

Form 3160-3
(June 2015)FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMNM081922
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		7. If Unit or CA Agreement, Name and No.
2. Name of Operator MEWBORNE OIL COMPANY		8. Lease Name and Well No. KANSAS 21/28 W2IP FED COM 1H
3a. Address PO Box 5270 Hobbs NM 88240	3b. Phone No. (include area code) (575)393-5905	9. API Well No. 30-015-47127
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface NESE / 2525 FSL / 665 FEL / LAT 32.2029467 / LONG -104.0863285 At proposed prod. zone SESE / 330 FSL / 440 FEL / LAT 32.1821656 / LONG -104.0852727		10. Field and Pool, or Exploratory PURPLE SAGE WOLFCAMP GAS / WOL
11. Sec., T. R. M. or Blk. and Survey or Area SEC 21 / T24S / R28E / NMP		
14. Distance in miles and direction from nearest town or post office* 3 miles	12. County or Parish EDDY	13. State NM
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 15 feet	16. No of acres in lease 80	17. Spacing Unit dedicated to this well 320
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1895 feet	19. Proposed Depth 10615 feet / 18073 feet	20. BLM/BIA Bond No. in file FED: NM1693
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3023 feet	22. Approximate date work will start* 07/24/2018	23. Estimated duration 60 days
24. Attachments		

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

- | | |
|--|---|
| 1. Well plat certified by a registered surveyor. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification. |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be requested by the BLM. |

25. Signature (Electronic Submission)	Name (Printed/Typed) Bradley Bishop / Ph: (575)393-5905	Date 04/26/2018
Title Regulatory		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Ty Allen / Ph: (575)234-5978	Date 12/21/2018
Title Wildlife Biologist		
Office CARLSBAD		

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

APPROVED WITH CONDITIONS

Approval Date: 12/21/2018 Entered 05/29/2020 - KMS NMOC

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

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

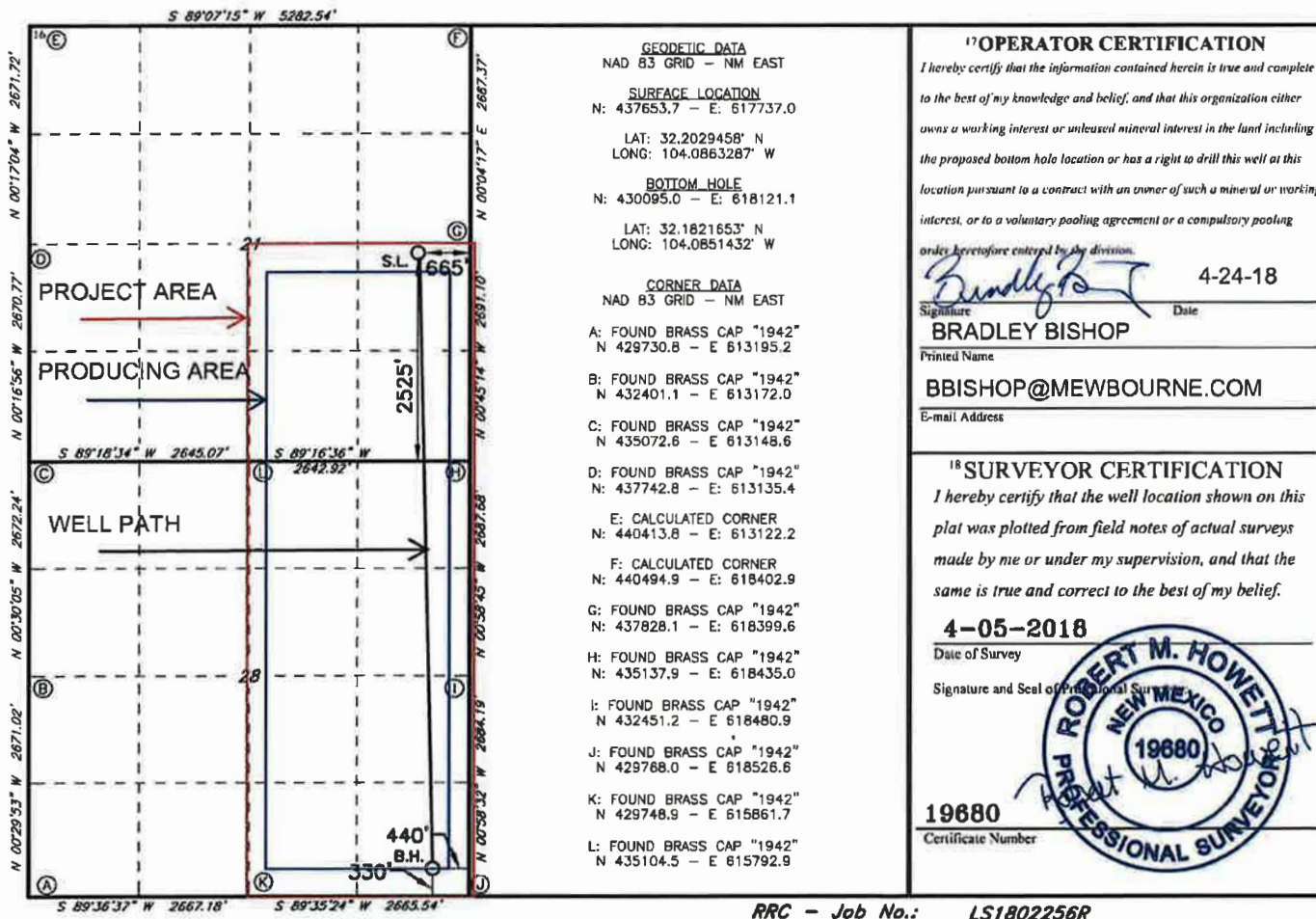
Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30 015 47127		² Pool Code 98220		³ Pool Name PURPLE SAGE - WOLFCAMP GAS POOL					
⁴ Property Code 328250		⁵ Property Name KANSAS 21/28 W2IP FEDERAL COM						⁶ Well Number 1H	
⁷ GRID NO. 14744		⁸ Operator Name MEWBOURNE OIL COMPANY						⁹ Elevation 3023'	
¹⁰ Surface Location									
UL or lot no. I	Section 21	Township 24S	Range 28E	Lot Idn	Feet from the 2525	North/South line SOUTH	Feet From the 665	East/West line EAST	County EDDY
¹¹ Bottom Hole Location If Different From Surface									
UL or lot no. P	Section 28	Township 24S	Range 28E	Lot Idn	Feet from the 330	North/South line SOUTH	Feet from the 440	East/West line EAST	County EDDY
¹² Dedicated Acres 480		¹³ Joint or infill		¹⁴ Consolidation Code		¹⁵ Order No.			

No allowable will be assigned to this completion until all interest have been consolidated or a non-standard unit has been approved by the division.





APD ID: 10400029782

Submission Date: 04/26/2018

Highlighted data
reflects the most
recent changes

Operator Name: MEWBOURNE OIL COMPANY

Well Name: KANSAS 21/28 W2IP FED COM

Well Number: 1H

[Show Final Text](#)

Well Type: CONVENTIONAL GAS WELL

Well Work Type: Drill

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
218708	UNKNOWN	3023	27	27		NONE	N
218712	CASTILE	1891	1080	1080	SALT	NONE	N
218713	LAMAR	456	2515	2515	LIMESTONE	NATURAL GAS, OIL	N
218714	BELL CANYON	426	2545	2545	SANDSTONE	NATURAL GAS, OIL	N
218715	CHERRY CANYON	-414	3385	3385	SANDSTONE	NATURAL GAS, OIL	N
218716	MANZANITA	-524	3495	3495	LIMESTONE	NATURAL GAS, OIL	N
218717	BRUSHY CANYON	-1639	4610	4610	SANDSTONE	NATURAL GAS, OIL	N
218711	BONE SPRING LIME	-3219	6190	6190	LIMESTONE, SHALE	NATURAL GAS, OIL	N
218709	BONE SPRING 1ST	-4119	7090	7090	SANDSTONE	NATURAL GAS, OIL	N
218710	BONE SPRING 2ND	-4979	7950	7950	SANDSTONE	NATURAL GAS, OIL	N
218718	BONE SPRING 3RD	-6029	9000	9000	SANDSTONE	NATURAL GAS, OIL	N
218719	WOLFCAMP	-6399	9370	9370	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M

Rating Depth: 18073

Equipment: Annular, Pipe Ram, Blind Ram

Requesting Variance? YES

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

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

Operator Name: MEWBORNE OIL COMPANY

Well Name: KANSAS 21/28 W2IP FED COM

Well Number: 1H

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

Choke Diagram Attachment:

Kansas_21_28_W2IP_Fed_Com_1H_5M_BOPE_Choke_Diagram_20180426103634.pdf

Kansas_21_28_W2IP_Fed_Com_1H_Flex_Line_Specs_20180426103636.pdf

BOP Diagram Attachment:

Kansas_21_28_W2IP_Fed_Com_1H_5M_BOPE_Schematic_20180426103653.pdf

Kansas_21_28_W2IP_Fed_Com_2H_Multi_Bowl_WH_20180426103654.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	4.0	NEW	API	N	0	425	0	425			425	H-40	48	ST&C	3.48	7.83	DRY	15.78	DRY	26.52
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	2440	0	2440			2440	J-55	36	LT&C	1.59	2.77	DRY	5.16	DRY	6.42
3	PRODUCTION	8.75	7.0	NEW	API	N	0	10730	0	10560			10730	P-110	26	LT&C	1.5	1.91	DRY	2.33	DRY	2.98
4	LINER	6.125	4.5	NEW	API	N	10026	18073	10021	10615			8047	P-110	13.5	LT&C	1.61	1.87	DRY	3.11	DRY	3.88

Casing Attachments

Operator Name: MEWBOURNE OIL COMPANY

Well Name: KANSAS 21/28 W2IP FED COM

Well Number: 1H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Kansas_21_28_W2IP_Fed_Com_1H_Csg_Assumptions_20180426103937.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Kansas_21_28_W2IP_Fed_Com_1H_Csg_Assumptions_20180426103943.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Kansas_21_28_W2IP_Fed_Com_1H_Csg_Assumptions_20180426103951.pdf

Operator Name: MEWBORNE OIL COMPANY

Well Name: KANSAS 21/28 W2IP FED COM

Well Number: 1H

Casing Attachments

Casing ID: 4 String Type: LINER

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Kansas_21_28_W2IP_Fed_Com_1H_Csg_Assumptions_20180426103958.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	234	155	2.12	12.5	329	100	Class C	Salt, Gel, Extender, LCM
SURFACE	Tail		234	425	200	1.34	14.8	268	100	Class C	Retarder
INTERMEDIATE	Lead		0	1786	345	2.12	12.5	731	25	Class C	Salt, Gel, Extender, LCM
INTERMEDIATE	Tail		1786	2440	200	1.34	14.8	268	25	Class C	Retarder
PRODUCTION	Lead	3495	2240	2824	60	2.12	12.5	116	25	Class C	Gel, Retarder, Defoamer, Extender
PRODUCTION	Tail		2824	3495	100	1.34	14.8	134	25	Class C	Retarder
PRODUCTION	Lead	3495	3495	8223	420	2.12	12.5	890	25	Class C	Gel, Retarder, Defoamer, Extender
PRODUCTION	Tail		8223	10730	400	1.18	15.6	472	25	Class H	Retarder, Fluid Loss, Defoamer
LINER	Lead		10026	18073	325	2.97	11.2	965	25	Class C	Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-Settling Agent

Operator Name: MEWBOURNE OIL COMPANY

Well Name: KANSAS 21/28 W2IP FED COM

Well Number: 1H

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

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

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

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

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

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	425	SPUD MUD	8.6	8.8							
425	2440	SALT SATURATED	10	10							
2440	1002 1	WATER-BASED MUD	8.6	9.7							
1002 1	1061 5	OIL-BASED MUD	10	12							MW up to 13.0 ppg may be required for shale control. The highest MW needed to balance formation pressure is expected to be 12.0 ppg.

Operator Name: MEWBOURNE OIL COMPANY

Well Name: KANSAS 21/28 W2IP FED COM

Well Number: 1H

Section 6 - Test, Logging, Coring

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

Will run GR/CNL from KOP (10,026') to surface

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

CNL,DS,GR,MWD,MUDLOG

Coring operation description for the well:

None

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 6624

Anticipated Surface Pressure: 4516.62

Anticipated Bottom Hole Temperature(F): 165

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

Describe:

Contingency Plans geohazards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Kansas_21_28_W2IP_Fed_Com_1H_H2S_Plan_20180426104249.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Kansas_21_28_W2IP_Fed_Com_1H_Dir_Plot_20180426104311.pdf

Kansas_21_28_W2IP_Fed_Com_1H_Dir_Plan_20180426104311.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

Kansas_21_28_W2IP_Fed_Com_1H_Drlg_Program_20180426104323.doc

Other Variance attachment:

Mewbourne Oil Company, Kansas 21/28 W2IP Fed Com #1H
Sec 21, T24S, R28E
SL: 2525' FSL & 665' FEL, Sec 21
BHL: 330' FSL & 440' FEL, Sec 28

Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
	From	To								
17.5"	0'	425'	13.375"	48	H40	STC	3.48	7.83	15.78	26.52
12.25"	0'	2440'	9.625"	36	J55	LTC	1.59	2.77	5.16	6.42
8.75"	0'	10,730'	7"	26	HCP110	LTC	1.50	1.91	2.33	2.98
6.125"	10,026'	18,073'	4.5"	13.5	P110	LTC	1.61	1.87	3.11	3.88
BLM Minimum Safety Factor							1.125	1	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet

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

Must have table for contingency casing

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

Mewbourne Oil Company, Kansas 21/28 W2IP Fed Com #1H
Sec 21, T24S, R28E
SL: 2525' FSL & 665' FEL, Sec 21
BHL: 330' FSL & 440' FEL, Sec 28

Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
	From	To								
17.5"	0'	425'	13.375"	48	H40	STC	3.48	7.83	15.78	26.52
12.25"	0'	2440'	9.625"	36	J55	LTC	1.59	2.77	5.16	6.42
8.75"	0'	10,730'	7"	26	HCP110	LTC	1.50	1.91	2.33	2.98
6.125"	10,026'	18,073'	4.5"	13.5	P110	LTC	1.61	1.87	3.11	3.88
BLM Minimum Safety Factor							1.125	1	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet

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

Must have table for contingency casing

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

Mewbourne Oil Company, Kansas 21/28 W2IP Fed Com #1H
Sec 21, T24S, R28E
SL: 2525' FSL & 665' FEL, Sec 21
BHL: 330' FSL & 440' FEL, Sec 28

Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
	From	To								
17.5"	0'	425'	13.375"	48	H40	STC	3.48	7.83	15.78	26.52
12.25"	0'	2440'	9.625"	36	J55	LTC	1.59	2.77	5.16	6.42
8.75"	0'	10,730'	7"	26	HCP110	LTC	1.50	1.91	2.33	2.98
6.125"	10,026'	18,073'	4.5"	13.5	P110	LTC	1.61	1.87	3.11	3.88
BLM Minimum Safety Factor							1.125	1	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet

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

Must have table for contingency casing

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

Mewbourne Oil Company, Kansas 21/28 W2IP Fed Com #1H
Sec 21, T24S, R28E
SL: 2525' FSL & 665' FEL, Sec 21
BHL: 330' FSL & 440' FEL, Sec 28

Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
	From	To								
17.5"	0'	425'	13.375"	48	H40	STC	3.48	7.83	15.78	26.52
12.25"	0'	2440'	9.625"	36	J55	LTC	1.59	2.77	5.16	6.42
8.75"	0'	10,730'	7"	26	HCP110	LTC	1.50	1.91	2.33	2.98
6.125"	10,026'	18,073'	4.5"	13.5	P110	LTC	1.61	1.87	3.11	3.88
BLM Minimum Safety Factor							1.125	1	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet

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

Must have table for contingency casing

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

3. Hydrogen Sulfide Safety Equipment and Systems

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

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

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

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

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

4. **Mud Program**

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

5. **Metallurgy**

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

6. **Communications**

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

7. **Well Testing**

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

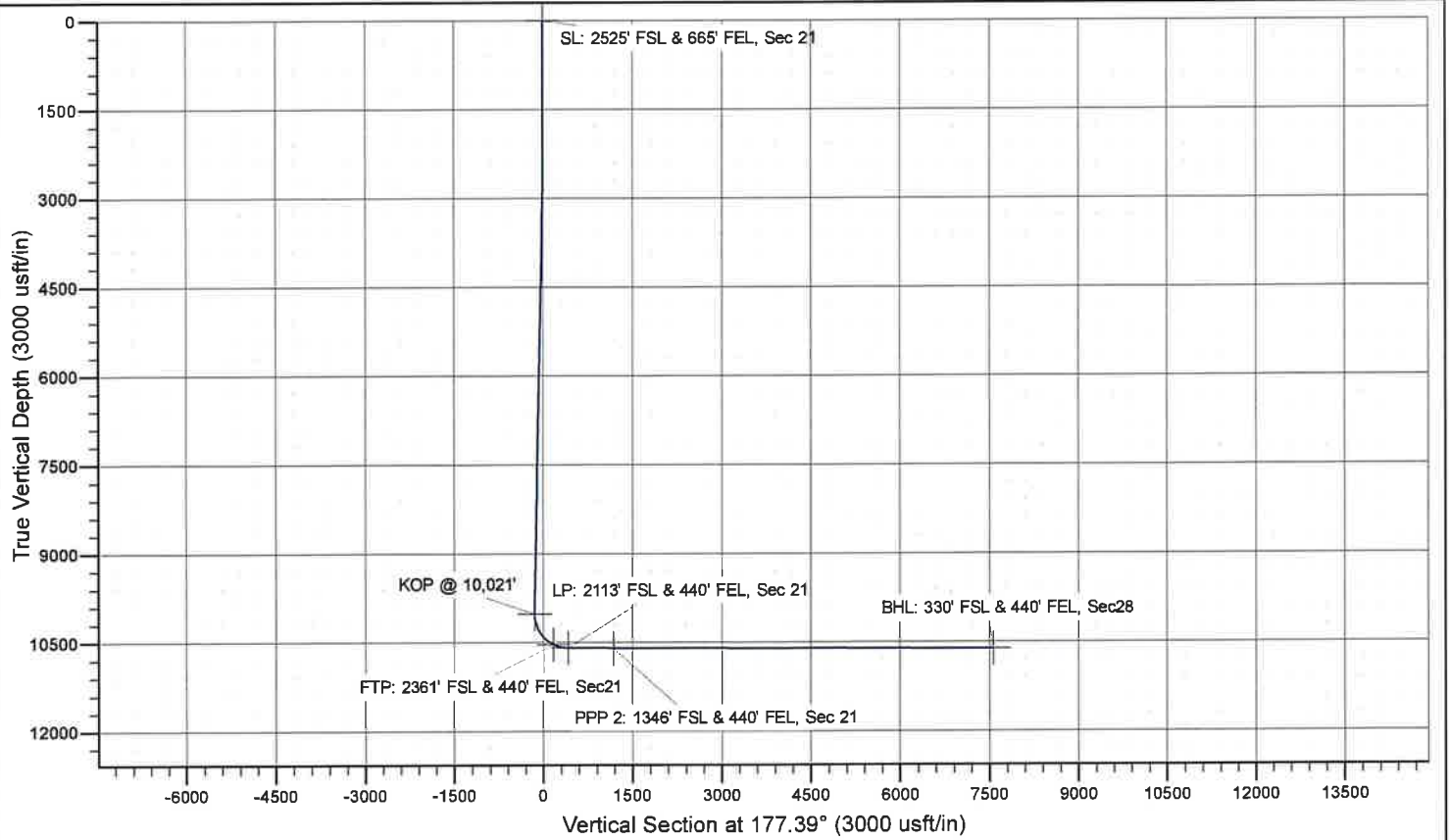
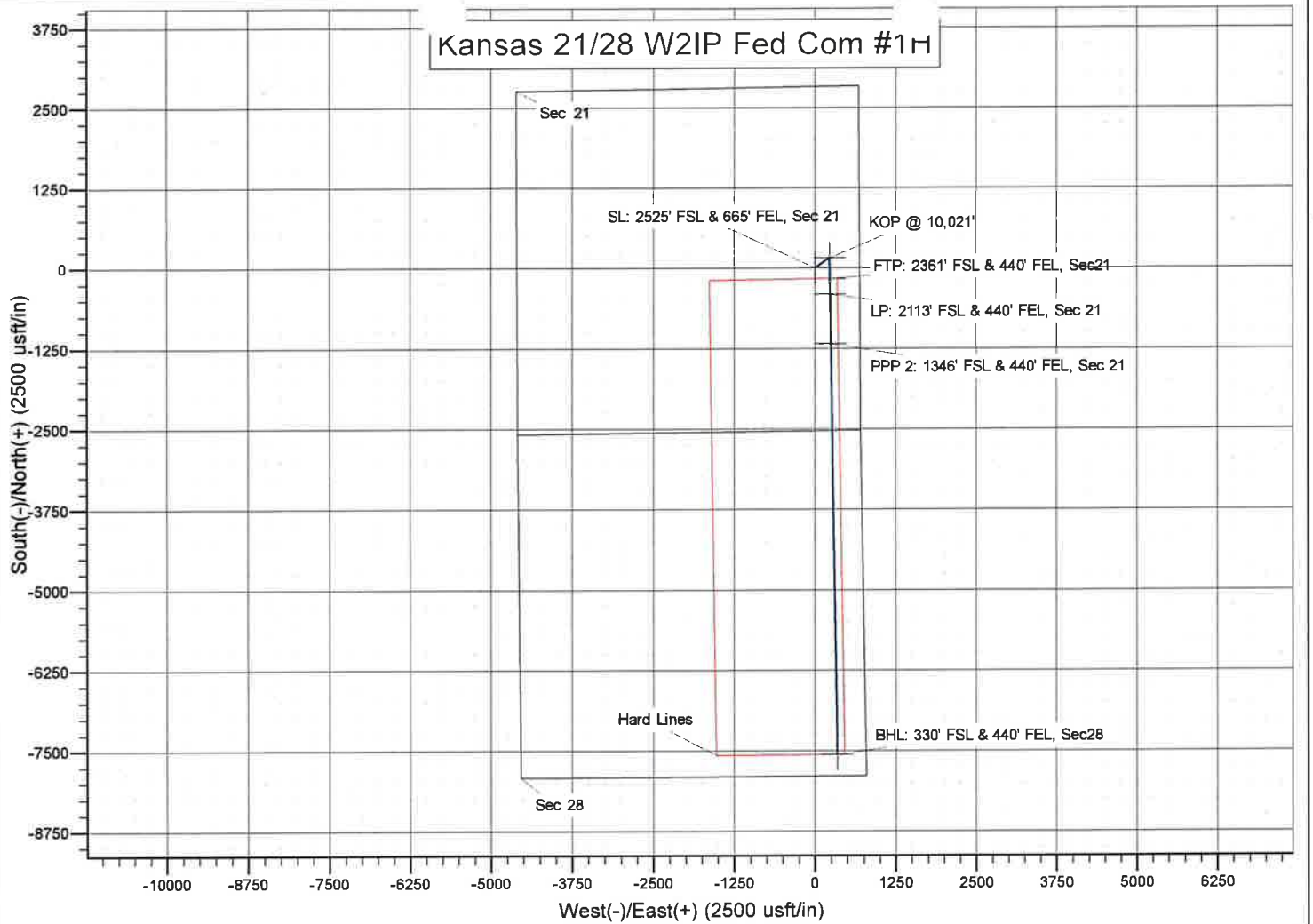
8. **Emergency Phone Numbers**

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

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

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

Kansas 21/28 W2IP Fed Com #1H



Mewbourne Oil Company

Eddy County, New Mexico NAD 83

Kansas 21/28 W2IP Fed Com #1H

Sec 21, T24S, R28E

SL: 2525' FSL & 665' FEL, Sec 21

BHL: 330' FSL & 440' FEL, Sec 28

Plan: Design #1

Standard Planning Report

25 April, 2018

Planning Report

Database:	Hobbs	Local Co-ordinate Reference:		Site Kansas 21/28 W2IP Fed Com #1H	
Company:	Mewbourne Oil Company	TVD Reference:		WELL @ 3050.0usft (Original Well Elev)	
Project:	Eddy County, New Mexico NAD 83	MD Reference:		WELL @ 3050.0usft (Original Well Elev)	
Site:	Kansas 21/28 W2IP Fed Com #1H	North Reference:		Grid	
Well:	Sec 21, T24S, R28E	Survey Calculation Method:		Minimum Curvature	
Wellbore:	BHL: 330' FSL & 440' FEL, Sec 28				
Design:	Design #1				

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

Site	Kansas 21/28 W2IP Fed Com #1H				
Site Position:		Northing:	437,654.00 usft	Latitude:	32.2029467
From:	Map	Easting:	617,737.00 usft	Longitude:	-104.0863285
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.13 °

Well	Sec 21, T24S, R28E					
Well Position	+N/-S	0.0 usft	Northing:	437,654.00 usft	Latitude:	32.2029467
	+E/-W	0.0 usft	Easting:	617,737.00 usft	Longitude:	-104.0863285
Position Uncertainty		0.0 usft	Wellhead Elevation:	3,050.0 usft	Ground Level:	3,023.0 usft

Wellbore	BHL: 330' FSL & 440' FEL, Sec 28				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/25/2018	6.98	59.91	47,868

Design	Design #1				
Audit Notes:					
Version:	Phase:	PROTOTYPE		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	177.39	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,641.7	2.13	54.51	2,641.7	1.5	2.1	1.50	1.50	0.00	54.51	
9,884.4	2.13	54.51	9,879.4	157.5	220.9	0.00	0.00	0.00	0.00	
10,026.1	0.00	0.00	10,021.0	159.0	223.0	1.50	-1.50	0.00	180.00	KOP @ 10,021'
10,924.4	89.83	179.10	10,594.0	-412.2	232.0	10.00	10.00	0.00	179.10	
18,072.1	89.83	179.10	10,615.0	-7,559.0	344.0	0.00	0.00	0.00	0.00	BHL: 330' FSL & 440'

Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Kansas 21/28 W2IP Fed Com #1H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3050.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	MD Reference:	WELL @ 3050.0usft (Original Well Elev)
Site:	Kansas 21/28 W2IP Fed Com #1H	North Reference:	Grid
Well:	Sec 21, T24S, R28E	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 330' FSL & 440' FEL, Sec 28		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Bulld Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
SL: 2525' FSL & 665' FEL, Sec 21									
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
1,500.0	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
2,600.0	1.50	54.51	2,600.0	0.8	1.1	-0.7	1.50	1.50	0.00
2,641.7	2.13	54.51	2,641.7	1.5	2.1	-1.4	1.50	1.50	0.00
2,700.0	2.13	54.51	2,699.9	2.8	3.9	-2.6	0.00	0.00	0.00
2,800.0	2.13	54.51	2,799.9	4.9	6.9	-4.6	0.00	0.00	0.00
2,900.0	2.13	54.51	2,899.8	7.1	9.9	-6.6	0.00	0.00	0.00
3,000.0	2.13	54.51	2,999.7	9.2	13.0	-8.6	0.00	0.00	0.00
3,100.0	2.13	54.51	3,099.7	11.4	16.0	-10.7	0.00	0.00	0.00
3,200.0	2.13	54.51	3,199.6	13.5	19.0	-12.7	0.00	0.00	0.00
3,300.0	2.13	54.51	3,299.5	15.7	22.0	-14.7	0.00	0.00	0.00
3,400.0	2.13	54.51	3,399.4	17.9	25.0	-16.7	0.00	0.00	0.00
3,500.0	2.13	54.51	3,499.4	20.0	28.1	-18.7	0.00	0.00	0.00
3,600.0	2.13	54.51	3,599.3	22.2	31.1	-20.7	0.00	0.00	0.00
3,700.0	2.13	54.51	3,699.2	24.3	34.1	-22.7	0.00	0.00	0.00
3,800.0	2.13	54.51	3,799.2	26.5	37.1	-24.8	0.00	0.00	0.00
3,900.0	2.13	54.51	3,899.1	28.6	40.1	-26.8	0.00	0.00	0.00
4,000.0	2.13	54.51	3,999.0	30.8	43.2	-28.8	0.00	0.00	0.00
4,100.0	2.13	54.51	4,099.0	32.9	46.2	-30.8	0.00	0.00	0.00
4,200.0	2.13	54.51	4,198.9	35.1	49.2	-32.8	0.00	0.00	0.00
4,300.0	2.13	54.51	4,298.8	37.2	52.2	-34.8	0.00	0.00	0.00
4,400.0	2.13	54.51	4,398.8	39.4	55.2	-36.8	0.00	0.00	0.00
4,500.0	2.13	54.51	4,498.7	41.5	58.3	-38.8	0.00	0.00	0.00
4,600.0	2.13	54.51	4,598.6	43.7	61.3	-40.9	0.00	0.00	0.00
4,700.0	2.13	54.51	4,698.6	45.8	64.3	-42.9	0.00	0.00	0.00
4,800.0	2.13	54.51	4,798.5	48.0	67.3	-44.9	0.00	0.00	0.00
4,900.0	2.13	54.51	4,898.4	50.2	70.3	-46.9	0.00	0.00	0.00
5,000.0	2.13	54.51	4,998.3	52.3	73.4	-48.9	0.00	0.00	0.00
5,100.0	2.13	54.51	5,098.3	54.5	76.4	-50.9	0.00	0.00	0.00

Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Kansas 21/28 W2IP Fed Com #1H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3050.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	MD Reference:	WELL @ 3050.0usft (Original Well Elev)
Site:	Kansas 21/28 W2IP Fed Com #1H	North Reference:	Grid
Well:	Sec 21, T24S, R28E	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 330' FSL & 440' FEL, Sec 28		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,200.0	2.13	54.51	5,198.2	56.6	79.4	-52.9	0.00	0.00	0.00
5,300.0	2.13	54.51	5,298.1	58.8	82.4	-55.0	0.00	0.00	0.00
5,400.0	2.13	54.51	5,398.1	60.9	85.4	-57.0	0.00	0.00	0.00
5,500.0	2.13	54.51	5,498.0	63.1	88.5	-59.0	0.00	0.00	0.00
5,600.0	2.13	54.51	5,597.9	65.2	91.5	-61.0	0.00	0.00	0.00
5,700.0	2.13	54.51	5,697.9	67.4	94.5	-63.0	0.00	0.00	0.00
5,800.0	2.13	54.51	5,797.8	69.5	97.5	-65.0	0.00	0.00	0.00
5,900.0	2.13	54.51	5,897.7	71.7	100.5	-67.0	0.00	0.00	0.00
6,000.0	2.13	54.51	5,997.7	73.8	103.6	-69.1	0.00	0.00	0.00
6,100.0	2.13	54.51	6,097.6	76.0	106.6	-71.1	0.00	0.00	0.00
6,200.0	2.13	54.51	6,197.5	78.1	109.6	-73.1	0.00	0.00	0.00
6,300.0	2.13	54.51	6,297.5	80.3	112.6	-75.1	0.00	0.00	0.00
6,400.0	2.13	54.51	6,397.4	82.4	115.6	-77.1	0.00	0.00	0.00
6,500.0	2.13	54.51	6,497.3	84.6	118.7	-79.1	0.00	0.00	0.00
6,600.0	2.13	54.51	6,597.2	86.8	121.7	-81.1	0.00	0.00	0.00
6,700.0	2.13	54.51	6,697.2	88.9	124.7	-83.1	0.00	0.00	0.00
6,800.0	2.13	54.51	6,797.1	91.1	127.7	-85.2	0.00	0.00	0.00
6,900.0	2.13	54.51	6,897.0	93.2	130.7	-87.2	0.00	0.00	0.00
7,000.0	2.13	54.51	6,997.0	95.4	133.8	-89.2	0.00	0.00	0.00
7,100.0	2.13	54.51	7,096.9	97.5	136.8	-91.2	0.00	0.00	0.00
7,200.0	2.13	54.51	7,196.8	99.7	139.8	-93.2	0.00	0.00	0.00
7,300.0	2.13	54.51	7,296.8	101.8	142.8	-95.2	0.00	0.00	0.00
7,400.0	2.13	54.51	7,396.7	104.0	145.8	-97.2	0.00	0.00	0.00
7,500.0	2.13	54.51	7,496.6	106.1	148.9	-99.3	0.00	0.00	0.00
7,600.0	2.13	54.51	7,596.6	108.3	151.9	-101.3	0.00	0.00	0.00
7,700.0	2.13	54.51	7,696.5	110.4	154.9	-103.3	0.00	0.00	0.00
7,800.0	2.13	54.51	7,796.4	112.6	157.9	-105.3	0.00	0.00	0.00
7,900.0	2.13	54.51	7,896.3	114.7	160.9	-107.3	0.00	0.00	0.00
8,000.0	2.13	54.51	7,996.3	116.9	164.0	-109.3	0.00	0.00	0.00
8,100.0	2.13	54.51	8,096.2	119.1	167.0	-111.3	0.00	0.00	0.00
8,200.0	2.13	54.51	8,196.1	121.2	170.0	-113.4	0.00	0.00	0.00
8,300.0	2.13	54.51	8,296.1	123.4	173.0	-115.4	0.00	0.00	0.00
8,400.0	2.13	54.51	8,396.0	125.5	176.0	-117.4	0.00	0.00	0.00
8,500.0	2.13	54.51	8,495.9	127.7	179.1	-119.4	0.00	0.00	0.00
8,600.0	2.13	54.51	8,595.9	129.8	182.1	-121.4	0.00	0.00	0.00
8,700.0	2.13	54.51	8,695.8	132.0	185.1	-123.4	0.00	0.00	0.00
8,800.0	2.13	54.51	8,795.7	134.1	188.1	-125.4	0.00	0.00	0.00
8,900.0	2.13	54.51	8,895.7	136.3	191.1	-127.4	0.00	0.00	0.00
9,000.0	2.13	54.51	8,995.6	138.4	194.2	-129.5	0.00	0.00	0.00
9,100.0	2.13	54.51	9,095.5	140.6	197.2	-131.5	0.00	0.00	0.00
9,200.0	2.13	54.51	9,195.5	142.7	200.2	-133.5	0.00	0.00	0.00
9,300.0	2.13	54.51	9,295.4	144.9	203.2	-135.5	0.00	0.00	0.00
9,400.0	2.13	54.51	9,395.3	147.0	206.2	-137.5	0.00	0.00	0.00
9,500.0	2.13	54.51	9,495.2	149.2	209.3	-139.5	0.00	0.00	0.00
9,600.0	2.13	54.51	9,595.2	151.4	212.3	-141.5	0.00	0.00	0.00
9,700.0	2.13	54.51	9,695.1	153.5	215.3	-143.6	0.00	0.00	0.00
9,800.0	2.13	54.51	9,795.0	155.7	218.3	-145.6	0.00	0.00	0.00
9,884.4	2.13	54.51	9,879.4	157.5	220.9	-147.3	0.00	0.00	0.00
9,900.0	1.89	54.51	9,895.0	157.8	221.3	-147.6	1.50	-1.50	0.00
10,000.0	0.39	54.51	9,995.0	158.9	222.9	-148.6	1.50	-1.50	0.00
10,026.1	0.00	0.00	10,021.0	159.0	223.0	-148.7	1.50	-1.50	0.00
KOP @ 10,021'									
10,100.0	7.39	179.10	10,094.7	154.2	223.1	-143.9	10.00	10.00	0.00

Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Kansas 21/28 W2IP Fed Com #1H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3050.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	MD Reference:	WELL @ 3050.0usft (Original Well Elev)
Site:	Kansas 21/28 W2IP Fed Com #1H	North Reference:	Grid
Well:	Sec 21, T24S, R28E	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 330' FSL & 440' FEL, Sec 28		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,200.0	17.39	179.10	10,192.3	132.8	223.4	-122.5	10.00	10.00	0.00
10,300.0	27.39	179.10	10,284.6	94.8	224.0	-84.5	10.00	10.00	0.00
10,400.0	37.39	179.10	10,369.0	41.3	224.8	-31.0	10.00	10.00	0.00
10,500.0	47.39	179.10	10,442.7	-26.0	225.9	36.3	10.00	10.00	0.00
10,600.0	57.39	179.10	10,503.7	-105.2	227.1	115.4	10.00	10.00	0.00
10,667.5	64.14	179.10	10,536.6	-164.0	228.1	174.2	10.00	10.00	0.00
FTP: 2361' FSL & 440' FEL, Sec21									
10,700.0	67.39	179.10	10,550.0	-193.6	228.5	203.8	10.00	10.00	0.00
10,800.0	77.39	179.10	10,580.2	-288.8	230.0	299.0	10.00	10.00	0.00
10,900.0	87.39	179.10	10,593.4	-387.8	231.6	397.9	10.00	10.00	0.00
10,924.4	89.83	179.10	10,594.0	-412.2	232.0	422.3	10.00	10.00	0.00
LP: 2113' FSL & 440' FEL, Sec 21									
11,000.0	89.83	179.10	10,594.2	-487.8	233.1	497.9	0.00	0.00	0.00
11,100.0	89.83	179.10	10,594.5	-587.8	234.7	597.8	0.00	0.00	0.00
11,200.0	89.83	179.10	10,594.8	-687.8	236.3	697.8	0.00	0.00	0.00
11,300.0	89.83	179.10	10,595.1	-787.7	237.8	797.7	0.00	0.00	0.00
11,400.0	89.83	179.10	10,595.4	-887.7	239.4	897.7	0.00	0.00	0.00
11,500.0	89.83	179.10	10,595.7	-987.7	241.0	997.7	0.00	0.00	0.00
11,600.0	89.83	179.10	10,596.0	-1,087.7	242.5	1,097.6	0.00	0.00	0.00
11,687.3	89.83	179.10	10,596.2	-1,175.0	243.9	1,184.9	0.00	0.00	0.00
PPP 2: 1346' FSL & 440' FEL, Sec 21									
11,700.0	89.83	179.10	10,596.3	-1,187.7	244.1	1,197.6	0.00	0.00	0.00
11,800.0	89.83	179.10	10,596.6	-1,287.7	245.7	1,297.5	0.00	0.00	0.00
11,900.0	89.83	179.10	10,596.9	-1,387.7	247.2	1,397.5	0.00	0.00	0.00
12,000.0	89.83	179.10	10,597.2	-1,487.7	248.8	1,497.4	0.00	0.00	0.00
12,100.0	89.83	179.10	10,597.5	-1,587.6	250.4	1,597.4	0.00	0.00	0.00
12,200.0	89.83	179.10	10,597.7	-1,687.6	252.0	1,697.3	0.00	0.00	0.00
12,300.0	89.83	179.10	10,598.0	-1,787.6	253.5	1,797.3	0.00	0.00	0.00
12,400.0	89.83	179.10	10,598.3	-1,887.6	255.1	1,897.3	0.00	0.00	0.00
12,500.0	89.83	179.10	10,598.6	-1,987.6	256.7	1,997.2	0.00	0.00	0.00
12,600.0	89.83	179.10	10,598.9	-2,087.6	258.2	2,097.2	0.00	0.00	0.00
12,700.0	89.83	179.10	10,599.2	-2,187.6	259.8	2,197.1	0.00	0.00	0.00
12,800.0	89.83	179.10	10,599.5	-2,287.6	261.4	2,297.1	0.00	0.00	0.00
12,900.0	89.83	179.10	10,599.8	-2,387.5	262.9	2,397.0	0.00	0.00	0.00
13,000.0	89.83	179.10	10,600.1	-2,487.5	264.5	2,497.0	0.00	0.00	0.00
13,100.0	89.83	179.10	10,600.4	-2,587.5	266.1	2,596.9	0.00	0.00	0.00
13,200.0	89.83	179.10	10,600.7	-2,687.5	267.6	2,696.9	0.00	0.00	0.00
13,300.0	89.83	179.10	10,601.0	-2,787.5	269.2	2,796.9	0.00	0.00	0.00
13,400.0	89.83	179.10	10,601.3	-2,887.5	270.8	2,896.8	0.00	0.00	0.00
13,500.0	89.83	179.10	10,601.6	-2,987.5	272.3	2,996.8	0.00	0.00	0.00
13,600.0	89.83	179.10	10,601.9	-3,087.5	273.9	3,096.7	0.00	0.00	0.00
13,700.0	89.83	179.10	10,602.2	-3,187.4	275.5	3,196.7	0.00	0.00	0.00
13,800.0	89.83	179.10	10,602.4	-3,287.4	277.0	3,296.6	0.00	0.00	0.00
13,900.0	89.83	179.10	10,602.7	-3,387.4	278.6	3,396.6	0.00	0.00	0.00
14,000.0	89.83	179.10	10,603.0	-3,487.4	280.2	3,496.5	0.00	0.00	0.00
14,100.0	89.83	179.10	10,603.3	-3,587.4	281.7	3,596.5	0.00	0.00	0.00
14,200.0	89.83	179.10	10,603.6	-3,687.4	283.3	3,696.4	0.00	0.00	0.00
14,300.0	89.83	179.10	10,603.9	-3,787.4	284.9	3,796.4	0.00	0.00	0.00
14,400.0	89.83	179.10	10,604.2	-3,887.4	286.4	3,896.4	0.00	0.00	0.00
14,500.0	89.83	179.10	10,604.5	-3,987.3	288.0	3,996.3	0.00	0.00	0.00
14,600.0	89.83	179.10	10,604.8	-4,087.3	289.6	4,096.3	0.00	0.00	0.00
14,700.0	89.83	179.10	10,605.1	-4,187.3	291.1	4,196.2	0.00	0.00	0.00
14,800.0	89.83	179.10	10,605.4	-4,287.3	292.7	4,296.2	0.00	0.00	0.00

Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Kansas 21/28 W2IP Fed Com #1H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3050.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	MD Reference:	WELL @ 3050.0usft (Original Well Elev)
Site:	Kansas 21/28 W2IP Fed Com #1H	North Reference:	Grid
Well:	Sec 21, T24S, R28E	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 330' FSL & 440' FEL, Sec 28		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,900.0	89.83	179.10	10,605.7	-4,387.3	294.3	4,396.1	0.00	0.00	0.00
15,000.0	89.83	179.10	10,606.0	-4,487.3	295.8	4,496.1	0.00	0.00	0.00
15,100.0	89.83	179.10	10,606.3	-4,587.3	297.4	4,596.0	0.00	0.00	0.00
15,200.0	89.83	179.10	10,606.6	-4,687.3	299.0	4,696.0	0.00	0.00	0.00
15,300.0	89.83	179.10	10,606.9	-4,787.2	300.5	4,796.0	0.00	0.00	0.00
15,400.0	89.83	179.10	10,607.1	-4,887.2	302.1	4,895.9	0.00	0.00	0.00
15,500.0	89.83	179.10	10,607.4	-4,987.2	303.7	4,995.9	0.00	0.00	0.00
15,600.0	89.83	179.10	10,607.7	-5,087.2	305.2	5,095.8	0.00	0.00	0.00
15,700.0	89.83	179.10	10,608.0	-5,187.2	306.8	5,195.8	0.00	0.00	0.00
15,800.0	89.83	179.10	10,608.3	-5,287.2	308.4	5,295.7	0.00	0.00	0.00
15,900.0	89.83	179.10	10,608.6	-5,387.2	310.0	5,395.7	0.00	0.00	0.00
16,000.0	89.83	179.10	10,608.9	-5,487.2	311.5	5,495.6	0.00	0.00	0.00
16,100.0	89.83	179.10	10,609.2	-5,587.1	313.1	5,595.6	0.00	0.00	0.00
16,200.0	89.83	179.10	10,609.5	-5,687.1	314.7	5,695.6	0.00	0.00	0.00
16,300.0	89.83	179.10	10,609.8	-5,787.1	316.2	5,795.5	0.00	0.00	0.00
16,400.0	89.83	179.10	10,610.1	-5,887.1	317.8	5,895.5	0.00	0.00	0.00
16,500.0	89.83	179.10	10,610.4	-5,987.1	319.4	5,995.4	0.00	0.00	0.00
16,600.0	89.83	179.10	10,610.7	-6,087.1	320.9	6,095.4	0.00	0.00	0.00
16,700.0	89.83	179.10	10,611.0	-6,187.1	322.5	6,195.3	0.00	0.00	0.00
16,800.0	89.83	179.10	10,611.3	-6,287.0	324.1	6,295.3	0.00	0.00	0.00
16,900.0	89.83	179.10	10,611.6	-6,387.0	325.6	6,395.2	0.00	0.00	0.00
17,000.0	89.83	179.10	10,611.8	-6,487.0	327.2	6,495.2	0.00	0.00	0.00
17,100.0	89.83	179.10	10,612.1	-6,587.0	328.8	6,595.1	0.00	0.00	0.00
17,200.0	89.83	179.10	10,612.4	-6,687.0	330.3	6,695.1	0.00	0.00	0.00
17,300.0	89.83	179.10	10,612.7	-6,787.0	331.9	6,795.1	0.00	0.00	0.00
17,400.0	89.83	179.10	10,613.0	-6,887.0	333.5	6,895.0	0.00	0.00	0.00
17,500.0	89.83	179.10	10,613.3	-6,987.0	335.0	6,995.0	0.00	0.00	0.00
17,600.0	89.83	179.10	10,613.6	-7,086.9	336.6	7,094.9	0.00	0.00	0.00
17,700.0	89.83	179.10	10,613.9	-7,186.9	338.2	7,194.9	0.00	0.00	0.00
17,800.0	89.83	179.10	10,614.2	-7,286.9	339.7	7,294.8	0.00	0.00	0.00
17,900.0	89.83	179.10	10,614.5	-7,386.9	341.3	7,394.8	0.00	0.00	0.00
18,000.0	89.83	179.10	10,614.8	-7,486.9	342.9	7,494.7	0.00	0.00	0.00
18,072.1	89.83	179.10	10,615.0	-7,559.0	344.0	7,566.8	0.00	0.00	0.00
BHL: 330' FSL & 440' FEL, Sec28									

Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Kansas 21/28 W2IP Fed Com #1H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3050.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	MD Reference:	WELL @ 3050.0usft (Original Well Elev)
Site:	Kansas 21/28 W2IP Fed Com #1H	North Reference:	Grid
Well:	Sec 21, T24S, R28E	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 330' FSL & 440' FEL, Sec 28		
Design:	Design #1		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
SL: 2525' FSL & 665' FE - plan hits target center - Point	0.00	0.01	0.0	0.0	0.0	437,654.00	617,737.00	32.2029467	-104.0863285
KOP @ 10,021' - plan hits target center - Point	0.00	0.00	10,021.0	159.0	223.0	437,813.00	617,960.00	32.2033824	-104.0856064
FTP: 2361' FSL & 440' F - plan hits target center - Point	0.00	0.00	10,536.6	-164.0	228.1	437,490.00	617,965.07	32.2024944	-104.0855924
LP: 2113' FSL & 440' FE - plan hits target center - Point	0.00	0.00	10,594.0	-412.2	232.0	437,241.80	617,969.00	32.2018121	-104.0855815
PPP 2: 1346' FSL & 440' - plan hits target center - Point	0.00	0.00	10,596.2	-1,175.0	243.9	436,479.00	617,980.92	32.1997152	-104.0855487
BHL: 330' FSL & 440' FE - plan hits target center - Point	0.00	0.00	10,615.0	-7,559.0	344.0	430,095.00	618,081.00	32.1821656	-104.0852727

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

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

Submit Original
to Appropriate
District Office

GAS CAPTURE PLAN

Date: 4-23-18

☒ Original

Operator & OGRID No.: Mewbourne Oil Company - 14744

☐ Amended - Reason for Amendment: _____

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

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

Well(s)/Production Facility – Name of facility

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

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Kansas 21/28 W2IP Fed Com #1H		1 - 21- T24S - R28E	2525 FSL & 665 FEL	0	NA	ONLINE AFTER FRAC

Gathering System and Pipeline Notification

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

Flowback Strategy

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

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

Alternatives to Reduce Flaring

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

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

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Mewbourne Oil Company
LEASE NO.:	NMNM-081922
WELL NAME & NO.:	Kansas 21 28 W2IP Federal Com 1H
SURFACE HOLE FOOTAGE:	2525' FSL & 0665' FEL
BOTTOM HOLE FOOTAGE	0330' FSL & 0440' FEL Sec. 28, T. 24 S., R 28 E.
LOCATION:	Section 21, T. 24 S., R 28 E., NMPM
COUNTY:	County, New Mexico

Communitization Agreement

· The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.

· If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.

· In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

A. DRILLING OPERATIONS REQUIREMENTS

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

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

☐ **Eddy County**

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

1. **Hydrogen Sulfide (H₂S) monitors shall be installed prior to drilling out the surface shoe. If H₂S is detected in concentrations greater than 100 ppm, the**

Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.
4. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size 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.

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

Wait on cement (WOC) for Water Basin:

After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least **8 hours**. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.

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.

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

Medium Cave/Karst

Possibility of water flows in the Castile and Salado.

Possibility of lost circulation in the Rustler, Red Beds, and Delaware.

Abnormal pressures may be encountered upon penetrating the 3rd Bone Spring Sandstone and all subsequent formations.

1. The 13-3/8 inch surface casing shall be set at approximately 425 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Formation below the 13-3/8" shoe to be tested according to Onshore Order

2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe and the mud weight for the bottom of the hole. Report results to BLM office.

2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing 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. Excess calculates to 23% - Additional cement may be required.**

If cement does not circulate to surface on the intermediate casing, the cement on the production casing must come to surface.

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

Centralizers required through the curve and a minimum of one every other joint.

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

Operator has proposed DV tool at depth of 3495', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range.

a. First stage to DV tool: ____

☐ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve approved top of cement on the next stage. **Excess calculates to 24% - Additional cement may be required.**

b. Second stage above DV tool:

☐ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.

Formation below the 7" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe and the mud weight for the bottom of the hole. Report results to BLM office.

4. The minimum required fill of cement behind the 4-1/2 inch production Liner is:

☐ Cement as proposed. Operator shall provide method of verification.

5. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API 53.
2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).
3. **Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be psi.**
 - a. **Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.**
 - b. **If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.**
 - c. **Manufacturer representative shall install the test plug for the initial BOP test.**
 - d. **Operator shall perform the 9-5/8" and 7" casing integrity tests to 70% of the casing burst. This will test the multi-bowl seals.**
 - e. **If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.**

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

4. The appropriate BLM office shall be notified a minimum of 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).
 - a. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.
 - b. 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.
 - c. The results of the test shall be reported to the appropriate BLM office.
 - d. 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.**
 - e. 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.
 - f. 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.

D. 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.

E. DRILL STEM TEST

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

F. 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.

JAM 121218

PECOS DISTRICT SURFACE USE CONDITIONS OF APPROVAL

OPERATOR'S NAME:	MARATHON OIL PERMIAN LLC
LEASE NO.:	NMNM081922
WELL NAME & NO.:	KANSAS 21/28 W2IP FED COM 1H
SURFACE HOLE FOOTAGE:	2525'/S & 665'/E
BOTTOM HOLE FOOTAGE:	330'/S & 440'/E
LOCATION:	SECTION 21, T24S, R28E, NMPM
COUNTY:	EDDY

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
 - Cave/Karst
 - Hydrology
- ☐ **Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☐ **Production (Post Drilling)**
 - Well Structures & Facilities
- ☐ **Interim Reclamation**
- ☐ **Final Abandonment & Reclamation**

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Cave Karst

Cave/Karst Surface Mitigation

The following stipulations will be applied to minimize impacts during construction, drilling and production:

Construction:

In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

No Blasting:

No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

Pad Berming:

- The entire perimeter of the well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.
- The compacted berm shall be constructed at a minimum of 12 inches high with impermeable mineral material (e.g., caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.
- The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed.
- Any access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)
- Following a rain event, all fluids will vacuumed off of the pad and hauled off-site and disposed at a proper disposal facility.

Tank Battery Liners and Berms:

Tank battery locations and all facilities will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing, or equivalent, to prevent tears or

punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

Leak Detection System:

A method of detecting leaks is required. The method could incorporate gauges to measure loss, situating valves and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

Automatic Shut-off Systems:

Automatic shut off, check valves, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

Cave/Karst Subsurface Mitigation

The following stipulations will be applied to protect cave/karst and ground water concerns:

Rotary Drilling with Fresh Water:

Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

Directional Drilling:

Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

Lost Circulation:

ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

Abandonment Cementing:

Upon well abandonment in cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

Pressure Testing:

Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

Hydrology:

The entire well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. The compacted berm shall be constructed at a minimum of 12 inches with impermeable mineral material (e.g. caliche). Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed. Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion. Stockpiling of topsoil is required. The top soil shall be stockpiled in an appropriate location to prevent loss of soil due to water or wind erosion and not used for berming or erosion control. If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank or 24 hour production, whichever is greater. Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

A leak detection plan will be submitted to the BLM Carlsbad Field Office for approval prior to pipeline installation. The method could incorporate gauges to detect pressure drops, situating valves and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing

The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. ON LEASE ACCESS ROADS**Road Width**

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

Surfacing

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching

Ditching shall be required on both sides of the road.

Turnouts

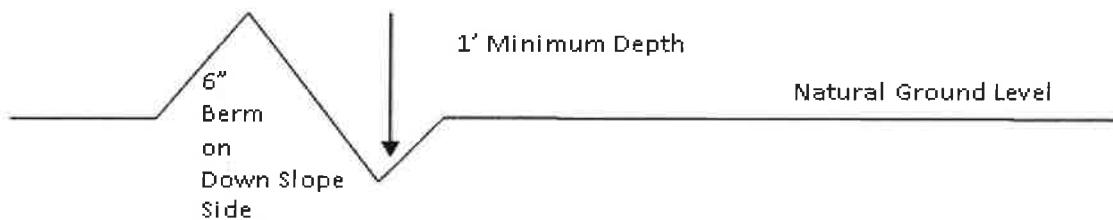
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outslowing and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$400 \text{ foot road with } 4\% \text{ road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

Cattle guards

An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

Fence Requirement

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Construction Steps

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes

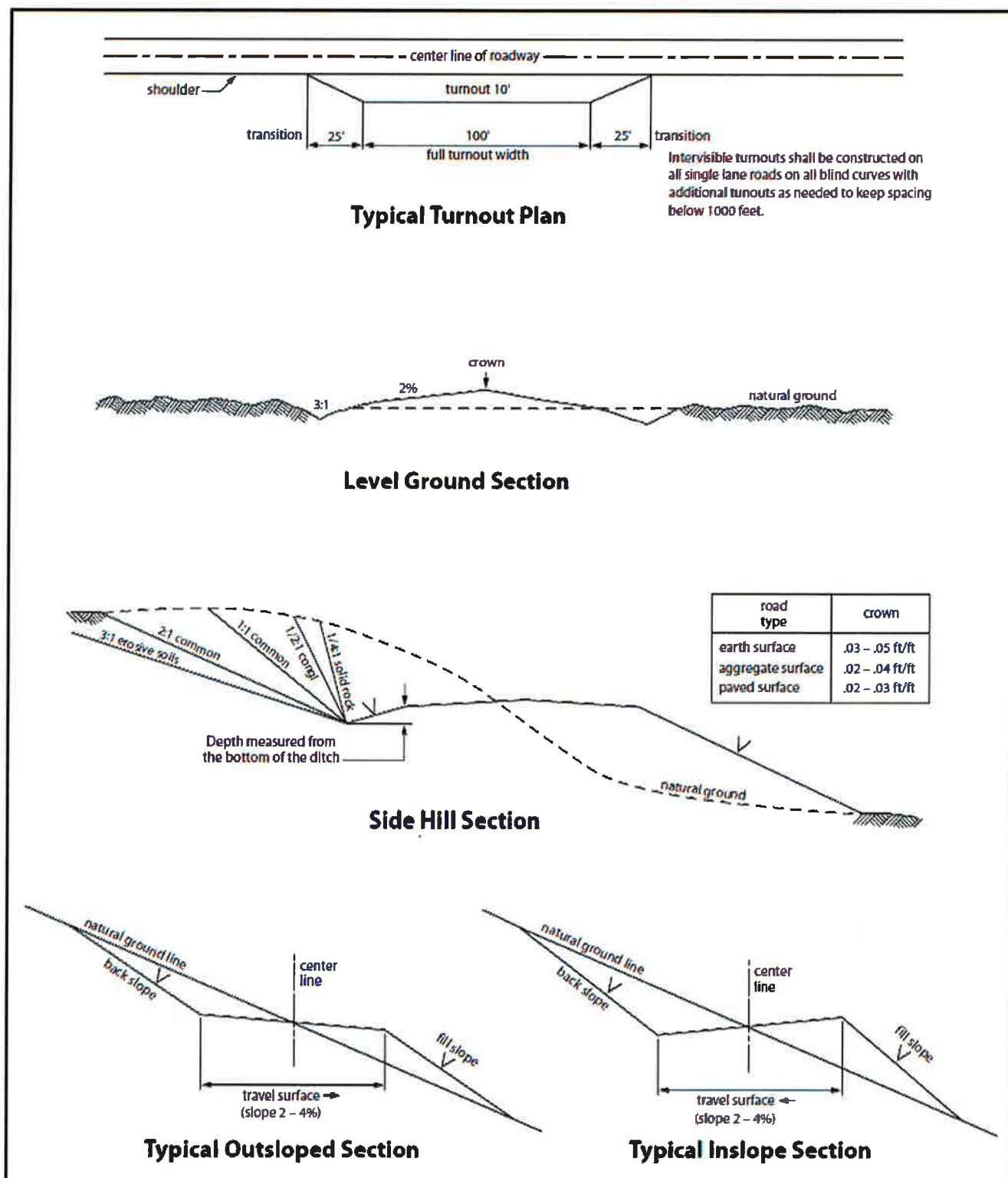


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Exclosure Netting (Open-top Tanks)

Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening

The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures

The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

Painting Requirement

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

VIII. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

IX. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Seed Mixture 1 for Loamy Sites

Holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed shall be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed shall be either certified or registered seed. The seed container shall be tagged in accordance with State law(s) and available for inspection by the Authorized Officer.

Seed shall be planted using a drill equipped with a depth regulator to ensure proper depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture shall be evenly and uniformly planted over the disturbed area (small/heavier seeds have a tendency to drop the bottom of the drill and are planted first). Holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed shall be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre shall be doubled. The seeding shall be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth may not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

<u>Species</u>	<u>lb/acre</u>
Plains lovegrass (<i>Eragrostis intermedia</i>)	0.5
Sand dropseed (<i>Sporobolus cryptandrus</i>)	1.0
Sideoats grama (<i>Bouteloua curtipendula</i>)	5.0
Plains bristlegrass (<i>Setaria macrostachya</i>)	2.0

*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed