RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

PROPOSAL FOR DECISION

OIL AND GAS DOCKET NO. 01-0295778

THE APPLICATION OF TEXOKAN OPERATING, INC. PURSUANT TO STATEWIDE RULE 46 FOR A PERMIT TO INJECT FLUID INTO A RESERVOIR PRODUCTIVE OF OIL OR GAS, JONSSON-PERLITZ RANCH LEASE, WELL NO. 3, PILOSA, EAST (2ND SAN MIGUEL) FIELD, ZAVALA COUNTY, TEXAS

HEARD BY: Paul Dubois – Technical Examiner
Marshall Enquist – Administrative Law Judge

APPEARANCES:	**REPRESENTING:**
APPLICANT:	
Donal R. Schmidt, Jr.	Texokan Operating, Inc.
Michael Hoffman	
PROTESTANT:	
Peter Gregg	Wintergarden Groundwater
Dr. Ronald Green	Conservation District
Ed Walker	

PROCEDURAL HISTORY

Application Filed:	January 5, 2015
Protest Received:	January 12, 2015
Request for Hearing:	February 20, 2015
Notice of Hearing:	April 20, 2015
Date of Hearing:	June 19, 2015
Transcript Received:	August 11, 2015
Proposal For Decision Issued:	October 20, 2015

STATEMENT OF THE CASE

Pursuant to Statewide Rule 46 (16 Tex. Admin. Code §3.46) Texokan Operating, Inc. ("Texokan") seeks authority to inject produced salt water into a reservoir productive of oil or gas, in its Jonsson-Perlitz Ranch Lease, Well No. 3 (API No. 42-507-32553), Pilosa, East (2nd San Miguel) Field, Zavala County, Texas. Texokan seeks authority to dispose of up to 500 barrels per day (bpd) of produced salt water into the San Miguel Formation in the depth interval from 2,736 feet to 2,797 feet. This is not an application for a commercial disposal well. Texokan proposes to use the existing well to dispose of fluids produced on its Jonsson-Perlitz Ranch Lease (No. 14085). The application was protested by the Wintergarden Groundwater Conservation District ("Wintergarden"), which is concerned about the potential for groundwater contamination and surface break-out via nearby wellbores. Based on the lack of supporting evidence, the Examiners recommend the Commission enter an order denying the application.

APPLICABLE LAW

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;

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

TEXOKAN'S EVIDENCE

Texokan's Counsel, Donal Schmidt, presented a rather unorthodox case. Texokan's witness was Michael Hoffman, the regulatory consultant who prepared and filed the subject application on behalf of Texokan. Texokan did not call its own technical witness (i.e., a geologist or engineer). Instead, Mr. Schmidt called Wintergarden's witnesses, Dr. Ronald Green, a consulting geoscientist, and Ed Walker, General Manager of the groundwater conservation district. Mr. Schmidt was advised that his approach was out of the ordinary:

Examiner Enquist: *"You're trying to attack their witnesses, and I suppose that's one way of trying to prove that there's no evidence against your–against your case, but it really is your burden here to prove that your well–you(r) injection well is not going to cause any harm as a result of a breakout, et cetera."*

Mr. Schmidt: *"I think I can do that with their witness, Your Honor, with all due respect."*[1]

Texokan offered two exhibits. Exhibit No. 1 was the permit application for the subject injection well that Mr. Hoffman prepared. Exhibit No. 2 was a geologic structure map of the top of the second San Miguel Formation obtained commercially from a third party.

Mr. Hoffman's Testimony

Mr. Hoffman stated he has 11 years of experience as a regulatory consulting filing applications and performing research at the Commission. On *voir dire*, Mr. Hoffman admitted to no particular education, training or experience in geology, engineering, or other relevant technical matters that would qualify him as an expert. Mr. Hoffman acknowledged no experience in reading geological logs, hydrology, determining whether wells are properly plugged, and other technical disciplines.[2] Mr. Hoffman stated that the application was complete and that there were no anomalies in the application that stood out in his opinion.

Texokan seeks authority to dispose of up to 500 bpd of produced salt water into the San Miguel Formation in the depth interval from 2,736 feet to 2,797 feet. The maximum injection pressure will be 1,368 pounds per square inch (psi). The current bottom hole pressure is 350 psi (depleted). The Form H-1/H-1A application indicates the well has 474 feet of surface casing cemented to the surface, and 2,862 feet of production casing cemented to the surface. The Commission's Groundwater Advisory Unit has determined that the interval from the land surface to the base of usable quality water (BUQW) at a depth of 300 feet must be protected. The base of underground sources of drinking water (USDW) is estimated to occur at a depth of 500 feet.

Dr. Green's Testimony

Dr. Green is a consultant for Wintergarden on this and other matters. Dr. Green has a PhD in hydrology and water resources, a masters in geophysics, and undergraduate degrees in engineering and geology. In response to Mr. Schmidt's questioning, Dr. Green acknowledged the following:

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1 Tr. pg. 26, ln. 17, through pg. 27, ln 3.

2 Tr. pgs. 76 through 80.

- There are 30 wells within a one-mile radius of the proposed disposal well, three of which are actively producing or shut-in.
- Dr. Green is not aware of any evidence that the nearby wells have leaked injected fluids to the surface or into another subsurface formation.
- Dr. Green has evidence in the form of pressure trend analysis that fluid will migrate from the proposed disposal well to other locations within the one-mile radius.
- Dr. Green is aware of a surface breakout from a San Miguel Formation injection well about 20 miles south of the subject well.
- The subject disposal well is down-dip from three wells on the Jonsson-Perlitz Ranch Lease.
- The injection interval is into the 2nd San Miguel Formation in the depth interval from 2,736 feet to 2,796 feet.

There were a substantial number of questions asked of Dr. Green and answered, but little additional relevant technical information was provided for the record.

Mr. Walker's Testimony

Mr. Walker testified that Wintergarden's jurisdiction includes all of Zavala, Dimmit, and La Salle Counties. Mr. Walker testified that it is Wintergarden's policy to protest every disposal well application filed within its jurisdiction as a means of gaining information about the applications so a decision can be made as to which applications should be actively protested.

Other Statements Made by Mr. Schmidt

Mr. Schmidt asked the Examiners to take judicial notice of the production records for wells on the Jonsson-Perlitz Ranch Lease (No. 14085). The Examiners accessed the Commission's mainframe lease and production records on September 16, 2015, which indicated the following:

Well No.	API No.	Type of Well	Well Status	Lowest Perforation
1	42-507-32547	Producing	Delinquent W-10	2704 feet
2	42-507-32550	Shut-in	14(b)(2) plugging extension	2753 feet
3	42-507-32553	Shut-in	14(b)(2) plugging extension	2759 feet
4	42-507-32554	Shut-in	14(b)(2) plugging extension	2746 feet
13	42-507-32568	Shut-in	14(b)(2) plugging extension	2670 feet

According to this information, Texokan operates five wells on the lease, four of which are shut-in with plugging extensions. The one producing well has a delinquent Form W-10 (Oil Well Status Report). The lease produced 37 barrels of oil in June 2015. No lease water production information was offered for the record.

WINTERGARDEN'S EVIDENCE

The proposed well is located in the center of a one-mile radius area in which 30 wellbores are located. Wintergarden is concerned that fluids injected into the subject well may migrate out of the injection interval and possibly breakout into fresh groundwater zones or the ground surface.

Dr. Green's Testimony

Dr. Green reviewed available completion, cementing, and plugging reports for wells within a one-mile radius of the proposed well. Wintergarden is concerned that there are numerous (30) wells in the area of the proposed disposal wells, and that some of these wells may provide an opportunity for injected fluids to migrate to other zones or to the ground surface. Dr. Green noted the following:

- The Bessie Fite Stuart, et al, No. 1 (no known API No.) was a dry hole drilled in 1963 to a depth of 3,100 feet. The well is located about 550 feet southwest of the proposed disposal well. Three plugs were set in the wellbore between 800 to 700 feet, 120 to 85 feet, and 30 feet to the surface. There did not appear to be a plug across the base of usable quality groundwater (BUQW) at 300 feet, or the USDW at 500 feet.

- The Weber No. 6 (API No. 42-507-32559) was a dry hole drilled in 1997 to a depth of 3,000 feet. The well is located about 1,650 feet west of the proposed disposal well. Commission records indicate the dry hole was plugged, but Commission records contain no information regarding casing, cementing, or plugging details.

- The Gran Miguel No. 1 (API No. 42-507-32355) was a dry hole drilled in 1990 to a depth of 4,100 feet. The well is located about 2,000 feet north of the proposed disposal well. Commission records indicate the dry hole was plugged, but Commission records contain no information regarding casing, cementing, or plugging details.

- Five wells drilled in 1997 and located 0.75 miles and farther to the northeast were plugged in November 2012. Plugging reports for the five wells were signed on the same day and all indicated identical plugging information (same amount of cement, same plug depths, etc.). To Wintergarden, the identical information on all plugging reports is suspicious and calls into question the validity of the plugging details contained on each.

- The Jack Van Cleve "B" Lease, Well No. 3W (API No. 42-507-31244) is located 4,350 feet southwest of the proposed injection well. The well was completed in 1979 with 510 feet of surface casing cemented to the surface. In 1981 the well was converted to injection. According to Commission records, the injection authority was cancelled on January 8, 2013 due to a delinquent Form P-5. The well has not been plugged and is considered to be an orphan well.

Dr. Green also conducted reservoir pressure front analysis based on the reservoir properties described in the application. A summary of the findings of his study states:

> *"The proposed Texokan SWD is within 1 mile of twelve existing well(s) that penetrate the horizon of injection (San Miguel Formation), each of which, based on available records, provides a potential pathway for fluids to migrate up the wellbores/wells from the horizon of injection to the base of the fresh-water Wilcox Aquifer. Pressure analyses indicate that, given the property values provided in the H-1, sufficient pressure will be induced in the horizon of injection to force fluids up to the fresh water Wilcox Aquifer if a pathway associated with one of the twelve boreholes is available. The pressure analyses indicate that this migration can occur even based on the assumption that the pressure of the horizon of injection is depleted to 350 psi."*[3]

On cross examination, Mr. Green stated his pressure calculations did not take into consideration the simultaneous withdrawal of fluid from the formation by wells producing oil and water from the same formation. He also stated his opinion that the dry wells in the area suggest the San Miguel Formation may not be laterally continuous.

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[3] Wintergarden Exh. No. 3, page 5 (emphasis added).

EXAMINERS' ANALYSIS OF THE EVIDENCE

The Examiners recommend the application be denied. Texokan has the burden to prove the proposed disposal well meets the requirements of Chapter 27 of the Texas Water Code and Statewide Rule 46. Texokan did not present any expert testimony in support of a direct case demonstrating the proposed disposal well meets these requirements. Texokan undertook an unorthodox posture by attempting to use Wintergarden's expert witness to make its own case for the disposal well. This attempt failed. Texokan's Exhibit No. 1 was the application package for the proposed disposal well, but Mr. Hoffman did not possess the technical expertise to offer, explain, or defend the details of the application. Further, the evidence Texokan did provide and its questioning of Wintergarden's witnesses was piecemeal, disjointed, and confusing.

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 the four requirements of the Statute are met. These requirements are discussed in turn.

The use or installation of the injection well is in the public interest

Texokan intends to use the well to dispose of water produced on the lease. The well will not be used for any secondary recovery purpose. No evidence of water production requiring disposal was provided. Mr. Schmidt stated there were three producing wells on the Jonsson-Perlitz Ranch Lease, but Commission records indicate only one producing well and four shut-in wells. In addition, no evidence of disposal alternatives was provided. Texokan has not demonstrated the proposed disposal well is in the public interest.

The use or installation of the injection well will not endanger or injure any oil, gas, or other mineral formation

The proposed well will inject salt water into a depleted producing zone–the same formation from which the water was produced. Texokan offered no evidence to physically characterize the reservoir/injection zone. The evidence in the record is not sufficient to demonstrate that injection will not endanger or injure any oil, gas, or other mineral formation.

With proper safeguards, both ground and surface fresh water can be adequately protected from pollution

Texokan provided no evidence to demonstrate that the proposed injection fluids will be confined to the injection interval. No technical experts, such as geologists or engineers, testified on behalf of the Applicant. No interpretation of the local geologic structure or stratigraphy and its capacity to contain the injected fluids was provided. The injection zone

reservoir properties, overlying strata, and fresh water-bearing groundwater zones were not identified.

Texokan identified one nearby well (API No. 42-507-31983) that was used for injection into the San Miguel Formation from 1997 to 2005; no supporting information was offered, such as the injection permit, injected fluid volumes or surface injection pressures.

There are about 30 wells within a one-mile radius of the proposed well. Twelve wells penetrate the disposal interval within a one-half mile radius of the proposed well. Two nearby dry holes appear to have been plugged, but Commission records contain no information documenting the casing, cementing, or plugging details for these dry holes. Without adequate documentation, these wells cannot be ruled out as potential conduits for migration of fluids.

Wintergarden's pressure front analysis indicates the injection activity may result in formation pressure sufficient to raise injected fluids to the fresh water strata and to the ground surface. Wintergarden speculates that decay of cement and/or casing may pose a risk to fluid migration. However, Wintergarden was not able to identify any known open conduits for vertical migration.

The Examiners conclude the record contains insufficient evidence to demonstrate that both ground and surface fresh water can be adequately protected from pollution.

The applicant has not made a satisfactory showing of financial responsibility as required by Section 27.073.

Texokan did not offer proof that it holds a current Form P-5 , Organization Report, with adequate financial assurance. Further, on Texokan's request, the Examiners took judicial notice of production records for its Jonsson-Perlitz Ranch Lease (No. 14085). The Commission's mainframe system indicates that four of the five wells on the lease are currently shut in. The fifth well appears to be delinquent on it's annual Form W-10 filing. The Examiners conclude the record contains insufficient evidence to demonstrate that Texokan has made a satisfactory showing of financial responsibility. Outside of the case record, however, Commission records do indicate Texokan Holds a current Form P-5 and a $50,000 letter of credit for financial assurance.

FINDINGS OF FACT

1. Notice of this hearing was given to all parties entitled to notice at least ten days prior to the date of hearing.

2. The proposed disposal well will inject up to 500 barrels per day (bpd) of produced salt water into the San Miguel Formation in the depth interval from

2,736 feet to 2,797 feet. The maximum injection pressure will be 1,368 pounds per square inch (psi).

3. Texokan operates five wells on its Jonsson-Perlitz Ranch Lease (No. 14085).

   a. One well is producing and is delinquent on its Form W-10 filing.

   b. Four wells are shut-in.

   c. The lease produced 37 barrels of oil in June 2015.

4. The proposed disposal well is currently a shut-in well.

   a. The current depleted bottom hole pressure is 350 psi.

   b. The well has 474 feet of surface casing cemented to the surface, and 2,862 feet of production casing cemented to the surface.

5. The Commission's Groundwater Advisory Unit has determined that the interval from the land surface to the base of usable quality water (BUQW) at a depth of 300 feet must be protected. The base of underground sources of drinking water (USDW) is estimated to occur at a depth of 500 feet.

6. The volume of water produced on the lease requiring legal disposition has not been established.

7. Pressure front analysis indicates the injection activity may result in formation pressure sufficient to raise injected fluids to the fresh water strata and to the ground surface.

8. Twelve wellbores penetrate the injection interval within a one-mile radius of the proposed well.

   a. No known open conduits for vertical migration were identified.

   b. Two dry holes within a one-half mile radius were plugged, but plugging records describing the casing, cementing, and plugging details were not available.

   c. These wells cannot be ruled out as potential conduits for migration of fluids.

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 evidence in the record is not sufficient to establish that the use or installation of the injection well is in the public interest. Tex. Water Code § 27.051(b)(1)

4. The evidence in the record is not sufficient to establish that the use or installation of the injection well will not endanger or injure any oil, gas, or other mineral formation. Tex. Water Code § 27.051(b)(2)

5. The evidence in the record is not sufficient to establish that, with proper safeguards, both ground and surface fresh water can be adequately protected from pollution. Tex. Water Code § 27.051(b)(3)

6. The applicant has made a satisfactory showing of financial responsibility. Tex. Water Code as required by Section 27.073 of the Texas Water Code. Tex. Water Code § 27.051(b)(4)

RECOMMENDATION

Based on the above findings of fact and conclusions of law, the Examiners recommend the Commission enter an order denying the application of Texokan Operating, Inc. Pursuant to Statewide Rule 46 for a permit to inject fluid into a reservoir productive of oil or gas, Jonsson-Perlitz Ranch Lease, Well No. 3, Pilosa, East (2nd San Miguel) Field, Zavala County, Texas.

Respectfully submitted,

Paul Dubois
Technical Examiner

Marshall Enquist
Administrative Law Judge