# RAILROAD COMMISSION OF TEXAS HEARINGS DIVISION

## OIL AND GAS DOCKET NOS. 7C-0299181 & 7C-0303143

COMPLAINT OF HENRY RESOURCES LLC REGARDING THE RBJ & ASSOCIATES, LP'S DELHI RANCH LEASE, WELL NOS. 1 AND 2, SPRABERRY (TREND AREA) FIELD, UPTON COUNTY, TEXAS

COMPLAINT OF RBJ & ASSOCIATES, LP REGARDING COG OPERATING LLC'S TXL T 27 No. 1 Well, Spraberry (Trend Area) Field, Upton County, Texas

# **FINAL ORDER**

The Commission finds that after statutory notice the captioned proceedings were heard by an Administrative Law Judge and Technical Examiner ("Examiners") on March 1, 2, 3, 6, and 9, 2017. The following Findings of Fact and Conclusions of Law are hereby adopted by the Commission:

#### FINDINGS OF FACT

- 1. All things necessary to the Railroad Commission of Texas (the "Commission") attaining jurisdiction have occurred.
- 2. Proper notice of hearing was timely given to all persons legally entitled to notice.
- 3. Pursuant to agreement by all parties, Oil and Gas Docket Nos. 7C-0299181 and 7C-0303143 were consolidated. A hearing on the merits was conducted on March 1, 2, 3, 6, and 9, 2017.
- 4. On March 31, 2008, the *Permit to Dispose of Non-Hazardous Oil and Gas Waste by Injection into a Porous Formation Not Productive of Oil and Gas* for the Delhi Ranch Lease, Well No. 1, Spraberry (Trend Area) Field, Upton County, Texas ("Disposal Well 1") was administratively approved by Commission staff and issued to RBJ & Associates, LP ("RBJ").
  - a. Disposal Well 1 was permitted with a maximum daily disposal volume of 10,000 barrels per day, a disposal interval of 3,700 to 5,500', and a maximum surface pressure of 1,850 psi.

- b. On March 31, 2008, there were no wells within a 1/2-mile radius of Disposal Well 1.
- 5. On April 22, 2015, the amended *Permit to Dispose of Non-Hazardous Oil and Gas Waste by Injection into a Porous Formation Not Productive of Oil and Gas* for Disposal Well 1 was administratively approved by Commission staff and issued to RBJ.
  - a. The amended *Permit to Dispose of Non-Hazardous Oil and Gas Waste by Injection into a Porous Formation Not Productive of Oil and Gas* granted authority to RBJ to dispose of non-hazardous oil and gas waste into the San Andres Formation at a depth interval from 3,600 to 5,550', and a maximum surface pressure of 1,800 psi.
- 6. On January 25, 2011, the *Permit to Dispose of Non-Hazardous Oil and Gas Waste by Injection into a Porous Formation Not Productive of Oil and Gas* for the Delhi Ranch Lease, Well No. 2, Spraberry (Trend Area) Field, Upton County, Texas ("Disposal Well 2") was administratively approved by Commission staff and issued to RBJ.
  - a. Disposal Well 2 was permitted with a maximum daily disposal volume of 10,000 barrels per day, a disposal interval of 3,700 to 5,500', and a maximum surface pressure of 1,850 psi.
  - b. On January 25, 2011, there were no wells within a 1/2-mile radius of Disposal Well 2.
- 7. On April 22, 2015, the amended *Permit to Dispose of Non-Hazardous Oil and Gas Waste by Injection into a Porous Formation Not Productive of Oil and Gas* for Disposal Well 2 was administratively approved by Commission staff and issued to RBJ.
  - a. The amended *Permit to Dispose of Non-Hazardous Oil and Gas Waste by Injection into a Porous Formation Not Productive of Oil and Gas* granted authority to RBJ to dispose of non-hazardous oil and gas waste into the San Andres Formation at a depth interval from 3,600 to 5,550', and a maximum surface pressure of 1,800 psi.
- 8. The Permit to Dispose of Non-Hazardous Oil and Gas Waste by Injection into a Porous Formation Not Productive of Oil and Gas for Disposal Well 1 and the Permit to Dispose of Non-Hazardous Oil and Gas Waste by Injection into a Porous Formation Not Productive of Oil and Gas for Disposal Well 2 are conditioned upon the injected fluid remaining in the approved interval.
  - a. 16 Tex. Admin. Code § 3.9 provides that a permit for a disposal well may be suspended, amended, or revoked if injected fluids are escaping from the permitted disposal zone.

- 9. RBJ is the current Form P-4 Certificate of Compliance and Transportation Authority operator of record for Disposal Well 1 and Disposal Well 2.
- 10. On July 9, 2008, Disposal Well 1 was spudded and drilled to a depth of 5,161'.
  - a. Surface casing was set at 458' below surface and cemented to surface.
    - i. The base of usable quality water is located at 370' below surface.
  - b. Long string casing was set at 5,161' feet below surface and cemented back to 2,320' below surface.
  - c. Injection of non-hazardous oil and gas waste occurs through perforations between 4,831 to 5,150' below surface.
  - d. On August 20, 2014, Disposal Well 1 passed a mechanical integrity test, as performed by RBJ.
  - e. Since it was permitted, approximately 20 million barrels of water have been injected into Disposal Well 1.
  - f. Since December 18, 2015, no injection of non-hazardous oil and gas waste has occurred into Disposal Well 1 other than approximately 85,000 barrels for Fesco pressure interference testing.
  - g. RBJ conducted Fesco pressure interference testing in October, November, and December 2016.
- 11. In January 2011, Disposal Well 2 was drilled to a depth of 5,500'.
  - a. In February 2011, Disposal Well 2 was completed with an open hole design from 3,700 to 5,500'.
  - b. Surface casing was set at 435' below surface and cemented to surface.
    - i. The base of usable quality water is located at 370' below surface.
  - c. Long string casing was set at 3,700' feet below surface and cemented back to 2,346' below surface.
  - d. Injection of non-hazardous oil and gas waste occurs through perforations between 3,700 to 5,550' below surface.
  - e. Injection of non-hazardous oil and gas waste began on or about May 1, 2011.

- f. On March 4, 2016, Disposal Well 2 passed a mechanical integrity test, as performed by RBJ.
- g. Since it was permitted, approximately 9.5 million barrels of water have been injected into Disposal Well 2.
- h. Since December 18, 2015, no injection of non-hazardous oil and gas waste has occurred into Disposal Well 2.
- i. RBJ conducted Fesco pressure interference testing in October, November, and December 2016.
- 12. Disposal Well 1 and Disposal Well 2 are located approximately 3,410' feet apart from each other.
  - a. Pressure interference testing confirms Disposal Well 1 and Disposal Well 2 are in pressure communication.
- 13. Disposal Well 2 is the nearest well to COG Operating LLC's ("COG") TXL T 27 No. 1 (the "P&A Well") at a distance of 269'.
- 14. On October 4, 2012, the P&A Well was spudded and drilled to a depth of 11,066'.
  - a. Prior to the P&A Well being spud, approximately 2.8 million barrels of non-hazardous oil and gas waste had been injected into Disposal Well 2.
  - b. Surface casing was set at 790' below surface and cemented to surface.
  - c. Long string casing was set at 11,066' feet below surface and cemented with a differential valve tool set at 6,909' below surface, with a top of cement at 5,606' below surface.
  - d. No cement exists behind the long string casing above 5,606'.
  - e. The P&A Well has no cement behind the long string casing in the depths equivalent to the disposal intervals of Disposal Well 1 and Disposal Well 2.
- 15. COG is the current Form P-4 Certificate of Compliance and Transportation Authority operator of record for the P&A Well.
- 16. In December 2012, the P&A Well was completed in the Spraberry (Trend Area) and David (Pennsylvanian) Fields.

- a. Commingled production occurred from the Spraberry (Trend Area) and David (Pennsylvanian) Fields from perforations between 8,068 and 10,980'.
- b. On May 24, 2013, production ceased.
- 17. In July 2013, COG attempted to rework the P&A Well to reestablish production.
  - a. Tubing and rods were cut off, with a top of fish at 4,323'.
  - b. After noting obstructions in the casing, COG attempted a swedge of the wellbore to expand the casing back to its original size.
  - c. The original casing size is an inside diameter of 4.892 inches.
  - d. On August 7, 2013, COG rigged up on the P&A well.
  - e. On August 7, 2013, the P&A well flowed back to surface 60 bbl of Spraberry and Wolfcamp oil.
  - f. On August 7, 2013, the P&A Well was in communication with the Spraberry and Wolfcamp formations.
  - g. On August 13, 2013, COG performed a caliper log which revealed casing collapses in two areas: 1) between the depth interval of 3,592 to 3,602'; and 2) between the depth interval of 3,670 to 3,718'.
    - i. The casing collapse between the depth interval of 3,592 to 3,602' reduced the inner diameter of the casing to 4.8 inches.
    - ii. The casing collapse between the depth interval of 3,670 to 3,718' reduced the inner diameter of the casing to 2.7 inches.
  - h. On August 19, 2013, COG reported to the Commission the casing collapse between the depth interval of 3,592 to 3,602'.
    - i. COG did not report to the Commission the casing collapse between the depth interval of 3,670 to 3,718'.
  - i. On August 19, 2013, COG tagged the top of fish at 4,323'.
  - j. On August 19, 2013, based on information provided by COG, the Commission set forth a plugging procedure for the P&A Well on Form D-8.

- i. The Commission-approved plugging procedure was recorded on Form D-8, and then issued to COG.
- ii. The Form D-8 cites remaining equipment left in the wellbore.
- iii. The Form D-8 cites a casing collapse between the depth interval of 3,592 to 3,602'.
- iv. The Form D-8 does not cite a casing collapse between the depth interval of 3,670 to 3,718'.
- k. On August 20, 2013, the P&A Well had 300 psi on the casing.
  - i. The P&A Well had 0 psi on the casing for the previous 18 days prior to August 20, 2013.
- l. On August 20, 2013, the P&A Well and Disposal Well 2 were in pressure communication.
- m. On August 20, 2013, the P&A Well was flowing at a rate of 4 barrels per minute.
- 18. On August 21, 2013, COG attempted to plug the P&A Well in accordance with Form D-8.
  - a. Form D-8 was assigned Commission Job No. 7105.
  - b. On August 19, 2017, Form D-8 was prepared by Commission District Office 7C based on information provided by COG.
  - c. Form D-8 was prepared prior to the discovery of pressure communication between the P&A well and Disposal Well 2.
  - d. Form D-8 lists a casing collapse from 3609' to 3619' and a fish in the hole with the top of fish at 4323'.
  - e. Form D-8 required COG to set a plug from 4000' to 4323' and tag the top of the plug.
  - f. COG was unable to get below 3650' with tubing.
    - i. A packer was set at 2878' with the end of tubing at a depth of 3638'.
    - ii. The end of tubing was below the reported casing collapse interval of 3609' to 3619'.

- iii. The end of tubing was not below actual known casing collapse interval of 3,670' to 3,718'.
- iv. The integrity of the casing below the depth 4,323' is unknown.
- v. The longstring casing was originally cemented with top of cement at 5,606'.
- vi. COG pumped 210 sacks of 14.8 lb per gal cement, with a slurry volume of 49 bbl.
- vii. COG displaced the cement with 29.5 bbl of fresh water, the amount of which was calculated by COG to put top of cement 4,000' below surface.
- viii. After waiting four hours for the cement plug to set, COG attempted to tag the top of cement, but upon opening the tubing, there was flow up the tubing. Upon running in the hole, COG tagged the top of the fish at a depth of 4,323' and did not tag any cement.
- ix. After an unsuccessful plugging attempt, the Commission directed COG to repeat the plugging process of pumping 210 sacks of cement.
  - 1. After pumping an additional 210 sacks of cement the well was shut in overnight.
- g. On August 22, 2013, the P&A Well tubing was opened.
  - i. The P&A Well flowed back one bbl of fluid.
  - ii. COG tagged the top of fish at 4323' and
  - iii. COG did not tag any cement.
- h. After an unsuccessful plugging attempt, the Commission directed COG to pump an additional 210 sacks of cement.
  - i. COG pumped an additional 210 sacks of cement.
  - ii. COG waited four hours before opening the tube.
  - iii. The tubing was opened and the P&A Well flowed back one bbl of fluid.

- i. After an unsuccessful plugging attempt, the Commission directed COG to repeat the process of pumping 210 sacks of cement (Plug No. 4).
  - i. COG pumped 210 sacks of the new cement blend (53 bbl slurry volume).
  - ii. COG displaced the cement with 29.5 bbl of fluid, and shut the well in overnight.
- 19. On August 23, 2013, COG tagged the top of cement at 3,620'.
  - a. The bottom depth of plug is unknown.
- 20. The Commission-approved plugging procedure required COG to set a plug between the depth interval of 4,000 to 4,323'.
  - a. COG did not tag this plug.
  - b. COG tagged the top of plug at 3,620' below surface.
  - c. The depth and integrity of this plug is unknown.
  - d. Form W-3 Plugging Record reports bottom of tubing to be 4,000'.
  - e. After each attempt to set a plug between the depth interval of 4,000 to 4,323', COG either tagged the top of the fish or witnessed fluid flow at surface.
- 21. The P&A Well has a casing collapse between the depth interval of 3,670 to 3,718'.
  - a. The casing collapse occurred within Disposal Well 1 and Disposal Well 2's permitted disposal interval.
  - b. There is an unknown amount of cement inside the casing below 3,620'.
  - c. There is an unknown amount of cement behind the casing of the P&A Well across the entire disposal interval of Disposal Well 2.
  - d. There is no plug tagged below 3,620' below surface in the P&A Well.
  - e. Perforations in the P&A Well are open between the depth interval of 8,068 to 10,980'.

- 22. Henry Resources LLC ("Henry") is the current Form P-4 Certificate of Compliance and Transportation Authority operator of record for 28 oil and gas wells located on Section 25, Blk. 41, A-499, Upton County, Texas (the "Melinda Lease").
  - a. The wells produce from either the Spraberry (Trend Area), Betty Sue (Strawn), or Amacker-Tipper East (Strawn) Fields.
  - b. The wells produce from either the Clearfork, Sprayberry, Wolfcamp, or Bend Formations.
  - c. The Melinda Lease is located approximately 1 ½ miles east of Disposal Well 2.
  - d. The Melinda Lease wells each passed a mechanical integrity test, as performed by Henry.
  - e. The Melinda Lease wells are not a conduit for flow from the disposal interval to producing intervals.
  - f. Water rates began to increase from the Melinda Lease after COG attempted to plug the P&A Well.
- 23. In 2014, the Melinda Lease began to produce an abnormal amount of water.
  - a. From May November 2015, Henry employed Cardinal Surveys Company to perform a tracer study under which chemical tracer 2-FBA was injected into produced water sent from the Melinda Lease to Disposal Well 2.
  - b. Henry sampled produced water stored in tank batteries located on the Melinda Lease and Melinda Lease wells to detect chemical tracer 2-FBA.
  - c. Approximately two months after chemical tracer 2-FBA was injected into produced water sent to Disposal Well 2, Henry detected chemical tracer 2-FBA at levels greater than expected background levels.
  - d. Chemical tracer 2-FBA was first detected in the Melinda No. 2525 Well.
  - e. Chemical tracer 2-FBA escaped the disposal interval and appeared in measurable quantities on the Melinda Lease.
  - f. The Melinda Nos. 2525, 2507, 2511, and 2516 Wells experienced the most anomalous water production.
    - i. Each well is completed in the Spraberry, Wolfcamp, and Bend Formations.

- g. Beginning in May 2015 and terminating in November 2015, RBJ disposed a total of 639,437 bbl of water sourced from the Melinda Lease into Disposal Well 1 and Disposal Well 2.
  - i. Beginning in May 2015 and terminating in November 2015, RBJ disposed a total of 7,330 bbl of water sourced from the Melinda Lease into Disposal Well 1.
  - ii. Beginning in May 2015 and terminating in November 2015, RBJ disposed a total of 632,1077 bbl of water sourced from the Melinda Lease into Disposal Well 2.
- 24. The disposal interval is continuous and relatively flat between Disposal Well 1, Disposal Well 2, and the Melinda Lease, with no major structural or stratigraphic changes, and no natural geographic pathways or features for water to travel from the disposal intervals to the producing formations.
  - a. Injected non-hazardous oil and gas waste is not migrating from Disposal Well 1 or Disposal Well 2 to the Melinda Lease through the injection interval or formation.
  - b. The natural fracture orientation is approximately west to east across Disposal Well 1, Disposal Well 2, the P&A Well, and the Melinda Lease, with an azimuth of 105 degrees.
  - c. Fluid migration from Disposal Well 2 to the Melinda Lease occurs in a west to east direction.
  - d. There is approximately 1,200' of confining rock between the Clearfork Formation and the base of the disposal interval.
- 25. Non-hazardous oil and gas waste injected into Disposal Well 2 escaped the permitted disposal interval.
- 26. Evidence sufficient to determine whether non-hazardous oil and gas waste injected into Disposal Well 1 escaped the permitted disposal interval is not in the record evidence.
- 27. Excess water migrating to the Melinda Lease has resulted in the waste of oil, gas, or geothermal resources.
  - a. Non-hazardous oil and gas waste injected into Disposal Well 2 has resulted and will result in fluid migration to the Melinda Lease.

- b. Chemical tracer 2-FBA was detected at the Melinda Lease in the same producing intervals as the perforations in the P&A Well.
- 28. Pressure in the producing formations is below normal.
- 29. Pressure in the disposal formation is greater than the pressure in the producing formations.
- 30. A pressure sink exists in the immediate vicinity of Disposal Well 2.
  - a. On August 31, 2016, Diamond D Slickline Service Company conducted a bottomhole pressure test.
    - i. The bottom hole pressure test indicated the bottomhole pressure in Disposal Well 2 is 438 psi lower than that observed in Disposal Well 1.
  - b. During Fesco testing conducted between October and December 2016, Disposal Well 2 experienced a continual bottomhole pressure drop of approximately 40 psi.
- 31. At all times relevant, RBJ did not exceed permitted surface injection pressures or permitted injection volumes during the operation of Disposal Well 1 and Disposal Well 2.
- 32. The Permit to Dispose of Non-Hazardous Oil and Gas Waste by Injection into a Porous Formation Not Productive of Oil and Gas for Disposal Well 1 must be suspended until such time that RBJ & Associates, LP can successfully demonstrate to the satisfaction of the Commission, within a period of time acceptable to the Commission, that the San Andres Formation can maintain pressure and retain injected fluids in the subsurface areas affected by the Delhi Ranch Lease, Well No. 1, Spraberry (Trend Area) Field, Upton County, Texas.
- 33. The Permit to Dispose of Non-Hazardous Oil and Gas Waste by Injection into a Porous Formation Not Productive of Oil and Gas for Disposal Well 1 must be suspended that RBJ & Associates, LP can successfully demonstrate to the satisfaction of the Commission, within a period of time acceptable to the Commission, that injected fluids disposed of at the Delhi Ranch Lease, Well No. 1, Spraberry (Trend Area) Field, Upton County, Texas, are not being produced from Henry Resources LLC's Melinda Lease.
- 34. The Permit to Dispose of Non-Hazardous Oil and Gas Waste by Injection into a Porous Formation Not Productive of Oil and Gas for Disposal Well 2 must be terminated to prevent waste of oil, gas, or geothermal resources.

## **CONCLUSIONS OF LAW**

- 1. Proper notice of hearing was timely issued to the appropriate persons entitled to notice.
- 2. All things necessary to the Commission attaining jurisdiction have occurred.
- 3. There is legally sufficient evidence to support the termination of the *Permit to Dispose of Non-Hazardous Oil and Gas Waste by Injection into a Porous Formation Not Productive of Oil and Gas* for Disposal Well 2 due to the escape of injected fluids from the permitted disposal intervals which are causing waste.
- 4. There is legally sufficient evidence to support the suspension of the *Permit to Dispose of Non-Hazardous Oil and Gas Waste by Injection into a Porous Formation Not Productive of Oil and Gas* for Disposal Well 1 and Disposal Well 2 because waste of oil, gas, or geothermal resources is likely to occur as a result of the permitted operations.
- 5. The Permit to Dispose of Non-Hazardous Oil and Gas Waste by Injection into a Porous Formation Not Productive of Oil and Gas for Disposal Well 1 is suspended until such time that RBJ & Associates, LP can successfully demonstrate to the satisfaction of the Commission, within a period of time acceptable to the Commission, that the San Andres Formation can maintain pressure and retain injected fluids in the subsurface areas affected by the Delhi Ranch Lease, Well No. 1, Spraberry (Trend Area) Field, Upton County, Texas.
- 6. The Permit to Dispose of Non-Hazardous Oil and Gas Waste by Injection into a Porous Formation Not Productive of Oil and Gas for Disposal Well 1 is suspended until such time that RBJ & Associates, LP can successfully demonstrate to the satisfaction of the Commission, within a period of time acceptable to the Commission, that injected fluids disposed of at the Delhi Ranch Lease, Well No. 1, Spraberry (Trend Area) Field, Upton County, Texas, are not being produced from Henry Resources LLC's Melinda Lease.
- 7. RBJ is in violation of 16 Tex. Admin. Code § 3.9 at Disposal Well 2.
- 8. RBJ is the current Form P-4 Certificate of Compliance and Transportation Authority operator of record for Disposal Well 1 and Disposal Well 2.
- 9. COG is the current Form P-4 Certificate of Compliance and Transportation Authority operator of record for the P&A Well.

IT IS HEREBY ORDERED by the Commission that the Permits to Dispose of Non-Hazardous Oil and Gas Waste by Injection into a Porous Formation Not Productive of Oil and Gas for the Delhi Ranch Lease, Well No. 2, Spraberry (Trend Area) Field, Upton County, Texas, is hereby TERMINATED.

**IT IS FURTHER ORDERED** by the Commission that RBJ & Associates, LP immediately **SUSPEND** operations and disposal activity at the Delhi Ranch Lease, Well No. 2, Spraberry (Trend Area) Field, Upton County, Texas.

IT IS FURTHER ORDERED by the Commission that, within 90 days from the date immediately following the date this order becomes final, RBJ & Associates, LP shall commence operations to plug and abandon, pursuant to requirements contained in 16 Tex. Admin. Code § 14, the Delhi Ranch Lease, Well No. 2, Spraberry (Trend Area) Field, Upton County, Texas, in accordance with a plan approved by Commission District Office 7C.

IT IS FURTHER ORDERED by the Commission that the Permit to Dispose of Non-Hazardous Oil and Gas Waste by Injection into a Porous Formation Not Productive of Oil and Gas for the Delhi Ranch Lease, Well No. 1, Spraberry (Trend Area) Field, Upton County, Texas is hereby SUSPENDED until such time that RBJ & Associates, LP can successfully demonstrate to the satisfaction of the Commission, within a period of time acceptable to the Commission, that the San Andres Formation can maintain pressure and retain injected fluids in the subsurface areas affected by the Delhi Ranch Lease, Well No. 1, Spraberry (Trend Area) Field, Upton County, Texas.

IT IS FURTHER ORDERED by the Commission that the Permit to Dispose of Non-Hazardous Oil and Gas Waste by Injection into a Porous Formation Not Productive of Oil and Gas for the Delhi Ranch Lease, Well No. 1, Spraberry (Trend Area) Field, Upton County, Texas is hereby SUSPENDED until such time that RBJ & Associates, LP can successfully demonstrate to the satisfaction of the Commission, within a period of time acceptable to the Commission, that injected fluids disposed of at the Delhi Ranch Lease, Well No. 1, Spraberry (Trend Area) Field, Upton County, Texas, are not being produced from Henry Resources LLC's Melinda Lease.

**IT IS FURTHER ORDERED** that the Complaint of RBJ & Associates, LP Regarding COG Operating LLC's TXL T 27 No. 1 Well, Spraberry (Trend Area) Field, Upton County, Texas, be **DISMISSED WITHOUT PREJUDICE**.

IT IS FURTHER ORDERED by the Commission that this order shall not be final and effective until 25 days after the Commission's order is signed, unless the time for filing a motion for rehearing has been extended under TEX. GOV'T CODE § 2001.142, by agreement under TEX. GOV'T CODE § 2001.147, or by written Commission Order issued pursuant to TEX. GOV'T CODE § 2001.146(e). If a timely motion for rehearing of an application is filed by any party at interest, this order shall not become final and effective until such motion is overruled, or if such motion is granted, this order shall be subject to further action by the Commission. Pursuant to TEX. GOV'T CODE § 2001.146(e), the time allotted for Commission action on a motion for rehearing in this case prior to its being overruled by operation of law is hereby extended until 100 days from the date Commission Order is signed.

Each exception to the Administrative Law Judge's proposal for decision not expressly granted herein is overruled. All requested findings of fact and conclusions of law which are not expressly adopted herein are denied. All pending motions and requests for relief not previously granted or granted herein are denied.

ENTERED in Austin, Texas on this February 27, 2018.

**RAILROAD COMMISSION OF TEXAS** 

CHAIRMAN CHRISTI CRADDICK

COMMISSIONER RYAN SITTON

COMMISSIONER WAYNE CHRISTIAN

MIJAN

SECRETARY