



# RAILROAD COMMISSION OF TEXAS

## OFFICE OF GENERAL COUNSEL

OIL AND GAS DOCKET NO. 06-0262466

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THE APPLICATION OF DEVON ENERGY PRODUCTION CO., LP TO INJECT FLUID INTO A RESERVOIR PRODUCTIVE OF OIL OR GAS PURSUANT TO STATEWIDE RULE 46 IN THE WILLIAMS-INGRAM SWD LEASE, WELL NO. 1, CARTHAGE (PETTIT, LOWER GAS) FIELD, PANOLA COUNTY, TEXAS

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HEARD BY: Richard D. Atkins, P.E. - Technical Examiner  
Mark J. Helmueller - Legal Examiner

**APPEARANCES:**

**REPRESENTING:**

**APPLICANT:**

Clark Jobe  
Michael E. McElroy  
Robert Hurd

Devon Energy Production Co., LP

**PROTESTANTS:**

Branda R. Milford  
Billy and Rene Davis

Eathel Langford Ritter Family

**PROCEDURAL HISTORY**

Application Filed:	June 24, 2009
Request for Hearing:	July 15, 2009
Notice of Hearing:	July 27, 2009
Hearing Held:	August 19, 2009
Transcript Received:	August 25, 2009
Proposal for Decision Issued:	October 7, 2009

**EXAMINERS' REPORT AND PROPOSAL FOR DECISION**

**STATEMENT OF THE CASE**

Devon Energy Production Co., LP ("Devon") requests authority to inject produced salt water pursuant to Statewide Rule 46 into its Williams-Ingram SWD Lease, Well No. 1, in the Carthage (Pettit, Lower Gas) Field, Panola County, Texas.

This application is protested by members of the Eathel Langford Ritter Family, who are mineral owners in the Williams-Ingram Unit and the offsetting Bailey Unit that is operated by EOG Resources, Inc.

### DISCUSSION OF THE EVIDENCE

#### Applicant's Evidence

Devon seeks authority to inject produced salt water into the depleted Pettit Limestone formation in the Williams-Ingram SWD Lease, Well No. 1, at a depth of 6,000 feet. The proposed injection is for the purpose of disposing of produced salt water from Devon's producing Cotton Valley wells located in the area. Devon is also planning to drill additional infill horizontal wells and needs additional disposal capacity. No water hauling trucks will be used, as all of the injection water will be piped to the proposed injection well.

Devon will be separating all of the produced oil and gas on each unit prior to transferring the produced water off of any unit for disposal. Devon believes that the proposed injection well will benefit the mineral owners, as it will lower unit operating costs and thereby extend the life of the existing Carthage (Cotton Valley) Field wells. Accordingly, in the event any condensate production is recovered at the disposal facility, Devon plans to allocate the production back to the original units based on annual well tests.

The subject well has not yet been drilled, but Devon proposes that the well be drilled through the Pettit Limestone to a maximum depth of 6,480 feet. It is proposed that the well have 1,000 feet of 13  $\frac{3}{8}$ " surface casing set and 5,600 feet of 9  $\frac{5}{8}$ " intermediate casing with cement circulated from the casing shoes to the ground surface on both strings of casing. The 7" longstring casing will be set at total depth of 6,480 feet with cement circulated from the casing shoe up into the intermediate casing to an approximate depth of 4,500 feet (See attached Devon Exhibit No. 7 - Wellbore Diagram). The Texas Commission on Environmental Quality ("TCEQ") recommends that usable-quality ground water be protected to a depth of 600 feet below the land surface.

The proposed injection will be through 3  $\frac{1}{2}$ " tubing set on a packer at approximately 6,122 feet, but no higher than 100 feet above the top of the injection interval. The proposed injection interval is the Pettit Limestone between 6,000 feet and 6,400 feet. The estimated depths for the Pettit Limestone are based on the log of Devon's - Williams-Ingram Lease, Well No. 3. This well is a Cotton Valley producing gas well and is located approximately 1,300 feet to the north of the proposed injection well. This well is the closest well which penetrated the Pettit Limestone. The proposed maximum injection volume is 20,000 BWPD, with an estimated average of 2,000 BWPD. The proposed maximum surface injection pressure is 3,000 psig.

There is one wellbore operated by Devon within a ¼ mile radius of the proposed Williams-Ingram SWD Lease, Well No. 1, which penetrated the proposed injection interval. This well is Devon's Williams-Ingram Unit, Well No. 3, which is a Cotton Valley producing gas well and is cased in a manner which will not provide a conduit for migration of injected water from the injection interval into other oil, gas or mineral bearing formations or useable quality groundwater zones.

Notice of the application was published in *The Panola Watchman*, a newspaper of general circulation in Panola County, on June 14, 2009. A copy of the application was mailed on June 22, 2009 to the Panola County Clerk's Office and the three offsetting operators within ½ mile. Devon is the surface owner and mineral lessor of the 10 acre tract where the proposed injection well will be located.

### **Protestant's Evidence**

Members of the Eathel Langford Ritter Family are primarily concerned that condensate production will be moved off of each of the units and they will not be paid the royalty due to the family. They submitted several oil and gas leases, division orders, a 1947 pooling agreement, land plats, a Devon surface commingling permit and Panola County tax appraisals that affirmed their interest in the Williams-Ingram Unit and other offsetting units.

The protestants were also concerned that the proposed injection well would not benefit their mineral interest, as they only had the rights down to 6,500 feet. As a result, injection into the depleted interval would sweep oil and gas off the Williams-Ingram Unit and cause damage to their mineral estate.

### **Matters Officially Noticed**

In areas of known injection confinement issues, such as Panola County, Commission staff also review well information within a ½ mile radius. Applicant identified two wellbores within this area of review that penetrate the proposed injection interval. To complete the administrative record, official notice was taken of the completion records for these wells.

The first well, the Clark E Lease, Well No. 1, produced from the depleted Pettit Limestone formation and is located approximately 2,200 feet to the north of the proposed injection well. This well was drilled and completed in November 1947, plugged in August 1970 and had a cumulative production of 3.7 BCFG and 50.5 MBC. This well is plugged in a manner which will not provide a conduit for migration of injected water from the injection interval into other oil, gas or mineral bearing formations or useable quality groundwater zones.

The second well within the ½ mile radius is Devon's Williams-Ingram Unit, Well No. 1, located approximately 1,700 feet to the west of the proposed injection well. This well is a producing Cotton Valley well that has surface and intermediate casing set and cemented back to surface, which will protect useable quality groundwater zones. However, the estimated top of cement behind the production string is only 6,889 feet. As a result, Well No. 1 does not have cement across the proposed Pettit Limestone injection interval and does not isolate the Pettit Limestone from other shallower producing formations in the Carthage Field area, such as the Paluxy, Rodessa and James Lime formations. However, there is no production from these formations within the ½ mile radius.

The examiners also have officially noticed the Commission P-5 Financial Assurance and Docket databases. This information establishes that Devon has an active Organization Report and a \$250,000 financial assurance bond on file with the Commission. Devon also has no pending enforcement docket at the Commission.

#### **EXAMINERS' OPINION**

The examiners recommend that the application be approved. The proposed injection well will be completed in a manner which will protect useable quality water resources and will confine the injected fluids to the injection interval. Based on the fact that the proposed injection well allow further development of the Carthage (Cotton Valley) Field and will lower unit operating costs and extend the life of the existing Cotton Valley wells, the approval of the application is in the public interest.

Although the protestants claim that the proposed injection well will not benefit their mineral estate, their own Panola County tax appraisal documents show that they have an interest in the Cotton Valley production on the Williams-Ingram Unit and are paying property taxes on the appraised value. In addition, Devon plans to allocate any recovered condensate production back to the original units based on annual well tests, so the protestants will be paid on their fair share of the recovered condensate.

With respect to the two wells within ½ mile of the proposed injection well, neither well poses a threat to contamination of usable quality water. Commission records show that the Clark Lease, Well No. 1 is properly plugged. Commission records further show that the Williams-Ingram Unit, Well No. 1, is completed with two strings of casing cemented to the surface across the usable quality ground water zone.

Commission records further show that the estimated top of cement in the Williams-Ingram Unit, Well No. 1, is below the proposed injection interval in the proposed injection well. Consequently, the Williams-Ingram Unit, Well No. 1, could provide a conduit for the migration of injected water from the injection interval into other oil, gas or mineral bearing formations. To properly isolate these zones, Well No. 1 should be squeeze cemented across the Pettit Limestone. However, the examiners note that there is no current

production from these formations within the ½ mile radius and Devon is subject to Statewide Rule 17, which provides for monitoring and reporting of any bradenhead pressure. As a result, the examiners recommend a Special Condition in the injection well permit to provide for monthly monitoring and reporting to UIC and the District Office of the bradenhead pressure in the Williams-Ingram Unit, Well No. 1.

### FINDINGS OF FACT

1. Notice of this application and hearing was provided to all persons entitled to notice at least ten (10) days prior to the date of the hearing.
2. Notice of the application was published in *The Panola Watchman*, a newspaper of general circulation in Panola County, on June 14, 2009. A copy of the application was mailed on June 22, 2009 to the Panola County Clerk's Office and the three offsetting operators within ½ mile.
3. Devon is the surface owner and mineral lessor of the 10 acre tract where the proposed injection well will be located.
4. The proposed injection into the Williams-Ingram SWD Lease, Well No. 1, will not endanger useable quality water.
  - a. The Texas Commission on Environmental Quality recommends that usable-quality ground water be protected to 600 feet.
  - b. The subject well has not yet been drilled, but Devon proposes that the well be drilled through the Pettit Limestone to a maximum depth of 6,480 feet. It is proposed that the well have 1,000 feet of 13 ⅝" surface casing and 5,600 feet of 9 ⅝" intermediate casing with cement circulated from the casing shoe to the ground surface on both strings of casing.
  - c. The 7" longstring casing will be set at total depth of 6,480 feet with cement circulated from the casing shoe up into the intermediate casing to an approximate depth of 4,500 feet.
  - d. The injected fluids will be confined to the Pettit Limestone injection interval between 6,000 feet and 6,400 feet.
  - e. Wells within ½ mile of the proposed injection well have been either cased and cemented or plugged in a manner that they will not provide a conduit for migration of injected water into the usable quality groundwater zone.

5. The proposed injection into the Williams-Ingram SWD Lease, Well No. 1, will not endanger production from other oil, gas or mineral bearing formations.
  - a. One wellbore operated by Devon within a ¼ mile radius of the proposed injection well penetrated the proposed injection interval. This well is Devon's Williams-Ingram Unit, Well No. 3, which is a Cotton Valley producing gas well and is cased in a manner which will not provide a conduit for migration of injected water.
  - b. Only one wellbore within a ½ mile radius of the proposed injection well, the Clark E Lease, Well No. 1, has produced from the proposed injection interval. This well is plugged in a manner which will not provide a conduit for migration of injected water.
  - c. Only one active wellbore within a ½ mile radius of the proposed injection well, Devon's Williams-Ingram Unit, Well No. 1, penetrated the proposed injection interval. This well is a Cotton Valley producing gas well and does not have cement across the proposed injection interval which does not isolate the Pettit Limestone from other shallower producing formations in the Carthage Field area, such as the Paluxy, Rodessa and James Lime formations.
  - d. There is no production from the Pettit Limestone, Paluxy, Rodessa and James Lime formations within the ½ mile radius.
6. The proposed injection is in the public interest because it will result in the further development and recovery of additional reserves from the Carthage (Cotton Valley) Field due to lower unit operating costs, thereby extending the time period that the existing Cotton Valley wells can produce economically. Additionally, the proposed injection does not endanger usable quality groundwater resources.
7. The Commission's docket database did not show any current enforcement dockets against Devon Energy Production Co., LP.
8. Devon has an active Organization Report and a \$250,000 financial assurance bond on file with the Commission.

#### **CONCLUSIONS OF LAW**

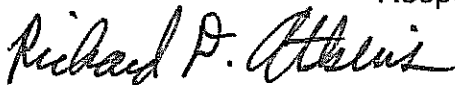
1. Proper notice was issued in accordance with the applicable statutory and regulatory requirements.

2. All things have occurred to give the Railroad Commission jurisdiction to consider this matter.
3. Devon Energy Production Co., LP has met its burden of proof and satisfied the requirements of Chapter 27 of the Texas Water Code and the Railroad Commission's Statewide Rule 46.
4. Approval of the application will not harm useable quality water resources, will not endanger oil, gas, or geothermal resources and will result in the further development and recovery of additional reserves from the Carthage (Cotton Valley) Field.

**EXAMINERS' RECOMMENDATION**

Based on the above findings of fact and conclusions of law, the examiners recommend that the application of Devon Energy Production Co., LP for authority to inject produced salt water into its Williams-Ingram SWD Lease, Well No. 1, be approved as set out in the attached Final Order.

Respectfully submitted,



Richard D. Atkins, P.E.  
Technical Examiner



Mark J. Helmueller  
Legal Examiner