OCD Hobbs

ATS-15-241

Form 3160-3
(March 2012)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

HOBBS OCD
JUN 17 2016
RECEIVED

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: NMNM077060

6. If Indian, Allotee or Tribe Name:

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

1a. Type of work: ☑ DRILL ☐ REENTER

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

8. Lease Name and Well No.: Red Tank 33 Federal #3H (39976)

2. Name of Operator: OXY USA Inc. (16696) 16696

9. API Well No.: 30-025- 43307

3a. Address: P.O. Box 50250, Midland, TX 79710

3b. Phone No. (include area code): 432-685-5717

10. Field and Pool, or Exploratory: Red Tank Delaware. West (51689)

4. Location of Well (Report location clearly and in accordance with any State requirements.*)

At surface: ~~330~~ 40 FSL 2215 FWL SESW(N) Sec 33 T22S R32E

At proposed prod. zone: 180 FNL 1973 FWL NENW(C) Sec 33 T22S R32E

11. Sec., T. R. M. or Blk. and Survey or Area: Sec 33 T22S R32E

14. Distance in miles and direction from nearest town or post office*: 23 miles northeast from Loving, NM

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): 40'

16. No. of acres in lease: 1160 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.: 2735'

19. Proposed Depth: 8428'V 13184'M

20. BLM/BIA Bond No. on file: NMB000862 ESB000226

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 3597.6' GR

22. Approximate date work will start*: 07/01/2015

23. Estimated duration: 35 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: David Stewart — Name (Printed Typed): David Stewart — Date: 11/19/14

Title: Sr. Regulatory Advisor — david_stewart@oxy.com

Approved by (Signature): /s/Cody Layton — Name (Printed Typed): — Date: JUN 10 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)

Carlsbad Controlled Water Basin

KZ 06/17/16

See attached NMOCD Conditions of Approval

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL

OXY USA Inc
Red Tank 33 Federal #3H
APD Drilling Data

OPERATOR NAME / NUMBER: OXY USA INC 16696

LEASE NAME / NUMBER: Red Tank 33 Federal #3H **Federal Lease No.** NMNM077060

STATE: NM **COUNTY:** Lea

POOL NAME/NUMBER: Red Tank Delaware, West 51689

SURFACE LOCATION: 40 FSL 2215 FWL SESW(N) Sec 33 T22S R32E
SL: LAT: 32.3408328N **LONG:**103.6805304W **X:**701615.2 **Y:**488325.3 **NAD:** 27

TOP PERFORATION: 330 FSL 2201 FWL SESW(N) Sec 33 T22S R32E
TP: LAT: 32.3416298N **LONG:**103.6805759W **X:**701599.4 **Y:**488615.1 **NAD:** 27

BOTTOM PERFORATION: 330 FNL 1980 FWL NENW(C) Sec 33 T22S R32E
BP: LAT: 32.3543242N **LONG:**103.6813005W **X:**701347.5 **Y:**493231.8 **NAD:** 27

BOTTOM HOLE LOCATION: 180 FNL 1973 FWL NENW(C) Sec 33 T22S R32E
BHL: LAT: 32.3547361N **LONG:**103.6813240W **X:**701339.3 **Y:**493381.6 **NAD:** 27

APPROX GR ELEV: 3597.6' **EST KB ELEV:** 3622.6' (24' KB)

1. **GEOLOGIC NAME OF SURFACE FORMATION**
   a. Permian

2. **ESTIMATED TOPS OF GEOLOGICAL MARKERS & DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS**

Formation	TVD	Expected Fluids
T. Rustler	1023	--
T. Salt	1373	--
B. Salt	4618	--
T. Delaware / Lamar	4668	Form Water
T. Bell Canyon	4718	Form Water
T. Cherry Canyon	5593	Oil/Gas
T. Brushy Canyon	6893	Oil/Gas
Target TVD – Brushy Canyon	8428	Oil/Gas
T. Bone Springs	8598	Oil/Gas

- **Fresh water may be present above the Rustler formation. Surface casing will be set below the top of the Rustler to protect any possible fresh water.**

LATERAL GREATEST PROJECTED TD: 13184' MD / 8428' TVD

OBJECTIVE: Brushy Canyon

APD-2

3. CASING PROGRAM

See COA

New Surface Casing ran in a 14.75" hole filled with 8.50 ppg mud

Hole Size (in)	Interval (ft)	OD (in)	Wt (ppf)	Grade	Conn	ID (in)	Condition	Burst (psi)	Collapse (psi)	**Burst SF**	**Coll SF**	**Ten SF**
14.75	~~1050~~ 1080	11.75	47	J55	STC	11.000	New	3070	1510	1.42	4.31	3.35

New Intermediate Casing ran in a 10.625" hole filled with 10.2 ppg mud

Hole Size (in)	Interval (ft)	OD (in)	Wt (ppf)	Grade	Conn	ID (in)	Condition	Burst (psi)	Collapse (psi)	**Burst SF**	**Coll SF**	**Ten SF**
10.625	~~4770~~ 4650	8.625	32	J55	LTC	7.921*	New	3930	2530	1.22	2.72	1.82

New Production Casing ran in a 7.875" hole filled with 9.0 ppg mud

Hole Size (in)	Interval (ft)	OD (in)	Wt (ppf)	Grade	Conn	ID (in)	Condition	Burst (psi)	Collapse (psi)	**Burst SF**	**Coll SF**	**Ten SF**
7.875	13184	5.500	17	L80	BTC	4.892	New	7740	6290	1.21	1.56	1.77

*SPECIAL DRIFT TO 7.875"

Casing Design Assumptions:

Burst Loads

CSG Test (Surface)
- Internal: Displacement fluid + 70% CSG Burst rating
- External: Pore Pressure from section TD to surface

CSG Test (Intermediate)
- Internal: Displacement fluid + 70% CSG Burst rating
- External: Pore Pressure from the Intermediate hole TD to Surface CSG shoe and MW of the drilling mud that was in the hole when the CSG was run to surface

CSG Test (Production)
- Internal: Displacement fluid + 80% CSG Burst rating
- External: Pore Pressure from the well TD the Intermediate CSG shoe and MW of the drilling mud that was in the hole when the CSG was run to surface

Gas Kick (Surface/Intermediate)
- Internal: Gas Kick based on Pore Pressure or Fracture Gradient @ CSG shoe with a gas 0.115psi/ft Gas gradient to surface while drilling the next hole section (e.g. Gas Kick while drilling the production hole section is a burst load used to design the intermediate CSG)
- External: Pore Pressure from section TD to previous CSG shoe and MW of the drilling mud that was in the hole when the CSG was run to surface

Stimulation (Production)
- Internal: Displacement fluid + Max Frac treating pressure (not to exceed 80% CSG Burst rating)
- External: Pore Pressure from the well TD to the Intermediate CSG shoe and 8.5 ppg MWE to surface

Collapse Loads

Lost Circulation (Surface/Intermediate)
- Internal: Losses experienced while drilling the next hole section (e.g. losses while drilling the production hole section are used as a collapse load to design the intermediate CSG). After losses there will be a column of mud inside the CSG with an equivalent weight to the Pore Pressure of the lost circulation zone
- External: MW of the drilling mud that was in the hole when the CSG was run

Cementing (Surface/Intermediate/Production)
- Internal: Displacement Fluid
- External: Cement Slurries to TOC, MW to surface

Full Evacuation (Production)
- Internal: Atmospheric Pressure
- External: MW of the drilling mud that was in the hole when the CSG was run

Tension Loads

Running CSG (Surface/Intermediate/Production)
- Axial load of the buoyant weight of the string plus either 100 klb over-pull or string weight in air, whichever is less

Green Cement (Surface/Intermediate/Production)
- Axial load of the buoyant weight of the string plus the cement plug bump pressure (Final displacement pressure + 500 psi)

Burst, Collapse and Tensile SF are calculated using Landmark's Stress Check (Casing Design) software.

4. CEMENT PROGRAM:

Surface Interval

Interval	Amount sx	Ft of Fill	Type	Gal/Sk	PPG	Ft^3/sk	24 Hr Comp
Lead: 0' – 750' (150% Excess)	470	750	Extendacem (TM) System Class C cement with 0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive)	9.14	13.5	1.73	888
Tail: 750' – 1050' (150% Excess)	270	300	Premium Plus Cement with 1 % Calcium Chloride - Flake (Accelerator)	6.36	14.8	1.34	1416

Intermediate Interval

Interval	Amount sx	Ft of Fill	Type	Gal/Sk	PPG	Ft^3/sk	24 Hr Comp
Lead: 0' – 4170' (180% Excess)	1150	4170	Halliburton Light Premium Plus Cement with 5% Salt (Salt), 0.4 % HR-800 (Retarder), 3 lbm/sk Kol-Seal (Lost Circulation Additive)	9.71	12.9	1.87	771
Tail: 4170' – 4770' (105% Excess)	210	600	Premium Plus Cement	6.34	14.8	1.33	2158

Production Casing

Interval	Amount sx	Ft of Fill	Type	Gal/Sk	PPG	Ft^3/sk	24 Hr Comp
Lead: 0' –7700' (100% Excess)	660	7700'	Tuned Light System; 3 lbm/sk Kol-Seal (Lost Circulation Additive, 0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive), 0.65% SCR-100 (Retarder)	17.5	9.86 (10.2 ppg down hole)	3.662	788 psi
Tail: 7700' – 13184' (40% Excess)	820	5574'	Super H Cement with 0.5 % Halad(R)-344 (Low Fluid Loss Control), 0.3 % CFR-3 (Dispersant), 2 lbm/sk Kol-Seal (Lost Circulation Additive), 3 lbm salt	8.45	13.2	1.652	1462 psi
***Contingency Second Stage – DV Tool @ 4430', only to be pumped if no cement to surface after first stage.**							
Lead: 0' – 4430' (10% Excess)	400	4560'	Econocem System	11.62	12.4	2.069	500 (@ 26:30)
Tail: 4430' – 4860' (200% OH Excess)	100	430'	94 lbm/sk Premium Plus Cement (Cement) and 1% CaCl - Flake	6.34	14.8	1.326	1462

The volumes indicated above may be revised depending on caliper measurement.

5. DIRECTIONAL PLAN

Please see attached directional plan

6. PRESSURE CONTROL EQUIPMENT

Surface: 0' – 1050' None.

Intermediate and Production: 4770' MD/TVD – 13184' MD / 8428' TVD. Intermediate and Production hole will be drilled with a 13-5/8" 10M three ram stack with a 5M annular preventer and a 5M Choke Manifold.

a. All BOP's and associated equipment will be tested in accordance with Onshore Order #2 (250/5000 psi on rams for 10 minutes each and 250/3500 psi for 10 minutes for annular preventer, equal to 70% of working pressure) with a third party BOP testing service before drilling out the surface casing shoe. A Multibowl wellhead system will be used in this well therefore the BOPE test will cover the test requirements for the Intermediate and Production sections.

b. The Surface and Intermediate casings strings will be tested to 70% of their burst rating for 30 minutes. This will also test the seals of the lock down pins that hold the pack-off in place in the Multibowl wellhead system.
c. Pipe rams will be function tested every 24 hours and blind rams will be tested each time the drill pipe is out of the hole. These functional tests will be documented on the daily driller's log. A 2" kill line and 3" choke line will be accommodated on the drilling spool below the ram-type BOP.
d. The BOPE test will be repeated within 21 days of the original test, on the first trip, if drilling the intermediate or production section takes more time than planned.
e. Other accessory BOP equipment will include a floor safety valve, choke lines, and choke manifold having a 5000 psi working pressure rating and tested to 5000 psi.
f. The Operator also requests a variance to connect the BOP choke outlet to the choke manifold using a co-flex hose manufactured by Contitech Rubber Industrial KFT. It is a 3" ID x 35' flexible hose with a 10,000 psi working pressure. It has been tested to 15,000 psi and is built to API Spec 16C. Once the flex line is installed it will be tied down with safety clamps (certifications attached).
g. BOP & Choke manifold diagrams attached.

7. MUD PROGRAM:

Depth	Mud Wt ppg	Vis Sec	Fluid Loss	Type System
0' – ~~1050'~~ 1080	8.5	28 – 38	NC	Fresh Water / Spud Mud
~~1050' – 4770'~~ 4650	10.2	28 – 32	NC	Fresh Water / NaCl Brine
~~4770'~~ – 7712'	9.0	28 – 34	NC	Cut Brine / Sweeps
7712' – 13184'	9.0	32 – 40	NC	Cut Brine / Sweeps

Remarks: Pump high viscosity sweeps as needed for hole cleaning. The mud system will be monitored visually/manually as well as with an electronic PVT. The necessary mud products for additional weight and fluid loss control will be on location at all times. Appropriately weighted mud will be used to isolate potential gas, oil, and water zones until such time as casing can be cemented into place for zonal isolation.

8. AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT

a. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor unobstructed and readily accessible at all times.

9. POTENTIAL HAZARDS:

a. H2S detection equipment will be in operation after drilling out the surface casing shoe until the production casing has been cemented. Breathing equipment will be on location from drilling out the surface shoe until production casing is cemented. If H2S is encountered the operator will comply with Onshore Order #6. Measured amounts and formations will be reported to the BLM.
b. No abnormal temperatures or pressures are anticipated. The highest anticipated pressure gradient is **0.46 psi/ft.** ~~Maximum anticipated bottom hole pressure is **3877 psi.**~~
c. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely.

10. WIRELINE LOGGING / MUD LOGGING / LWD

a. Wireline logging: Triple Combo from intermediate shoe to landing point
b. Mud loggers to be rigged up from intermediate shoe to TD
c. Acquire GR while drilling, from kick off point to TD

11. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS

Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon as possible after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 35 days. If production casing is run, then an additional 30 days will be needed to complete the well and construct surface facilities and/or lay flow lines in order to place well on production.

COMPANY PERSONNEL:

Name	Title	Office Phone	Mobile Phone
R. Chan Tysor	Drilling Engineer	(713)513-6668	(832) 564-6454
Sebastian Millan	Drilling Engineer Supervisor	(713)350-4950	(832) 528-3268
Roger Allen	Drilling Superintendent	(713)215-7617	(281) 682-3919
Oscar Quintero	Drilling Manager	(713)985-6343	(713) 689-4946