



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

April 17, 2018

Peter MacIntyre
Continental Resources, Inc.
20 N. Broadway
Oklahoma City, OK 73102

Re: Oil and Gas Case No. 2-2018 – Approval of Major Modification of Permit to Inject, WBRRU 23-25H/SBRRU 23-30H Injection Well, NE/4 SW/4 Section 25, Township 21 North, Range 3 East, Harding County

Dear Mr. MacIntyre:

Thank you for your application filed March 2, 2018, requesting modification of Continental Resources' permit to inject for its existing WBRRU 23-25H/SBRRU 23-30H well. Your application requested modification of injection fluid from air to water for the WBRRU 23-25H/SBRRU 23-30H injection well.

The department published a Notice of Recommendation for Case No. 2-2018 recommending approval of the application. The final date for intervention was April 11, 2018, and no parties petitioned the Board of Minerals and Environment for a hearing on the application by the deadline.

Therefore, in accordance with the Administrative Rules of South Dakota (ARSD) 74:12:07 and 74:12:09, approval of the application is hereby granted. The permit is conditioned on compliance with all applicable requirements of South Dakota Codified Laws 45-9 and ARSD 74:12. Please refer to the enclosed Notice of Recommendation for specific terms and conditions.

Thank you for your interest in protecting the water resources of the state.

Sincerely,

Steven M. Pirner
Secretary

Enclosure

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, OK, TO MODIFY ITS PERMIT TO INJECT FOR THE WBRRU 23-25H/SBRRU 23-30H WELL LOCATED IN THE NE¼ SW¼ SECTION 25, TOWNSHIP 21 NORTH, RANGE 3 EAST, IN THE WEST BUFFALO RED RIVER UNIT OF THE BUFFALO FIELD, HARDING COUNTY, ABOUT FOURTEEN MILES NORTHWEST OF BUFFALO, SD, TO SUPPORT WATER FLOOD IN THE "B" ZONE OF THE RED RIVER FORMATION IN THE WEST BUFFALO RED RIVER UNIT AND SOUTH BUFFALO RED RIVER UNIT FOR ENHANCED RECOVERY OF OIL AND GAS.

NOTICE
OF
RECOMMENDATION
FOR MAJOR MODIFICATION OF
PERMIT TO INJECT

OIL AND GAS
CASE NO. 2-2018

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."

Continental Resources, Inc., hereinafter "Continental," has requested a major modification of its permit to inject for the existing WBRRU 23-25H/SBRRU 23-30H well. The permit to inject for the WBRRU 23-25H/SBRRU 23-30H well was previously authorized under South Dakota Oil and Gas Order No. 10-1997. The request entails modifying injection fluid from air to water for the WBRRU 23-25H/SBRRU 23-30H injection well.

The WBRRU 23-25H/SBRRU 23-30H well was completed with 1,503 feet of 9 5/8-inch steel surface casing, cemented to protect underground sources of drinking water, and 8,958 feet of 7-inch steel production casing, cemented to protect underground sources of drinking water. The injection zone remains the "B" zone of the Red River Formation. Injection water will be water from the Red River Formation from West Buffalo Red River Unit wells, Table Mountain Field wells, and the Aldrin 24-25H well. No domestic water wells are located within the one-half mile area of review. All wells within the one-half mile area of review and maximum calculated radius of influence are constructed such that the injection into the WBRRU 23-25H/SBRRU 23-30H well will not affect any underground sources of drinking water.

The requested maximum injection pressure for water injection is 1,700 pounds per square inch and the total requested injection volume is 27,375,000 cumulative barrels of water.

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 South Dakota Board of Minerals and Environment;
- 2) The total number of barrels injected during the life of this permit may not exceed 27,375,000 barrels of water;

- 3) The maximum injection rate must not exceed 3,000 barrels of water per day;
- 4) The term of water injection may not exceed 25 years;
- 5) The maximum pressure for water injection must not exceed 1,700 pounds per square inch surface injection pressure during injection operations;
- 6) A mechanical integrity test must be successfully conducted prior to the commencement of water 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;
- 7) Once mechanical integrity is established, the well must be retested at least once every five years to ensure that mechanical integrity is maintained;
- 8) 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 April 11, 2018, 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 Mike Lees, Environmental Scientist III, Minerals and Mining Program, Department of Environment and Natural Resources, 523 East Capitol Avenue, Pierre, SD 57501, telephone (605) 773-4201, email michael.lees@state.sd.us.

March 16, 2018



Steven M. Pirner
Secretary

Published once at the total approximate cost of _____.