

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

<p>IN THE MATTER OF THE APPLICATION OF MUREX PETROLEUM CORPORATION, HOUSTON, TEXAS, FOR APPROVAL OF A MAJOR MODIFICATION TO THE PERMIT TO INJECT PRODUCTION WATER INTO THE EXISTING NJOS 34-10 WELL LOCATED IN THE SW¼ SE¼ SECTION 10, TOWNSHIP 22 NORTH, RANGE 3 EAST, TABLE MOUNTAIN FIELD, HARDING COUNTY, ABOUT 22 MILES NORTHWEST OF BUFFALO, SOUTH DAKOTA.</p>	<p>NOTICE OF RECOMMENDATION FOR A MAJOR MODIFICATION TO THE PERMIT TO INJECT</p> <p>OIL AND GAS CASE NO. 1-2016</p>
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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 Njos 34-10 is a previously permitted salt water disposal well that was permitted to inject into the Minnelusa Formation. The Njos 34-10 well was completed with 1,555 feet of 9.625-inch steel surface casing, cemented to protect underground sources of drinking water, and 8,780 feet of 4.5-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 Meridian 14-15H State well producing from the Red River Formation ("B" zone). There is one other well located within the one-half mile area of review, or maximum calculated radius of influence. Injection into the Njos 34-10 well will not affect any underground sources of drinking water.

Water from the Inyan Kara Formation, near the injection well, has a total dissolved solid content of less than 10,000 milligrams per liter and greater than 3,000 milligrams per liter; therefore, an aquifer exemption is required to conduct injection operations at this well. The Secretary recommends granting a 900-foot radius aquifer exemption in the Inyan Kara Formation around the injection well. The Secretary has made this recommendation because the Inyan Kara Formation, near the 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 1,300 pounds per square inch and the requested duration of this application is 30 years or the time required to inject 9,855,000 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 9,855,000 barrels of water;
- 3) The maximum injection rate must not exceed 900 barrels of water per day;

- 4) The life of the permit may not exceed 30 years;
- 5) The maximum pressure must not exceed 1,300 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 Njos 34-10 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 May 18, 2016, 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> and <http://denr.sd.gov/public>. 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.

April 22, 2016



Steven M. Pirner
Secretary

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