



**RAILROAD COMMISSION OF TEXAS**  
**HEARINGS DIVISION**

**PROPOSAL FOR DECISION**

**OIL & GAS DOCKET NO. 10-0308852**

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**THE APPLICATION OF ADAMS AFFILIATES, INC. PURSUANT TO STATEWIDE  
RULE 46 FOR A PERMIT TO DISPOSE OF OIL AND GAS WASTE BY INJECTION  
INTO A POROUS FORMATION PRODUCTIVE OF OIL AND GAS, FOR THE  
THOMPSON (04308) LEASE, WELL NO. 2031, PANHANDLE (RED CAVE) FIELD,  
MOORE COUNTY, TEXAS**

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**HEARD BY:** Richard Eyster, P.G. – Technical Examiner  
Jennifer Cook – Administrative Law Judge

**APPEARANCES:**

**REPRESENTING:**

**APPLICANT:**

David Nelson  
Steve Towns  
Jennifer Sexton  
Nguyen B. Ngoc, P.E.

Adams Affiliates, Inc.  
Attorney  
Consultant  
Consultant  
Engineer

**PROTESTANT:**

Bill Hayenga

Thompson Mineral Trust No. 2  
Attorney

**PROCEDURAL HISTORY**

Application Filed:	November 13, 2017
Protest Received:	March 7, 2018
Request for Hearing:	January 12, 2018
Notice of Hearing:	July 10, 2017
Hearing Held:	April 30, 2018
Transcript Received:	May 17, 2018
Late Filed Exhibits	May 14, 2018
Record Closed:	May 17, 2018
Proposal For Decision Issued:	June 12, 2018

### **STATEMENT OF THE CASE**

Adams Affiliates, Inc (“Adams”) is seeking authority pursuant to Statewide Rule 46(16 Tex. Admin. Code §3.46) to dispose of oil and gas waste by injection into a formation productive of oil or gas on the Thompson (04308) Lease, Well No. 2031, Panhandle (Red Cave) Field, Moore County, Texas. The proposed injection well is located on 337 acres, approximately 4.0 miles east of Masterson in Moore County. The Adams Well No. 2031, is an existing well (API No. 341-33372) that will be converted to an injection well. There are currently 39 wells on the Thompson Lease.<sup>1</sup>

Adams seeks authority to dispose of 600 barrels per day (bbls/d) of produced saltwater from Adams Thompson Lease into the Red Cave Formation from a depth of 1,853 feet to 2,148 feet. On July 31, 2017, notice of the application was published in *The Amarillo Globe News*, a newspaper of general circulation in Moore County, Texas.<sup>2</sup> On July 10, 2017, Adams notified the Moore County Clerk, owners of the surface tract, adjacent landowners and the operators of wells within one half-mile of the proposed disposal well.<sup>3</sup> The proposed well is not located in the city limits of any city or town.

The Technical Examiner and Administrative Law Judge (collectively, “Examiners”) conclude Adams has met its burden of proof under Chapter 27 of the Texas Water Code and the Commission’s Statewide Rule 46, and recommend the application be granted and the disposal permit issued.

The application is protested by Thompson Mineral Estate No. 2, who contend that the proposed injection well will negatively impact their mineral interests and reserves.

### **APPLICABLE LAW**

Statewide Rule 46 [T.A.C. Title 16, Part 1, Chapter 3, Rule §3.46] requires that “Any person who engages in fluid injection operations in reservoirs productive of oil, gas or geothermal resources must obtain a permit from the commission. Permits may be issued when the injection will not endanger oil, gas or geothermal resources or cause pollution of freshwater strata unproductive of oil, gas or geothermal resources.”

Texas Water Code, Chapter 27, and Title 3 of the Natural Resources Code states; The Railroad Commission may grant an application for a disposal well permit under Texas Water Code §27.051(b) and may issue a permit if it finds:

1. The use or installation of the injection well is in the public interest;
2. The use or installation of the injection well will not endanger or injure any oil, gas, or other mineral formation;

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<sup>1</sup> Adams Exhibits Nos. 9, 10 & 11

<sup>2</sup> Adams Exhibit No. 6

<sup>3</sup> Adams Exhibit No. 4.

3. With proper safeguards, both ground and surface fresh water can be adequately protected from pollution; and
4. The applicant has made a satisfactory showing of financial responsibility as required by Section 27.073.

### **DISCUSSION OF THE EVIDENCE**

#### **APPLICANT'S EVIDENCE**

At the hearing, Adams offered evidence and testimony from Jennifer Sexton, Regulatory consultant and Nguyen B. Ngoc, P.E.

##### ***Well Design and Operation***

The Adams Thompson (04308) Lease, Well No. 2031, is an existing well (API No. 341-33372) that will be converted to an injection well and operated as follows:<sup>4</sup>

- The well was drilled to a total depth of 2,300 feet and plugged back to 2,257;
- Surface casing (8 5/8-inch) is set at 514 feet and cemented to the surface with 300 sacks of Class C cement;
- Long-string casing (5 1/2-inch) is set to a depth of 2,280 feet, cemented with 325 sacks of Class A cement to a depth of 500 feet as shown by a cement bond log;
- Tubing, 2 3/8-inch is set at 1,946 feet with a packer set at a depth of 1,850 feet, 3.0 feet above the top of the injection interval;
- The injection interval will be from 1,853 feet to 2,148 feet in the Red Cave Formation;
- The maximum daily injection volume will be 600 bpd;
- The maximum surface injection pressure will be 200 pounds per square inch gauge ("psig"); and
- Injected water will be limited to produced salt water from the Red Cave Formation on the Thompson lease.

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<sup>4</sup> Tr. Vol 1, pg 76 Ins 1-25. Pg 77, Ins1-18. Adams Exhibit No. 2. Adams Exhibit No. 14, Form W-2. Adams Exhibit No. 15 Well bore Diagram.

### ***Geology and Resource Development***

The proposed disposal zone is the Red Cave Formation. The proposed injection well will be used to inject only produced water from the Red Cave Formation. The proposed injection interval will be from 1,853 feet to 2,148 feet to maintain formation pressure which will facilitate the production of hydrocarbons, prevent waste and will reduce disposal costs. Only produced water from the Red Cave Formation on the Adams' Thompson lease will be injected back into the Red Cave Formation. Mr. Ngoc stated that at the base of the proposed injection interval at 2,148 feet, "there is a tight, dense brown dolomite limestone, which will act as a good seal for the base of this interval." The base of the injection interval is sealed by a minimum of 150 feet of tight brown dolomite limestone. The top of the injection interval at 1,853 feet is sealed by a minimum of 150 feet of shale.<sup>5</sup>

### ***Groundwater***

The Commission's Groundwater Advisory Unit (GAU) determined the base of usable quality groundwater (BUQW) to be at a depth of 500 feet, which includes the Permian Red beds. The base of the underground sources of drinking water, (USDW) is found at 2,025 feet.<sup>6</sup> The proposed injection well has surface casing (8 5/8-inch) set at 514 feet and cemented to the surface with 300 sacks of Class C cement. The long-string casing (5 1/2-inch) is set at a depth of 2,280 feet and cemented with 325 sacks of Class A cement to a depth of 500 feet as shown by a cement bond log. The casing strings and cement are protective of groundwater.<sup>7</sup>

### ***Seismic activity***

When the application was filed, a review of the records of the U. S. Geologic Survey identified one seismic event with a magnitude greater than 1.0 within a 9.08-kilometer radius (100 square miles) of the proposed disposal well. On 02/18/2006 a 3.5 magnitude earthquake occurred at a depth of 5 kilometers approximately 5.2 miles from the proposed injection well. As a result of the seismic activity Commission Underground Injection Control staff recommended the following special condition be added to the permit.<sup>8</sup>

*1. The permittee shall, in addition to standard Form H-10 Annual Disposal/Injection Well Monitoring Report, collect and record accurate daily injected volumes and maximum daily injection pressures and make this data available to the Commission upon request.*

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<sup>5</sup> Tr. Vol.1, pg 77, Ins, 10-21. Adams Exhibit No. 17 well log.

<sup>6</sup> Adams Exhibit No. 19 CBL.

<sup>7</sup> Tr. Vol.1, pg 77, Ins, 10-21. Adams Exhibit Nos., 9, 17 & 19.

<sup>8</sup> Adams Exhibit No. 20. USGS TexNet seismic report.

Adams stated that they would not consider the special condition to be adverse.

***Area of Review***

Statewide Rule §3.46(e)(1), Area of Review states: "Except as otherwise provided in this subsection, the applicant shall review the data of public record for wells that penetrate the proposed disposal zone within a 1/4 mile radius of the proposed disposal well to determine if all abandoned wells have been plugged in a manner that will prevent the movement of fluids from the disposal zone into freshwater strata. The applicant shall identify in the application any wells which appear from such review of public records to be unplugged or improperly plugged and any other unplugged or improperly plugged wells of which the applicant has actual knowledge."

Adams Exhibit No.3, a 1/4 mile radius map centered around the proposed disposal well, shows there is one plugged well bore, (API No. 341-30507) within the 1/4 mile area of review. A plugging report (Form W-3) submitted into evidence shows that the well was plugged on July 26, 2004 in accordance with Commission standards and the plugged well will not provide a pathway for the migration of fluids outside of the injection zone.<sup>9</sup>

***Financial Assurance***

Adams has an active Organization Report (Form P-5, Operator No. 003978). Consistent with 16 Tex. Admin. Code § 3.78, Commission records show that Adams Affiliates has a \$250,000 bond on file with the Commission.<sup>10</sup>

**PROTESTANT'S EVIDENCE:**

The Protestant contends that the proposed injection well will negatively impact their mineral interests and reserves.

At the hearing the Protestant did not enter into evidence any expert witness testimony or submit any exhibits that would support their contention that the proposed injection well will negatively impact their mineral interests and reserves.

**PROTESTANT'S MOTION TO DISMISS:**

Protestant filed a motion to dismiss the application due to inaccurate notice ("Motion").<sup>11</sup> Statewide Rule 46 requires the applicant to send affected persons a copy of the application.<sup>12</sup> Protestant complains that the GPS coordinates originally submitted in Commission Form H-1A of the application are incorrect. The Motion was heard at the hearing. Adams acknowledges the GPS coordinates were incorrect. However, GPS

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<sup>9</sup> Adams Exhibit Nos. 3, radius map & 19 Form W-3 plugging report.

<sup>10</sup> Adams Exhibit No. 8.

<sup>11</sup> See Letter to Examiners from Protestant's attorney filed April 20, 2018.

<sup>12</sup> 16 TEX. ADMIN. CODE § 3.46(c)(1).

coordinates are one of several ways the location of the proposed well is identified in the application. The well's API number, Lease ID number and legal description of the well location including distance and direction from survey lines are all required. There is no dispute that these well identifiers were accurate in the application. In fact, as noted on the Form H-1A, providing GPS coordinates is "optional." The notice of hearing<sup>13</sup> and the notice of the application by publication<sup>14</sup> do not contain the GPS coordinates to identify the well. The Examiners find that the insignificant inaccuracy does render the notice insufficient. The Examiners recommend the Commission deny the Motion.

### **EXAMINERS' ANALYSIS**

The Examiners conclude the evidence in the record demonstrates Adams has met its burden of proof and that the proposed disposal well application meets the requirements of Chapter 27 of the Texas Water Code and Statewide Rule 46.

The Examiners conclude that the proposed injection well is in the public interest. The well is completed in accordance with Commission standards and will be operated in a manner that will protect both usable ground and surface water from pollution. The operation of the injection well will not endanger or injure any oil, gas, or other mineral formation. The four required elements of the Texas Water Code § 27.051(b) will be considered sequentially.

#### ***Public Interest***

Adams proposes to inject water into the Red Canyon Formation, to maintain formation pressure and to reduce their disposal costs. The proposed injection well will allow Adams to maximize hydrocarbon recovery which will minimize waste. Without the proposed non-commercial injection well Adams will have to truck their produced water off site to commercial disposal wells increasing their costs to operate their wells on their lease.

#### ***Endanger or Injure Any Oil, Gas, or Other Mineral Formation***

The evidence in the record demonstrates the proposed disposal well was drilled, completed and will be operated in such a manner that the proposed injection well will not endanger or injure any oil, gas, or other mineral formation pursuant to Texas Water Code § 27.051(b)(2). The well will enhance the recovery of hydrocarbons from the Red Cave Formation and reduce waste. Surface casing (8 5/8-inch) was set at 514 feet and cemented to the surface with 300 sacks of Class C cement. Long-string casing (5 1/2-inch) is set to a depth of 2,280 feet and cemented with 325 sacks of Class A cement to a depth of 500 feet as shown on the cement bond log.<sup>15</sup> Adams has entered evidence into the record that the top of the proposed disposal zone is confined by at 150 feet of dense,

<sup>13</sup> See Notice of Prehearing Conference dated February 21, 2018.

<sup>14</sup> See Adam's filing of the application, with enclosures, dated July 13, 2017.

<sup>15</sup> Adams Exhibit Nos. 17 & 18.

shaly limestone that's highly cemented. The base of the injection interval is confined by over 200 feet of a tight shaly limestone.<sup>16</sup>

### ***Area of Review***

Within a one-quarter mile radius of the proposed disposal well there is one plugged wellbore, (API No. 341-30507) within the 1/4 mile area of review. A plugging report (Form W-3) submitted into evidence shows that the well was plugged on July 26, 2004 in accordance with Commission standards and the plugged well will not provide a pathway for the migration of fluids outside of the injection zone.<sup>17</sup>

### ***Prevent Pollution of Ground and Surface Fresh Water***

The proposed disposal well is cased and cemented in such a way as to prevent the migration of injected fluids from the disposal interval. According to the Commissions Groundwater Advisory Unit the base of usable quality groundwater (BUQW) is at a depth of 500 feet, which includes the Permian Red beds. The base of the underground sources of drinking water, (USDW) is found at 2,025 feet. The proposed injection well has surface casing (8 5/8-inch) set at 514 feet and cemented to the surface with 300 sacks of Class C cement. The long-string casing (5 1/2-inch) is set at a depth of 2,280 feet and cemented with 325 sacks of Class A cement to a depth of 500 feet as shown by a cement bond log. The top of the proposed disposal zone is confined by at 150 feet of shale. The base of the injection interval is confined by over 200 feet of tight brown limestone.<sup>18</sup>

### ***Demonstrate Financial Responsibility***

Adams has an active Organization Report (Form P-5). The applicant has made a satisfactory showing of financial responsibility as required by Texas Water Code § 27.073 pursuant to Texas Water Code § 27.051(b)(4). Consistent with 16 Tex. Admin. Code § 3.78, Commission records show that Adams Affiliates has a \$250,000 bond on file with the Commission.

## **FINDINGS OF FACT**

1. Notice of the application was published in *The Amarillo Globe News*, on July 31, 2017.
2. On July 10, 2017 Adams notified the Moore County Clerk, and operators of wells within one-half mile of the proposed disposal well.
3. The Application was protested by Thompson Mineral Trust No. 2.

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<sup>16</sup> Adams Exhibit No. 17, well log.

<sup>17</sup> Adams Exhibit No. 18.

<sup>18</sup> Adams Exhibit No. 17, well log.

4. The proposed well will be located 4.0 miles east of the City of Masterson in Moore County, Texas.
5. The proposed disposal well is completed and will be operated as follows:
  - a. Surface casing (8 5/8-inch) is set at 514 feet and cemented to the surface with 300 sacks of Class C cement;
  - b. Long-string casing (5 1/2-inch) is set to a depth of 2,280 feet and cemented with 325 sacks of Class A cement to a depth of 500 feet as shown by a cement bond log;
  - c. Tubing, 2 3/8-inch is set at 1,946 feet with a packer set at a depth of 1,850 feet, 3.0 feet above the top of the injection interval;
  - d. The injection interval will be from 1,853 feet to 2,148 feet in the Red Cave Formation;
  - e. The maximum daily injection volume will be 600 bpd;
  - f. The maximum surface injection pressure will be 200 pounds per square inch gauge ("psig"); and
  - g. Injected fluids will be limited to produced salt water from the Red Cave Formation on the Thompson Lease.
6. The base of usable quality groundwater (BUQW) is at a depth of 500 feet, including the Permian Red Beds. The well is cased and cemented to isolate the BUQW from the injection interval.
7. The top of the proposed disposal zone is confined by 150 feet shale. The base of the injection interval is confined by over 150 feet of a tight brown limestone.
8. The use or installation of the injection well will not endanger or injure any oil, gas, or other mineral formation.
9. With proper safeguards, both ground and surface fresh water can be adequately protected from pollution.
  - a. There is one properly plugged well, (API No. 341-30507) within the one-quarter mile area of review.
10. Adams has an active Organization Report (Form P-5, Operator No. 003978).



11. The applicant has made a satisfactory showing of financial responsibility in the form of a \$250,000 bond as required by section 27.073 of the Texas Water Code.
12. The permittee shall, in addition to standard Form H-10 Annual Disposal/Injection Well Monitoring Report, collect and record accurate daily injected volumes and maximum daily injection pressures and make this data available to the Commission upon request.
13. On April 20, 2018, the protestant filed a motion to dismiss the application claiming the notice of application was insufficient because the GPS coordinates in the Commission Form H-1A were inaccurate.
14. The well's API number, Lease ID number and legal description of the well location including distance and direction from survey lines provided in the application were all accurate.
15. Providing GPS coordinates in the Form H-1A is optional.
16. The notice of hearing and published notice of application do not contain the GPS coordinates to identify the well.
17. Any inaccuracy in the application is insignificant as to notice.

#### **CONCLUSIONS OF LAW**

1. Resolution of the subject application is a matter committed to the jurisdiction of the Railroad Commission of Texas. Tex. Nat. Res. Code § 81.051
2. All notice requirements have been satisfied. 16 Tex. Admin. Code § 3.46.
3. The use or installation of the proposed disposal well is in the public interest. Tex. Water Code §27.051(b)(1).
4. The use or installation of the proposed disposal well will not endanger or injure any oil, gas, or other mineral formation. Tex. Water Code §27.051(b)(2).
5. With proper safeguards, both ground and surface fresh water can be adequately protected from pollution. Tex. Water Code §27.051(b)(3).
6. Adams has made a satisfactory showing of financial responsibility. Tex. Water Code §27.051(b)(4).

7. Adams 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 46.
8. Protestant's motion to dismiss the application should be denied.

**EXAMINERS' RECOMMENDATION**

Based on the above Findings of Fact and Conclusions of Law, the Examiners recommend the Commission enter an order granting the application of Adams Affiliates, Inc., a permit with special conditions, to dispose of oil and gas waste by injection into the Red Cave Formation, a porous formation productive of oil or gas, Thompson (04308) Lease, Well No. 2031, Panhandle (Red Cave) Field, Moore County, Texas.

Respectfully,



Richard Eyster, P. G.  
Technical Examiner



Jennifer Cook  
Administrative Law Judge