

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☒ DRILL ☐ REENTER		7. If Unit or CA Agreement, Name and No.	
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		8. Lease Name and Well No. (313741) Big Sinks 1 A2 PA Fed Com #1H	
2. Name of Operator Mewbourne Oil Company		9. API Well No. 30-015-42694	
3a. Address PO Box 5270 Hobbs, NM 88241	3b. Phone No. (include area code) 575-393-5905	10. Field and Pool, or Exploratory Jennings 13S West Jennings Upper Bone Spring Shale	
4. Location of Well (Report location clearly and in accordance with any State requirements *) At surface 465' FNL & 330' FEL, Sec 12 T26S R31E At proposed prod. zone 330' FNL & 375' FEL Sec 1 T26S R31E		11. Sec., T. R. M. or Blk. and Survey or Area Sec 12 T26S R31E 29260	
14. Distance in miles and direction from nearest town or post office* 25.1 miles northeast of Orla, TX		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) 330'	16. No. of acres in lease 2160 (NMNM 089057) 40 (NMNM112931)	17. Spacing Unit dedicated to this well 160 acres	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 953' COLTRANE BQR FEDERAL COM #001H	19. Proposed Depth 14,037' - MD 8,831' - TVD	20. BLM/BIA Bond No. on file NM-1693 Nationwide, NMB-000919	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3261'	22. Approximate date work will start* 04/28/2014	23. Estimated duration 60 Days	

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

- | | |
|--|---|
| 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 required by the BLM. |

25. Signature 	Name (Printed/Typed) BRADLEY BISHOP	Date 4-24-14
---	--	-----------------

Approved by (Signature) Steve Caffey	Name (Printed/Typed)	Date SEP 23 2014
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

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

APPROVAL FOR TWO YEARS

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.

(Continued on page 2)

*(Instructions on page 2)

Carlsbad Controlled Water Basin

NM OIL CONSERVATION

ARTESIA DISTRICT

SEP 25 2014

RECEIVED

Approval Subject to General Requirements
& Special Stipulations Attached

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Mewbourne Oil Company

PO Box 5270
Hobbs, NM 88241
(575) 393-5905

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

Executed this 11 day of MARCH, 2014.

Name: NM Young

Signature: Bradley B. Young FOR NM Young

Position Title: Hobbs District Manager

Address: PO Box 5270, Hobbs NM 88241

Telephone: 575-393-5905

E-mail: myoung@mewbourne.com

Attachment: Big Sinks "1" A2PA Fed COM #1-H

BLM Serial No.: NMNM 112931 – T26S, R31E, Section 1: NE/4NE/4, Eddy County, NM

Current Record Title and Operating Rights owner is Marshall & Winston, Inc.

Mewbourne Oil Company purchased this lease from Marshall & Winston, Inc. The Assignment of Record Title has been submitted for BLM approval.

BLM Serial No.: NMNM 89507 – T26S, R31E, Section 1: SE/4SE/4, Eddy County, NM

Current Record Title and Operating Rights owner is Devon Energy Production Company, L.P.

Mewbourne Oil Company is currently working with Devon and XTO Energy, Inc. to form a working interest unit including this lease that will allow for the development of all lands within the anticipated project area for the subject well.

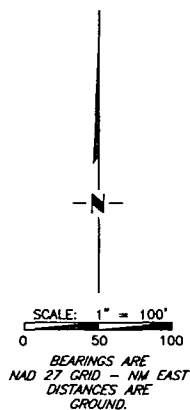
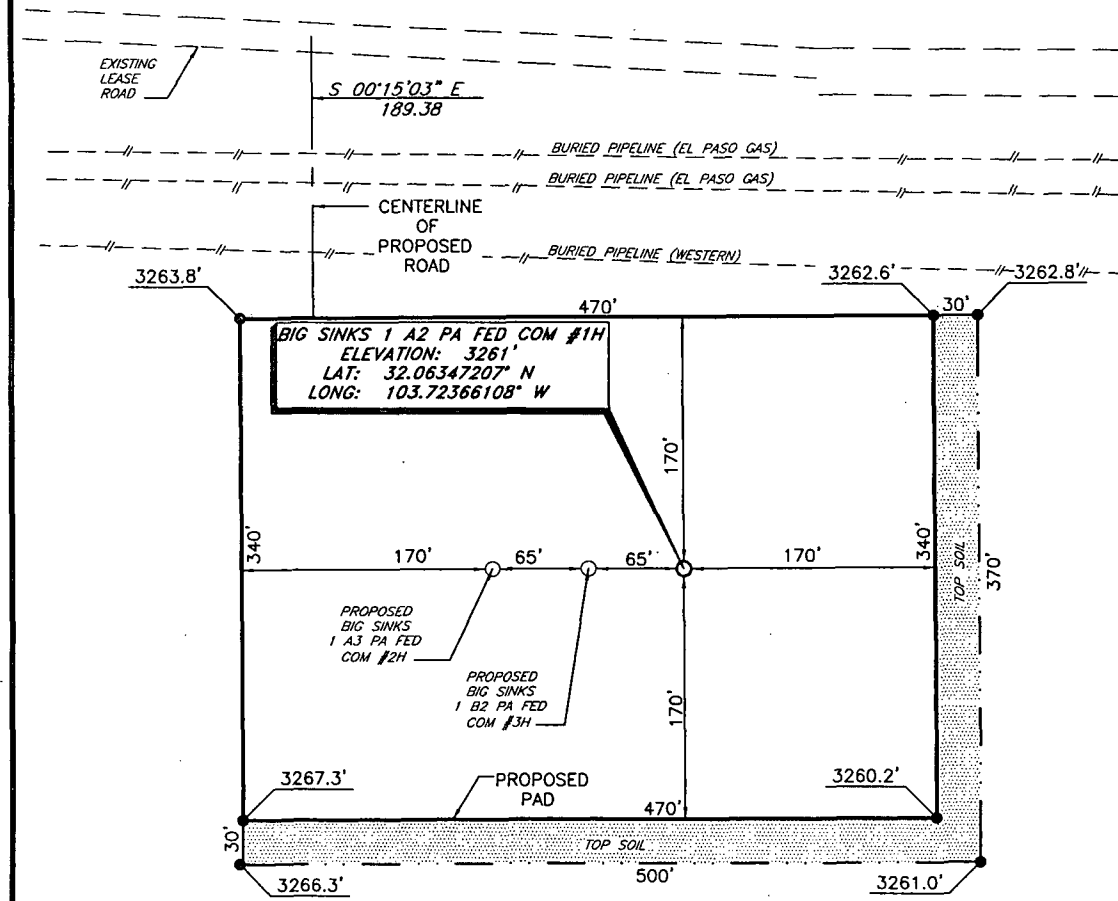
Devon Energy Production Company, L.P., 333 W. Sheridan Avenue, Oklahoma City, OK 73102
Attn: Mr. Samuel Walker (405) 228-4342

XTO Energy, Inc., 810 Houston Street, Suite 2000, Fort Worth, TX 76102
Attn: Mr. Steve Cobb (817) 885-3305

"3"

MEWBOURNE OIL COMPANY

Big Sinks 1 A2 PA Fed Com #1H
(465' FNL & 330' FEL)
Section 12, T-26-S, R-31-E,
N. M. P. M., Eddy Co., New Mexico



DIRECTIONS TO LOCATION

From the intersection C.R. J-1, (Orla RD), and C.R. J-2, (Battle Axe), go Northeast on C.R. J-1 approx. 3.1 miles to a lease road;

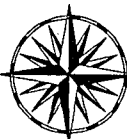
Turn turn left and go West approx. 3.0 miles to proposed road survey;

The location is approx. 350 feet to the South.

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NO.	REVISION	DATE
JOB NO.:	LS140010	
DWG. NO.:	140010PAD	

PROSPERITY CONSULTANTS, LLC



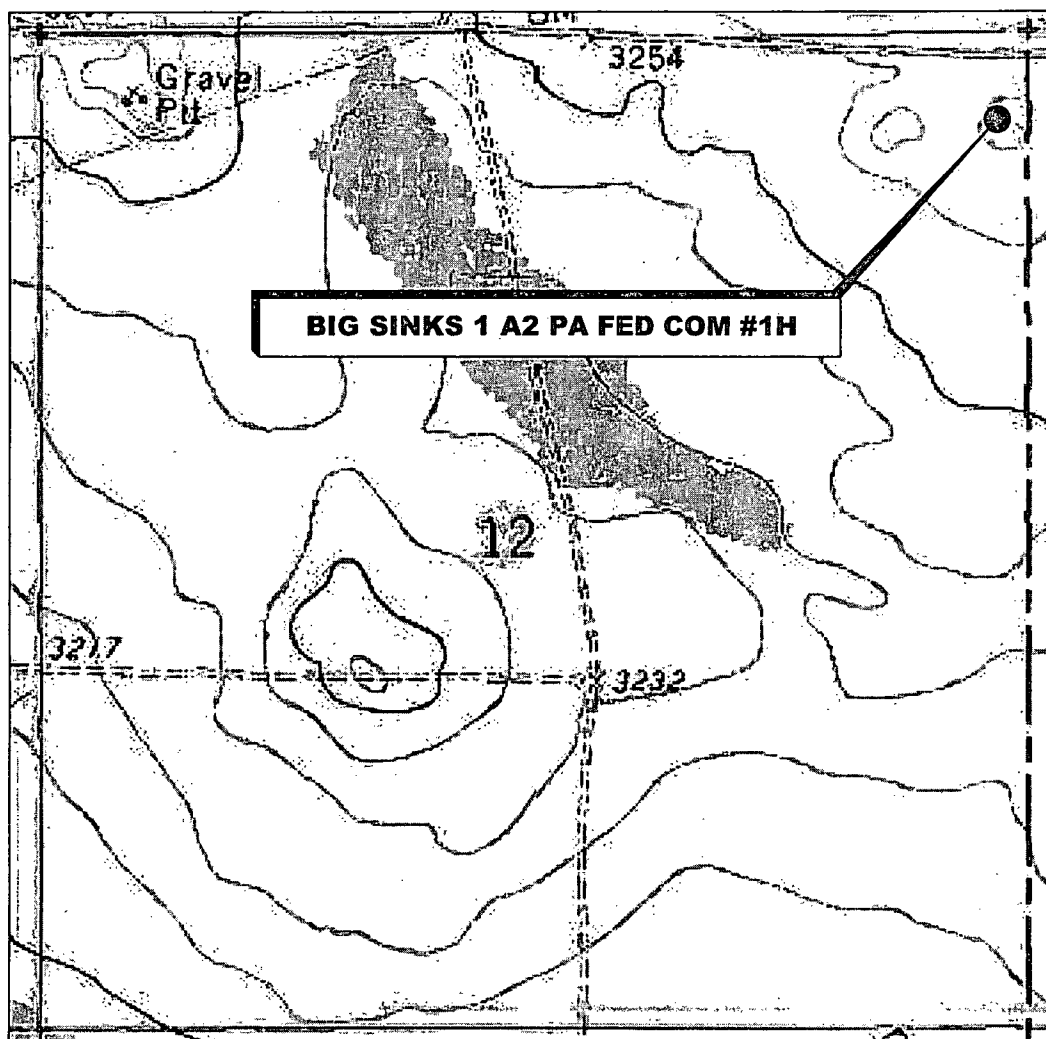
2251 Double Creek Drive, Suite 602, Round Rock, Texas 78664

o (512) 992-2087 f (512) 251-2518

SCALE: $1" = 100'$
DATE: 1-21-14
SURVEYED BY: BK/BC
DRAWN BY: JF
APPROVED BY: LWB
SHEET : 1 OF 1

3A

LOCATION VERIFICATION MAP



*SECTION 12, TWP. 26 SOUTH, RGE. 31 EAST,
N. M. P. M., EDDY COUNTY, NEW MEXICO*

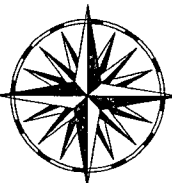
OPERATOR: Mewbourne Oil Company
LEASE: Big Sinks 1 A2 PA Fed Com
WELL NO.: 1H
ELEVATION: 3261'

LOCATION: 465' FNL & 330' FEL
CONTOUR INTERVAL: 10'
USGS TOPO. SOURCE MAP:
Paduca Breaks West NM-TX (1973)

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NO.	REVISION	DATE
JOB NO.: LS140010		
DWG. NO.: 140010LVM		

PROSPERITY CONSULTANTS, LLC



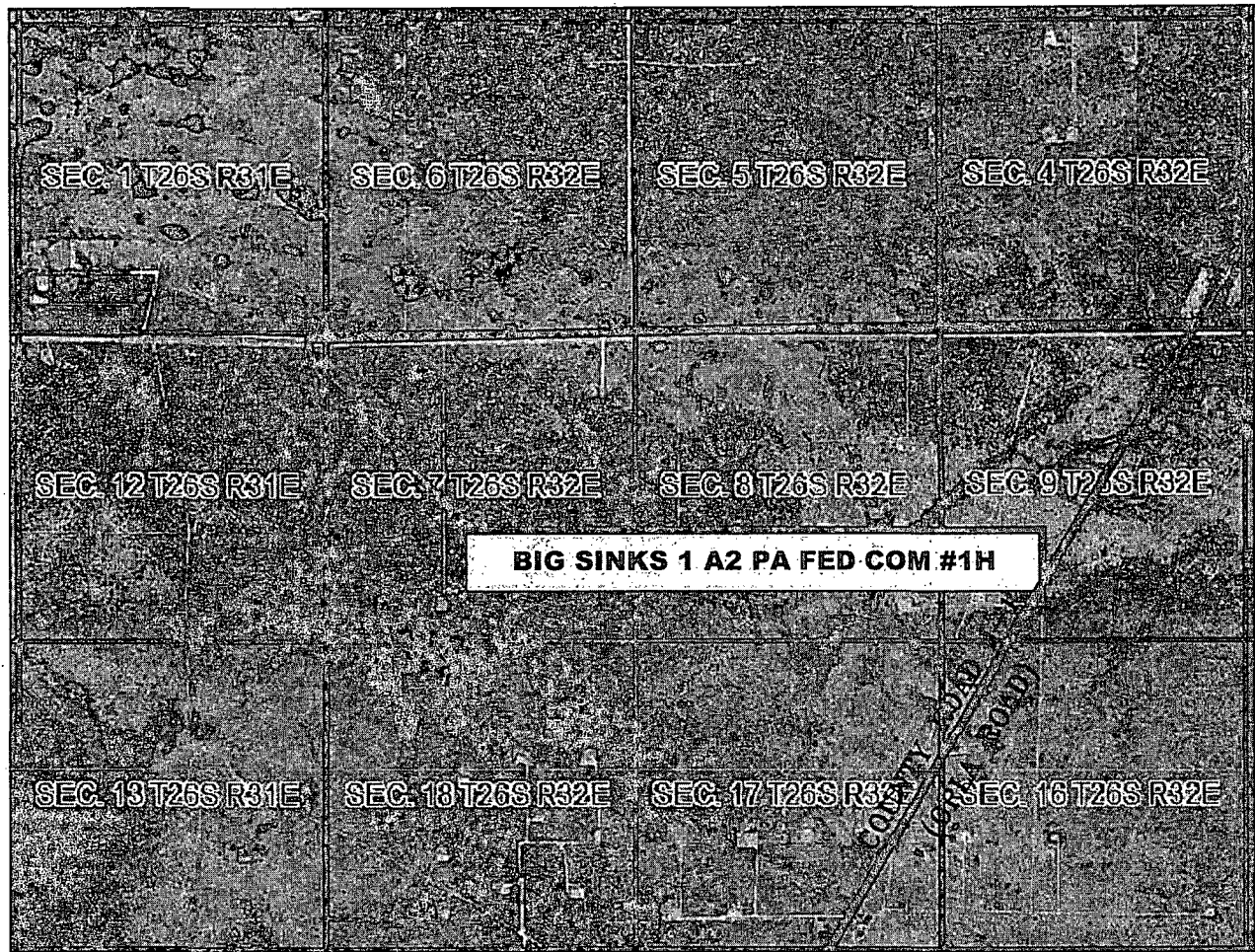
308 W. Broadway St., Hobbs, NM 88240 | Firm No. TX 10193838 NM 4655451 | (575) 964-8200

SCALE: NOT TO SCALE
DATE: 1-21-14
SURVEYED BY: BK/BC
DRAWN BY: JF
APPROVED BY: LWB
SHEET : 1 OF 1

38"

VICINITY MAP

NOT TO SCALE



SECTION 12, TWP. 26 SOUTH, RGE. 31 EAST,
N. M. P. M., EDDY COUNTY, NEW MEXICO

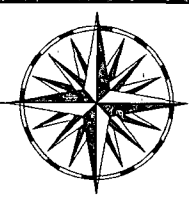
OPERATOR: Mewbourne Oil Company
LEASE: Big Sinks 1 A2 PA Fed Com
WELL NO.: 1H

LOCATION: 465' FNL & 330' FEL
ELEVATION: 3261'

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NO.	REVISION	DATE
JOB NO.: LS140010		
DWG. NO.: 140010VM		

PROSPERITY CONSULTANTS, LLC

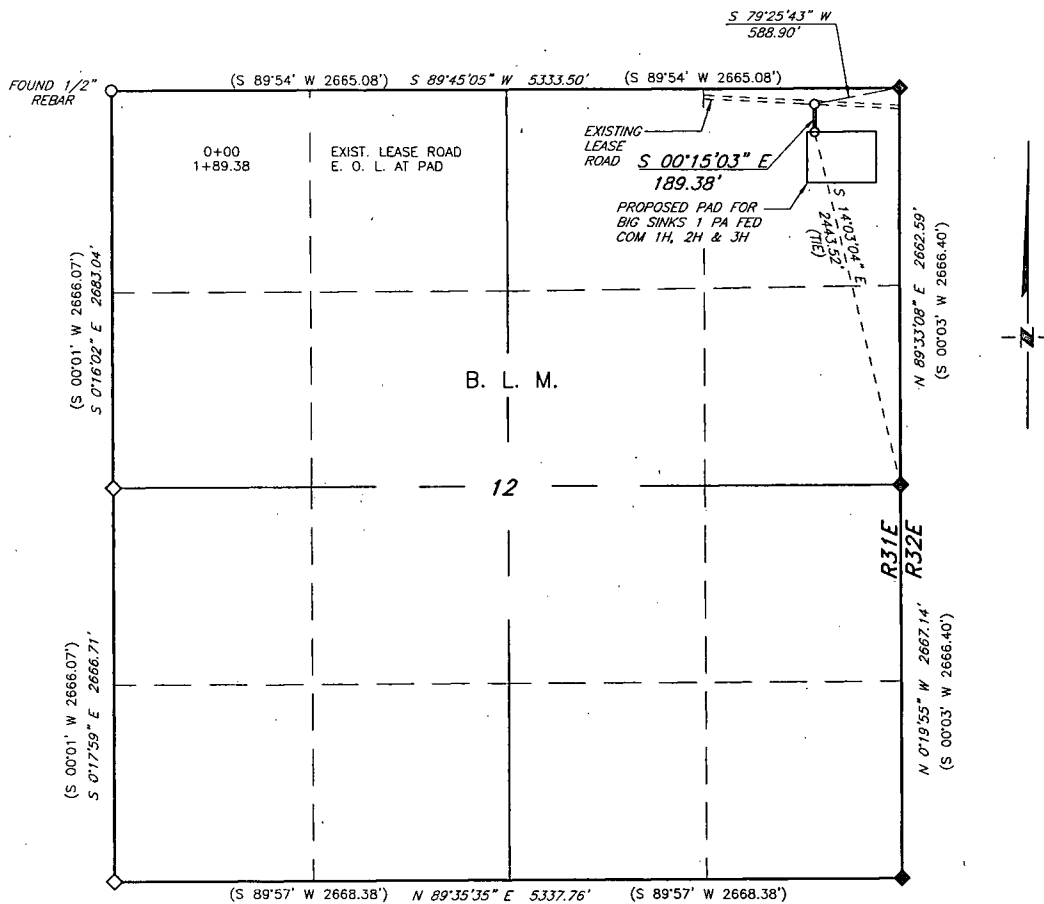


308 W. Broadway St., Hobbs, NM 88240 | Firm No. TX 10193838 NM 4655451 | (575) 964-8200

SCALE: NOT TO SCALE
DATE: 1-21-14
SURVEYED BY: BK/BC
DRAWN BY: JF
APPROVED BY: LWB
SHEET : 1 OF 1

3C

MEWBOURNE OIL COMPANY
ROAD EASEMENT FOR THE BIG SINKS 1 PA FED COM 1H, 2H & 3H
SEC. 12, T-26-S, R-32-E, N. M. P. M., EDDY CO., N.M.



DESCRIPTION

A strip of land 30 feet in width and 189.38 feet or 11.478 rods in length situated in Section 12, Township 26 South, Range 31 East, N. M. P. M., Eddy County, New Mexico, being 15 feet right and 15 feet left of the following described survey of centerline across B. L. M. land:

Beginning at Engr. Sta. 0+00, a point which lies S 79°25'43" W 588.90 feet from a brass cap, stamped "1939", found for the Northeast corner of the aforementioned Section 12;

Thence S 00°15'03" E, 189.38 feet to Engr. Sta. 1+89.38, the end of the survey and a point from which a brass cap, stamped "1939", found for the East quarter corner of the aforementioned Section 12 bears S 14°03'04" E, 2443.42 feet.

Said strip of land containing 0.130 acre, more or less, all within the NE1/4 NE 1/4 of the aforementioned Section 12.

SCALE: 1" = 1000'
0 500 1000

BEARINGS: NAD 27--NM EAST
DISTANCES: GROUND HORIZ.

LEGEND

- () RECORD DATA
◆ FOUND BRASS CAP "1939"
◇ FOUND BRASS CAP "1940"

I, R. M. Howett, a N. M. Professional Surveyor, hereby certify that this plat was prepared from an actual ground survey made under my direct supervision, said survey and plat meet the Min. Stds. for Land Surveying in the State of N. M. and are true and correct to the best of my knowledge and belief.

Robert M. Howett
Robert M. Howett NM PS 19680



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NO.	REVISION	DATE
JOB NO.:	LS140010	
DWG. NO.:	140010ESMT	

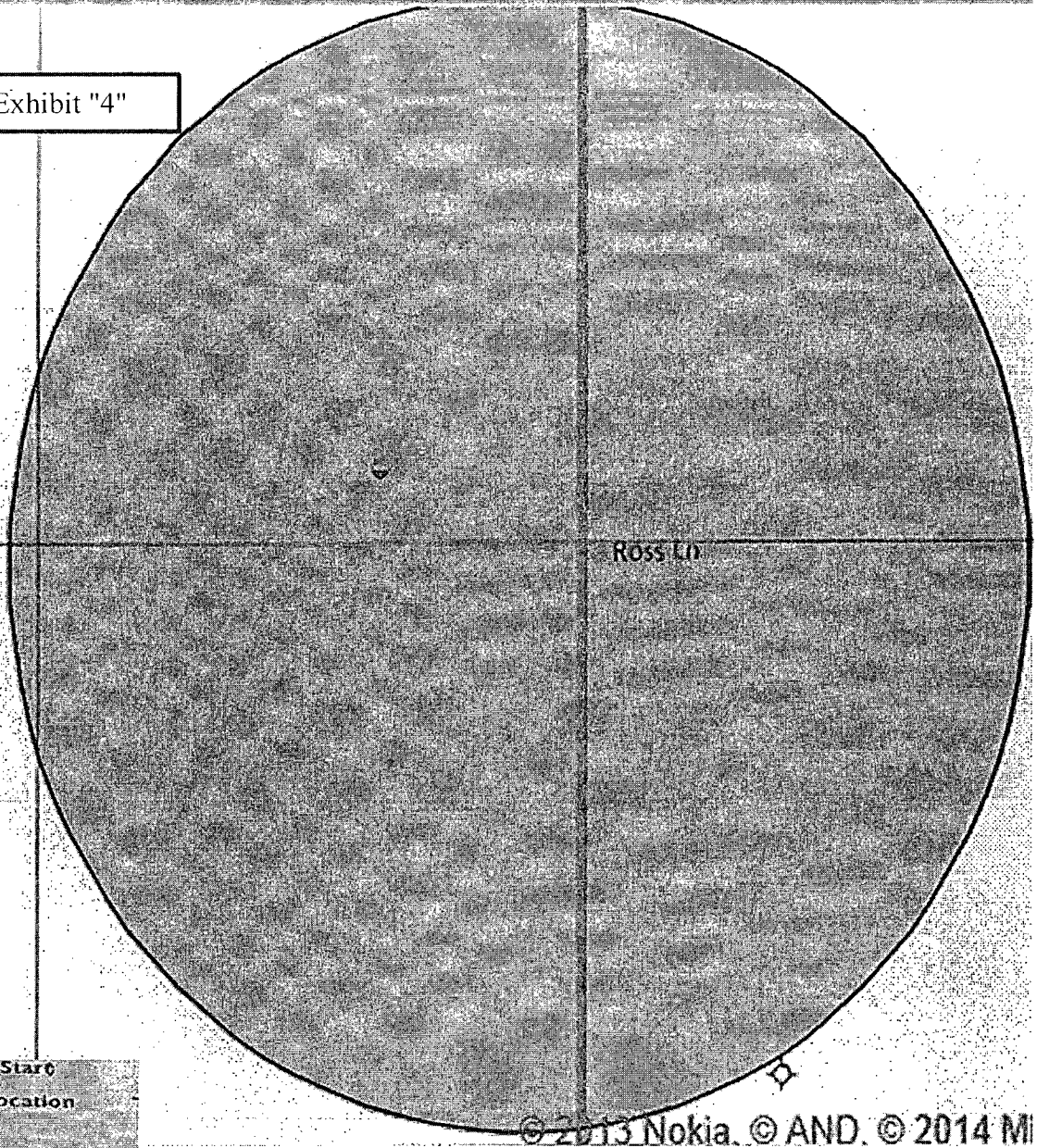
PROSPERITY CONSULTANTS, LLC



308 W. Broadway St., Hobbs, NM 88240 | Firm No.: TX 10193838 NM 4655451 | (575) 964-8200

SCALE: 1" = 1000'
DATE: 1-21-14
SURVEYED BY: BK/BC
DRAWN BY: JF
APPROVED BY: LWB
SHEET : 1 OF 1

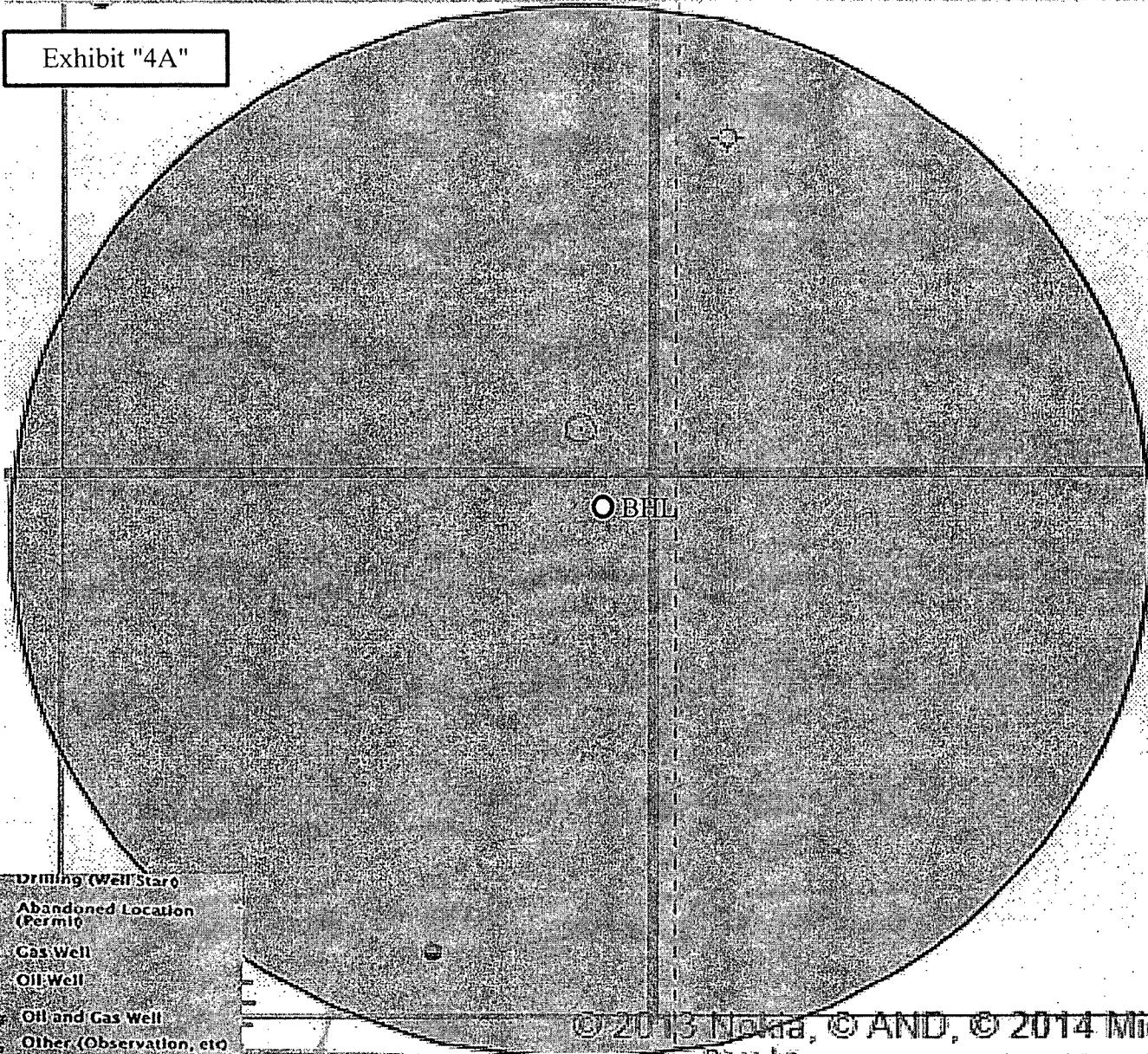
Exhibit "4"



○	Drilling (Well Start)
×	Abandoned Location (Permit)
✱	Gas Well
○	Oil Well
✱	Oil and Gas Well
○	Other (Observation, etc)
✱	Injection Well
◇	Suspended
✱	Plugged Gas Well
✱	Plugged Oil Well
✱	Plugged Oil and Gas
◇	Dry Hole (No Shows)
✱	Dry Hole w/Gas Show
◇	Dry Hole w/Oil Show
✱	Dry Hole w/Oil and Gas Show

Surface Location
Big Sinks 1 A2PA Fed Com #1H
Sec 12 T26S R31E

Exhibit "4A"



- Drilling (Well Start)
- ✱ Abandoned Location (Permit)
- ✱ Gas Well
- Oil Well
- ✱ Oil and Gas Well
- Other (Observation, etc)
- ✱ Injection Well
- Suspended
- ✱ Plugged Gas Well
- ✱ Plugged Oil Well
- ✱ Plugged Oil and Gas
- ✱ Dry Hole (No Shows)
- ✱ Dry Hole w/Gas Show
- ✱ Dry Hole w/Oil Show
- ✱ Dry Hole w/Oil and Gas Show

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Surface Location
Big Sinks 1 A2PA Fed Com #1H
Sec 12 T26S R31E

Drilling Program
Mewbourne Oil Company
Big Sinks 1 A2PA Fed Com #1H
465' FNL & 330' FEL
Sec 12, T26S, R31E
Eddy County, New Mexico

1. The estimated tops of geological markers are as follows:

Rustler	1350'
Top Salt	1910'
Castile	2610'
Base Salt/Lamar	4100'
*Yates	NP
Seven Rivers	NP
*Queen	NP
Grayburg	NP
San Andres	NP
Delaware	4310'
Bell Canyon	4345'
Cherry Canyon	5310'
Manzanita Marker	5460'
Brushy Canyon	6850'
*Bone Springs	8310'
*Wolfcamp	NA

2. Estimated depths of anticipated fresh water, oil, or gas:

Water	Fresh water is anticipated @ 240' and will be protected by setting surface casing at 1375' and cementing to surface.
Hydrocarbons	Oil and gas are anticipated in the above (*) formations. These zones will be protected by casing as necessary.

3. Pressure control equipment:

See COA
A 2000# WP annular will be installed after running 13 3/8" casing. A 3000# WP double ram BOP and 3000# WP Annular will be installed after running 9 5/8" casing. Pressure tests will be conducted prior to drilling out under all casing strings. BOP controls will be installed prior to drilling under surface casing and will remain in use until completion of drilling operations. BOPs will be inspected and operated as recommended in Onshore Order #2. A Kelly cock and a sub equipped with a full opening valve sized to fit the drill pipe and collars will be available on the rig floor in the open position when the Kelly is not in use.

Will test the 13 3/8" annular to 1500# and the 9 5/8" BOPE to 3000# and annular to 1500# with a third party testing company before drilling below each shoe, but will test again, if needed, in 30 days from the 1st test as per BLM Onshore Oil and Gas Order #2.

4. MOC proposes to drill a vertical wellbore to 8232' & kick off to horizontal @ 8811' TVD. The well will be drilled to 14037' MD (8831' TVD). See attached directional plan.

5. Proposed casing and cementing program:

A. Casing Program:

<u>Hole Size</u>	<u>Casing</u>	<u>Wt/Ft.</u>	<u>Grade</u>	<u>Depth</u>	<u>Jt Type</u>
17 1/2"	13 3/8" (new)	48#	H40	0' - 1375'	ST&C
12 1/4"	9 5/8" (new)	36#	J55	0' - 3400' MD	LT&C
12 1/4"	9 5/8" (new)	40#	J55	3400' - 4275' MD	LT&C
8 3/4"	5 1/2" (new)	17#	HCP110	0' - 8232' MD	LT&C

8 3/4"	5 1/2" (new)	17#	HCP110	8232' - 9143' MD	BT&C
8 3/4"	5 1/2" (new)	17#	HCP110	9143' - TD	LT&C

Minimum casing design factors: Collapse 1.125, Burst 1.0, Tensile strength 1.8.

*Subject to availability of casing.

B. Cementing Program:

- i. Surface Casing: 800 sks Class C light cement with salt & LCM. Yield at 2.15 cuft/sk. Mix water @ 11.29 gal/sk. 200 sks Class C cement containing 1% CaCl₂. Yield at 1.33 cuft/sk. Mix water @ 6.34 gal/sk. Cmt circulated to surface w/100% excess.
- ii. Intermediate Casing: 650 sacks Class C light cement with salt & LCM. Yield at 2.15 cuft/sk. Mix water @ 11.29 gal/sk. 200 sacks Class C cement. Yield at 1.33 cuft/sk. Mix water @ 6.34 gal/sk. Cmt circulated to surface w/25% excess.
- iii. Production Casing: 1100 sacks class H cmt. Yield at 2.99 cuft/sk. Mix water @ 17.43 gal/sk. Calculated to tie back inside 9 5/8" csg 200' w/25% excess.

See COA

*Referring to above blends of light cement: (65% fly ash : 35% cement : 4% bentonite of the total of first two numbers). Generic names of additives are used since the availability of specific company and products are unknown at this time.

6. Mud Program:

Interval	Type System	Weight	Viscosity	Fluid Loss
0' - 1375'	FW spud mud	8.6-9.0	32-34	NA
1375' - 4275'	Brine water	10.0-10.2	28-30	NA
4275' - 8232' (KOP)	FW	8.5-8.7	28-30	NA
8232' - TD	FW w/Polymer	8.5-8.7	32-35	15

*Visual mud monitoring system shall be in place to detect volume changes indicating loss or gain of circulation fluid volume. Sufficient mud materials will be kept on location at all times to combat abnormal conditions.

7. Evaluation Program:

Samples: 10' samples from KOP to TD
Logging: GR, CN & Gyro 100' above KOP (8132') to surface. GR from 8132' to TD.

8. Downhole Conditions

Zones of abnormal pressure: None anticipated
Zones of lost circulation: Anticipated in surface and intermediate holes
Maximum bottom hole temperature: 120 degree F
Maximum bottom hole pressure: 8.3 lbs/gal gradient or less (.43668 x 8831' = 3830 psi)

9. Anticipated Starting Date:

Mewbourne Oil Company intends to drill this well as soon as possible after receiving approval with approximately 40 days involved in drilling operations and an additional 20 days involved in completion operations on the project.

Mewbourne Oil Co

Eddy County, New Mexico

Sec 12, T-26-S, R-31-E

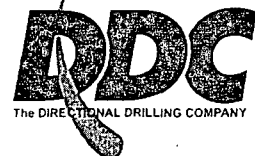
Big Sinks 1 A2PA Fed Com #1H

Wellbore #1

Plan: Design #1

DDC Well Planning Report

05 March, 2014



DDC
Well Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Big Sinks 1 A2PA Fed Com #1H
Company:	Mewbourne Oil Co	TVD Reference:	Well @ 3281.0usft (Patterson)
Project:	Eddy County, New Mexico	MD Reference:	Well @ 3281.0usft (Patterson)
Site:	Sec 12, T-26-S, R-31-E	North Reference:	Grid
Well:	Big Sinks 1 A2PA Fed Com #1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project: Eddy County, New Mexico			
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site: Sec 12, T-26-S, R-31-E					
Site Position:		Northing:	387,349.30 usft	Latitude:	32° 3' 48.500 N
From:	Map	Easting:	688,866.40 usft	Longitude:	103° 43' 25.180 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.32 °

Well: Big Sinks 1 A2PA Fed Com #1H						
Well Position	+N/-S	0.0 usft	Northing:	387,349.30 usft	Latitude:	32° 3' 48.500 N
	+E/-W	0.0 usft	Easting:	688,866.40 usft	Longitude:	103° 43' 25.180 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	3,261.0 usft

Wellbore:		Wellbore #1			
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/3/2014	7.31	59.94	48,233

Design: Design #1				
Audit Notes:				
Version:		Phase:	PLAN	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.0	0.0	0.0	359.21

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	
8,232.1	0.00	0.00	8,232.1	0.0	0.0	0.00	0.00	0.00	0.00	
8,682.1	45.00	347.20	8,637.2	163.6	-37.2	10.00	10.00	0.00	347.20	
9,143.9	89.77	0.00	8,811.0	576.3	-75.4	10.00	9.69	2.77	17.89	
14,037.0	89.77	0.00	8,831.0	5,469.4	-75.2	0.00	0.00	0.00	0.00	PBHL Big Sinks 1 A2I

DDC
Well Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Big Sinks 1 A2PA Fed Com #1H
Company:	Mewbourne Oil Co	TVD Reference:	Well @ 3281.0usft (Patterson)
Project:	Eddy County, New Mexico	MD Reference:	Well @ 3281.0usft (Patterson)
Site:	Sec 12, T-26-S, R-31-E	North Reference:	Grid
Well:	Big Sinks 1 A2PA Fed Com #1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
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)	
Build 10° / 100'										
8,232.1	0.00	0.00	8,232.1	0.0	0.0	0.0	0.00	0.00	0.00	
8,300.0	6.79	347.20	8,299.8	3.9	-0.9	3.9	10.00	10.00	0.00	
8,400.0	16.79	347.20	8,397.6	23.8	-5.4	23.9	10.00	10.00	0.00	
8,500.0	26.79	347.20	8,490.3	60.0	-13.6	60.2	10.00	10.00	0.00	
8,600.0	36.79	347.20	8,575.2	111.3	-25.3	111.6	10.00	10.00	0.00	
Build & Turn 10° / 100'										
8,682.1	45.00	347.20	8,637.2	163.6	-37.2	164.1	10.00	10.00	0.00	
8,700.0	46.71	347.96	8,649.7	176.2	-39.9	176.7	10.00	9.53	4.22	
8,800.0	56.31	351.53	8,711.9	253.1	-53.7	253.8	10.00	9.60	3.57	
8,900.0	66.00	354.37	8,760.1	339.9	-64.3	340.8	10.00	9.69	2.84	
9,000.0	75.73	356.81	8,792.8	434.0	-71.5	435.0	10.00	9.73	2.44	
9,100.0	85.48	359.05	8,809.1	532.5	-75.1	533.5	10.00	9.75	2.24	
End of Curve / 89.77° Inc / 360° Azm / 8811.0 TVD										
9,143.9	89.77	0.00	8,811.0	576.3	-75.4	577.3	10.00	9.76	2.18	
9,200.0	89.77	0.00	8,811.2	632.4	-75.4	633.4	0.00	0.00	0.00	
9,300.0	89.77	0.00	8,811.6	732.4	-75.4	733.4	0.00	0.00	0.00	
9,400.0	89.77	0.00	8,812.0	832.4	-75.4	833.4	0.00	0.00	0.00	
9,500.0	89.77	0.00	8,812.4	932.4	-75.4	933.4	0.00	0.00	0.00	
9,600.0	89.77	0.00	8,812.8	1,032.4	-75.4	1,033.4	0.00	0.00	0.00	
9,700.0	89.77	0.00	8,813.2	1,132.4	-75.4	1,133.4	0.00	0.00	0.00	
9,800.0	89.77	0.00	8,813.6	1,232.4	-75.4	1,233.4	0.00	0.00	0.00	
9,900.0	89.77	0.00	8,814.1	1,332.4	-75.4	1,333.3	0.00	0.00	0.00	
10,000.0	89.77	0.00	8,814.5	1,432.4	-75.4	1,433.3	0.00	0.00	0.00	
10,100.0	89.77	0.00	8,814.9	1,532.4	-75.4	1,533.3	0.00	0.00	0.00	
10,200.0	89.77	0.00	8,815.3	1,632.4	-75.4	1,633.3	0.00	0.00	0.00	
10,300.0	89.77	0.00	8,815.7	1,732.4	-75.4	1,733.3	0.00	0.00	0.00	
10,400.0	89.77	0.00	8,816.1	1,832.4	-75.4	1,833.3	0.00	0.00	0.00	
10,500.0	89.77	0.00	8,816.5	1,932.4	-75.4	1,933.3	0.00	0.00	0.00	
10,600.0	89.77	0.00	8,816.9	2,032.4	-75.4	2,033.3	0.00	0.00	0.00	
10,700.0	89.77	0.00	8,817.3	2,132.4	-75.4	2,133.3	0.00	0.00	0.00	
10,800.0	89.77	0.00	8,817.7	2,232.4	-75.3	2,233.3	0.00	0.00	0.00	
10,900.0	89.77	0.00	8,818.2	2,332.4	-75.3	2,333.2	0.00	0.00	0.00	
11,000.0	89.77	0.00	8,818.6	2,432.4	-75.3	2,433.2	0.00	0.00	0.00	
11,100.0	89.77	0.00	8,819.0	2,532.4	-75.3	2,533.2	0.00	0.00	0.00	
11,200.0	89.77	0.00	8,819.4	2,632.4	-75.3	2,633.2	0.00	0.00	0.00	
11,300.0	89.77	0.00	8,819.8	2,732.4	-75.3	2,733.2	0.00	0.00	0.00	
11,400.0	89.77	0.00	8,820.2	2,832.4	-75.3	2,833.2	0.00	0.00	0.00	
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11,600.0	89.77	0.00	8,821.0	3,032.4	-75.3	3,033.2	0.00	0.00	0.00	
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12,100.0	89.77	0.00	8,823.1	3,532.4	-75.3	3,533.1	0.00	0.00	0.00	
12,200.0	89.77	0.00	8,823.5	3,632.4	-75.3	3,633.1	0.00	0.00	0.00	
12,300.0	89.77	0.00	8,823.9	3,732.4	-75.3	3,733.1	0.00	0.00	0.00	
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12,600.0	89.77	0.00	8,825.1	4,032.4	-75.3	4,033.1	0.00	0.00	0.00	
12,700.0	89.77	0.00	8,825.5	4,132.4	-75.2	4,133.1	0.00	0.00	0.00	
12,800.0	89.77	0.00	8,825.9	4,232.4	-75.2	4,233.0	0.00	0.00	0.00	
12,900.0	89.77	0.00	8,826.3	4,332.4	-75.2	4,333.0	0.00	0.00	0.00	

DDC
Well Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Big Sinks 1 A2PA Fed Com #1H
Company:	Mewbourne Oil Co	TVD Reference:	Well @ 3281.0usft (Patterson)
Project:	Eddy County, New Mexico	MD Reference:	Well @ 3281.0usft (Patterson)
Site:	Sec 12, T-26-S, R-31-E	North Reference:	Grid
Well:	Big Sinks 1 A2PA Fed Com #1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

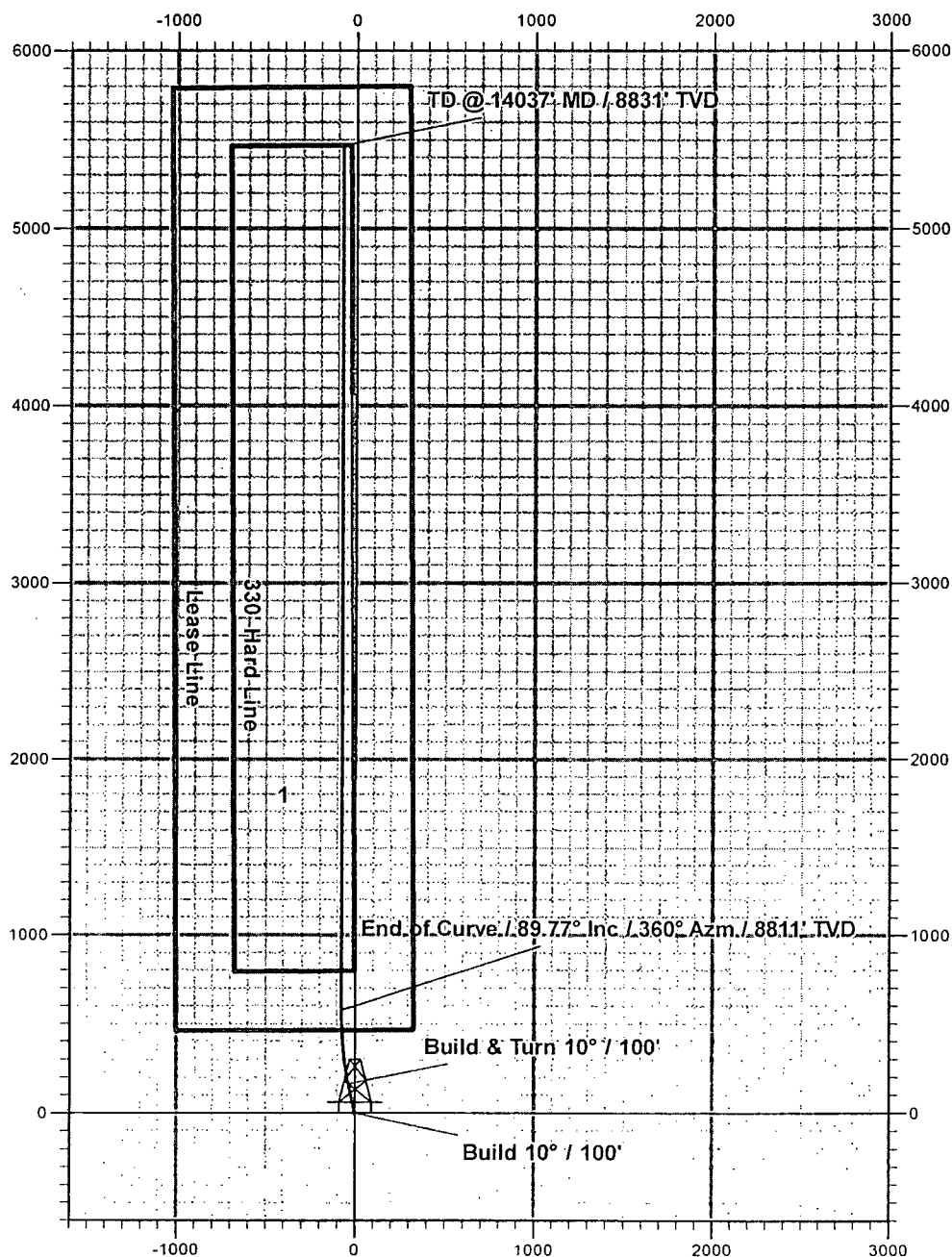
Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/S (usft)	+E/W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
13,000.0	89.77	0.00	8,826.8	4,432.4	-75.2	4,433.0	0.00	0.00	0.00	
13,100.0	89.77	0.00	8,827.2	4,532.4	-75.2	4,533.0	0.00	0.00	0.00	
13,200.0	89.77	0.00	8,827.6	4,632.4	-75.2	4,633.0	0.00	0.00	0.00	
13,300.0	89.77	0.00	8,828.0	4,732.4	-75.2	4,733.0	0.00	0.00	0.00	
13,400.0	89.77	0.00	8,828.4	4,832.4	-75.2	4,833.0	0.00	0.00	0.00	
13,500.0	89.77	0.00	8,828.8	4,932.4	-75.2	4,933.0	0.00	0.00	0.00	
13,600.0	89.77	0.00	8,829.2	5,032.4	-75.2	5,033.0	0.00	0.00	0.00	
13,700.0	89.77	0.00	8,829.6	5,132.4	-75.2	5,133.0	0.00	0.00	0.00	
13,800.0	89.77	0.00	8,830.0	5,232.4	-75.2	5,232.9	0.00	0.00	0.00	
13,900.0	89.77	0.00	8,830.4	5,332.4	-75.2	5,332.9	0.00	0.00	0.00	
14,000.0	89.77	0.00	8,830.8	5,432.4	-75.2	5,432.9	0.00	0.00	0.00	
TD @ 14037' MD / 8831' TVD										
14,037.0	89.77	0.00	8,831.0	5,469.4	-75.2	5,469.9	0.00	0.00	0.00	

Design Targets										
Target Name	Dip Angle	Dip Dir	TVD	+N/S	+E/W	Northing	Easting	Latitude	Longitude	
hit/miss target										
Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)			
PBHL Big Sinks 1 A2PA	0.00	0.00	8,831.0	5,469.4	-75.2	392,818.67	688,791.22	32° 4' 42.629 N	103° 43' 25.695 W	
- plan hits target center										
- Point										

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/S (usft)	+E/W (usft)	Comment	
8,232.1	8,232.1	0.0	0.0	Build 10° / 100'	
8,682.1	8,637.2	163.6	-37.2	Build & Turn 10° / 100'	
9,143.9	8,811.0	576.3	-75.4	End of Curve / 89.77° Inc / 360° Azm / 8811' TVD	
14,037.0	8,831.0	5,469.4	-75.2	TD @ 14037' MD / 8831' TVD	

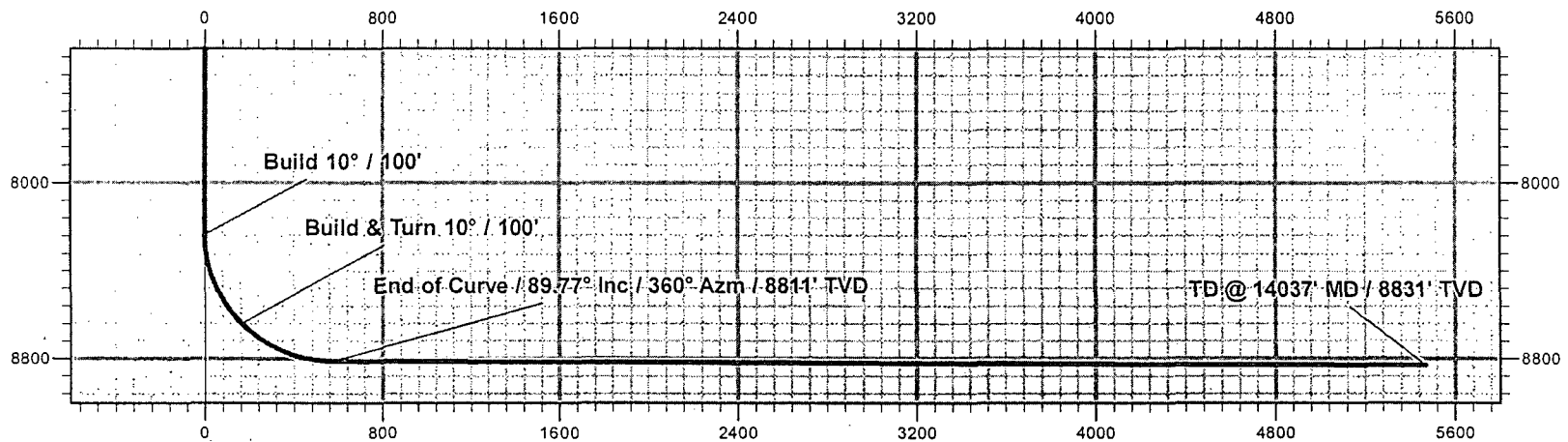
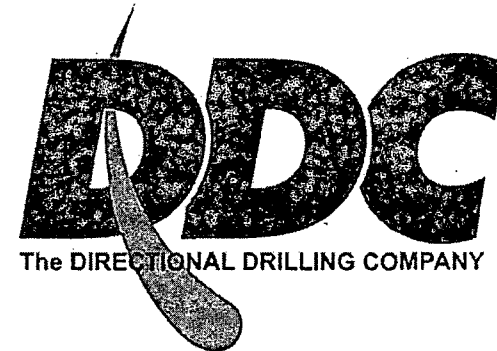
Mewbourne Oil Co

Eddy County, New Mexico
Big Sinks 1 A2PA Fed Com #1H
Design #1



Mewbourne Oil Company

Eddy County, New Mexico
Big Sinks 1 A2PA Fed Com #1H
Design #1



Vertical Section at 359.21° (800 usft/in)

13 5/8" 2M BOPE & Closed Loop Equipment Schematic

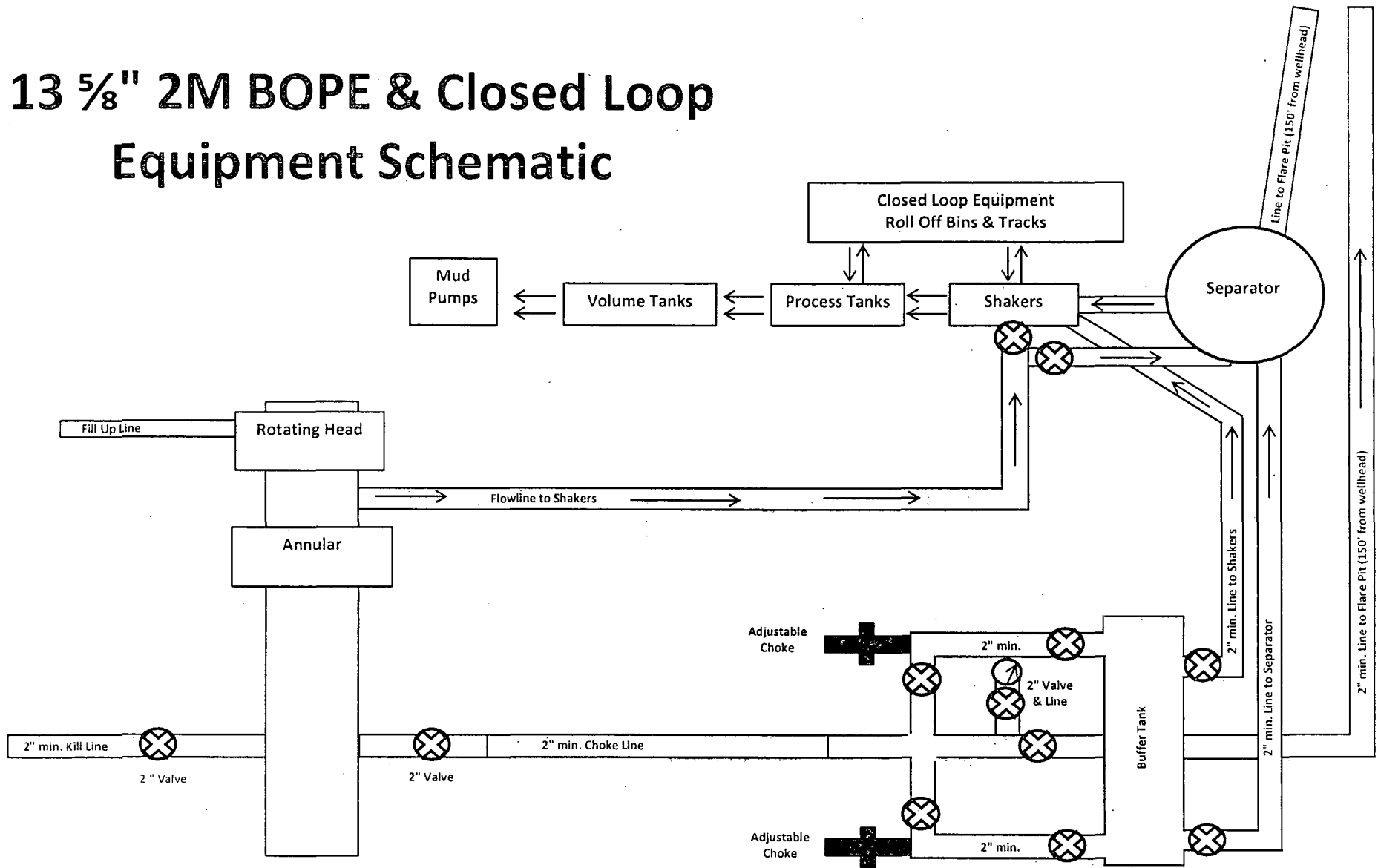


Exhibit 2A
Big Sinks 1 A2PA Fed Com #1H

11" 3M BOPE & Closed Loop Equipment Schematic

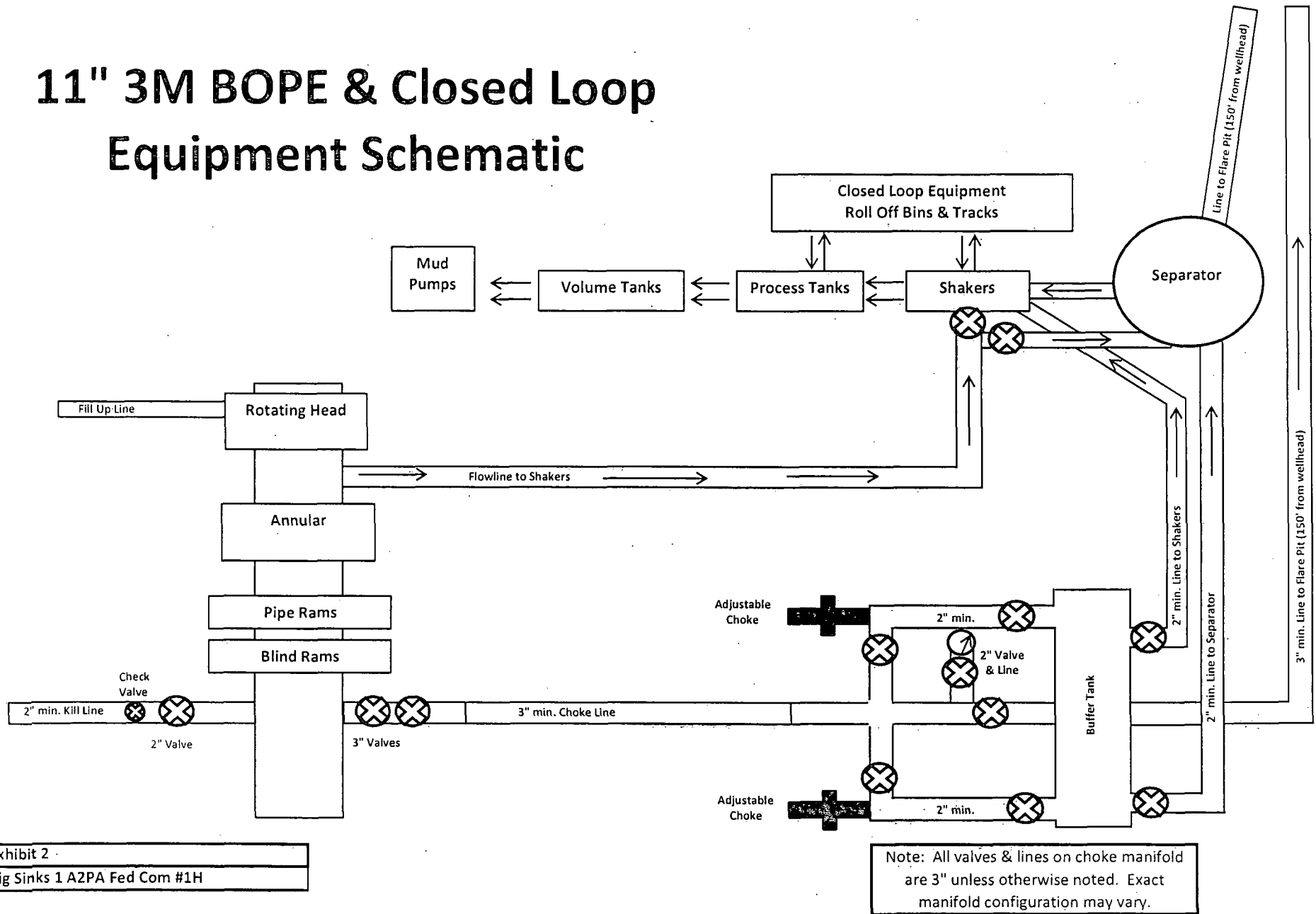


Exhibit 2
Big Sinks 1 A2PA Fed Com #1H

Notes Regarding Blowout Preventer

Mewbourne Oil Company

Big Sinks 1 A2PA Fed Com #1H

465' FNL & 330' FEL (SHL)

Sec 12-T26S-R31E

Eddy County, New Mexico

- I. Drilling nipple (bell nipple) to be constructed so that it can be removed without the use of a welder through the opening of the rotary table, with minimum internal diameter equal to blowout preventer bore.
- II. Blowout preventer and all fittings must be in good condition with a minimum 3000 psi working pressure on 9 5/8" and 7" casing.
- III. Safety valve must be available on the rig floor at all times with proper connections to install in the drill string. Valve must be full bore with minimum 3000 psi working pressure.
- IV. Equipment through which bit must pass shall be at least as large as internal diameter of the casing.
- V. A kelly cock shall be installed on the kelly at all times.

Blowout preventer closing equipment to include and accumulator of at least 40 gallon capacity, two independent sources of pressure on closing unit, and meet all other API specifications.

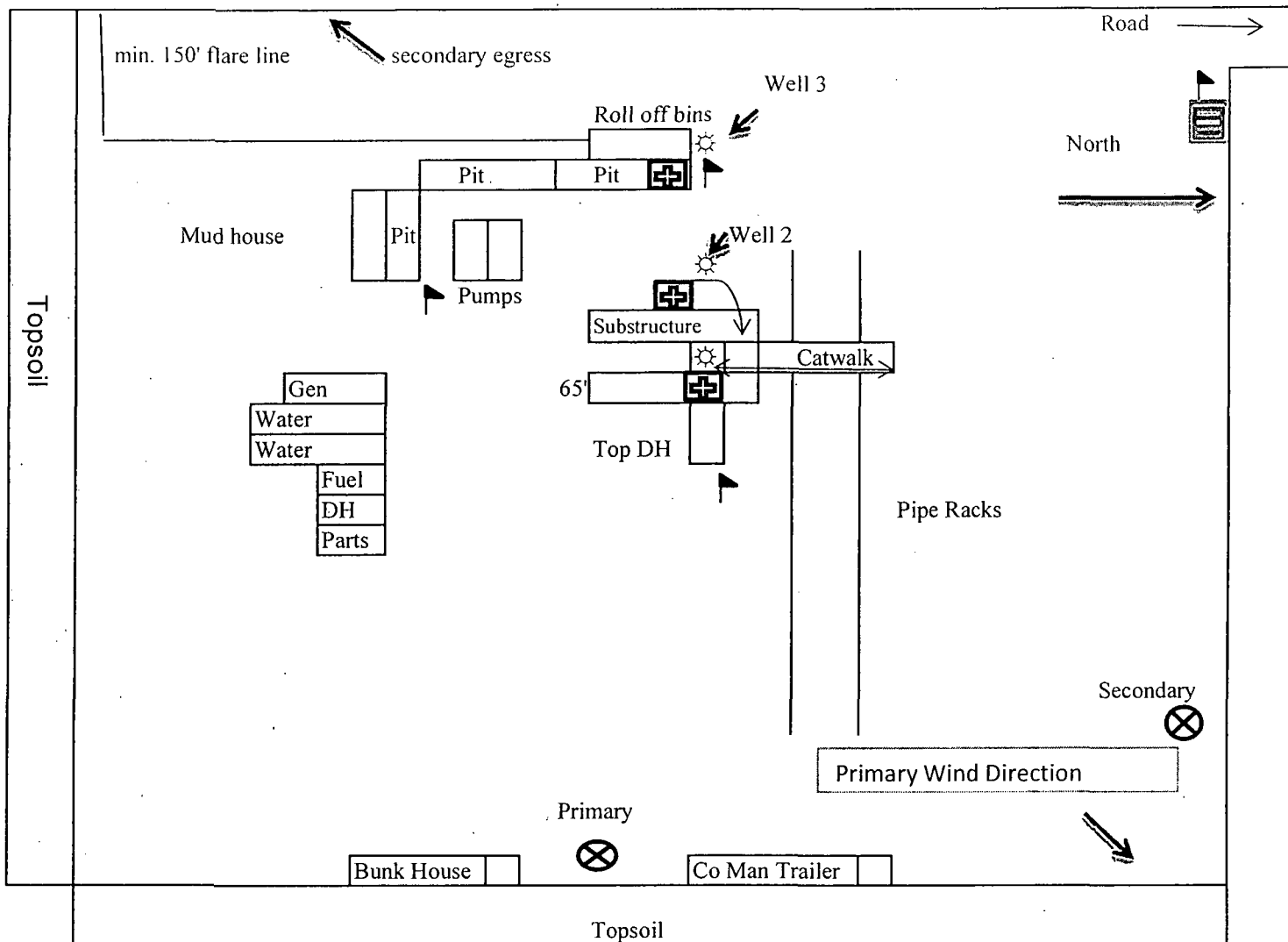


Exhibit 5



= Safety Stations



= Warning Signs



= H₂S Monitors



= Wind Markers

Mewbourne Oil Company
Big Sinks 1 A2PA Fed Com #1H
465' FSL & 330' FEL
Sec. 12 T26S R31E
Eddy County, NM

Hydrogen Sulfide Drilling Operations Plan
Mewbourne Oil Company
Big Sinks 1 A2PA Fed Com #1H
465' FSL & 330' FEL
Sec. 12 T26S R31E
Eddy, County, NM

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 MOC will follow Onshore Order 6 and install 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 well site 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. A drill stem test is required and 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**

Lea County Sheriff's Office	911 or 575-396-3611
Ambulance Service	911 or 575-885-2111
Carlsbad Fire Dept	911 or 575-885-2111
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	Micky Young	575-390-0999
Drilling Superintendent	Frosty Lathan	575-390-4103
	Bradley Bishop	575-390-6838
Drilling Foreman	Wesley Noseff	575-441-0729

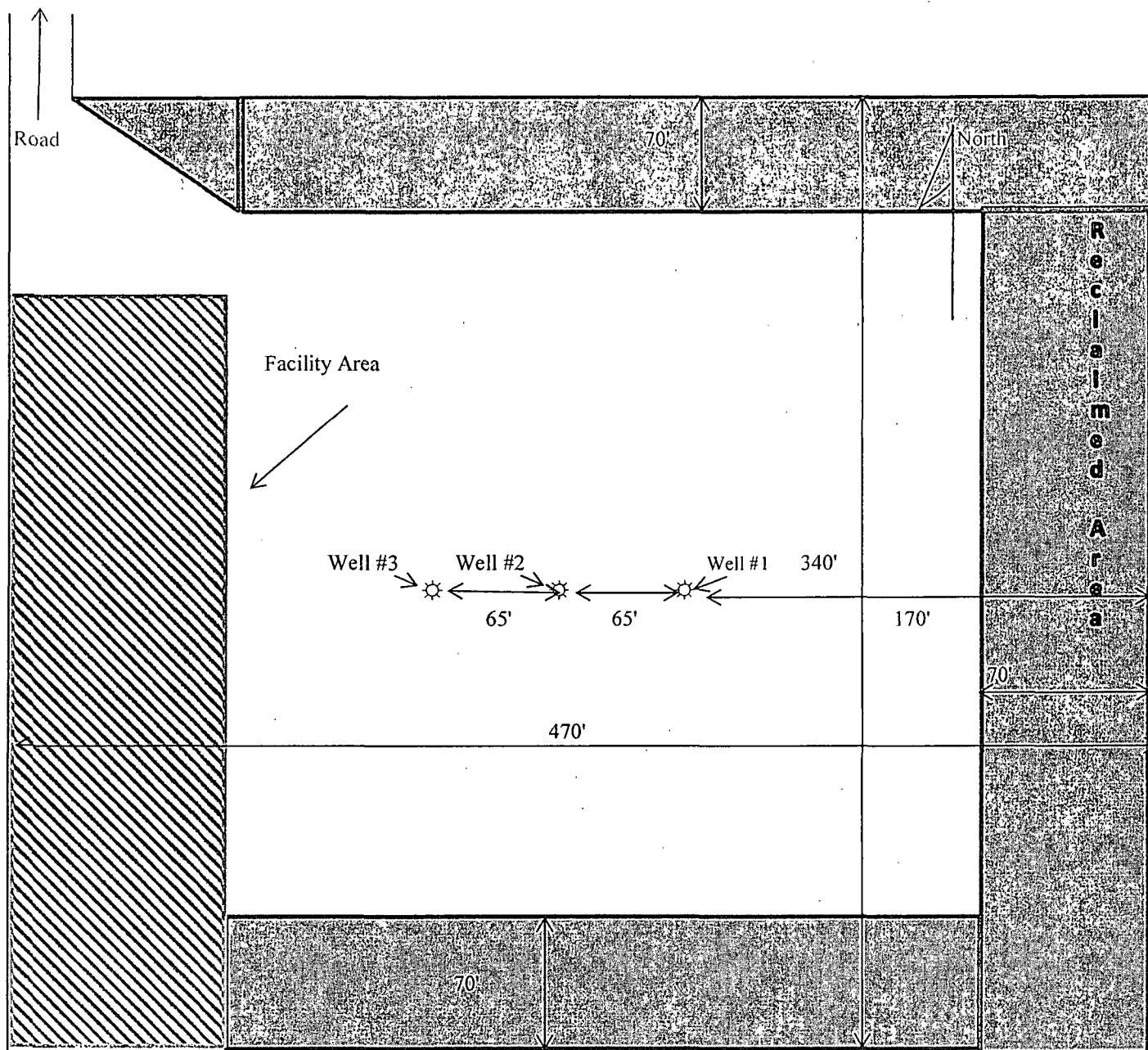


Exhibit 6

Mewbourne Oil Company
 Big Sinks 1 A2PA Fed Com #1H
 465' FNL & 330' FEL
 Sec. 12 T26S R31E
 Eddy Co. NM

MULTI-POINT SURFACE USE AND OPERATIONS PLAN

MEWBOURNE OIL COMPANY

Big Sinks 1 A2PA Fed Com #1H

465' FNL & 330' FEL (SHL)

Sec 12-T26S-R31E

Eddy County, New Mexico

This plan is submitted with Form 3160-3, Application for Permit to Drill, Covering the above described well. The purpose of this plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of the surface disturbance involved, and the procedures to be followed in restoring the surface so that a complete appraisal can be made of the environmental impact associated with the proposed operations.

1. Existing Roads:

- A. Exhibit #3 is a road map showing the location of the proposed well. Existing roads are highlighted in black. Exhibits #3-#3C are maps showing the location of the proposed well and access road. Existing and proposed roads are highlighted in black.
- B. Directions to location: From the intersection of C.R. J-1 (Orla Rd.) and C.R. J-2 (Battle Axe), go northeast on C.R. J-1 approx. 3.1 miles to a lease road. Turn left and go west approx. 3.0 miles to proposed road survey. The location is approx. 350 feet to the south.
- C. Existing roads will be maintained in a condition the same as or better than before operations begin.

2. Proposed Access Road:

- A. Approx. 189.38' feet of new road construction will be needed.
- B. The maximum width of the driving surface will be 14 feet. The road will be crowned and ditched with a 2% slope from the tip of the crown to the edge of the driving surface. The ditches will be 1 foot deep with 3:1 slopes. The road will be surfaced with 6" of rolled and compacted caliche.
- C. Mewbourne Oil Co. will cooperate with other operators in the maintenance of lease roads.

3. Location of Existing Wells:

There are producing wells within the immediate vicinity of the well site. Exhibit #4 shows existing wells within a one mile radius.

4. Location of Existing and/or Proposed Facilities:

- A. There are no production facilities on this lease at the present time.
- B. In the event that the well is productive, production facilities will be built on the west side of the location. Electric lines and gas lines will be filed for at a later date.
- C. All production vessels left on location will be painted to conform to BLM painting stipulations within 180 days of installation.

5. Location and Type of Water Supply

The well will be drilled with a combination of fresh water and brine water based mud systems. The water will be obtained from commercial suppliers in the area and/or hauled to the location by transport trucks over existing and proposed roads as indicated in Exhibit #3.

6. Source of Construction Materials

All material required for construction of the drill pad and access roads will be obtained from private, state, or federal pits. The construction contractor will be solely responsible for securing construction materials required for this operation and paying any royalties that may be required on those materials.

7. Methods of Handling Waste Disposal:

- A. Drill cuttings not retained for evaluation purposed will be hauled to an off-site permitted facility.
- B. Water produced during operations will be hauled to an off-site permitted SWD in the area.
- C. If any liquid hydrocarbons are produced during operations, those liquids will be stored in suitable tanks until sold.
- D. Sewage and gray water will be safely contained on-site, and then waste will be disposed at an approved off-site facility.
- E. All trash, junk, and other waste materials will be stored in proper containers to prevent dispersal and will be removed to an appropriate facility within one week of cessation of drilling and completion activities.
- F. MOC will utilize a closed loop facility during drilling operations.

8. Ancillary Facilities

There are no ancillary facilities within the immediate vicinity of the proposed well site.

9. Well Site Layout

- A. A diagram of the drill pad is shown in Exhibit #5. Dimensions of the pad and location of major rig components are shown.
- B. The pad dimension of 340' x 470' has been staked and flagged.

10. Plans for Restoration of Surface

- A. Within 120 days of cessation of drilling and completion operations, all equipment not necessary for production operations will be removed. The location and surrounding area will be cleaned of all trash and junk to assure the well site is left as esthetically pleasing as reasonably possible.
- B. Interim reclamation:
 - i. All areas not needed for production operations will be reclaimed as shown in the interim reclamation layout, exhibit #6 after all 3 wells are drilled.

- ii. In these areas, caliche will be removed, the land will be recontoured to match the surrounding area and the topsoil from the stockpile will be spread over these areas.
- iii. The disturbed area will be restored by seeding during the proper growing season.
- iv. Any additional caliche required for production facilities will be obtained from the reclaimed areas.

C. Final Reclamation:

- i. Upon cessation of the proposed operations, if the well is abandoned, all equipment and trash will be removed and taken to a proper facility.
- ii. The location and road surfacing material will be removed and used to patch area lease roads.
- iii. The entire location will be restored to the original contour as much as reasonable possible.
- iv. The topsoil used for interim reclamation will be spread over the entire location.
- v. The disturbed area will be restored by seeding during the proper growing season.

All restoration work will be completed within 180 days of cessation of activities.

11. Surface Ownership:

The surface is owned by BLM. Archaeology is cleared through BLM MOA program.

12. Other Information:

- A. The primary use of the surface at the location is for grazing of livestock.

13. Operators Representative:

- A. Through APD approval, drilling, completion and production operations:

N.M. Young, District Manager
Mewbourne Oil Company
PO Box 5270
Hobbs, NM 88241
575-393-5905

Form NM 8140-9
(March 2008)
United States Department of the Interior
Bureau of Land Management
New Mexico State Office

Permian Basin Cultural Resource Mitigation Fund

The company shown below has agreed to contribute funding to the Permian Basin Cultural Resource Fund in lieu of being required to conduct a Class III survey for cultural resources associated with their project. This form verifies that the company has elected to have the Bureau of Land Management (BLM) follow the procedures specified within the Memorandum of Agreement (MOA) concerning improved strategies for managing historic properties within the Permian Basin, New Mexico, for the undertaking rather than the Protocol to meet the agency's Section 106 obligations.

Company Name: Mewbourne Oil Company

Address: PO Box 5270, Hobbs, NM 88241

Project description:

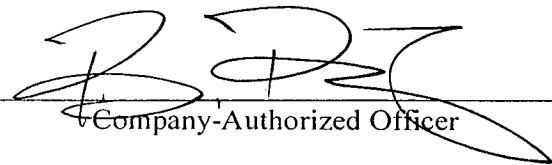
location & lease road for Big Sinks 1 A2PA Fed Com #1H

T. 26S, R. 31E, Section 12 NMPM, Eddy County, New Mexico

Amount of contribution: \$ 1507.00

Provisions of the MOA:

- A. No new Class III inventories are required of industry within the Project Area for those projects where industry elects to contribute to the mitigation fund.
- B. The amount of funds contributed was derived from the rate schedule established within Appendix B of the MOA. The amount of the funding contribution acknowledged on this form reflects those rates.
- C. The BLM will utilize the funding to carry out a program of mitigation at high-priority sites whose study is needed to answer key questions identified within the Regional Research Design.
- D. Donating to the fund is voluntary. Industry acknowledges that it is aware it has the right to pay for Class III survey rather than contributing to the mitigation fund, and that it must avoid or fund data recovery at those sites already recorded that are eligible for nomination to the National Register or whose eligibility is unknown and that any such payments are independent of the mitigation funds established by this MOA.
- E. Previously recorded archeological sites determined eligible for nomination to the National Register or whose eligibility remains undetermined must be avoided or mitigated.
- F. If any skeletal remains that might be human or funerary objects are discovered by any activities, the land-use applicant will cease activities in the area of discovery, protect the remains, and notify the BLM within 24 hours. The BLM will determine the appropriate treatment of the remains in consultation with culturally affiliated Indian Tribe(s) and lineal descendents. Applicants will be required to pay for treatment of the cultural items independent and outside of the mitigation fund.



Company-Authorized Officer

3-11-14

Date

BLM-Authorized Officer

Date

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Mewbourne Oil Company
LEASE NO.:	NMNM-112931
WELL NAME & NO.:	Big Sinks 1 A2 PA Fed Com 1H
SURFACE HOLE FOOTAGE:	0465' FNL & 0330' FEL
BOTTOM HOLE FOOTAGE	0330' FNL & 0375' FEL Sec. 01, T. 26 S., R 31 E.
LOCATION:	Section 12, T. 26 S., R 31 E., NMPM
COUNTY:	Eddy County, New Mexico

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**
 - Phantom Banks Heronry Area Requirements
 - Communitization Agreement
- ☐ **Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
 - Cement Requirements
 - H2S Requirements
 - Medium Cave/Karst
 - Logging Requirements
 - Waste Material and Fluids
- ☐ **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)

Phantom Banks Heronry Area Requirements

Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

Communitization Agreement

A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales. In addition, the well sign shall include the surface and bottom hole lease numbers. If the Communitization Agreement number is known, it shall also be on the sign. If not, it shall be placed on the sign when the sign is replaced.

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

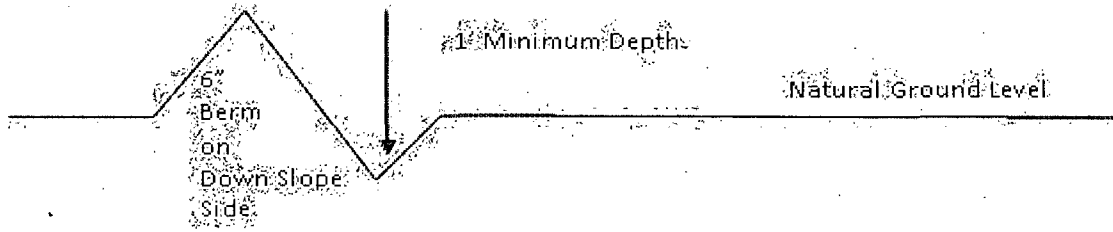
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping 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:

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

Cattleguards

An appropriately sized cattleguard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattleguards 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 cattleguards that are in place and are utilized during lease operations.

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

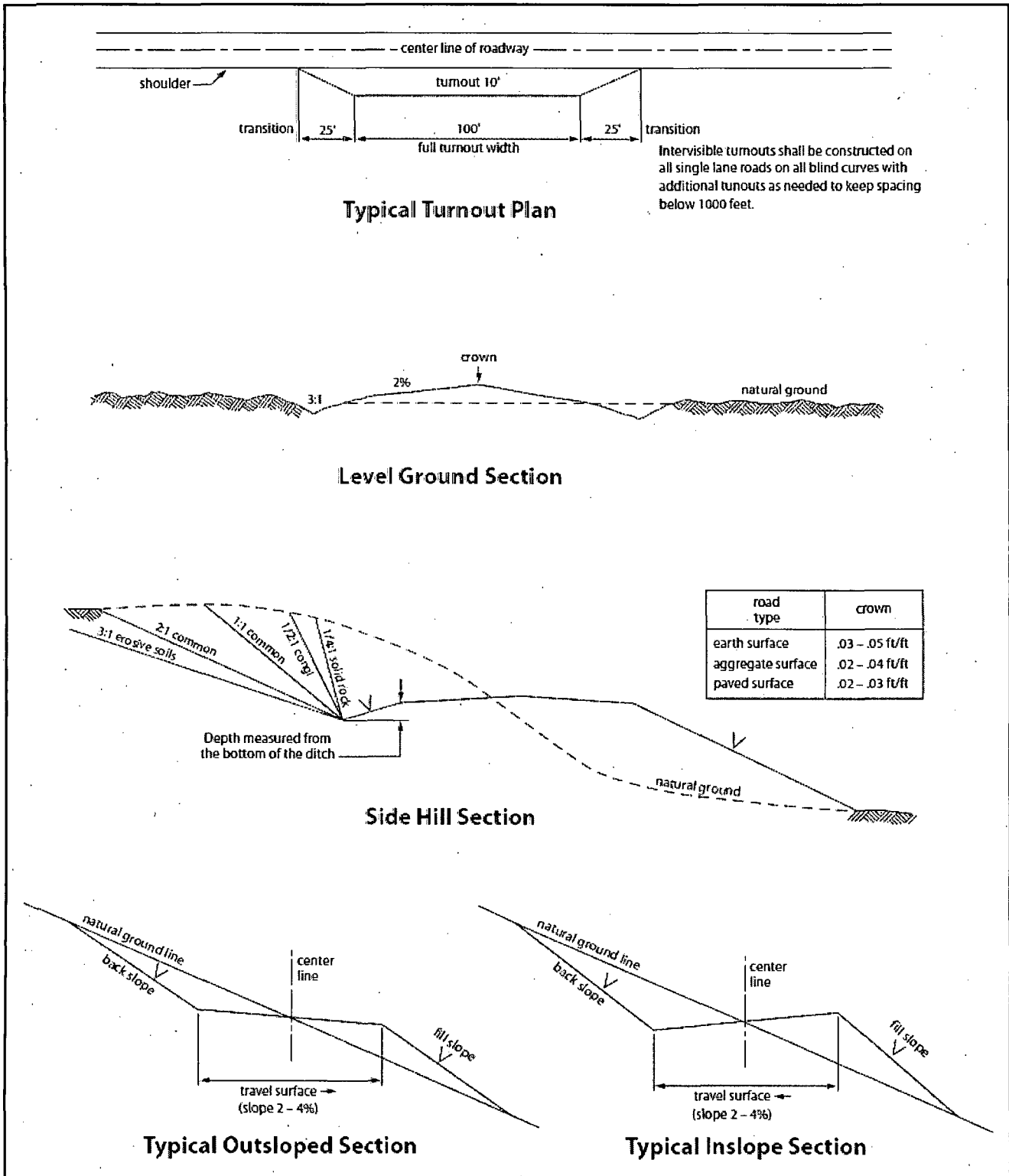


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

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

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

☒ **Eddy County**

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

1. A Hydrogen Sulfide (H₂S) Drilling Plan shall be activated 500 feet prior to drilling into the **Delaware** formation. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**
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) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. IF OPERATOR DOES NOT HAVE THE WELL SPECIFIC CEMENT DETAILS ONSITE PRIOR TO PUMPING THE CEMENT FOR EACH CASING STRING, THE WOC WILL BE 30 HOURS. See individual casing strings for details regarding lead cement slurry requirements.

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

Medium Cave/Karst

Possibility of water flows in the Salado and Castile.

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

1. The 13-3/8 inch surface casing shall be set at approximately **1375** 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.

Intermediate casing shall be kept fluid filled while running into hole to meet BLM minimum collapse requirements.

- 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 15% - Additional cement may be required.**

If 75% or greater lost circulation occurs while drilling the intermediate casing hole, the cement on the production casing must come to surface.

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

- 3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

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

- 4. 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 RP 53 Sec. 17.
- 2. **In the case where the only BOP installed is an annular preventer, it shall be tested to a minimum of 2000 psi (which may require upgrading to 3M or 5M annular).**

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.
4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** intermediate casing shoe shall be **3000 (3M)** psi.
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. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.
 - c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
 - d. The results of the test shall be reported to the appropriate BLM office.
 - e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**
 - f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

D. DRILL STEM TEST

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

E. WASTE MATERIAL AND FLUIDS

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

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

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VIII. 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).

IX. 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).

X. 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 2, for Sandy Sites

The 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 will 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 will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will 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>
Sand dropseed (<i>Sporobolus cryptandrus</i>)	1.0
Sand love grass (<i>Eragrostis trichodes</i>)	1.0
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