

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Artesia

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010**SUNDRY NOTICES AND REPORTS ON WELLS**
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.*5. Lease, Serial No.
NMNM62589

6. If Indian, Allottee or Tribe Name

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

SUBMIT IN TRIPLICATE - Other instructions on reverse side.8. Well Name and No.
FEDERAL 23 12H9. API Well No.
30-015-41803-00-X110. Field and Pool, or Exploratory
LIVINGSTON RIDGE11. County or Parish, and State
EDDY COUNTY, NM1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other2. Name of Operator
OXY USA INCORPORATED

Contact: DAVID STEWART

3a. Address
5 GREENWAY PLAZA STE 110
HOUSTON, TX 77046-05213b. Phone No. (include area code)
Ph: 432.685.57174. Location of Well (Footage, Sec., T., R., M., or Survey Description)
Sec 26 T22S R31E NWNW 0941FNL 0490FWL**12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	Change to Original A
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	PD

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

OXY USA Inc. respectfully requests approval for the following changes to the drilling plan:

1. Change the completion design to run a 4-1/2" completion system that consists of OH packers, sleeves and no cement.

2. Casing design modification, to drill the well with larger bit sizes:
a. Surface Casing-Update setting depth per COA
13-3/8" 54.5# J-55 BT&C new csg @ 0-835', 16" hole w/ 8.4# mudColl Rating (psi)-1130 Burst Rating (psi)-2730
SF Coll-3.86 SF Burst-1.38 SF Ten-6.17**NM OIL CONSERVATION**
ARTESIA DISTRICT

DEC 01 2014

RECEIVED
SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Accepted for record

NMOCD

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #277657 verified by the BLM Well Information System
For OXY USA INCORPORATED, sent to the Carlsbad
Committed to AFMSS for processing by CHRISTOPHER WALLS on 11/21/2014 (15CRW0029SE)

Name (Printed/Typed) DAVID STEWART

Title REGULATORY ADVISOR

Signature (Electronic Submission)

Date 11/10/2014

THIS SPACE FOR FEDERAL OR STATE OFFICE USE**APPROVED**

NOV 21 2014

/s/ Chris. Walls
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICEApproved By _____
Conditions of approval, if any, are attached. Approval of this notice 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.

Title

Office

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 any statement or representation as to any matter within its jurisdiction.

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

Additional data for EC transaction #277657 that would not fit on the form

32. Additional remarks, continued

b. Intermediate Casing-Update setting depth per COA
9-5/8" 36# J-55 BT&C new csg @ 0-4420', 12-1/4" hole w/ 10.0# mud

Coll Rating (psi)-2020 Burst Rating (psi)-3520
SF Coll-1.95 SF Burst-1.34 SF Ten-2.40

c. Production Casing
7" 26# P110 BT&C new csg @ 0-7698', 8-3/4" hole w/ 9.2# mud

Coll Rating (psi)-6210 Burst Rating (psi)-9960
SF Coll-1.86 SF Burst-1.40 SF Ten-2.37

d. Completion System
4-1/2" 13.5# L-80 BT&C new csg @ 6377-12268'M, 6-1/4" hole w/ 9.2# mud

Coll Rating (psi)-8540 Burst Rating (psi)-9020
SF Coll-2.55 SF Burst-1.25 SF Ten-1.82

Collapse and burst loads calculated using Stress Check with anticipated loads, see attached for design assumptions

3. Cement program adjustment to the depths/bit/casing sizes. Cement program modifications detailed below.

a. Surface - Circulate cement to surface w/ 320sx PP cmt w/ 4% Bentonite + 1% CaCl₂ + .25#/sx Poly-E-Flake, 13.5ppg 1.73 yield 1013# 24hr CS 200% Excess followed by 410sx PP cmt w/ 1% CaCl₂, 14.8ppg 1.34 yield 1415# 24hr CS 200% Excess.

b. Intermediate - Circulate cement to surface w/ 1755sx HES light PP cmt w/ 5#/sx Kol-Seal + .125#/sx Poly-E-Flake, 12.9ppg 1.88 yield 813# 24hrs CS 200% Excess followed by 300sx PP cmt 14.8ppg 1.33 yield 1789# 24hr CS 200% Excess.

c. Production - Circulate cement w/ 420sx Tuned Light (TM) system cmt w/ 1#/sx Kol-Seal + .125#/sx Poly-E-Flake, 10.2ppg 3.37 yield 555# 24hr CS 100% Excess followed by 180sx PP H cmt w/ 3#/sx salt + .4% CFR-3 + .5% Halad(R)-344 + 2#/sx Kol-Seal, 13.2ppg 1.66 yield 1462# 24hr CS 40% Excess.

DV tool @ 4550'. If cement comes to surface during first stage cement job we will drop the cancelation cone for the DV tool. Add second stage contingency cement in the event we do not circulate cement to surface during the first stage.

Contingency 2nd Stage - Cement w/ 390sx Econocement + 5% salt, 12.9ppg 1.85 yield 813# 24hr CS 10% Excess followed by 100sx PP cmt, 14.8ppg 1.33 yield 1789# 24hr CS 10# excess

d. Completion System - no cement

Description of Cement Additives: Calcium Chloride, Salt (Accelerator); CFR-3 (Dispersant); Bentonite (Light Weight Additive); Kol-Seal, Poly-E-Flake (Lost Circulation Additive); Halad(R)-344 (Low Fluid Loss Control)

The above cement volumes could be revised pending the caliper measurement.

4. See attached for Pressure Control Equipment update

5. Company Personnel:

Name	Title	Office Phone	Mobile Phone
Karina Yustiz	Drlg Engineer	(713)985-6331	(281)908-5090
Sebastian Millan	Drlg Eng Supervisor	(713)350-4950	(832)528-3268
Roger Allen	Drlg Superintendent	(713)215-7617	(281)682-3919
Oscar Quintero	Drlg Manager	(713)985-6343	(713)689-4946

PRESSURE CONTROL EQUIPMENT

Surface: 0 – 835' None.

Intermediate & 8-3/4" Production: 835' MD/TVD – 7698' MD / 7008' TVD Intermediate and Production hole will be drilled using a 13-5/8" 10M three ram BOP stack with **Variable DP Rams**, 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 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 12-1/4" Intermediate and 8-3/4" Production sections.
- b) The Surface and intermediate casings strings will be tested to 70% of its 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 12-1/4" intermediate or 8-3/4" production section takes more time than planned.
- e) Other accessory BOP equipment will include a Kelly cock, 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 to original APD
- g) BOP & Choke manifold as per approved APD

6 1/8" Production: 7698' MD / 7008' TVD - 12268' MD / 6970' TVD. Production hole will be drilled using a 13-5/8" 10M three ram BOP stack with **Variable DP Rams**, 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 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.
- b) The 7" production casing string will be tested to 3000 psi for 30 minutes. 7" casing will be tested to 80% burst from the 4-1/2" Liner Hanger upwards, after drilling the 6.125" lateral section and running the 4-1/2" Completion System (Packers & sleeves completion), before starting the hydraulic fracking
- c) As above
- d) As above
- e) As above
- f) As above
- g) As above

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 + 70% 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/Completion System)

- Internal: Displacement fluid + Max Frac treating pressure (not to exceed 70% 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/Completion System)

- 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/Completion System)

- 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.

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	OXY USA Inc
LEASE NO.:	NM62589
WELL NAME & NO.:	12H Federal 23
SURFACE HOLE FOOTAGE:	941' FNL & 490' FWL
BOTTOM HOLE FOOTAGE	350' FNL & 629' FWL, SEC. 23
LOCATION:	Section 26, T.22 S., R.31 E., NMPM
COUNTY:	Eddy County, New Mexico

I. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

☒ **Eddy County**

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,
(575) 361-2822

1. **Hydrogen Sulfide (H₂S) monitors shall be installed prior to drilling out the surface shoe. If H₂S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.

4. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.).

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. **DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE.** Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. **IF OPERATOR DOES NOT HAVE THE WELL SPECIFIC CEMENT DETAILS ONSITE PRIOR TO PUMPING THE CEMENT FOR EACH CASING STRING, THE WOC WILL BE 30 HOURS.** See individual casing strings for details regarding lead cement slurry requirements.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

R-111-P Potash

WIPP

Possibility of water and brine flows in the Salado and Castile.

Possibility of lost circulation in the Delaware and Bone Spring.

1. The 13-3/8 inch surface casing shall be set at approximately 835 feet (**in a competent bed below the Magenta Dolomite, which is a Member of the Rustler, and if salt is encountered, set casing at least 25 feet above the salt**) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after

completing the cement job.

- b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**
- c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
- d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Formation below the 13-3/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe and the mud weight for the bottom of the hole. Report results to BLM office.

- 2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing, which shall be set at approximately 4420 feet, is:

- ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to potash.**

Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

- 3. The minimum required fill of cement behind the 7 inch production casing is:

- a. First stage to DV tool:

- ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.

Operator has proposed a contingency DV tool at 4450'. If cement circulates to surface while pumping the first stage, operator is approved to run the DV tool cancellation plug and cancel the second stage of the proposed cement plan.

- b. Second stage above DV tool:

- ☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Excess calculates to 15% - Additional cement may be required.**

4. The minimum required fill of cement behind the 4-1/2 inch production liner is:
☒ Cement not required – Packer/Port system to be used.
5. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
6. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).
3. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M) psi.**
 - a. **Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.**
 - b. **If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.**
 - c. **Manufacturer representative shall install the test plug for the initial BOP test.**
 - d. **Operator shall perform the intermediate casing integrity test to 70% of the casing burst. This will test the multi-bowl seals.**

- e. **If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.**

5M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

- 4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.
 - b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer.**
 - c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
 - d. The results of the test shall be reported to the appropriate BLM office.
 - e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**
 - f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

E. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

F. WIPP Requirements

The proposed well is located over 330' but within a mile of the WIPP Land Withdrawal Area boundary. As a result, OXY USA Inc. is requested, but not required to submit daily drilling reports, logs and deviation survey information to the Bureau of Land Management and the Department of Energy per requirements of the Joint Powers Agreement until a total vertical depth of 7,000 feet is reached. These reports will have at a minimum the rate of penetration and a clearly marked section showing the deviation for each 500 foot interval. Operator may be required to do more frequent deviation surveys based on the daily information submitted and may be required to take other corrective measures. Information from this well will be included in the Quarterly Drilling Report. Information will also be provided to the New Mexico Oil Conservation Division after drilling activities have been completed. Upon completion of the well, the operator shall submit a complete directional survey. Any future entry into the well for purposes of completing additional drilling will require supplemental information.

OXY USA Inc. can email the required information to Mr. Melvin Balderrama at Melvin.Balderama@wipp.ws or Mr. J. Neatherlin at Jimmy.Neatherlin@wipp.ws fax to his attention at 575-234-6062.

CRW 112114