

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

NM OIL CONSERVATION

ARTESIA DISTRICT

JUL 21 2015

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

5. Lease Serial No.
NMNM132928, NMNM-130850

6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

7. If Unit or CA/Agreement, Name and/or No.

1. Type of Well
 Oil Well Gas Well Other

8. Well Name and No.
RIO BRAVO 8 B3MD FED #1H
1720 W2DE RD
Com 1H

2. Name of Operator
MEWBOURNE OIL COMPANY
Contact: JACKIE LATHAN
E-Mail: jlathan@mewbourne.com

9. API Well No.
30-015-43108-00-X1

3a. Address
P O BOX 5270
HOBBS, NM 88241

3b. Phone No. (include area code)
Ph: 575-393-5905

10. Field and Pool, or Exploratory
DEADMAN DRAW

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
Sec 17 T21S R25E NWNW 400FNL 790FWL
32.485635 N Lat, 104.423200 W Lon

11. County or Parish, and State
EDDY COUNTY, NM

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other Change to Original APD
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplate horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Mewbourne Oil Company is requesting the following changes to the approved APD for the Rio Bravo 8 B3MD Fed #1H:

Change well name to: Rio Bravo 1720 W2DE Fed Com #1H prop. 315052
Change target formation to: Wolfcamp
Attached is the drilling program and well plan. Also, many of the formation tops were amended after review of a recently drilled offset.

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

Approved for record

APD 7/21/2015

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #309250 verified by the BLM Well Information System
For MEWBOURNE OIL COMPANY, sent to the Carlsbad
Committed to AFMS for processing by JENNIFER SANCHEZ on 07/16/2015 (15JAS0422SE)

Name (Printed/Typed) JAKE NAVE Title REGULATORY

Signature (Electronic Submission) Date 07/15/2015

APPROVED

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By _____ Title _____

Conditions of approval, if any, are attached. Approval of this notice 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.

Office

JUL 16 2015
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

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.

NM OIL CONSERVATION

ARTESIA DISTRICT

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

JUL 21 2015

Form C-102

Revised August 1, 2011

Submit one copy to appropriate
District Office

RECEIVED

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number 30-015-43108		2 Pool Code 97489		3 Pool Name WILDCAT WOLFCAMP BAS	
4 Property Code 315052		5 Property Name RIO BRAVO 17/20 W2DE FED COM			6 Well Number 1H
7 OGRID NO. 14744		8 Operator Name MEWBOURNE OIL COMPANY			9 Elevation 3437'

10 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet From the	East/West line	County
D	17	21S	25E		400	NORTH	790	WEST	EDDY

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	20	21S	25E		2310	NORTH	660	WEST	EDDY

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

SEE DETAIL "A"
Project Area
DETAIL "A"
Producing Area

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

Signature: Bradley Bishop Date: 7-16-15
Printed Name: **BRADLEY BISHOP**
E-mail Address: _____

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

8-12-2014
Date of Survey
Signature and Seal of Professional Surveyor: Robert M. Howett
19680
Certificate Number
REV: NAME & BH 7-7-2015

Mewbourne Oil Company, Rio Bravo 17/20 W2DE Fed Com #1H
Sec 17, T21S, R25E
SL: 400' FNL & 790' FWL, Sec 17
BHL: 2310' FNL & 660' FWL, Sec 20

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0'	400'	13.375"	48	H40	STC	3.56	8.32	16.77
12.25"	0'	1470'	9.625"	36	J55	LTC	2.64	4.60	8.56
8.75"	0'	7281'	7"	26	HCP110	LTC	2.06	2.63	3.26
8.75"	7281'	8181'	7"	26	HCP110	BTC	1.91	2.44	35.47
6.125"	7281'	14886'	4.5"	13.5	P110	LT&C	2.62	3.04	3.28
BLM Minimum Safety Factor			1.125	1	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, Rio Bravo 17/20 W2DE Fed Com #1H

Sec 17, T21S, R25E

SL: 400' FNL & 790' FWL, Sec 17

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3. Cementing Program

Casing	# Sks	Wt. lb/gal	Yld. ft ³ /sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	150	12.5	2.12	11	10	Lead: Class C (35:65:4) + 5% Sodium Chloride +5#/sk LCM +0.25lb/sk Cello-Flake
	200	14.8	1.34	6.3	8	Tail: Class C + 0.25 lb/sk Cello Flake + 0.005 lb/sk Static Free
Inter.	150	12.5	2.12	11	10	Lead: Class C (35:65:4) + 5% Sodium Chloride +5#/sk LCM +0.25lb/sk Cello-Flake
	200	14.8	1.34	6.3	8	Tail: Class C + 0.25 lb/sk Cello Flake + 0.005 lb/sk Static Free
Prod.	390	12.5	2.12	11	9	Lead: 60:40:0 Class C + 15.00 lb/sk BA-90 + 4.00% MPS-5 + 3.00% SMS + 5.00% A-10 + 1.00% BA-10A + 0.80% ASA-301 + 2.90% R-21 + 8.00 lb/sk LCM-1 + 0.005 lb/sk Static Free
	400	15.6	1.18	5.2	10	Tail: Class H + 0.65% FL-52 + 0.10% R-3 + 0.005 lb/sk Static Free
Liner	305	11.2	2.97	18	16	Class C (60:40:0)+4% MPA5+1.2% BA10A+10#/sk BA90+5%A10+0.65%ASA301+1.5%SMS+1.2%R21

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

Casing String	TOC	% Excess
Surface	0'	100%
Intermediate	0'	25%
Production	1270'	25%
Liner	7281'	25%

Mewbourne Oil Company, Rio Bravo 17/20 W2DE Fed Com #1H

Sec 17, T21S, R25E

SL: 400' FNL & 790' FWL, Sec 17

BHL: 2310' FNL & 660' FWL, Sec 20

4. Pressure Control Equipment

Variance: None

BOP installed and tested before drilling which hole?	Size?	System Rated WP	Type	✓	Tested to:
12-1/4"	13-5/8"	2M	Annular	X	1250#
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other*		
8-3/4"	11"	5M	Annular	X	2500#
			Blind Ram	X	
			Pipe Ram	X	
			Double Ram		
			Other*		
6-1/8"	11"	5M	Annular	X	2500#
			Blind Ram	X	
			Pipe Ram	X	
			Double Ram		
			Other*		

*Specify if additional ram is utilized.

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

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

X	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
Y	A variance is requested for the use of a flexible choke line from the BOP to Choke

Mewbourne Oil Company, Rio Bravo 17/20 W2DE Fed Com #1H
Sec 17, T21S, R25E
SL: 400' FNL & 790' FWL, Sec 17
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	Manifold. See attached for specs and hydrostatic test chart.
N	Are anchors required by manufacturer?
N	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. <ul style="list-style-type: none"> Provide description here See attached schematic.

must drill 12-1/4" hole w/ fresh water

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0'	400'	FW Gel	8.5-8.8	28-34	N/C
400'	1470'	FW	10.0	28-34	N/C
1470'	8181'	Cut Brine	8.5-9.3	28-34	N/C
8181'	14886'	OBM	10.0-13.0	30-40	<10cc

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

What will be used to monitor the loss or gain of fluid?	Visual Monitoring/PVT/Pason
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See (57A)

Mewbourne Oil Company, Rio Bravo 17/20 W2DE Fed Com #1H

Sec 17, T21S, R25E

SL: 400' FNL & 790' FWL, Sec 17

BHL: 2310' FNL & 660' FWL, Sec 20

6. Logging and Testing Procedures

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

Additional logs planned	Interval
X Gamma Ray	7281'(KOP) to TD

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	3377 psi
Abnormal Temperature	No

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers.

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

8. Other facets of operation

Is this a walking operation? If yes, describe.

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

Attachments

Directional Plan

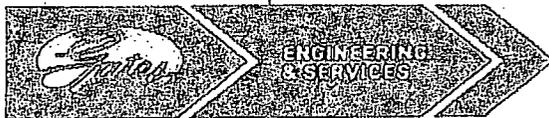
Other, describe

Mewbourne Oil Company, Rio Bravo 17/20 W2DE Fed Com #1H

Sec 17, T21S, R25E

SL: 400' FNL & 790' FWL, Sec 17

BHL: 2310' FNL & 660' FWL, Sec 20



GATES E & S NORTH AMERICA, INC.
 134 44TH STREET
 CORPUS CHRISTI, TEXAS 78405

PHONE: 361-887-9807
 FAX: 361-887-0812
 EMAIL: Tim.Cantu@gates.com
 WEB: www.gates.com

10K CEMENTING ASSEMBLY PRESSURE TEST CERTIFICATE

Customer :	AUSTIN DISTRIBUTING	Test Date:	4/30/2015
Customer Ref. :	4060578	Hose Serial No.:	D-043015-7
Invoice No. :	500506	Created By:	JUSTIN CROPPER

Product Description: 10K3.548.0CK4.1/1610KFLGE/E LE

End Fitting 1 :	4 1/16 10K FLG	End Fitting 2 :	4 1/16 10K FLG
Gates Part No. :	4773-6290	Assembly Code :	L36554102914D-043015-7
Working Pressure :	10,000 PSI	Test Pressure :	15,000 PSI

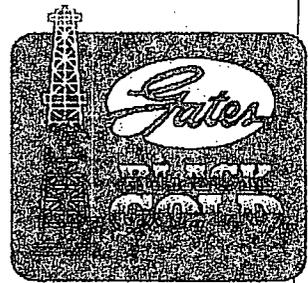
Gates E & S North America, Inc. certifies that the following hose assembly has been tested to the Gates Oilfield Roughneck Agreement/Specification requirements and passed the 15 minute hydrostatic test per API Spec 7K/Q1, Fifth Edition, June 2010, Test pressure 9.6.7 and per Table 9 to 15,000 psi in accordance with this product number. Hose burst pressure 9.6.7.2 exceeds the minimum of 2.5 times the working pressure per Table 9.

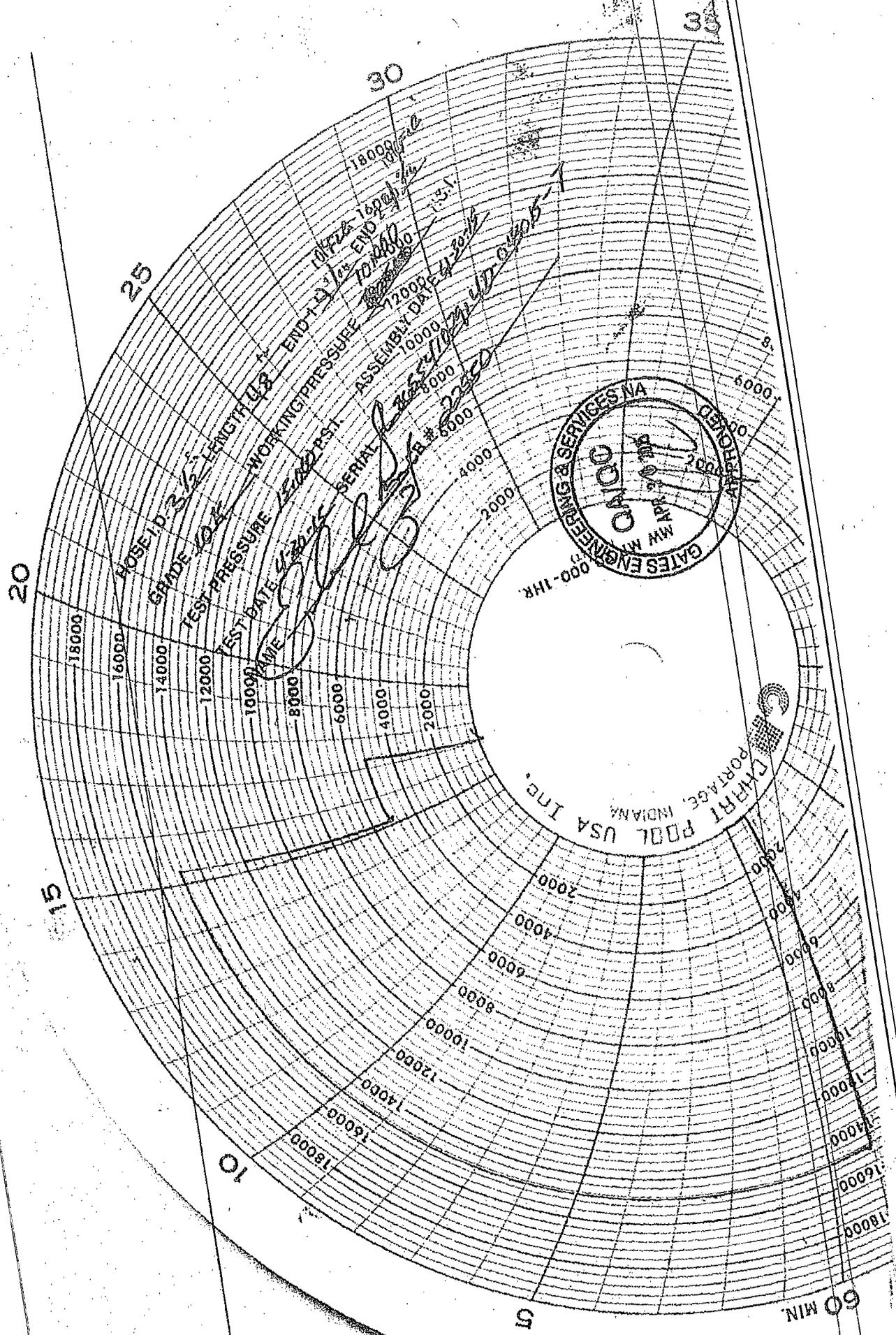
Quality Manager :
 Date : 4/30/2015
 Signature : *Justin Cropper*

Production:
 Date :
 Signature :

PRODUCTION
 4/30/2015
[Signature]

Form PTC - 01 Rev.02





000-1HR
GATES ENGINEERING & SERVICES NA
MM WPA 2014
CHART POOL USA INC.
PORTAGE, INDIANA

25

30

20

15

10

5

60 MIN

HOSE ID 3/4"
GRADE 40
TEST PRESSURE 2200 PSI
TEST DATE 5/20/14
TIME 10:00 AM
SERIAL 22820
ASSEMBLY DATE 4/20/14
WORKING PRESSURE 16000
END 1 10/22/14
END 2 10/22/14
TEST 16000

18000

16000

14000

12000

10000

8000

6000

4000

2000

2000

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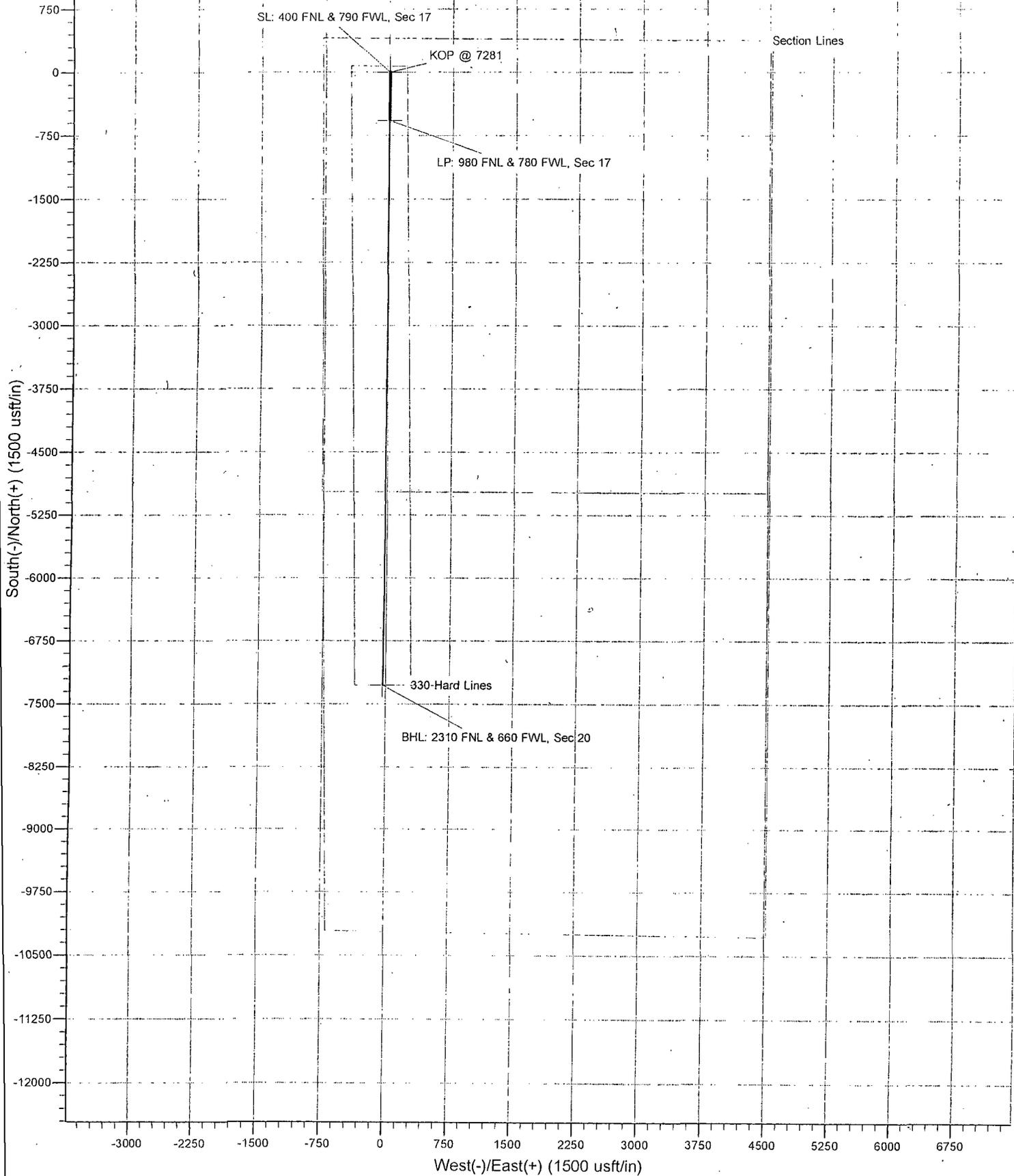
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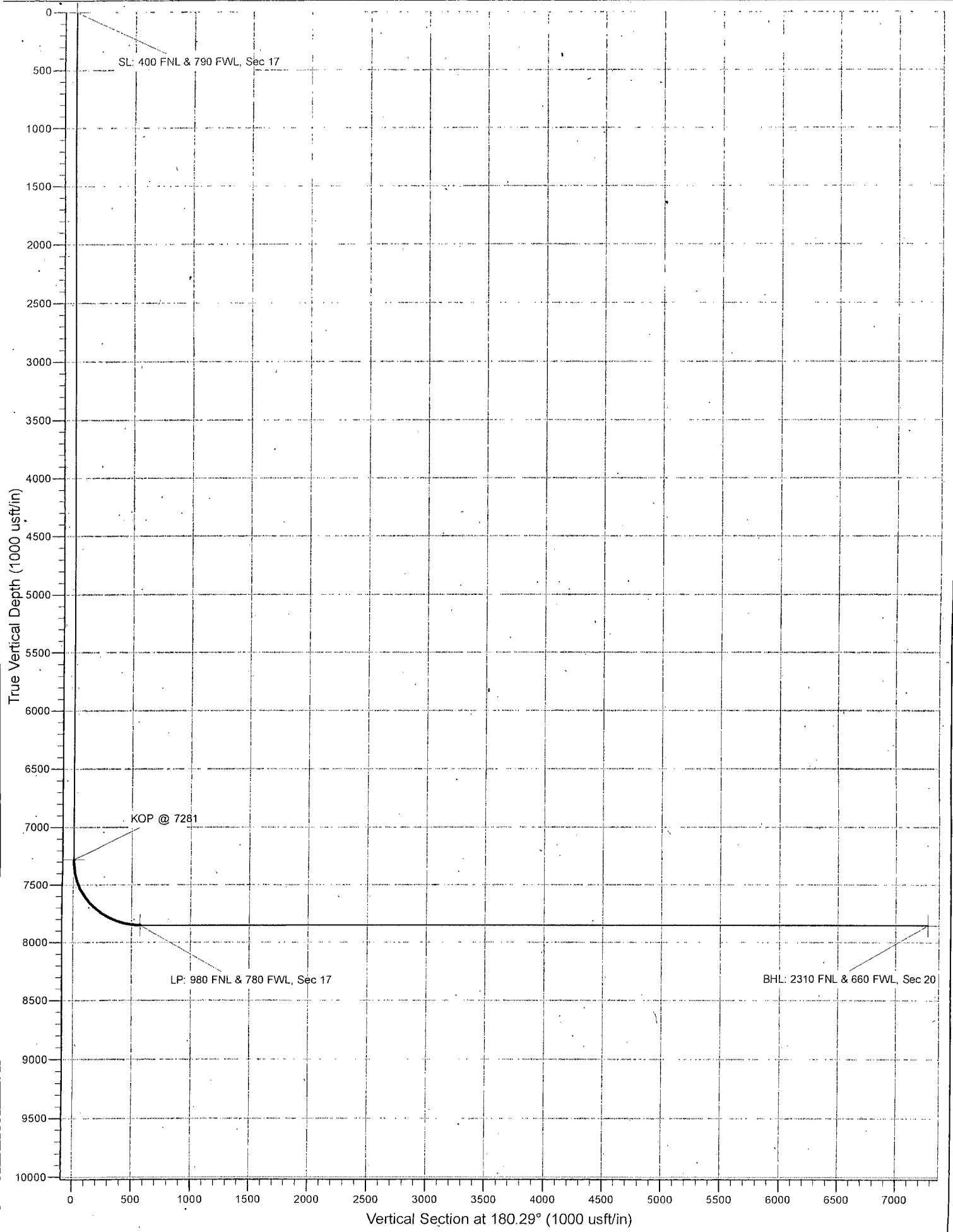
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Rio Bravo 17/20 W2DE Fed Com #1H





SL: 400 FNL & 790 FWL, Sec 17

KOP @ 7281

LP: 980 FNL & 780 FWL, Sec 17

BHL: 2310 FNL & 660 FWL, Sec 20

Vertical Section at 180.29° (1000 usft/in)

NM OIL CONSERVATION
ARTESIA DISTRICT

JUL 21 2015

RECEIVED

Mewbourne Oil Company

Eddy County, New Mexico

Rio Bravo 17/20 W2DE Fed Com #1H

Sec 17, T21S, R25E

SL: 400' FNL & 790' FWL, Sec 17

BHL: 2310' FNL & 660' FWL, Sec 20

Plan: Design #1

Standard Planning Report

15 July, 2015

Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Rio Bravo 17/20 W2DE Fed Com #1H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3462.0usft (Original Well Elev)
Project:	Eddy County, New Mexico	MD Reference:	WELL @ 3462.0usft (Original Well Elev)
Site:	Rio Bravo 17/20 W2DE Fed Com #1H	North Reference:	Grid
Well:	Sec 17, T21S, R25E	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 2310' FNL & 660' FWL, Sec 20		
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:	Rio Bravo 17/20 W2DE Fed Com #1H				
Site Position:	From: Map	Northing:	540,398.70 usft	Latitude:	32° 29' 8.286 N
		Easting:	472,289.70 usft	Longitude:	104° 25' 23.519 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.05 °

Well:	Sec 17, T21S, R25E					
Well Position	+N/-S	0.0 usft	Northing:	540,398.70 usft	Latitude:	32° 29' 8.286 N
	+E/-W	0.0 usft	Easting:	472,289.70 usft	Longitude:	104° 25' 23.519 W
Position Uncertainty	0.0 usft	Wellhead Elevation:	3,462.0 usft	Ground Level:	3,437.0 usft	

Wellbore:	BHL: 2310' FNL & 660' FWL, Sec 20				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	8.15	60.33	48,853

Design:	Design #1				
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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	180.29	

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	
7,281.0	0.00	0.00	7,281.0	0.0	0.0	0.00	0.00	0.00	0.00	
8,181.1	90.00	180.29	7,854.0	-573.0	-2.9	10.00	10.00	0.00	-179.71	
14,886.2	90.00	180.29	7,854.0	-7,278.0	-36.3	0.00	0.00	0.00	0.00	BHL: 2310 FNL & 660

Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Rio Bravo 17/20 W2DE Fed Com #1H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3462.0usft (Original Well Elev)
Project:	Eddy County, New Mexico	MD Reference:	WELL @ 3462.0usft (Original Well Elev)
Site:	Rio Bravo 17/20 W2DE Fed Com #1H	North Reference:	Grid
Well:	Sec 17, T21S, R25E	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 2310' FNL & 660' FWL, Sec 20		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
SL: 400 FNL & 790 FWL, Sec 17									
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	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00

Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Rio Bravo 17/20 W2DE Fed Com #1H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3462.0usft (Original Well Elev)
Project:	Eddy County, New Mexico	MD Reference:	WELL @ 3462.0usft (Original Well Elev)
Site:	Rio Bravo 17/20 W2DE Fed Com #1H	North Reference:	Grid
Well:	Sec 17, T21S, R25E	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 2310' FNL & 660' FWL, Sec 20		
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)	
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,900.0	0.00	0.00	5,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,000.0	0.00	0.00	6,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,100.0	0.00	0.00	6,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,200.0	0.00	0.00	6,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,300.0	0.00	0.00	6,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,400.0	0.00	0.00	6,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,500.0	0.00	0.00	6,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,600.0	0.00	0.00	6,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,700.0	0.00	0.00	6,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,800.0	0.00	0.00	6,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,900.0	0.00	0.00	6,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,000.0	0.00	0.00	7,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,100.0	0.00	0.00	7,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,200.0	0.00	0.00	7,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,281.0	0.00	0.00	7,281.0	0.0	0.0	0.0	0.00	0.00	0.00	
KOP @ 7281										
7,300.0	1.90	180.29	7,300.0	-0.3	0.0	0.3	10.00	10.00	0.00	
7,400.0	11.90	180.29	7,399.1	-12.3	-0.1	12.3	10.00	10.00	0.00	
7,500.0	21.90	180.29	7,494.7	-41.3	-0.2	41.3	10.00	10.00	0.00	
7,600.0	31.90	180.29	7,583.8	-86.5	-0.4	86.5	10.00	10.00	0.00	
7,700.0	41.90	180.29	7,663.6	-146.5	-0.7	146.5	10.00	10.00	0.00	
7,800.0	51.90	180.29	7,731.9	-219.4	-1.1	219.4	10.00	10.00	0.00	
7,900.0	61.90	180.29	7,786.4	-303.1	-1.5	303.1	10.00	10.00	0.00	
8,000.0	71.89	180.29	7,825.6	-394.9	-2.0	394.9	10.00	10.00	0.00	
8,100.0	81.89	180.29	7,848.3	-492.2	-2.5	492.2	10.00	10.00	0.00	
8,181.1	90.00	180.29	7,854.0	-573.0	-2.9	573.0	10.00	10.00	0.00	
LP: 980 FNL & 780 FWL, Sec.17										
8,200.0	90.00	180.29	7,854.0	-591.9	-3.0	591.9	0.00	0.00	0.00	
8,300.0	90.00	180.29	7,854.0	-691.9	-3.5	691.9	0.00	0.00	0.00	
8,400.0	90.00	180.29	7,854.0	-791.9	-3.9	791.9	0.00	0.00	0.00	
8,500.0	90.00	180.29	7,854.0	-891.9	-4.4	891.9	0.00	0.00	0.00	
8,600.0	90.00	180.29	7,854.0	-991.9	-4.9	991.9	0.00	0.00	0.00	
8,700.0	90.00	180.29	7,854.0	-1,091.9	-5.4	1,091.9	0.00	0.00	0.00	
8,800.0	90.00	180.29	7,854.0	-1,191.9	-5.9	1,191.9	0.00	0.00	0.00	
8,900.0	90.00	180.29	7,854.0	-1,291.9	-6.4	1,291.9	0.00	0.00	0.00	
9,000.0	90.00	180.29	7,854.0	-1,391.9	-6.9	1,391.9	0.00	0.00	0.00	
9,100.0	90.00	180.29	7,854.0	-1,491.9	-7.4	1,491.9	0.00	0.00	0.00	
9,200.0	90.00	180.29	7,854.0	-1,591.9	-7.9	1,591.9	0.00	0.00	0.00	
9,300.0	90.00	180.29	7,854.0	-1,691.9	-8.4	1,691.9	0.00	0.00	0.00	
9,400.0	90.00	180.29	7,854.0	-1,791.9	-8.9	1,791.9	0.00	0.00	0.00	
9,500.0	90.00	180.29	7,854.0	-1,891.9	-9.4	1,891.9	0.00	0.00	0.00	
9,600.0	90.00	180.29	7,854.0	-1,991.9	-9.9	1,991.9	0.00	0.00	0.00	
9,700.0	90.00	180.29	7,854.0	-2,091.9	-10.4	2,091.9	0.00	0.00	0.00	
9,800.0	90.00	180.29	7,854.0	-2,191.9	-10.9	2,191.9	0.00	0.00	0.00	
9,900.0	90.00	180.29	7,854.0	-2,291.9	-11.4	2,291.9	0.00	0.00	0.00	
10,000.0	90.00	180.29	7,854.0	-2,391.9	-11.9	2,391.9	0.00	0.00	0.00	
10,100.0	90.00	180.29	7,854.0	-2,491.9	-12.4	2,491.9	0.00	0.00	0.00	
10,200.0	90.00	180.29	7,854.0	-2,591.9	-12.9	2,591.9	0.00	0.00	0.00	

Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Rio Bravo 17/20 W2DE Fed Com #1H
Company:	Mewbourne Oil Company	TVD/Reference:	WELL @ 3462.0usft (Original Well Elev)
Project:	Eddy County, New Mexico	MD Reference:	WELL @ 3462.0usft (Original Well Elev)
Site:	Rio Bravo 17/20 W2DE Fed Com #1H	North Reference:	Grid:
Well:	Sec 17, T21S, R25E	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 2310' FNL & 660' FWL, Sec 20		
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)
10,300.0	90.00	180.29	7,854.0	-2,691.9	-13.4	2,691.9	0.00	0.00	0.00
10,400.0	90.00	180.29	7,854.0	-2,791.9	-13.9	2,791.9	0.00	0.00	0.00
10,500.0	90.00	180.29	7,854.0	-2,891.9	-14.4	2,891.9	0.00	0.00	0.00
10,600.0	90.00	180.29	7,854.0	-2,991.9	-14.9	2,991.9	0.00	0.00	0.00
10,700.0	90.00	180.29	7,854.0	-3,091.9	-15.4	3,091.9	0.00	0.00	0.00
10,800.0	90.00	180.29	7,854.0	-3,191.9	-15.9	3,191.9	0.00	0.00	0.00
10,900.0	90.00	180.29	7,854.0	-3,291.9	-16.4	3,291.9	0.00	0.00	0.00
11,000.0	90.00	180.29	7,854.0	-3,391.9	-16.9	3,391.9	0.00	0.00	0.00
11,100.0	90.00	180.29	7,854.0	-3,491.9	-17.4	3,491.9	0.00	0.00	0.00
11,200.0	90.00	180.29	7,854.0	-3,591.9	-17.9	3,591.9	0.00	0.00	0.00
11,300.0	90.00	180.29	7,854.0	-3,691.9	-18.4	3,691.9	0.00	0.00	0.00
11,400.0	90.00	180.29	7,854.0	-3,791.9	-18.9	3,791.9	0.00	0.00	0.00
11,500.0	90.00	180.29	7,854.0	-3,891.9	-19.4	3,891.9	0.00	0.00	0.00
11,600.0	90.00	180.29	7,854.0	-3,991.9	-19.9	3,991.9	0.00	0.00	0.00
11,700.0	90.00	180.29	7,854.0	-4,091.9	-20.4	4,091.9	0.00	0.00	0.00
11,800.0	90.00	180.29	7,854.0	-4,191.9	-20.9	4,191.9	0.00	0.00	0.00
11,900.0	90.00	180.29	7,854.0	-4,291.9	-21.4	4,291.9	0.00	0.00	0.00
12,000.0	90.00	180.29	7,854.0	-4,391.9	-21.9	4,391.9	0.00	0.00	0.00
12,100.0	90.00	180.29	7,854.0	-4,491.9	-22.4	4,491.9	0.00	0.00	0.00
12,200.0	90.00	180.29	7,854.0	-4,591.9	-22.9	4,591.9	0.00	0.00	0.00
12,300.0	90.00	180.29	7,854.0	-4,691.9	-23.4	4,691.9	0.00	0.00	0.00
12,400.0	90.00	180.29	7,854.0	-4,791.9	-23.9	4,791.9	0.00	0.00	0.00
12,500.0	90.00	180.29	7,854.0	-4,891.9	-24.4	4,891.9	0.00	0.00	0.00
12,600.0	90.00	180.29	7,854.0	-4,991.9	-24.9	4,991.9	0.00	0.00	0.00
12,700.0	90.00	180.29	7,854.0	-5,091.9	-25.4	5,091.9	0.00	0.00	0.00
12,800.0	90.00	180.29	7,854.0	-5,191.9	-25.9	5,191.9	0.00	0.00	0.00
12,900.0	90.00	180.29	7,854.0	-5,291.9	-26.4	5,291.9	0.00	0.00	0.00
13,000.0	90.00	180.29	7,854.0	-5,391.9	-26.9	5,391.9	0.00	0.00	0.00
13,100.0	90.00	180.29	7,854.0	-5,491.9	-27.4	5,491.9	0.00	0.00	0.00
13,200.0	90.00	180.29	7,854.0	-5,591.9	-27.9	5,591.9	0.00	0.00	0.00
13,300.0	90.00	180.29	7,854.0	-5,691.9	-28.4	5,691.9	0.00	0.00	0.00
13,400.0	90.00	180.29	7,854.0	-5,791.9	-28.9	5,791.9	0.00	0.00	0.00
13,500.0	90.00	180.29	7,854.0	-5,891.9	-29.4	5,891.9	0.00	0.00	0.00
13,600.0	90.00	180.29	7,854.0	-5,991.9	-29.9	5,991.9	0.00	0.00	0.00
13,700.0	90.00	180.29	7,854.0	-6,091.9	-30.4	6,091.9	0.00	0.00	0.00
13,800.0	90.00	180.29	7,854.0	-6,191.9	-30.9	6,191.9	0.00	0.00	0.00
13,900.0	90.00	180.29	7,854.0	-6,291.9	-31.4	6,291.9	0.00	0.00	0.00
14,000.0	90.00	180.29	7,854.0	-6,391.9	-31.9	6,391.9	0.00	0.00	0.00
14,100.0	90.00	180.29	7,854.0	-6,491.9	-32.4	6,491.9	0.00	0.00	0.00
14,200.0	90.00	180.29	7,854.0	-6,591.9	-32.9	6,591.9	0.00	0.00	0.00
14,300.0	90.00	180.29	7,854.0	-6,691.9	-33.4	6,691.9	0.00	0.00	0.00
14,400.0	90.00	180.29	7,854.0	-6,791.8	-33.9	6,791.9	0.00	0.00	0.00
14,500.0	90.00	180.29	7,854.0	-6,891.8	-34.4	6,891.9	0.00	0.00	0.00
14,600.0	90.00	180.29	7,854.0	-6,991.8	-34.9	6,991.9	0.00	0.00	0.00
14,700.0	90.00	180.29	7,854.0	-7,091.8	-35.4	7,091.9	0.00	0.00	0.00
14,800.0	90.00	180.29	7,854.0	-7,191.8	-35.9	7,191.9	0.00	0.00	0.00
14,886.2	90.00	180.29	7,854.0	-7,278.0	-36.3	7,278.1	0.00	0.00	0.00

BHL: 2310 FNL & 660 FWL, Sec 20

Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Rio Bravo 17/20 W2DE Fed Com #1H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3462.0usft (Original Well Elev)
Project:	Eddy County, New Mexico	MD Reference:	WELL @ 3462.0usft (Original Well Elev)
Site:	Rio Bravo 17/20 W2DE Fed Com #1H	North Reference:	Grid
Well:	Sec 17, T21S, R25E	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 2310 FNL & 660 FWL, Sec 20		
Design:	Design #1		

Design Targets										
Target Name hit/miss target Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
SL: 400 FNL & 790 FWL - plan hits target center - Point	0.00	360.00	0.0	0.0	0.0	540,398.70	472,289.70	32° 29' 8.286 N	104° 25' 23.519 W	
KOP @ 7281 - plan hits target center - Point	0.00	360.00	7,281.0	0.0	0.0	540,398.70	472,289.70	32° 29' 8.286 N	104° 25' 23.519 W	
BHL: 2310 FNL & 660 F - plan hits target center - Point	0.00	0.00	7,854.0	-7,278.0	-36.3	533,120.70	472,253.40	32° 27' 56.263 N	104° 25' 23.871 W	
LP: 980 FNL & 780 FWL - plan hits target center - Point	0.00	360.00	7,854.0	-573.0	-2.9	539,825.70	472,286.80	32° 29' 2.616 N	104° 25' 23.547 W	

JUL 21 2015

PECOS DISTRICT
CONDITIONS OF APPROVAL

RECEIVED

OPERATOR'S NAME:	Mewbourne Oil Company
LEASE NO.:	NMNM-130850
WELL NAME & NO.:	Rio Bravo 17 20 W2DE Fed Com 1H
SURFACE HOLE FOOTAGE:	0400' FNL & 0790' FWL
BOTTOM HOLE FOOTAGE:	2310' FNL & 0660' FWL Sec. 20, T. 21 S., R 25 E
LOCATION:	Section 17, T. 21 S., R 25 E., NMPM
COUNTY:	Eddy County, New Mexico

The original COAs still stand with the following drilling modifications:

Special Requirements:

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.

I. 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. **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.**

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.

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

High Cave/Karst

Capitan Reef

Possibility of water flows in the San Andres

Possibility of lost circulation in the San Andres and Delaware

Abnormal pressure may be encountered within the 3rd Bone Spring Sandstone

A MINIMUM OF TWO CASING STRINGS CEMENTED TO SURFACE IS REQUIRED IN HIGH CAVE/KARST AREAS. THE CEMENT MUST BE IN A SOLID SHEATH. THEREFORE, ONE INCH OPERATIONS ARE NOT SUFFICIENT TO PROTECT CAVE/KARST RESOURCES. A CASING DESIGN THAT HAS A ONE INCH JOB PERFORMED DOES NOT COUNT AS A SOLID SHEATH. IF THE PRIMARY CEMENT JOB ON THE SURFACE CASING DOES NOT CIRCULATE, THEN THE NEXT TWO CASING STRINGS MUST BE CEMENTED TO SURFACE.

1. The **13-3/8** inch surface casing shall be set at approximately **400** feet and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. **Wait on cement (WOC) time for a primary cement job 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.

NOTE: The 12-1/4" hole must be drilled with FRESH WATER.

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 and Capitan Reef. Excess calculates to 16% - Additional cement may be required.**

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:

- Cement should tie-back at least **50 feet above the Capitan Reef**. Operator shall provide method of verification. **Excess calculates to 15% - Additional cement may be required.**

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 by operator. Operator shall provide method of verification. **Excess calculates to 24% - Additional cement may be required.**

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. 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 (Operator installing a 2M annular)**.
 - a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.
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 **5000 (5M) psi. 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.**
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**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
 - 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.
- g. 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.

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