March 31, 2004

OIL AND GAS DOCKET NO. 7B-0236231

THE APPLICATION OF RICHMAN PETROLEUM CORPORATION TO INJECT FLUID INTO A RESERVOIR PRODUCTIVE OF OIL OR GAS, WALLACE DOVE LEASE WELL NO. 1, MCINTOSH (STRAWN) FIELD, HOOD COUNTY, TEXAS

HEARD BY: Thomas H. Richter, P.E., Technical Examiner
James M. Doherty, Hearings Examiner

APPLICANT:	**REPRESENTING:**
Dale E. Miller	Richman Petroleum Corporation

PROTESTANT:	
Kerri Patterson	Self

PROCEDURAL HISTORY

Date of Application:	August 29, 2003
Date of Notice:	December 17, 2003
Date of Hearing:	January 12, 2004
Date of Transcript:	None Requested
Proposal For Decision Issued:	March 31, 2004

EXAMINERS' REPORT AND PROPOSAL FOR DECISION
STATEMENT OF THE CASE

This is the application of Richman Petroleum Corporation ("Richman") to dispose of produced saltwater into its Wallace Dove Lease Well No. 1 ("subject well") in the McIntosh (Strawn) Field area. The application is protested by Kerri Patterson ("Patterson"), a surface owner of a tract approximately one mile from the proposed well.

The Commission's Environmental Services Section proposes two special permit conditions because insufficient cement exists above the proposed injection interval and therefore a cement squeeze should be performed immediately above the injection zone. Second, there are open perforations below the proposed injection interval which must be effectively isolated prior to injection.

DISCUSSION OF THE EVIDENCE

APPLICANT'S EVIDENCE

The Richman Petroleum Corp., Wallace Dove Lease Well No. 1, was completed (per Commission records) in January 2002 through perforations from 4,848' to 4,980' subsurface depth in the Newark, East (Barnett Shale) Field.

The subject well was completed with surface casing of 8-5/8" set at 366' with cement circulated from the casing shoe to the ground surface. Longstring casing of 5-1/2" was set at 5,270' and cement circulated to a calculated top of 3,839'. The Texas Natural Resources Conservation Commission (now the Texas Commission on Environmental Quality (TCEQ)) recommends that usable quality water be protected down to a depth of 320' (TNRCC Letter dated December 7, 2001). It is proposed that 2-7/8" tubing be set on a packer at 2,450' and the injection interval be selectively perforated from 2,480' to 4,270' subsurface depth (a gross interval of 1790'). A cast iron bridge plug will be set across the original Barnett Shale perforations. The disposal interval represents the Strawn/Atoka/Caddo/Marble Falls Formations which are sand/limestones separated by shale barriers. The proposed sands for injection are continuous across the area. Specifically one massive sand, located at ± 2750', is 130' in thickness and the next massive sand, located at ± 3120', is over 200' in thickness. The proposed maximum injection volume is 5,000 BWPD (current anticipated average is 2000 BWPD) and the proposed maximum injection pressure is 1,240 psig (current anticipated average injection pressure is 620 psig).

To comply with the requirements of the Commission's Environmental Services, a cement squeeze will be performed using 75 sacks of cement at 2,475' subsurface depth. A continuous shale barrier is present between the base of the fresh water and the top of the injection interval. Water to be disposed of will come from Richman Petroleum's leases producing from the Barnett Shale in the area. This will be a closed system, i.e. all waters will be piped to the subject disposal well from off the subject lease. Richman asserts the subject injection well is in the public's interest as the well will provide for the proper, safe and economical disposal of Richman's produced water from its other leases which in turn will allow for Richman's wells to recover additional reserves because of lower economic limits.

A review was made of all well completions, producing or plugged, within the prescribed radius of review of the subject well. There are no completed wells within the 1/4 mile area of review (only a well with an expired drilling permit). Within the ½ mile radius there is one producing well that was completed in January 2002 (the Richman Petroleum, Wallace Dove Well No. 2). The subject well will be completed in such a manner as to prevent the vertical migration of fluids, thus removing the possibility of endangering usable quality water. The well log shows that there is in excess of several hundred feet of shale overlying the disposal formation which will prevent any upward fluid migration.

In an abundance of caution, a review/investigation was made of all wells to a radial distance of one mile from the proposed disposal well. This investigation revealed four producing wells, three wells that were properly plugged and abandoned between 1974 and 1980, and one well with an expired drilling permit.

Notice of the subject application was published in *The Hood County News*, a newspaper of general circulation in Hood County, on July 8, 2003. A copy of the application was filed with the Hood County Clerk's Office. A copy of the application was given to the surface owner. Richman has a $50,000 letter of credit on file with the Commission for P-5 Financial Assurance (per Commission records).

PROTESTANTS' EVIDENCE

Kerri Patterson, a surface owner approximately one mile from the proposed well, is concerned with possible salt water pollution to the surface and surface waters as well as concerned with the general public's fresh water supply wells in the area.

Richman proposes transporting salt water through an underground pipeline from off lease to the subject well. Patterson submits that this steel pipe would be exposed to the corrosive agents of the soil. An excerpt from the United States Department of Agriculture Soil Conservation Service report for Hood County was presented which describes surface physical and chemical properties A topographical map was presented with an area marked indicating what Patterson believes is the subject well's location. The report indicates that from 0-62 inches, the permeability of the soil ranges from .6 to 2 inches per hour. The chemical properties of the soil present a risk of corrosion to un-coated steel. Patterson points out that no evidence was submitted by Richman confirming whether the pipe to be used would be coated, screwed or welded pipe. The Paluxy River is within one mile of the subject well. Patterson is concerned that a possible leak may result in a spill which could possibly reach the river.

Patterson presented a report from the Texas Water Development Board (Report 195) that states that most of the contamination reported in the northwestern area is by saltwater from oil-brine fields.[1] The report states that in areas of unplugged or improperly plugged oil or gas wells, the oil or natural gas has entered fresh-water sands. According to the report, contamination of ground water occurs generally when saline water from the Glen Rose Formation is allowed to enter and mix with native Travis Peak water.

Patterson argues that the application was misrepresented as the subject well is a commercial disposal well based on her interpretation of 16 Tex. Admin. Code §3.46(b)(2). This rule provides that "commercial disposal well" means a well whose owner or operator receives compensation from others for the disposal of oil field fluids or oil and gas wastes that are wholly or partially trucked or hauled to the well, and the primary business purpose for the well is to provide these services for compensation.

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[1] There is no indication as to the location of the "northwestern area".

Patterson submits that there are 50,000 uncapped wells in the State of Texas. and presented a petition signed by residents opposed to the well.

Finally, Patterson presented an EPA document entitled: "Class 1 Underground Injection Control Program: Study of the Risks Associated with Class 1 Underground Injection Wells." The report states that all Class 1 wells require 2.5 mile area of review. The applicant did not review such an area.

EXAMINERS' OPINION

The examiners recommend that this application be approved pursuant to §27.051 of the Texas Water Code and Commission Statewide Rules. The well will be completed in such a manner as to prevent the migration of injected fluids to zones other than the intended zone. The proposed additional special permit requirements by Environmental Services will provide additional assurance against possible mechanical problems. Therefore, the usable quality water at and below the ground surface will not be placed at risk of pollution or contamination. The use of the proposed injection well is in the public interest as it will provide for the proper and safe disposal of oil field wastes and the potential recovery of additional oil and gas reserves.

The subject well is not a commercial disposal well. Pursuant to the Texas Administrative Code and the Commission's Statewide Rules for commercial injection/disposal operations, the subject well does not meet the required parameters. This is a closed system with all waste waters being piped to the well from other Richman-operated wells for disposal. A special condition has been included in the permit reflecting this limitation.

Patterson's concern over potential pollution of the ground surface or surface waters is not lost on the examiners. No one desires to have any usable water contaminated through oil field waste disposal/injection operations. No one wants the ground surface to be polluted from hydrocarbon products or associated waste products. The Commission adopted Statewide Rules (specifically 8, 9, 13, and 46), environmental policies, and established special permit requirements that specifically address these matters to minimize and mitigate the possibility of an adverse occurrence. The examiners believe that the subject well meets the regulatory requirements, and the additional special permit requirements will provide additional protection.

FINDINGS OF FACT

1. Notice of the subject application was published in *The Hood County News*, a newspaper of general circulation in Hood County, on July 8, 2003. A copy of the application was filed with the Hood County Clerk's Office. A copy of the application was given to the surface owner.

2 The Richman Petroleum Corp., Wallace Dove Lease Well No. 1, was completed (per Commission records) in January 2002 through perforations from 4,848' to 4,980' subsurface depth

in the Newark, East (Barnett Shale) Field.

3. The subject well was completed with surface casing of 8-5/8" set at 366' with cement circulated from the casing shoe to the ground surface. Longstring casing of 5-1/2" was set at 5,270' and cement circulated to a calculated top of 3,839'.

   a. The Texas Natural Resources Conservation Commission (now the Texas Commission on Environmental Quality (TCEQ)) recommends that usable quality water be protected down to a depth of 320' (TNRCC Letter dated December 7, 2001).
   b. The well will have 2-7/8" tubing set on a packer at 2,450' and the injection interval will be from 2,480' to 4,270' subsurface depth (a gross interval of 1790').

   c. The interval represents the Strawn/Atoka/Caddo/Marble Falls Formations which are sand/limestones separated by shale barriers and the proposed sands for injection are continuous across the area.

   d. The maximum injection volume will be 5,000 BWPD (current anticipated average is 2,000 BWPD) and the maximum injection pressure will be 1,240 psig (current anticipated average injection pressure is 620 psig).

4. A review was made of all well completions, producing or plugged, within the prescribed radius of review of the subject well.

   a. There are no wells within the 1/4 mile area of review.

   b. Within the ½ mile radius there is one producing well that was completed in January 2002 (the Richman Petroleum, Wallace Dove Well No. 2).

5. The subject well will be completed in such a manner as to prevent the vertical migration of fluids, thus removing the possibility of endangering usable quality water.

   a. The well log shows that there are several hundred feet of shale overlying the producing formation which will prevent any upward fluid migration.

   b. The longstring casing will be perforated at 2,475' and a cement squeeze performed to seal the casing-formation annulus and prevent fluid migration.

   c. A cast iron bridge plug will be set below the disposal interval to isolate other perforations below the disposal interval.

6. The proposed injection operations of Richman Petroleum Corporation to inject produced saltwater

into its Wallace Dove Lease Well No. 1 in the McIntosh (Strawn) Field area will not endanger any oil, gas or other mineral formation and will not endanger usable quality water.

a. The well is completed in such a manner as to prevent the migration of injected fluids to zones other than the intended zone.

b. The proposed additional special permit requirements by Environmental Services will provide additional assurance against possible mechanical problems.

c. All water disposed of through the well will be piped to the well in a closed system.

7. Richman Petroleum's injection into the subject well is in the public interest as the well will provide for the proper, safe and economical disposal of Richman's produced water from its other leases which in turn will allow for Richman's wells to recover additional reserves because of lower economic limits.

8. Richman Petroleum Corp. has satisfactory financial responsibility in that it has a $50,000 letter of credit on file with the Commission for P-5 Financial Assurance (per Commission records).

9. The use of the proposed well will not impair any existing mineral rights

CONCLUSIONS OF LAW

1. Proper notice was timely given to all parties entitled to notice pursuant to applicable statutes and rules.

2. All things have occurred and have been accomplished to give the Commission jurisdiction in this case.

3. The use of the proposed injection well will not endanger oil, gas, or geothermal resources or cause the pollution of surface water or fresh water strata unproductive of oil, gas, or geothermal resources.

4. The applicant has complied with the requirements for approval set forth in Statewide Rules and the provisions of Sec. 27.051 of the Texas Water Code.

5. Approval of the application will prevent waste of hydrocarbons that otherwise would remain unrecovered.

EXAMINERS' RECOMMENDATION

Based on the above findings and conclusions, the examiners recommend that the application of Richman Petroleum Corporation to inject produced saltwater into its Wallace Dove Lease Well No. 1 in the McIntosh (Strawn) Field area be approved as set out in the attached Final Order.

Respectfully submitted,

Thomas H. Richter, P.E.
Technical Hearings Examiner
Office of General Counsel

James M. Doherty
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Office of General Counsel