

STATE OF SOUTH DAKOTA
SECRETARY OF THE
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

IN THE MATTER OF THE APPLICATION OF ZENERGY OPERATING COMPANY, LLC, TULSA, OKLAHOMA, FOR APPROVAL OF A PERMIT TO INJECT PRODUCTION WATER INTO THE EXISTING TECTON FEDERAL 2-1H WELL LOCATED IN THE NW¼ NE¼ SECTION 1, TOWNSHIP 22 NORTH, RANGE 2 EAST, IN THE BORDER FIELD, HARDING COUNTY, ABOUT TWENTY SIX MILES NORTHWEST OF BUFFALO, SOUTH DAKOTA.

NOTICE
OF
RECOMMENDATION
FOR A PERMIT TO INJECT

OIL AND GAS
CASE NO. 9-2014

Notice is hereby given to the public and to all interested persons that pursuant to South Dakota Codified Laws (SDCL) Chapter 1-26 and Chapter 45-9 and further pursuant to the Administrative Rules of South Dakota (ARSD) 74:12:07 and 74:12:09, the following matter has come to the attention of the Secretary of the Department of Environment and Natural Resources, hereinafter "Secretary."

The Tecton Federal 2-1H well was completed with 2,000 feet of 9 5/8-inch steel surface casing, cemented to protect underground sources of drinking water, and 8,712 feet of 7-inch steel production casing, cemented to protect underground sources of drinking water. The injection zone will be in the Inyan Kara Formation. Injection water will be produced water from the Pronghorn 32P-29-20H and Gunderson 31P-30-19H wells producing from the Red River Formation ("B" zone). All wells within the one-half mile area of review, and maximum calculated radius of influence, are constructed such that the injection into this well will not affect any underground sources of drinking water.

Water from the Inyan Kara Formation, near the proposed injection well, has a total dissolved solid content of less than 10,000 milligrams per liter; therefore, an aquifer exemption is required to conduct injection operations at this well. The Secretary recommends granting a 1,300-foot radius aquifer exemption in the Inyan Kara Formation around the proposed injection well. The Secretary has made this recommendation because the Inyan Kara Formation, near the proposed injection well, does not currently serve as a source of drinking water, is not expected to supply a public water system, and will not serve as a source of drinking water in the future because its location and depth make recovery of water for drinking water purposes economically impractical.

The requested maximum injection pressure is 1,415 pounds per square inch and the requested duration of this application is 20 years or the time required to inject 29,200,000 cumulative barrels of water, whichever comes first.

The Secretary recommends approval of the application with the following conditions:

- 1) Injection operations authorized under the permit to inject must be conducted in accordance with SDCL Chapter 45-9, ARSD 74:12 and any applicable orders or rules promulgated by the board;
- 2) The total number of barrels injected during the life of this permit may not exceed 29,200,000 barrels of water;
- 3) The maximum injection rate must not exceed 4,000 barrels of water per day;
- 4) The life of the permit may not exceed 20 years;

- 5) The maximum pressure must not exceed 1,415 pounds per square inch surface pressure during injection operations;
- 6) Prior to the commencement of injection, a water compatibility analysis of the water to be injected and water from the injection formation at the Tecton Federal 2-1H well must be completed and submitted to the department for review. If the analysis indicates the waters are incompatible, action must be taken to prevent potential damage to the injection well or the injection formation;
- 7) Prior to the commencement of injection, the Secretary's recommended Aquifer Exemption for this operation must be approved by the United States Environmental Protection Agency;
- 8) A mechanical integrity test must be successfully conducted prior to the commencement of injection activity. The well must pass the mechanical integrity test at 1,000 pounds per square inch surface pressure. The operator is required to notify the Secretary a minimum of 72 hours prior to running a mechanical integrity test;
- 9) Once mechanical integrity is established, the well must be retested at least once every five years to ensure that mechanical integrity is maintained, unless the department indicates differently;
- 10) If an unsuccessful pressure test occurs, the operator must cease operations immediately if it is determined the injection will threaten any underground source of drinking water. If the failure is not threatening ground water, the operator must cease operations within 48 hours after receipt of the department secretary's notice, and take corrective action on the well as soon as feasible. Corrective action options include repairing the well so that a successful test result can be obtained, plugging and abandoning the well, or any other action approved by the department.

Authority for the Secretary to approve this application is contained in ARSD 74:12:07 and 74:12:09. Unless a person files a petition requesting a hearing on the above application pursuant to the provisions of ARSD 74:09:01 on or before September 3, 2014, the Secretary's recommendation will be considered final and the Secretary will approve the application in accordance with that recommendation.

The application and notice of recommendation are also posted on the department's website at: <http://denr.sd.gov/des/og/pubhearing.aspx>. Additional information about this application is available from Brian Walsh, Environmental Scientist III, Ground Water Quality Program, Department of Environment and Natural Resources, 523 East Capitol Avenue, Pierre, SD 57501, telephone (605) 773-3296, email brian.walsh@state.sd.us.

August 14, 2014



Steven M. Pirner
Secretary

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