



# RAILROAD COMMISSION OF TEXAS

## HEARINGS DIVISION

**OIL AND GAS DOCKET NO. 08-0279365**

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**THE APPLICATION OF HIGH ROLLER WELLS, LLC FOR COMMERCIAL DISPOSAL AUTHORITY PURSUANT TO STATEWIDE RULE 9 FOR THE HIGHROLLER GLASSCOCK SWD LEASE, WELL NO. 1, SPRABERRY (TREND AREA) FIELD, GLASSCOCK COUNTY, TEXAS**

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**HEARD BY:** Richard D. Atkins, P.E. - Technical Examiner  
Terry Johnson - Legal Examiner

**APPEARANCES:**

**REPRESENTING:**

**APPLICANT:**

George C. Neale  
George Pigg  
Rick Johnston  
Dustin Bailey  
Matt Randolph

High Roller Wells, LLC

**PROTESTANTS:**

Tim George  
John McBeath

Endeavor Energy Resources, LP

Paul Tough  
William Hayenga

Energen Resources Corporation

Herbert F. Boles  
Greg H. Boles

Hubbard Boles Properties

### PROCEDURAL HISTORY

Application Filed:	August 13, 2012
Protest Received:	November 6, 2012
Request for Hearing:	November 8, 2012
Notice of Hearing:	July 24, 2013
Hearing Held:	August 14, 2013
Re-convened Hearing Held:	October 17, 2013
Transcript Received:	October 23, 2013
Proposal for Decision Issued:	February 11, 2014

**EXAMINERS' REPORT AND PROPOSAL FOR DECISION****STATEMENT OF THE CASE**

High Roller Wells, LLC ("High Roller") requests commercial disposal authority pursuant to Statewide Rule 9 for the Highroller Glasscock SWD Lease, Well No. 1, in the Spraberry (Trend Area) Field, Glasscock County, Texas.

Notice of the application was published in the *Midland Reporter-Telegram*, a newspaper of general circulation in Glasscock County, on August 3 and October 17, 2012. Notice of the application was sent to the Glasscock County Clerk, offset operators within ½ mile and to the surface owners of the disposal tract and each tract which adjoins the disposal tract on August 9, 2012, and September 18, 2013.

During the first hearing held on August 14, 2013, High Roller determined that the legal description and latitude and longitude calls were incorrect on the Form W-14. As a result, High Roller requested a hearing recess so that it could revise the Form W-14 and send it out to all of the parties. A re-convened hearing was held on October 17, 2013, for the purpose of receiving additional testimony and evidence to complete the record for the proposed disposal well.

The application was determined to be administratively complete by Commission staff, but is protested by two offset operators, Endeavor Energy Resources, LP ("Endeavor") and Energen Resources Corporation ("Energen"), and a surface and mineral owner adjacent to the tract on which the proposed disposal well is located.

**DISCUSSION OF THE EVIDENCE****Applicant's Evidence**

The subject well has not yet been drilled, but, as proposed, will be located on a 5 acre tract off of FM 2401 and adjacent to the east of County Road 111 (Paymaster Road). The tract is located in a rural area approximately 11 miles southwest of the town of Garden City, Texas. High Roller plans to drill a new injection well down to 4,500 feet. The well will have 13 3/8" surface casing set at 600 feet that will be cemented to the surface with 700 sacks of cement. High Roller proposes to run 8 5/8" production casing to 4,500 feet that will be cemented to the surface with 3,500 sacks of cement. The well will be equipped with 6" tubing and packer set at 2,950 feet (See attached High Roller Exhibit No. 12 - Wellbore Diagram).

At the hearing, to mitigate concerns of the Protestants, High Roller amended its request to decrease the maximum daily injection volume. The proposed injection interval is the San Andres formation between 3,000 feet and 4,500 feet. The interval is suitable for disposal and is used for disposal in other area wells. High Roller requests authority to

dispose of a maximum of 17,500 barrels of saltwater and RCRA<sup>1</sup> exempt waste per day with a maximum surface injection pressure of 1,500 psig.

The Commission Groundwater Advisory Unit ("GAU") recommends that usable-quality groundwater be protected down to a depth of 425 feet below the land surface and the base of the USDW is 825 feet. High Roller submitted a GAU letter dated August 13, 2013, which stated that injection into the proposed disposal interval will not endanger the freshwater strata in the area.

High Roller requests commercial authority to allow disposal of saltwater produced by wells in the area of the proposed disposal well. There is no San Andres production within a two and one-half mile radius. The San Andres formation is a blanket formation across Glasscock county and, using an infinite unbounded reservoir assumption, the fluids will dissipate out in all directions over time. The nearest production is from the Clearfork and Spraberry formations at an average depth of 6,150 feet in the Spraberry (Trend Area) Field.

There is one producing well located within the 1/4 mile radius of review and four producing wells and one plugged well located within the 1/2 mile radius of review for the proposed disposal well. All of the producing wells are operated by either Endeavor or Energen and are completed in the Spraberry (Trend Area) Field. In addition, all of the wells are properly plugged and abandoned or cased and cemented so as not to provide a conduit for the migration of injected water from the injection interval into other oil, gas or mineral bearing formations or useable-quality groundwater zones.

High Roller submitted a drilling permit graph showing that since 2011 there had been over 250 drilling permits issued by the Commission per calendar year quarter. In addition to the Spraberry formation development, there is ongoing development in the Cline and Wolfcamp shale formations. This activity has resulted in approximately 20 rigs operating within a 25 mile radius of the proposed disposal well and saltwater disposal volumes have increased, as a direct result of the drilling activity. High Roller plans to use the proposed well to dispose of produced water and frac water generated as a result of the active and future development in southern Glasscock County. The wells require large, multi-stage fracture treatments that use large quantities of water that will require disposal.

Although there are currently 9 active commercial disposal wells contained within a ten mile radius, two of the wells are private disposal wells. High Roller believes that additional disposal facilities are necessary to accommodate the active drilling in the area. A disposal well at the proposed site would allow High Roller to be competitive in the area market and allow the saltwater haulers to make a shorter haul and, thereby, greatly reduce well operating expenses and increase the ultimate recovery from the local producing wells.

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<sup>1</sup> Resource Conservation and Recovery Act: Examples of RCRA exempt oil and gas waste includes produced water, drilling fluids, frac flowback fluids, rigwash and workover wastes.

**The Facility**

Access to the disposal facility will be off of County Road 111 (Paymaster Road), which connects with FM 2401, a paved two lane public highway. At an average injection rate of 10,000 BWPD, there will be approximately 75 trucks per day accessing the facility. The facility can accommodate many trucks at any one time and is of sufficient size to allow trucks access without having to wait on the highway. The surface facility will comply with all of the permit conditions requested by the Commission staff. In addition, the facility will be manned 24 hours per day, have a firewall built around the entire facility and have high water level switches to prevent the tanks from overflowing onto the ground.

High Roller submits that it has the expertise to build and manage the proposed facility. High Roller has a current approved Form P-5 (Organization Report), a \$25,000 cash deposit for financial assurance and no pending Commission enforcement actions.

**Protestants' Evidence**

The application is protested by two offset operators, Endeavor and Energen, and a surface and mineral owner adjacent to the tract on which the proposed disposal well is located. The surface and mineral owner owns 1,280 acres adjacent to the proposed disposal well that is leased to Endeavor. He believes that the application for the proposed commercial disposal well and facility should be denied. The protestant's evidence fell into several general categories: 1) potential for pollution of surface or subsurface waters; 2) the small size of the surface facility in relation to his 1,280 acres; and 3) contamination of potential Residual Oil Zones ("ROZs") that could potentially result in billions of barrels of additional producible reserves in the Permian Basin.

The two operators are primarily concerned that the injected fluids will adversely affect the existing producing wells and the development of their offset acreage. Their expert engineering witness submitted ten wellbore diagrams depicting wells that did not have the proposed disposal interval completely isolated. The two closest wells which did not have the San Andres formation completely covered with cement were greater than 1,500 feet from the proposed disposal well. The eight remaining wells were over one-half mile, or over 2,500 feet from the proposed disposal well. The engineering expert also submitted a cross-section that depicted the proposed disposal well and other area producing wells. The cross-section showed that the proposed disposal interval included more than the San Andres formation. The interval also included parts of the Grayburg and San Angelo/Glorieta formations.

From the available reservoir data for the San Andres formation, the operators' expert engineering witness determined an average porosity of 12% and an average net pay thickness of 1,500 feet. Using a San Andres formation bottomhole pressure of 1,299 psi, the expert performed pressure front calculations for two wells that were 1,500 feet and 4,300 feet from the proposed disposal well. The pressure front calculations were done in

five year increments up to 25 years and used injection rates of 10,000 BWPD, 17,500 BWPD and 25,000 BWPD. Based on his calculations, the expert opined, that after 25 years of injection, the disposal operation pressure front would support a column of fluid up above the base of useable-quality groundwater at both offset wells using any of the three injection rates.

### **Applicant's Rebuttal Evidence**

High Roller's expert engineering witness performed a volumetric water displacement calculation to determine the distance from the proposed disposal well that the injected water front would be after 10 years of injection. The available reservoir data for the San Andres formation showed an average porosity of 12% and an average net pay thickness of 410 feet. The expert calculated that the injected water front would be approximately 1,500 feet from the disposal well after injection of 17,500 BWPD for 10 years, or 63.9 MMBW.

The expert believed that all of the producing wells would all be plugged within five years and would not present any problems for confinement of the injected fluids. The expert also disagreed with the Protestants estimate of the San Andres bottomhole pressure of 1,299 psi. He believed this bottomhole pressure to be erroneous, as it would support a standing fluid level prior to any injection at 206 feet, which would already be above the base of useable-quality groundwater. He also knew of many disposal wells in the San Andres formation that would take water on a vacuum and felt that would be impossible with a bottomhole pressure of 1,299 psi.

The engineering expert submitted a tabulation of all of the disposal well permits that had been issued by the Commission in Glasscock and Reagan Counties. The tabulation showed approximately 80 disposal wells and most of the wells were permitted for the San Andres formation. However, the permitted interval in a majority of the wells included the San Andres, Grayburg, San Angelo/Glorieta and other miscellaneous formations. The expert opined that the proposed disposal interval was identical to a majority of the other San Andres formation permitted disposal wells and should be approved.

### **EXAMINERS' OPINION**

The examiners recommend that the application for commercial disposal authority pursuant to Statewide Rule 9 for the Highroller Glasscock SWD Lease, Well No. 1, be approved. High Roller has established:

1. The water resources (surface and sub-surface) are adequately protected from pollution;
2. The proposed injection well will not endanger or injure any oil, gas, or mineral formations;

3. The proposed injection well is in the public interest;
4. A satisfactory showing of financial responsibility, as required under Texas Statutes and Commission Rules.

The proposed disposal well will be completed in a manner which will protect useable-quality water resources and will confine the injected fluids to the disposal interval. The proposed disposal well will have cement behind the production casing up to the surface and injection will be through tubing set on a packer to confine injected fluids to the San Andres formation. There is one producing well located within the 1/4 mile radius of review and four producing wells and one plugged well located within the 1/2 mile radius of review for the proposed disposal well. The two closest wells which do not have the San Andres formation completely covered with cement are greater than 1,500 feet from the proposed disposal well. However, the injected water front will not exceed 1,500 feet from the disposal well after injection of 17,500 BWPD for 10 years and it is anticipated that the two wells will be plugged within five years and will not present any problems for confinement of the injected fluids.

The proposed disposal well is in the public interest, as there have been over 250 drilling permits issued by the Commission per calendar quarter since 2011. In addition to the Spraberry formation development, there is ongoing development in the Cline and Wolfcamp shale formations. This activity has resulted in approximately 20 rigs operating within a 25 mile radius of the proposed disposal well and saltwater volumes have increased, as a direct result of the drilling activity. The wells require large, multi-stage fracture treatments that use large quantities of water that will require disposal.

The proposed disposal well will inject produced water and frac water generated as a result of the active and future development in southern Glasscock County. Although there are currently 9 active commercial disposal wells contained within a ten mile radius, two of the wells are private disposal wells and additional disposal facilities are necessary to accommodate the active drilling in the area. A disposal well at the proposed site would allow the saltwater haulers to make a shorter haul and, thereby, greatly reduce well operating expenses and increase the ultimate recovery from the nearby producing wells.

After 10 years of injection, the calculated injected water front will be approximately 1,500 feet from the proposed disposal well after injection of 17,500 BWPD for 10 years, or 63.9 MMBW. Of the ten wells that do not have the proposed disposal interval completely isolated, the two closest wells are greater than 1,500 feet from the proposed disposal well and the eight remaining wells are over one-half mile, or over 2,500 feet from the proposed disposal well. Based on decline curve analysis, all of the offset producing wells under one-half mile will be plugged within five years and will not present any problems for confinement of the injected fluids. The Protestants' assertion of a current San Andres formation bottomhole pressure of 1,299 psi was not supported by any credible evidence. As a result, the examiners do not believe the Protestants' pressure front calculations are accurate projections.

The area surrounding the proposed disposal facility is rural ranching land. Access to the disposal facility will be off of County Road 111 (Paymaster Road), which connects with FM 2401, a paved two lane public highway. At an average injection rate of 10,000 BWPD, there will be approximately 75 trucks per day accessing the facility. The surface facility will be newly constructed and is of sufficient size to accommodate trucks hauling water to the facility without having to wait on the highway. Compliance with permit conditions will minimize the risk of spills at the facility and will prevent the migration of any spills that occur, thereby protecting both ground and surface water.

#### FINDINGS OF FACT

1. Notice of the application was published in the *Midland Reporter-Telegram*, a newspaper of general circulation in Glasscock County, on August 3 and October 17, 2012.
2. Notice of the application was sent to the Glasscock County Clerk, offset operators within ½ mile and to the surface owners of the disposal tract and each tract which adjoins the disposal tract on August 9, 2012, and September 18, 2013.
3. The proposed injection into the Highroller Glasscock SWD Lease, Well No. 1, will not endanger useable quality water.
  - a. The Commission Groundwater Advisory Unit ("GAU") recommends that usable-quality groundwater be protected down to a depth of 425 feet below the land surface and the base of the USDW is 825 feet.
  - b. The well will have 13 3/8" surface casing set at 600 feet that will be cemented to the surface with 700 sacks of cement.
4. The proposed injection into the Highroller Glasscock SWD Lease, Well No. 1, will not endanger production from other oil, gas or mineral bearing formations.
  - a. High Roller Wells, LLC ("High Roller") plans to drill a new disposal well down to 4,500 feet.
  - b. High Roller proposes to run 8 5/8" production casing to 4,500 feet that will be cemented to the surface with 3,500 sacks of cement.
  - c. The well will be equipped with 6" tubing and packer set at 2,950 feet.
  - d. There is one producing well located within the 1/4 mile radius of review and four producing wells and one plugged well located within the 1/2 mile radius of review for the proposed disposal well.

- e. The San Andres formation is a blanket formation across Glasscock County and, using an infinite unbounded reservoir assumption, the fluids will dissipate out in all directions over time.
  - f. After 10 years of injection at a rate of 17,500 BWPD, the calculated injected water front will be approximately 1,500 feet from the proposed disposal well.
  - g. The two closest wells which do not have the San Andres formation completely covered with cement are greater than 1,500 feet from the proposed disposal well. Based on decline curve analysis, it is anticipated that the two wells will be plugged within five years and will not present any problems for confinement of the injected fluids.
  - h. The Protestants' assertion of a current San Andres formation bottomhole pressure of 1,299 psi was not supported by any credible evidence and, as a result, the Protestants' pressure front calculations are not accurate projections.
5. Use of the Highroller Glasscock SWD Lease, Well No. 1, as a commercial disposal well is in the public interest because it will reduce hauling distances and will provide needed commercial disposal capacity for wells to be drilled, completed and produced in the area of the proposed facility.
- a. Since 2011, there have been over 250 drilling permits issued by the Commission per calendar quarter.
  - b. In addition to the Spraberry formation development, there is ongoing development in the Cline and Wolfcamp shale formations.
  - c. The development activity has resulted in approximately 20 rigs operating within a 25 mile radius of the proposed disposal well and saltwater disposal volumes have increased, as a direct result of the drilling activity. The wells require large, multi-stage fracture treatments that use large quantities of water that will require disposal.
  - d. The proposed disposal well will inject produced water and frac water generated as a result of the active and future development in southern Glasscock County.
  - e. Although there are currently 9 active commercial disposal wells contained within a ten mile radius, two of the wells are private disposal wells and additional disposal facilities are necessary to accommodate the active drilling in the area.

- f. The use of the proposed disposal well will reduce travel time and miles traveled by waste hauling trucks, resulting in reduced costs to operators.
- 6. High Roller has a current approved Form P-5 (Organization Report), a \$25,000 cash deposit for financial assurance and no pending Commission enforcement actions.

**CONCLUSIONS OF LAW**

- 1. Proper notice was issued in accordance with the applicable statutory and regulatory requirements.
- 2. All things necessary to give the Railroad Commission jurisdiction to consider this matter have occurred.
- 3. Approval of the application will not harm useable quality water resources, will not endanger oil, gas, or geothermal resources, will promote further development in this area of Glasscock County and is in the public interest pursuant to Sec. 27.051 of the Texas Water Code.
- 4. High Roller Wells, LLC has met its burden of proof and its application satisfies the requirements of Chapter 27 of the Texas Water Code and the Railroad Commission's Statewide Rule 9.

**EXAMINERS' RECOMMENDATION**

Based on the above findings of fact and conclusions of law, the examiners recommend that the application of High Roller Wells, LLC for commercial disposal authority pursuant to Statewide Rule 9 for the Highroller Glasscock SWD Lease, Well No. 1, be approved, as set out in the attached Final Order.

Respectfully submitted,



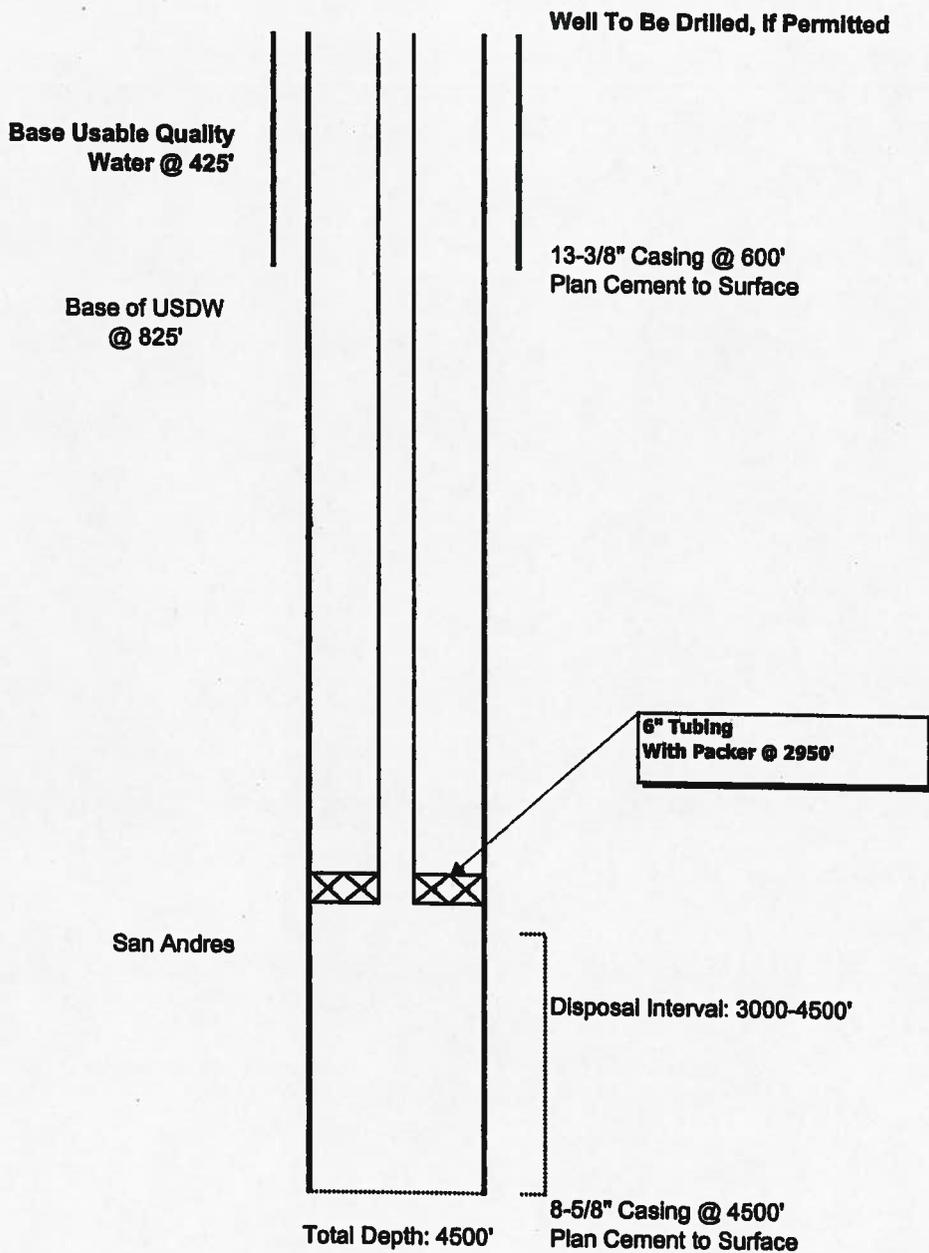
Richard D. Atkins, P.E.  
Technical Examiner



Terry Johnson  
Legal Examiner

**Highroller Glasscock SWD # 1 # 1  
(API # 42-173-36009)  
High Roller Wells, LLC  
Glasscock County, Texas**

**Proposed Disposal Configuration**



**Exhibit No. 12  
O&G Docket No. 08-0279365  
Date: October 17, 2013  
High Roller Wells, LLC**