

OIL AND GAS DOCKET NO. 09-0255550

THE APPLICATION OF GREAT NORTHERN ENERGY INC. TO DISPOSE OF OIL AND GAS WASTE BY INJECTION INTO A POROUS FORMATION NOT PRODUCTIVE OF OIL OR GAS, GNE 15 LEASE WELL NO. 1S, NEWARK, EAST (BARNETT SHALE) FIELD, ERATH COUNTY, TEXAS

HEARD BY: Donna K. Chandler, Technical Examiner
James M. Doherty, Hearings Examiner

APPEARANCES:

REPRESENTING:

Lloyd Muennink
Roland Baker
Jerry Paterson

Great Northern Energy, Inc.

Joe Cooper

Middle Trinity Groundwater
Conservation District

Elaine Smith

Self

Wes Biglin

Self

PROCEDURAL HISTORY

Date of Application:	November 7, 2007
Date of Notice:	February 15, 2008
Date of Hearing:	March 17, 2008
Date of Transcript:	April 4, 2008
Proposal For Decision Issued:	May 2, 2008

EXAMINERS' REPORT AND PROPOSAL FOR DECISION
STATEMENT OF THE CASE

Great Northern Energy Inc. ("Great Northern") requests authority pursuant to Statewide Rule 9 to dispose of salt water from leases it operates in the area. Elaine Smith and Wes Biglin oppose the application. The Middle Trinity Groundwater Conservation District initially opposed the application and appeared at the hearing. The District withdrew

its opposition based on the agreement by Great Northern to perform additional testing/monitoring in conjunction with the operation of the well.

DISCUSSION OF THE EVIDENCE

Great Northern Evidence

Great Northern requests authority to dispose of a maximum of 10,000 barrels of salt water per day into its GNE 15 Well No. 1S, with a maximum surface injection pressure of 2,000 psi. The proposed injection is into the non-productive Ellenburger formation between 4,122 feet and 4,850 feet. All salt water for disposal will be piped to the No. 1S, with no trucking involved.

The subject well was drilled in July 2006 to a total depth of 4,147 feet. The well has 9⁵/₈" casing set at 446 feet with cemented circulated to surface. The well has 4¹/₂" casing set at 4,122 feet, with top of cement calculated to be at 3,174 feet. The Texas Commission on Environmental Quality recommends that usable quality water be protected to a depth of 395 feet in the area. Injection will be through tubing set on a packer at approximately 4,100 feet. (See attached wellbore diagram).

Great Northern plans to deepen the well approximately 600 feet and dispose open hole into the Ellenburger. The top of the Ellenburger occurs at approximately 3,960 feet, which is the base of the Barnett Shale. There will be 162 feet of Ellenburger formation between the disposal interval and the Barnett Shale.

Great Northern has an oil and gas lease on approximately 1,200 acres around the No. 1S well. The No. 1S was drilled as a pilot vertical well to determine the thickness of the Barnett Shale in the area and to monitor fracture stimulation in nearby horizontal wells. Great Northern has permitted three horizontal wells for completion in the Newark, East (Barnett Shale) Field. These three wells are in close proximity to the No. 1S. One of the wells, the Scholz No. 1H, has been drilled and completed. The proposed disposal well is necessary to economically produce the Scholz No. 1H. The Scholz No. 1H produces 350-400 BWPD and only 150 MCFD. Production is not sufficient to justify hauling water to a commercial facility.

The only wellbore within ¼ mile of the GNE 15 No. 1S is the Scholz No. 1H. There are no unplugged or improperly plugged wellbores within ¼ mile.

Great Northern submitted letters of agreement from three offsetting landowners to the No. 1S well which allow Great Northern and the Middle Trinity Groundwater Conservation District to sample their domestic water wells on an annual basis. The closest water well is 386 feet from the No. 1S well; the other wells are 1,692 feet away, 1,725 feet away and 3,110 feet away.

Great Northern has no objection to inclusion of the monitoring/testing requirements as permit conditions for the well. The conditions agreed to include benchmark testing for benzene, toluene, ethylbenzene and xylene, and chlorides in all four of the domestic water wells previously discussed. The testing is then required on an annual basis for the life of the well. Results of the testing must be furnished to the Water District, the Railroad Commission and the owners of the wells being tested. (See attached plat).

Great Northern has a current Form P-5 and maintains a \$25,000 letter of credit for financial assurance as required by the Commission.

Notice was given to the surface owner of the tract on which the No. 1S well is located. There are no operators within ½ mile except Great Northern. Notice was also sent to the County Clerk of Erath County on November 5, 2007. Notice of this application was published in the *Fort Worth Star Telegram*, a newspaper of general circulation for Erath County, on July 6, 2007.

Protestants' Evidence

Elaine Smith lives about three miles from the GNE 15 No. 1S well and believes that the proposed disposal will result in contamination of usable quality water resources and is not in the public interest.. Ms. Smith submitted copies of District Office inspection reports on the lease, dated March 6, 2008. The reports indicate violations of Commission Statewide Rules 8 and 14, open reserve pit and open conductor pipe, at the locations of the two other proposed horizontal wells on the lease. The reports indicate violations of Rules 3 and 8 at the Scholz No. 1H, with no sign posted and an oil soaked area around the wellhead. The well is inactive. Also, there was a violation of Rule 3 at the GNE 15 No. 1S, with no sign posted. Ms. Smith believes these violations should be a basis for denial of the permit.

Ms. Smith believes that the newspaper publication of the application was not appropriate because the well is located in Erath County, while publication was in the *Fort Worth Star Telegram*. She believes that publication should have been in a local paper, such as in the Stephenville paper.

Wes Biglin also lives about three miles from the GNE 15 No. 1S well. Mr. Biglin is opposed to the disposal operations because he believes it may result in pollution of his water resources for his ranch, business and family. Mr. Biglin is also concerned about the mechanical integrity of the wellbore and whether sufficient testing has been done on the casing.

EXAMINERS' OPINION

The examiners recommend that the permit be approved, subject to the provisions agreed to by the Middle Trinity Groundwater Conservation District. The examiners further recommend that Great Northern be required to perform additional work on the well in order

to accomplish 250 feet of separation between the top of the disposal interval and the base of the Barnett Shale. The well should be equipped with a cemented liner set no higher than 4,210 feet. Recent Commission approvals for Ellenburger disposal wells have required at least 250 feet of separation to insure that injected fluids do not escape the Ellenburger into the productive Barnett Shale formation.

With these provisions, the examiners recommend the application be approved pursuant to §27.051 of the Texas Water Code and Commission Statewide Rule 9. Great Northern established:

1. The proposed injection well will not endanger or injure any oil, gas, or mineral formations;
2. The water resources (surface and subsurface) are adequately protected from pollution;
3. A satisfactory showing of financial responsibility as required under Commission statutes and Commission regulatory requirements; and
4. The proposed injection is in the public interest.

With the remedial work, injected fluids will be confined to the Ellenburger disposal interval between 4,210 feet and total depth, estimated to be at 4,850 feet. The well has 9 5/8" casing set at 446 feet with cement circulated to surface. The Texas Commission on Environmental Quality recommends that usable-quality ground water be protected to a depth of 395 feet. Disposal will be through tubing set on a packer no higher than 100 feet above the disposal interval.

Great Northern demonstrated that the well is in the public interest. It will be used solely for disposal of water produced from wells on leases operated by Great Northern. Great Northern has drilled one horizontal well on the Scholz lease which is currently shut-in due to high water production and the costs associated with disposal of the produced water at a commercial facility. Use of the proposed disposal well will allow this well to be economically produced.

Adequate notice of the application, including notice by publication, has been provided. Great Northern provided proof of publication of notice in the *Fort Worth Star Telegram* in the form of a publisher's affidavit which certified that this newspaper is a newspaper of general circulation in Erath County. Publication of notice thus complied with Statewide Rule 9(5)(D).

Protestants pointed out some current violations of Commission rules by Great Northern. At the time of the hearing, the witness for Great Northern testified that letters had not even been received from the District Office and that Great Northern would correct the violations. The examiners consider the violations to be unrelated to the safe operation of

a disposal well. If the violations are not timely corrected in a manner acceptable to the District Office, severance and enforcement action may be initiated. There have been no enforcement actions against Great Northern to date.

FINDINGS OF FACT

1. Notice of this hearing was given to all persons entitled to notice at least ten (10) days prior to the hearing. Notice of the application was published in *The Fort Worth Star Telegram*, a newspaper of general circulation in Erath County, on July 6, 2007.
2. The subject well is completed in a manner to protect usable quality water.
 - a. The Texas Commission on Environmental Quality recommends that usable-quality water be protected to 395 feet in the area of the proposed well.
 - b. The subject well has 9 $\frac{5}{8}$ " casing set at 446 feet with cement circulated to surface.
3. With a cemented additional liner set no higher than 4,210 feet, fluids injected into the subject well will be confined to the injection interval.
 - a. The subject well currently has 4 $\frac{1}{2}$ " casing set at 4,122 feet, with top of cement calculated to be at 3,174 feet.
 - b. Injection will be through tubing set on a packer no higher than 100 feet above the top of the injection interval.
 - c. The only wellbore within a $\frac{1}{4}$ mile which penetrates the disposal interval is the recently completed Scholz No. 1H.
 - d. The base of the Barnett Shale is at 3,960 feet in this well.
 - e. With the cemented liner, there will be 250 feet of Ellenburger formation between the injection interval and the Barnett Shale.
4. Use of the proposed disposal well is in the public interest. Use of the well will provide a safe, economic means of disposal of the fluids associated with drilling and production of Great Northern's wells, thereby extending the economic life of the wells and conserving natural resources.

5. With proper safeguards, as provided by terms and conditions in the attached final order which are incorporated herein by reference, both ground and surface fresh water will be adequately protected from pollution.
6. Great Northern Energy Inc is an active operator with financial assurance in the amount of \$25,000.

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 disposal well, with the additional permit conditions, will not endanger oil, gas, or geothermal resources or cause the pollution of surface water or fresh water strata.
4. The applicant has complied with the requirements for approval set forth in Statewide Rule 9 and the provisions of Sec. 27.051 of the Texas Water Code.
5. The use of the proposed disposal well is in the public interest pursuant to Sec 27.051 of the Texas Water Code.

EXAMINERS' RECOMMENDATION

Based on the above findings and conclusions, the examiners recommend that the application be approved.

Respectfully submitted,

Donna K. Chandler
Technical Examiner

James M. Doherty
Hearings Examiner