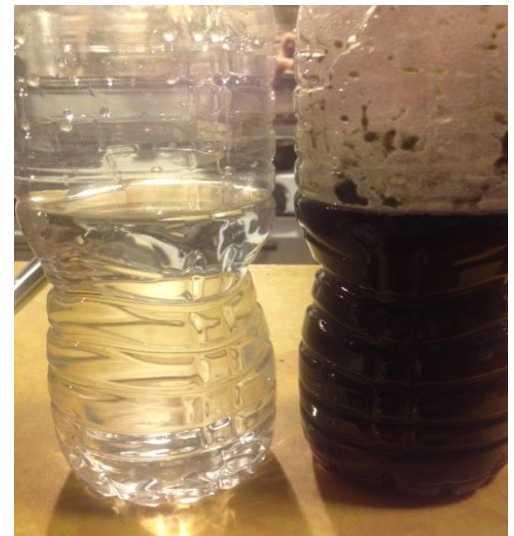
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# Water Recycling



**The Chemical Coagulant/Dissolved Air Flotation (CC/DAF) water recycling system**

**3 step process to convert non-usable frac and produced water into water with very low concentrations of suspended solids, metals, and bacteria.**





# Water Recycling

## PROCESS ADVANTAGES

Modular on-site system

Quick deployment and set up

Process up to 20,000 bbls of frac water/day

Removes 99% of suspended solids > 5  $\mu\text{m}$

Kills ~99% bacteria

Produces reusable frac water on-site

Reduces:

- fresh water sourcing costs
- transportation costs
- disposal costs



# Water Recycling

## ENVIRONMENTAL ADVANTAGES

- Reduces fresh water consumption in drought areas
- Minimizes community concern regarding drinking and agriculture water supply
- Less impact on sources of fresh water and their ecosystems
- Reduces truck traffic of moving water over local roadways
- Reduces damage and repair to local roadways



# Water Recycling

## Future directions, challenges and opportunities

- Operators indicate added interest in Recycling
  - Looking at reducing over all water costs
  - Centralizing water system for E&P Development, ie. produced and flow back water to recycling
- Challenges include:
  - Landowners not wanting hoses running over property
- Opportunities:
  - Recycling existing produced water ponds