

Form 3160-3
(June 2015)FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☒ DRILL ☐ REENTER 1b. Type of Well: ☒ Oil Well ☒ Gas Well ☐ Other 1c. Type of Completion: ☐ Hydraulic Fracturing ☐ Single Zone ☒ Multiple Zone		5. Lease Serial No. NMNM016348 6. If Indian, Allottee or Tribe Name 7. If Unit or CA Agreement, Name and No. 8. Lease Name and Well No. ARMSTRONG 26/23 W0GB FED COM 4H 9. API Well No. 3001547148
2. Name of Operator MEWBOURNE OIL COMPANY 3a. Address PO Box 5270 Hobbs NM 88240 3b. Phone No. (include area code) (575)393-5905		10. Field and Pool, or Exploratory WELCH / PURPLE SAGE WOLFCAMP G 11. Sec., T. R. M. or Blk. and Survey or Area SEC 26 / T25S / R31E / NMP
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface SWNE / 2500 FNL / 1980 FEL / LAT 32.106686 / LONG -103.7465878 At proposed prod. zone NWNE / 330 FNL / 2310 FEL / LAT 32.1221388 / LONG -103.7475907		12. County or Parish EDDY 13. State NM
14. Distance in miles and direction from nearest town or post office* 25 miles 15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 330 feet 16. No of acres in lease 840 17. Spacing Unit dedicated to this well 240 18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 50 feet 19. Proposed Depth 11791 feet / 19079 feet 20. BLM/BIA Bond No. in file FED: NM1693		21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3341 feet 22. Approximate date work will start* 03/08/2019 23. Estimated duration 60 days
24. Attachments		

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

- | | |
|---|---|
| 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 requested by the BLM. |
|---|---|

25. Signature (Electronic Submission) Title Regulatory	Name (Printed/Typed) Bradley Bishop / Ph: (575)393-5905	Date 01/16/2019
Approved by (Signature) (Electronic Submission) Title Assistant Field Manager Lands & Minerals	Name (Printed/Typed) Cody Layton / Ph: (575)234-5959 Office CARLSBAD	Date 09/25/2019

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.

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.

Entered - KMS NMOCD

(Continued on page 2)

APPROVED WITH CONDITIONS

Approval Date: 09/25/2019

*(Instructions on page 2)

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 3001547148		² Pool Code 98220		³ Pool Name PURPLE SAGE WOLFCAMP GAS	
⁴ Property Code 328258		⁵ Property Name ARMSTRONG 26/23 W0GB FED COM			⁶ Well Number 4H
⁷ OGRID NO. 14744		⁸ Operator Name MEWBOURNE OIL COMPANY			⁹ Elevation 3341'

¹⁰ Surface Location

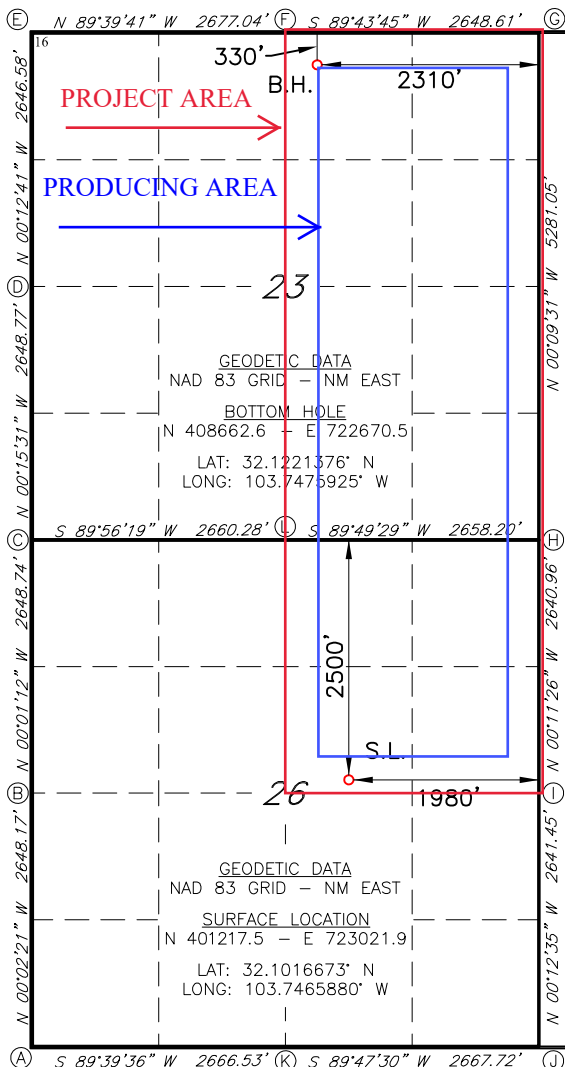
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet From the	East/West line	County
G	26	25S	31E		2500	NORTH	1980	EAST	EDDY

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	23	25S	31E		330	NORTH	2310	EAST	EDDY

¹² Dedicated Acres 480	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interest have been consolidated or a non-standard unit has been approved by the division.



CORNER DATA

NAD 83 GRID - NM EAST

A: FOUND BRASS CAP "1939"
N 398416.8 - E 719679.1

B: FOUND BRASS CAP "1939"
N 401064.4 - E 719677.2

C: CALCULATED CORNER
N 403712.6 - E 719676.3

D: FOUND BRASS CAP "1939"
N 406360.7 - E 719664.4

E: CALCULATED CORNER
N 409006.7 - E 719654.6

F: FOUND BRASS CAP "1939"
N 408990.9 - E 722331.0

G: FOUND 2" PIPE
N 409003.4 - E 724979.0

H: FOUND BRASS CAP "1939"
N 403723.6 - E 724993.6

I: FOUND BRASS CAP "1939"
N 401083.2 - E 725002.4

J: FOUND BRASS CAP "1939"
N 398442.3 - E 725012.1

K: FOUND BRASS CAP "1939"
N 398432.6 - E 722344.9

L: FOUND BRASS CAP "1939"
N 403715.4 - E 722336.0

¹⁷ OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Klay Kirkes 12-21-18
Signature Date

KLAY KIRKES
Printed Name

KKIRKES@MEWBOURNE.COM
E-mail Address

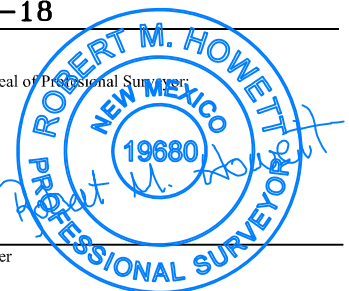
¹⁸ SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

12-05-18
Date of Survey

Signature and Seal of Professional Surveyor

19680
Certificate Number



Intent ☒ As Drilled ☐

API #								
Operator Name: MEWBOURNE OIL COMPANY			Property Name: ARMSTRONG 26/23 W0GB FED COM			Well Number 4H		

Kick Off Point (KOP)

UL G	Section 26	Township 25S	Range 31E	Lot	Feet 2500	From N/S N	Feet 2310	From E/W E	County EDDY
Latitude 32.1016681					Longitude -103.7476536				NAD 83

First Take Point (FTP)

UL G	Section 26	Township 25S	Range 31E	Lot	Feet 2311	From N/S N	Feet 2310	From E/W E	County EDDY
Latitude 32.1021876					Longitude -103.7476520				NAD 83

Last Take Point (LTP)

UL B	Section 23	Township 25S	Range 31E	Lot	Feet 330	From N/S N	Feet 2310	From E/W E	County EDDY
Latitude 32.1221388					Longitude -103.7475907				NAD 83

Is this well the defining well for the Horizontal Spacing Unit? ☒

Is this well an infill well? ☐

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #								
Operator Name:			Property Name:			Well Number		

KZ 06/29/2018

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1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit Original
to Appropriate
District Office

GAS CAPTURE PLAN

Date: 12-21-18

☒ Original

Operator & OGRID No.: Mewbourne Oil Company - 14744

☐ Amended - Reason for Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Armstrong 26/23 W0GB Fed Com #4H		G 26- 25S - 31E	2500 FNL & 1980' FEL	0	NA	ONLINE AFTER FRAC

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to Western and will be connected to Western low/high pressure gathering system located in EDDY County, New Mexico. It will require 3,400 ' of pipeline to connect the facility to low/high pressure gathering system. Mewbourne Oil Company provides (periodically) to Western a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Mewbourne Oil Company and Western have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at Western Processing Plant located in Sec. 36, Blk. 58 T1S, Culberson County, Texas. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on Western system at that time. Based on current information, it is Operator's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
 - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
 - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
 - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Mewbourne Oil Company
LEASE NO.:	NMNM016348
WELL NAME & NO.:	Armstrong 26/23 W0GB Fed Com 4H
SURFACE HOLE FOOTAGE:	2500'/N & 1980'/E
BOTTOM HOLE FOOTAGE:	330'/N & 2310'/E
LOCATION:	Section 26, T.25 S., R.31 E., NMPM
COUNTY:	Eddy County, New Mexico

COA

H2S	☐ Yes	☒ No	
Potash	☒ None	☐ Secretary	☐ R-111-P
Cave/Karst Potential	☐ Low	☒ Medium	☐ High
Variance	☐ None	☒ Flex Hose	☐ Other
Wellhead	☐ Conventional	☒ Multibowl	☐ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP
Other	☐ Fluid Filled	☐ Cement Squeeze	☐ Pilot Hole
Special Requirements	☐ Water Disposal	☒ COM	☐ Unit

A. HYDROGEN SULFIDE

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.

B. CASING

1. The 13-3/8 inch surface casing shall be set at approximately 1050 feet (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite and 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 will be a minimum of 8 hours or 500 pounds compressive strength, whichever is greater. (This is to

- include the lead cement)
- 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.
2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:
- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Additional cement maybe required. Excess calculated to 24%.**
- Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**
- ❖ In Medium Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
3. The minimum required fill of cement behind the **7** inch production casing is: Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.
- a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
 - Second stage above DV tool: Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.
4. The minimum required fill of cement behind the **4-1/2** inch production liner is:
- Cement should tie-back **100 feet** into the previous casing. Operator shall provide method of verification.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).
2. 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. 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.
- e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

GENERAL 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)

☒ Chaves and Roosevelt Counties
 Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.
 During office hours call (575) 627-0272.
 After office hours call (575)

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

☒ Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)
393-3612

1. 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.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. 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 are located, this does not include the dog house or stairway area.
3. 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.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. 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.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the

following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. 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.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. 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. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: 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.

3. 5M or higher 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. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - 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. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
 - 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.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, 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. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
 - b. 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.
 - c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water

basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

- d. 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.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. 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.
- g. 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.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. 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.

ZS 052819



U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Operator Certification Data Report

06/03/2020

Operator Certification

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

NAME: Bradley Bishop

Signed on: 01/16/2019

Title: Regulatory

Street Address: PO Box 5270

City: Hobbs

State: NM

Zip: 88260

Phone: (575)393-5905

Email address: bbishop@mewbourne.com

Field Representative

Representative Name:

Street Address:

City:

State:

Zip:

Phone:

Email address:



APD ID: 10400037517

Submission Date: 01/16/2019

Highlighted data
reflects the most
recent changes

Operator Name: MEWBOURNE OIL COMPANY

Well Name: ARMSTRONG 26/23 W0GB FED COM

Well Number: 4H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - General

APD ID: 10400037517

Tie to previous NOS?

Submission Date: 01/16/2019

BLM Office: CARLSBAD

User: Bradley Bishop

Title: Regulatory

Federal/Indian APD: FED

Is the first lease penetrated for production Federal or Indian? FED

Lease number: NMNM016348

Lease Acres: 840

Surface access agreement in place?

Allotted?

Reservation:

Agreement in place? NO

Federal or Indian agreement:

Agreement number:

Agreement name:

Keep application confidential? YES

Permitting Agent? NO

APD Operator: MEWBOURNE OIL COMPANY

Operator letter of designation:

Operator Info

Operator Organization Name: MEWBOURNE OIL COMPANY

Operator Address: PO Box 5270

Zip: 88240

Operator PO Box:

Operator City: Hobbs

State: NM

Operator Phone: (575)393-5905

Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? NO

Master Development Plan name:

Well in Master SUPO? NO

Master SUPO name:

Well in Master Drilling Plan? NO

Master Drilling Plan name:

Well Name: ARMSTRONG 26/23 W0GB FED COM

Well Number: 4H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: WELCH

Pool Name: PURPLE SAGE
WOLFCAMP GAS

Is the proposed well in an area containing other mineral resources? USEABLE WATER

Operator Name: MEWBOURNE OIL COMPANY

Well Name: ARMSTRONG 26/23 W0GB FED COM

Well Number: 4H

Is the proposed well in an area containing other mineral resources? USEABLE WATER

Is the proposed well in a Helium production area? N

Use Existing Well Pad? YES

New surface disturbance? Y

Type of Well Pad: MULTIPLE WELL

Multiple Well Pad Name:

Number: 2

ARMSTRONG 26/23 GB WELLS

Well Class: HORIZONTAL

Number of Legs:

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: APPRAISAL

Describe sub-type:

Distance to town: 25 Miles

Distance to nearest well: 50 FT

Distance to lease line: 330 FT

Reservoir well spacing assigned acres Measurement: 240 Acres

Well plat: Armstrong26_23W0GBFedCom4H_wellplat_20181221125550.pdf

Well work start Date: 03/08/2019

Duration: 60 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83

Vertical Datum: NAVD88

Survey number:

Reference Datum:

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this lease?
SHL Leg #1	2500	FNL	1980	FEL	25S	31E	26	Aliquot SWNE	32.106686	-103.7465878	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 016348	3341	0	0	
KOP Leg #1	2500	FNL	2310	FEL	25S	31E	26	Aliquot SWNE	32.1016681	-103.7476536	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 016348	-8013	11359	11354	
PPP Leg #1-1	2641	FNL	2310	FEL	25S	31E	23	Aliquot NWNE	32.1157862	-103.7476102	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMLC0 061862	-8463	16768	11804	

Operator Name: MEWBOURNE OIL COMPANY

Well Name: ARMSTRONG 26/23 W0GB FED COM

Well Number: 4H

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this lease?
PPP Leg #1-2	2311	FNL	2310	FEL	25S	31E	26	Aliquot SWNE	32.1021876	- 103.747652	EDD Y	NEW MEXICO	NEW MEXICO	F	NMNM 016348	- 8393	11799	11734	
EXIT Leg #1	330	FNL	2310	FEL	25S	31E	23	Aliquot NWNE	32.1221388	- 103.7475907	EDD Y	NEW MEXICO	NEW MEXICO	F	NMLC0 061862	- 8450	19079	11791	
BHL Leg #1	330	FNL	2310	FEL	25S	31E	23	Aliquot NWNE	32.1221388	- 103.7475907	EDD Y	NEW MEXICO	NEW MEXICO	F	NMLC0 061862	- 8450	19079	11791	



APD ID: 10400037517

Submission Date: 01/16/2019

Highlighted data
reflects the most
recent changes

Operator Name: MEWBOURNE OIL COMPANY

Well Name: ARMSTRONG 26/23 W0GB FED COM

Well Number: 4H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
366194	UNKNOWN	3341	27	27		NONE	N
366195	RUSTLER	2431	899	899	ANHYDRITE, DOLOMITE	USEABLE WATER	N
366196	TOP SALT	2041	1289	1289	SALT	NONE	N
366197	BASE OF SALT	-714	4044	4044	SALT	NONE	N
366201	LAMAR	-963	4293	4293	LIMESTONE	NATURAL GAS, OIL	N
366198	BELL CANYON	-1002	4332	4332	SANDSTONE	NATURAL GAS, OIL	N
366202	CHERRY CANYON	-2024	5354	5354	SANDSTONE	NATURAL GAS, OIL	N
366199	MANZANITA	-2156	5486	5486		NONE	N
366200	BRUSHY CANYON	-3507	6837	6837	SANDSTONE	NATURAL GAS, OIL	Y
366203	BONE SPRING	-4939	8269	8269	LIMESTONE, SHALE	NATURAL GAS, OIL	N
366204	BONE SPRING 1ST	-5980	9310	9310	SANDSTONE	NATURAL GAS, OIL	N
366205	BONE SPRING 2ND	-6598	9928	9928	SANDSTONE	NATURAL GAS, OIL	N
366207	BONE SPRING 3RD	-7864	11194	11194	SANDSTONE	NATURAL GAS, OIL	N
366208	WOLFCAMP	-8310	11640	11640	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Operator Name: MEWBOURNE OIL COMPANY

Well Name: ARMSTRONG 26/23 W0GB FED COM

Well Number: 4H

Pressure Rating (PSI): 5M

Rating Depth: 19079

Equipment: Annular, Pipe Ram, Blind Ram

Requesting Variance? YES

Variance request: A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. Anchors are not required by manufacturer. A multibowl wellhead is being used. See attached schematic.

Testing Procedure: BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested. Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

Choke Diagram Attachment:

Armstrong_26_23_W0GB_Fed_Com_4H_5M_BOPE_Choke_Diagram_20190115101846.pdf

Armstrong_26_23_W0GB_Fed_Com_4H_Flex_Line_Specs_20190115101847.pdf

BOP Diagram Attachment:

Armstrong_26_23_W0GB_Fed_Com_4H_5M_BOPE_Schematic_20190115101905.pdf

Armstrong_26_23_W0GB_Fed_Com_4H_Multi_Bowl_WH_20190115101906.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	1050	0	1050			1050	H-40	48	ST&C	1.6	3.6	DRY	10.7 ³	DRY	6.39
2	INTERMEDIATE	12.25	9.625	NEW	API	Y	0	4280	0	4280			4280	J-55	36	LT&C	1.13	1.96	DRY	2.88	DRY	3.58
3	PRODUCTION	8.75	7.0	NEW	API	N	0	12111	0	11831			12111	HCP-110	26	LT&C	1.33	1.7	DRY	2.2	DRY	2.64
4	LINER	6.125	4.5	NEW	API	N	11359	19079	11354	11791			7720	P-110	13.5	LT&C	1.34	1.56	DRY	4.05	DRY	3.24

Casing Attachments

Operator Name: MEWBOURNE OIL COMPANY

Well Name: ARMSTRONG 26/23 W0GB FED COM

Well Number: 4H

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Armstrong_26_23_W0GB_Fed_Com_4H_Csg_Assumptions_20190115085308.pdf

Casing ID: 2 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Armstrong_26_23_W0GB_Fed_Com_4H_Intermediate_Tapered_String_Diagram_20190115085852.xlsx

Casing Design Assumptions and Worksheet(s):

Armstrong_26_23_W0GB_Fed_Com_4H_Csg_Assumptions_20190115085930.pdf

Casing ID: 3 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Armstrong_26_23_W0GB_Fed_Com_4H_Csg_Assumptions_20190115090312.pdf

Operator Name: MEWBOURNE OIL COMPANY

Well Name: ARMSTRONG 26/23 W0GB FED COM

Well Number: 4H

Casing Attachments

Casing ID: 4 **String Type:** LINER

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Armstrong_26_23_W0GB_Fed_Com_4H_Csg_Assumptions_20190115090419.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	857	565	2.12	12.5	1198	100	Class C	Salt, Gel, Extender, LCM
SURFACE	Tail		857	1050	200	1.34	14.8	268	100	Class C	Retarder
INTERMEDIATE	Lead		0	3628	710	2.12	12.5	1505	25	Class C	Salt, Gel, Extender, LCM
INTERMEDIATE	Tail		3628	4280	200	1.34	14.8	268	25	Class C	Retarder
PRODUCTION	Lead	5485	4080	4807	455	2.12	12.5	965	25	Class C	Gel, Retarder, Defoamer, Extender
PRODUCTION	Tail		4807	5485	100	1.34	14.8	134	25	Class C	Retarder
PRODUCTION	Lead	5485	5485	9662	385	2.12	12.5	816	25	Class C	Gel, Retarder, Defoamer, Extender
PRODUCTION	Tail		9662	12111	400	1.18	15.6	472	25	Class H	Retarder, Fluid Loss, Defoamer
LINER	Lead		11359	19079	310	2.97	11.2	921	25	Class H	Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-Settling Agent

Operator Name: MEWBOURNE OIL COMPANY

Well Name: ARMSTRONG 26/23 W0GB FED COM

Well Number: 4H

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: Lost circulation material Sweeps Mud scavengers in surface hole

Describe the mud monitoring system utilized: Pason, PVT, visual monitoring

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
1050	4280	SALT SATURATED	10	10							
4280	1183 1	WATER-BASED MUD	8.6	10							
1179 1	1183 1	OIL-BASED MUD	10	12							Mud wieght up to 13.0 ppg may be required for shale control. The highest mud weight needed to balance formation is expected to be 12.0 ppg.
0	1050	SPUD MUD	8.6	8.8							

Operator Name: MEWBOURNE OIL COMPANY

Well Name: ARMSTRONG 26/23 W0GB FED COM

Well Number: 4H

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

GR/CNL will be run from KOP (11,359') to surface.

List of open and cased hole logs run in the well:

DS,GR,MWD,MUDLOG

Coring operation description for the well:

None

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 7383

Anticipated Surface Pressure: 4786.12

Anticipated Bottom Hole Temperature(F): 165

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geohazards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Armstrong_26_23_W0GB_Fed_Com_4H_H2S_Plan_20190115091311.doc

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Armstrong_26_23_W0GB_Fed_Com_4H_Dir_Plan_20190115091345.pdf

Armstrong_26_23_W0GB_Fed_Com_4H_Dir_Plot_20190115091346.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

Armstrong_26_23_W0GB_Fed_Com_4H_C101_20190115091400.pdf

Armstrong_26_23_W0GB_Fed_Com_4H_Drlg_Program_20190516102912.pdf

Other Variance attachment:

Mewbourne Oil Company, Armstrong 26/23 W0GB Fed Com #4H
Sec 26 & 23, T25S, R31E
SL: 2500' FNL & 1980' FEL
BHL: 330' FNL & 2310' FEL

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
	From	To								
17.5"	0'	1050'	13.375"	48	H40	STC	1.60	3.60	6.39	10.73
12.25"	0'	3452'	9.625"	36	J55	LTC	1.13	1.96	2.88	3.58
12.25"	3452'	4280'	9.625"	40	L80	LTC	1.39	2.58	21.95	27.66
8.75"	0'	12111'	7"	26	HCP110	LTC	1.33	1.70	2.20	2.64
6.125"	11359'	19079'	4.5"	13.5	P110	LTC	1.34	1.56	3.24	4.05
BLM Minimum Safety Factor							1.125	1	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Must have table for contingency casing

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Mewbourne Oil Company, Armstrong 26/23 W0GB Fed Com #4H
Sec 26 & 23, T25S, R31E
SL: 2500' FNL & 1980' FEL
BHL: 330' FNL & 2310' FEL

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Mewbourne Oil Company, Armstrong 26/23 W0GB Fed Com #4H
Sec 26 & 23, T25S, R31E
SL: 2500' FNL & 1980' FEL
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Mewbourne Oil Company, Armstrong 26/23 W0GB Fed Com #4H
Sec 26 & 23, T25S, R31E
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Mewbourne Oil Company

Eddy County, New Mexico NAD 83

Armstrong 26/23 W0GB Fed Com #4H

SL: 2500 FNL & 1980 FEL (Sec 26)

Sec 26, T25S, R31E

BHL: 330 FNL & 2310 FEL (Sec 23)

Plan: Design #1

Standard Planning Report

14 January, 2019

Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Armstrong 26/23 W0GB Fed Com #4H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3368.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	MD Reference:	WELL @ 3368.0usft (Original Well Elev)
Site:	Armstrong 26/23 W0GB Fed Com #4H	North Reference:	Grid
Well:	SL: 2500 FNL & 1980 FEL (Sec 26)	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 330 FNL & 2310 FEL (Sec 23)		
Design:	Design #1		

Project	Eddy County, New Mexico NAD 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		Armstrong 26/23 W0GB Fed Com #4H				
Site Position:		Northing:	401,218.00 usft	Latitude:	32.1016686	
From:	Map	Easting:	723,022.00 usft	Longitude:	-103.7465878	
Position Uncertainty:		0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.31 °

Well	SL: 2500 FNL & 1980 FEL (Sec 26)					
Well Position	+N/-S	0.0 usft	Northing:	401,218.00 usft	Latitude:	32.1016686
	+E/-W	0.0 usft	Easting:	723,022.00 usft	Longitude:	-103.7465878
Position Uncertainty		0.0 usft	Wellhead Elevation:	3,368.0 usft	Ground Level:	3,341.0 usft

Wellbore	BHL: 330 FNL & 2310 FEL (Sec 23)				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/14/2019	6.72	59.85	47,768

Design	Design #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	357.30

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,050.0	0.00	0.00	1,050.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,173.8	1.86	269.65	1,173.8	0.0	-2.0	1.50	1.50	0.00	269.65	
11,235.5	1.86	269.65	11,230.2	-2.0	-328.0	0.00	0.00	0.00	0.00	
11,359.3	0.00	0.00	11,354.0	-2.0	-330.0	1.50	-1.50	0.00	180.00	KOP: 2500 FNL & 2310 FEL
12,111.3	90.33	359.84	11,831.0	477.7	-331.4	12.01	12.01	0.00	-0.16	
19,078.7	90.33	359.84	11,791.0	7,445.0	-351.0	0.00	0.00	0.00	0.00	BHL: 330 FNL & 2310 FEL

Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Armstrong 26/23 W0GB Fed Com #4H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3368.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	MD Reference:	WELL @ 3368.0usft (Original Well Elev)
Site:	Armstrong 26/23 W0GB Fed Com #4H	North Reference:	Grid
Well:	SL: 2500 FNL & 1980 FEL (Sec 26)	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 330 FNL & 2310 FEL (Sec 23)		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
SL: 2500 FNL & 1980 FEL (Sec 26)									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,050.0	0.00	0.00	1,050.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.75	269.65	1,100.0	0.0	-0.3	0.0	1.50	1.50	0.00
1,173.8	1.86	269.65	1,173.8	0.0	-2.0	0.1	1.50	1.50	0.00
1,200.0	1.86	269.65	1,200.0	0.0	-2.9	0.1	0.00	0.00	0.00
1,300.0	1.86	269.65	1,299.9	0.0	-6.1	0.3	0.00	0.00	0.00
1,400.0	1.86	269.65	1,399.9	-0.1	-9.3	0.4	0.00	0.00	0.00
1,500.0	1.86	269.65	1,499.8	-0.1	-12.6	0.5	0.00	0.00	0.00
1,600.0	1.86	269.65	1,599.8	-0.1	-15.8	0.6	0.00	0.00	0.00
1,700.0	1.86	269.65	1,699.7	-0.1	-19.1	0.8	0.00	0.00	0.00
1,800.0	1.86	269.65	1,799.6	-0.1	-22.3	0.9	0.00	0.00	0.00
1,900.0	1.86	269.65	1,899.6	-0.2	-25.5	1.0	0.00	0.00	0.00
2,000.0	1.86	269.65	1,999.5	-0.2	-28.8	1.2	0.00	0.00	0.00
2,100.0	1.86	269.65	2,099.5	-0.2	-32.0	1.3	0.00	0.00	0.00
2,200.0	1.86	269.65	2,199.4	-0.2	-35.3	1.4	0.00	0.00	0.00
2,300.0	1.86	269.65	2,299.4	-0.2	-38.5	1.6	0.00	0.00	0.00
2,400.0	1.86	269.65	2,399.3	-0.3	-41.7	1.7	0.00	0.00	0.00
2,500.0	1.86	269.65	2,499.3	-0.3	-45.0	1.8	0.00	0.00	0.00
2,600.0	1.86	269.65	2,599.2	-0.3	-48.2	2.0	0.00	0.00	0.00
2,700.0	1.86	269.65	2,699.2	-0.3	-51.5	2.1	0.00	0.00	0.00
2,800.0	1.86	269.65	2,799.1	-0.3	-54.7	2.2	0.00	0.00	0.00
2,900.0	1.86	269.65	2,899.1	-0.4	-57.9	2.4	0.00	0.00	0.00
3,000.0	1.86	269.65	2,999.0	-0.4	-61.2	2.5	0.00	0.00	0.00
3,100.0	1.86	269.65	3,099.0	-0.4	-64.4	2.6	0.00	0.00	0.00
3,200.0	1.86	269.65	3,198.9	-0.4	-67.7	2.8	0.00	0.00	0.00
3,300.0	1.86	269.65	3,298.9	-0.4	-70.9	2.9	0.00	0.00	0.00
3,400.0	1.86	269.65	3,398.8	-0.4	-74.1	3.0	0.00	0.00	0.00
3,500.0	1.86	269.65	3,498.8	-0.5	-77.4	3.2	0.00	0.00	0.00
3,600.0	1.86	269.65	3,598.7	-0.5	-80.6	3.3	0.00	0.00	0.00
3,700.0	1.86	269.65	3,698.7	-0.5	-83.9	3.4	0.00	0.00	0.00
3,800.0	1.86	269.65	3,798.6	-0.5	-87.1	3.6	0.00	0.00	0.00
3,900.0	1.86	269.65	3,898.5	-0.5	-90.3	3.7	0.00	0.00	0.00
4,000.0	1.86	269.65	3,998.5	-0.6	-93.6	3.8	0.00	0.00	0.00
4,100.0	1.86	269.65	4,098.4	-0.6	-96.8	4.0	0.00	0.00	0.00
4,200.0	1.86	269.65	4,198.4	-0.6	-100.1	4.1	0.00	0.00	0.00
4,300.0	1.86	269.65	4,298.3	-0.6	-103.3	4.2	0.00	0.00	0.00
4,400.0	1.86	269.65	4,398.3	-0.6	-106.5	4.4	0.00	0.00	0.00
4,500.0	1.86	269.65	4,498.2	-0.7	-109.8	4.5	0.00	0.00	0.00
4,600.0	1.86	269.65	4,598.2	-0.7	-113.0	4.6	0.00	0.00	0.00
4,700.0	1.86	269.65	4,698.1	-0.7	-116.3	4.8	0.00	0.00	0.00
4,800.0	1.86	269.65	4,798.1	-0.7	-119.5	4.9	0.00	0.00	0.00
4,900.0	1.86	269.65	4,898.0	-0.7	-122.7	5.0	0.00	0.00	0.00
5,000.0	1.86	269.65	4,998.0	-0.8	-126.0	5.2	0.00	0.00	0.00

Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Armstrong 26/23 W0GB Fed Com #4H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3368.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	MD Reference:	WELL @ 3368.0usft (Original Well Elev)
Site:	Armstrong 26/23 W0GB Fed Com #4H	North Reference:	Grid
Well:	SL: 2500 FNL & 1980 FEL (Sec 26)	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 330 FNL & 2310 FEL (Sec 23)		
Design:	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,100.0	1.86	269.65	5,097.9	-0.8	-129.2	5.3	0.00	0.00	0.00	
5,200.0	1.86	269.65	5,197.9	-0.8	-132.5	5.4	0.00	0.00	0.00	
5,300.0	1.86	269.65	5,297.8	-0.8	-135.7	5.6	0.00	0.00	0.00	
5,400.0	1.86	269.65	5,397.8	-0.8	-138.9	5.7	0.00	0.00	0.00	
5,500.0	1.86	269.65	5,497.7	-0.9	-142.2	5.8	0.00	0.00	0.00	
5,600.0	1.86	269.65	5,597.7	-0.9	-145.4	6.0	0.00	0.00	0.00	
5,700.0	1.86	269.65	5,697.6	-0.9	-148.6	6.1	0.00	0.00	0.00	
5,800.0	1.86	269.65	5,797.5	-0.9	-151.9	6.2	0.00	0.00	0.00	
5,900.0	1.86	269.65	5,897.5	-0.9	-155.1	6.4	0.00	0.00	0.00	
6,000.0	1.86	269.65	5,997.4	-1.0	-158.4	6.5	0.00	0.00	0.00	
6,100.0	1.86	269.65	6,097.4	-1.0	-161.6	6.6	0.00	0.00	0.00	
6,200.0	1.86	269.65	6,197.3	-1.0	-164.8	6.8	0.00	0.00	0.00	
6,300.0	1.86	269.65	6,297.3	-1.0	-168.1	6.9	0.00	0.00	0.00	
6,400.0	1.86	269.65	6,397.2	-1.0	-171.3	7.0	0.00	0.00	0.00	
6,500.0	1.86	269.65	6,497.2	-1.1	-174.6	7.2	0.00	0.00	0.00	
6,600.0	1.86	269.65	6,597.1	-1.1	-177.8	7.3	0.00	0.00	0.00	
6,700.0	1.86	269.65	6,697.1	-1.1	-181.0	7.4	0.00	0.00	0.00	
6,800.0	1.86	269.65	6,797.0	-1.1	-184.3	7.6	0.00	0.00	0.00	
6,900.0	1.86	269.65	6,897.0	-1.1	-187.5	7.7	0.00	0.00	0.00	
7,000.0	1.86	269.65	6,996.9	-1.2	-190.8	7.8	0.00	0.00	0.00	
7,100.0	1.86	269.65	7,096.9	-1.2	-194.0	8.0	0.00	0.00	0.00	
7,200.0	1.86	269.65	7,196.8	-1.2	-197.2	8.1	0.00	0.00	0.00	
7,300.0	1.86	269.65	7,296.8	-1.2	-200.5	8.2	0.00	0.00	0.00	
7,400.0	1.86	269.65	7,396.7	-1.2	-203.7	8.4	0.00	0.00	0.00	
7,500.0	1.86	269.65	7,496.7	-1.3	-207.0	8.5	0.00	0.00	0.00	
7,600.0	1.86	269.65	7,596.6	-1.3	-210.2	8.6	0.00	0.00	0.00	
7,700.0	1.86	269.65	7,696.6	-1.3	-213.4	8.8	0.00	0.00	0.00	
7,800.0	1.86	269.65	7,796.5	-1.3	-216.7	8.9	0.00	0.00	0.00	
7,900.0	1.86	269.65	7,896.4	-1.3	-219.9	9.0	0.00	0.00	0.00	
8,000.0	1.86	269.65	7,996.4	-1.4	-223.2	9.2	0.00	0.00	0.00	
8,100.0	1.86	269.65	8,096.3	-1.4	-226.4	9.3	0.00	0.00	0.00	
8,200.0	1.86	269.65	8,196.3	-1.4	-229.6	9.4	0.00	0.00	0.00	
8,300.0	1.86	269.65	8,296.2	-1.4	-232.9	9.6	0.00	0.00	0.00	
8,400.0	1.86	269.65	8,396.2	-1.4	-236.1	9.7	0.00	0.00	0.00	
8,500.0	1.86	269.65	8,496.1	-1.5	-239.4	9.8	0.00	0.00	0.00	
8,600.0	1.86	269.65	8,596.1	-1.5	-242.6	10.0	0.00	0.00	0.00	
8,700.0	1.86	269.65	8,696.0	-1.5	-245.8	10.1	0.00	0.00	0.00	
8,800.0	1.86	269.65	8,796.0	-1.5	-249.1	10.2	0.00	0.00	0.00	
8,900.0	1.86	269.65	8,895.9	-1.5	-252.3	10.4	0.00	0.00	0.00	
9,000.0	1.86	269.65	8,995.9	-1.5	-255.6	10.5	0.00	0.00	0.00	
9,100.0	1.86	269.65	9,095.8	-1.6	-258.8	10.6	0.00	0.00	0.00	
9,200.0	1.86	269.65	9,195.8	-1.6	-262.0	10.8	0.00	0.00	0.00	
9,300.0	1.86	269.65	9,295.7	-1.6	-265.3	10.9	0.00	0.00	0.00	
9,400.0	1.86	269.65	9,395.7	-1.6	-268.5	11.0	0.00	0.00	0.00	
9,500.0	1.86	269.65	9,495.6	-1.6	-271.8	11.2	0.00	0.00	0.00	
9,600.0	1.86	269.65	9,595.6	-1.7	-275.0	11.3	0.00	0.00	0.00	
9,700.0	1.86	269.65	9,695.5	-1.7	-278.2	11.4	0.00	0.00	0.00	
9,800.0	1.86	269.65	9,795.4	-1.7	-281.5	11.6	0.00	0.00	0.00	
9,900.0	1.86	269.65	9,895.4	-1.7	-284.7	11.7	0.00	0.00	0.00	
10,000.0	1.86	269.65	9,995.3	-1.7	-288.0	11.8	0.00	0.00	0.00	
10,100.0	1.86	269.65	10,095.3	-1.8	-291.2	12.0	0.00	0.00	0.00	
10,200.0	1.86	269.65	10,195.2	-1.8	-294.4	12.1	0.00	0.00	0.00	
10,300.0	1.86	269.65	10,295.2	-1.8	-297.7	12.2	0.00	0.00	0.00	
10,400.0	1.86	269.65	10,395.1	-1.8	-300.9	12.3	0.00	0.00	0.00	

Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Armstrong 26/23 W0GB Fed Com #4H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3368.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	MD Reference:	WELL @ 3368.0usft (Original Well Elev)
Site:	Armstrong 26/23 W0GB Fed Com #4H	North Reference:	Grid
Well:	SL: 2500 FNL & 1980 FEL (Sec 26)	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 330 FNL & 2310 FEL (Sec 23)		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,500.0	1.86	269.65	10,495.1	-1.8	-304.2	12.5	0.00	0.00	0.00
10,600.0	1.86	269.65	10,595.0	-1.9	-307.4	12.6	0.00	0.00	0.00
10,700.0	1.86	269.65	10,695.0	-1.9	-310.6	12.7	0.00	0.00	0.00
10,800.0	1.86	269.65	10,794.9	-1.9	-313.9	12.9	0.00	0.00	0.00
10,900.0	1.86	269.65	10,894.9	-1.9	-317.1	13.0	0.00	0.00	0.00
11,000.0	1.86	269.65	10,994.8	-1.9	-320.4	13.1	0.00	0.00	0.00
11,100.0	1.86	269.65	11,094.8	-2.0	-323.6	13.3	0.00	0.00	0.00
11,200.0	1.86	269.65	11,194.7	-2.0	-326.8	13.4	0.00	0.00	0.00
11,235.5	1.86	269.65	11,230.2	-2.0	-328.0	13.5	0.00	0.00	0.00
11,300.0	0.89	269.65	11,294.7	-2.0	-329.5	13.5	1.50	-1.50	0.00
11,359.3	0.00	0.00	11,354.0	-2.0	-330.0	13.5	1.50	-1.50	0.00
KOP: 2500 FNL & 2310 FEL (Sec 26)									
11,400.0	4.89	359.84	11,394.6	-0.3	-330.0	15.3	12.01	12.01	0.00
11,500.0	16.90	359.84	11,492.6	18.6	-330.1	34.1	12.01	12.01	0.00
11,600.0	28.91	359.84	11,584.6	57.4	-330.2	72.9	12.01	12.01	0.00
11,700.0	40.92	359.84	11,666.4	114.6	-330.3	130.0	12.01	12.01	0.00
11,799.4	52.86	359.84	11,734.2	187.0	-330.5	202.4	12.01	12.01	0.00
FTP: 2311 FNL & 2310 FEL (Sec 26)									
11,800.0	52.93	359.84	11,734.6	187.5	-330.5	202.8	12.01	12.01	0.00
11,900.0	64.94	359.84	11,786.1	273.0	-330.8	288.3	12.01	12.01	0.00
12,000.0	76.95	359.84	11,818.7	367.3	-331.0	382.5	12.01	12.01	0.00
12,100.0	88.97	359.84	11,830.9	466.4	-331.3	481.5	12.01	12.01	0.00
12,111.3	90.33	359.84	11,831.0	477.7	-331.4	492.8	12.01	12.01	0.00
12,200.0	90.33	359.84	11,830.5	566.4	-331.6	581.4	0.00	0.00	0.00
12,300.0	90.33	359.84	11,829.9	666.4	-331.9	681.3	0.00	0.00	0.00
12,400.0	90.33	359.84	11,829.3	766.4	-332.2	781.2	0.00	0.00	0.00
12,500.0	90.33	359.84	11,828.8	866.4	-332.4	881.1	0.00	0.00	0.00
12,600.0	90.33	359.84	11,828.2	966.4	-332.7	981.0	0.00	0.00	0.00
12,700.0	90.33	359.84	11,827.6	1,066.4	-333.0	1,080.9	0.00	0.00	0.00
12,800.0	90.33	359.84	11,827.0	1,166.4	-333.3	1,180.8	0.00	0.00	0.00
12,900.0	90.33	359.84	11,826.5	1,266.4	-333.6	1,280.7	0.00	0.00	0.00
13,000.0	90.33	359.84	11,825.9	1,366.4	-333.9	1,380.6	0.00	0.00	0.00
13,100.0	90.33	359.84	11,825.3	1,466.4	-334.1	1,480.5	0.00	0.00	0.00
13,200.0	90.33	359.84	11,824.7	1,566.4	-334.4	1,580.4	0.00	0.00	0.00
13,300.0	90.33	359.84	11,824.2	1,666.4	-334.7	1,680.3	0.00	0.00	0.00
13,400.0	90.33	359.84	11,823.6	1,766.4	-335.0	1,780.2	0.00	0.00	0.00
13,500.0	90.33	359.84	11,823.0	1,866.4	-335.3	1,880.1	0.00	0.00	0.00
13,600.0	90.33	359.84	11,822.5	1,966.4	-335.6	1,980.0	0.00	0.00	0.00
13,700.0	90.33	359.84	11,821.9	2,066.4	-335.8	2,079.9	0.00	0.00	0.00
13,800.0	90.33	359.84	11,821.3	2,166.4	-336.1	2,179.8	0.00	0.00	0.00
13,900.0	90.33	359.84	11,820.7	2,266.4	-336.4	2,279.7	0.00	0.00	0.00
14,000.0	90.33	359.84	11,820.2	2,366.4	-336.7	2,379.6	0.00	0.00	0.00
14,100.0	90.33	359.84	11,819.6	2,466.4	-337.0	2,479.5	0.00	0.00	0.00
14,200.0	90.33	359.84	11,819.0	2,566.4	-337.2	2,579.4	0.00	0.00	0.00
14,300.0	90.33	359.84	11,818.4	2,666.4	-337.5	2,679.3	0.00	0.00	0.00
14,400.0	90.33	359.84	11,817.9	2,766.4	-337.8	2,779.2	0.00	0.00	0.00
14,500.0	90.33	359.84	11,817.3	2,866.3	-338.1	2,879.1	0.00	0.00	0.00
14,600.0	90.33	359.84	11,816.7	2,966.3	-338.4	2,979.0	0.00	0.00	0.00
14,700.0	90.33	359.84	11,816.1	3,066.3	-338.7	3,078.9	0.00	0.00	0.00
14,800.0	90.33	359.84	11,815.6	3,166.3	-338.9	3,178.8	0.00	0.00	0.00
14,900.0	90.33	359.84	11,815.0	3,266.3	-339.2	3,278.7	0.00	0.00	0.00
15,000.0	90.33	359.84	11,814.4	3,366.3	-339.5	3,378.6	0.00	0.00	0.00
15,100.0	90.33	359.84	11,813.8	3,466.3	-339.8	3,478.5	0.00	0.00	0.00
15,200.0	90.33	359.84	11,813.3	3,566.3	-340.1	3,578.4	0.00	0.00	0.00

Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Armstrong 26/23 W0GB Fed Com #4H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3368.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	MD Reference:	WELL @ 3368.0usft (Original Well Elev)
Site:	Armstrong 26/23 W0GB Fed Com #4H	North Reference:	Grid
Well:	SL: 2500 FNL & 1980 FEL (Sec 26)	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 330 FNL & 2310 FEL (Sec 23)		
Design:	Design #1		

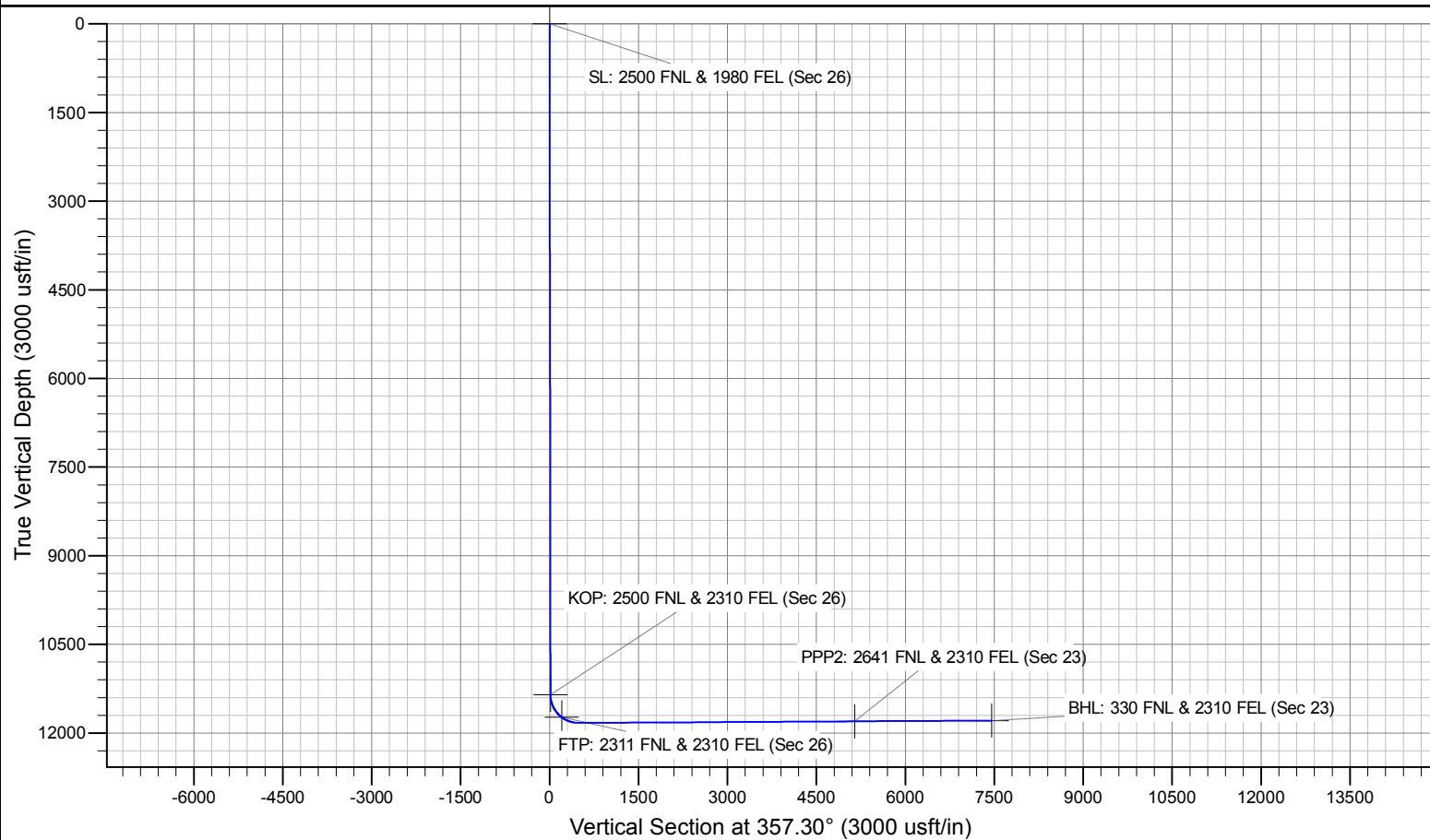
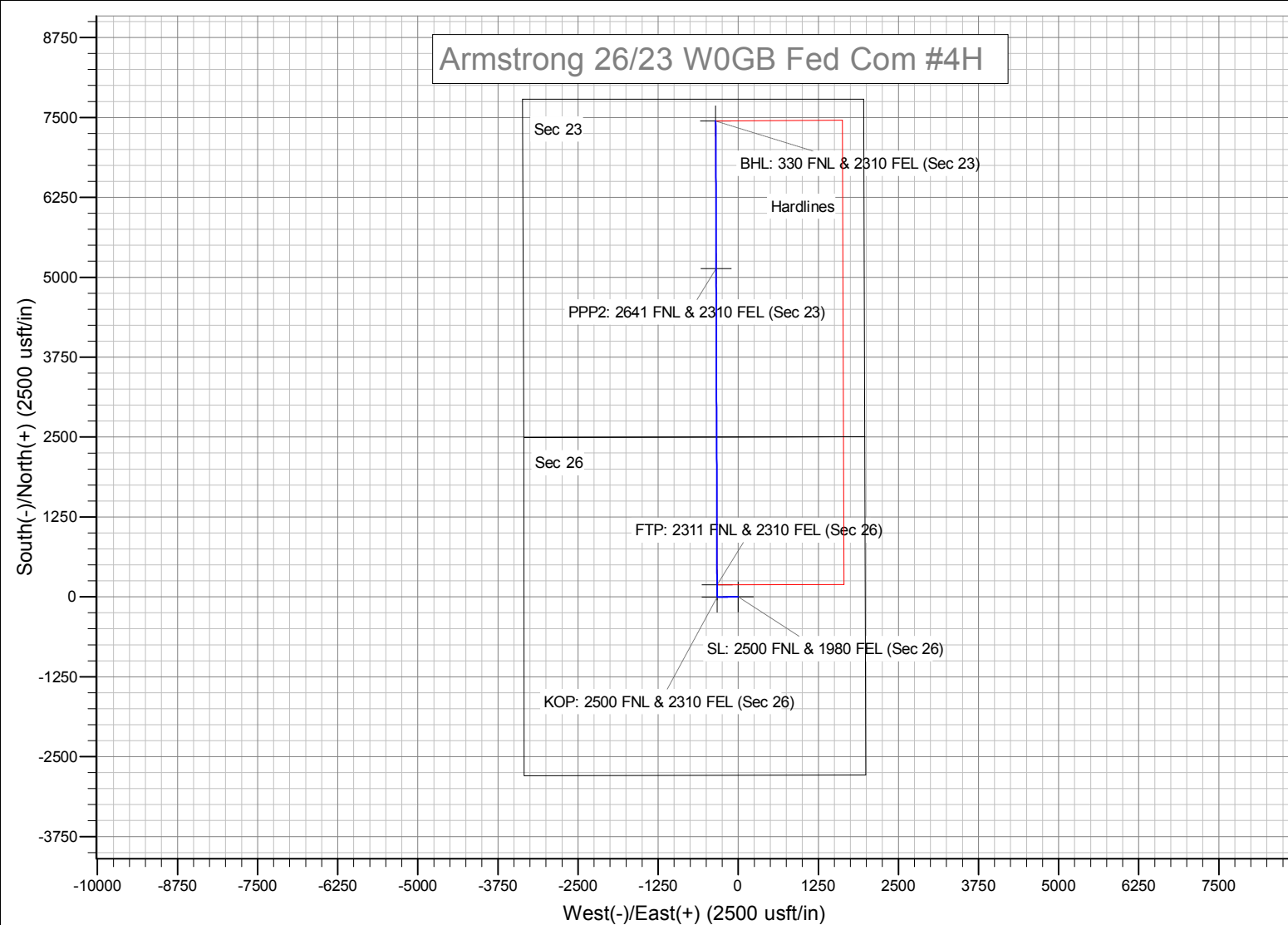
Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,300.0	90.33	359.84	11,812.7	3,666.3	-340.3	3,678.3	0.00	0.00	0.00
15,400.0	90.33	359.84	11,812.1	3,766.3	-340.6	3,778.2	0.00	0.00	0.00
15,500.0	90.33	359.84	11,811.5	3,866.3	-340.9	3,878.1	0.00	0.00	0.00
15,600.0	90.33	359.84	11,811.0	3,966.3	-341.2	3,978.0	0.00	0.00	0.00
15,700.0	90.33	359.84	11,810.4	4,066.3	-341.5	4,077.9	0.00	0.00	0.00
15,800.0	90.33	359.84	11,809.8	4,166.3	-341.8	4,177.8	0.00	0.00	0.00
15,900.0	90.33	359.84	11,809.2	4,266.3	-342.0	4,277.7	0.00	0.00	0.00
16,000.0	90.33	359.84	11,808.7	4,366.3	-342.3	4,377.6	0.00	0.00	0.00
16,100.0	90.33	359.84	11,808.1	4,466.3	-342.6	4,477.5	0.00	0.00	0.00
16,200.0	90.33	359.84	11,807.5	4,566.3	-342.9	4,577.4	0.00	0.00	0.00
16,300.0	90.33	359.84	11,807.0	4,666.3	-343.2	4,677.3	0.00	0.00	0.00
16,400.0	90.33	359.84	11,806.4	4,766.3	-343.4	4,777.2	0.00	0.00	0.00
16,500.0	90.33	359.84	11,805.8	4,866.3	-343.7	4,877.1	0.00	0.00	0.00
16,600.0	90.33	359.84	11,805.2	4,966.3	-344.0	4,977.0	0.00	0.00	0.00
16,700.0	90.33	359.84	11,804.7	5,066.3	-344.3	5,076.9	0.00	0.00	0.00
16,767.7	90.33	359.84	11,804.3	5,134.0	-344.5	5,144.5	0.00	0.00	0.00
PPP2: 2641 FNL & 2310 FEL (Sec 23)									
16,800.0	90.33	359.84	11,804.1	5,166.3	-344.6	5,176.8	0.00	0.00	0.00
16,900.0	90.33	359.84	11,803.5	5,266.3	-344.9	5,276.7	0.00	0.00	0.00
17,000.0	90.33	359.84	11,802.9	5,366.3	-345.1	5,376.6	0.00	0.00	0.00
17,100.0	90.33	359.84	11,802.4	5,466.3	-345.4	5,476.5	0.00	0.00	0.00
17,200.0	90.33	359.84	11,801.8	5,566.3	-345.7	5,576.4	0.00	0.00	0.00
17,300.0	90.33	359.84	11,801.2	5,666.3	-346.0	5,676.3	0.00	0.00	0.00
17,400.0	90.33	359.84	11,800.6	5,766.3	-346.3	5,776.2	0.00	0.00	0.00
17,500.0	90.33	359.84	11,800.1	5,866.3	-346.5	5,876.1	0.00	0.00	0.00
17,600.0	90.33	359.84	11,799.5	5,966.3	-346.8	5,976.0	0.00	0.00	0.00
17,700.0	90.33	359.84	11,798.9	6,066.3	-347.1	6,075.9	0.00	0.00	0.00
17,800.0	90.33	359.84	11,798.3	6,166.3	-347.4	6,175.8	0.00	0.00	0.00
17,900.0	90.33	359.84	11,797.8	6,266.3	-347.7	6,275.7	0.00	0.00	0.00
18,000.0	90.33	359.84	11,797.2	6,366.3	-348.0	6,375.6	0.00	0.00	0.00
18,100.0	90.33	359.84	11,796.6	6,466.3	-348.2	6,475.5	0.00	0.00	0.00
18,200.0	90.33	359.84	11,796.0	6,566.3	-348.5	6,575.4	0.00	0.00	0.00
18,300.0	90.33	359.84	11,795.5	6,666.3	-348.8	6,675.3	0.00	0.00	0.00
18,400.0	90.33	359.84	11,794.9	6,766.3	-349.1	6,775.2	0.00	0.00	0.00
18,500.0	90.33	359.84	11,794.3	6,866.3	-349.4	6,875.1	0.00	0.00	0.00
18,600.0	90.33	359.84	11,793.7	6,966.3	-349.6	6,975.0	0.00	0.00	0.00
18,700.0	90.33	359.84	11,793.2	7,066.3	-349.9	7,074.9	0.00	0.00	0.00
18,800.0	90.33	359.84	11,792.6	7,166.3	-350.2	7,174.8	0.00	0.00	0.00
18,900.0	90.33	359.84	11,792.0	7,266.3	-350.5	7,274.7	0.00	0.00	0.00
19,000.0	90.33	359.84	11,791.5	7,366.3	-350.8	7,374.6	0.00	0.00	0.00
19,078.7	90.33	359.84	11,791.0	7,445.0	-351.0	7,453.3	0.00	0.00	0.00
BHL: 330 FNL & 2310 FEL (Sec 23)									

Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Armstrong 26/23 W0GB Fed Com #4H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3368.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	MD Reference:	WELL @ 3368.0usft (Original Well Elev)
Site:	Armstrong 26/23 W0GB Fed Com #4H	North Reference:	Grid
Well:	SL: 2500 FNL & 1980 FEL (Sec 26)	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 330 FNL & 2310 FEL (Sec 23)		
Design:	Design #1		

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SL: 2500 FNL & 1980 FE - plan hits target center - Point	0.00	0.00	0.0	0.0	0.0	401,218.00	723,022.00	32.1016686	-103.7465878
KOP: 2500 FNL & 2310 - plan hits target center - Point	0.00	0.00	11,354.0	-2.0	-330.0	401,216.00	722,692.00	32.1016681	-103.7476536
FTP: 2311 FNL & 2310 F - plan hits target center - Point	0.00	0.00	11,734.2	187.0	-330.5	401,405.00	722,691.46	32.1021876	-103.7476520
BHL: 330 FNL & 2310 FI - plan hits target center - Point	0.00	0.00	11,791.0	7,445.0	-351.0	408,663.00	722,671.00	32.1221388	-103.7475907
PPP2: 2641 FNL & 2310 - plan hits target center - Point	0.00	0.00	11,804.3	5,134.0	-344.5	406,352.00	722,677.51	32.1157862	-103.7476102

Armstrong 26/23 W0GB Fed Com #4H



Mewbourne Oil Company, Armstrong 26/23 W0GB Fed Com #4H
Sec 26 & 23, T25S, R31E
SL: 2500' FNL & 1980' FEL
BHL: 330' FNL & 2310' FEL

1. Geologic Formations

TVD of target	11,831'	Pilot hole depth	NA
MD at TD:	19,079'	Deepest expected fresh water:	315'

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Fill	Surface		
Rustler	899		
Top of Salt	1289		
Base of Salt	4044		
Delaware (Lamar)	4293		
Bell Canyon	4332		
Cherry Canyon	5354		
Manzanita Marker	5486		
Brushy Canyon	6837		
Bone Spring	8269	Oil/Gas	
1 st Bone Spring Sand	9310		
2 nd Bone Spring Sand	9928		
3 rd Bone Spring Sand	11194		
Abo			
Wolfcamp	11640	Target Zone	
Devonian			
Fusselman			
Ellenburger			
Granite Wash			

*H2S, water flows, loss of circulation, abnormal pressures, etc.

Mewbourne Oil Company, Armstrong 26/23 W0GB Fed Com #4H
Sec 26 & 23, T25S, R31E
SL: 2500' FNL & 1980' FEL
BHL: 330' FNL & 2310' FEL

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
	From	To								
17.5"	0'	1050'	13.375"	48	H40	STC	1.60	3.60	6.39	10.73
12.25"	0'	3452'	9.625"	36	J55	LTC	1.13	1.96	2.88	3.58
12.25"	3452'	4280'	9.625"	40	L80	LTC	1.39	2.58	21.95	27.66
8.75"	0'	12111'	7"	26	HCP110	LTC	1.33	1.70	2.20	2.64
6.125"	11359'	19079'	4.5"	13.5	P110	LTC	1.34	1.56	3.24	4.05
BLM Minimum Safety Factor							1.125	1	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Must have table for contingency casing

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Mewbourne Oil Company, Armstrong 26/23 W0GB Fed Com #4H
Sec 26 & 23, T25S, R31E
SL: 2500' FNL & 1980' FEL
BHL: 330' FNL & 2310' FEL

3. Cementing Program

Casing	# Sks	Wt. lb/gal	Yld ft3/sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	565	12.5	2.12	11	10	Lead: Class C + Salt + Gel + Extender + LCM
	200	14.8	1.34	6.3	8	Tail: Class C + Retarder
Inter.	710	12.5	2.12	11	10	Lead: Class C + Salt + Gel + Extender + LCM
	200	14.8	1.34	6.3	8	Tail: Class C + Retarder
Prod. Stg 1	385	12.5	2.12	11	9	Lead: Class C + Gel + Retarder + Defoamer + Extender
	400	15.6	1.18	5.2	10	Tail: Class H + Retarder + Fluid Loss + Defoamer
ECP/DV Tool @ 5485'						
Prod. Stg 2	455	12.5	2.12	11	10	Lead: Class C + Salt + Gel + Extender + LCM
	100	14.8	1.34	6.3	8	Tail: Class C + Retarder
Liner	310	11.2	2.97	18	16	Class C + Salt + Gel + Fluid Loss + Retarder + Dispersant + Defoamer + Anti-Settling Agent

A copy of cement test will be available on location at time of cement job providing pump times & compressive strengths.

Casing String	TOC	% Excess
Surface	0'	100%
Intermediate	0'	25%
Production	4080'	25%
Liner	11359'	25%

Mewbourne Oil Company, Armstrong 26/23 W0GB Fed Com #4H
Sec 26 & 23, T25S, R31E
SL: 2500' FNL & 1980' FEL
BHL: 330' FNL & 2310' FEL

4. Pressure Control Equipment

BOP installed and tested before drilling which hole?	Size?	System Rated WP	Type	✓	Tested to:
12-1/4"	13-5/8"	5M	Annular	X	2,500#
			Blind Ram	X	5,000#
			Pipe Ram	X	
			Double Ram		
			Other*		

*Specify if additional ram is utilized.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

X	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.	
Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.	
	N	Are anchors required by manufacturer?
Y	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.	
	Provide description here: See attached schematic.	

Mewbourne Oil Company, Armstrong 26/23 W0GB Fed Com #4H
Sec 26 & 23, T25S, R31E
SL: 2500' FNL & 1980' FEL
BHL: 330' FNL & 2310' FEL

5. Mud Program

TVD		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	1050	FW Gel	8.6-8.8	28-34	N/C
1050	4280	Saturated Brine	10.0	28-34	N/C
4280	11831	Cut Brine	8.6-9.5	28-34	N/C
11354	11791	OBM	10.0-13.0	30-40	<10cc

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	Pason/PVT/Visual Monitoring
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6. Logging and Testing Procedures

Logging, Coring and Testing.	
X	Will run GR/CNL from KOP (11,359') to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No Logs are planned based on well control or offset log information.
	Drill stem test? If yes, explain
	Coring? If yes, explain

Additional logs planned		Interval
X	Gamma Ray	11,359' (KOP) to TD
	Density	
	CBL	
	Mud log	
	PEX	

Mewbourne Oil Company, Armstrong 26/23 W0GB Fed Com #4H
Sec 26 & 23, T25S, R31E
SL: 2500' FNL & 1980' FEL
BHL: 330' FNL & 2310' FEL

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	7383 psi
Abnormal Temperature	No

Mitigation measure for abnormal conditions. Describe. **Lost circulation material/sweeps/mud scavengers in surface hole. Weighted mud for possible over-pressure in Wolfcamp formation.**

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
	H2S is present
X	H2S Plan attached

8. Other facets of operation

Is this a walking operation? If yes, describe.

Will be pre-setting casing? If yes, describe.

Attachments

___ Directional Plan

___ Other, describe