Form 3160-3				FORM	APPROVED
UNITED STA	TES	HOB	BS C	CD Expires: J	January 31, 2018
DEPARTMENT OF TH BUREAU OF LAND MA	E INTER	ίος Γεντ ΙΔΝ	1620	5. Lease Serial No.	
	D DRILL	OR REENTER		6. If Indian, Alloted	e or Tribe Name
		REC	CEIV	ED /	\wedge
Ia. Type of work: 🖌 DRILL	REENTEI	R		7. If Unit or CA Ag	greement, Name and No.
Ib. Type of Well: Oil Well Gas Well	Other			8. Lease Name and	Well No
Ic. Type of Completion: Hydraulic Fracturing	Single Zon	ne 🔲 Multiple Zone		HEREFORD 29/2 1H	0-8208 FED COM 32 69 95
2. Name of Operator MEWBOURNE OIL COMPANY (14744)			N	9. APJ. Well No. 300-002.5	46768
3a. Address PO Box 5270 Hobbs NM 88240	3b. Ph (575)3	one No. (include area cod 93-5905	e)	10 Field and Pool, PEARL SOUTH	or Exploratory BONE SPRING
4. Location of Well (Report location clearly and in accordan	nce with any	State requirements.*)	\sim	11. Sec., T. R. M. O	or Blk. and Survey or Area
At surface SWSE / 205 FSL / 1330 FEL / LAT 32.6	247222 / LO	UNG -103.4751768	772070	0-0 201 100/ 1	
14. Distance in miles and direction from nearest town or post 10 miles	t office*		12010	12. County or Paris LEA	sh 13. State NM
15. Distance from proposed* 210 feet location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No 80	of acres in lease	17. Spacii 640	Lunit dedicated to	this well
 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 330 feet 	19. Pri 10231	pposed Depth Teet / 20690 feet	20/BLM/ FED: NN	BIA Bond No. in file 11693	c
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3744 feet	22.(Ap	proximate date work will	start*	23. Estimated durat 60 days	tion
	24.)	Attachments			
The following, completed in accordance with the requirement (as applicable)	its of Onshor	e Oil and Gas Order No. 1	l, and the H	Iydraulic Fracturing	rule per 43 CFR 3162.3-3
1. Well plat certified by a registered surveyor.	$\backslash /$	4. Bond to cover th	e operation	s unless covered by a	an existing bond on file (see
 A Drilling Plan. A Surface Use Plan (if the location is on National Forest Sy SUPO must be filed with the appropriate Forest Service Of 	ystem Lands	, the 5. Operator certific 6. Such other site sp BLM.	ation.	mation and/or plans a	s may be requested by the
25. Signature	1	Name (Printed/Typed)			Date
(Electronic Submission) Title	B	radley Bishop / Ph: (57)	5)393-590		02/15/2019
Regulatory		Jama (Dutres J/T)			Date
(Electronic Submission)		Name (Printed/Typed) Christopher Walls / Ph: (575)234-2	234	01/15/2020
Title Petroleum Engineer	C C	Office CARLSBAD			·
Application approval does not warrant or certify that the appl applicant to conduct operations thereon. Conditions of approval, if any, are attached.	licant holds l	egal or equitable title to the	ose rights	in the subject lease w	which would entitle the
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 121 of the United States any false, fictitious or fraudulent statemet	2, make it a ents or repres	crime for any person know entations as to any matter	wingly and within its j	willfully to make to urisdiction.	any department or agency
GCA Rec ar 116/2020			INVO	K-1/1	4/2020
		WITH CONDIT	INUS	011	

APPROVED

<u>FL</u> (Continued on page 2)

*(Instructions on page 2)

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Mewbourne Oil Company
LEASE NO.:	NMLC0070397
WELL NAME & NO.:	Hereford 29/20 B2OB Fed Com 1H
SURFACE HOLE FOOTAGE:	205'/S & 1330'/E
BOTTOM HOLE FOOTAGE	100'/N & 1980'/E
LOCATION:	Section 29, T.19 S., R.35 E., NMPM
COUNTY:	Lea County, New Mexico



H2S	O Yes	No	
Potash	None	C Secretary	C R-111-P
Cave/Karst Potential	C Low	C Medium	C High
Cave/Karst Potential	C Critical		
Variance	O None	Flex Hose	C Other
Wellhead	C Conventional	Multibowl	C 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

Casing Design:

- 1. The 13-3/8 inch surface casing shall be set at approximately 1900 feet (a minimum of 25 feet (Lea 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

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completing the cement job.

- b. Wait on cement (WOC) time for a primary cement job will be a minimum of <u>8</u> <u>hours</u> 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 3450 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. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.
- 3. The minimum required fill of cement behind the 7 inch production casing is:
 - 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.

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- 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. <u>When the Communitization Agreement number is known, it shall also be</u> <u>on the sign.</u>

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.

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- 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.
- <u>Wait on cement (WOC) for Potash Areas:</u> 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 <u>24 hours</u>. WOC time will be recorded in the driller's log. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.
- 3. <u>Wait on cement (WOC) for Water Basin:</u> 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

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strength of 500 psi at the shoe, 2) until cement has been in place at least <u>8 hours</u>. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing intergrity 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.

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- 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).

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- 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.

OTA01102020

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

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

Operator Certification Data Report

01/15/2020

NAME: Bradley Bishop		Signed on: 02/15/2019
Title: Regulatory		
Street Address:		
City:	State:	Zip:
Phone: (575)393-5905		
Email address: bbishop@mewbo	burne.com	
Field Representativ	e	
Representative Name:		
Street Address:		
City:	State:	Zip:
Phone:		
Email address:		



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

Submission Date: 02/15/2019

Zip: 88240

APD ID: 10400038747 Operator Name: MEWBOURNE OIL COMPANY

Well Name: HEREFORD 29/20 B2OB FED COM

Well Type: OIL WELL

Well Number: 1H Well Work Type: Drill Show Final Text

01/15/2020

Application Data Report

Section 1 - General		
APD ID: 10400038747	Tie to previous NOS?	Submission Date: 02/15/2019
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: NMLC0070397	Lease Acres: 80	
Surface access agreement in place?	Allotted? R	eservation:
Agreement in place? NO	Federal or Indian agreement	::
Agreement number:		
Agreement name:		
Keep application confidential? YES		
Permitting Agent? NO	APD Operator: MEWBOURN	E OIL COMPANY
Operator letter of designation:		

Operator Info

Operator Organization Name: MEWBOURNE OIL COMPANY

Operator Address: PO Box 5270

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: HEREFORD 29/20 B2OB FED COM	Well Number: 1H	Well API Number:					
Field/Pool or Exploratory? Field and Pool	Field Name: PEARL SOUTH	Pool Name: BONE SPRING					

le the areaneed well in an area containing other mineral measuree? DOTASH

Operator Name: MEWBOURNE OIL COMPANY Well Name: HEREFORD 29/20 B2OB FED COM

Well Number: 1H

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

Is the proposed well in a Helium produ	uction area? N	Use Existing Well Pad?	New surface disturbance?					
Type of Well Pad: MULTIPLE WELL		Multiple Well Pad Name	: :	Number: 3				
Well Class: HORIZONTAL		HEREFORD 29/20 PA & WELLS Number of Legs: 1	BO					
Well Work Type: Drill								
Well Type: OIL WELL								
Describe Well Type:								
Well sub-Type: APPRAISAL								
Describe sub-type:								
Distance to town: 10 Miles	Distance to ne	arest well: 330 FT	Distanc	e to lease line: 210 FT				
Reservoir well spacing assigned acres	s Measurement:	640 Acres						
Well plat: HEREFORD29_20B2OBFI	EDCOM1H_well	plat_20190201134859.pdf	F					
Well work start Date: 04/01/2019		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	QVT	Will this well produce from this lease?
SHL	205	FSL	133	FEL	19S	35E	29		32.62472	-	LEA	NEW	NEW	s	STATE	374	0	0	
Leg			0					SWSE	22	103.4751		MEXI	MEXI			4			
#1										768									
KOP	10	FSL	198	FEL	19S	35E	29		32.62418	-	LEA	NEW	NEW	S	STATE	-	993	989	
Leg			0					SWSE	82	103.4772		MEXI	MEXI			615	1	4	
#1										881						0			

Well Name: HEREFORD 29/20 B2OB FED COM

Well Number: 1H

Welibore	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	DVL	Will this well produce from this lease?
PPP	0	FNL	198	FEL	19S	35E	20		32.63873	-	LEA	NEW	NEW	F	NMLC0	-	154	103	
Leg #1-1			0					SWSE	38	103.4772 873		MEXI	MEXI		069704	656 0	96	04	
PPP	132	FSL	198	FEL	19S	35E	20		32.64237	-	LEA	NEW	NEW	F	NMNM	-	168	102	
Leg	3		0					NWSE	29	103.4772		MEXI	MEXI		129268	654 1	20	85	
	205		100	re.	100	255	20		22 62144	0/1				6			120	102	
	200	FNL	198	FEL	192	355	29		32.03 144	-				ľ		-	120	103	
#1-3	2		0					SVVINE	13	877					0/039/	7	45	41	
PPP	100	FSL	198	FEL	19S	35E	29		32.65300	-	LEA	NEW	NEW	s	STATE	-	102	101	
Leg			0					SWSE	73	103.4772		MEXI	MEXI			643	37	79	
#1-4			ļ							906						5			
EXIT	264	FNL	198	FEL	19S	35E	20		32.64600	-	LEA	NEW	NEW	F	FEE	-	181	102	
Leg	6		0					SWNE	93	103.4772		MEXI	MEXI			652	43	67	
#1										869						3			
BHL	100	FNL	198	FEL	19S	35E	20		32.65300	-	LEA	NEW	NEW	F	FEE	-	206	102	
Leg			0					NWNE	77	103.4772		MEXI	MEXI			648	90	31	
#1										878		_				7			



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



APD ID: 10400038747

Operator Name: MEWBOURNE OIL COMPANY

Well Name: HEREFORD 29/20 B2OB FED COM

Well Type: OIL WELL

Well Number: 1H

Submission Date: 02/15/2019

Well Work Type: Drill



Section 1 - Geologic Formations

ormation			True Vertical	Measured			Producing
ID	Formation Name	Elevation	Depth	Depth	Lithologies	Mineral Resources	Formation
389109	UNKNOWN	3812	27	27		NONE	N
389110	RUSTLER	1993	1819	1819	ANHYDRITE, DOLOMITE	USEABLE WATER	N
389111	TOP SALT	1710	2102	2102	SALT	NONE	N
389112	BASE OF SALT	584	3228	3228	SALT	NONE	N
389113	YATES	415	3397	3397	SANDSTONE	NATURAL GAS, OIL	N
389114	SEVEN RIVERS	-75	3887	3887	DOLOMITE	NATURAL GAS, OIL	N
389115	QUEEN	-795	4607	4607	DOLOMITE, SANDSTONE	NATURAL GAS, OIL	N
389116	DELAWARE	-2040	5852	5852	LIMESTONE, SANDSTONE	NATURAL GAS, OIL	N
389117	BONE SPRING	-3990	7802	7802	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
389118	BONE SPRING 1ST	-5538	9350	9350	SANDSTONE	NATURAL GAS, OIL	N
389119	BONE SPRING 2ND	-5860	9672	9672	SANDSTONE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

ressure Rating (PSI): 5M

Rating Depth: 20690

quipment: Annular Pipe Rams Blind Rams Other accessories to the BOP equipment will include a Kelly cock and floor afety valve (inside BOP) and choke lines and choke manifold. See attached schematics. **:equesting Variance?** YES

'ariance request: A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. Anchors are ot required by manufacturer. A variance is requested to use a multi-bowl wellhead. See attached schematic. esting Procedure: BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure idicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the variance pressure listed in the table above. If the system is upgraded all the components installed will be functional and

Well Name: HEREFORD 29/20 B2OB FED COM

Well Number: 1H

f the hole. These checks will be noted on the daily tour sheets.

:hoke Diagram Attachment:

Hereford_29_20_B2OB_Fed_Com_1H_5M_BOPE_Choke_Diagram_20190214161120.pdf

Hereford_29_20_B2OB_Fed_Com_1H_Flex_Line_Specs_20190214161121.pdf

OP Diagram Attachment:

Hereford_29_20_B2OB_Fed_Com_1H_5M_BOPE_Schematic_20190214161151.pdf

Hereford_29_20_B2OB_Fed_Com_1H_Multi_Bowl_WH_20190214161152.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	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	1900	0	1900	3771		1900	J-55	54.5	ST&C	1.27	3.07	DRY	4.96	DRY	8.24
2	INTERMED IATE	12.2 5	9.625	NEW	API	N	0	3450	0	3450	3771		3450	J-55	36	LT&C	1.13	1.96	DRY	3.65	DRY	4.54
3	PRODUCTI ON	8.75	7.0	NEW	API	N	0	10688	0	10371	3771		10688	P- 110	26	LT&C	1.45	1.93	DRY	2.33	DRY	2.9§
4	LINER	6.12 5	4.5	NEW	API	N	9931	20690	9894	10371			10759	P- 110	13.5	LT&C	1.98	2.3	DRY	2.33	DRY	2.91

Casing Attachments

Casing ID: 1

String Type: SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Harafard 90 90 DOOD End Cam 44 Can Assumptions 90400944469440 adf

Well Name: HEREFORD 29/20 B2OB FED COM

Well Number: 1H

Casing Attachments

Casing ID: 2 String Type: INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Hereford_29_20_B2OB_Fed_Com_1H_Csg_Assumptions_20190214163217.pdf

Casing ID: 3 String Type: PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Hereford_29_20_B2OB_Fed_Com_1H_Csg_Assumptions_20190214163230.pdf

Casing ID: 4 String Type:LINER

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Hereford_29_20_B2OB_Fed_Com_1H_Csg_Assumptions_20190214163239.pdf

Section 4 - Cement

Well Name: HEREFORD 29/20 B2OB FED COM

Well Number: 1H

String Type	Lead/Tail	Stage Tool	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	1713	1125	2.12	12.5	2385	100	Class C	Salt, Gel, Extender, LCM
SURFACE	Tail		1713	1900	200	1.34	14.8	268	100	Class C	Retarder
NTERMEDIATE	Lead		0	2837	585	2.12	12.5	1240	25	Class C	Salt, Gel, Extender, LCM
NTERMEDIATE	Tail		2837	3450	200	1.34	14.8	268	25	Class C	Retarder
RODUCTION	Lead		3250	8189	440	2.12	12.5	933	25	Class H	Gel, Retarder, Defoamer, Extender
RODUCTION	Tail		8189	1068 8	400	1.18	15.6	472	25	Class H	Retarder, Fluid Loss, Defoamer
.INER	Lead		9931	2069 0	435	2.97	11.2	1292	25	Class H	Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-settling Agent

Section 5 - Circulating Medium

lud System Type: Closed

Vill an air or gas system be Used? NO

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

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

escribe what will be on location to control well or mitigate other conditions: Lost circulation material, sweeps, mud cavengers

escribe the mud monitoring system utilized: Pason/PVT/Visual Monitoring

Circulating Medium Table

Well Name: HEREFORD 29/20 B2OB FED COM

Well Number: 1H

Top Depth	Bottom Depth	Mud Type	Min Weight (Ibs/gal)	Max Weight (Ibs/gal)	Density (Ibs/cu ft)	Gel Strength (lbs/100 sqft)	Н	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	1900	SPUD MUD	8.6	8.8							
1900	3450	SALT SATURATED	10	10							
3450	1023 1	WATER-BASED MUD	8.6	9.5							
1023 1	1037 1	OIL-BASED MUD	8.6	10							

Section 6 - Test, Logging, Coring

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

vill run GR/CNL from KOP (9931') to surface.

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

:NL,DS,GR,MWD,MUDLOG

oring operation description for the well:

lone

Section 7 - Pressure

Inticipated Bottom Hole Pressure: 5393

Anticipated Surface Pressure: 3117.98

Inticipated Bottom Hole Temperature(F): 140

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

escribe:

ontingency Plans geoharzards description:

contingency Plans geohazards attachment:

lydrogen Sulfide drilling operations plan required? YES

lydrogen sulfide drilling operations plan:

Hereford_29_20_B2OB_Fed_Com_1H_H2S_Plan_20190214165326.pdf

Well Name: HEREFORD 29/20 B2OB FED COM

Well Number: 1H

Section 8 - Other Information

roposed horizontal/directional/multi-lateral plan submission:

Hereford_29_20_B2OB_Fed_Com_1H_Dir_Plan_20190214165646.pdf Hereford_29_20_B2OB_Fed_Com_1H_Dir_Plot_20190214165646.pdf

ther proposed operations facets description:

Ither proposed operations facets attachment:

Hereford_29_20_B2OB_Fed_Com_1H_Add_Info_20190214165925.pdf Hereford_29_20_B2OB_Fed_Com_1H_Drlg_Program_20190214165936.doc http://www.action.com/internationality.com/internationa



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CORPUS CHRISTI, TEXAS 78405 EMAIL: 77m.Cantralgarbas.com UBC WEB: www.gates.com USK CEMENTING ASSEMBLY PRESSURE TEST CERTIFICATE Custome Rd.: AUSTIM DISTABUTING Locatame Rd.: AUSTIM DISTABUTING Locatame Rd.: S00506 Ceatad By: DOI(0157 Justime Rd.: S00506 Product Decription: LIXELS46.00Xx1/J850PT02/ELE End Filling 11: 61/16 10K Fild Eader Part Ro: 61/16 10K Fild Modity Pressure: 10,000 PSI Test Pressure: 10500 PSI Gates E & S North America, Inc. certifies that the following hose assembly has been tested to the Gates Oilfield Roughnock Agreement/Specification requirements and passed the 15 minute Phydrostatic test per API Spec 7K/QL, Fifth Edition, June 2010, Test pressure 9.6.7.2 accreding the minimum of 2.5 times the working pressure per Table 9. Quality Menager: Quality Algor/2016 Quality Menager: Quality Algor/2016 Synsture: Quality Algor/2016	134 44TH STREET	r	•		FAX: 361-887-0812		
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10K CEMENTING ASSEMBLY PRESSURE TEST CERTIFICATE Castomer F:		+		· · · · · · · · · · · · · · · · · · ·			
Customer : AUSTIN DUSTRIBUTING Test Date: 4/30/2015 Customer Ref. : 4/30/2015 D-VIS015-7 Incica No. : S0036 Created 9r JUSTIN COOPER Product Description: 10K3.548.00XA.1/16JINFLGUE LE Incica No. : 4/30/2015 Product Description: 10K3.548.00XA.1/16JINFLGUE LE Incica No. : 1355541302840-043015-7 Gates Purt No. : 4/37.76:200 Assembly Code : 1355541302840-043015-7 Working Pressure : 10,000 Pst Test Pressure : 15,000 Pst Gates E & S North America, Inc. certifies that the following hose assembly has been tested to the Gates Oilfield Roughneck Agreement/Specification requirements and passed the 15 minute by thydrotatic test per API Spec 7K/Q1, Fifth Edition, June 2010, Test pressure 9.6.7 and per Table 9 to 15,000 psl In accordance with this product number. Hose burst pressure 9.6.7 and per Table 9 to 15,000 psl In accordance with this product number. Hose burst pressure 9.6.7 and per Table 9 to 15,000 psl In accordance with this product number. Hose burst pressure 9.6.7 and per Table 9 to 15,000 psl In accordance with this product number. Hose burst pressure 9.6.7 and per Table 9 to 15,000 psl In accordance with this product number. Quality Menager : Quality Menager State Stat	10K C	EME	NTING ASSEMBLY	PRESSURE	TEST CERTIFICATE		
Customer : AUSTIN DISTRIBUTING Test Date: 4/30/2015 Duscen r6.f.: 4/30/2015 D-4/3015.7 Drokes No.: S00505 Custad By: JUSTIN DISTRIBUTING Product Description: 10/05.548.0CK.1/1510/FLGE/E LE D-4/3015.7 Product Description: 10/05.548.0CK.1/1510/FLGE/E LE D-4/3015.7 End Fatting 1: 41/16 10K FLG End Pating 2: 11/15 10K FLG Gates Pet No.: 7774-530 Assembly Code :: L36554.02014D-042015-7 Working Pressure : 10,000 PSI Test Pressure :: 15,000 PSI Gates E & S North America, Inc. certifiles that the following hose assembly has been tested to The Gates Oilfield Roughneck Agreement/Specification requirements and passed the 15 minute Hydrostatic test per API Spec 7K/01, Fifth Editon, June 2010, Test pressure 9.6.7.7.2 exceeds the minimum of 2.5 times the working pressure per Table 9. Quality Menager : QUALITY Productor: PRODUCTION One : 4/30/2036 Signature : Productor: PRODUCTION Gate: Signature : QUALITY Productor: PRODUCTION One : 3gnature : Guilty Menager : QUALITY Productor: Productor: Signature :	·L					7	
Customer Fr. ACIANAL MERCANNAN Inciden Ro.: GODSTB Incide No.: S00306 Order Stell No.: GODSTB Product Descriptor: Incide No.: End Fitting 1: 4 1/16 10K FLG Gates Fat No.: 4772-4220 Assentity Code: LisSS-1022/10-0430157 Working Pressure : 10(0.576 Code No.: Incide No.: 4772-4220 Assentity Code: LisSS-1022/10-0430157 Working Pressure : 13,000 PSI Test Pressure : 15,000 PSI Gates E & S North America, Inc. certifies that the following hose assembly has been tested to the Gates Olified Roughneck Agreement/Specification requirements and passed the 15 minute hydrostatic test per API Spec 7/V(2), Fifth Edition, June 2010, Test pressure 9.6.7.2 exceeds the minute hydrostatic test per API Spec 7/V(2), Fifth Edition, June 2010, Test pressure 9.6.7.2 exceeds the minute hydrostatic test per API Spec 7/V(2), Fifth Edition, June 2010, Test pressure 9.6.7.2 exceeds the minute hydrostatic test per API Spec 7/V(2), Fifth Edition, June 2010, Test pressure 9.6.7.2 exceeds the minute hydrostatic test per API Spec 7/V(2), Fifth Edition, June 2010, Test pressure 9.6.7.2 exceeds the minute hydrostatic test per API Spec 7/V(2), Fifth Edition, June 2010, Test pressure 9.6.7.2 exceeds the minute hydrostatic test per API Spec 7/V(2), Fifth Edition, June 2010, Test pressure 9.6.7.2 exceeds the spec fifth Edition, June 2010, Test per Spec fifth Editor, June 2010, Test per Spec fifth Ed	Curtana i			Test Dates	4/20/2015	-1.1 []	
Decisi No.: 30336 Created By: JUSTIA CROPPER Product Description: 1013.548.0CX4.1/1610/PLGE/E LE End Fitting 1: 41/16 10K FIG End Fitting 2: 41/16 10K FIG Genes Pan No.: 4172-6280 Assembly Code: 1303541029140-043015-7 Working Pressure: 130,000 PS1 Test Pressure: 130,000 PS1 Gates E & S North America, Inc. certifies that the following hose assembly has been tested to the Gates Oilfield Roughneck Agreement/Specification requirements and passed the 15 minute hydrostatic test per API Spec 7K/Q1, Fifth Edition, June 2010, Test pressure 9.6.7.2 exceeds the minimum of 2.5 times the working pressure per Table 9. Quality Manager: // 4/207015 Producton: Gates : 3genture : // 4/207025 Fignature : Quality Manager : // 4/207015 Producton: PRODUCTION Gates : 3genture : Signature : Producton: Producton: Signature : Signature : Signature : Figure Picture - 01 Rev.0 2 Figure Picture - 01 Rev.0 2	Customer : Oustomer Ref		4060578	Hose Serial No.:	D-043015-7	-11	
Product Description: 10K3.548.0CKA.1/1510RFLGE/E LE End Fitting 1: 41/16 10K FLG Gates Pat No.: 4773-6380 Assembly Code : 135,000 PSI Working Pressure : 10,000 PSI Gates E & S North America, Inc. certifies that the following hose assembly has been tested to the Gates Oilfeld Roughneck Agreement/Specification requirements and passed the 15 minute hydrostatic test per API Spec 7K/Q1, Fifth Edition, June 2010, Test pressure 9.6.7 and per Table 9 to 15,000 psi in actordance with this product number. Hose burst pressure 9.6.7.2 exceeds the minimum of 2.5 times the working pressure per Table 9. Quality Manager : 4/2072015 Quality Manager : 4/2072015 Gutes T : 9/207105 Signature : 1/2007015	Invoice No. :		500506	Created By:	JUSTIN CROPPER	-1	
Product Description: 10K3.548.0CK4.1/1610RP.GE/E LE End Fitting 1: 41/16 10K FLG Gates Fet No :: 47/73-6290 Working Pressure : 10,000 PSI End Fitting 2: 114/15 10K FLG LissSyl102914D-042015-7 LissSyl102914D-042015-7 Working Pressure : 10,000 PSI Test Pressure : 15,000 PSI Gates E & S North America, Inc. certifies that the following hose assembly has been tested to the Gates Olifield Roughneck Agreement/Specification requirements and passed the 15 minute hydrostatic test per API Spec 7K/Q1, Fifth Edition, June 2010, Test pressure 9.6.7.2 exceeds the minimum of 2.5 times the working pressure per Table 9. Quality Manager : QUALITY Algor/2016 Production: Marking Manager : QUALITY Algor/2016 Signature : Gates : Guality Manager : Algor/2016 Signature : Production: PRODUCTION Algor/2016 Signature : Production: Production: Bate : Signature : Algor/2016 Signature : Fort: Fet = 01 Rev. 02 Fort: Fet = 01 Rev. 02	20002000			· · · · ·		-11	
Product Description: 10K3.548.00K4.1/1510KFLGEPE LE End Fitting 1: 4 1/15 10K FLG Gates Fan No.: 4773-6259 Working Pressure: 10,000 PS1 Test Pressure: 15,000 PS1 Gates E & S North America, Inc. certifies that the following hose assembly has been tested to the Gates Olifield Roughnock Agreement/Specification requirements and passed the 15 minute hydrostatic test per API Spec 7K/Q1, Fifth Edition, June 2010, Test pressure 9.6.7 and per Table 9 to 15,000 psi in accordance with this product number. Hose burst pressure 9.6.7.2 exceeds the minimum of 2.5 times the working pressure per Table 9. Quility Manager: Quality Manager: Quality Manager: QUALITY Production: PRODUCTION Bate : 3gnature :							
End Fitting 1: 4 1/16 10K FIG End Fitting 2: 4 1/16 10K FIG Gates Park No. : 4773-6230 Assembly Code : 136554102914D-043015-7 Working Pressure : 10,000 PSI Test Pressure : 13500 PSI Gates E & S North America, Inc. certifies that the following hose assembly has been tested to the Gates Olifield Roughneck Agreement/Specification requirements and passed the 15 minute hydrostatic test per API Spec 7K/Q1, Fifth Edition, June 2010, Test pressure 9.6.7 and per Table 9 to 15,000 psi in accordance with this product number. Hose burst pressure 9.6.7.2 exceeds the minimum of 2.5 times the working pressure per Table 9. Quality Menager : Quality Menager : QUALITY Productor: Bars : 9gnature : 9gnature : Find PC - 01 Rev.0 2	Product Description:		10	K3.548.0CK4.1/1610KFU	GE/E LE	_4	
End Fining 1: 4 1/18 100 FLG End Fining 2: 4 1/18 FLG Genes Park No.: 4777-6520 Assembly Code: 1355010-251157 Genes Park No.: 10,000 PSI Tex Pressure :: 13500 PSI Gates E & S North America, Inc. certifies that the following hose assembly has been tested to the Gates Olifield Roughneck Agreement/Specification requirements and passed the E15 minute hydrostatic test per API Spec 7K/Q1, Fifth Edition, June 2010, Test pressure 9.6.7 and per Table 9 to 15,000 psi in accordance with this product number. Hose burst pressure 9.6.7.2 exceeds the minimum of 2.5 times the working pressure per Table 9. Quality Manager : Quality Manager : Productor: PRODUCTION Quality Manager : Quality Manager : Quality Manager : PRODUCTION Gates : Signature : Signature : FrankFrc - 01 Rev.0 2							
States Fight No.: 10,000 PSI Test Pressure : 15,000 PSI Gates E & S North America, Inc. certifies that the following hose assembly has been tested to the Gates Oilfield Roughneck Agreement/Specification requirements and passed the 15 minute hydrostatic test per API Spec TK/Q1, Fifth Edition, June 2010, Test pressure 9.6.7 and per Table 9 to 15,000 psi in accordance with this product number. Hose burst pressure 9.6.7.2 exceeds the minimum of 2.5 times the working pressure per Table 9. Quality Manager : Quality Manager : Quality Manager : PRODUCTION Quality Manager : Quality Manager : Quality Manager : PRODUCTION Signature : Quality Manager : PRODUCTION Signature :	End Fitting 1 :	\vdash	4 1/16 10K FLG	End Fitting 2 :	4 1/16 10K PLG	-8	
Gates E & S North America, Inc. certifies that the following hose assembly has been tested to the Gates Olifield Roughneck Agreement/Specification requirements and passed the 15 minute hydrostatic test per API Spec 7K/Q1, Fifth Edition, June 2010, Test pressure 9.6.7 and per Table 9 to 15,000 psl in accordance with this product number. Hose burst pressure 9.6.7.2 exceeds the minimum of 2.5 times the working pressure per Table 9. Quality Manager: Quality Manager: Quality Manager: Quality Manager: Algo/2015 Production: bate : Signature: Production: Production: Bagenetic: Algo/2015 Bagenetic: Algo/2015 Bagenetic: Algo/2015 Bagenetic: Bagenetic: Bagenet: Bagenetic: <td>Gates Part No. :</td> <td>\vdash</td> <td>10.000 PSI</td> <td>Test Pressure :</td> <td>15.000 PSI</td> <td>-# </td> <td></td>	Gates Part No. :	\vdash	10.000 PSI	Test Pressure :	15.000 PSI	-#	
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United to be solution of particular optimization opt	Gates E & S I	North	America, Inc. certifies the	nat the following h	nose assembly has been tested to ments and passed the 15 minute	D	
to 15,000 psi in accordance with this product number. Hose burst pressure 9.6.7.2 exceeds the minimum of 2.5 times the working pressure per Table 9.	hvdrostatic tes	t per A	PI Spec 7K/01, Fifth Editi	on, June 2010, Te	est pressure 9.6.7 and per Table	9	
minimum of 2.5 times the working pressure per Table 9. Quality Manager : Quality Manager : Quality Manager : Aj30r/2015 () Date : Signature : Mundahn Guality Manager : Aj30r/2015 () Date : Signature : Mundahn Guality Manager : Mundahn Signature : Mundahn Signature : Signature : Mundahn Signature :	to 15,000 psi	In acc	ordance with this product	number. Hose bu	rst pressure 9.6.7.2 exceeds the		
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CAMERON A Soblumberger Company

13-5/8" MN-DS Wellhead System





Casing Program

Hole	Casing Interval		Csg.	Weight	Grade	Conn.	SF	SF	SF Jt	SF Body
Size	From	То	Size	(lbs)			Collapse	Burst	Tension	Tension
17.5"	0'	1900'	13.375"	54.5	J55	STC	1.27	3.07	4.96	8.24
12.25"	0'	3450'	9.625"	36	J55	LTC	1.13	1.96	3.65	4.54
8.75"	0'	10,688'	7"	26	HCP110	LTC	1.45	1.93	2.33	2.99
6.125"	9931'	20,690'	4.5"	13.5	P110	LTC	1.98	2.30	2.33	2.91
			BLM Minimum Safety Factor				1	1.6 Dry	1.6 Dry	
						-			1.8 Wet	1.8 Wet

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

	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?	

Casing Program

Hole	Casin	g Interval	Csg.	Weight	Grade	Conn.	SF	SF	SF Jt	SF Body
Size	From	То	Size	(lbs)	1		Collapse	Burst	Tension	Tension
17.5"	0'	1900'	13.375"	54.5	J55	STC	1.27	3.07	4.96	8.24
12.25"	0'	3450'	9.625"	36	J55	LTC	1.13	1.96	3.65	4.54
8.75"	0'	10,688'	7"	26	HCP110	LTC	1.45	1.93	2.33	2.99
6.125"	9931'	20,690'	4.5"	13.5	P110	LTC	1.98	2.30	2.33	2.91
			BLM Minimum Safety Factor				1	1.6 Dry	1.6 Dry	
						•			1.8 Wet	1.8 Wet

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

	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?	

Casing Program

Hole	Casing Interval		Csg.	Weight	Grade	Conn.	SF	SF	SF Jt	SF Body
Size	From	То	Size	(lbs)			Collapse	Burst	Tension	Tension
17.5"	0'	1900'	13.375"	54.5	J55	STC	1.27	3.07	4.96	8.24
12.25"	0'	3450'	9.625"	36	J55	LTC	1.13	1.96	3.65	4.54
8.75"	0'	10,688'	7"	26	HCP110	LTC	1.45	1.93	2.33	2.99
6.125"	9931'	20,690'	4.5"	13.5	P110	LTC	1.98	2.30	2.33	2.91
····· • · · ···· • · · · · · · · · ·			BLM Minimum Safety Factor				1	1.6 Dry	1.6 Dry	
						-			1.8 Wet	1.8 Wet

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

	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?	Τ
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Casing Program

Hole	Casing Interval		Csg.	Weight	Grade	Conn.	SF	SF	SF Jt	SF Body
Size	From	То	Size	(lbs)			Collapse	Burst	Tension	Tension
17.5"	0'	1900'	13.375"	54.5	J55	STC	1.27	3.07	4.96	8.24
12.25"	0'	3450'	9.625"	36	J55	LTC	1.13	1.96	3.65	4.54
8.75"	0'	10,688'	7"	26	HCP110	LTC	1.45	1.93	2.33	2.99
6.125"	9931'	20,690'	4.5"	13.5	P110	LTC	1.98	2.30	2.33	2.91
	BLM Minimum		imum Safe	ty Factor	1.125	1	1.6 Dry	1.6 Dry		
						•			1.8 Wet	1.8 Wet

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

	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?	1
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?	

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 know 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. <u>Well Control Equipment</u>
 - 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. <u>Protective Equipment for Essential Personnel</u> 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. <u>Hydrogen Sulfide Protection and Monitoring Equipment</u> 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. <u>Visual Warning Systems</u>

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 Office911 or 575-887-7551Ambulance Service911 or 575-885-2111Carlsbad Fire Dept911 or 575-885-2111Loco Hills Volunteer Fire Dept.911 or 575-677-3266Closest Medical Facility - Columbia Medical Center of Carlsbad575-492-5000

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

Lea County, New Mexico NAD 83 Hereford 29/20 B2OB Fed Com #1H Sec 29, T19S, R35E SHL: 205' FSL & 1330' FEL, Sec 29 BHL: 100' FNL & 1980' FEL, Sec 20

Plan: Design #1

Standard Planning Report

14 February, 2019

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Database.	Hohh	s			Local Co	ordinate Refe	Tence.	Site Hereford 2	9/20 B2OB Fee	1 Com #1H		
Company:	Mewt	ourne Oil Corr	ากลกง		TVD Pofe	mano:		WELL @ 3771	Oueft (Original)	Woll Flev)		
Broloct:	i ea C	County New M	evico NAD 83		ND Refe			WELL @ 3771 Ousft (Original Well Elev)				
Site:	Heref	ord 29/20 B20	B Eed Com #1	н	MD Keler	ence:						
3108.	Cee (010 20120 D20	-	••								
weil:	Sec 2	9, 1195, KJOE		•	Survey C							
wellbore:	BHL:	100' FNL & 19	80' FEL, Sec 2	U								
Design:	Desig	in #1	<u> </u>									
Desile at	100.0											
Project	Lea C	bunty, New Me	IXICO NALI 63									
Man System:	vstem: US State Plane 1983				System Da	tum:	Me	an Sea Level				
Geo Datum:	North Ar	nerican Datum	1983		-,							
Man Zone:	New Mexico Eastern Zone											
1110p 20110.												
Site	Herefo	rd 29/20 B2OE	3 Fed Com #1H	1								
						070 00						
Site Position:			North	ling:	592	2,072.00 USI	Latitude:			32.6247235		
From:	Ma	P	Easti	ng:	805	5,541.00 usit	Longitude:			-103.4/51/50		
Position Uncert	Position Uncertainty: 0.0 usft Slot Radius: 13-3/16 " Grid Convergence:				ence:		0.46 "					
Wall	Sec 20	T105 D35E								· · · · · · · · · · · · · · · · · · ·		
wen	Jet 23	, 1190, NODE										
Well Position	Well Position +N/-S 0.0 us		0.0 usft N	t Northing: 592,0			Ousft Lati	tude:	32.624723			
+E/-W 0.0 usft		0.0 usft E	asting:		805,541.00 usft Lo			ongitude:				
Position Uncertainty 0.0 usft			0.0 usft W	ellhead Eleva	ation:	3,771.0	0 usft Gra	und Level:		3,744.0 usft		
Wellberg	841 -	100' ENIL 8 19	90'EEL Sec 21									
	DRL.	SUU FINE OL 134	OU FEL, SEC 20									
Magnetics	M	odel Name	Samp	le Date	Declina	ation	Dip A	ngle	Field \$	Strength		
					(°)	I	(°)	((nT)		
		IGRF2010)	2/13/2019		6.62		60.37		48,096		
Design	Decig						· · · ·					
Design	Desigi								· · · · · · · · · · · · · · · · · · ·			
Audit Notes:												
Version:			Phas	ie:	PROTOTYPE	TI	e On Depth:		0.0			
Vertical Section	•		Denth From (T		+N/-S	+	F/JW	Dir	rection			
			(usft)	,	(usft)	(usft)		(°)			
			0.0		0.0		0.0	3	55.92			
								•	••••			
Plan Sections												
Measured			Vertical			Dogleg	Build	Turn				
Denth	Inclination	Azimuth	Depth	+N/-S	+E/-W	Rate	Rate	Rate	TEO			
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)	(")	Target		
				· · ·								
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00			
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.00	0.00	0.00	0.00			
3,819.0	6.38	252.87	3,818.3	-5.2	-17.0	2.00	2.00	0.00	252.87			
9,611.8	6.38	252.87	9,575.2	-194.8	-632.0	0.00	0.00	0.00	0.00			
9,930.7	0.00	0.00	9,893.5	-200.0	-649.0	2.00	-2.00	0.00	180.00	KOP: 10' FSL & 1980'		
10,687.5	90.80	359.54	10,371.0	284.2	-652.9	12.00	12.00	0.00	-0.46			
20,689.6	90.80	359.54	10,231.0	10,285.0	-733.0	0.00	0.00	0.00	0.00	BHL: 100' FNL & 198(
	······									-		

Database:	Hobbs	Local Co-ordinate Reference:	Site Hereford 29/20 B2OB Fed Com #1H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3771.0usft (Original Well Elev)
Project:	Lea County, New Mexico NAD 83	MD Reference:	WELL @ 3771.0usft (Original Well Elev)
Site:	Hereford 29/20 B2OB Fed Com #1H	North Reference:	Grid
Well:	Sec 29, T19S, R35E	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 100' FNL & 1980' FEL, Sec 20	-	
Design:	Design #1		

Planned Survey

Measured			Vertical			Vertical	Dogleg	Build	Turn
Depth	inclination	Azimuth	Depth	+N/-S	+E/JW	Section	Rate	Rate	Rate
(usft)	(°)	(*)	(usft)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)
				((
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
SHL: 205 F	5L & 1330 PEL ((a)							a 'aa
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
1.100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1.200.0	0.0	0.0	0.0	0.00	0.00	0.00
1 300 0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1 400 0	0.00	0.00	1 400 0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2.200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2.300.0	0.00	0.00	2.300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2 500 0	0.00	0.00	2 500 0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	2.00	252.87	3,600.0	-0.5	-1.7	-0.4	2.00	2.00	0.00
3,700.0	4.00	252.87	3,699.8	-2.1	-6.7	-1.6	2.00	2.00	0.00
3,800.0	6.00	252.87	3,799.5	-4.6	-15.0	-3.5	2.00	2.00	0.00
3,819.0	6.38	252.87	3,818.3	-5.2	-17.0	-4.0	2.00	2.00	0.00
3,900.0	6.38	252.87	3,898.8	-7.9	-25.6	-6.0	0.00	0.00	0.00
4.000.0	6.38	252.87	3.998.2	-11.1	-36.2	-8.5	0.00	0.00	0.00
4 100 0	6.38	252.87	4.097.6	-14.4	-46.8	-11.1	0.00	0.00	0.00
4 200 0	6.38	252 87	4 197 0	-17 7	-57.4	-13.6	0.00	0.00	0.00
4,300.0	6.38	252.87	4.296.4	-21.0	-68.0	-16.1	0.00	0.00	0.00
4,000.0	0.00	250.07	4 905 7	04.0	70.0	40.0	0.00	0.00	0.00
4,400.0	0.38	202.07	4,393.7	-24.2 07 E	-/0.0	-10.0	0.00	0.00	0.00
4,500.0	6.38	252.87	4,495.1	-27.5	-89.3	-21.1	0.00	0.00	0.00
4,600.0	6.38	252.87	4,594.5	-30.8	-99.9	-23.6	0.00	0.00	0.00
4,700.0	6.38	252.87	4,693.9	-34.1	-110.5	-26.1	0.00	0.00	0.00
4,800.0	6.38	252.87	4,793.3	-37.3	-121.1	-28.6	0.00	0.00	0.00
4,900.0	6.38	252.87	4,892.6	-40.6	-131.7	-31.1	0.00	0.00	0.00
5,000.0	6.38	252.87	4,992.0	-43.9	-142.4	-33.6	0.00	0.00	0.00
5,100.0	6.38	252.87	5,091.4	<u>-47.1</u>	-153.0	-36.1	0.00	0.00	0.00

COMPASS 5000.1 Build 72

Database:	Hobbs	Local Co-ordinate Reference:	Site Hereford 29/20 B2OB Fed Corn #1H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3771.0usft (Original Well Elev)
Project:	Lea County, New Mexico NAD 83	MD Reference:	WELL @ 3771.0usft (Original Well Elev)
Site:	Hereford 29/20 B2OB Fed Com #1H	North Reference:	Grid
Well:	Sec 29, T19S, R35E	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 100' FNL & 1980' FEL, Sec 20	-	
Desian:	Design #1		

Planned Survey

Measured			Vertical			Vertical	Dogleg	Build	Turn
Depth	Inclination	Animuth	Denth	AN/ C		Section	Rate	Rate	Rate
(uction)	Inclination	Azimuun	(ueft)	TR/-5		(00000	/%/100ue@\	(*/100ue#)	(°/100ue®)
(usir)	0	(7)	(usit)	(usn)	(usπ)	(usit)	(71000810)	(/ toousity	
5,200.0	6.38	252.87	5,190.8	-50.4	-163.6	-38.7	0.00	0.00	0.00
5,300.0	6.38	252.87	5,290,2	-53.7	-174.2	-41.2	0.00	0.00	0.00
			•,=••.=	••••		••••=			
5,400.0	6.38	252.87	5,389.6	-57.0	-184.8	-43.7	0.00	0.00	0.00
5,500.0	6.38	252.87	5,488.9	-60.2	-195.4	-46.2	0.00	0.00	0.00
5,600.0	6.38	252.87	5,588.3	-63.5	-206.1	-48.7	0.00	0.00	0.00
5,700.0	6.38	252.87	5,687.7	-66.8	-216.7	-51.2	0.00	0.00	0.00
5,800.0	6.38	252.87	5,787.1	-70.0	-227.3	-53.7	0.00	0.00	0.00
-,			-,						
5,900.0	6.38	252.87	5 ,88 6.5	-73.3	-237.9	-56.2	0.00	0.00	0.00
6,000.0	6.38	252.87	5,985.8	-76.6	-248.5	-58.7	0.00	0.00	0.00
6,100.0	6.38	252.87	6,085.2	-79.9	-259.2	-61.2	0.00	0.00	0.00
6,200.0	6.38	252.87	6,184.6	-83.1	-269.8	-63.7	0.00	0.00	0.00
6,300.0	6.38	252.87	6,284.0	-86.4	-280.4	-66.3	0.00	0.00	0.00
0.400.0		050.07	0 000 4		004.0	~~~	0.00	0.00	0.00
6,400.0	6.38	252.87	6,383.4	-89.7	-291.0	-68.8	0.00	0.00	0.00
6,500.0	6.38	252.87	6,482.7	-93.0	-301.6	-/1.3	0.00	0.00	0.00
6,600.0	6.38	252.87	6,582.1	-96.2	-312.3	-73.8	0.00	0.00	0.00
6,700.0	6.38	252.87	6,681.5	-99.5	-322.9	-76.3	0.00	0.00	0.00
6,800.0	6.38	252.87	6,780.9	-102.8	-333.5	-78.8	0.00	0.00	0.00
6 000 0	6 29	252.97	6 990 3	106.0	244.4	91.2	0.00	0.00	0.00
0,900.0	0.30	202.07	0,00U.3 6,070 C	-100.0	-344.1	-01.3	0.00	0.00	0.00
7,000.0	0.38	202.07	0,979.0	-109.3	-304.7	-03.0	0.00	0.00	0.00
7,100.0	6.38	252.87	7,079.0	-112.6	-365.3	-86.3	0.00	0.00	0.00
7,200.0	6.38	252.87	7,178.4	-115.9	-376.0	-88.8	0.00	0.00	0.00
7,300.0	6.38	252.87	7,277.8	-119.1	-386.6	-91.3	0.00	0.00	0.00
7 400 0	6 38	252 87	7 377 2	-122 4	-397.2	-93.9	0.00	0.00	0.00
7,400.0	6.39	252.07	7 476 5	-125.7	-407.9	-06.4	0.00	0.00	0.00
7,500.0	0.30	252.07	7,470.5	-123.7	-407.0	-30.4	0.00	0.00	0.00
7,000.0	0.30	232.07	7,575.9	-120.9	-410.4	-90.9	0.00	0.00	0.00
7,700.0	0.38	252.87	7,075.3	-132.2	-429.1	-101.4	0.00	0.00	0.00
7,800.0	6.38	252.87	1,114.1	-135.5	-439.7	-103.9	0.00	0.00	0.00
7.900.0	6.38	252.87	7.874.1	-138.8	-450.3	-106.4	0.00	0.00	0.00
8 000 0	6.38	252 87	7 973 5	-142.0	-460.9	-108.9	0.00	0.00	0.00
8 100 0	6 38	252.87	8 072 8	-145.3	-471 5	-111 4	0.00	0.00	0.00
8 200 0	6 38	252.87	8 172 2	-148.6	_482.1	_113.9	0.00	0.00	0.00
8 300 0	6 39	252.07	9 271 6	-151.0	-402.1	-116.0	0.00	0.00	0.00
0,300.0	0.30	202.07	0,271.0	-151.8	-492.0	-110.4	0.00	0.00	0.00
8,400.0	6.38	252.87	8,371.0	-155.1	-503.4	-118.9	0.00	0.00	0.00
8,500.0	6.38	252.87	8,470.4	-158.4	-514.0	-121.5	0.00	0.00	0.00
8,600.0	6.38	252.87	8,569.7	-161.7	-524.6	-124.0	0.00	0.00	0.00
8,700.0	6.38	252.87	8,669.1	-164.9	-535.2	-126.5	0.00	0.00	0.00
8.800.0	6.38	252.87	8,768.5	-168.2	-545.9	-129.0	0.00	0.00	0.00
8,900.0	6.38	252.87	8,867.9	-171.5	-556.5	-131.5	0.00	0.00	0.00
9,000.0	6.38	252.87	8,967.3	-174.8	-567.1	-134.0	0.00	0.00	0.00
9,100.0	6.38	252.87	9,066.6	-178.0	-577.7	-136.5	0.00	0.00	0.00
9,200.0	6.38	252.87	9,166.0	-181.3	-588.3	-139.0	0.00	0.00	0.00
9,300.0	6.38	252.87	9,265.4	-184.6	-598.9	-141.5	0.00	0.00	0.00
0.400.0	6.20	757 97	0 264 9	107 0	600 E	144.0	0.00	0.00	0.00
9,400.0	0.38	232.87	9,304.0	-107.0	-009.0	-144.0	0.00	0.00	0.00
9,500.0	6.38	252.87	9,464.2	-191.1	-620.2	-140.5	0.00	0.00	0.00
9,600.0	6.38	252.87	9,563.5	-194.4	-630.8	-149.1	0.00	0.00	0.00
9,611.8	6.38	252.87	9,575.2	-194.8	-632.0	-149.4	0.00	0.00	0.00
9,700.0	4.61	252.87	9,663.1	-197.3	-640.1	-151.3	2.00	-2.00	0.00
0 900 0	19 61	252 97	9 762 0	100 1	_6A6 2	-162 7	2 00	-2 00	0.00
0,000.0	2.01	202.01	0,02.0	-100.1	-040.2	-102.7	2.00	-2.00	0.00
9,900.0	0.01	10.262	7,00 ≰.0	-200.0	-040.0	-100.0	2.00	-2.00	0.00
9,930.7	0.00	0.00	9,893.5	-200.0	-649.0	-153.4	2.00	-2.00	0.00
KOP: 10' FS	L & 1980' FEL (2	9)				=			
10,000.0	8.31	359.54	9,962.6	-195.0	-649.0	-148.4	12.00	12.00	0.00
10,100.0	20.31	359.54	10,059.3	-170.3	-649.2	-123.7	12.00	12.00	0.00
L									

Database:	Hobbs	Local Co-ordinate Reference:	Site Hereford 29/20 B2OB Fed Com #1H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3771.0usft (Original Well Elev)
Project:	Lea County, New Mexico NAD 83	MD Reference:	WELL @ 3771.0usft (Original Well Elev)
Site:	Hereford 29/20 B2OB Fed Com #1H	North Reference:	Grid
Well:	Sec 29, T19S, R35E	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 100' FNL & 1980' FEL, Sec 20	-	
Desian:	Desian #1		

Planned Survey

	Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Vertical Section	Dogleg Rate	Build Rate	Turn Rate
	(usft)	(°)	(*)	(usft)	(usft)	(usft)	(usft)	(°/100usft)	(*/100usft)	(*/100usft)
	10,200.0	32.31	359.54	10,148.8	-126.1	-649.6	-79.6	12.00	12.00	0.00
	10,237.1	36.77	359.54	10,179.4	-105.0	-649.8	-58.6	12.00	12.00	0.00
	FTP: 100' FS	L & 1980' FEL (2	29)							
	10,300.0	44.31	359.54	10,227.1	-64.2	-650.1	-17.8	12.00	12.00	0.00
	10,400.0	56.31	359.54	10,290.8	12.6	-650.7	58.8	12.00	12.00	0.00
	10,500.0	68.31	359.54	10,337.2	101.0	-651.4	147.0	12.00	12.00	0.00
	10,600.0	80.31	359.54	10,364.2	197.1	-652.2	243.0	12.00	12.00	0.00
	10,687.5	90.80	359.54	10,371.0	284.2	-652.9	329.9	12.00	12.00	0.00
· .	LP: 489' FSL	& 1980' FEL (29)		-					
	10,700.0	90.80	359.54	10,370.8	296.7	-653.0	342.4	0.00	0.00	0.00
	10,800.0	90.80	359.54	10,369.4	396.7	-653.8	442.2	0.00	0.00	0.00
	10,900.0	90.80	359.54	10,368.0	496.7	-654.6	541.9	0.00	0.00	0.00
	11,000.0	90.80	359.54	10,366.6	596.7	-655.4	641.7	0.00	0.00	0.00
	11,100.0	90.80	359.54	10,365.2	696.6	-656.2	741.5	0.00	0.00	0.00
	11,200.0	90,80	359.54	10,363.8	796.6	-657.0	841.3	0,00	0.00	0.00
	11,300.0	90.80	359.54	10,362.4	896.6	-657.8	941.1	0.00	0.00	0.00
	11,400.0	90.80	359.54	10,361.0	996.6	-658.6	1,040.9	0.00	0.00	0.00
	11,500.0	90.80	359.54	10,359.6	1,096.6	-659.4	1,140.7	0.00	0.00	0.00
	11,600.0	90.80	359.54	10,358.2	1,196.6	-660.2	1,240.5	0.00	0.00	0.00
	11,700.0	90.80	359.54	10,356.8	1,296.6	-661.0	1,340.3	0.00	0.00	0.00
	11,800.0	90.80	359.54	10,355.4	1,396.6	-661.8	1,440.1	0.00	0.00	0.00
	11,900.0	90.80	359.54	10,354.0	1,496.5	-662.6	1,539.9	0.00	0.00	0.00
	12,000.0	90.80	359.54	10,352.6	1,596.5	-663.4	1,639.6	0.00	0.00	0.00
	12,100.0	90.80	359.54	10,351.2	1,696.5	-664.2	1,739.4	0.00	0.00	0.00
	12,200.0	90.80	359.54	10,349.8	1,796.5	-665.0	1,839.2	0.00	0.00	0.00
	12,300.0	90.80	359.54	10,348.4	1,896.5	-665.8	1,939.0	0.00	0.00	0.00
	12,400.0	90.80	359.54	10,347.0	1,996.5	-666.6	2,038.8	0.00	0.00	0.00
	12,500.0	90.80	359.54	10,345.6	2,096.5	-667.4	2,138.6	0.00	0.00	0.00
	12,600.0	90.80	359.54	10,344.2	2,196.5	-668.2	2,238.4	0.00	0.00	0.00
l	12,700.0	90.80	359.54	10,342.8	2,296.4	-669.0	2,338.2	0.00	0.00	0.00
ļ	12,800.0	90.80	359.54	10,341.4	2,396.4	-669.8	2,438.0	0.00	0.00	0.00
	12,844.6	90.80	359.54	10,340.8	2,441.0	-670.2	2,482.5	0.00	0.00	0.00
	PPP2: 2562'	FNL & 1980' FEI	L (29)	-				-	-	
{	12,900.0	90.80	359.54	10,340.0	2,496.4	-670.6	2,537.8	0.00	0.00	0.00
	13,000.0	90.80	359.54	10,338.6	2,596.4	-671.4	2,637.6	0.00	0.00	0.00
	13,100.0	90.80	359.54	10,337.2	2,696.4	-672.2	2,737.3	0.00	0.00	0.00
	13,200.0	90.80	359.54	10,335.8	2,796.4	-673.0	2,837.1	0.00	0.00	0.00
	13,300.0	90.80	359.54	10,334.4	2,896.4	-673.8	2,936.9	0.00	0.00	0.00
	13,400.0	90.80	359.54	10,333.0	2,996.3	-674.6	3,036.7	0.00	0.00	0.00
	13,500.0	90.80	359.54	10,331.6	3,096.3	-675.4	3,136.5	0.00	0.00	0.00
	13,600.0	90.80	359.54	10,330.2	3,196.3	-676.2	3,236.3	0.00	0.00	0.00
	13,700.0	90.80	359.54	10,328.8	3,296.3	-677.0	3,336.1	0.00	0.00	0.00
	13,800.0	90.80	359.54	10,327.4	3,396.3	-677.8	3,435.9	0.00	0.00	0.00
1	13,900.0	90.80	359.54	10,326.0	3,496.3	-678.6	3,535.7	0.00	0.00	0.00
	14,000.0	90.80	359.54	10,324.6	3,596.3	-679.4	3,635.5	0.00	0.00	0.00
1	14,100.0	90.80	359.54	10,323.2	3,696.3	-680.2	3,735.3	0.00	0.00	0.00
	14,200.0	90.80	359.54	10,321.8	3,796.2	-681.0	3,835.1	0.00	0.00	0.00
	14,300.0	90.80	359.54	10,320.4	3,896.2	-681.8	3,934.8	0.00	0.00	0.00
	14,400.0	90.80	359.54	10,319.0	3,996.2	-682.6	4,034.6	0.00	0.00	0.00
1	14,500.0	90.80	359.54	10,317.6	4,096.2	-683.4	4,134.4	0.00	0.00	0.00
1	14,600.0	90.80	359.54	10,316.2	4,196.2	-684.2	4,234.2	0.00	0.00	0.00
i	14,700.0	90.80	359.54	10,314.8	4,296.2	-685.0	4,334.0	0.00	0.00	0.00
	14,800.0	90.80	359.54	10,313.4	4,396.2	-685.8	4,433.8	0.00	0.00	0.00
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Database:	Hobbs	Local Co-ordinate Reference:	Site Hereford 29/20 B2OB Fed Corn #1H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3771.0usft (Original Well Elev)
Project:	Lea County, New Mexico NAD 83	MD Reference:	WELL @ 3771.0usft (Original Well Elev)
Site:	Hereford 29/20 B2OB Fed Com #1H	North Reference:	Grid
Well:	Sec 29, T19S, R35E	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 100' FNL & 1980' FEL, Sec 20	-	
Design:	Design #1		

Planned	Survey
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Me	asured			Vertical			Vertical	Dogleg	Build	Turn	
	Depth	Inclination	Azimuth	Depth	+N/-S	+E/JM	Section	Rate	Rate	Rate	
	(usft)	/*\	/P)	(usft)		(ueft)	(usft)	(*/100usft)	(°/100usft)	(*/100usft)	
					(0011)	(0011)				·····	
	14,900.0	90.80	359.54	10,312.0	4,496.2	-686.6	4,533.6	0.00	0.00	0.00	
	15,000.0	90.80	359.54	10,310.6	4,596.1	-687.4	4,633.4	0.00	0.00	0.00	
	15,100.0	90.80	359.54	10.309.2	4,696,1	-688.2	4,733.2	0.00	0.00	0.00	
	15,200.0	90.80	359.54	10.307.8	4,796.1	-689.0	4.833.0	0.00	0.00	0.00	
	15,300.0	90.80	359.54	10.306.4	4.896.1	-689.8	4.932.8	0.00	0.00	0.00	
									0.00	0.00	
	15,400.0	90.80	359.54	10,305.0	4,996.1	-690.6	5,032.5	0.00	0.00	0.00	
	15,495.9	90.80	339,34	10,303.7	5,092.0	-091.4	5,128.3	0.00	0.00	0.00	
PI	PP3: 0' FSL	. & 1980' FEL (20	9								
	15,500.0	90.80	359.54	10,303.6	5,096.1	-691.4	5,132.3	0.00	0.00	0.00	
	15, 6 00.0	90.80	359.54	10,302.2	5,196.1	-692.2	5,232.1	0.00	0.00	0.00	
	15,700.0	90.80	359.54	10,300.8	5,296.0	-693.0	5,331.9	0.00	0.00	0.00	
	15.800.0	90.80	359.54	10.299.4	5.396.0	-693.8	5.431.7	0.00	0.00	0.00	
	15,900.0	90.80	359.54	10,298.0	5,496.0	-694.6	5.531.5	0.00	0.00	0.00	
	16,000.0	90.80	359 54	10 296 6	5 596 0	-695.4	5 631 3	0.00	0.00	0.00	
	16,000.0	00.00	250 54	10,200.0	5,550.0	-055.4	5,001.0	0.00	0.00	0.00	
	10,100.0	90.60	339.54	10,295.2	5,090.0	-090.2	5,731.1	0.00	0.00	0.00	
	16,200.0	90.80	359.54	10,293.8	5,796.0	-697.0	5,830.9	0.00	0.00	0.00	
	16,300.0	90.80	359.54	10,292.4	5,896.0	-697.8	5,930.7	0.00	0.00	0.00	
	16,400.0	90.80	359.54	10,291.0	5,996.0	-698.6	6,030.5	0.00	0.00	0.00	
	16.500.0	90.80	359.54	10.289.6	6.095.9	-699.4	6.130.2	0.00	0.00	0.00	
	16 600 0	90.80	359 54	10 288 2	6 195 9	-700 2	6 230 0	0.00	0.00	0.00	
	16 700 0	00.00	350 54	10,200.2	6 205 0	-701.0	6 320 8	0.00	0.00	0.00	
	10,700.0	90.00	339.34	10,200.0	0,295.9	-701.0	0,329.0	0.00	0.00	0.00	
	16,800.0	90.80	359.54	10,285.4	6,395.9	-701.8	6,429.6	0.00	0.00	0.00	
	16,820.1	90.80	359.54	10,285.2	6,416.0	-702.0	6,449.7	0.00	0.00	0.00	
PI	PP4: 1323'	FSL & 1980' FEL	. (20)								
	16.900.0	90.80	359.54	10.284.0	6.495.9	-702.6	6.529.4	0.00	0.00	0.00	
	17 000 0	90.80	359 54	10 282 6	6 595 9	-703 4	6 629 2	0.00	0.00	0.00	
	17.100.0	90.80	359.54	10.281.2	6.695.9	-704.2	6.729.0	0.00	0.00	0.00	
				40.070.0		305.0					
	17,200.0	90.80	359.54	10,279.8	6,795.9	-705.0	6,828.8	0.00	0.00	0.00	
	17,300.0	90.80	359.54	10,278.4	6,895.8	-705.8	6,928.6	0.00	0.00	0.00	
	17,400.0	90.80	359.54	10,277.0	6,995.8	-706.6	7,028.4	0.00	0.00	0.00	
	17,500.0	90.80	359.54	10,275.6	7,095.8	-707.4	7,128.2	0.00	0.00	0.00	
	17,600.0	90.80	359.54	10,274.2	7,195.8	-708.3	7,227.9	0.00	0.00	0.00	
	17 700 0	90.80	359 54	10 272 8	7 295 8	-709 1	7 327 7	0.00	0.00	0.00	
	17 800.0	90.80	359 54	10 271 4	7 305 8	.709.9	7 427 5	0.00	0.00	0.00	
	17,000.0	00.00	350 54	10,270.0	7,000.0	-710.7	7 5 27 3	0.00	0.00	0.00	
	17,900.0	90.00	339.34	10,270.0	7,493.0	-710.7	7,527.3	0.00	0.00	0.00	
	18,000.0	90.80	359.54	10,268.6	7,595.7	-/11.5	7,627.1	0.00	0.00	0.00	
	18,100.0	90.80	339.34	10,207.2	1,090.1	-/12.3	1,120.9	0.00	0.00	0.00	
	18,143.3	90.80	359.54	10,266.6	7,739.0	-712.6	7,770.1	0.00	0.00	0.00	
. PI	PP5: 2646'	FNL & 1980' FEL	. (20)								
	18,200.0	90.80	359.54	10,265.8	7,795.7	-713.1	7,826.7	0.00	0.00	0.00	
	18,300.0	90.80	359.54	10.264.4	7.895.7	-713.9	7.926.5	0.00	0.00	0.00	
	18 400 0	90.80	359 54	10 263 0	7 995 7	-714 7	8 026 3	0.00	0.00	0.00	
	18,500.0	90.80	359.54	10,261.6	8.095.7	-715.5	8,126,1	0.00	0.00	0.00	
					-,						
	18,600.0	90.80	359.54	10,260.2	8,195.7	-716.3	8,225.9	0.00	0.00	0.00	
	18,700.0	90.80	359.54	10,258.8	8,295.7	-717.1	8,325.6	0.00	0.00	0.00	
	18,800.0	90.80	359.54	10,257.4	8,395.6	-717.9	8,425.4	0.00	0.00	0.00	
	18,900.0	90.80	359.54	10,256.0	8,495.6	-718.7	8,525.2	0.00	0.00	0.00	
	19,000.0	90.80	359.54	10,254.6	8,595.6	-719.5	8,625.0	0.00	0.00	0.00	
	40.400.0	~~~~	250 54	40.050.0	0 005 0	700.0	0 704 0	0.00	0.00	0.00	
	19,100.0	90.80	339.54	10,253.2	8,095.0	-/20.3	5,724.8	0.00	0.00	0.00	
	19,200.0	90.80	339.54	10,251.8	0,795.0	-/21.1	0,024.0	0.00	0.00	0.00	
	19,300.0	90.80	359.54	10,250.5	8,895.6	-/21.9	8,924.4	0.00	0.00	0.00	
	19,400.0	90.80	359.54	10,249.1	8,995.6	-722.7	9,024.2	0.00	0.00	0.00	
	19,500.0	90.80	359.54	10,247.7	9,095.6	-723.5	9,124.0	0.00	0.00	0.00	

COMPASS 5000.1 Build 72

Database:	Hobbs	Local Co-ordinate Reference:	Site Hereford 29/20 B2OB Fed Com #1H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3771.0usft (Original Well Elev)
Project:	Lea County, New Mexico NAD 83	MD Reference:	WELL @ 3771.0usft (Original Well Elev)
Site:	Hereford 29/20 B2OB Fed Com #1H	North Reference:	Grid
Well:	Sec 29, T19S, R35E	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 100' FNL & 1980' FEL, Sec 20	-	
Design:	Desian #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)
		()		(2011)	(20.1.)				
19,600.0	90.80	359.54	10,246.3	9,195.5	-724.3	9,223.8	0.00	0.00	0.00
19,700.0	90.80	359.54	10,244.9	9,295.5	-725.1	9,323.6	0.00	0.00	0.00
19,800.0	90.80	359.54	10,243.5	9,395.5	-725.9	9,423.3	0.00	0.00	0.00
19,900.0	90.80	359.54	10,242.1	9,495.5	-726.7	9,523.1	0.00	0.00	0.00
20,000.0	90.80	359.54	10,240.7	9,595.5	-727.5	9,622.9	0.00	0.00	0.00
20,100.0	90.80	359.54	10,239.3	9,695.5	-728.3	9,722.7	0.00	0.00	0.00
20,200.0	90.80	359.54	10,237.9	9,795.5	-729.1	9,822.5	0.00	0.00	0.00
20,300.0	90.80	359.54	10,236.5	9,895.4	-729.9	9,922.3	0.00	0.00	0.00
20,400.0	90.80	359.54	10,235.1	9,995.4	-730.7	10,022.1	0.00	0.00	0.00
20,500.0	90.80	359.54	10,233.7	10,095.4	-731.5	10,121.9	0.00	0.00	0.00
20,600.0	90.80	359.54	10,232.3	10,195.4	-732.3	10,221.7	0.00	0.00	0.00
20,689.6	90.80	359.54	10,231.0	10,285.0	-733.0	10,311.1	0.00	0.00	0.00
BHL: 100' F	NL & 1980' FEL (20)					-		

Design Targets

Target Name		0-0-	7/0			Northlan	Factor		
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	Lasung (usft)	Latitude	Longitude
SHL: 205' FSL & 1330' F - plan hits target cer - Point	0.00 nter	0.00	0.0	0.0	0.0	592,072.00	805,541.00	32.6247235	-103.4751750
KOP: 10' FSL & 1980' Ft - plan hits target cer - Point	0.00 Nter	0.00	9,893.5	-200.0	-649.0	591,872.00	804,892.00	32.6241882	-103.4772881
FTP: 100' FSL & 1980' F - plan hits target cer - Point	0.00 nter	0.00	10,179.4	-105.0	-649.8	591,967.00	804,891.24	32.6244493	-103.4772881
BHL: 100' FNL & 1980' F - plan hits target cer - Point	0.00 nter	0.00	10,231.0	10,285.0	-733.0	602,357.00	804,808.00	32.6530072	-103.4772865
PPP5: 2646' FNL & 1980 - plan hits target cer - Point	0.00 hter	0.00	10,266.6	7,739.0	-712.6	599,811.00	804,828.40	32.6460093	-103.4772869
PPP4: 1323' FSL & 1980 - plan hits target cer - Point	0.00 nter	0.00	10,285.2	6,416.0	-702.0	598,488.00	804,838.99	32.6423729	-103.4772871
PPP3: 0' FSL & 1980' FE - plan hits target cer - Point	0.00 nter	0.00	10,303.7	5,092.0	-691.4	597,164.00	804,849.60	32.6387338	-103.4772873
PPP2: 2562' FNL & 1980 - plan hits target cer - Point	0.00 nter	0.00	10,340.8	2,441.0	-670.2	594,513.00	804,870.84	32.6314473	-103.4772877
LP: 489' FSL & 1980' FE - plan hits target cer - Point	0.00 hter	0.00	10,371.0	284.2	-652.9	592,356.20	804,888.10	32.6255191	-103.4772881

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רי											ВН	L: 100' FN	IL & 1980' F	EL (20)				• • •	
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				-	· •	• • •					LP:	489' FSL	& 1980' FE	L (29)			•		
]			<u> </u>				FTP: 10)' FSL & 198	30' FEL (29)		-								
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		1.									58	1L: 200 F3	SL & 1330 I	-EL (29)					•
	-10	- 0000	3750 -	7500	-6250	-5	000 -	3750 - West	KOP: 10' F	SL & 19 -1250 +) (25	980' FE 	L (29)	1250	2500	3750	500	 	6250	75
	-10	- 0000	3750 -	7500 -	-6250	-5	000 -	3750 - West	KOP: 10' F 2500 (-)/East(SL & 19 1250 +) (25	980' FE	L (29)	1250	2500	3750	5000	 D	6250	7!
	-10	0000 4	3750 -	7500 -	-6250	-5i -5i -205'	55L & 133	3750 - West	KOP. 10' F 2500 (-)/East(SL & 11 1250 +) (25	980' FEI 	L (29)	1250	2500	3750	5000		6250	7!
	-10	0000 -	3750 -	7500	-6250	-5	FSL & 133	3750 - West	KOP. 10' F 	SL & 11 1250 +) (25	980' FEI	L (29)	1250	2500	3750	5000		6250	75
	-10		3750 -	7500	-6250	-5 -5	FSL & 133	3750 - West	KOP. 10' F 2500 (-)/East(SL & 11 1250 +) (25	980' FEI	L (29)		2500	3750	5000	D	6250	75
	-10		3750 -	7500	-6250	-5	FSL & 1334	3750 - West	KOP: 10' Fi 	SL & 11	980' FE	L (29)		2500	3750	5000	- 	6250	75
	-10		3750 -	7500 -	-6250	51 51 L: 205' I	FSL & 133	3750 - West	KOP. 10' F 	SL & 11	980' FE	L (29)		2500	3750	5000		6250	7!
	-10		3750 -	7500	-6250	-51	FSL & 133	3750 - West	KOP: 10' Fi 	SL & 11	980' FE	L (29)		2500	3750			6250	
	-10		3750 -	7500	6250	-5	FSL & 1334	3750 - West	KOP: 10' Fi 	SL & 11 + +) (25	980' FE	L (29)		2500	3750			6250	
	-10		3750 -	7500	6250	-5	FSL & 133	3750 - West	KOP. 10' Fi 1 1 1 1 2500 (-)/East(SL & 11 1 - 1250 +) (25	980' FE	L (29)		2500	3750			6250	7
	-10		3750 -	7500	-6250	-5	FSL & 133	3750 - West	KOP: 10' Fi 	SL & 11 	980' FE	L (29)			3750				
	-10		3750 -	7500	6250	51	FSL & 133	3750 - West	KOP: 10' Fi 	SL & 11 1250 +) (25	980' FE	L (29)			3750				
	-10		3750 - 3750 - 	7500	-6250	-5	FSL & 133	7 FEL (29)	KOP: 10' Fi 	SL & 11	980' FE	L (29)			3750				
	-10			7500	6250	5	FSL & 133	3750 - West	KOP. 10' Fi 	SL & 11 1	980' FE	L (29)			3750		· · · · · · · · · · · · · · · · · · ·		
				7500	541 5H		FSL & 133	7 FEL (29)	KOP: 10' Fi 2500 (-)/East(SL & 11	980' FE	L (29)			3750				
	-10			7500	541 54250	5	FSL & 133	7 FEL (29)	KOP: 10' Fi 2500 (-)/East(SL & 11 		L (29)			3750				
					541 5H		FSL & 133	7 FEL (29)	KOP: 10' Fi 2500 t(-)/East(SL & 11	980' FE	L (29)			3750				
					6250	-5(-5)	FSL & 133	7 FEL (29)	KOP: 10' Fi 2500 (-)/East(SL & 11		L (29)			3750				
					6250	51	FSL & 133	7 FEL (29)	KOP: 10' Fi 	SL & 11	280' FE	L (29)		- 2500	3750	5001			
	-10	2000 - 4	8. 1980' FEI	7500	6250	-51 -51 -2051	FSL & 133/	7 FEL (29)	KOP: 10' F	SL & 11		L (29)		- 2500	3750	FEL (22			
	-10	2000 -4	8. 1980' FEI	7500	6250	5(5) 	FSL & 133	7 FEL (29) FEL (29) FEL (29) FEL (29) 80' FEL (29) 80' FEL (29) 80' FEL (29)	KOP: 10' Fi 2500 (-)/East(SL & 11	280' FE	L (29)		- 2500	3750 3750	FEL (2)			

Intent X As Drilled		
API #		
Operator Name:	Property Name:	Well Number
Mewbourne Oil Co.	Hereford 29/20 B2OB Fed Com	1H

Kick Off Point (KOP)

UL O	Section 29	Township 198	Range 35E	Lot	Feet 10	From N/S S	Feet 1980	From E/W E	County Lea
Latitu	ıde				Longitude				NAD
32.6	524188	32			-103.47	72881			83

First Take Point (FTP)

UL O	Section 29	Township 19S	Range 35E	Lot	Feet 100	From N/S S	Feet 1980	From E/W E	County Lea
Latitu	ıde				Longitude				NAD
32.6	624449)3			-103.47	72881			83

Last Take Point (LTP)

UL B	Section 20	Township 19S	Range 35E	Lot	Feet 100	From N/S N	Feet 1980	From E/W E	County Lea	
Latitu	ıde				Longitu	de			NAD	
32.6	653007	7			-103.	4772878	3		83	

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

Is this well an infill well?

Y	

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
Mewbourne Oil Co.	Hereford 29/20 B3PA St Com	2H
		KZ 06/29/2018

1. Geologic Formations

TVD of target	10,371'	Pilot hole depth	NA
MD at TD:	20,690'	Deepest expected fresh water:	50'

Basin

Formation	Depth (TVD)	Water/Mineral Bearing/	Hazards*
	from KB	Target Zone?	
Quaternary Fill	Surface		
Rustler	1819		
Top of Salt	2102		
Castile			
Base of Salt	3228		
Yates	3397		
Seven Rivers	3887		
Queen	4607		
Lamar	5852	Oil/Gas	
Bell Canyon			
Cherry Canyon			
Manzanita Marker			
Brushy Canyon			
Bone Spring	7802	Oil/Gas	
1 st Bone Spring Sand	9350		
2 nd Bone Spring Sand	9672	Target Zone	
3 rd Bone Spring Sand			
Abo			
Wolfcamp			
Devonian			
Ellenburger			
Granite Wash			

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

2. Casing Program

Hole	ole Casing Interval		Csg.	Weight		t Grade		Conn	. SF		SF	SF Jt	SF Body	
Size	From	То	Size	(lbs)					Collapse	e	Burst	Tension	Tension	
17.5"	0'	1900'	13.375'	54.5		J55		STC	1.27		3.07	4.96	8.24	
12.25"	0'	3450'	9.625"	36	36 J		J55		1.13		1.96	3.65	4.54	
8.75"	0'	10,688'	7"	26		HCP11	0	LTC	1.45		1.93	2.33	2.99	
6.125"	9931'	20,690'	4.5"	13.5		P110		LTC	1.98		2.30	2.33	2.91	
	BLM Mini	Factor 1	.125	1		1.0	6 Dry	1.6 Dry						
							1.3	8 Wet	1.8 Wet					

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

	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	Y
justification (loading assumptions, casing design criteria).	
Will the pipe be kept at a minimum 1/3 fluid filled to avoid approaching the	Y
collapse pressure rating of the casing?	
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?	

3. Cementing Program

Casing	# Sks	Wt. lb/	Yld ft3/	H20 gal/	500# Comp.	Slurry Description
		gal	sack	sk	Strength	
					(hours)	
Surf.	1125	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.	585	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.	440	12.5	2.12	11	9	Lead: Class H + Gel + Retarder + Defoamer +
						Extender
	400	15.6	1.18	5.2	10	Tail: Class H + Retarder + Fluid Loss + Defoamer
Liner	435	11.2	2.97	18	16	Class H + 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	ТОС	% Excess
Surface	0'	100%
Intermediate	0'	25%
Production	3250'	25%
Liner	9931'	25%

4. Pressure Control Equipment

Ν	N Variance: None						
BOP installedSize?Systemand testedRatebefore drillingWithich hole?		System Rated WP	Туре		~	Tested to:	
				Aı	nnular	X	2500#
		13-5/8"	5M	Blind Ram		X	
12-	12-1/4"			Pip	e Ram	X	5000#
				Double Ram			5000#
				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.

	A variance is requested for the use of a flexible choke line from the BOP to Choke			
Y	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.			

5. Mud Program

L L	VD	Туре	Weight (ppg)	Viscosity	Water Loss
From	То				
0	1900'	FW Gel	8.6-8.8	28-34	N/C
1900'	3450'	Saturated Brine	10.0	28-34	N/C
3450'	10,231'	Cut Brine	8.6-9.5	28-34	N/C
10,231'	10,371'	OBM	8.6-10.0	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	PVT/Visual Monitoring
of fluid?	

6. Logging and Testing Procedures

Logging, Coring and Testing.		
X	Will run GR/CNL from KOP (9931') 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	

Addi	tional logs planned	Interval
Χ	Gamma Ray	9931' (KOP) to TD

Drilling Plan

Density	
CBL	
Mud log	
PEX	

7. Drilling Conditions

Condition	Specify what type and where?	
BH Pressure at deepest TVD	5393 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

Drilling Plan

6

____ Directional Plan ____ Other, describe

Drilling Plan

7



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



APD ID: 10400038747

Operator Name: MEWBOURNE OIL COMPANY

Well Name: HEREFORD 29/20 B2OB FED COM

Well Type: OIL WELL

Well Number: 1H Well Work Type: Drill

Submission Date: 02/15/2019

Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO **Produced Water Disposal (PWD) Location: PWD surface owner:** Lined pit PWD on or off channel: Lined pit PWD discharge volume (bbl/day): Lined pit specifications: **Pit liner description:** Pit liner manufacturers information: **Precipitated solids disposal:** Decribe precipitated solids disposal: Precipitated solids disposal permit: Lined pit precipitated solids disposal schedule: Lined pit precipitated solids disposal schedule attachment: Lined pit reclamation description: Lined pit reclamation attachment: Leak detection system description: Lask datastian evetam attachment:

PWD disturbance (acres):

Weil Name: HEREFORD 29/20 B2OB FED COM

Well Number: 1H

Lined pit Monitor description: Lined pit Monitor attachment: Lined pit: do you have a reclamation bond for the pit? Is the reclamation bond a rider under the BLM bond? Lined pit bond number: Lined pit bond amount: Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD disturbance (acres):

PWD surface owner:

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Unlined pit: do you have a reclamation bond for the pit?

Operator Name: MEWBOURNE OIL COMPANY	
Well Name: HEREFORD 29/20 B2OB FED COM	Well Number: 1H
Is the reclamation bond a rider under the BLM bond?	
Unlined pit bond number:	
Unlined pit bond amount:	
Additional bond information attachment:	
Section 4 - Injection	
Would you like to utilize Injection PWD options? NO	
Produced Water Disposal (PWD) Location:	
PWD surface owner:	PWD disturbance (acres):
Injection PWD discharge volume (bbl/day):	
Injection well mineral owner:	
Injection well type:	
Injection well number:	Injection well name:
Assigned injection well API number?	Injection well API number:
Injection well new surface disturbance (acres):	
Minerals protection information:	
Mineral protection attachment:	
Underground Injection Control (UIC) Permit?	
UIC Permit attachment:	
Section 5 - Surface Discharge	
Would you like to utilize Surface Discharge PWD options?	NO
Produced Water Disposal (PWD) Location:	
PWD surface owner:	PWD disturbance (acres):
Surface discharge PWD discharge volume (bbl/day):	
Surface Discharge NPDES Permit?	
Surface Discharge NPDES Permit attachment:	
Surface Discharge site facilities information:	

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Well Name: HEREFORD 29/20 B2OB FED COM

Well Number: 1H

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:



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

APD ID: 10400038747

Operator Name: MEWBOURNE OIL COMPANY Well Name: HEREFORD 29/20 B2OB FED COM Well Type: OIL WELL

Bond Information

Federal/Indian APD: FED

BLM Bond number: NM1693

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment:

