



DEPARTMENT of ENVIRONMENT and NATURAL RESOURCES
 Minerals & Mining Program
 2050 West Main, Suite #1, Rapid City, SD 57702-2493
 Telephone: 605-773-4201, FAX: 605-394-5317

FORM 2
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 APR 01 2013

DEPT OF ENVIRONMENT & NATURAL
 RESOURCES - RAPID CITY

APPLICATION FOR PERMIT TO DRILL

State of South Dakota
 Department of Environment
 and Natural Resources

Type of work: Drill New Well Re-enter Well Drill Directional Well Other: _____

Type of well: Oil Well Gas Well Injection Other: _____

Name and Address of Operator: Luff Exploration Company 1580 Lincoln Street, Suite 850, Denver, CO 80203 Telephone: 303-861-2468

Name and Address of Surface Owner: David Stearns: 606 E Grant, Spearfish, SD 57783; Todd L. Stearns: 1265 Leisure World, Mesa, AZ 85206

Name and Address of Drilling Contractor and Rig Number: Cyclone Drilling, Inc., 5800 Mohan Road, Gillette, WY 82718; Rig #11

Surface Location of well: Qtr-Qtr, Sec, Twp, Rge, County, feet from nearest lines of section, and latitude and longitude (if available): SESE, Sec. 2, T22N, R4E, Harding Co., 1010' FSL x 220' FEL, Lat: 45° 53' 42.241" N, Long: 103° 35' 02.907" W

If Directional, top of pay and bottom hole location from nearest lines of section: TOP: 1487' FSL & 220' FEL, NESE, Sec. 2, T22N, R4E BHL: 2100' FSL & 1820' FEL, NWSE, Sec. 35, T23N, R4E

Acres in Spacing (Drilling) Unit: 960 Description of Spacing Unit: W/2 Sec. 1, E/2 Sec. 2 T22N, R4E; Sec. 35 SE/4, Sec. 36 SW/4 T23N, R4E

Well Name and Number:	Elevation:	Field and Pool, or Wildcat:	Proposed Depth and Formation:
Stearns Ranch P-2H	3117.6 ground	Buffalo	15,837' MD, 8987' TVD, Red River B

Size of Hole:	Size of Casing:	Weight per Foot:	Depth:	Cementing Program (amount, type, yield, additives)	Depth:
1) 13 1/2"	9 5/8"	36#	2000'	565 sks Lite, Tail w/200 sks Premium	Surface
2) 8 3/4"	7"	23, 26, 29#	9260'	145 sks Lite, Tail w/500 sks Premium	4600'
3) 6 1/8"	None		15,837'		
4)					

Describe Proposed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). Use additional page(s) if appropriate.
 Drill a medium radius horizontal well that has one lateral in the Red River "B" formation. Drill 13-1/2" surface hole to 2000' with fresh water. Run 9-5/8" casing and cement to surface. Drill 8-3/4" vertical hole to KOP at 8510'. Drill build section with an azimuth of 0 degrees to 9260' MD (8987' TVD). Vertical and build section to be drilled with invert oil mud. Run 7" casing with shoe at BHL 1487' FSL & 220' FEL Sec 2-T22N-R4E and cement to 4600'. Drill one 6-1/8" horizontal lateral to 15837' MD (8987' TVD) and a BHL 2100' FSL & 1820' FEL Sec 35-T23N-R4E with fresh water. Estimated start date for location construction is 4/8/13. Estimated start date for drilling is 5/1/13.
 Pit Liner Specifications: All drilling fluids and cuttings will be contained in a pit lined with a 12 mil plastic liner

I hereby certify that the foregoing as to any work or operation performed is a true and correct report of such work or operation.

Gloria Ramirez Signature Gloria Ramirez Name (Print) Operations Administrator Title 3/28/13 Date

FOR OFFICE USE ONLY

Approved By: *Robert Tansoul* Title: *Administrator Minerals & Mining Program*

Permit No.: 2028 API No.: 40 063 20743 Date Issued: 4/5/2013

Conditions, if any, on attached page.



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
www.state.sd.us/denr

PERMIT CONDITIONS

Luff: Stearns Ranch P-2H
22N-4E-2 SESE, Harding County

Permit: 2028
API: 40 063 20743

Approval has been granted to drill this location as detailed on the attached Application for Permit to Drill (Form #2) with the following additional conditions:

1. This permit is conditioned on compliance with all applicable requirements of South Dakota Codified Laws 45-9 and Administrative Rules of South Dakota 74-12.
2. A 12-mil woven, reinforced high-density polyethylene liner must be used on all pits.
3. Surface runoff must be diverted around the drill site.
4. The surface hole must be drilled with fresh water.
5. Cement must be circulated to the ground surface on the surface casing.
6. If horizontally drilled:
 - A. The coordinates of the production casing shoe and the well terminus must be filed with the department.
 - B. The azimuth of the horizontal segment of the well must be filed with the department along with the results of periodic down hole surveys.
7. If production casing (long string) is set:
 - A. The casing and cementing program submitted with the application shall be followed.
 - B. A cement bond log must be run and filed with the department within 60 days after completion of the well as required by Administrative Rules of South Dakota 74:12:02:12.
8. If abandoned, a plugging plan must be submitted to the department for review and approval. The plugging plan should address all requirements found in Administrative Rules of South Dakota 74:12:03.
 - A. If production casing is left in the wellbore, a mechanical integrity test must be conducted to verify the integrity of the casing as required by rule 74:12:03:02(4)(b)(ii).
 - B. The casing string must be cut off at least three feet below the final ground surface contour. A plate with the name of the operator, well name and number, and legal location by quarter-quarter section, township and range must be welded to the casing stub. The location of the abandoned well must be surveyed with high resolution global positioning system equipment or other appropriate survey methods sufficient to accurately locate the well. Survey coordinates must be included in the final abandonment report.
9. Surface reclamation of the site must be completed within one year of plugging and abandoning the well.
10. **Interim reclamation must be completed within one year after site is completed in accordance with Administrative Rules of South Dakota 74:12:03:07.**
11. A washed set of sample cuttings (or cores, if cut) must be shipped, free of charge, to:

Derric Iles
Geological Survey Program
Akeley-Lawrence Science Center
University of South Dakota
414 E. Clark Street
Vermillion, SD 57069-2390

12. Please notify this office prior to plugging or MIT so a witness can be on location. If plugging or MIT will occur after regular business hours, call Jeff Klenner at (605) 929-1414.