

Traditional



Comingled oil, gas and saline water are produced.



Oil, gas and saline water are separated in heater treaters.



Saline water (~13k TDS) is stored in tanks on well pad.



Saline water is trucked to a salt water disposal well and reinjected deep in the formation.

Water Conservation



Comingled oil, gas and saline water are produced.



Oil, gas and saline water are separated in heater treaters.



Saline water (~13k TDS) moves via metered pipelined to a lined holding pond.



Saline water is used to frac wells, reinjected deep in the formation, offsetting fresh water use.

Estimate of Freshwater Volumes

- *Wells Drilled* – 290 on average, per year.
 - ~62% Horizontal – all frac'ed
 - $290 \times 62\% = 180$ wells requiring frac'ing
- *Frac'ing Water Use* – 1.5-16 million gallons/well (USGS)
 - Use comparisons assumes 4 million gallons/well (API)
- *Estimated Water Per Well*– 4.6 - 49 ac-ft per well
 - $(1.5\text{-}16 \text{ million gallons}) / 325,850 = \text{ac-ft}$
 - @ 4million gallons/325,850 = 12.3 ac-ft
- *Producers Use of Water* – typically 100% freshwater

EST. TOTAL = @ 2,200 ac-ft/year

828 ac-ft (low) to 8,820 ac-ft (high)/year

Increased production in the Basin will result in an increase demand for water supplies and SIGNIFICANT opportunity to save fresh water.



= @ 625 acres of pivot irrigation



= @ 4,900 domestic households



= @ 78,500 head of cattle