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DEPARTMENT of ENVIRONMENT and NATURAL RESOURCES
PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

September 7, 2012

Richard George
Engineering Manager
Luff Exploration Company
1580 Lincoln Street, Suite 850
Denver, CO 80203

Dear Mr. George:

Re: Case No. 13-2012 – approval of permit to inject

Thank you for your application filed July 27, 2012, requesting a permit to inject produced water into the existing Janvrin O-33H well, located in the SW ¼ SE ¼ Section 33, Township 23 North, Range 5 East, Harding County, South Dakota, for the purpose of continuing long-term enhanced recovery of oil from the Red River "B" zone reservoir at a depth of approximately 9,000 feet below land surface. The injection water is produced water from the Red River "B" and Red River "D" zones.

The department published a Notice of Recommendation for Case No. 13-2012, recommending approval of the application. The date for intervention was September 5, 2012, 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

cc w/enc: John Morrison, Attorney at Law, P. O. Box 2798, Bismarck, ND 58502

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

IN THE MATTER OF THE APPLICATION OF LUFF EXPLORATION CO., DENVER, COLORADO, FOR APPROVAL OF A PERMIT TO INJECT INTO THE EXISTING JANVRIN O-33H WELL LOCATED IN THE SW ¼ SE ¼ SECTION 33, TOWNSHIP 23 NORTH, RANGE 5 EAST, IN THE TRAVERS RANCH RED RIVER UNIT OF THE TRAVERS RANCH FIELD, HARDING COUNTY, ABOUT EIGHT MILES NORTHWEST OF LUDLOW, SOUTH DAKOTA, TO SUPPORT THE WATER FLOOD IN THE "B" ZONE OF THE RED RIVER FORMATION IN THE TRAVERS RANCH RED RIVER UNIT FOR ENHANCED RECOVERY OF OIL AND GAS.	NOTICE OF RECOMMENDATION FOR A PERMIT TO INJECT OIL AND GAS CASE NO. 13-2012

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 Janvrin O-33H well was completed with 2,019 feet of 9 5/8–inch steel surface casing, cemented to protect underground sources of drinking water, and 9,234 feet of 7-inch steel production casing, cemented to protect underground sources of drinking water. The injection zone will be in the "B" zone of the Red River Formation. All injection water will be produced water from the Red River "B" zone and Red River "D" 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.

The requested maximum injection pressure is 1,700 pounds per square inch and the requested duration of this application is the time to inject 4,930,000 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 board;

2) The total number of barrels injected during the life of this permit may not exceed 4,930,000 barrels of water;

3) The maximum injection rate must not exceed 2,000 barrels of water per day;

4) The life of the permit may not exceed 25 years;

5) The maximum pressure must not exceed 1,700 pounds per square inch during injection operations;

6) 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;

7) 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;

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 September 5, 2012, 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 J. 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.

August 16, 2012

Steven M. Pirner
Secretary

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