

Water in the West

Dan Haley, President & CEO,
Colorado Oil & Gas Association

@DanHaleyCO
#COGA2017

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Oil and Natural Gas Water Use

- Water is needed during drilling and hydraulic fracturing
- 1 to 5 million gallons needed per well, depending on basin
- Fracking uses 0.10 percent of Colorado's water each year
- One-time use of 5 million gallons for a well
 - One day at a Colorado coal-fired plant
 - 30 Denver-area homes for one year

Water Use

Projection of Annual Demand for Hydraulic Fracturing (Acre-Feet ²) ³					
2010	2011	2012	2013	2014	2015
13,900	14,900	16,100	16,900	17,800	18,700

- 2015: 0.10% of total water use

One Acre Foot is Approximately 326,000 Gallons

Source: COGCC

Sources for Water

- Use of Water Must be Legally Allowed
 - Municipal lease/purchase (industrial uses)
 - Changed water rights (e.g. temp agricultural to industrial)
 - Fully consumed water (leased/purchase effluent)
 - Produced water (non-trib or decreed trib & augmented)
 - Non-tributary (landowner & operator agreement)

Colorado Water Diversions

- Total annually (all uses) = 16,400,000 acre-feet
- Agriculture = 14,000,000 acre-feet
- Municipal and Industrial = 1,200,000 acre-feet
- All others combined = 1,200,000 acre-feet
- Hydraulic fracturing = 14,000 acre-feet

Source: State of Colorado

Myth vs Fact

Myth: Water cannot be recycled in the oil and gas industry.

Fact: It is common practice for producers in Colorado to reuse all of their flowback water and a good portion of their produced water for future hydraulic fracturing operations.

Some operators reuse nearly 100 percent of their produced water. Because produced water also originates in the formation itself, it reduces the need for fresh water supplies.

Regulations

Clean Water Act is primary federal law governing pollution of surface water.

- Established to protect water quality, including regulation of pollutant limits on the discharge of oil- and gas-related produced water.

In Colorado:

- Pre- and post-drilling groundwater monitoring required.
- Public Water System Protection – Special requirements for new development in surface water supply areas
- Pollution – Requires operators to take precautions to prevent significant adverse environmental impacts to air, water, soil, or biological resources to protect public health, safety and welfare.