NM OIL CONSERVATION
ARTESIA DISTRICT
OCD Hobbs
AUG 17 2016
RECEIVED

Form 3160-3
(August 2007)

FORM APPROVED
OMB No. 1004-0137
Expires July 31, 2010

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: LC-065194

6. If Indian, Allotee or Tribe Name:

1a. Type of work: ☑ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.:

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.: Starcaster 18 Fed Com 1H (313567)

2. Name of Operator: Endurance Resources, LLC (270329)

9. API Well No.: 30-025-43386

3a. Address: 203 West Wall Suite 1000, Midland, Tx 79701

3b. Phone No. (include area code): 432-242-4680

10. Field and Pool, or Exploratory: Bell Lake; Bone Springs, North (5150) KZ

4. Location of Well (Report location clearly and in accordance with any State requirements.*)
At surface: 330' FNL & 1270' FWL
At proposed prod. zone: 330' FSL & 660' FWL

HOBBS OCD
AUG 18 2016
RECEIVED

11. Sec., T. R. M. or Blk. and Survey or Area: Sec 18-23s-34e

14. Distance in miles and direction from nearest town or post office*: 26 miles Northwest of Jal, New Mexico

12. County or Parish: Lea

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any): 155'

16. No. of acres in lease: 320 ac

17. Spacing Unit dedicated to this well: 160 ac

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: 1320'

19. Proposed Depth: MD: 14881' TVD: 10469'

20. BLM/BIA Bond No. on file: NMB001~~200~~ 1220

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 3509' GL

22. Approximate date work will start*: 05/01/2016

23. Estimated duration: 45 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature: Tinlee Tilton — Name (Printed/Typed): Tinlee Tilton — Date: 01/25/2016

Title: Engineer

Approved by (Signature): /s/George MacDonell — Name (Printed/Typed): — Date: JUL 29 2016

Title: FIELD MANAGER — Office: CARLSBAD FIELD OFFICE

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

KZ 08/19/16

*(Instructions on page 2)

Capitan Controlled Water Basin

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL

ENDURANCE
RESOURCES, LLC

Endurance Resources LLC

DRILLING & OPERATIONS PROGRAM
Starcaster 18 Federal #1H
SHL: 330' FNL & 1270' FWL
Sec 18-23S-34E
BHL: 330' FSL & 660' FWL
Sec 18-23S-34E
Lea Co, NM

1. Geological Name of Surface Formation
   Quaternary

2. Estimated Tops of Important Geological Markers

Fresh Water	311'
Rustler	979'
Top of Salt	1,416'
Lamar Limestone	4,943'
Delaware	5,025' - Oil
Bone Spring	8,551' - Oil
1st Bone Spring	9,626' - Oil
2nd Bone Spring	10,201' – Oil

   TVD: 10,469'; MD: 14,881'

3. Estimated Depths of Anticipated Fresh Water, Oil or Gas
   The estimated depths at which water, oil and gas will be encountered are as follows:
   Water: Average depth to water: 311'. Minimum depth: 255'. Max: 430'. As reported from the New Mexico Office of the State Engineer website.

   Oil & Gas: 4,990' – 10,500' (Delaware through Bone Spring)
   No other formations are expected to give up oil, gas, or fresh water in measurable quantities.

ENDURANCE
RESOURCES, LLC

Endurance Resources LLC

DRILLING & OPERATIONS PROGRAM

Starcaster 18 Federal #1H
SHL: 330' FNL & 1270' FWL
Sec 18-23S-34E
BHL: 330' FSL & 660' FWL
Sec 18-23S-34E
Lea Co, NM

Proposed Casing Program:

Hole Size	Casing Size	Depth	#/ft	Grade	Connection	Collapse	Burst	Tension
17.5"	13-3/8"	1,216'	54.5	J-55	BTC	2.22	5.38	15.3
12.25"	9-5/8"	4,963'	40	HCL-80	LT&C	1.61	2.39	3.66
8.75"	5-1/2"	14,850'	20.0	HCP-110	BTC	2.41	2.5	2.25

NOTE: ALL CASING IS NEW & API APPROVED. WHILE RUNNING CASING, PIPE WILL BE KEPT A MINIMUM OF 1/3 FULL AT ALL TIMES TO AVOID APPROACHING COLLAPSE PRESSURE OF THE CASING. SURFACE CASING WILL BE WATCHED & NECESSARY ADJUSTMENTS MADE TO ENSURE PIPE IF FULL DUE TO LOST CIRCULATION ZONES THAT MAY OCCUR. CENTRALIZERS WILL BE USED ON SURFACE CASING

ENDURANCE
RESOURCES, LLC

4. Proposed Casing Program:

Size	Depth	#/ft	Grade	Connection	Collapse	Burst	Tension
13-3/8"	1,216'	54.5	J-55	BTC	1.79	4.34	13.72
9-5/8"	4,963'	40	HCL-80	LT&C	1.67	2.48	3.66
5-1/2"	14,881'	20.0	HCP-110	BTC	2.41	2.5	2.24

NOTE: ALL CASING IS NEW & API APPROVED. WHILE RUNNING CASING, PIPE WILL BE KEPT A MINIMUM OF 1/3 FULL AT ALL TIMES TO AVOID APPROACHING COLLAPSE PRESSURE OF THE CASING. SURFACE CASING WILL BE WATCHED & NECESSARY ADJUSTMENTS MADE TO ENSURE PIPE IF FULL DUE TO LOST CIRCULATION ZONES THAT MAY OCCUR. CENTRALIZERS WILL BE USED ON SURFACE CASING

5. Proposed Cement Program:
   a. 13-3/8" Surface
      Lead: 550 sks ExtendaCem Class C (13.7ppg / 1.694 cuft/sk)
      Tail: 525 sks HalCem Class C (14.80ppg / 1.32 cuft/sk)
      **Calculated w/ 100% excess on OH volume
   b. 9-5/8" Intermediate
      Lead: 1100 sks EconoCem Class C + 0.4% HR-800 Retarder + 0.125 lbm/sk Poly-E-Flake Lost Circulation Additive (12.9ppg / 1.789 cuft/sk)
      Tail: 230 sks HalCem Class C (14.80 ppg / 1.326 cuft/sk)
      **Calculated w/ 50% excess on OH volumes & 10% in CH
   c. 5-1/2" Production
      Lead: 770 sks 50/50 Poz (Class H) + 5% Cal-Seal 60 Lost Circulation Additive + 8% Bentonite + 0.1% FE-2 + 0.25 lbm/sk D-Air 5000 Defoamer (11.5 ppg / 2.672 cuft/sk)
      Tail: 1255 sks Class H + 0.5% Halad R-344 Low Fluid Loss Control + 0.4% Halad R-322 + 0.4% HR-800 Retarder (14.5 ppg / 1.227 cuft/sk)
   **Calculated w/ 20% excess in vertical OH, 20% excess on lateral OH volumes & 10% in CH

NOTE: THE ABOVE CEMENT VOLUMES COULD BE REVISED PENDING FLUID CALIPER & CALIPER LOG DATA. SURFACE AND INTERMEDIATE VOLUMES ARE DESIGNED TO CIRCULATE TO SURFACE. PRODUCTION IS DESIGNED TO TIE INTO 9 5/8" CASING.

need to tie back 200'ft into 9⅝" casing (4763' approx) – See COA

ENDURANCE
RESOURCES, LLC

6. Minimum Specifications for Pressure Control: — See COA

13-5/8 (5M) working pressure BOP system consisting of one set of blind rams and one set of pipe rams and a 5000# annular type preventer (please see BOP schematic). A 5M choke manifold & 120 gallon accumulator with floor and remote operating stations & auxiliary power system. Rotating head as needed. A KC will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor.

BOP unit will be hydraulically operated. BOP will be NU and operated at least once a day while drilling and the blind rams will be operated when out of the hole during trips. From the base of the 13-3/8" csg through running of production casing, the well will be equipped with a 10M BOP system. Below the 9-5/8 csg shoe, this 5M system will be equipped with a HCR valve, remote kill line, & annular to match. The remote kill line will be installed prior to testing the system & tested to stack pressure.

Before drilling out of the 13-3/8 surface casing, BOP will be tested by an independent service company to 250 psi low & 3000 psi high. Hydril will be tested to 250 psi low and 2500 psi high. Before drilling out the 9-5/8 intermediate shoe BOP will be tested by an independent service company to 250 psi low and 5000 psi high. Hydril will be tested to 250 psi low and 2500 psi high. These low pressure tests from 250 to 300 psi will be held a minimum of 10 minutes if test is done with a test plug & 30 minutes without a test plug.

ENDURANCE
RESOURCES, LLC

4,963' – 14,881'	Cut Brine	8.3 – 9.3	28-32	NC-12

NOTE: NECESSARY MUD PRODUCTS FOR WEIGHT ADDITION & FLUID LOSS WILL BE ON LOCATION AT ALL TIMES. VISUAL MUD MONITORING EQUIPMENT (I.E. TRIP TANK) WILL BE IN PLACE TO DETECT VOLUME CHANGES INDICATING LOSS OR GAIN OF CIRCULATION VOLUME WITH ALARMS.

9. Auxiliary Well Control & Monitoring Equipment:
   a. A KC will be in the drill string at all times.
   b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times
   c. H2S detection equipment will be in operation & breathing apparatuses will be on location after the drill out of the 13-3/8" casing shoe until the 5-1/2" casing in cemented.

10. Testing, Logging & Coring Program: — See COA
    a. No drill stem tests are planned.
    b. Neutron Porosity well log ran from KOP to 200'.
    c. Quad combo logs from KOP to intermediate casing shoe.
    d. No coring is planned.

11. Potential Hazards:

No abnormal pressures or temperatures are expected. If H2S is encountered, Endurance Resources LLC will comply with Onshore Order #6. Regardless, all personnel will be trained & qualified with H2S safety. Rig safety equipment will all also be checked daily once drill out of the 13-3/8" casing shoe to TD. It has been noted that H2S has been encountered in the salt section. If H2S is encountered, measurements & formations will be reported to the BLM. See COA

12. Anticipated starting date & Duration of Operations:

Road & location construction will begin after the BLM has approved the APD. Anticipated spud date will begin after BLM approval & after a drilling rig is secured. Move in operations & drilling is expected to take no more than 45 days. An additional 30-50 days will be needed to complete this well

ENDURANCE
RESOURCES, LLC

& construct surface facilities and/or lay flow lines in order to place well on production.