

PIONEER

NATURAL RESOURCES

Positive Impacts of RRC Rule 3.8 May 22, 2014



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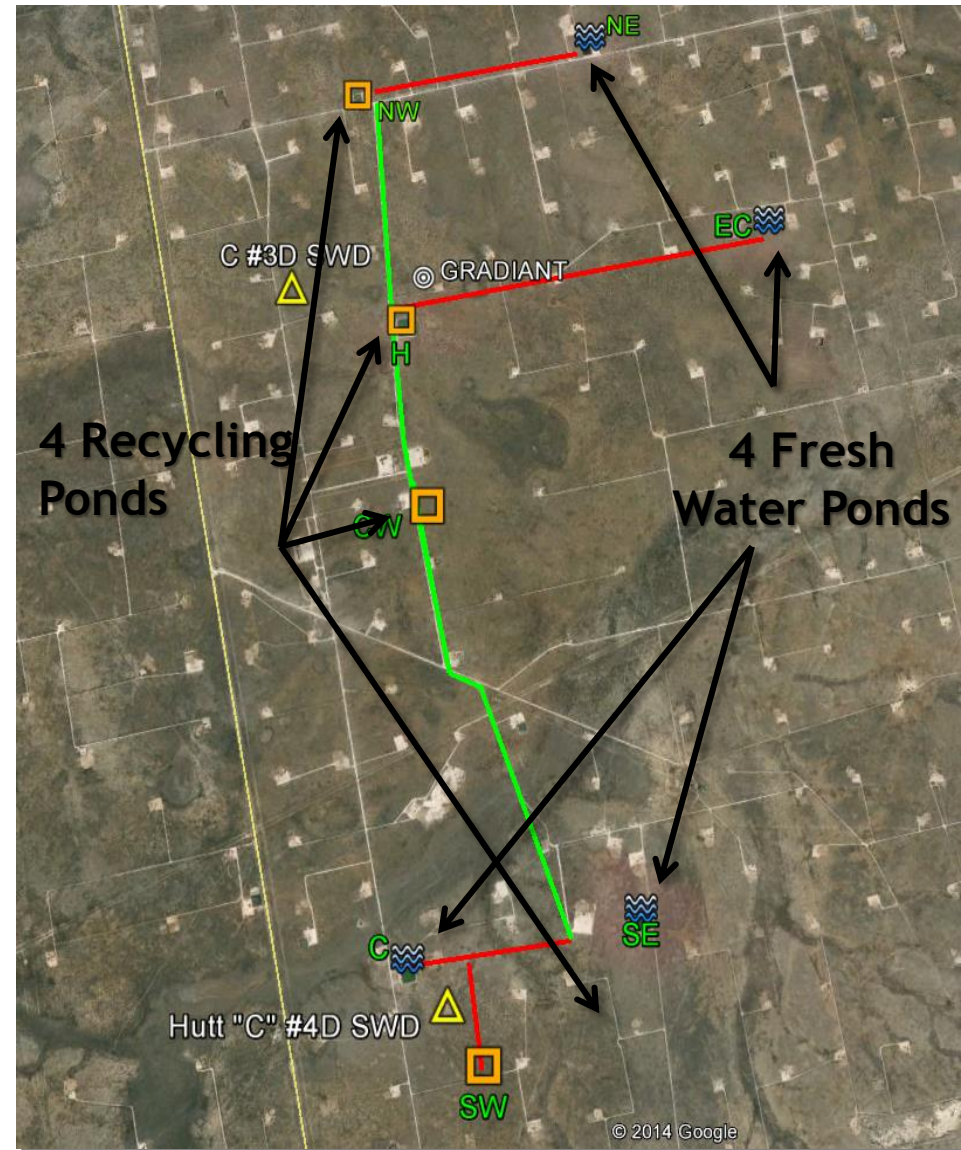
1. If operating the pit on an existing commission-designated lease or drilling unit associated with a commission-issued drilling permit, or upon land leased or owned by the operator for the purposes of operation of a non-commercial disposal well or a non-commercial injection well – No permit is required for the construction or operation of the recycling pit.
2. Operators may utilize existing pits as long as they meet requirements outlined in rule (d)(4)(G).
3. Allows for recycling which includes reuse or treatment by the operator or contract vendor.
4. Operators of the pits may accept fluids from other leases and other operators.
5. Provides authorization of use of fluids treated to “Distilled Water” quality in any manner except surface water discharge (which must be permitted).
6. Provides authorization to reuse treated fluids (if not used in oil and gas activities) pursuant to a permit issued by another state or federal agency for the new use.
7. Clarifies that treated fluid is not a waste but may become a waste if it is abandoned or disposed of rather than reused or recycled.
8. Supports recycling in Texas.

Rule 3.8 Recycling Pit Requirements

1. Does not require Professional Engineer certification.
2. Must maintain 2 feet of freeboard to account for precipitation.
3. No storm water runoff can enter pit and berms must be structurally sound, no seepage.
4. Must be lined and constructed of materials to prevent failure during expected life of pit.
5. If single lined, must be drained and inspected annually or propose an alternative.
6. If double-lined with leak detection, must inspect leak detection system monthly.
7. Must keep records on file to demonstrate compliance
8. Must provide written notification to the RRC district office of:
 - Location with lease name and number or drilling permit number and lat/long
 - Dimensions and max capacity
 - Signed statement of permission from surface owner for constructions and use of the pit.



- Built a network of recycling ponds in two areas in West Texas
- Reduces water hauled by trucking
- Networks allow easy use of recycled water
 - Recycling reduces fresh water needs
 - Recycling reduces water disposed



1. Currently - ~30,000 BWPD in Permian (West Texas)

A. Desalination processes

- DL Hutt & Giddings
- Established evaporation technology & new Carrier Gas Extraction

B. Clean Brine

- No removal of dissolved solids (salts)
- Technologies: chemical and dissolved air flotation (DAF)

2. Planning

- ### A. Growth of recycling driven by goal to reduce fresh water use and reduce water disposal



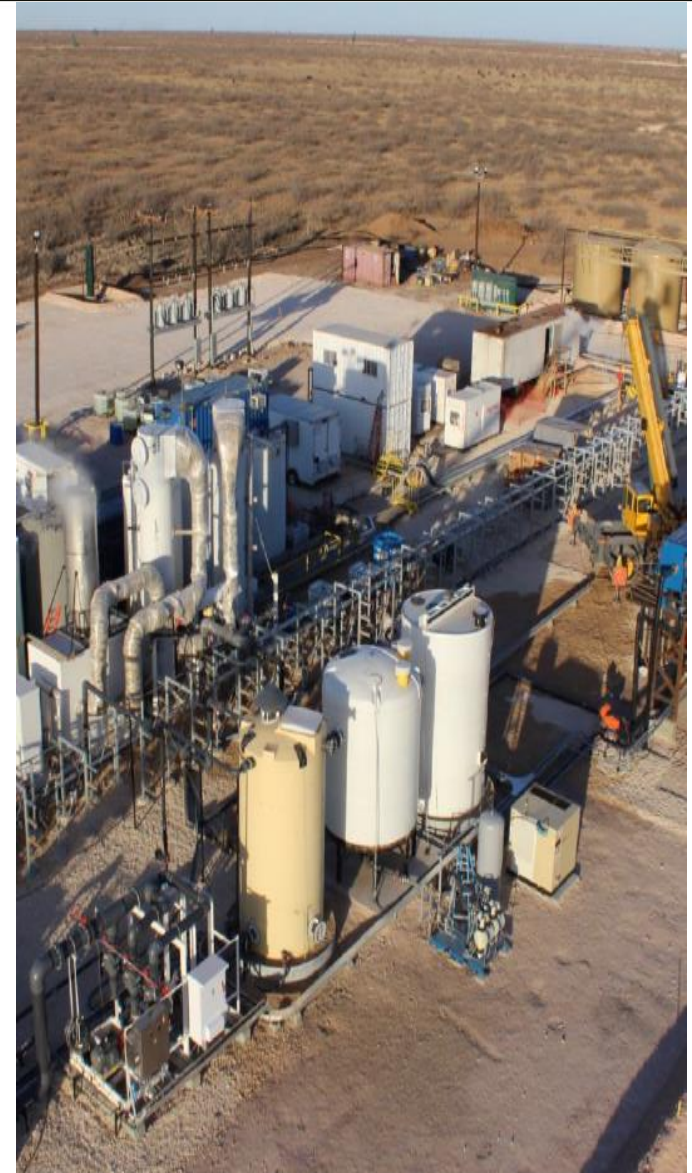
Recycling Facility South of Midland



- First CGE plant based on patented technology
- Will process 8,000 Bbls of water per day
- Treats water to a fresh standard



CGE™ Tower at Hutt



Gradient Facility at Hutt

Pioneer/Gradiant International Award

- Won Award for the International Industrial Water Project of the Year at the Global Water Summit in Paris in April.
- Award Presented by Nobel Laureate and Africa's first democratically elected female president, President Ellen Johnson Sirleaf, of Liberia.



Recycling North of Rankin, TX

- Produced water recycling plant
- Capacity for 5,000 BWPD



Conclusions on Rule 3.8 and Recycling

1. Rule 3.8 made changes to insure high environmental standards, while allowing produced water recycling/reuse to happen faster.
2. Pioneer has expanded recycling faster than it would have been able to do without changes in Rule 3.8
 - A. Recycling reduces fresh water needs and disposal requirements
 - B. Pioneer plans to continue expanding recycling

