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2012 Water Management

Evaluation and challenges of the of storage, treating, transportation and planning water movements to provide a sound operational platform to constantly deliver water to support operations.

Tyler Bittner
WPXEnergy
Water Management Group
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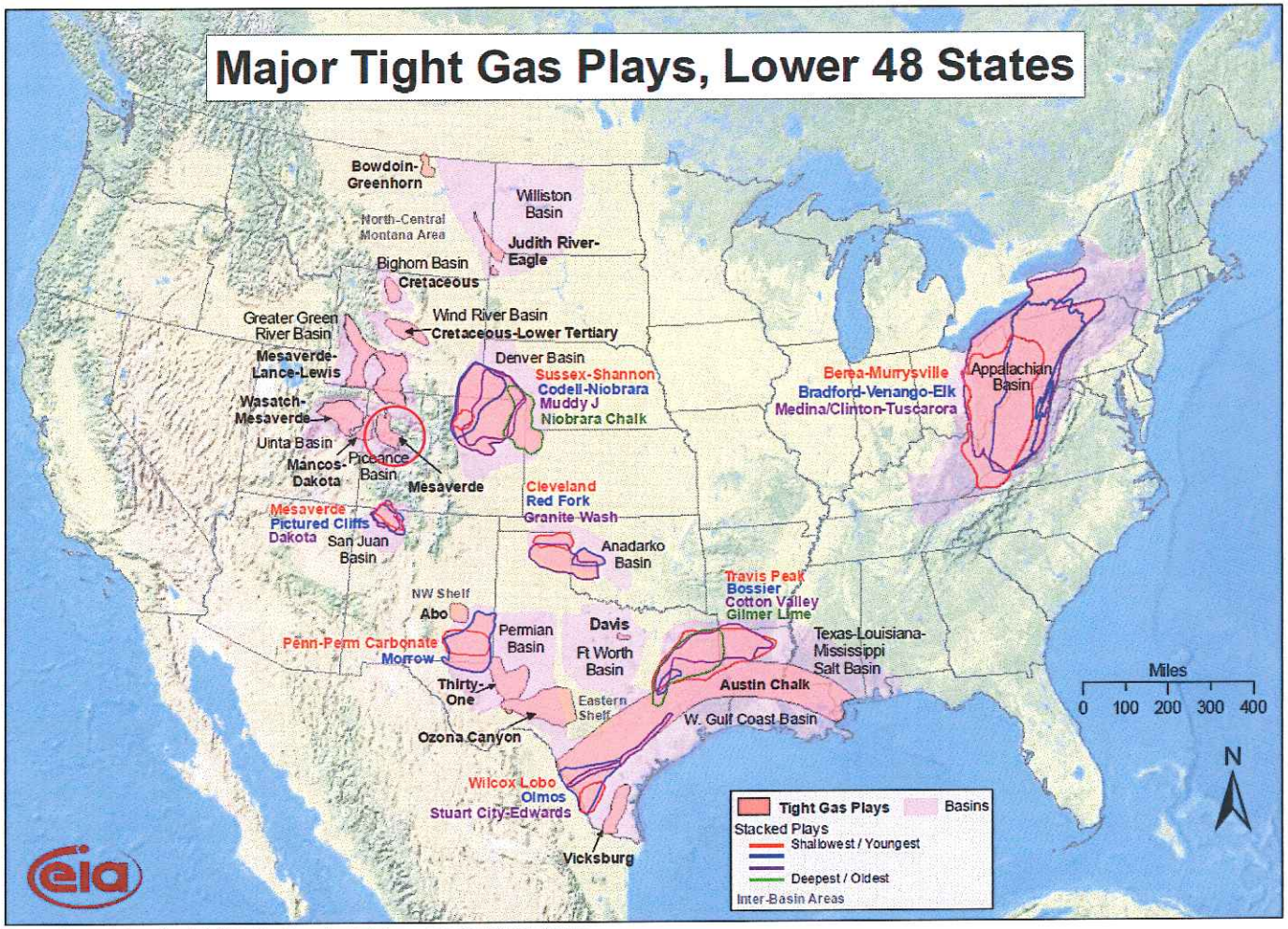
Attachment B

Agenda

- Piceance Basin background
- Current water situation
- WPX water management approach
- Summary
- Q&A

Piceance Basin, Western CO

- WPX operates over 4,000 wells in the basin
- Currently 5 rigs running
- Anticipate drilling over 200 wells in 2012
- Anticipate pumping over 2,000 frac stages in 2012



Source: Energy Information Administration based on data from various published studies
Updated June 6, 2010

Current water situation
Production/Storage/Disposal volumes

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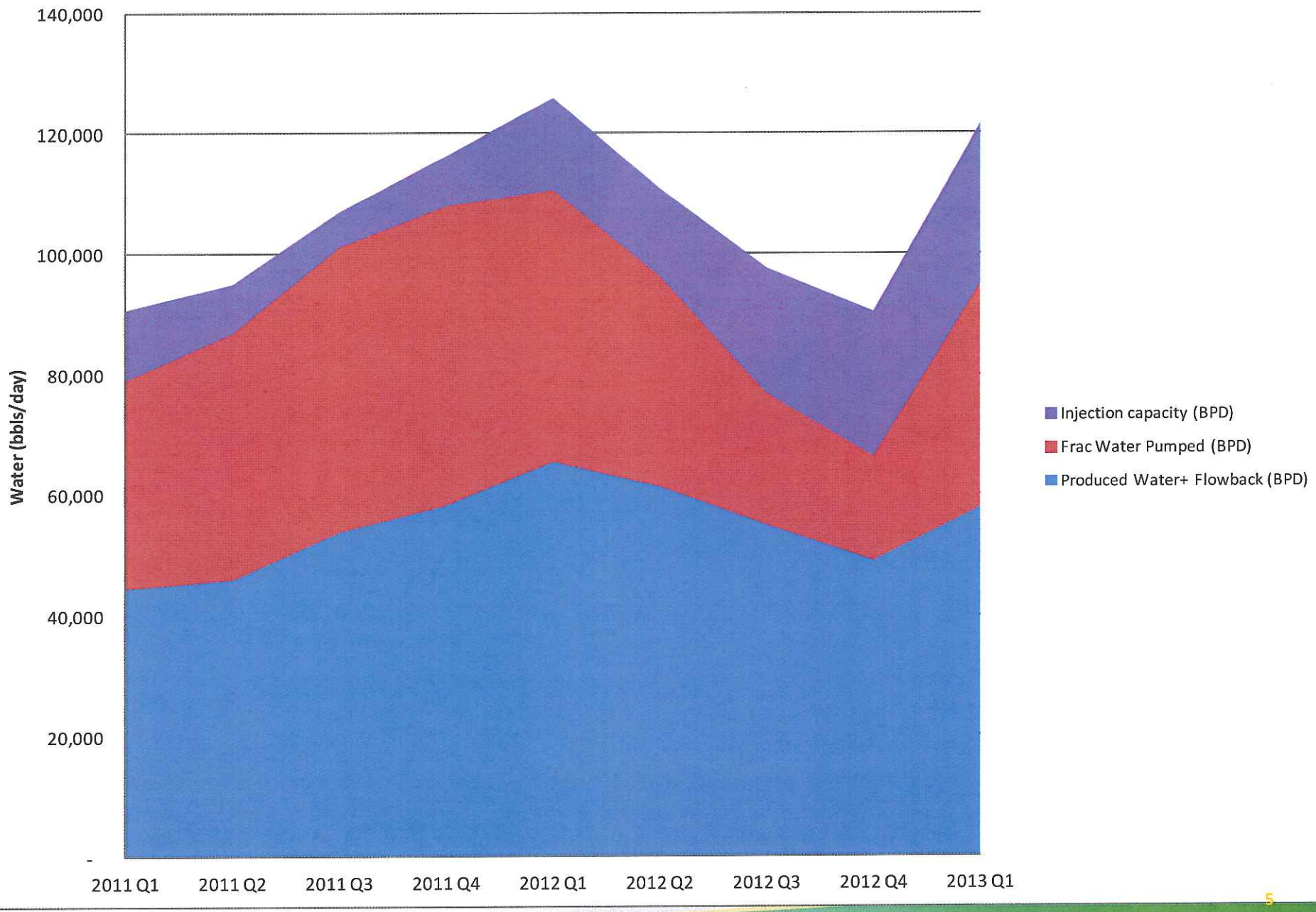
- **Water management = Key to success in unconventional development**
  - Average Water production: 34,000-42,000 bwpd; Frac flow back volume: Additional 10,000-21,000 bwpd
  - Estimated average Frac water 25,000-35,000 bwpd
  - Substantial storage capacity
  - Current water inventory: 75-80%
  - Injection capacity: 19,000 bwpd; Currently disposing ~10,000-12,000 bwpd
  - Evaporation capacity 500,000 bbls/year per facility
  - Manage and move in excess of 100,000 bbls of water per day
  - Recycle/Re-use of all water available

Piceance Water Summary 2011-Q1 2013



Water management approach

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PROBLEM:

- **(2007) 30,000 BWPD would require 300 truck loads per day; 109,500 truck loads per year**
- **Over $27.4MM USD per year in water hauling costs**
- **Thousands of wells to drill**
- **Water transportation efficiency critical to the economic viability of the asset**
- **Remote assets**
  - Trail Ridge, Alan Point and Ryan Gulch
- **Commodity prices**
  - Oil vs Gas
- **Changing legislation**
- **Public pressure**

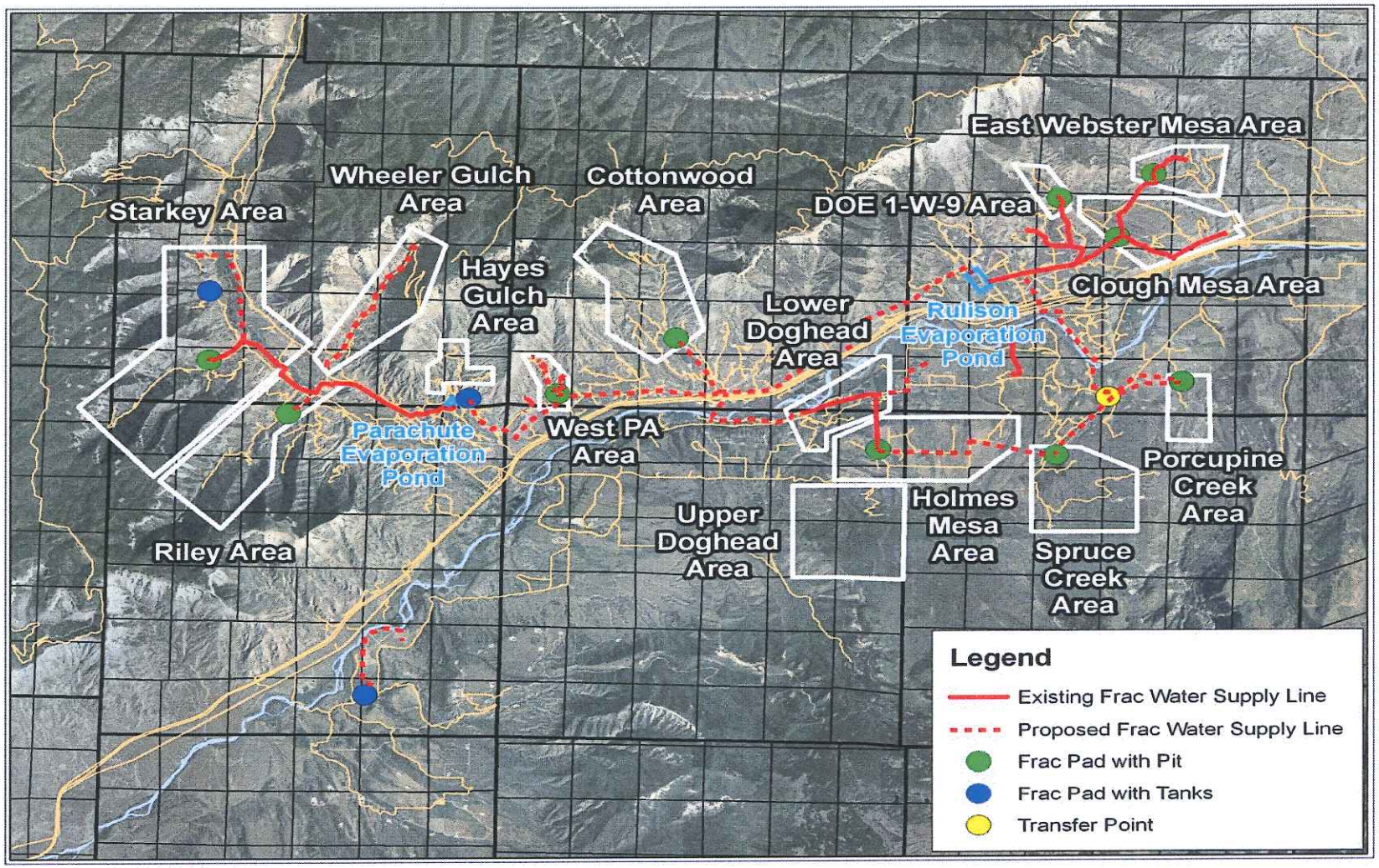
SOLUTION:

- Economic evaluation of water infrastructure in high well density areas to reduce/eliminate trucking
- Prefer 1 year pay out
- Injection
- Comprehensive team approach
  - Completions, Production, 3rd parties and Water management group
  - Flexibility
- New Technology

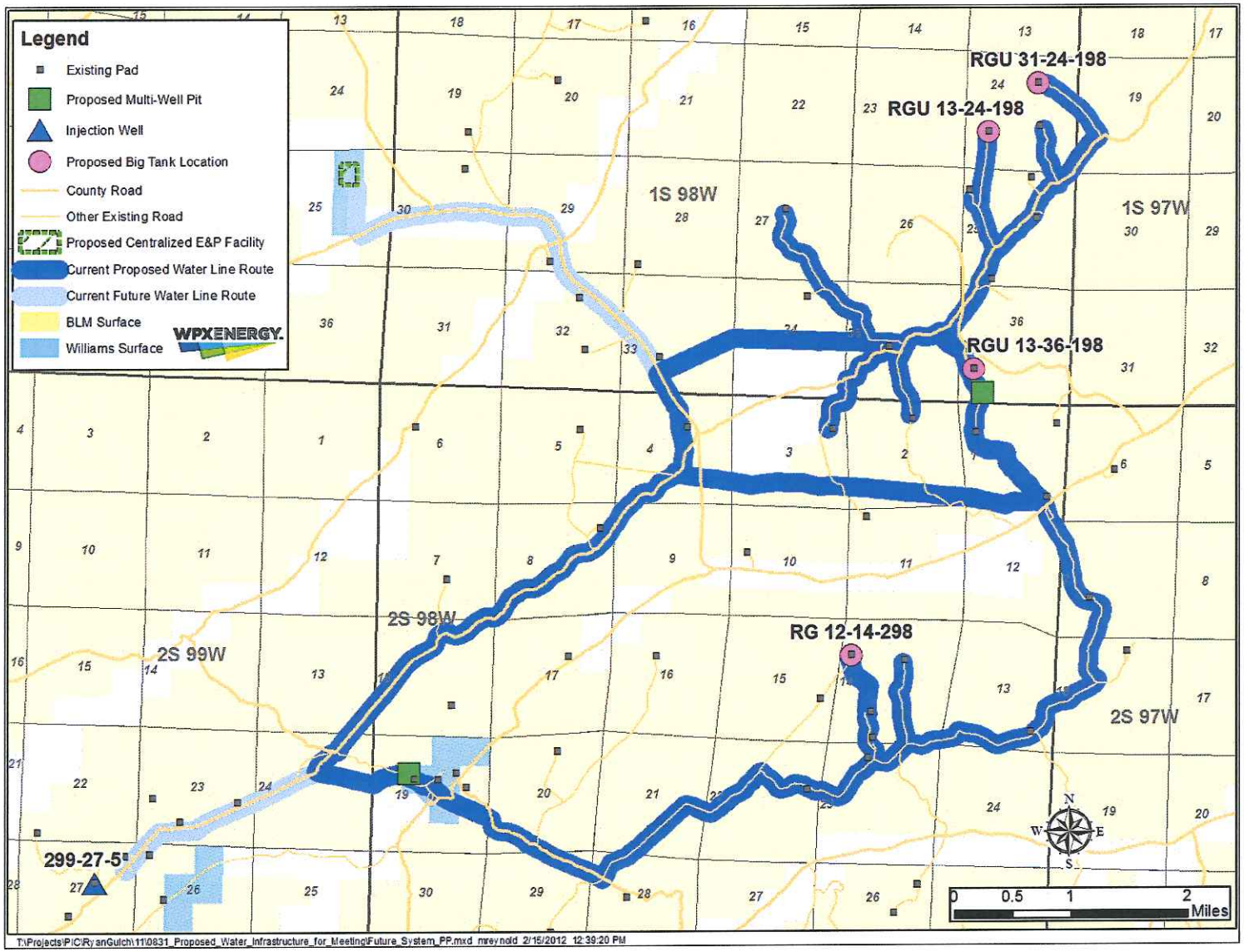
Water Infrastructure results:

- Water handling costs reduced by 60 percent
- Completion AFE reduced by 17 percent
- Reduced the number of truck loads by 95 percent
- Sustainability at lower gas prices

Piping - Frac Water Supply Status



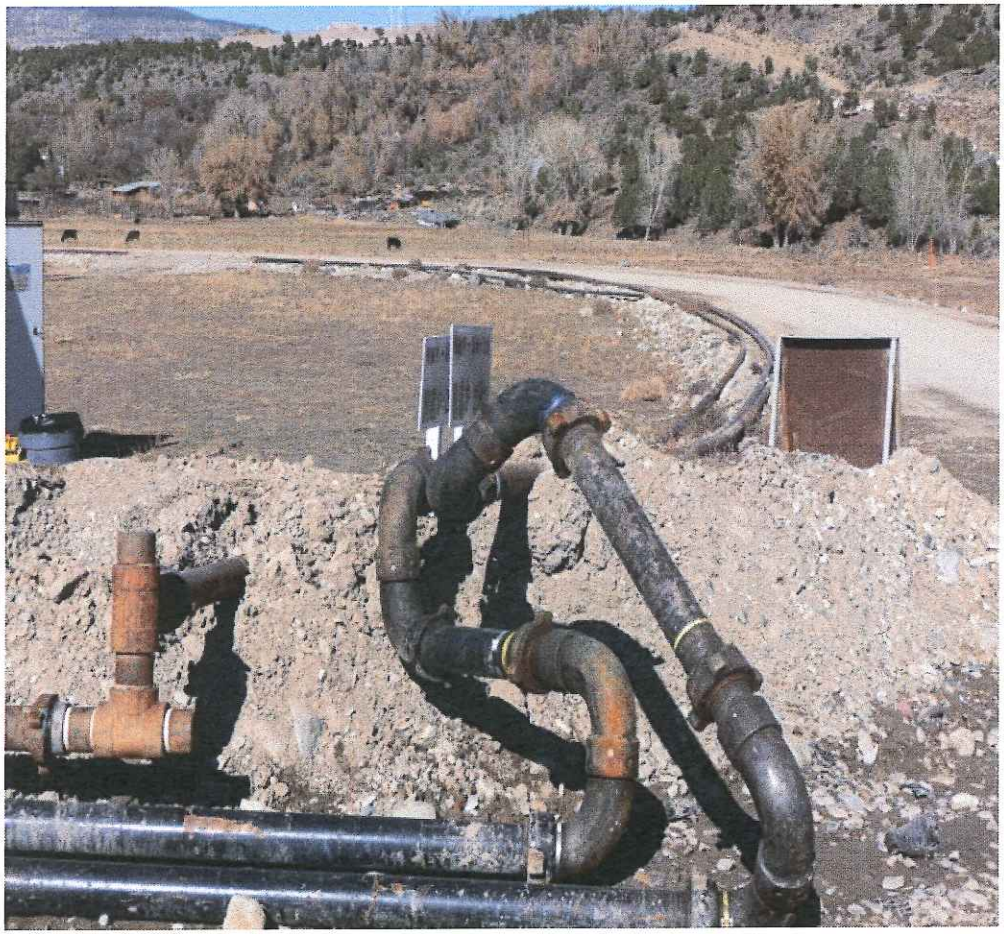
Ryan Gulch Planned Water Loop



Piceance Basin, Operations

- **WPX cleans and recycles produced water for well completions**
- **Approximately 3,100-6,000 barrels of water and 100,000-200,000 pounds of sand pumped per frac stage**
- **Frac stages range from 5-13 per well.**
- **3 main areas of operation**
  - Remotes area management,
    - Trail Ridge, Alan Point and RG

Remote fracturing /Simops - Benefits



- Landowner preference is a major factor on route and construction
- Flowlines can be installed in many ways
- Minimization of new disturbance
- Reduces total drilling and completion time
- Safer in challenging locations to not truck water

Remote fracturing - Benefits

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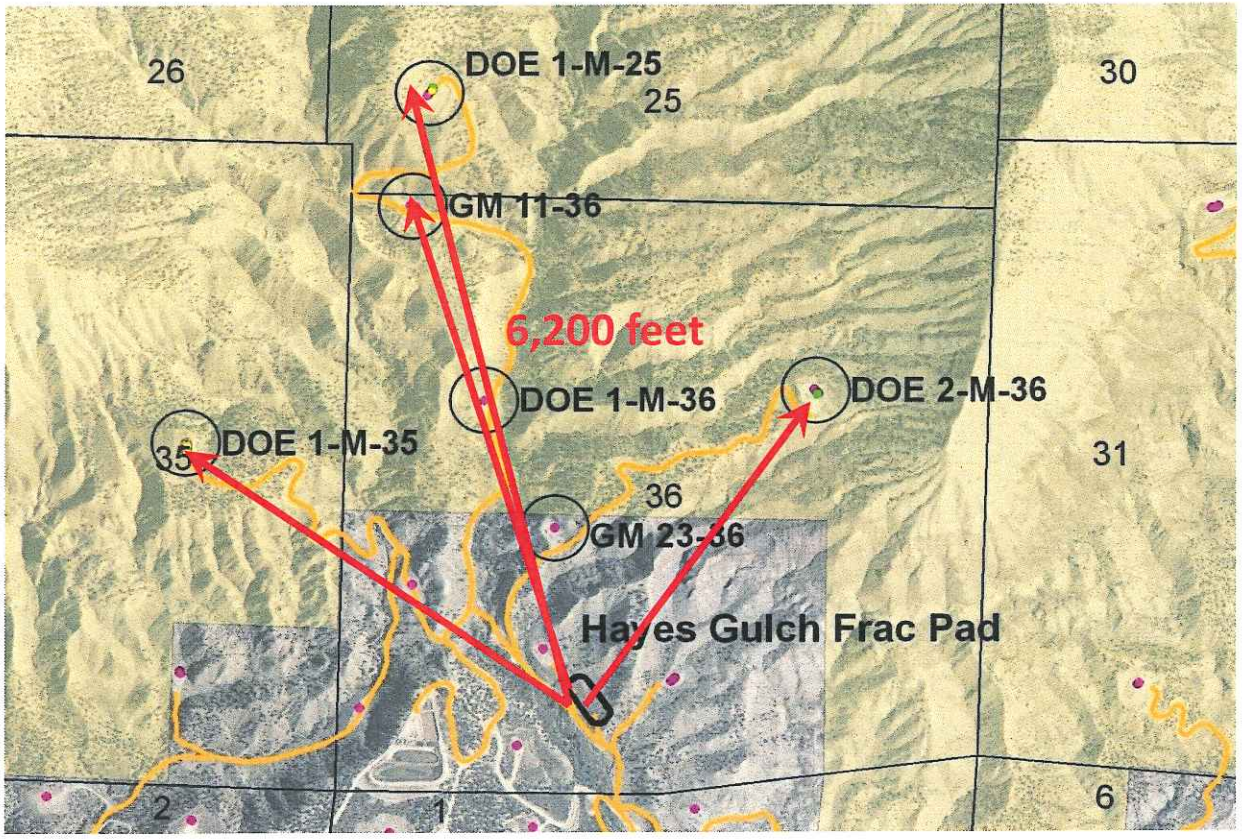
>Federal Locations

- Temporary flowlines can be installed to go cross country with very little impact

> Tougher Remote Locations

- Minimize the disturbed area
- Shortening the total construction time

Remote frac - Hayes Gulch example



- Able to fracture up to 3 miles away from the wellhead
- Can fracture multiple sites from one remote location, **6 pads, 87 wells,**
- Eliminated over 21,000 water truck trips in this area
- Better efficiencies with frac crews (more jobs in a given day)
- Awards from the BLM and COGCC
- CDOW allowed year-round development

- **Additional benefits**
  - **Smaller size drilling pads**
  - **Less traffic, dust, emissions, road maintenance, accidents**
  - **More fracs per day**
  - **Get in and get out sooner!**

Remote fracturing - Benefits

- Reduces truck traffic by up to 90%
- Reduces footprint by 30%
- Reduces time required to drill and complete by up to 80%
- Reduces impacts on roads
- Reduces traffic through neighborhoods (noise, odor, dust)
- Reduces impacts to wildlife
- Reduced nearly 500,000 heavy truck trips on public roads

Safety and environmental protection

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> Safety

- Initial and periodic pressure testing of flowlines~10,000 psi
- Pressure test before every use
- Real time monitoring of pressures from both ends during completions via computer and radio
- Visual inspection of flowlines
- Dedicated site safety manager

> Environmental

- All tanks set in accordance with BMPs
- Spill kits located on site
- Spill Prevention Control and Countermeasures Plan
- Reduction of impacts to environment through remote fracing
- Temporary location - removed, reclaimed

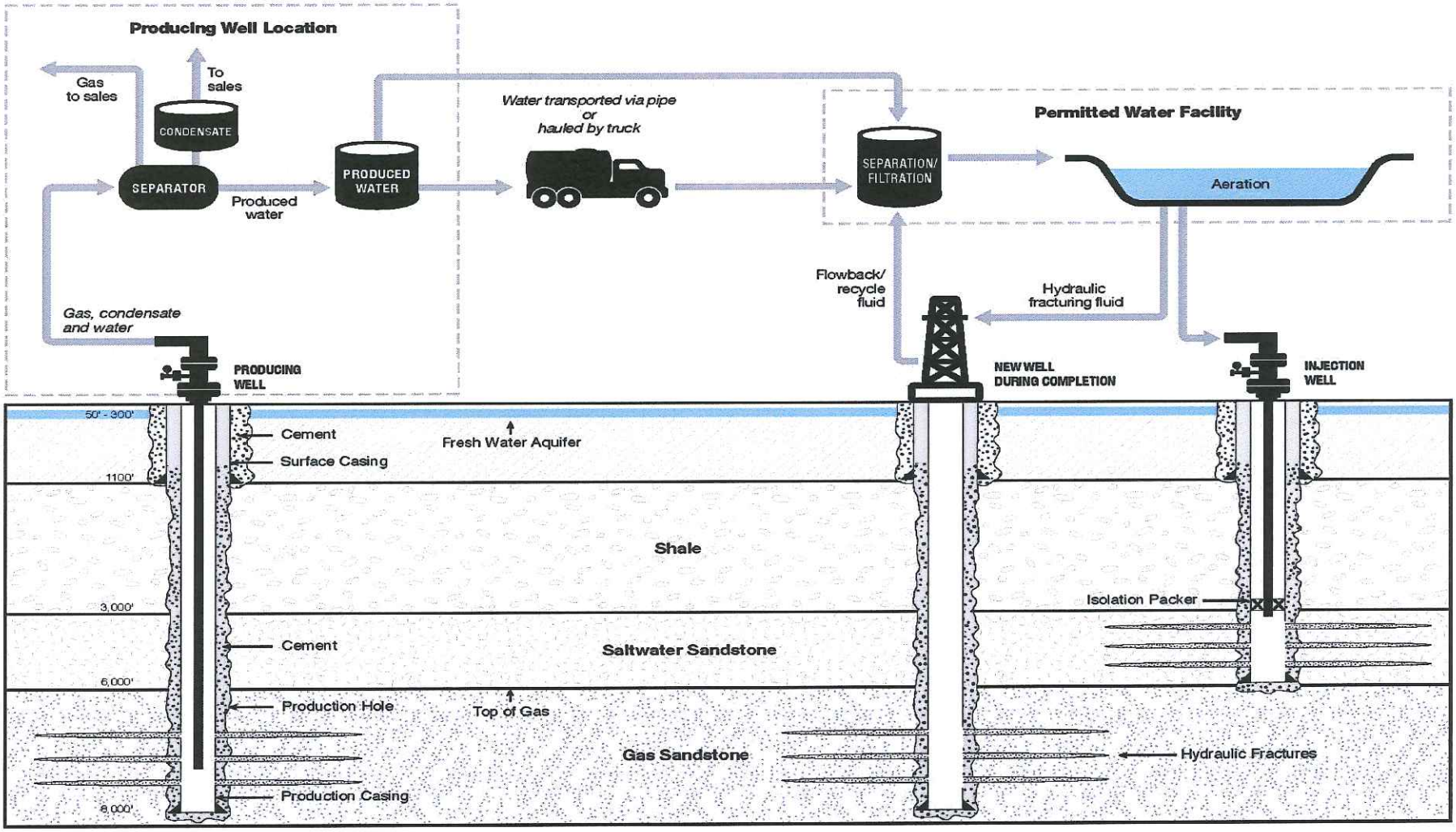
Water treatment to reduce air emissions

- **CDPHE mandates emission control technologies using RACT**
  - (Reasonably Available Control Technology)
- **Required multi-million dollar upgrades and construction**
- **Rulison Water Treatment Facility was completed June 2010**
- **Parachute Water Treating Facility was completed stages and fully operational December 2011**
- **Complex/rigorous operating plan, extensive testing, monitoring, record keeping**
- **Covered ponds, field and emulsion treating, DAF technology, Microbiology and good production practices.**
- **Planning and Inspections and documentation**

Water Facilities

- **Two major storage and water treating facilities**
- **Rulison and Parachute WTF's**
  - Centrally located to minimize pumping and overall water movement costs, with full automation and controls to ensure safe operations and consistent clean product delivery
  - 3 stages oil separation
    - Skim tanks
    - Polish/Surge
    - DAF
      - Robust chemical treating program utilizing coagulants and polymers for DAF pre-treatment
  - Emulsion treating
  - Site Specific Bioremediation Program to improve overall water quality emissions control
  - Provided clean water for injection
  - Reduces filter costs and maintenance
  - Centralize injection facility
    - Minimize surface land use and location foot print
- **The mass storage meets all state and federal regulatory requirements and minimizes odors from emissions.**

Water management approach
Recycle and Reuse



Not to scale

Benefits of water infrastructure

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- Cost Control
- Reduced truck traffic
- Less dust / emissions
- Minimal impact to local wildlife
- Reduced impact on road infrastructure
- Fewer spills
- Regulatory support
- Buffer for activity
- Predictable delivery
- Community Support

Summary

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- Increased water production from continuous development required a solution.
- Water storage in the Piceance began with two permitted waste facilities. WPX would re-use production water and supplement with fresh water for completions as needed.
- 2008 rig count plummeted and we could not use all of the water we produced. We had to haul ~5-6,000 BWPD to Utah at an expense of ~$40,000/day.
- 5 injection wells were drilled/converted at an expense of $10MM…~8 month payout. Continue to and develop injection program
- Currently we are evaluating several new technologies to manage future excess water
- We currently evaluate each development area…
- ~2 years to install a water line from start to finish
- For WPX, water infrastructure is simply the Right Way to do business

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Questions?