

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

IN THE MATTER OF THE APPLICATION OF CONTINENTAL RESOURCES, INC., OKLAHOMA CITY, OKLAHOMA, FOR APPROVAL OF A PERMIT TO INJECT PRODUCTION WATER INTO THE EXISTING HANSEN STATE 34-1 WELL LOCATED IN THE SW¼ SE¼ SECTION 1, TOWNSHIP 22 NORTH, RANGE 3 EAST, IN THE TABLE MOUNTAIN FIELD, HARDING COUNTY, ABOUT 23 MILES NORTHWEST OF BUFFALO, SOUTH DAKOTA.	NOTICE OF RECOMMENDATION FOR A PERMIT TO INJECT OIL AND GAS CASE NO. 49-2013
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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 Hansen State 34-1 well was completed with 1,573 feet of 8 5/8-inch steel surface casing, cemented to protect underground sources of drinking water, and 9,190 feet of 5 1/2-inch steel production casing, cemented to protect underground sources of drinking water. The well will be converted for injection including the addition of a cast iron bridge plug at 8,925 feet below land surface, a cement plug on top of the cast iron bridge plug, a cement plug at 6,550 feet below land surface, and a cast iron bridge plug at 4,875 feet below land surface. The injection zone will be in the Inyan Kara Formation. All injection water will be produced water from the State Central Tank Battery #4 and the Quinn 44-36H production well. There are no other wells located within the one-half mile area of review.

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 1,800-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 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 life of the permit may not exceed 25 years;
- 3) 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;
- 4) Prior to the commencement of injection, a water compatibility analysis of the water to be injected and water from the injection formation at the Hansen State 34-1 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;

- 5) The maximum injection rate may not exceed 4,000 barrels of water per day during injection operations;
- 6) The maximum surface injection pressure may not exceed 1,500 pounds per square inch during injection operations;
- 7) A mechanical integrity test must be successfully conducted prior to commencement of injection. The well casing 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;
- 8) 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;
- 9) 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 December 26, 2013, the Secretary's recommendation will be considered final and the Secretary will approve the application in accordance with that recommendation. For additional information about the application, please contact Brian Walsh, Environmental Scientist III, Ground Water Quality Program, Department of Environment and Natural Resources, 523 East Capitol Avenue, Pierre, SD 57501; 605.773.3296 or email brian.walsh@state.sd.us.

December 2, 2013



Steven M. Pirner
Secretary

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