OCD-ARTESIA

Form 3160-5
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: March 31, 2007

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.

SUBMIT IN TRIPLICATE- Other instructions on reverse side.

5. Lease Serial No.
02884, 02887B&D, 071988B, 28881

6. If Indian, Allottee or Tribe Name

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

1. Type of Well
☑ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
James Ranch Unit #110H

2. Name of Operator **BOPCO, L. P.**

9. API Well No.
30-015-38115

3a. Address
P. O. Box 2760, Midland, TX 79702

3b. Phone No. *(include area code)*
432-683-2277

10. Field and Pool, or Exploratory Area
Quahada Ridge SE (Delaware)

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*

Surface: NESE, UL I, 2235' FSL, 530' FEL, Lat N32.332922, Long W103.827336
Bottom Hole: 660' FNL, 330'FWL, Sec 8, T23S, R31E, Lat N32.324475, Long W103.80093

11. County or Parish, State
Sec 1, T23S, R30E, Mer NMP

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

TYPE OF SUBMISSION	TYPE OF ACTION			
☑ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☑ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☑ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

RECEIVED
APR 15 2011
NMOCD ARTESIA

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 recomplete 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.)

BOPCO, L.P. respectfully requests the changes listed below to be approved for the above captioned well. Additionally, the well will be drilled using the Latshaw Rig #4 (updated rig plats and well plan attached).
The new BHL will be 660' FNL, 330'FWL, Sec 8, T23S, R31E.

The dedicated proration units will now be 360 acres.

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

We would like to utilize an armored, 3", 5000 psi WP flex hose for the choke line in the drilling of the well. This is rig equipment and will help quicken nipple up time thus saving money without a safety problem. The hose itself is rated to 5000 psi and has 5000 psi flanges on each end. This well is to be drilled to 15,404' MD (7686' TVD) and max surface pressure should be +/- 1690 psi as prescribed in onshore order #2 shown as 0.22 psi/ft. Thus, 2000 psi BOPE (for 12-1/4" hole) and 3000 psi BOPE (for 8-3/4" and 6-1/8" hole) is all that is needed for this well.

RWP 4-14-K

The Latshaw #4 BOPE diagram (5000 psi as specified within the approved APD) is attached along with spec sheet and drawing of the 3-1/2" flex hose.

SM 4/8/2011

Surface Casing will be 560' of 13-3/8", 54.5 ppf, J-55, STC, second intermediate casing will be 10003' of 7", 26 ppf, N-80, LTC, and production liner will be from 9803' to 15,404' of 4-1/2", 11.6 ppf, HCP-110, LTC with Baker OH packers for zone isolation. Cement on additional page.

14. I hereby certify that the foregoing is true and correct
Name *(Printed/Typed)*
Brian Hammit Title **Drilling Engineer**

Signature Brian Hammit Date **04/08/2011**

APPROVED
APR 12 2011
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by _____ Title _____ Date _____

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

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.

(Instructions on page 2)

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Cement program changes as follows:

Surface: 0 - 560', Tail 440 sx ExtendaCem + additives (13.7 ppg, 1.68 yield)

1st Intermediate: 0 - 3,917', Lead 935 sx EconoCem + additives (12.9 ppg, 1.81 yield), Tail 195 sx HalCem + additives (14.8 ppg, 1.33 yield)

2nd Intermediate: 0 - 10,003', DV Tool @ 5,000', 1st Stage: Lead 205 sx Tuned Light + additives (10.25 ppg, 3.18 yield), Tail 310 sx VersaCem + additives (13 ppg, 1.65 yield)

2nd Stage: Lead 260 sx Tuned Light + additives (10.25 ppg, 3.18 yield), Tail 100 sx HalCem + additives (14.8 ppg, 1.33 yield)

SEE ATTACHED FOR
CONDITIONS OF APPROVAL
BLM E. G. Forman
4/12/11

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240

DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised October 15, 2009

Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-38115	50470	Quahada Ridge, SE (Delaware)

Property Code	Property Name	Well Number
306407	JAMES RANCH UNIT	110H

OGRID No.	Operator Name	Elevation
260737	BOPCO, L.P.	3294'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	1	23 S	30 E		2235	SOUTH	530	EAST	EDDY

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
D	8	23 S	31 E		660	NORTH	330	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.

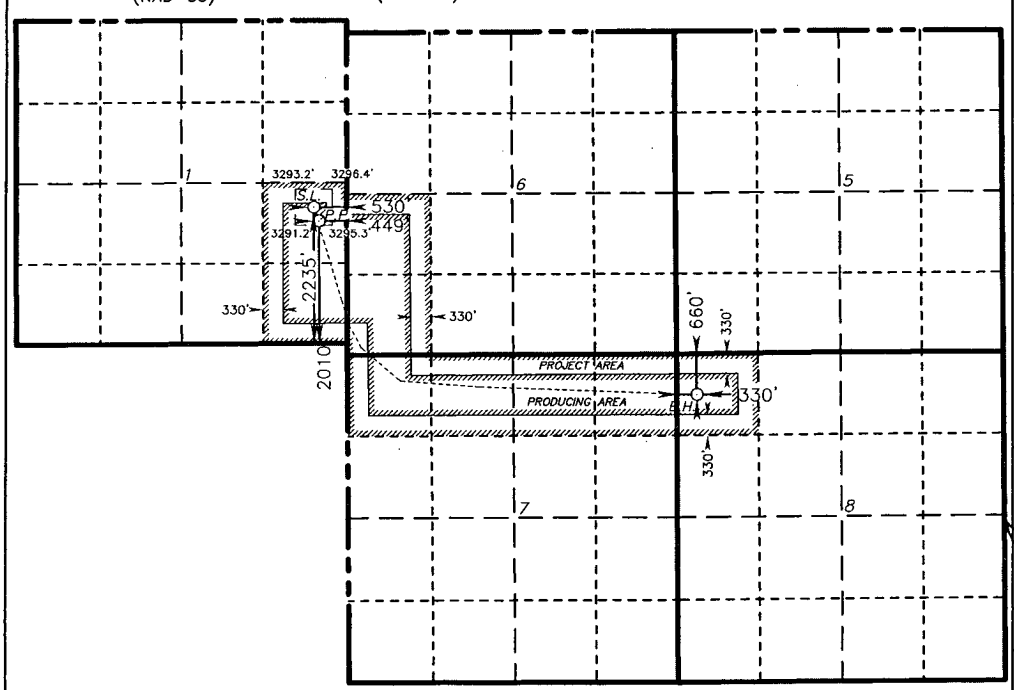
NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

SURFACE LOCATION
Lat – N 32°19'58.52"
Long – W 103°49'38.41"
NMSPCE– N 485218.026
E 697621.651
(NAD-83)

PROPOSED DELAWARE PENETRATION POINT
Lat – N 32°19'58.52"
Long – W 103°49'38.41"
NMSPCE– N 485218.026
E 697621.651
(NAD-83)

PROPOSED LOWER LBC "W" SAND PP
Lat – N 32°19'55.47"
Long – W 103°49'37.13"
NMSPCE– N 484910.20
E 697733.69
(NAD-83)

PROPOSED BOTTOM HOLE LOCATION
Lat – N 32°19'28.11"
Long – W 103°48'03.35"
NMSPCE– N 482184.90
E 705793.20
(NAD-83)



SCALE = 1" = 3000'

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.

Jeremy Braden 4-6-11
Signature Date

Jeremy Braden
Printed Name

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 supervison, and that the same is true and correct to the best of my belief.

FEBRUARY 10, 2010
Date Surveyed
Signature & Seal of Professional Surveyor
7977

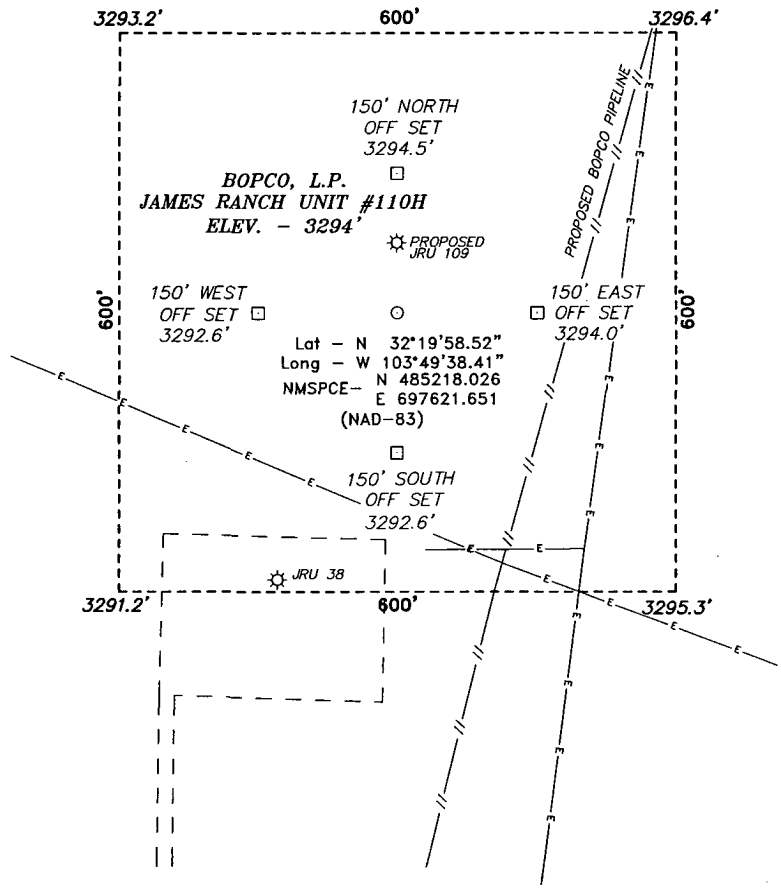
GARY L. JONES
NEW MEXICO
7977
REGISTERED PROFESSIONAL LAND SURVEYOR

Certificate No. Gary L. Jones 7977

BASIN SURVEYS

SECTION 1, TOWNSHIP 23 SOUTH, RANGE 30 EAST, N.M.P.M.,

EDDY COUNTY, **NEW MEXICO.**



200 0 200 400 FEET

SCALE: 1" = 200'

Directions to Location:

FROM THE JUNCTION OF STATE HWY 128 AND WIPP, GO NORTHEASTERLY ON WIPP 0.5 MILES TO LEASE ROAD, ONE LEASE ROAD GO WEST 0.1 MILES TO WELL PAD AND PROPOSED LOCATION.

BASIN SURVEYS P.O. BOX 1786 - HOBBS, NEW MEXICO

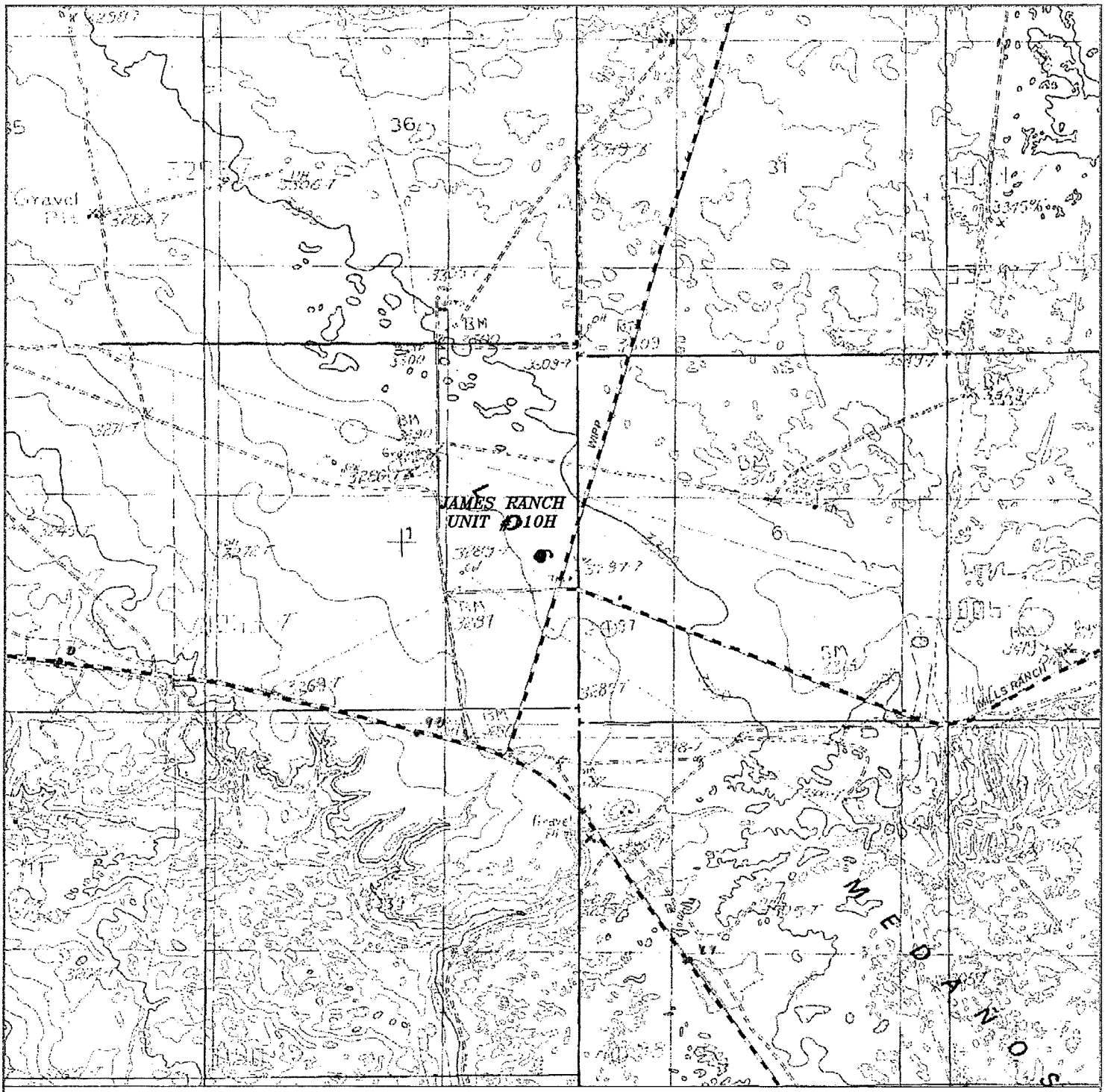
W.O. Number: 22334	Drawn By: J. SMALL
Date: 02-12-2010	Disk: JMS 22334

BOPCO, L.P.

REF: JAMES RANCH UNIT #110H / WELL PAD TOPO

THE JAMES RANCH UNIT #110H LOCATED 2235' FROM THE SOUTH LINE AND 530' FROM THE EAST LINE OF SECTION 1, TOWNSHIP 23 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

Survey Date: 02-12-2010	Sheet 1 of 1 Sheets



JAMES RANCH UNIT #110H

Located 2235' FSL and 530' FEL
Section 1, Township 23 South, Range 30 East,
N.M.P.M., Eddy County, New Mexico.

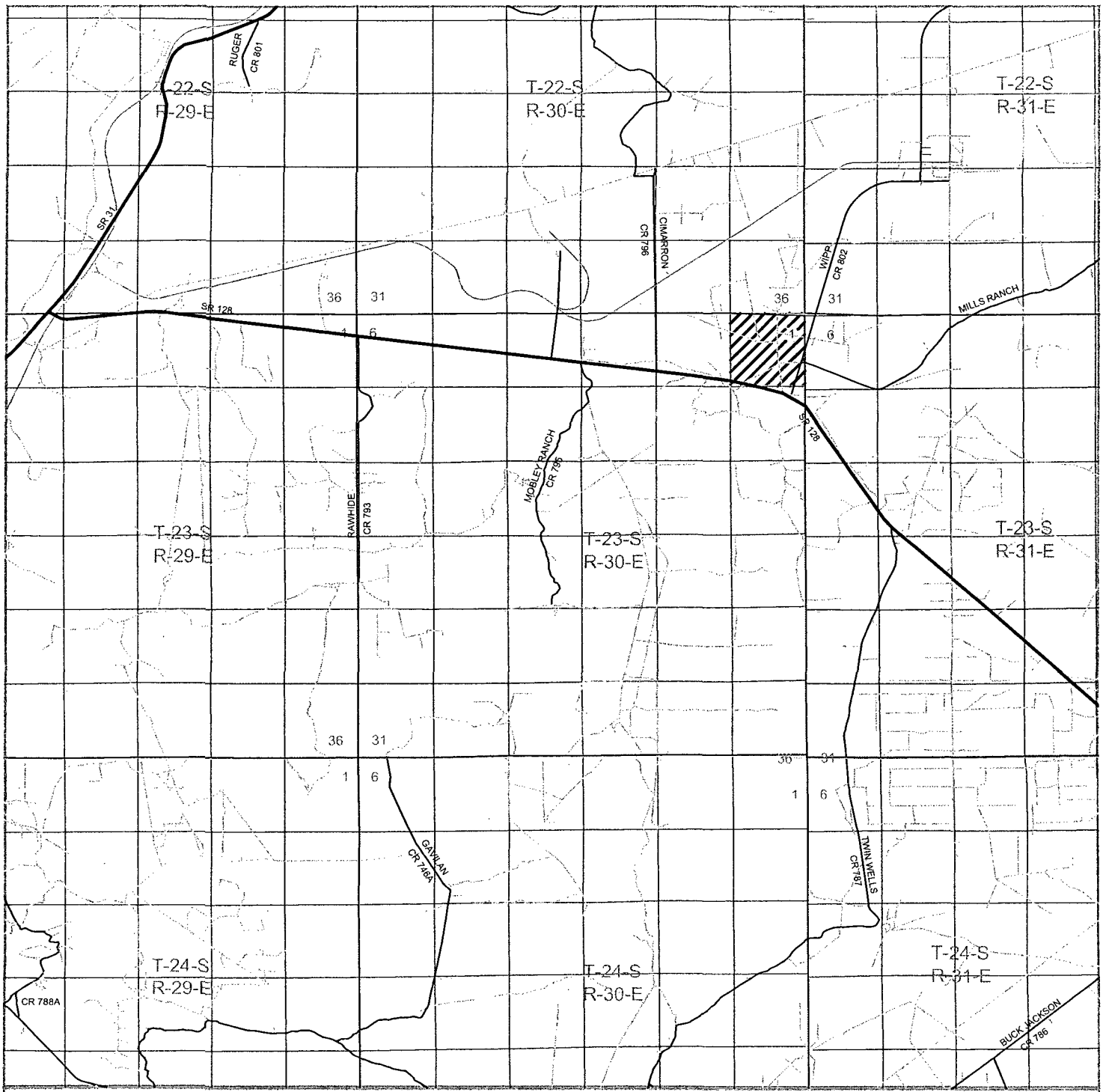
basin surveys
focused on excellence in the oilfield

P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

W.O. Number: JMS 22334
Survey Date: 02-12-2010
Scale: 1" = 2000'
Date: 02-15-2010

N

BOPCO, L.P.



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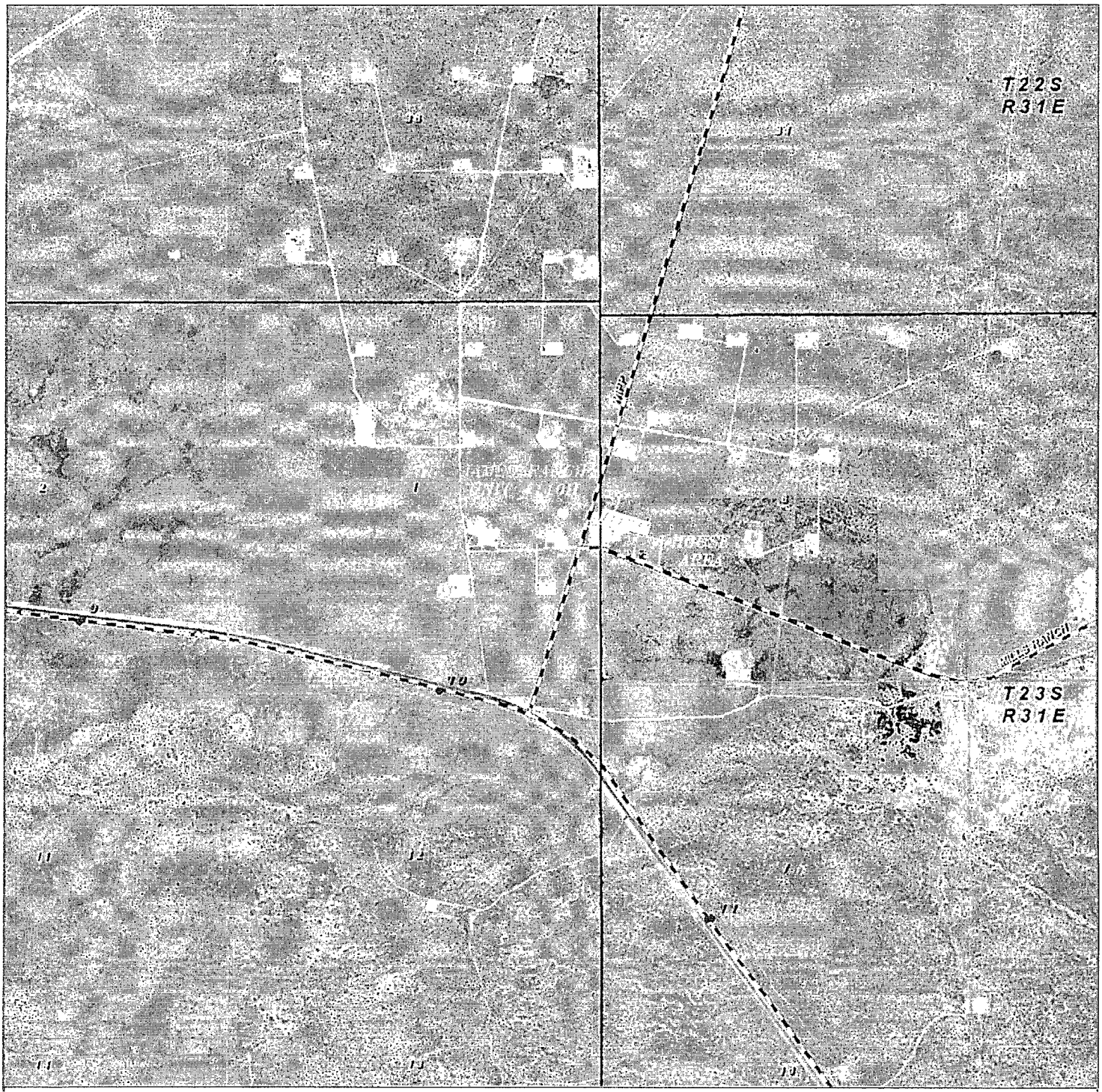
basinsurveys.com

W.O. Number:	JMS 22334
Survey Date:	02-12-2010
Scale:	1" = 2 Miles
Date:	02-15-2010

N

BOPCO, L.P.



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Scale: 1" = 2000'

YELLOW TINT - USA LAND
BLUE TINT - STATE LAND
NATURAL COLOR - FEE LAND

N

BOPCO, L.P.

BOPCO, L.P.

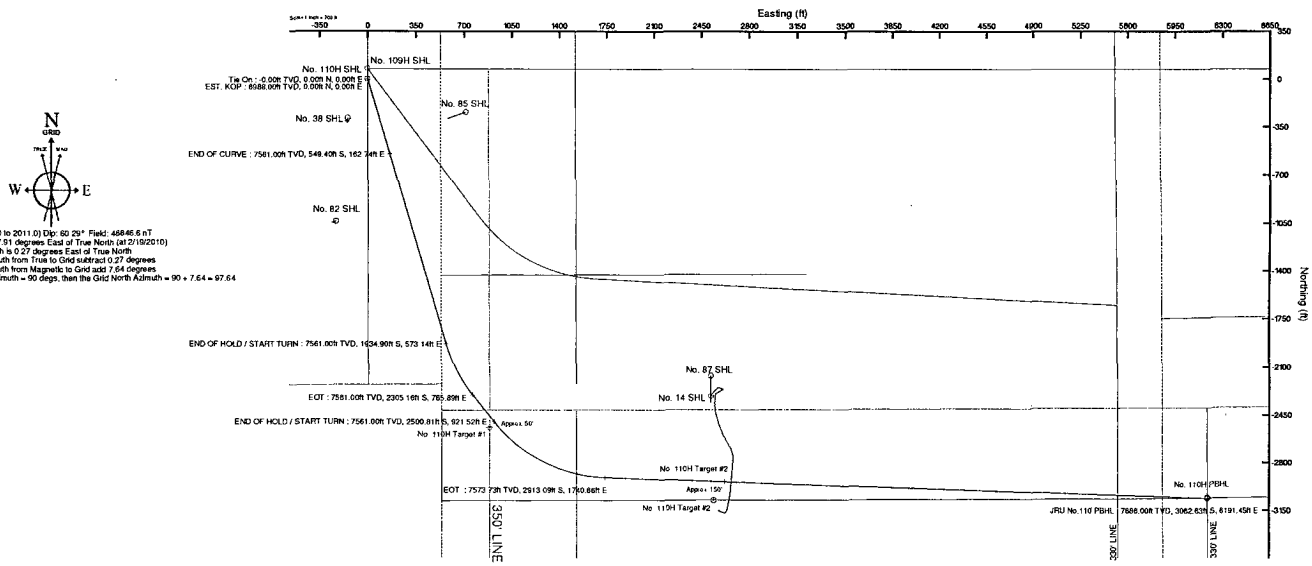
Location: Eddy County, NM
Field: JRU Project
Facility: JRU No. 110H

Slot: No. 110H SHL
Well: No. 110H
Wellbore: No. 110H PWB

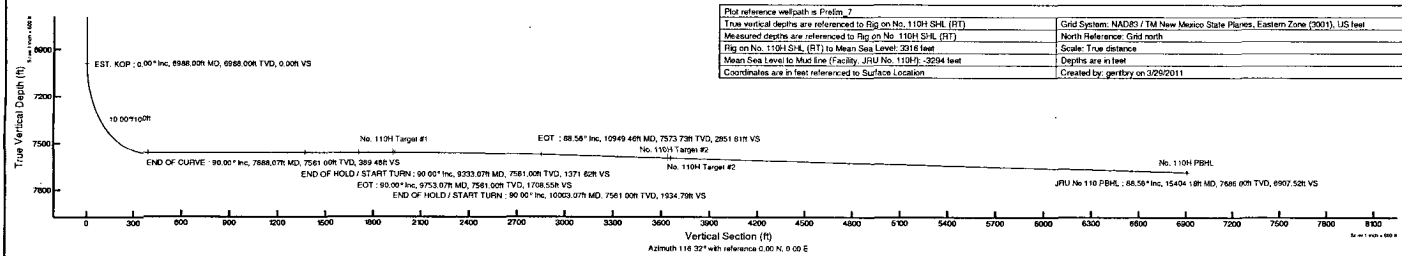
BAKER HUGHES
INTEQ

Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	0.00	0.000	163.500	0.00	0.00	0.00	0.00	0.00
EST. KOP	6988.00	0.000	163.500	6988.00	0.00	0.00	0.00	0.00
END OF CURVE	7888.07	90.000	163.500	7561.00	-549.40	162.74	10.00	389.48
END OF HOLD / START TURN	9333.07	90.000	163.500	7561.00	-1934.90	573.14	0.00	1371.62
EOT	9753.07	90.000	141.500	7561.00	-2305.16	765.89	5.24	1708.55
END OF HOLD / START TURN	10003.07	90.000	141.500	7561.00	-2500.81	921.52	0.00	1934.79
EOT	10949.46	88.556	91.924	7573.73	-2913.09	1740.66	5.24	2851.81
JRU No.110 PBHL	15404.18	88.556	91.924	7686.00	-3062.63	6191.45	0.00	6907.52



BGGM (1945.0 to 2011.0) Dip: 60.29° Field: 46846.6 nT
Magnetic North is 7.91 degrees East of True North (at 2/19/2010)
Grid North is 0.27 degrees East of True North
To correct azimuth from True to Grid subtract 0.27 degrees
To correct azimuth from Magnetic to Grid add 7.64 degrees
For example: If the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7.64 = 97.64



Plot reference wellpath is Prelim_7	
True vertical depths are referenced to Rig on No. 110H SHL (RT)	Grid System: NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on No. 110H SHL (RT)	North Reference: Grid north
Rig on No. 110H SHL (RT) to Mean Sea Level: 3316 feet	Scale: True distance
Mean Sea Level to Mud line (Facility: JRU No. 110H): -3294 feet	Depths are in feet
Coordinates are in feet referenced to Surface Location	Created by: gerrby on 3/29/2011

Planned Wellpath Report

Prelim_7

BAKER HUGHES INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	**BOPCO, L.P.**	Slot	**No. 110H SHL**
Area	**Eddy County, NM**	Well	**No. 110H**
Field	**JRU Project**	Wellbore	**No. 110H PWB**
Facility	**JRU No. 110H**		

REPORT SETUP INFORMATION			
Projection System	**NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet**	Software System	**WellArchitect® 2.0**
North Reference	**Grid**	User	**Gentbry**
Scale	**0.999937**	Report Generated	**3/29/2011 at 11:41:20 AM**
Convergence at slot	**0.27° East**	Database/Source file	**WA Midland/No._110H_PWB.xml**

WELLPATH LOCATION	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	**East[ft]**	**Easting[USft]**	**Northing[USft]**	**Latitude**	**Longitude**
Slot Location	**0.00**	**0.00**	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W
Facility Reference Pt			**697621.65**	**485218.03**	32°19'58.517"N	103°49'38.415"W
Field Reference Pt			**697621.65**	**485218.03**	32°19'58.517"N	103°49'38.415"W

WELLPATH DATUM			
Calculation method	**Minimum curvature**	Rig on No. 110H SHL (RT) to GL	**22.00ft**
Horizontal Reference Pt	**Surface Location**	Rig on No. 110H SHL (RT) to Mean Sea Level	**3316.00ft**
Vertical Reference Pt	**Rig on No. 110H SHL (RT)**	GL to Mud Line (Facility)	**0.00ft**
MD Reference Pt	**Rig on No. 110H SHL (RT)**	Section Origin	**N 0.00, E 0.00 ft**
Field Vertical Reference	**Mean Sea Level**	Section Azimuth	**116.32°**

Planned Wellpath Report

Prelim_7

BAKER HUGHES INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	**BOPCO, L.P.**	Slot	**No. 110H SHL**
Area	**Eddy County, NM**	Well	**No. 110H**
Field	**JRU Project**	Wellbore	**No. 110H PWB**
Facility	**JRU No. 110H**		

WELLPATH DATA (166 stations) **† = interpolated/extrapolated station**

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	163.500	0.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	Tie On
100.00†	0.000	163.500	100.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
200.00†	0.000	163.500	200.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
300.00†	0.000	163.500	300.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
400.00†	0.000	163.500	400.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
500.00†	0.000	163.500	500.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
600.00†	0.000	163.500	600.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
700.00†	0.000	163.500	700.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
800.00†	0.000	163.500	800.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
900.00†	0.000	163.500	900.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
1000.00†	0.000	163.500	1000.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
1100.00†	0.000	163.500	1100.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
1200.00†	0.000	163.500	1200.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
1300.00†	0.000	163.500	1300.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
1400.00†	0.000	163.500	1400.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
1500.00†	0.000	163.500	1500.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
1600.00†	0.000	163.500	1600.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
1700.00†	0.000	163.500	1700.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
1800.00†	0.000	163.500	1800.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
1900.00†	0.000	163.500	1900.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
2000.00†	0.000	163.500	2000.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
2100.00†	0.000	163.500	2100.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
2200.00†	0.000	163.500	2200.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
2300.00†	0.000	163.500	2300.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
2400.00†	0.000	163.500	2400.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
2500.00†	0.000	163.500	2500.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
2600.00†	0.000	163.500	2600.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
2700.00†	0.000	163.500	2700.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
2800.00†	0.000	163.500	2800.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
2900.00†	0.000	163.500	2900.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
3000.00†	0.000	163.500	3000.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
3100.00†	0.000	163.500	3100.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
3200.00†	0.000	163.500	3200.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
3300.00†	0.000	163.500	3300.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
3400.00†	0.000	163.500	3400.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
3500.00†	0.000	163.500	3500.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
3600.00†	0.000	163.500	3600.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
3700.00†	0.000	163.500	3700.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
3800.00†	0.000	163.500	3800.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
3900.00†	0.000	163.500	3900.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
4000.00†	0.000	163.500	4000.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
4100.00†	0.000	163.500	4100.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
4200.00†	0.000	163.500	4200.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
4300.00†	0.000	163.500	4300.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
4400.00†	0.000	163.500	4400.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	

Planned Wellpath Report

Prelim_7

BAKER HUGHES INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, L.P.	Slot	No. 110H SHL
Area	Eddy County, NM	Well	No. 110H
Field	JRU Project	Wellbore	No. 110H PWB
Facility	JRU No. 110H		

WELLPATH DATA (166 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4500.00†	0.000	163.500	4500.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
4600.00†	0.000	163.500	4600.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
4700.00†	0.000	163.500	4700.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
4800.00†	0.000	163.500	4800.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
4900.00†	0.000	163.500	4900.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
5000.00†	0.000	163.500	5000.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
5100.00†	0.000	163.500	5100.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
5200.00†	0.000	163.500	5200.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
5300.00†	0.000	163.500	5300.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
5400.00†	0.000	163.500	5400.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
5500.00†	0.000	163.500	5500.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
5600.00†	0.000	163.500	5600.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
5700.00†	0.000	163.500	5700.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
5800.00†	0.000	163.500	5800.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
5900.00†	0.000	163.500	5900.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
6000.00†	0.000	163.500	6000.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
6100.00†	0.000	163.500	6100.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
6200.00†	0.000	163.500	6200.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
6300.00†	0.000	163.500	6300.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
6400.00†	0.000	163.500	6400.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
6500.00†	0.000	163.500	6500.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
6600.00†	0.000	163.500	6600.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
6700.00†	0.000	163.500	6700.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
6800.00†	0.000	163.500	6800.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
6900.00†	0.000	163.500	6900.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	
6988.00	0.000	163.500	6988.00	0.00	0.00	0.00	697621.65	485218.03	32°19'58.517"N	103°49'38.415"W	0.00	EST. KOP
7000.00†	1.200	163.500	7000.00	0.09	-0.12	0.04	697621.69	485217.91	32°19'58.516"N	103°49'38.414"W	10.00	
7100.00†	11.199	163.500	7099.29	7.42	-10.46	3.10	697624.75	485207.57	32°19'58.414"N	103°49'38.379"W	10.00	
7200.00†	21.198	163.500	7195.20	26.35	-37.18	11.01	697632.66	485180.86	32°19'58.149"N	103°49'38.289"W	10.00	
7218.14†	23.012	163.500	7212.00	30.99	-43.72	12.95	697634.60	485174.31	32°19'58.084"N	103°49'38.266"W	10.00	Brushy Canyon U
7300.00†	31.198	163.500	7284.81	56.32	-79.45	23.53	697645.18	485138.58	32°19'57.730"N	103°49'38.145"W	10.00	
7400.00†	41.197	163.500	7365.41	96.41	-136.01	40.29	697661.93	485082.03	32°19'57.170"N	103°49'37.953"W	10.00	
7469.80†	48.176	163.500	7415.00	129.75	-183.04	54.22	697675.87	485035.00	32°19'56.704"N	103°49'37.793"W	10.00	Lo. Brushy Canyon 8A
7500.00†	51.196	163.500	7434.54	145.40	-205.12	60.76	697682.40	485012.93	32°19'56.485"N	103°49'37.718"W	10.00	
7600.00†	61.195	163.500	7490.10	201.81	-284.69	84.33	697705.97	484933.36	32°19'55.697"N	103°49'37.448"W	10.00	
7621.27†	63.322	163.500	7500.00	214.60	-302.73	89.67	697711.32	484915.32	32°19'55.518"N	103°49'37.386"W	10.00	LBC W Sand
7700.00†	71.195	163.500	7530.41	263.92	-372.30	110.28	697731.92	484845.75	32°19'54.828"N	103°49'37.150"W	10.00	
7800.00†	81.194	163.500	7554.25	329.84	-465.30	137.83	697759.47	484752.76	32°19'53.907"N	103°49'36.834"W	10.00	
7888.07	90.000	163.500	7561.00	389.46	-549.40	162.74	697784.38	484668.66	32°19'53.074"N	103°49'36.548"W	10.00	END OF CURVE
7900.00†	90.000	163.500	7561.00	397.57	-560.85	166.13	697787.77	484657.22	32°19'52.960"N	103°49'36.510"W	0.00	
8000.00†	90.000	163.500	7561.00	465.54	-656.73	194.53	697816.17	484561.34	32°19'52.010"N	103°49'36.184"W	0.00	
8100.00†	90.000	163.500	7561.00	533.51	-752.61	222.93	697844.57	484465.47	32°19'51.060"N	103°49'35.858"W	0.00	
8200.00†	90.000	163.500	7561.00	601.48	-848.49	251.33	697872.97	484369.59	32°19'50.110"N	103°49'35.532"W	0.00	
8300.00†	90.000	163.500	7561.00	669.45	-944.37	279.74	697901.37	484273.72	32°19'49.160"N	103°49'35.207"W	0.00	
8400.00†	90.000	163.500	7561.00	737.42	-1040.26	308.14	697929.77	484177.84	32°19'48.210"N	103°49'34.881"W	0.00	

Planned Wellpath Report

Prelim_7

BAKER HUGHES INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	**BOPCO, L.P.**	Slot	**No. 110H SHL**
Area	**Eddy County, NM**	Well	**No. 110H**
Field	**JRU Project**	Wellbore	**No. 110H PWB**
Facility	**JRU No. 110H**		

WELLPATH DATA (166 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8500.00†	90.000	163.500	7561.00	805.39	-1136.14	336.54	697958.17	484081.97	32°19'47.260"N	103°49'34.555"W	0.00	
8600.00†	90.000	163.500	7561.00	873.36	-1232.02	364.94	697986.57	483986.09	32°19'46.310"N	103°49'34.230"W	0.00	
8700.00†	90.000	163.500	7561.00	941.33	-1327.90	393.34	698014.97	483890.21	32°19'45.360"N	103°49'33.904"W	0.00	
8800.00†	90.000	163.500	7561.00	1009.30	-1423.78	421.74	698043.37	483794.34	32°19'44.410"N	103°49'33.578"W	0.00	
8900.00†	90.000	163.500	7561.00	1077.27	-1519.67	450.15	698071.77	483698.46	32°19'43.459"N	103°49'33.253"W	0.00	
9000.00†	90.000	163.500	7561.00	1145.23	-1615.55	478.55	698100.17	483602.59	32°19'42.509"N	103°49'32.927"W	0.00	
9100.00†	90.000	163.500	7561.00	1213.20	-1711.43	506.95	698128.57	483506.71	32°19'41.559"N	103°49'32.601"W	0.00	
9200.00†	90.000	163.500	7561.00	1281.17	-1807.31	535.35	698156.97	483410.84	32°19'40.609"N	103°49'32.275"W	0.00	
9300.00†	90.000	163.500	7561.00	1349.14	-1903.19	563.75	698185.37	483314.96	32°19'39.659"N	103°49'31.950"W	0.00	
9333.07	90.000	163.500	7561.00	1371.62	-1934.90	573.14	698194.76	483283.26	32°19'39.345"N	103°49'31.842"W	0.00	END OF HOLD / START TURN
9400.00†	90.000	159.994	7561.00	1418.58	-1998.45	594.10	698215.72	483219.71	32°19'38.715"N	103°49'31.601"W	5.24	
9500.00†	90.000	154.756	7561.00	1493.97	-2090.73	632.56	698254.17	483127.44	32°19'37.800"N	103°49'31.158"W	5.24	
9600.00†	90.000	149.518	7561.00	1575.03	-2179.10	679.28	698300.89	483039.07	32°19'36.924"N	103°49'30.619"W	5.24	
9700.00†	90.000	144.280	7561.00	1661.09	-2262.84	733.87	698355.48	482955.33	32°19'36.093"N	103°49'29.987"W	5.24	
9753.07	90.000	141.500	7561.00	1708.55	-2305.16	765.89	698387.49	482913.02	32°19'35.672"N	103°49'29.616"W	5.24	EOT
9800.00†	90.000	141.500	7561.00	1751.02	-2341.89	795.11	698416.70	482876.29	32°19'35.308"N	103°49'29.278"W	0.00	
9900.00†	90.000	141.500	7561.00	1841.52	-2420.15	857.36	698478.95	482798.04	32°19'34.530"N	103°49'28.557"W	0.00	
10000.00†	90.000	141.500	7561.00	1932.01	-2498.41	919.61	698541.20	482719.78	32°19'33.753"N	103°49'27.836"W	0.00	
10003.07	90.000	141.500	7561.00	1934.79	-2500.81	921.52	698543.11	482717.38	32°19'33.729"N	103°49'27.814"W	0.00	END OF HOLD / START TURN
10100.00†	89.832	136.423	7561.14	2024.22	-2573.90	985.14	698606.73	482644.30	32°19'33.003"N	103°49'27.076"W	5.24	
10200.00†	89.660	131.186	7561.59	2119.57	-2643.10	1057.28	698678.86	482575.11	32°19'32.315"N	103°49'26.239"W	5.24	
10300.00†	89.491	125.949	7562.33	2217.25	-2705.42	1135.44	698757.02	482512.79	32°19'31.694"N	103°49'25.332"W	5.24	
10400.00†	89.327	120.711	7563.36	2316.47	-2760.34	1218.96	698840.53	482457.87	32°19'31.147"N	103°49'24.362"W	5.24	
10500.00†	89.167	115.473	7564.67	2416.38	-2807.41	1307.14	698928.71	482410.80	32°19'30.677"N	103°49'23.337"W	5.24	
10600.00†	89.015	110.235	7566.26	2516.15	-2846.23	1399.25	699020.81	482371.99	32°19'30.289"N	103°49'22.265"W	5.24	
10700.00†	88.871	104.996	7568.11	2614.94	-2876.48	1494.51	699116.06	482341.74	32°19'29.985"N	103°49'21.157"W	5.24	
10800.00†	88.737	99.756	7570.19	2711.94	-2897.90	1592.13	699213.68	482320.32	32°19'29.768"N	103°49'20.021"W	5.24	
10900.00†	88.613	94.516	7572.51	2806.33	-2910.31	1691.29	699312.83	482307.91	32°19'29.641"N	103°49'18.866"W	5.24	
10949.46	88.556	91.924	7573.73	2851.81	-2913.09	1740.66	699362.20	482305.13	32°19'29.611"N	103°49'18.291"W	5.24	EOT
11000.00†	88.556	91.924	7575.00	2897.82	-2914.79	1791.15	699412.69	482303.43	32°19'29.592"N	103°49'17.702"W	0.00	
11100.00†	88.556	91.924	7577.52	2988.86	-2918.14	1891.06	699512.59	482300.08	32°19'29.554"N	103°49'16.538"W	0.00	
11200.00†	88.556	91.924	7580.04	3079.91	-2921.50	1990.98	699612.50	482296.72	32°19'29.516"N	103°49'15.374"W	0.00	
11300.00†	88.556	91.924	7582.56	3170.95	-2924.86	2090.89	699712.40	482293.36	32°19'29.478"N	103°49'14.210"W	0.00	
11400.00†	88.556	91.924	7585.09	3261.99	-2928.21	2190.80	699812.31	482290.01	32°19'29.440"N	103°49'13.046"W	0.00	
11500.00†	88.556	91.924	7587.61	3353.03	-2931.57	2290.71	699912.21	482286.65	32°19'29.402"N	103°49'11.882"W	0.00	
11600.00†	88.556	91.924	7590.13	3444.08	-2934.93	2390.62	700012.12	482283.29	32°19'29.364"N	103°49'10.717"W	0.00	
11700.00†	88.556	91.924	7592.65	3535.12	-2938.28	2490.53	700112.02	482279.94	32°19'29.326"N	103°49'09.553"W	0.00	
11800.00†	88.556	91.924	7595.17	3626.16	-2941.64	2590.45	700211.93	482276.58	32°19'29.288"N	103°49'08.389"W	0.00	
11833.09†	88.556	91.924	7596.00	3656.29	-2942.75	2623.51	700244.98	482275.47	32°19'29.276"N	103°49'08.004"W	0.00	No. 110H Target #2
11900.00†	88.556	91.924	7597.69	3717.21	-2945.00	2690.36	700311.83	482273.22	32°19'29.250"N	103°49'07.225"W	0.00	
12000.00†	88.556	91.924	7600.21	3808.25	-2948.35	2790.27	700411.74	482269.87	32°19'29.212"N	103°49'06.061"W	0.00	
12100.00†	88.556	91.924	7602.73	3899.29	-2951.71	2890.18	700511.64	482266.51	32°19'29.174"N	103°49'04.897"W	0.00	
12200.00†	88.556	91.924	7605.25	3990.33	-2955.07	2990.09	700611.55	482263.15	32°19'29.136"N	103°49'03.733"W	0.00	
12300.00†	88.556	91.924	7607.77	4081.38	-2958.43	3090.01	700711.45	482259.80	32°19'29.098"N	103°49'02.569"W	0.00	
12400.00†	88.556	91.924	7610.29	4172.42	-2961.78	3189.92	700811.36	482256.44	32°19'29.060"N	103°49'01.404"W	0.00	

Planned Wellpath Report

Prelim_7

BAKER HUGHES INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	**BOPCO, L.P.**	Slot	**No. 110H SHL**
Area	**Eddy County, NM**	Well	**No. 110H**
Field	**JRU Project**	Wellbore	**No. 110H PWB**
Facility	**JRU No. 110H**		

WELLPATH DATA (166 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12500.00†	88.556	91.924	7612.81	4263.46	-2965.14	3289.83	700911.27	482253.08	32°19'29.022"N	103°49'00.240"W	0.00	
12600.00†	88.556	91.924	7615.33	4354.51	-2968.50	3389.74	701011.17	482249.73	32°19'28.984"N	103°48'59.076"W	0.00	
12700.00†	88.556	91.924	7617.85	4445.55	-2971.85	3489.65	701111.08	482246.37	32°19'28.946"N	103°48'57.912"W	0.00	
12800.00†	88.556	91.924	7620.37	4536.59	-2975.21	3589.56	701210.98	482243.01	32°19'28.908"N	103°48'56.748"W	0.00	
12900.00†	88.556	91.924	7622.89	4627.63	-2978.57	3689.48	701310.89	482239.66	32°19'28.871"N	103°48'55.584"W	0.00	
13000.00†	88.556	91.924	7625.41	4718.68	-2981.92	3789.39	701410.79	482236.30	32°19'28.833"N	103°48'54.420"W	0.00	
13100.00†	88.556	91.924	7627.93	4809.72	-2985.28	3889.30	701510.70	482232.94	32°19'28.795"N	103°48'53.256"W	0.00	
13200.00†	88.556	91.924	7630.45	4900.76	-2988.64	3989.21	701610.60	482229.59	32°19'28.757"N	103°48'52.092"W	0.00	
13300.00†	88.556	91.924	7632.97	4991.81	-2991.99	4089.12	701710.51	482226.23	32°19'28.719"N	103°48'50.927"W	0.00	
13400.00†	88.556	91.924	7635.49	5082.85	-2995.35	4189.04	701810.41	482222.87	32°19'28.680"N	103°48'49.763"W	0.00	
13500.00†	88.556	91.924	7638.01	5173.89	-2998.71	4288.95	701910.32	482219.52	32°19'28.642"N	103°48'48.599"W	0.00	
13600.00†	88.556	91.924	7640.53	5264.94	-3002.06	4388.86	702010.22	482216.16	32°19'28.604"N	103°48'47.435"W	0.00	
13700.00†	88.556	91.924	7643.05	5355.98	-3005.42	4488.77	702110.13	482212.80	32°19'28.566"N	103°48'46.271"W	0.00	
13800.00†	88.556	91.924	7645.57	5447.02	-3008.78	4588.68	702210.04	482209.45	32°19'28.528"N	103°48'45.107"W	0.00	
13900.00†	88.556	91.924	7648.09	5538.06	-3012.14	4688.60	702309.94	482206.09	32°19'28.490"N	103°48'43.943"W	0.00	
14000.00†	88.556	91.924	7650.61	5629.11	-3015.49	4788.51	702409.85	482202.73	32°19'28.452"N	103°48'42.779"W	0.00	
14100.00†	88.556	91.924	7653.13	5720.15	-3018.85	4888.42	702509.75	482199.38	32°19'28.414"N	103°48'41.614"W	0.00	
14200.00†	88.556	91.924	7655.65	5811.19	-3022.21	4988.33	702609.66	482196.02	32°19'28.376"N	103°48'40.450"W	0.00	
14300.00†	88.556	91.924	7658.17	5902.24	-3025.56	5088.24	702709.56	482192.66	32°19'28.338"N	103°48'39.286"W	0.00	
14400.00†	88.556	91.924	7660.69	5993.28	-3028.92	5188.15	702809.47	482189.31	32°19'28.300"N	103°48'38.122"W	0.00	
14500.00†	88.556	91.924	7663.21	6084.32	-3032.28	5288.07	702909.37	482185.95	32°19'28.262"N	103°48'36.958"W	0.00	
14600.00†	88.556	91.924	7665.73	6175.36	-3035.63	5387.98	703009.28	482182.59	32°19'28.224"N	103°48'35.794"W	0.00	
14700.00†	88.556	91.924	7668.25	6266.41	-3038.99	5487.89	703109.18	482179.24	32°19'28.186"N	103°48'34.630"W	0.00	
14800.00†	88.556	91.924	7670.77	6357.45	-3042.35	5587.80	703209.09	482175.88	32°19'28.148"N	103°48'33.466"W	0.00	
14900.00†	88.556	91.924	7673.29	6448.49	-3045.70	5687.71	703308.99	482172.52	32°19'28.110"N	103°48'32.302"W	0.00	
15000.00†	88.556	91.924	7675.81	6539.54	-3049.06	5787.63	703408.90	482169.17	32°19'28.072"N	103°48'31.137"W	0.00	
15100.00†	88.556	91.924	7678.33	6630.58	-3052.42	5887.54	703508.81	482165.81	32°19'28.034"N	103°48'29.973"W	0.00	
15200.00†	88.556	91.924	7680.85	6721.62	-3055.77	5987.45	703608.71	482162.45	32°19'27.996"N	103°48'28.809"W	0.00	
15300.00†	88.556	91.924	7683.37	6812.66	-3059.13	6087.36	703708.62	482159.10	32°19'27.958"N	103°48'27.645"W	0.00	
15400.00†	88.556	91.924	7685.89	6903.71	-3062.49	6187.27	703808.52	482155.74	32°19'27.920"N	103°48'26.481"W	0.00	
15404.18	88.556	91.924	7686.00[1]	6907.52	-3062.63	6191.45	703812.70	482155.60	32°19'27.918"N	103°48'26.432"W	0.00	JRU No.110 PBHL

Planned Wellpath Report

Prelim_7

BAKER HUGHES INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	**BOPCO, L.P.**	Slot	**No. 110H SHL**
Area	**Eddy County, NM**	Well	**No. 110H**
Field	**JRU Project**	Wellbore	**No. 110H PWB**
Facility	**JRU No. 110H**		

TARGETS

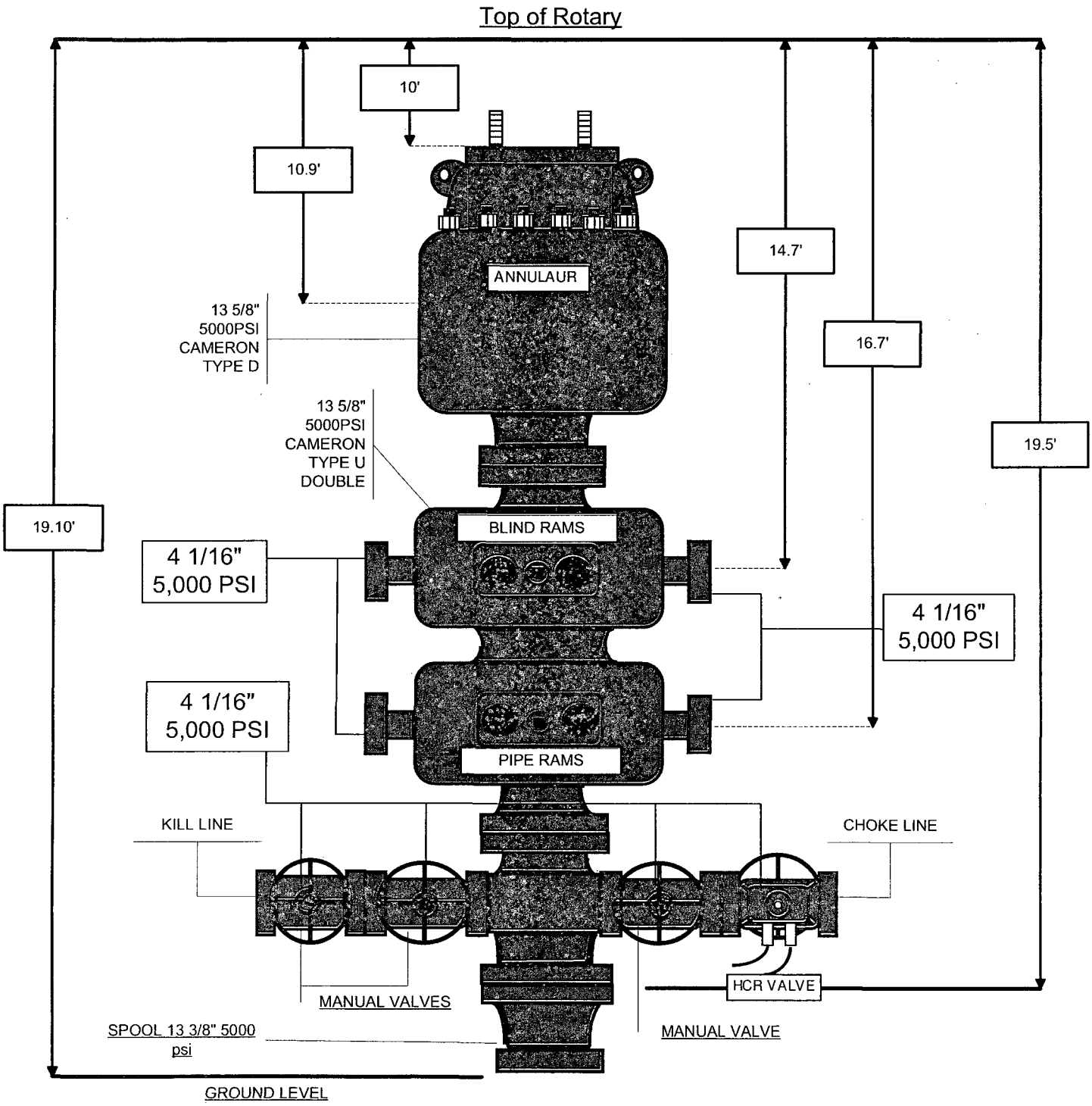
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
No. 110H Target #1		7561.00	-2546.60	890.11	**698511.70**	**482671.60**	32°19'33.278"N	103°49'28.182"W	point
No. 110H Target #2		7596.00	-3077.03	2542.22	**700163.70**	**482141.20**	32°19'27.951"N	103°49'08.959"W	point
1) No. 110H PBHL	15404.18	7686.00	-3062.63	6191.45	**703812.70**	**482155.60**	32°19'27.918"N	103°48'26.432"W	point

SURVEY PROGRAM Ref Wellbore: No. 110H PWB Ref Wellpath: Prelim_7

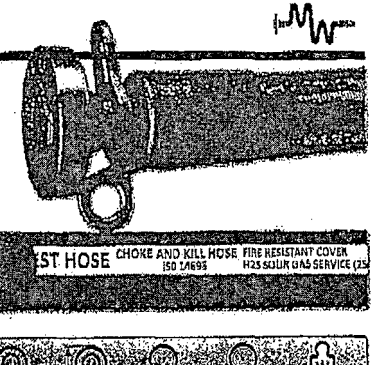
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
22.00	15404.18	NaviTrak (Standard)		No. 110H PWB

LATSHAW DRILLING

RIG 4



Choke & Kill, BOP



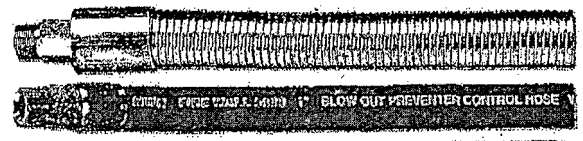
Choke & Kill

Designed as a flexible connection to the choke manifold.
Tube: petroleum resistant for oil based drilling fluids
Cover: ozone, petroleum, and abrasion resistant
Reinforcement: high tensile steel wire spiral layers
Thermal Blanket: 1500° continuous ratings, non-flammable, non-conductive
Armor Wall: .144"
Max Length: 150 feet

-20° F / +212° F
-29° C / +100° C

Part No.	ID	OD	WP	Test	Weight W
CK-48 Red	3	4.94	5,000	10,000	14.9
CK-56 Red	3½	5.44			17.7
CK-64 Red	4	6.31			26.4
CK-48 Armor	3	6.5			20.8
CK-56 Armor	3½	7			23.1
CK-64 Armor	4	8			26.3
CK-4810K Red	3	5.31	10,000	15,000	22.3
CK-5610K Red	3½	5.81			25.0
CK-6410K Red	4	4.75			36.1
CK-4810K Armor	3	6.5			26.0
CK-5610K Armor	3½	7			29.0
CK-6410K Armor	4	8			32.8

BOP Control Line



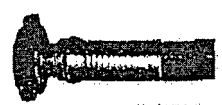
For blowout preventer lines.
Tube: for hydraulic BOP actuation
Thermal Blanket: 1500° continuous rating, non-flammable, non-conductive
Armor Wall: .08"
Popular with a larger hex and longer threads for easier installation of hammer unions.

-20° F / +212° F
-29° C / +100° C

Part No.	ID	OD	WP	Test	Weight W
BOP-16 Armor	1	2.06	5,000	10,000	3.9
BOP-32 Armor	2	3.75			11.7
BOP-16	1	1.77			2.1
BOP-32	2	3.09			10.2

Carbon or stainless steel nipples are available and 1/2", 3/4", 1-1/4", and 1-1/2" sizes are available too.


Weld-on Flanges or Hammer Unions


Integral 1002/1502 Hammer Union Fittings


Safety Clamps


Fire Proof Quick Connects


Ring Gaskets

MIDWEST

HOSE AND SPECIALTY INC.

INTERNAL HYDROSTATIC TEST REPORT

Customer: LATSHAW DRILLING	**P.O. Number:** RIG#4

HOSE SPECIFICATIONS

Type: CHOKE & KILL	**Length:** 30'
I.D. 3" *INCHES*	**O.D.** 6-1/2"

WORKING PRESSURE	TEST PRESSURE	BURST PRESSURE
5,000 *PSI*	10,000	

COUPLINGS

Stem Part No. D3.0X64WB	**Ferrule No.** D3.0X64WB
Type of Coupling: 4-1/16 5K FLANGE	**Die Size:**

PROCEDURE

Hose assembly pressure tested with water at ambient temperature.

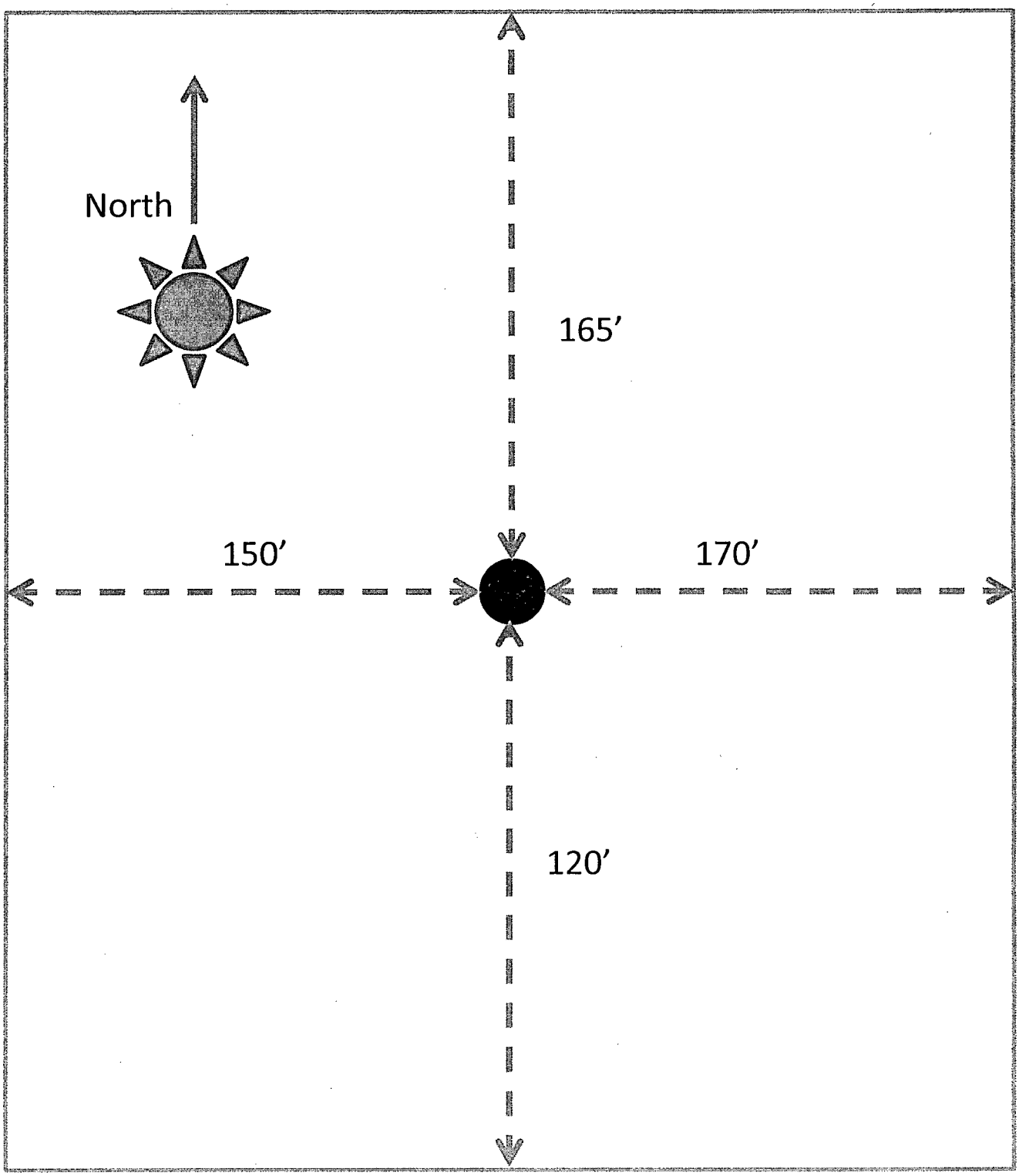
TIME HELD AT TEST PRESSURE	ACTUAL BURST PRESSURE:
15 *MIN.*	0 *PSI*

COMMENTS:
SER#81610

Date:	Tested By:	Approved:
3/1/2011	DONNIE MCLEMORE	BRENT BURNETT

James Ranch Unit #110H
Latshaw Rig #4 Location Size

V-Door North



CONDITIONS OF APPROVAL

OPERATOR'S NAME:	BOPCO, L. P.
LEASE NO.:	NMLC 71988B
WELL NAME & NO.:	JAMES RANCH UNIT #110H
SURFACE HOLE FOOTAGE:	2235' FSL & 530' FEL, SEC. 1, T. 23 S, R 30 E.
BOTTOM HOLE FOOTAGE	660' FNL & 330' FWL, SEC. 8, T. 23 S, R 31 E. NMPM
COUNTY:	Eddy County, New Mexico

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

a. Spudding well
b. Setting and/or Cementing of all casing strings
c. BOPE tests

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

1. **Due to recent H2S encounters in the salt formation, it is recommended that monitoring equipment be onsite for potential Hydrogen Sulfide prior to drilling out the surface shoe. If Hydrogen Sulfide is encountered, please report measurements 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 are 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 and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.

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. 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
R-111-P Potash
Possible water and brine flows in the Salado and Casitle groups.
Possible lost circulation and water flows in the Delaware and Bone Spring.

1. The **13-3/8** inch surface casing shall be set at approximately **550 to 560** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is penetrated, set casing shoe 10 feet above the top of 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.

2. The **9-5/8** inch intermediate casing shall be set at approximately **3917 feet** and 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 potash. Set in the Lamar Limestone.**

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

   a. First stage to DV tool, cement shall:

   ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job.

   b. Second stage above DV tool, cement shall:

   ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst and potash. Additional cement will be required as excess calculates to 22%.**

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

   ☒ Packer system to be used – No Cement 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.

6. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

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. **Variance approved to use flex line with Serial #81610 from BOP to choke manifold. Check condition of 3" 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. Anchor requirements to be onsite for review. 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. **5M system tested as a 2M.**

    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 **3000 (3M)** psi. **5M system tested as a 3M**

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.

    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 (18 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 results of the test shall be reported to the appropriate BLM office.

    d. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**

e. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

D. WASTE MATERIAL AND FLUIDS

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

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

E. WIPP Requirements

The proposed well is located within 330' of the WIPP Land Withdrawal Area boundary. As a result, Yates Petroleum Corporation is required to submit daily drilling reports, logs and deviation survey information to the Bureau of Land Management and the Department of Energy per requirements of the Joint Powers Agreement until a total vertical depth of 7,000 feet is reached. These reports will have at a minimum the rate of penetration and a clearly marked section showing the deviation for each 500 foot interval. Operator may be required to do more frequent deviation surveys based on the daily information submitted and may be required to take other corrective measures. Information from this well will be included in the Quarterly Drilling Report. Information will also be provided to the New Mexico Oil Conservation Division after drilling activities have been completed. Upon completion of the well, the operator shall submit a complete directional survey. Any future entry into the well for purposes of completing additional drilling will require supplemental information.

Yates Petroleum Corporation can email the required information to Ms. Susan McCauslin at susan.mccauslin@wipp.ws or fax to her attention at 575-234-6003 or Mel Balderama at (575) 234-8174.

EGF 041111