

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: <input type="checkbox"/> DRILL <input type="checkbox"/> REENTER 1b. Type of Well: <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other 1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		5. Lease Serial No. 6. If Indian, Allottee or Tribe Name 7. If Unit or CA Agreement, Name and No. 8. Lease Name and Well No. 9. API Well No. <div style="text-align: right; color: blue;">30 015 47762</div>
2. Name of Operator 3a. Address 3b. Phone No. (include area code)		10. Field and Pool, or Exploratory 11. Sec., T. R. M. or Blk. and Survey or Area 12. County or Parish 13. State
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface At proposed prod. zone		14. Distance in miles and direction from nearest town or post office* 15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 16. No of acres in lease 17. Spacing Unit dedicated to this well 18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 19. Proposed Depth 20. BLM/BIA Bond No. in file 21. Elevations (Show whether DF, KDB, RT, GL, etc.) 22. Approximate date work will start* 23. Estimated duration 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	Name (Printed/Typed)	Date
Title		
Approved by (Signature)	Name (Printed/Typed)	Date
Title	Office	

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

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.

Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.

Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string

- Will require a directional survey with the C-104

SL

(Continued on page 2)

APPROVED WITH CONDITIONS

Approval Date: 11/05/2020

KP 12/4/2020 GEO Review

*(Instructions on page 2)

Entered - KMS NMOCD

Job No.: LS19111120

Intent ☐ As Drilled ☐

API #		
Operator Name:	Property Name:	Well Number

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

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

District I
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: 12-13-19

☒ 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
Knox 13/14 B2PM Fed Com #1H		I- 13-18S-30E	1395' FSL & 240' FEEL	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.:	NMNM125633
WELL NAME & NO.:	KNOX 13/14 B2PM FED COM 1H
SURFACE HOLE FOOTAGE:	1395'/S & 240'/E
BOTTOM HOLE FOOTAGE:	660'/S & 100'/W
LOCATION:	Section 13, T.18 S., R.30 E., NMPM
COUNTY:	Eddy County, New Mexico

COA

H2S	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Potash	<input type="radio"/> None	<input checked="" type="radio"/> Secretary	<input type="radio"/> R-111-P
Cave/Karst Potential	<input checked="" type="radio"/> Low	<input type="radio"/> Medium	<input type="radio"/> High
Cave/Karst Potential	<input type="radio"/> Critical		
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	<input type="radio"/> Both
Other	<input type="checkbox"/> 4 String Area	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input type="checkbox"/> Fluid Filled	<input type="checkbox"/> Cement Squeeze	<input type="checkbox"/> Pilot Hole
Special Requirements	<input type="checkbox"/> Water Disposal	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the Yates formations. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

Casing Design:

1. The **13-3/8** inch surface casing shall be set at approximately **570** 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 **24 hours in the Potash Area** 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 **9-5/8** inch intermediate casing shall be set at approximately **2150** feet. 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. **Excess cement calculates to 18%, additional cement might be required.**
 - ❖ In Secretary Potash 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 **7** inch production casing shall be set at approximately **8800** feet. The minimum required fill of cement behind the **7** inch production casing is:
 - Cement should tie-back at least **500 feet** into previous casing string. Operator shall provide method of verification. **Excess cement calculates to 20%, additional cement might be required.**
 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 **3000 (3M)** 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)

☒ 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. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.

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. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
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: The flex line must meet the requirements of API 16C. 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, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).

- 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.

APD ID: 10400052402

Submission Date: 01/23/2020

Highlighted data
reflects the most
recent changes

Operator Name: MEWBOURNE OIL COMPANY

Well Name: KNOX 13/14 B2PM FED COM

Well Number: 1H

[Show Final Text](#)

Well Type: CONVENTIONAL GAS WELL

Well Work Type: Drill

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
609861	UNKNOWN	3653	28	28	OTHER : Topsoil	NONE	N
609866	RUSTLER	3133	520	520	ANHYDRITE	USEABLE WATER	N
609862	TOP SALT	2898	755	755	SALT	NONE	N
609864	BASE OF SALT	1883	1770	1770	SALT	NONE	N
609867	YATES	1703	1950	1950	SANDSTONE	NATURAL GAS, OIL	N
609868	SEVEN RIVERS	1258	2395	2395	DOLOMITE	NATURAL GAS, OIL	N
609869	QUEEN	563	3090	3090	DOLOMITE, SANDSTONE	NATURAL GAS, OIL	N
609873	GRAYBURG	288	3365	3365	SANDSTONE	NATURAL GAS, OIL	N
609874	SAN ANDRES	-232	3885	3885	DOLOMITE	NATURAL GAS, OIL	N
609865	LAMAR	-772	4425	4425	LIMESTONE	NATURAL GAS, OIL	N
609870	BONE SPRING	-1987	5640	5640	LIMESTONE, SHALE	NATURAL GAS, OIL	N
609871	BONE SPRING 1ST	-3942	7595	7595	SANDSTONE	NATURAL GAS, OIL	N
609872	BONE SPRING 2ND	-4562	8215	8215	SANDSTONE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Operator Name: MEWBOURNE OIL COMPANY

Well Name: KNOX 13/14 B2PM FED COM

Well Number: 1H

Pressure Rating (PSI): 3M

Rating Depth: 18968

Equipment: Annular, Pipe Ram x2, 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 not required by manufacturer. A multi-bowl 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.

Choke Diagram Attachment:

Knox_13_14_B2PM_Fed_Com_1H_3M_BOPE_Choke_Diagram_20200123084410.pdf

Knox_13_14_B2PM_Fed_Com_1H_Flex_Line_Specs_20200123084410.pdf

Knox_13_14_B2PM_Fed_Com_1H_Flex_Line_Specs_API_16C_20200123084411.pdf

BOP Diagram Attachment:

Knox_13_14_B2PM_Fed_Com_1H_Multi_Bowl_WH_20200123084422.pdf

Knox_13_14_B2PM_Fed_Com_1H_3M_BOPE_Schematic_20200123084422.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	570	0	570	3141	2571	570	H-40	48	ST&C	2.95	6.63	DRY	11.77	DRY	19.77
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	2150	0	2150	-8529	991	2150	J-55	36	LT&C	1.81	3.15	DRY	5.85	DRY	7.29
3	PRODUCTION	8.75	7.0	NEW	API	N	0	8800	0	8647	-8529	-5506	8800	P-110	26	LT&C	1.46	2.33	DRY	3.03	DRY	3.63
4	LINER	6.125	4.5	NEW	API	N	8251	18968	8211	8688	-5070	-5547	10717	P-110	13.5	LT&C	2.36	2.75	DRY	2.34	DRY	2.92

Casing Attachments

Operator Name: MEWBOURNE OIL COMPANY

Well Name: KNOX 13/14 B2PM FED COM

Well Number: 1H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

FNR_17_20_W2IP_Fed_Com_3H_TaperedCsg_05-26-2017.pdf

Casing Design Assumptions and Worksheet(s):

Knox_13_14_B2PM_Fed_Com_1H_Csg_assumptions_20200123084546.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Knox_13_14_B2PM_Fed_Com_1H_Csg_assumptions_20200123084621.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Knox_13_14_B2PM_Fed_Com_1H_Csg_assumptions_20200123084701.pdf

Operator Name: MEWBOURNE OIL COMPANY

Well Name: KNOX 13/14 B2PM FED COM

Well Number: 1H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Knox_13_14_B2PM_Fed_Com_1H_Csg_assumptions_20200123084800.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	379	250	2.12	12.5	530	100	Class C	Salt, Gel, Extender, LCM
SURFACE	Tail		379	570	200	1.34	14.8	268	100	Class C	Retarder
INTERMEDIATE	Lead		0	1464	270	2.12	12.5	572	25	Class C	Salt, Gel, Extender, LCM
INTERMEDIATE	Tail		1464	2150	200	1.34	14.8	268	25	Class C	Retarder
PRODUCTION	Lead		1950	6288	390	2.12	12.5	827	25	Class C	Gel, Retarder, Defoamer, Extender
PRODUCTION	Tail		6288	8800	400	1.18	15.6	472	25	Class H	Retarder, Fluid loss, Defoamer
LINER	Lead		8251	18968	430	2.97	11.2	1277	25	Class C	Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-Settling Agent

Operator Name: MEWBOURNE OIL COMPANY

Well Name: KNOX 13/14 B2PM FED COM

Well Number: 1H

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
0	570	SPUD MUD	8.6	8.8							
570	2150	SALT SATURATED	10	10							
2150	8647	WATER-BASED MUD	8.6	9.5							
8647	8688	OIL-BASED MUD	8.6	10							

Section 6 - Test, Logging, Coring

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

Will run GR/CNL from KOP (8251') to surface (horizontal well - vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.

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

DIRECTIONAL SURVEY, MEASUREMENT WHILE DRILLING, MUD LOG/GEOLOGIC LITHOLOGY LOG, GAMMA RAY LOG, COMPENSATED NEUTRON LOG, MUD LOG/GEOLOGICAL LITHOLOGY LOG,

Coring operation description for the well:

None

Operator Name: MEWBOURNE OIL COMPANY

Well Name: KNOX 13/14 B2PM FED COM

Well Number: 1H

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 4518

Anticipated Surface Pressure: 2625

Anticipated Bottom Hole Temperature(F): 140

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:

Knox_13_14_B2PM_Fed_Com_1H_H2S_Plan_20200123085608.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Knox_13_14_B2PM_Fed_Com_1H_Dir_plan_20200123085718.pdf

Knox_13_14_B2PM_Fed_Com_1H_Dir_plot_20200123085718.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

Knox_13_14_B2PM_Fed_Com_1H_Add_Info_20200123085735.pdf

Other Variance attachment:

**Mewbourne Oil Company,
Knox 13/14 B2PM Fed Com #1H
Sec 13, T18S, R31E
SL: 1395' FSL & 240' FEL (Sec 13, T18S, R30E)
BHL: 660' FSL & 100' FWL (Sec 14, T18S, R30E)**

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'	570'	13.375"	48	H40	STC	2.95	6.63	11.77	19.77
12.25"	0'	2150'	9.625"	36	J55	LTC	1.81	3.15	5.85	7.29
8.75"	0'	8800'	7"	26	P110	LTC	1.46	2.33	3.03	3.63
6.125"	8251'	18968'	4.5"	13.5	P110	LTC	2.36	2.75	2.34	2.92
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,
Knox 13/14 B2PM Fed Com #1H
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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
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If yes, are there three strings cemented to surface?	

Hydrogen Sulfide Drilling Operations Plan **Mewbourne Oil Company**

1. General Requirements

Rule 118 does not apply to this well because MOC has researched this area and no high concentrations of H₂S were found. MOC will have on location and working all H₂S safety equipment before the Delaware formation for purposes of safety and insurance requirements.

2. Hydrogen Sulfide Training

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will have received training from a qualified instructor in the following areas prior to entering the drilling pad area of the well:

1. The hazards and characteristics of hydrogen sulfide gas.
2. The proper use of personal protective equipment and life support systems.
3. The proper use of hydrogen sulfide detectors, alarms, warning systems, briefing areas, evacuation procedures.
4. The proper techniques for first aid and rescue operations.

Additionally, supervisory personnel will be trained in the following areas:

- 1 The effects of hydrogen sulfide on metal components. If high tensile tubular systems are utilized, supervisory personnel will be trained in their special maintenance requirements.
- 2 Corrective action and shut in procedures, blowout prevention, and well control procedures while drilling a well.
- 3 The contents of the Hydrogen Sulfide Drilling Operations Plan.

There will be an initial training session prior to encountering a known hydrogen sulfide source. The initial training session shall include a review of the site specific Hydrogen Sulfide Drilling Operations Plan.

3. Hydrogen Sulfide Safety Equipment and Systems

All hydrogen sulfide safety equipment and systems will be installed, tested, and operational prior to drilling below the 9 5/8" intermediate casing.

1. Well Control Equipment
 - A. Choke manifold with minimum of one adjustable choke/remote choke.
 - B. Blowout preventers equipped with blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit
 - C. Auxiliary equipment including annular type blowout preventer.
2. Protective Equipment for Essential Personnel

Thirty minute self contained work unit located in the dog house and at briefing areas.

Additionally: If H₂S is encountered in concentrations less than 10 ppm, fans will be placed in work areas to prevent the accumulation of hazardous amounts of poisonous gas. If higher concentrations of H₂S are detected the well will be shut in and a rotating head, mud/gas separator, remote choke and flare line with igniter will be installed.

3. Hydrogen Sulfide Protection and Monitoring Equipment
Two portable hydrogen sulfide monitors positioned on location for optimum coverage and detection. The units shall have audible sirens to notify personnel when hydrogen sulfide levels exceed 20 PPM.
4. Visual Warning Systems
 - A. Wind direction indicators as indicated on the wellsite diagram.
 - B. Caution signs shall be posted on roads providing access to location. Signs shall be painted a high visibility color with lettering of sufficient size to be readable at reasonable distances from potentially contaminated areas.

4. Mud Program

The mud program has been designed to minimize the amount of hydrogen sulfide entrained in the mud system. Proper mud weight, safe drilling practices, and the use of hydrogen sulfide scavengers will minimize hazards while drilling the well.

5. Metallurgy

All tubular systems, wellheads, blowout preventers, drilling spools, kill lines, choke manifolds, and valves shall be suitable for service in a hydrogen sulfide environment when chemically treated.

6. Communications

State & County Officials phone numbers are posted on rig floor and supervisors trailer. Communications in company vehicles and toolpushers are either two way radios or cellular phones.

7. Well Testing

Drill stem testing is not an anticipated requirement for evaluation of this well. If a drill stem test is required, it will be conducted with a minimum number of personnel in the immediate vicinity. The test will be conducted during daylight hours only.

8. Emergency Phone Numbers

Eddy County Sheriff's Office	911 or 575-887-7551
Ambulance Service	911 or 575-885-2111
Carlsbad Fire Dept	911 or 575-885-2111
Loco Hills Volunteer Fire Dept.	911 or 575-677-3266
Closest Medical Facility - Columbia Medical Center of Carlsbad	575-492-5000

Mewbourne Oil Company	Hobbs District Office	575-393-5905
	Fax	575-397-6252
	2nd Fax	575-393-7259

District Manager	Robin Terrell	575-390-4816
Drilling Superintendent	Frosty Lathan	575-390-4103
	Bradley Bishop	575-390-6838
Drilling Foreman	Wesley Noseff	575-441-0729

Mewbourne Oil Company

Eddy County, New Mexico NAD 83

Knox 13/14 B2PM Fed Com #1H

Sec 13, T18S, R30E

SHL: 1395' FSL & 240' FEL, Sec 13

BHL: 660' FSL & 100' FWL, Sec 14

Plan: Design #1

Standard Planning Report

22 January, 2020

Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Knox 13/14 B2PM Fed Com #1H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3681.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	MD Reference:	WELL @ 3681.0usft (Original Well Elev)
Site:	Knox 13/14 B2PM Fed Com #1H	North Reference:	Grid
Well:	Sec 13, T18S, R30E	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 660' FSL & 100' FWL, Sec 14		
Design:	Design #1		

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

Site		Knox 13/14 B2PM Fed Com #1H			
Site Position:		Northing:	634,647.00 usft	Latitude:	32.7439927
From:	Map	Easting:	669,139.00 usft	Longitude:	-103.9176646
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.22 °

Well	Sec 13, T18S, R30E					
Well Position	+N/-S	0.0 usft	Northing:	634,647.00 usft	Latitude:	32.7439927
	+E/-W	0.0 usft	Easting:	669,139.00 usft	Longitude:	-103.9176646
Position Uncertainty		0.0 usft	Wellhead Elevation:	3,881.0 usft	Ground Level:	3,653.0 usft

Wellbore	BHL: 660' FSL & 100' FWL, Sec 14				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/31/2014	7.35	60.52	48,509

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	265.69

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	

Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Knox 13/14 B2PM Fed Com #1H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3681.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	MD Reference:	WELL @ 3681.0usft (Original Well Elev)
Site:	Knox 13/14 B2PM Fed Com #1H	North Reference:	Grid
Well:	Sec 13, T18S, R30E	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 660' FSL & 100' FWL, Sec 14		
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
SHL: 1395' FSL & 240' FEL (13)									
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
570.0	0.00	0.00	570.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.45	162.46	600.0	-0.1	0.0	0.0	1.50	1.50	0.00
700.0	1.95	162.46	700.0	-2.1	0.7	-0.5	1.50	1.50	0.00
800.0	3.45	162.46	799.9	-6.6	2.1	-1.6	1.50	1.50	0.00
900.0	4.95	162.46	899.6	-13.6	4.3	-3.3	1.50	1.50	0.00
974.8	6.07	162.46	974.1	-20.4	6.5	-4.9	1.50	1.50	0.00
1,000.0	6.07	162.46	999.1	-23.0	7.3	-5.5	0.00	0.00	0.00
1,100.0	6.07	162.46	1,098.5	-33.1	10.5	-7.9	0.00	0.00	0.00
1,200.0	6.07	162.46	1,198.0	-43.1	13.6	-10.4	0.00	0.00	0.00
1,300.0	6.07	162.46	1,297.4	-53.2	16.8	-12.8	0.00	0.00	0.00
1,400.0	6.07	162.46	1,396.9	-63.3	20.0	-15.2	0.00	0.00	0.00
1,500.0	6.07	162.46	1,496.3	-73.4	23.2	-17.6	0.00	0.00	0.00
1,600.0	6.07	162.46	1,595.7	-83.5	26.4	-20.0	0.00	0.00	0.00
1,700.0	6.07	162.46	1,695.2	-93.6	29.6	-22.5	0.00	0.00	0.00
1,800.0	6.07	162.46	1,794.6	-103.7	32.8	-24.9	0.00	0.00	0.00
1,900.0	6.07	162.46	1,894.1	-113.8	36.0	-27.3	0.00	0.00	0.00
2,000.0	6.07	162.46	1,993.5	-123.8	39.1	-29.7	0.00	0.00	0.00
2,100.0	6.07	162.46	2,092.9	-133.9	42.3	-32.2	0.00	0.00	0.00
2,200.0	6.07	162.46	2,192.4	-144.0	45.5	-34.6	0.00	0.00	0.00
2,300.0	6.07	162.46	2,291.8	-154.1	48.7	-37.0	0.00	0.00	0.00
2,400.0	6.07	162.46	2,391.2	-164.2	51.9	-39.4	0.00	0.00	0.00
2,500.0	6.07	162.46	2,490.7	-174.3	55.1	-41.8	0.00	0.00	0.00
2,600.0	6.07	162.46	2,590.1	-184.4	58.3	-44.3	0.00	0.00	0.00
2,700.0	6.07	162.46	2,689.6	-194.5	61.5	-46.7	0.00	0.00	0.00
2,800.0	6.07	162.46	2,789.0	-204.5	64.7	-49.1	0.00	0.00	0.00
2,900.0	6.07	162.46	2,888.4	-214.6	67.8	-51.5	0.00	0.00	0.00
3,000.0	6.07	162.46	2,987.9	-224.7	71.0	-54.0	0.00	0.00	0.00
3,100.0	6.07	162.46	3,087.3	-234.8	74.2	-56.4	0.00	0.00	0.00
3,200.0	6.07	162.46	3,186.8	-244.9	77.4	-58.8	0.00	0.00	0.00
3,300.0	6.07	162.46	3,286.2	-255.0	80.6	-61.2	0.00	0.00	0.00
3,400.0	6.07	162.46	3,385.6	-265.1	83.8	-63.6	0.00	0.00	0.00
3,500.0	6.07	162.46	3,485.1	-275.2	87.0	-66.1	0.00	0.00	0.00
3,600.0	6.07	162.46	3,584.5	-285.2	90.2	-68.5	0.00	0.00	0.00
3,700.0	6.07	162.46	3,684.0	-295.3	93.3	-70.9	0.00	0.00	0.00
3,800.0	6.07	162.46	3,783.4	-305.4	96.5	-73.3	0.00	0.00	0.00
3,900.0	6.07	162.46	3,882.8	-315.5	99.7	-75.7	0.00	0.00	0.00
4,000.0	6.07	162.46	3,982.3	-325.6	102.9	-78.2	0.00	0.00	0.00
4,100.0	6.07	162.46	4,081.7	-335.7	106.1	-80.6	0.00	0.00	0.00
4,200.0	6.07	162.46	4,181.1	-345.8	109.3	-83.0	0.00	0.00	0.00
4,300.0	6.07	162.46	4,280.6	-355.9	112.5	-85.4	0.00	0.00	0.00
4,400.0	6.07	162.46	4,380.0	-365.9	115.7	-87.9	0.00	0.00	0.00
4,500.0	6.07	162.46	4,479.5	-376.0	118.9	-90.3	0.00	0.00	0.00
4,600.0	6.07	162.46	4,578.9	-386.1	122.0	-92.7	0.00	0.00	0.00
4,700.0	6.07	162.46	4,678.3	-396.2	125.2	-95.1	0.00	0.00	0.00
4,800.0	6.07	162.46	4,777.8	-406.3	128.4	-97.5	0.00	0.00	0.00
4,900.0	6.07	162.46	4,877.2	-416.4	131.6	-100.0	0.00	0.00	0.00
5,000.0	6.07	162.46	4,976.7	-426.5	134.8	-102.4	0.00	0.00	0.00

Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Knox 13/14 B2PM Fed Com #1H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3681.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	MD Reference:	WELL @ 3681.0usft (Original Well Elev)
Site:	Knox 13/14 B2PM Fed Com #1H	North Reference:	Grid
Well:	Sec 13, T18S, R30E	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 660' FSL & 100' FWL, Sec 14		
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	6.07	162.46	5,076.1	-436.5	138.0	-104.8	0.00	0.00	0.00
5,200.0	6.07	162.46	5,175.5	-446.6	141.2	-107.2	0.00	0.00	0.00
5,300.0	6.07	162.46	5,275.0	-456.7	144.4	-109.7	0.00	0.00	0.00
5,400.0	6.07	162.46	5,374.4	-466.8	147.5	-112.1	0.00	0.00	0.00
5,500.0	6.07	162.46	5,473.8	-476.9	150.7	-114.5	0.00	0.00	0.00
5,600.0	6.07	162.46	5,573.3	-487.0	153.9	-116.9	0.00	0.00	0.00
5,700.0	6.07	162.46	5,672.7	-497.1	157.1	-119.3	0.00	0.00	0.00
5,800.0	6.07	162.46	5,772.2	-507.2	160.3	-121.8	0.00	0.00	0.00
5,900.0	6.07	162.46	5,871.6	-517.2	163.5	-124.2	0.00	0.00	0.00
6,000.0	6.07	162.46	5,971.0	-527.3	166.7	-126.6	0.00	0.00	0.00
6,100.0	6.07	162.46	6,070.5	-537.4	169.9	-129.0	0.00	0.00	0.00
6,200.0	6.07	162.46	6,169.9	-547.5	173.1	-131.5	0.00	0.00	0.00
6,300.0	6.07	162.46	6,269.4	-557.6	176.2	-133.9	0.00	0.00	0.00
6,400.0	6.07	162.46	6,368.8	-567.7	179.4	-136.3	0.00	0.00	0.00
6,500.0	6.07	162.46	6,468.2	-577.8	182.6	-138.7	0.00	0.00	0.00
6,600.0	6.07	162.46	6,567.7	-587.9	185.8	-141.1	0.00	0.00	0.00
6,700.0	6.07	162.46	6,667.1	-597.9	189.0	-143.6	0.00	0.00	0.00
6,800.0	6.07	162.46	6,766.6	-608.0	192.2	-146.0	0.00	0.00	0.00
6,900.0	6.07	162.46	6,866.0	-618.1	195.4	-148.4	0.00	0.00	0.00
7,000.0	6.07	162.46	6,965.4	-628.2	198.6	-150.8	0.00	0.00	0.00
7,100.0	6.07	162.46	7,064.9	-638.3	201.7	-153.2	0.00	0.00	0.00
7,200.0	6.07	162.46	7,164.3	-648.4	204.9	-155.7	0.00	0.00	0.00
7,300.0	6.07	162.46	7,263.7	-658.5	208.1	-158.1	0.00	0.00	0.00
7,400.0	6.07	162.46	7,363.2	-668.6	211.3	-160.5	0.00	0.00	0.00
7,500.0	6.07	162.46	7,462.6	-678.6	214.5	-162.9	0.00	0.00	0.00
7,600.0	6.07	162.46	7,562.1	-688.7	217.7	-165.4	0.00	0.00	0.00
7,700.0	6.07	162.46	7,661.5	-698.8	220.9	-167.8	0.00	0.00	0.00
7,800.0	6.07	162.46	7,760.9	-708.9	224.1	-170.2	0.00	0.00	0.00
7,846.2	6.07	162.46	7,806.9	-713.6	225.5	-171.3	0.00	0.00	0.00
7,900.0	5.27	162.46	7,860.4	-718.6	227.1	-172.5	1.50	-1.50	0.00
8,000.0	3.77	162.46	7,960.1	-726.1	229.5	-174.3	1.50	-1.50	0.00
8,100.0	2.27	162.46	8,060.0	-731.2	231.1	-175.5	1.50	-1.50	0.00
8,200.0	0.77	162.46	8,159.9	-733.7	231.9	-176.2	1.50	-1.50	0.00
8,251.1	0.00	0.00	8,211.0	-734.0	232.0	-176.2	1.50	-1.50	0.00
KOP: 660' FSL & 10' FEL (13)									
8,300.0	5.88	269.81	8,259.8	-734.0	229.5	-173.7	12.01	12.01	0.00
8,400.0	17.89	269.81	8,357.5	-734.1	208.9	-153.2	12.01	12.01	0.00
8,500.0	29.90	269.81	8,448.8	-734.2	168.5	-112.9	12.01	12.01	0.00
8,548.9	35.77	269.81	8,489.9	-734.3	142.0	-86.5	12.01	12.01	0.00
FTP: 660' FSL & 100' FEL (13)									
8,600.0	41.91	269.81	8,529.6	-734.4	110.0	-54.5	12.01	12.01	0.00
8,700.0	53.92	269.81	8,596.5	-734.7	35.9	19.4	12.01	12.01	0.00
8,800.0	65.93	269.81	8,646.6	-734.9	-50.5	105.5	12.01	12.01	0.00
8,900.0	77.94	269.81	8,677.5	-735.3	-145.4	200.2	12.01	12.01	0.00
9,000.0	89.95	269.81	8,688.0	-735.6	-244.6	299.2	12.01	12.01	0.00
9,007.1	90.80	269.81	8,688.0	-735.6	-251.7	306.2	12.01	12.01	0.00
LP: 660' FSL & 492' FEL (13)									
9,100.0	90.80	269.81	8,686.7	-735.9	-344.6	398.9	0.00	0.00	0.00
9,200.0	90.80	269.81	8,685.3	-736.3	-444.6	498.6	0.00	0.00	0.00
9,300.0	90.80	269.81	8,683.9	-736.6	-544.6	598.4	0.00	0.00	0.00
9,400.0	90.80	269.81	8,682.5	-736.9	-644.6	698.1	0.00	0.00	0.00
9,500.0	90.80	269.81	8,681.1	-737.3	-744.6	797.8	0.00	0.00	0.00
9,600.0	90.80	269.81	8,679.7	-737.6	-844.6	897.6	0.00	0.00	0.00

Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Knox 13/14 B2PM Fed Com #1H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3681.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	MD Reference:	WELL @ 3681.0usft (Original Well Elev)
Site:	Knox 13/14 B2PM Fed Com #1H	North Reference:	Grid
Well:	Sec 13, T18S, R30E	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 660' FSL & 100' FWL, Sec 14		
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)
9,700.0	90.80	269.81	8,678.3	-737.9	-944.6	997.3	0.00	0.00	0.00
9,800.0	90.80	269.81	8,676.9	-738.3	-1,044.5	1,097.0	0.00	0.00	0.00
9,900.0	90.80	269.81	8,675.5	-738.6	-1,144.5	1,196.8	0.00	0.00	0.00
10,000.0	90.80	269.81	8,674.1	-738.9	-1,244.5	1,296.5	0.00	0.00	0.00
10,100.0	90.80	269.81	8,672.7	-739.3	-1,344.5	1,396.2	0.00	0.00	0.00
10,200.0	90.80	269.81	8,671.4	-739.6	-1,444.5	1,496.0	0.00	0.00	0.00
10,300.0	90.80	269.81	8,670.0	-740.0	-1,544.5	1,595.7	0.00	0.00	0.00
10,400.0	90.80	269.81	8,668.6	-740.3	-1,644.5	1,695.4	0.00	0.00	0.00
10,500.0	90.80	269.81	8,667.2	-740.6	-1,744.5	1,795.2	0.00	0.00	0.00
10,600.0	90.80	269.81	8,665.8	-741.0	-1,844.5	1,894.9	0.00	0.00	0.00
10,700.0	90.80	269.81	8,664.4	-741.3	-1,944.5	1,994.6	0.00	0.00	0.00
10,800.0	90.80	269.81	8,663.0	-741.6	-2,044.4	2,094.4	0.00	0.00	0.00
10,900.0	90.80	269.81	8,661.6	-742.0	-2,144.4	2,194.1	0.00	0.00	0.00
11,000.0	90.80	269.81	8,660.2	-742.3	-2,244.4	2,293.8	0.00	0.00	0.00
11,100.0	90.80	269.81	8,658.8	-742.6	-2,344.4	2,393.6	0.00	0.00	0.00
11,200.0	90.80	269.81	8,657.4	-743.0	-2,444.4	2,493.3	0.00	0.00	0.00
11,300.0	90.80	269.81	8,656.0	-743.3	-2,544.4	2,593.0	0.00	0.00	0.00
11,400.0	90.80	269.81	8,654.6	-743.6	-2,644.4	2,692.8	0.00	0.00	0.00
11,500.0	90.80	269.81	8,653.2	-744.0	-2,744.4	2,792.5	0.00	0.00	0.00
11,600.0	90.80	269.81	8,651.8	-744.3	-2,844.4	2,892.2	0.00	0.00	0.00
11,700.0	90.80	269.81	8,650.4	-744.6	-2,944.3	2,992.0	0.00	0.00	0.00
11,800.0	90.80	269.81	8,649.0	-745.0	-3,044.3	3,091.7	0.00	0.00	0.00
11,900.0	90.80	269.81	8,647.6	-745.3	-3,144.3	3,191.4	0.00	0.00	0.00
12,000.0	90.80	269.81	8,646.2	-745.6	-3,244.3	3,291.2	0.00	0.00	0.00
12,100.0	90.80	269.81	8,644.8	-746.0	-3,344.3	3,390.9	0.00	0.00	0.00
12,200.0	90.80	269.81	8,643.4	-746.3	-3,444.3	3,490.6	0.00	0.00	0.00
12,300.0	90.80	269.81	8,642.1	-746.7	-3,544.3	3,590.3	0.00	0.00	0.00
12,400.0	90.80	269.81	8,640.7	-747.0	-3,644.3	3,690.1	0.00	0.00	0.00
12,500.0	90.80	269.81	8,639.3	-747.3	-3,744.3	3,789.8	0.00	0.00	0.00
12,600.0	90.80	269.81	8,637.9	-747.7	-3,844.3	3,889.5	0.00	0.00	0.00
12,700.0	90.80	269.81	8,636.5	-748.0	-3,944.2	3,989.3	0.00	0.00	0.00
12,800.0	90.80	269.81	8,635.1	-748.3	-4,044.2	4,089.0	0.00	0.00	0.00
12,900.0	90.80	269.81	8,633.7	-748.7	-4,144.2	4,188.7	0.00	0.00	0.00
13,000.0	90.80	269.81	8,632.3	-749.0	-4,244.2	4,288.5	0.00	0.00	0.00
13,100.0	90.80	269.81	8,630.9	-749.3	-4,344.2	4,388.2	0.00	0.00	0.00
13,200.0	90.80	269.81	8,629.5	-749.7	-4,444.2	4,487.9	0.00	0.00	0.00
13,300.0	90.80	269.81	8,628.1	-750.0	-4,544.2	4,587.7	0.00	0.00	0.00
13,400.0	90.80	269.81	8,626.7	-750.3	-4,644.2	4,687.4	0.00	0.00	0.00
13,500.0	90.80	269.81	8,625.3	-750.7	-4,744.2	4,787.1	0.00	0.00	0.00
13,600.0	90.80	269.81	8,623.9	-751.0	-4,844.2	4,886.9	0.00	0.00	0.00
13,700.0	90.80	269.81	8,622.5	-751.3	-4,944.1	4,986.6	0.00	0.00	0.00
13,800.0	90.80	269.81	8,621.1	-751.7	-5,044.1	5,086.3	0.00	0.00	0.00
13,900.0	90.80	269.81	8,619.7	-752.0	-5,144.1	5,186.1	0.00	0.00	0.00
14,000.0	90.80	269.81	8,618.3	-752.4	-5,244.1	5,285.8	0.00	0.00	0.00
14,100.0	90.80	269.81	8,616.9	-752.7	-5,344.1	5,385.5	0.00	0.00	0.00
14,200.0	90.80	269.81	8,615.5	-753.0	-5,444.1	5,485.3	0.00	0.00	0.00
14,300.0	90.80	269.81	8,614.1	-753.4	-5,544.1	5,585.0	0.00	0.00	0.00
14,400.0	90.80	269.81	8,612.7	-753.7	-5,644.1	5,684.7	0.00	0.00	0.00
14,500.0	90.80	269.81	8,611.4	-754.0	-5,744.1	5,784.5	0.00	0.00	0.00
14,600.0	90.80	269.81	8,610.0	-754.4	-5,844.1	5,884.2	0.00	0.00	0.00
14,700.0	90.80	269.81	8,608.6	-754.7	-5,944.0	5,983.9	0.00	0.00	0.00
14,800.0	90.80	269.81	8,607.2	-755.0	-6,044.0	6,083.7	0.00	0.00	0.00
14,900.0	90.80	269.81	8,605.8	-755.4	-6,144.0	6,183.4	0.00	0.00	0.00
15,000.0	90.80	269.81	8,604.4	-755.7	-6,244.0	6,283.1	0.00	0.00	0.00

Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Knox 13/14 B2PM Fed Com #1H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3681.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	MD Reference:	WELL @ 3681.0usft (Original Well Elev)
Site:	Knox 13/14 B2PM Fed Com #1H	North Reference:	Grid
Well:	Sec 13, T18S, R30E	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 660' FSL & 100' FWL, Sec 14		
Design:	Design #1		

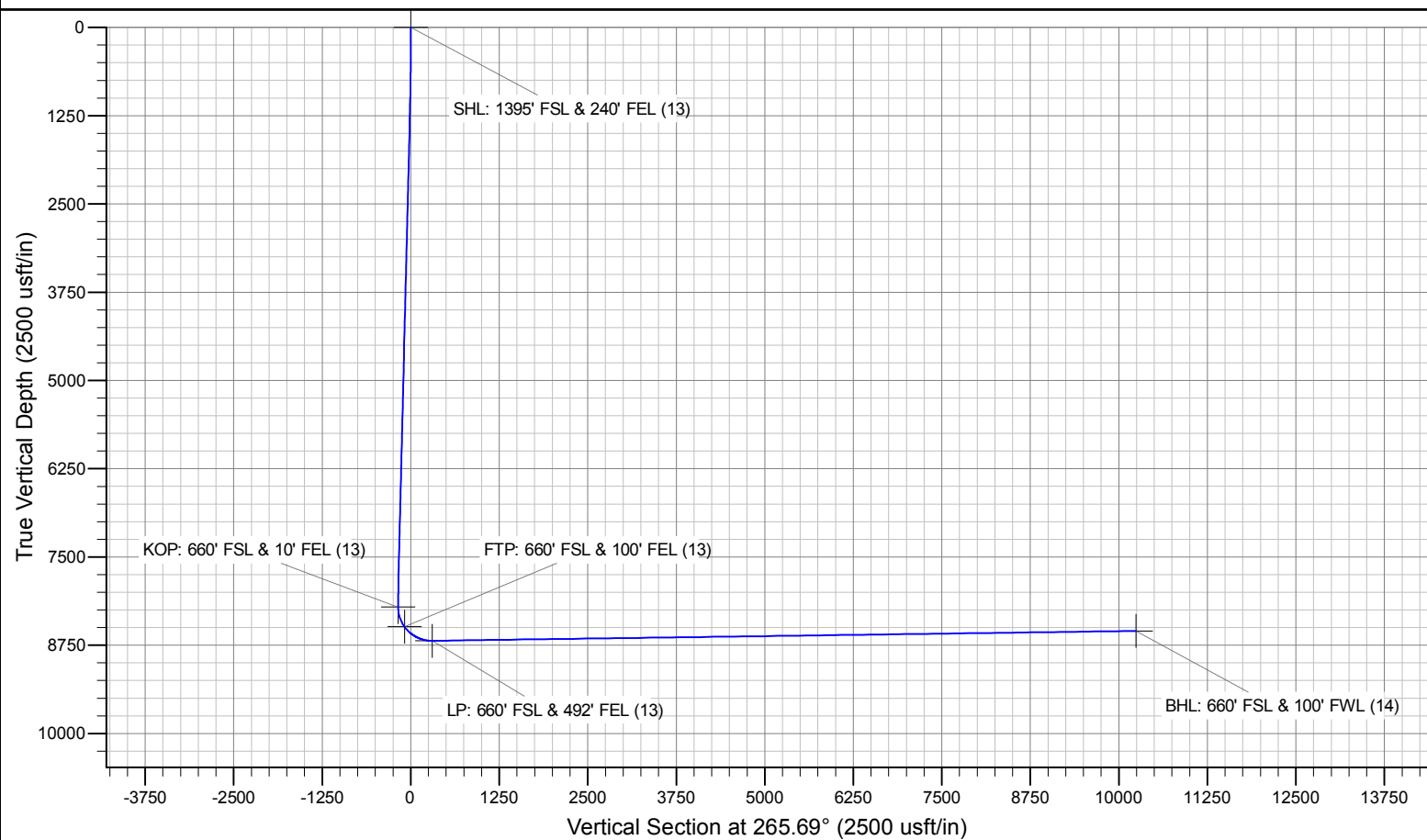
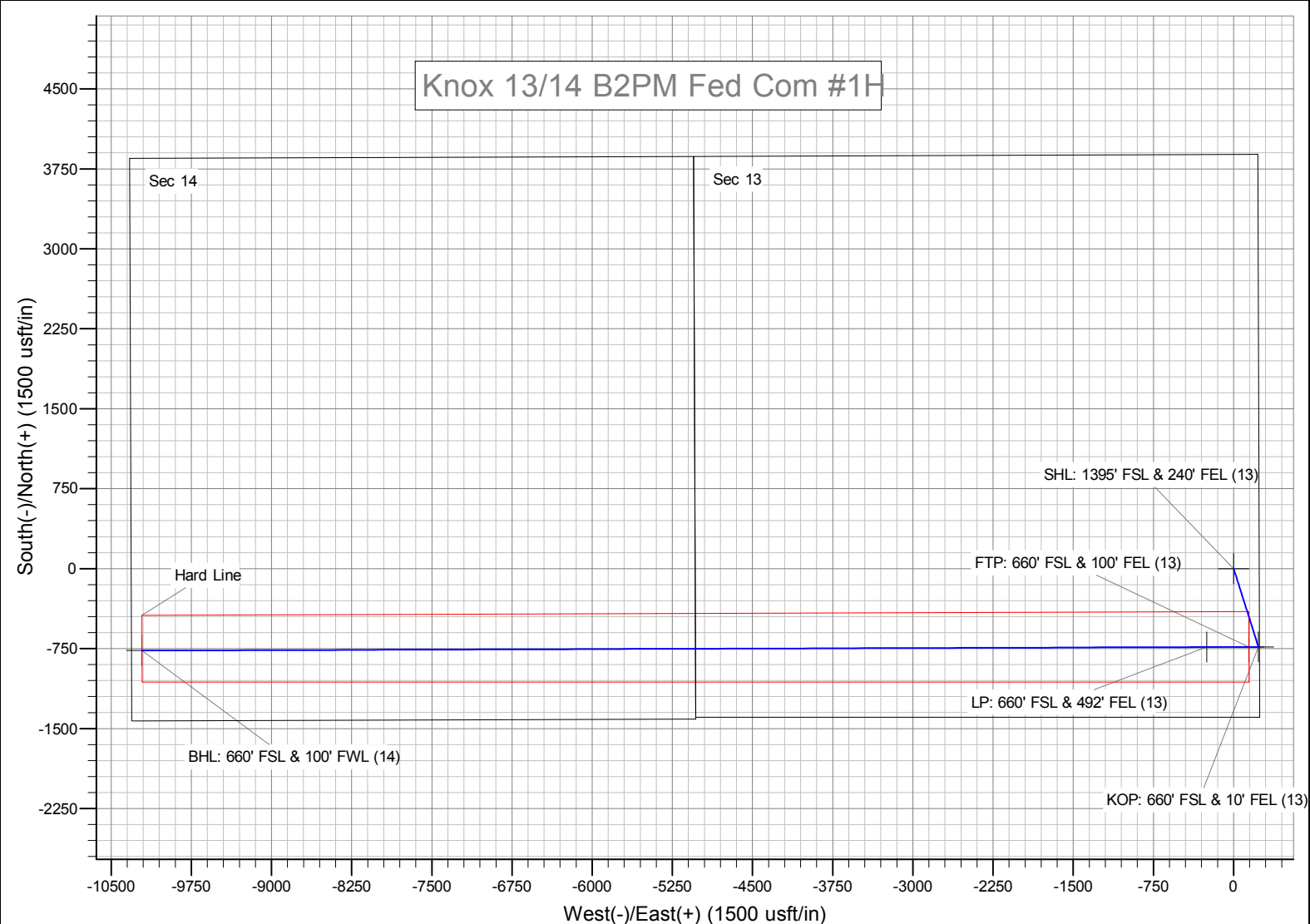
Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
15,100.0	90.80	269.81	8,603.0	-756.0	-6,344.0	6,382.9	0.00	0.00	0.00	
15,110.0	90.80	269.81	8,602.8	-756.1	-6,354.0	6,392.8	0.00	0.00	0.00	
PPP2: 660' FSL & 1319' FEL (14)										
15,200.0	90.80	269.81	8,601.6	-756.4	-6,444.0	6,482.6	0.00	0.00	0.00	
15,300.0	90.80	269.81	8,600.2	-756.7	-6,544.0	6,582.3	0.00	0.00	0.00	
15,400.0	90.80	269.81	8,598.8	-757.0	-6,644.0	6,682.1	0.00	0.00	0.00	
15,500.0	90.80	269.81	8,597.4	-757.4	-6,744.0	6,781.8	0.00	0.00	0.00	
15,600.0	90.80	269.81	8,596.0	-757.7	-6,843.9	6,881.5	0.00	0.00	0.00	
15,700.0	90.80	269.81	8,594.6	-758.0	-6,943.9	6,981.3	0.00	0.00	0.00	
15,800.0	90.80	269.81	8,593.2	-758.4	-7,043.9	7,081.0	0.00	0.00	0.00	
15,900.0	90.80	269.81	8,591.8	-758.7	-7,143.9	7,180.7	0.00	0.00	0.00	
16,000.0	90.80	269.81	8,590.4	-759.1	-7,243.9	7,280.5	0.00	0.00	0.00	
16,100.0	90.80	269.81	8,589.0	-759.4	-7,343.9	7,380.2	0.00	0.00	0.00	
16,200.0	90.80	269.81	8,587.6	-759.7	-7,443.9	7,479.9	0.00	0.00	0.00	
16,300.0	90.80	269.81	8,586.2	-760.1	-7,543.9	7,579.7	0.00	0.00	0.00	
16,400.0	90.80	269.81	8,584.8	-760.4	-7,643.9	7,679.4	0.00	0.00	0.00	
16,429.1	90.80	269.81	8,584.4	-760.5	-7,673.0	7,708.4	0.00	0.00	0.00	
PPP3: 660' FSL & 2640' FWL (14)										
16,500.0	90.80	269.81	8,583.4	-760.7	-7,743.9	7,779.1	0.00	0.00	0.00	
16,600.0	90.80	269.81	8,582.0	-761.1	-7,843.8	7,878.8	0.00	0.00	0.00	
16,700.0	90.80	269.81	8,580.7	-761.4	-7,943.8	7,978.6	0.00	0.00	0.00	
16,800.0	90.80	269.81	8,579.3	-761.7	-8,043.8	8,078.3	0.00	0.00	0.00	
16,900.0	90.80	269.81	8,577.9	-762.1	-8,143.8	8,178.0	0.00	0.00	0.00	
17,000.0	90.80	269.81	8,576.5	-762.4	-8,243.8	8,277.8	0.00	0.00	0.00	
17,100.0	90.80	269.81	8,575.1	-762.7	-8,343.8	8,377.5	0.00	0.00	0.00	
17,200.0	90.80	269.81	8,573.7	-763.1	-8,443.8	8,477.2	0.00	0.00	0.00	
17,300.0	90.80	269.81	8,572.3	-763.4	-8,543.8	8,577.0	0.00	0.00	0.00	
17,400.0	90.80	269.81	8,570.9	-763.7	-8,643.8	8,676.7	0.00	0.00	0.00	
17,500.0	90.80	269.81	8,569.5	-764.1	-8,743.8	8,776.4	0.00	0.00	0.00	
17,600.0	90.80	269.81	8,568.1	-764.4	-8,843.7	8,876.2	0.00	0.00	0.00	
17,700.0	90.80	269.81	8,566.7	-764.7	-8,943.7	8,975.9	0.00	0.00	0.00	
17,800.0	90.80	269.81	8,565.3	-765.1	-9,043.7	9,075.6	0.00	0.00	0.00	
17,900.0	90.80	269.81	8,563.9	-765.4	-9,143.7	9,175.4	0.00	0.00	0.00	
18,000.0	90.80	269.81	8,562.5	-765.8	-9,243.7	9,275.1	0.00	0.00	0.00	
18,100.0	90.80	269.81	8,561.1	-766.1	-9,343.7	9,374.8	0.00	0.00	0.00	
18,200.0	90.80	269.81	8,559.7	-766.4	-9,443.7	9,474.6	0.00	0.00	0.00	
18,300.0	90.80	269.81	8,558.3	-766.8	-9,543.7	9,574.3	0.00	0.00	0.00	
18,400.0	90.80	269.81	8,556.9	-767.1	-9,643.7	9,674.0	0.00	0.00	0.00	
18,500.0	90.80	269.81	8,555.5	-767.4	-9,743.6	9,773.8	0.00	0.00	0.00	
18,600.0	90.80	269.81	8,554.1	-767.8	-9,843.6	9,873.5	0.00	0.00	0.00	
18,700.0	90.80	269.81	8,552.7	-768.1	-9,943.6	9,973.2	0.00	0.00	0.00	
18,800.0	90.80	269.81	8,551.3	-768.4	-10,043.6	10,073.0	0.00	0.00	0.00	
18,900.0	90.80	269.81	8,550.0	-768.8	-10,143.6	10,172.7	0.00	0.00	0.00	
18,968.4	90.80	269.81	8,549.0	-769.0	-10,212.0	10,240.9	0.00	0.00	0.00	
BHL: 660' FSL & 100' FWL (14)										

Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Knox 13/14 B2PM Fed Com #1H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3681.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	MD Reference:	WELL @ 3681.0usft (Original Well Elev)
Site:	Knox 13/14 B2PM Fed Com #1H	North Reference:	Grid
Well:	Sec 13, T18S, R30E	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 660' FSL & 100' FWL, Sec 14		
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
SHL: 1395' FSL & 240' F - plan hits target center - Point	0.00	0.00	0.0	0.0	0.0	634,647.00	669,139.00	32.7439927	-103.9176646
KOP: 660' FSL & 10' FEI - plan hits target center - Point	0.00	0.00	8,211.0	-734.0	232.0	633,913.00	669,371.00	32.7419727	-103.9169194
FTP: 660' FSL & 100' FE - plan hits target center - Point	0.00	0.00	8,489.9	-734.3	142.0	633,912.70	669,281.00	32.7419728	-103.9172122
BHL: 660' FSL & 100' Fv - plan hits target center - Point	0.00	0.00	8,549.0	-769.0	-10,212.0	633,878.00	658,927.00	32.7419847	-103.9508870
PPP3: 660' FSL & 2640' - plan hits target center - Point	0.00	0.00	8,584.4	-760.5	-7,673.0	633,886.51	661,466.00	32.7419826	-103.9426293
PPP2: 660' FSL & 1319' - plan hits target center - Point	0.00	0.00	8,602.8	-756.1	-6,354.0	633,890.93	662,785.00	32.7419813	-103.9383394
LP: 660' FSL & 492' FEL - plan hits target center - Point	0.00	0.00	8,688.0	-735.6	-251.7	633,911.40	668,887.30	32.7419735	-103.9184926

Knox 13/14 B2PM Fed Com #1H



Operator Name: MEWBOURNE OIL COMPANY

Well Name: KNOX 13/14 B2PM FED COM

Well Number: 1H

Casing length (ft.):

Casing top depth (ft.):

Well Production type:

Completion Method:

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Using any construction materials: YES

Construction Materials description: Caliche - both sources shown on one map

Construction Materials source location attachment:

Knox13_14B2PMFedCom1H_calichesourceandtransmap_20191213143215.pdf

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: Drill Cuttings

Amount of waste: 3240 barrels

Waste disposal frequency : One Time Only

Safe containment description: Drill cuttings will be properly contained in steel tanks (20 yard roll off bins.)

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE

Disposal type description:

Disposal location description: NMOCD approved disposal locations are CRI or Lea Land, both facilities are located on HWY 62/180, Sec 27 T20S R32E.

Waste type: SEWAGE

Waste content description: Human waste & Grey water

Amount of waste: 1500 gallons

Waste disposal frequency : Weekly

Safe containment description: 2000 gallon plastic container

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE

Disposal type description:

Disposal location description: City of Carlsbad Water Treatment Facility