

RECEIVED

FEB 01 2013

DEPT. OF ENVIRONMENT &
NATURAL RESOURCES,
GROUND WATER PROGRAM

UIC Class II Permit Application

Continental Resources is requesting to convert the following well to a salt water disposal well of produced water from the secondary oil recovery project within the Buffalo Red River Units.

Well Name: SBRRU 32-33A (Haivala #32-33A)

Well Location: SWNW Sec 33-T21N-R4E, Harding County, Buffalo, SD.

The application for a permit to inject shall contain the following complete information:

(1) A one-half mile fixed radius area of review plat which shows the location of the injection well or wells, existing or proposed; the location of all oil and gas wells; the location of all water wells active and abandoned; the location of all other wells, including plugged and abandoned wells; abandoned locations; dry holes; current drilling locations; the names of operators; the surface and mineral owners; and each offset operator;

See attached map.

Operator: Continental Resources is the operator of the SBRRU Unit.

Working Owners:

Continental Resources Inc.
AME LTD
Judson Operations, LTD
LAJ Corporation
Karen V. and William H. Martin Energy LTD
Pendergrass Investment CO., INC
Linn Operating INC

Mineral Owners

See Attached.

Surface Owner

Name: Ted Butler

Address: PO Box 173, Buffalo, SD, 57720

(2) The formation or formations from which oil, gas, and water wells are producing or have produced;

Oil: Red River "B" Formation

Gas: Red River "B" Formation

Water: Red River "B" Formation, Fox Hills, Hell Creek, Inyan Kara, Madison & Minnelusa.

(3) The name, description (stratigraphic and structural), and depth of the receiving formation or formations and the overlying confining zone or formation;

Receiving formation(s): Dakota Sand (Inyan Kara) 4,442 ft – 4,672 ft MD.

The Dakota Sandstone (Inyan Kara) is a quartzose sandstone with some grey shale with a thickness of 230 ft in the SBRRU 32-33A.

Confining zone/formation(s): The SBRRU 32-33A well enters the Dakota Sand at 4,442' MD. The top confining zone is 412 ft of the Mowry / Newcastle shale and the bottom confining zone is 73' of the Morrison shale.

(4) The well type, construction, spud date, total depth, formation tops, record of completion or recompletion, and plugging for all oil, gas, and injection wells within the area of review, **and any additional pertinent information which the secretary determines is necessary to make an informed judgment on the issuance of a permit**, including drill stem tests and well logs for all oil and gas wells identified in the area of review;

- 1) SBRRU 34-28 - Producing
- 2) SBRRU 21-33E - P&A'd
- 3) SBRRU (Haivalla) 32-33 – P&A'd

See attached documents.

(5) Information on abandoned and active water wells, as follows:

See attached documents.

(a) Abandoned water wells: None

- (i) The legal location;
- (ii) Well name; and
- (iii) Method of abandonment, if available;

(b) Active water wells: One

- (i) The legal location; NWSW Sec 33-21N-4E, 2,190 ft FEL & 1,020 FSL.
- (ii) Well name: Mike Butler
- (iii) A water sample was not collected from the well as it is a private well.
- (iv) The construction program, including casing size and type, if available;

Construction details:

Hole/drill bit sizes

Surface: 11"

Production: 7-7/8

Casing sizes and weights

Surface: 8-5/8" 24#

Production: 7" 19# & 5-1/2" 15.5#

Tubing size and weight: NA

Cement details:

Surface

Type(s): 20 sacks cmt

Production

Type(s): 225 sacks cmt

(v) Depth of well, if available; 1269 ft

(vi) A geologic/driller's log, if available; See Attached

(vii) The water level and pump type, if available;

(6) A description of the injection well's casing and the proposed casing program, and the proposed method for testing the casing for mechanical integrity before use as an injection well.

See attached.

1) Proposed wellbore diagram

The current production equipment will be removed and a Baker Model "D" pkr installed with coated tbg. Packer to be set at approx. 4,435 ft. The casing will be MIT tested as required by the State of South Dakota, which is a 15 minute test at 1000 psi with an allowable 10% fall off.

(7) The geologic name and the depth to and interval of all freshwater resources which may be affected by injection;

Name: Fox Hills Depth: 800'

(8) The names and addresses of the operators of the project;

Name: Continental Resources

Address: PO Box 268870, Oklahoma City, OK, 73126

(9) Schematic drawings of the surface and subsurface construction details of the well with detailed drawings of the gauge connections;

See Attached

(10) The source and nature of the substance or substances to be injected, its viscosity, its compatibility with the receiving formation, including stability indices, and the estimated average and maximum daily amounts to be injected. If the nature of the injected fluid is produced water, a water quality analysis must be submitted and must include information on total dissolved solids content, chlorides, sodium, sulfates, nitrates, and hydrocarbons;

See attach water analysis from Jacam Laboratories. Partial water volumes will be coming into the well from the SBRRU CTB #3 & #10.

(11) The average and maximum estimated injection pressure;

Average: To be determined with step-rate test after well is completed.

Maximum: To be determined with step-rate test after well is completed.

(12) A narrative description of any proposed production stimulation program, including a feasibility study, process description, and an explanation of how the data were determined, such as working calculations;

Production stimulation Program

Feasibility Study: NA

Process description: NA

How data was Determined: NA

(13) An analysis of any corrective action on all wells identified on the plat required by subdivision (1) of this section and the basis for the conclusion;

Corrective Action:

Continental Resources is not aware of any corrective actions needed on any of the wells in the AOR.

Basis for the Conclusion:

All wells within the area of review are properly constructed so no corrective action is need.

(14) The injection zone characteristics, including porosity, compressibility, and intrinsic permeability. This information has been collected over the numerous years of drilling and completion of wells within the unit using well logs.

Porosity: 18%

Compressibility: NA, need core to determine.

Intrinsic Permeability: NA, need core to determine.

(15) The expected project life

Years: 25

(16) The surface owner's name, address, and telephone number.

Name: Ted Butler

Address: PO Box 173, Buffalo, SD, 57720

Telephone number: (605) 375 - 3391

As indicated in Section 4, the Secretary reserves the right to request additional pertinent information needed to make a recommendation on the approvability of the application. The secretary shall deny any permit application which is incomplete.

In addition, the applicant will need to submit a notarized Certification of Applicant (Form 13), that can be obtained at <http://denr.sd.gov/documents/form13.pdf>. or by contacting the South Dakota Department of Environment and Natural Resources

All permits to inject are issued pursuant to the provisions of chapter 74:10:11.01.

Name of person legally responsible for Class II operation (owner/operator),

Continental Resources INC

Address: PO Box 268870, Oklahoma City, OK, 73126

Telephone: (405) 234-9000

Local representative or contact person if different from above:

Name: Gordon Carlson

Address: 11583 S. Cave Hills Road, Buffalo, SD, 57720

Telephone: (605) 375-3731

