The Water Challenge
Permian Basin Pilot

Helping Industry Advance Water Management Strategies

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HARC
Introduction

**Houston Advanced Research Center**

*Nonprofit research hub founded in 1982 by George P. Mitchell*

Provide independent analysis on **energy**, **water**, and **air** issues to people seeking scientific answers and to operate as a research hub finding solutions for a sustainable future.
Introduction

Environmentally Friendly Drilling Program

Collaborative Program
Industry, Academia, Government, and Environmental Organizations

Provide unbiased science to address environmental and societal aspects associated with oil and gas development.
EFD Work with Industry

Field trials since 2012
Background

2016 Methane Challenge was announced

What about water?!
Addressing the needs of all water users requires a thorough examination of practices, technologies, and behaviors that impact water demands, supplies, and management strategies.
Getting Started

Discussions with industry & environmental partners led to development of The Water Challenge.

Grant awarded for Pilot focusing on Permian Basin

- Test the Water Challenge
- Identify Improvements
- Industry & state regulators feedback
Initial Objectives

The Water Challenge
Work with onshore O&G producers to:
- Reduce freshwater usage
- Increase use of produced water within operations
- Investigate beneficial uses of produced water

The Water Challenge PILOT
Work with onshore O&G producers to:
- Test the Water Challenge Program
- Obtain feedback from industry & regulators
- Identify improvements that could be made
Previous HARC-EFD Work
Scorecard, Field Trials, O&G bmp’s, Industry Sponsors and University/National Lab Alliance members
Literature Review - External

Industry Publications, Presentations, Case Studies  
Corporate Sustainability Reports, Awards/Recognition, etc.
...so that this is industry-driven and identify most applicable practices (MAPs) industry is using and/or considering.

What is working?  What isn’t?
What do you want stakeholders to know?
How measurements have been/are made for:

- Baseline of water usage
- Reduction in potable water usage
- Amount of produced water used in operations
- Reduction in amount of water disposed

Programs, MAPs, goals, and/or innovative technologies that companies are currently using or evaluating.

*Most Applicable Practices = economical, operational, & environmental successes.*
Some ways industry gets the word out on their goals and/or achievements

Primarily Within Industry
• Annual Sustainability Reports
• Shareholder Reports
• Corporate Responsibility Reports
• Industry Publications & Conferences

Outside of Industry
• Engaging communities at events, on their turf
• Establishing community relations staff/contacts

“In the communities’ eyes it’s not just the company — it’s the industry.”
Drilling, Completions and Production requires a lot of water. It also yields a lot of water.

Sometimes, that water can be recycled/reused.

Sometimes it can’t.
Industry has been doing this a long time, and knows the value of water.

Main Challenges =

Logistics

(infrastrucure, timing/sequencing, transportation)
Opportunities

What would be ‘big wins?’

- Common infrastructure
- Regional collaboration

*Opportunities to share infrastructure (reduce trucks/mileage)*

Identification of Key Performance Indicators
The Water Challenge Pilot

• Toured sites in Midland to document processes that are addressing water issues.
• Documented practices/technologies in use/being researched.
• Outreach efforts to both industry and non-industry stakeholders.
• Developed website to host data (Case studies, Success Stories, Lessons Learned, etc.).
Now what?
The Water Challenge was envisioned as a tool for companies to undertake and document voluntary water conservation efforts.

Operators participate by implementing and reporting water management strategies to reduce freshwater usage, increase recycling/reuse and help share their progress in the ways that the company knows to be most effective/applicable.
How could this benefit industry?

Supporting Company Objectives

Operational Excellence    Continuous Improvement
Stakeholder Partnerships   Technology Development
Transparency and Communication

Complement:
IPIECA/GRI Reporting
Carbon Disclosure Project Reporting
Annual Corporate Sustainability Reporting
Continue with the full Water Challenge?

Advance the adoption of expanded, voluntary water management practices, offering flexibility so that companies utilize the paths that best fit their corporate sustainability and operating priorities.

Contribute to other Water Focused Programs

‘Internet of Water’
Data on Sourcing, Quality, Quantity, Logistics, etc.
Continuous improvement is not only feasible, but also essential for both operational and environmental sustainability.

Thank you!

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