

The Future of Produced Water: The Future is NOW

Shellie R. Chard

Water Quality Division Director

Oklahoma Department of Environmental Quality

ODEQ's Role in Produced Water

- * National
- * Regional
- * State



Oklahoma DEQ's Role

- * National
- * Water Q
- * Participa
- * Water re
workgro
- * Part of C
Group
- * Work wi
treatmei



ced water
Report
kshops
ecific

Working

ation,

Produced Water Activities to Watch

- * Ground Water Protection Council
 - * *Produced Water Report: Regulations, Current Practices and Research Needs*
- * EPA
 - * Effluent Limitations Guidelines
 - * Water Reuse Framework
 - * New Mexico/EPA MOU
- * Oklahoma DEQ
 - * OPDES Delegation of Produced Water Discharges



GROUNDWATER

PROTECTION COUNCIL



PRODUCED WATER REPORT

Regulations, Current Practices & Research Needs

Developing Solutions: Modular Approach

MODULE 01

Regulatory & Legal Frameworks

This module describes the current legal and regulatory frameworks that address produced water. It also addresses changes that may need to occur to facilitate the use of produced water.

Leadership:

John Baza, Utah Division of Oil, Gas & Mining
Shellie Chard, Oklahoma DEQ, Water Quality

MODULE 02

Produced Water Use in the Oilfield

This module describes the current uses and potential future uses of produced water inside the oilfield. It defines the existing constraints of use and identifies the opportunities and challenges of expanded use.

Leadership:

Tom Kropatsch, Wyoming Oil & Gas Commission
Scott Kell, Ohio Department of Natural Resources

MODULE 03

Produced Water Use & Research Needs Outside the Oilfield

This module describes current and potential use of produced water outside the oilfield and identifies the research needs that will need to be addressed to facilitate expanded use.

Leadership:

Ken Harris, California Department of Conservation
Nichole Saunders, Environmental Defense Fund

Produced Water Report

Conclusions

*** Produced water reuse requires careful thought**

- Reuse IS possible and may be cost effective in the right situations
- Oil & gas companies and end users must work together to facilitate reuse
- Regulators CAN look for ways to allow reuse projects but **MUST** ensure these practices are done with proper environmental and public health protection

Regulatory Conclusion

- Expanding reuse opportunities may require regulatory or legislative solutions to issues such as:
 - Ownership of produced water
 - Transfer of ownership
 - Determination of liability
 - Human health and safety concerns
 - Environmental risk and mitigation concerns



ELG Review and White Paper

- * All 11 oil and gas effluent limitation guidelines reviewed
- * EPA met with stakeholders across the country
- * White paper scheduled release was December 2019, February 2019, late March 2019, soon...



EPA's Water Reuse Framework

- * First draft prepared late December 2018
- * Meetings April 18 and May 9 with invited stakeholders
 - * Oklahoma and Texas only states invited so far
- * Top priorities
 - * Potable reuse
 - * Non-potable reuse
 - * Produced water
- * Final Framework to be released in September 2019 in San Diego



Produced Water Discharge in Oklahoma

- * Currently prohibited in approximately 60% of state (east of 98th Meridian)
- * Current discharge permits issued by EPA R6
- * DEQ submitted a supplement to OPDES delegation
- * R6 has completed reviewed and sent to EPA HQ

Keys for Successful **Intentional** Reuse

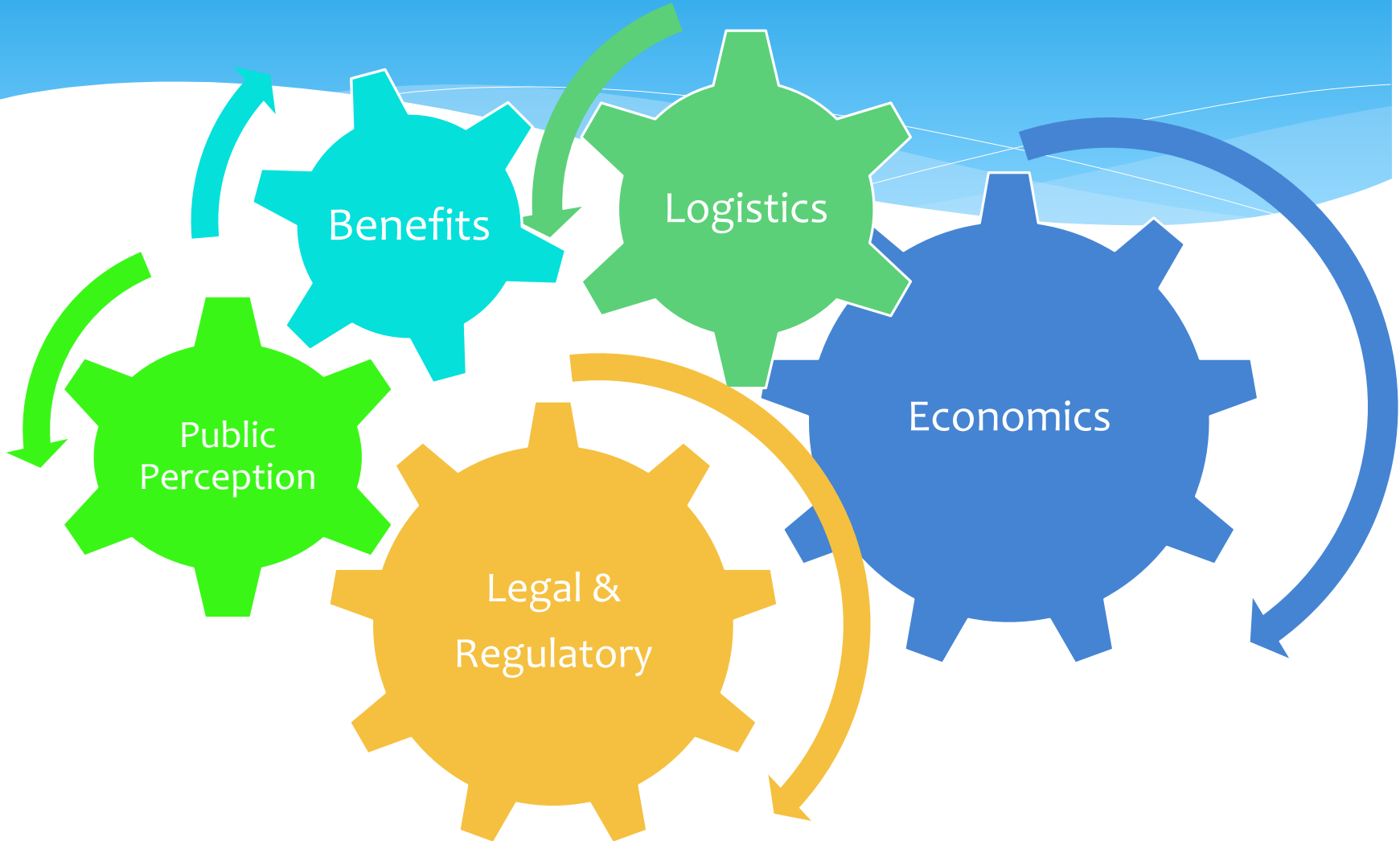
- * Deliberate process
- * Fit for Purpose
- * Available Water
- * Available Treatment
- * Available Transportation
- * Public education and outreach

COMMUNICATION

COMMUNICATION

COMMUNICATION

Practical Considerations



Things to think about...

- * It takes

- * 3 gallons of water to make 1 sheet of paper
- * 13 gallons of water to make 1 gallon of gas
- * 450 gallons of water to make 1 chocolate bar
- * 1799 gallons of water to make 1 pound of beef
- * 3400 gallons of water to make 1 smart phone
- * 62,000 gallons of water to make 1 ton of steel

What we try to avoid...



What we want to encourage...?

We may need to try unconventional methods to reach our goal.



Photo credit: Shellie Chard



Shellie Chard

405.702.8157

Shellie.chard@deq.ok.gov