

OCD-ARTESIA

Form 3160-3
(April 2004)

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

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

1a. Type of work <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NM 031382 (BHL) (See box 6)
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name See pg 1 of 8pt DP for lease info
2. Name of Operator BOPCO, L. P.		7. If Unit or CA Agreement, Name and No. Poker Lake Unit NMNM 71016X
3a. Address P. O. Box 2760 Midland, TX 79702	3b. Phone No. (include area code) 432-683-2277	8. Lease Name and Well No. Poker Lake Unit 413H [306400]
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At surface NESW, UL K, 2140' FSL, 2200' FWL, Lat: N32.186806, Long: W103.783686 At proposed prod zone 1900' FSL, 2300' FWL, Sec 34, T24S-R31E, Lat: N32.171886, Lg: W103.7663		9. API Well No. 30-015-39794
14. Distance in miles and direction from nearest town or post office* 20 miles East of Malaga		10. Field and Pool, or Exploratory Poker Lake (Delaware) South [30386]
15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line, if any) 2140'	16. No. of acres in lease 3821.55	11. Sec., T. R. M. or Blk. and Survey or Area Sec 28, T24S-R31E, Mer, NMPM
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 250' (PLU 073)	17. Spacing Unit dedicated to this well 360	12. County or Parish Eddy
21. Elevations (Show whether DF, KDB, RT, GL, etc) 3465'	19. Proposed Depth 15,560' MD, 8194' TVD	13. State NM
22. Approximate date work will start* 07/27/2011	20. BLM/BIA Bond No. on file COB 000050	
23. Estimated duration 30 Days		

24. Attachments

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

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

25. Signature		Name (Printed/Typed) Jeremy Braden	Date 11-17-11
Title Engineering Assistant			
Approved by (Signature)		Name (Printed/Typed) W. W. Ingram	Date DEC 16 2011
Title FIELD MANAGER		Office CARLSBAD FIELD OFFICE	

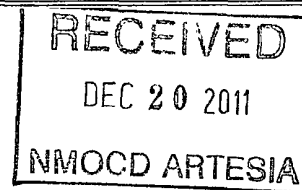
Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

Title 18 USC 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)

Carlsbad Controlled Water Basin



Approval Subject to General Requirements
& Special Stipulations Attached

SEE ATTACHED FOR
CONDITIONS OF APPROVAL *COA*

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

Form C-102

Revised July 16, 2010

Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-015-39794		Pool Code 50386	Pool Name Poker Lake, S (Delaware)
Property Code 306402	Property Name POKER LAKE UNIT		Well Number 413H
OGRID No. 260737	Operator Name BOPCO, L.P.		Elevation 3465'

Surface Location

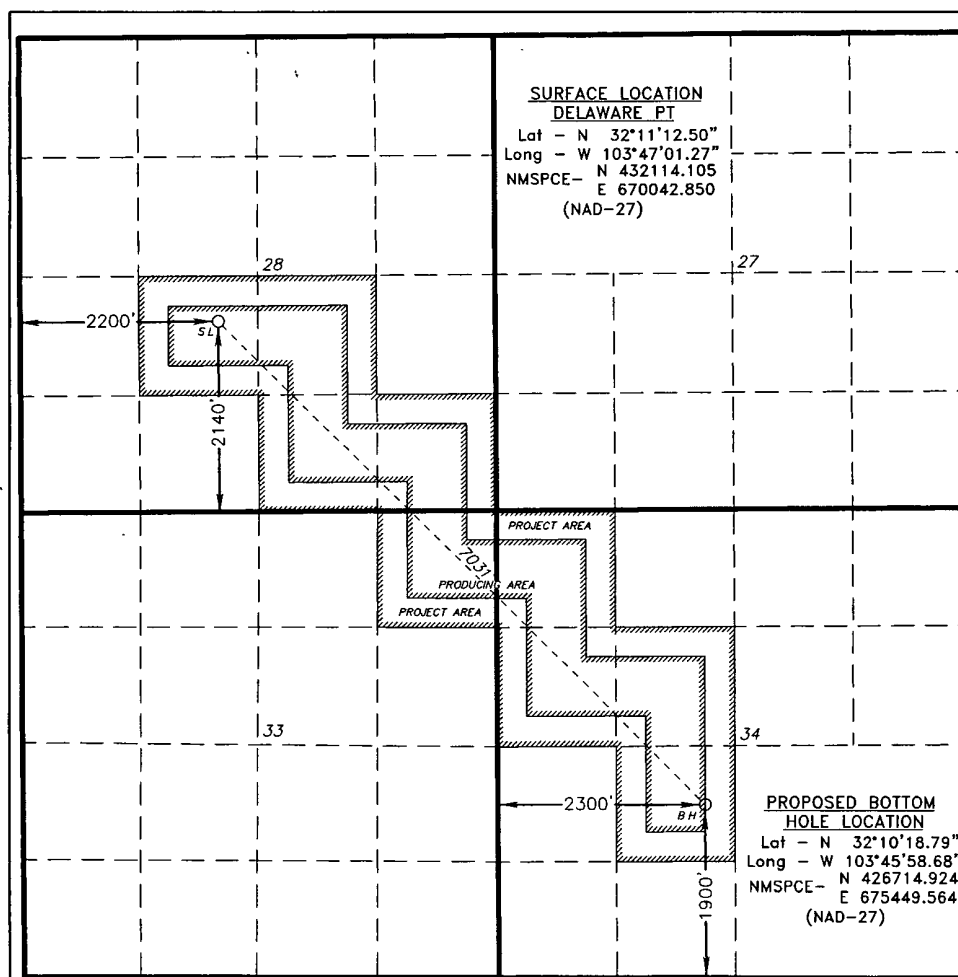
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	28	24 S	31 E		2140	SOUTH	2200	WEST	EDDY

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
K	34	24 S	31 E		1900	SOUTH	2300	WEST	EDDY

Dedicated Acres 360	Joint or Infill	Consolidation Code	Order No.
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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



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 10-26-11
Signature Date

Printed Name
Jeremy BradenEmail Address
JDBraden@basspet.com

Email Address

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.

SEPTEMBER 26 2011
Date Surveyed
Signature & Seal of
Professional Surveyor
GARY L. JONES
NEW MEXICO
REGISTERED PROFESSIONAL LAND SURVEYOR
W.D. 25293

Certificate No. Gary L. Jones 7977

BASIN SURVEYS 25293

EIGHT POINT DRILLING PROGRAM **BOPCO, L.P.**

NAME OF WELL: Poker Lake Unit 413H

LEGAL DESCRIPTION - SURFACE: 2140' FSL, 2200' FWL, Section 28, T24S, R31E, Eddy County, NM.
BHL: 1900' FSL, 2300' FWL, Section 34, T24S, R31E, Eddy County, New Mexico.

POINT 1: ESTIMATED FORMATION TOPS (See No. 2 Below)

POINT 2: WATER, OIL, GAS AND/OR MINERAL BEARING FORMATIONS

Anticipated Formation Tops: KB 3487' (estimated)
GL 3465'

<u>FORMATION</u>	<u>ESTIMATED TOP FROM KB</u>		<u>ESTIMATED SUB-SEA TOP</u>	<u>BEARING</u>
	<u>TVD</u>	<u>MD</u>		
T/Fresh Water	182'	182'	+ 3,305'	Fresh Water
T/Rustler	568'	568'	+ 2,919'	Barren
T/Salado	785'	785'	+ 2,702'	Barren
T/Salt	1,034'	1,034'	+ 2,453'	Barren
B/Salt	4,036'	4,036'	- 549'	Barren
T/Lamar	4,319'	4,319'	- 832'	Barren
T/Ramsey	4,374'	4,374'	- 887'	Oil/Gas
T/Lower Cherry Canyon	6,446'	6,446'	- 2,959'	Oil/Gas
KOP	7,646'	7,646'	- 4,159'	Oil/Gas
Lower Brushy Canyon Sand	7,911'	7,926'	- 4,424'	Oil/Gas
Target #1	8,123'	9,116'	- 4,636'	Oil/Gas
EOC	8,123'	8,395'	- 4,636'	Oil/Gas
TD Horizontal Hole	8,194'	15,560'	- 4,707'	Oil/Gas

POINT 3: CASING PROGRAM

<u>TYPE</u>	<u>INTERVALS (MD)</u>	<u>Hole Size</u>	<u>PURPOSE</u>	<u>CONDITION</u>
20"	0' - 80'	24"	Conductor	Contractor Discretion
13-3/8", 48#, H-40, or 54.5#, J-55 8rd, ST&C*	0' - 1,024'	17-1/2"	Surface	New
9-5/8", 40#, N-80, 8rd, LT&C	0' - 4,340'	12-1/4"	Intermediate	New
7", 26#, N-80, Buttress or 8rd LTC*	0' - 8,495'	8-3/4"	Production	New
Completion System				
4-1/2", 11.6#, HCP-110 8rd. LT&C*	8,445' - 15,560'	6-1/8"	Completion System	New
4-1/2", 11.6#, N-80, 8rd, LT&C*	8,445' - 15,560'	6-1/8"	Completion System	New

CASING DESIGN SAFETY FACTORS:

<u>TYPE</u>	<u>TENSION</u>	<u>COLLAPSE</u>	<u>BURST</u>
13-3/8", 48#, H-40, 8rd, ST&C*	7.57	1.44	3.03
13-3/8", 54.5#, J-55, 8rd, STC*	17.78	2.26	4.78
9-5/8", 40#, N-80, 8rd, LT&C	5.03	1.22	2.37
7", 26#, N-80, Buttress*	3.32	1.21	1.60
7", 26#, N-80, 8rd, LTC*	2.85	1.16	1.60
Completion System			
4-1/2", 11.6#, HCP-110 8rd. LT&C*	3.40	1.93	2.34
4-1/2", 11.6#, N-80, 8rd, LT&C*	2.72	1.32	1.70

* Depending on availability

DESIGN CRITERIA AND CASING LOADING ASSUMPTIONS:

SURFACE CASING - (13-3/8")

Tension	A 1.6 design factor utilizing the effects of buoyancy (9.2 ppg).
Collapse	A 1.0 design factor with full internal evacuation and a collapse force equal to the mud gradient in which the casing will be run (0.48 psi/ft). The effects of axial load on collapse will be considered.
Burst	A 1.3 design factor with a surface pressure equal to the fracture gradient at setting depth less a gas gradient to the surface. Internal burst force at the shoe will be fracture pressure at that depth. Backup pressure will be formation pore pressure. In all cases a conservative fracture pressure will be used such that it represents the upper limit of potential fracture resistance up to a 1.0 psi/ft gradient. The effects of tension on burst will not be utilized.

PROTECTIVE CASING - (9-5/8")

Tension	A 1.6 design factor utilizing the effects of buoyancy (10 ppg).
Collapse	A 1.0 design factor with full internal evacuation and a collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered. In the case of development drilling, collapse design should be analyzed using internal evacuation equal to 1/3 the proposed total depth of the well. This criterion will be used when there is absolutely no potential of the protective string being used as a production casing string.
Burst	A 1.0 surface design factor and a 1.3 downhole design factor with a surface pressure equivalent to the fracture gradient at setting depth less a gas gradient to the surface. Internal burst force at the shoe will be fracture pressure at that depth. Backup pressure will be formation pore pressure. In all cases a conservative fracture pressure will be used such that it represents the upper limit of potential fracture resistance up to a 1.0 psi/ft gradient.

Production CASING - (7")

Tension	A 1.6 design factor utilizing the effects of buoyancy (9.0 ppg).
Collapse	A 1.0 design factor with full internal evacuation and a collapse force equal to the mud gradient in which the casing will be run (0.48 psi/ft). The effects of axial load on collapse will be considered.
Burst	A 1.25 design factor with anticipated maximum tubing pressure (5000 psig) on top of the maximum anticipated packer fluid gradient. (0.433 psi/ft) Backup on production strings will be formation pore pressure. (0.433 psi/ft) The effects of tension on burst will not be utilized.

Completion System - (4-1/2")

Tension	A 1.6 design factor utilizing the effects of buoyancy (9.0 ppg).
Collapse	A 1.0 design factor with full internal evacuation and a collapse force equal to the mud gradient in which the casing will be run (0.48 psi/ft). The effects of axial load on collapse will be considered.
Burst	A 1.25 design factor with anticipated maximum tubing pressure (5000 psig) on top of the maximum anticipated packer fluid gradient. (0.433 psi/ft) Backup on production strings will be formation pore pressure. (0.433 psi/ft) The effects of tension on burst will not be utilized.

POINT 4: PRESSURE CONTROL EQUIPMENT (SEE ATTACHED DIAGRAM 1 & 2)

The BOPE when rigged up on the 13-3/8" surface casing head (12-1/4" open hole) will consist of 13-5/8" X 5,000 psi dual ram BOP's with mud cross, choke manifold, chokes, and hydril per Diagram 1 (5,000 psi WP). The pipe and blind rams, choke, kill lines, kelly cocks, inside BOP, etc. when installed on the surface casing head will be hydro-tested to 250-300 psig and 2000 psig by independent tester. The hydril when installed on surface casing head will be tested to 1000 psi.

The BOPE when rigged up on the 9-5/8" intermediate casing spool (8-3/4" open hole) will consist of 13-5/8" x 5,000 psi annular, 13-5/8" x 5,000 psi pipe & blind rams with mud cross, choke manifold and chokes as in Diagram 1. The pipe and blind rams, choke, kill lines, kelly cocks inside BOP, etc. will be tested to 3000 psig by independent tester. In addition to the high pressure test, a low pressure (250-300 psig) test will be required. Hydril will be tested to 1500 psig.

The BOPE when rigged up on the 7" intermediate casing spool (6-1/8" open hole) will consist of 13-5/8" x 5,000 psi annular, 13-5/8" x 5,000 psi pipe & blind rams with mud cross choke manifold and chokes as in Diagram 1. The pipe and blind rams, choke, kelly lines, kelly cocks inside BOP, etc. will be tested to 3000 psig by independent tester. In addition to the high pressure test, a low pressure (250-300 psig) test will be required. Hydril will be tested to 1500 psig.

These tests will be performed:

- a) Upon installation
- b) After any component changes
- c) Thirty days after a previous test
- d) As required by well conditions

A function test to insure that the preventers are operating correctly will be performed on each trip.

Please refer to diagram 2 for choke manifold and closed loop system layout.

POINT 5: MUD PROGRAM

DEPTH	MUD TYPE	WEIGHT	FV	PV	YP	FL	Ph
0' - 1,024'	FW Spud Mud	8.5 - 9.2	38-70	NC	NC	NC	10.0
1,024' - 4,340'	Brine Water	9.8 - 10.2	28-30	NC	NC	NC	9.5 - 10.5
4,340' - 8,495'	FW/Gel	8.7 - 9.0	28-36	NC	NC	NC	9.5 - 10.0
8,495' - 15,560'	FW/Gel/Starch	8.7 - 9.0	28-36	NC	NC	<100	9.5 - 10.0

NOTE: May increase vis for logging purposes only.

POINT 6: TECHNICAL STAGES OF OPERATION

A) TESTING

None anticipated.

B) LOGGING

See COA

Run #1: GR with MWD during drilling of build and horizontal portions of 8-3/4" and 6-1/8" hole.

Run #2: Shuttle log w/GR, PE, Density, Neutron, Resistivity in lateral leg open hole.

Mud Logger: Rigged up at 100'.

C) CONVENTIONAL CORING

None anticipated

D) CEMENT

<u>INTERVAL</u>	<u>AMOUNT SXS</u>	<u>FT OF FILL</u>	<u>TYPE</u>	<u>GALS/SX</u>	<u>PPG</u>	<u>FT³/SX</u>
SURFACE:						
Lead: 0' – 524'	440	524	ExtendaCem CZ	8.72	13.70	1.68
Tail: 524' – 1,024'	440	500	ExtendaCem CZ	8.72	13.70	1.68
INTERMEDIATE:						
Lead: 0' – 3,840'	1170	3840	EconoCem HLC 5% CaCl + 5 #/sk Gilsonite	9.32	12.90	1.85
Tail: 3,840' – 4,340'	270	500	HalCem C	6.34	14.80	1.33
Production						
Stage 1:						
Lead: 5,000' – 7,546'	220	2546	Tuned Light + 0.75% CFR-3 + 1.5#/sk CaCl	12.41	10.20	2.76
Tail: 7,546' – 8,495'	150	949	VersaCem-PBSH2 + 0.4% Halad-9	8.76	13.0	1.65
DV Tool @ 5,000'						
Stage 2:						
Lead: 3,840' – 4,500'	70	660	EconoCem HLC + 1% Econolite + 5% CaCl + 5#/sk Gilsonite	10.71	12.60	2.04
Tail: 4,500' – 5,000'	100	500	HalCem C	6.34	14.80	1.33

Cement excesses will be as follows:

Surface – 100% excess with cement circulated to surface.

1st Intermediate – 50% excess above fluid caliper with cement circulated to surface.

Production – 50% above gauge hole or 35% above electric log caliper with cement circulated 500' up into the 9-5/8" 1st intermediate casing in **areas outside the SOPA**. Cement will be circulated to surface on areas inside the SOPA.

Cement volumes will be adjusted proportionately for depth changes of the multi stage tool.

E) COMPLETIONS SYSTEM

A 4-1/2" completion system with open hole packers will be run in the producing lateral to a depth of 15,560'. The top of the Completion System will be set at approximately 8,445'. Cement will not be required for this system.

F) DIRECTIONAL DRILLING

BOPCO, L.P. plans to drill out the 9-5/8" intermediate casing with a 8-3/4" bit to a TVD of approximately 7,646' at which point a directional hole will be kicked off and drilled at an azimuth of 135.00 degrees, building angle at 12.01 deg/100' to 90 degrees at a TVD of 8,123' (MD 8,395'). This angle and azimuth will be maintained for 100' to a measured depth of 8,495' (8,123' TVD). At this depth 7", 26#, N80, Buttress, or 8rd LTC casing will be installed and cemented in two stages (DV Tool @ approximately 5000') with cement circulated 500' inside the 9-5/8" intermediate casing. A 6-1/8" open hole lateral will then be drilled out from 7" casing at an azimuth of 134.960 degrees, inclination of 90.547 degrees to a measured depth of 15,560', (TVD 8,194'). At this depth a 4-1/2" Completion System with packers installed for zone isolation will be run into the producing lateral.

G) H₂S SAFETY EQUIPMENT

As stated in the BLM Onshore Order 6, for wells located in the SOPA, H₂S equipment will be rigged up after setting surface casing. For the wells located inside the SOPA the flare pit or 1/2 steel pits will be located 150' from the location. For wells located outside the SOPA the flare pit or 1/2 steel pit will be located 100' away from the location. **(See page 6 of Survey plat package and diagram 2)** There is not any H₂S anticipated in the area, although in the event that H₂S is encountered, the H₂S contingency plan attached will be implemented. **(Please refer to diagram 2 for choke manifold and closed loop system layout.)**

H) CLOSED LOOP AND CHOKE MANIFOLD

Please see diagram 2.

POINT 7: ANTICIPATED RESERVOIR CONDITIONS

Normal pressures are anticipated throughout Delaware section. A BHP of 3834 psi (max) or MWE of 9.0 ppg is expected. Lost circulation may exist in the Delaware Section from 4,319'-8,194' TVD.



Planned Wellpath Report

Prelim 1

Page 2 of 6



REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, L.P.	Slot	No.413H SHL
Area	Eddy County, NM	Well	No.413H
Field	Poker Lake Unit	Wellbore	No.413H PWB
Facility	Poker Lake Unit No. 413H		

WELLPATH DATA (171 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00†	0.000	135.000	0.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
22.00	0.000	135.000	22.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	Tie On
122.00†	0.000	135.000	122.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
222.00†	0.000	135.000	222.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
322.00†	0.000	135.000	322.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
422.00†	0.000	135.000	422.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
522.00†	0.000	135.000	522.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
568.00†	0.000	135.000	568.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	Rustler
622.00†	0.000	135.000	622.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
722.00†	0.000	135.000	722.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
785.00†	0.000	135.000	785.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	Salado
822.00†	0.000	135.000	822.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
922.00†	0.000	135.000	922.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
1022.00†	0.000	135.000	1022.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
1034.00†	0.000	135.000	1034.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	Salt
1122.00†	0.000	135.000	1122.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
1222.00†	0.000	135.000	1222.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
1322.00†	0.000	135.000	1322.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
1422.00†	0.000	135.000	1422.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
1522.00†	0.000	135.000	1522.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
1622.00†	0.000	135.000	1622.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
1722.00†	0.000	135.000	1722.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
1822.00†	0.000	135.000	1822.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
1922.00†	0.000	135.000	1922.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
2022.00†	0.000	135.000	2022.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
2122.00†	0.000	135.000	2122.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
2222.00†	0.000	135.000	2222.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
2322.00†	0.000	135.000	2322.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
2422.00†	0.000	135.000	2422.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
2522.00†	0.000	135.000	2522.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
2622.00†	0.000	135.000	2622.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
2722.00†	0.000	135.000	2722.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
2822.00†	0.000	135.000	2822.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
2922.00†	0.000	135.000	2922.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
3022.00†	0.000	135.000	3022.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
3122.00†	0.000	135.000	3122.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
3222.00†	0.000	135.000	3222.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
3322.00†	0.000	135.000	3322.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
3422.00†	0.000	135.000	3422.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
3522.00†	0.000	135.000	3522.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
3622.00†	0.000	135.000	3622.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
3722.00†	0.000	135.000	3722.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
3822.00†	0.000	135.000	3822.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
3922.00†	0.000	135.000	3922.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
4022.00†	0.000	135.000	4022.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, L.P.	Slot	No.413H SHL
Area	Eddy County, NM	Well	No.413H
Field	Poker Lake Unit	Wellbore	No.413H PWB
Facility	Poker Lake Unit No. 413H		

WELLPATH DATA (171 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4036.00†	0.000	135.000	4036.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	Base/Salt
4122.00†	0.000	135.000	4122.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
4222.00†	0.000	135.000	4222.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
4319.00†	0.000	135.000	4319.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	Lamar
4322.00†	0.000	135.000	4322.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
4374.00†	0.000	135.000	4374.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	Ramsey
4422.00†	0.000	135.000	4422.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
4522.00†	0.000	135.000	4522.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
4622.00†	0.000	135.000	4622.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
4722.00†	0.000	135.000	4722.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
4822.00†	0.000	135.000	4822.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
4922.00†	0.000	135.000	4922.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
5022.00†	0.000	135.000	5022.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
5122.00†	0.000	135.000	5122.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
5222.00†	0.000	135.000	5222.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
5322.00†	0.000	135.000	5322.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
5422.00†	0.000	135.000	5422.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
5522.00†	0.000	135.000	5522.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
5622.00†	0.000	135.000	5622.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
5722.00†	0.000	135.000	5722.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
5822.00†	0.000	135.000	5822.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
5922.00†	0.000	135.000	5922.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
6022.00†	0.000	135.000	6022.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
6122.00†	0.000	135.000	6122.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
6222.00†	0.000	135.000	6222.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
6322.00†	0.000	135.000	6322.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
6422.00†	0.000	135.000	6422.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
6446.00†	0.000	135.000	6446.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	Lower Cherry Canyon
6522.00†	0.000	135.000	6522.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
6622.00†	0.000	135.000	6622.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
6722.00†	0.000	135.000	6722.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
6822.00†	0.000	135.000	6822.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
6922.00†	0.000	135.000	6922.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
7022.00†	0.000	135.000	7022.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
7122.00†	0.000	135.000	7122.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
7222.00†	0.000	135.000	7222.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
7322.00†	0.000	135.000	7322.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
7422.00†	0.000	135.000	7422.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
7522.00†	0.000	135.000	7522.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
7622.00†	0.000	135.000	7622.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	
7646.00	0.000	135.000	7646.00	0.00	0.00	0.00	670042.85	432114.10	32°11'12.496"N	103°47'01.266"W	0.00	Est KOP
7722.00†	9.129	135.000	7721.68	6.04	-4.27	4.27	670047.12	432109.83	32°11'12.453"N	103°47'01.217"W	12.01	
7822.00†	21.141	135.000	7818.03	32.10	-22.70	22.70	670065.55	432091.41	32°11'12.270"N	103°47'01.003"W	12.01	
7922.00†	33.152	135.000	7906.86	77.65	-54.90	54.90	670097.75	432059.20	32°11'11.950"N	103°47'00.630"W	12.01	
7926.97†	33.749	135.000	7911.00	80.38	-56.84	56.84	670099.69	432057.27	32°11'11.930"N	103°47'00.608"W	12.01	Lower Brushy Canyon



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, L.P.	Slot	No.413H SHL
Area	Eddy County, NM	Well	No.413H
Field	Poker Lake Unit	Wellbore	No.413H PWB
Facility	Poker Lake Unit No. 413H		

WELLPATH DATA (171 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8022.00†	45.164	135.000	7984.25	140.68	-99.47	99.47	670142.32	432014.64	32°11'11.506"N	103°47'00.115"W	12.01	
8122.00†	57.176	135.000	8046.84	218.43	-154.46	154.46	670197.30	431959.66	32°11'10.959"N	103°46'59.478"W	12.01	
8222.00†	69.187	135.000	8091.87	307.52	-217.45	217.45	670260.28	431896.67	32°11'10.333"N	103°46'58.749"W	12.01	
8322.00†	81.199	135.000	8117.38	404.02	-285.68	285.68	670328.52	431828.44	32°11'09.654"N	103°46'57.959"W	12.01	
8395.27	90.000	135.000	8123.00	477.00	-337.29	337.29	670380.12	431776.84	32°11'09.141"N	103°46'57.362"W	12.01	EOC
8398.60	90.000	134.933	8123.00	480.33	-339.64	339.65	670382.48	431774.48	32°11'09.118"N	103°46'57.334"W	2.00	Build
8422.00†	90.000	134.933	8123.00	503.73	-356.17	356.21	670399.04	431757.96	32°11'08.953"N	103°46'57.143"W	0.00	
8522.00†	90.000	134.933	8123.00	603.73	-426.80	427.00	670469.83	431687.33	32°11'08.251"N	103°46'56.323"W	0.00	
8622.00†	90.000	134.933	8123.00	703.73	-497.43	497.80	670540.62	431616.71	32°11'07.548"N	103°46'55.504"W	0.00	
8722.00†	90.000	134.933	8123.00	803.73	-568.06	568.59	670611.41	431546.08	32°11'06.846"N	103°46'54.684"W	0.00	
8822.00†	90.000	134.933	8123.00	903.73	-638.68	639.38	670682.19	431475.46	32°11'06.143"N	103°46'53.865"W	0.00	
8922.00†	90.000	134.933	8123.00	1003.73	-709.31	710.18	670752.98	431404.83	32°11'05.441"N	103°46'53.045"W	0.00	
9022.00†	90.000	134.933	8123.00	1103.73	-779.94	780.97	670823.77	431334.21	32°11'04.738"N	103°46'52.226"W	0.00	
9116.27	90.000	134.933	8123.00†	1198.00	-846.52	847.71	670890.50	431267.63	32°11'04.076"N	103°46'51.453"W	0.00	Target #1
9122.00†	89.886	134.938	8123.01	1203.73	-850.57	851.76	670894.56	431263.59	32°11'04.036"N	103°46'51.406"W	2.00	
9147.94	89.367	134.960	8123.17	1229.67	-868.90	870.12	670912.92	431245.26	32°11'03.853"N	103°46'51.194"W	2.00	Build
9222.00†	89.367	134.960	8123.99	1303.72	-921.22	922.52	670965.32	431192.94	32°11'03.333"N	103°46'50.587"W	0.00	
9322.00†	89.367	134.960	8125.10	1403.72	-991.88	993.28	671036.07	431122.28	32°11'02.630"N	103°46'49.768"W	0.00	
9422.00†	89.367	134.960	8126.20	1503.71	-1062.54	1064.03	671106.82	431051.63	32°11'01.927"N	103°46'48.949"W	0.00	
9522.00†	89.367	134.960	8127.31	1603.71	-1133.20	1134.79	671177.57	430980.98	32°11'01.225"N	103°46'48.130"W	0.00	
9622.00†	89.367	134.960	8128.41	1703.70	-1203.85	1205.54	671248.32	430910.32	32°11'00.522"N	103°46'47.311"W	0.00	
9722.00†	89.367	134.960	8129.52	1803.69	-1274.51	1276.30	671319.07	430839.67	32°10'59.819"N	103°46'46.492"W	0.00	
9822.00†	89.367	134.960	8130.62	1903.69	-1345.17	1347.05	671389.82	430769.02	32°10'59.116"N	103°46'45.673"W	0.00	
9922.00†	89.367	134.960	8131.72	2003.68	-1415.82	1417.81	671460.58	430698.37	32°10'58.413"N	103°46'44.854"W	0.00	
10022.00†	89.367	134.960	8132.83	2103.68	-1486.48	1488.57	671531.33	430627.71	32°10'57.711"N	103°46'44.035"W	0.00	
10122.00†	89.367	134.960	8133.93	2203.67	-1557.14	1559.32	671602.08	430557.06	32°10'57.008"N	103°46'43.216"W	0.00	
10222.00†	89.367	134.960	8135.04	2303.66	-1627.80	1630.08	671672.83	430486.41	32°10'56.305"N	103°46'42.397"W	0.00	
10322.00†	89.367	134.960	8136.14	2403.66	-1698.45	1700.83	671743.58	430415.75	32°10'55.602"N	103°46'41.578"W	0.00	
10422.00†	89.367	134.960	8137.25	2503.65	-1769.11	1771.59	671814.33	430345.10	32°10'54.900"N	103°46'40.759"W	0.00	
10522.00†	89.367	134.960	8138.35	2603.65	-1839.77	1842.34	671885.08	430274.45	32°10'54.197"N	103°46'39.940"W	0.00	
10622.00†	89.367	134.960	8139.46	2703.64	-1910.42	1913.10	671955.83	430203.80	32°10'53.494"N	103°46'39.121"W	0.00	
10722.00†	89.367	134.960	8140.56	2803.63	-1981.08	1983.85	672026.59	430133.14	32°10'52.791"N	103°46'38.302"W	0.00	
10822.00†	89.367	134.960	8141.67	2903.63	-2051.74	2054.61	672097.34	430062.49	32°10'52.088"N	103°46'37.483"W	0.00	
10922.00†	89.367	134.960	8142.77	3003.62	-2122.40	2125.37	672168.09	429991.84	32°10'51.386"N	103°46'36.664"W	0.00	
11022.00†	89.367	134.960	8143.87	3103.61	-2193.05	2196.12	672238.84	429921.18	32°10'50.683"N	103°46'35.845"W	0.00	
11122.00†	89.367	134.960	8144.98	3203.61	-2263.71	2266.88	672309.59	429850.53	32°10'49.980"N	103°46'35.026"W	0.00	
11222.00†	89.367	134.960	8146.08	3303.60	-2334.37	2337.63	672380.34	429779.88	32°10'49.277"N	103°46'34.207"W	0.00	
11322.00†	89.367	134.960	8147.19	3403.60	-2405.02	2408.39	672451.09	429709.22	32°10'48.574"N	103°46'33.388"W	0.00	
11422.00†	89.367	134.960	8148.29	3503.59	-2475.68	2479.14	672521.84	429638.57	32°10'47.872"N	103°46'32.569"W	0.00	
11522.00†	89.367	134.960	8149.40	3603.58	-2546.34	2549.90	672592.60	429567.92	32°10'47.169"N	103°46'31.750"W	0.00	
11622.00†	89.367	134.960	8150.50	3703.58	-2617.00	2620.65	672663.35	429497.27	32°10'46.466"N	103°46'30.931"W	0.00	
11722.00†	89.367	134.960	8151.61	3803.57	-2687.65	2691.41	672734.10	429426.61	32°10'45.763"N	103°46'30.112"W	0.00	
11822.00†	89.367	134.960	8152.71	3903.57	-2758.31	2762.17	672804.85	429355.96	32°10'45.060"N	103°46'29.293"W	0.00	
11922.00†	89.367	134.960	8153.82	4003.56	-2828.97	2832.92	672875.60	429285.31	32°10'44.357"N	103°46'28.475"W	0.00	
12022.00†	89.367	134.960	8154.92	4103.55	-2899.62	2903.68	672946.35	429214.65	32°10'43.655"N	103°46'27.656"W	0.00	



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, L.P.	Slot	No.413H SHL
Area	Eddy County, NM	Well	No.413H
Field	Poker Lake Unit	Wellbore	No.413H PWB
Facility	Poker Lake Unit No. 413H		

WELLPATH DATA (171 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12122.00†	89.367	134.960	8156.02	4203.55	-2970.28	2974.43	673017.10	429144.00	32°10'42.952"N	103°46'26.837"W	0.00	
12222.00†	89.367	134.960	8157.13	4303.54	-3040.94	3045.19	673087.86	429073.35	32°10'42.249"N	103°46'26.018"W	0.00	
12322.00†	89.367	134.960	8158.23	4403.54	-3111.60	3115.94	673158.61	429002.70	32°10'41.546"N	103°46'25.199"W	0.00	
12422.00†	89.367	134.960	8159.34	4503.53	-3182.25	3186.70	673229.36	428932.04	32°10'40.843"N	103°46'24.380"W	0.00	
12522.00†	89.367	134.960	8160.44	4603.52	-3252.91	3257.45	673300.11	428861.39	32°10'40.141"N	103°46'23.561"W	0.00	
12622.00†	89.367	134.960	8161.55	4703.52	-3323.57	3328.21	673370.86	428790.74	32°10'39.438"N	103°46'22.742"W	0.00	
12722.00†	89.367	134.960	8162.65	4803.51	-3394.22	3398.97	673441.61	428720.08	32°10'38.735"N	103°46'21.923"W	0.00	
12822.00†	89.367	134.960	8163.76	4903.51	-3464.88	3469.72	673512.36	428649.43	32°10'38.032"N	103°46'21.104"W	0.00	
12922.00†	89.367	134.960	8164.86	5003.50	-3535.54	3540.48	673583.11	428578.78	32°10'37.329"N	103°46'20.285"W	0.00	
13022.00†	89.367	134.960	8165.97	5103.49	-3606.20	3611.23	673653.87	428508.13	32°10'36.626"N	103°46'19.466"W	0.00	
13122.00†	89.367	134.960	8167.07	5203.49	-3676.85	3681.99	673724.62	428437.47	32°10'35.924"N	103°46'18.648"W	0.00	
13222.00†	89.367	134.960	8168.18	5303.48	-3747.51	3752.74	673795.37	428366.82	32°10'35.221"N	103°46'17.829"W	0.00	
13322.00†	89.367	134.960	8169.28	5403.47	-3818.17	3823.50	673866.12	428296.17	32°10'34.518"N	103°46'17.010"W	0.00	
13422.00†	89.367	134.960	8170.38	5503.47	-3888.82	3894.25	673936.87	428225.51	32°10'33.815"N	103°46'16.191"W	0.00	
13522.00†	89.367	134.960	8171.49	5603.46	-3959.48	3965.01	674007.62	428154.86	32°10'33.112"N	103°46'15.372"W	0.00	
13622.00†	89.367	134.960	8172.59	5703.46	-4030.14	4035.76	674078.37	428084.21	32°10'32.409"N	103°46'14.553"W	0.00	
13722.00†	89.367	134.960	8173.70	5803.45	-4100.80	4106.52	674149.13	428013.55	32°10'31.707"N	103°46'13.734"W	0.00	
13822.00†	89.367	134.960	8174.80	5903.44	-4171.45	4177.28	674219.88	427942.90	32°10'31.004"N	103°46'12.915"W	0.00	
13922.00†	89.367	134.960	8175.91	6003.44	-4242.11	4248.03	674290.63	427872.25	32°10'30.301"N	103°46'12.096"W	0.00	
14022.00†	89.367	134.960	8177.01	6103.43	-4312.77	4318.79	674361.38	427801.60	32°10'29.598"N	103°46'11.278"W	0.00	
14122.00†	89.367	134.960	8178.12	6203.43	-4383.42	4389.54	674432.13	427730.94	32°10'28.895"N	103°46'10.459"W	0.00	
14222.00†	89.367	134.960	8179.22	6303.42	-4454.08	4460.30	674502.88	427660.29	32°10'28.192"N	103°46'09.640"W	0.00	
14322.00†	89.367	134.960	8180.33	6403.41	-4524.74	4531.05	674573.63	427589.64	32°10'27.489"N	103°46'08.821"W	0.00	
14422.00†	89.367	134.960	8181.43	6503.41	-4595.40	4601.81	674644.38	427518.98	32°10'26.787"N	103°46'08.002"W	0.00	
14522.00†	89.367	134.960	8182.53	6603.40	-4666.05	4672.56	674715.14	427448.33	32°10'26.084"N	103°46'07.183"W	0.00	
14622.00†	89.367	134.960	8183.64	6703.40	-4736.71	4743.32	674785.89	427377.68	32°10'25.381"N	103°46'06.365"W	0.00	
14722.00†	89.367	134.960	8184.74	6803.39	-4807.37	4814.08	674856.64	427307.03	32°10'24.678"N	103°46'05.546"W	0.00	
14822.00†	89.367	134.960	8185.85	6903.38	-4878.02	4884.83	674927.39	427236.37	32°10'23.975"N	103°46'04.727"W	0.00	
14922.00†	89.367	134.960	8186.95	7003.38	-4948.68	4955.59	674998.14	427165.72	32°10'23.272"N	103°46'03.908"W	0.00	
15022.00†	89.367	134.960	8188.06	7103.37	-5019.34	5026.34	675068.89	427095.07	32°10'22.569"N	103°46'03.089"W	0.00	
15122.00†	89.367	134.960	8189.16	7203.36	-5090.00	5097.10	675139.64	427024.41	32°10'21.867"N	103°46'02.270"W	0.00	
15222.00†	89.367	134.960	8190.27	7303.36	-5160.65	5167.85	675210.39	426953.76	32°10'21.164"N	103°46'01.452"W	0.00	
15322.00†	89.367	134.960	8191.37	7403.35	-5231.31	5238.61	675281.15	426883.11	32°10'20.461"N	103°46'00.633"W	0.00	
15422.00†	89.367	134.960	8192.48	7503.35	-5301.97	5309.36	675351.90	426812.45	32°10'19.758"N	103°45'59.814"W	0.00	
15522.00†	89.367	134.960	8193.58	7603.34	-5372.62	5380.12	675422.65	426741.80	32°10'19.055"N	103°45'58.995"W	0.00	
15560.04	89.367	134.960	8194.00	7641.38	-5399.50	5407.04	675449.56	426714.92	32°10'18.788"N	103°45'58.684"W	0.00	No.413H PBHL



Planned Wellpath Report

Prelim_1

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REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, L.P.	Slot	No.413H SHL
Area	Eddy County, NM	Well	No.413H
Field	Poker Lake Unit	Wellbore	No.413H PWB
Facility	Poker Lake Unit No. 413H		

HOLE & CASING SECTIONS - Ref Wellbore: No.413H PWB Ref Wellpath: Prelim_1

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
8.75in Open Hole	22.00	8595.00	8573.00	22.00	8123.00	0.00	0.00	-478.36	478.68
7in Casing	22.00	7595.00	7573.00	22.00	7595.00	0.00	0.00	0.00	0.00

TARGETS

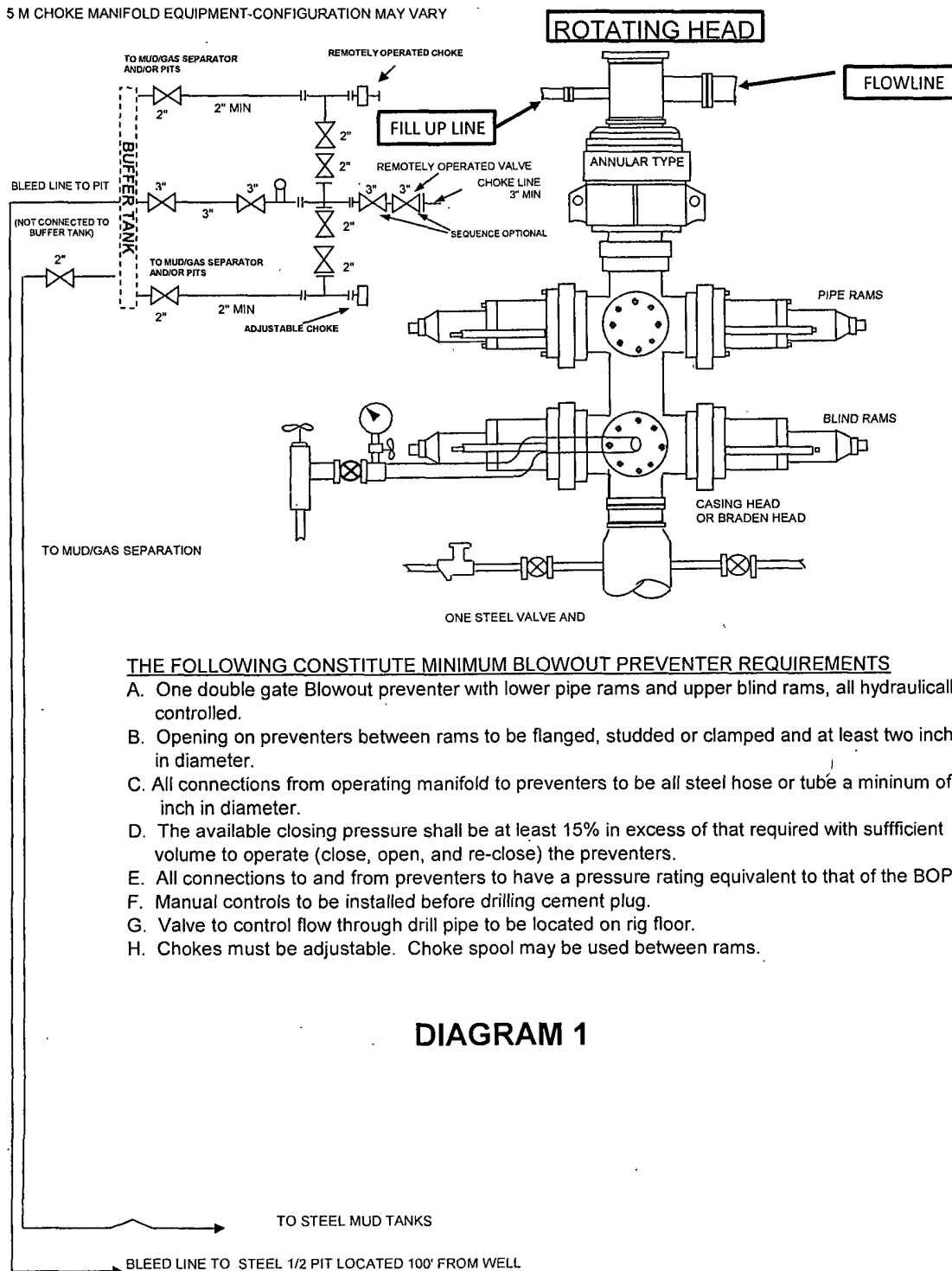
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
1) No.413H Target #1	9116.27	8123.00	-846.52	847.71	670890.50	431267.63	32°11'04.076"N	103°46'51.453"W	point
2) No.413H PBHL	15560.04	8194.00	-5399.50	5407.04	675449.56	426714.92	32°10'18.788"N	103°45'58.684"W	point

SURVEY PROGRAM - Ref Wellbore: No.413H PWB Ref Wellpath: Prelim_1

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
22.00	15560.04	NaviTrak (Standard)		No.413H PWB

13 5/8" X 5-M WP BOPE WITH 5-M WP ANNULAR

5 M CHOKE MANIFOLD EQUIPMENT-CONFIGURATION MAY VARY



THE FOLLOWING CONSTITUTE MINIMUM BLOWOUT PREVENTER REQUIREMENTS

- A. One double gate Blowout preventer with lower pipe rams and upper blind rams, all hydraulically controlled.
- B. Opening on preventers between rams to be flanged, studded or clamped and at least two inches in diameter.
- C. All connections from operating manifold to preventers to be all steel hose or tube a minimum of one inch in diameter.
- D. The available closing pressure shall be at least 15% in excess of that required with sufficient volume to operate (close, open, and re-close) the preventers.
- E. All connections to and from preventers to have a pressure rating equivalent to that of the BOPs.
- F. Manual controls to be installed before drilling cement plug.
- G. Valve to control flow through drill pipe to be located on rig floor.
- H. Chokes must be adjustable. Choke spool may be used between rams.

DIAGRAM 1

HYDROGEN SULFIDE (H₂S) CONTINGENCY PLAN

Assumed 100 ppm ROE = 3000'

100 ppm H₂S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing H₂S, the first responder(s) must

- Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- Evacuate any public places encompassed by the 100 ppm ROE.
- Be equipped with H₂S monitors and air packs in order to control the release.
- Use the "buddy system" to ensure no injuries occur during the response
- Take precautions to avoid personal injury during this operation.
- Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- Have received training in the
 - Detection of H₂S, and
 - Measures for protection against the gas;
 - Equipment used for protection and emergency response.

Ignition of Gas source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO₂). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever this is an ignition of the gas.

Characteristics of H₂S and SO₂

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H ₂ S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO ₂	2.21 Air = 1	2 ppm	N/A	1000 ppm

Contacting Authorities

BOPCO L.P. personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. (Operator Name)'s response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

H₂S CONTINGENCY PLAN EMERGENCY CONTACTS

BOPCO L.P. Midland Office

432-683-2277

Key Personnel

<u>Name</u>	<u>Title</u>	<u>Cell Phone Number</u>
Stephen Martinez	Drilling Supt.	432-556-0262
Buddy Jenkins	Assistant Supt.	432-238-3295
Bill Dannels	Engineer	432-638-9463
Pete Lensing	Engineer	432-557-7157
Charles Warne	Engineer	432-894-1392

Ambulance	911
State Police	575-746-2703
City Police	575-746-2703
Sheriff's Office	575-746-9888
Fire Department	575-746-2701
Local Emergency Planning Committee	575-746-2122
New Mexico Oil Conservation Division	575-748-1283

Carlsbad

Ambulance	911
State Police	575-885-3137
City Police	575-885-2111
Sheriff's Office	575-887-7551
Fire Department	575-887-3798
Local Emergency Planning Committee	575-887-6544
US Bureau of Land Management	575-887-6544

New Mexico Emergency Response Commission (Santa Fe)	505-476-9600
24 Hour	505-827-9126
New Mexico State Emergency Operations Center	505-476-9635
National Emergency Response Center (Washington, DC)	800-424-8802

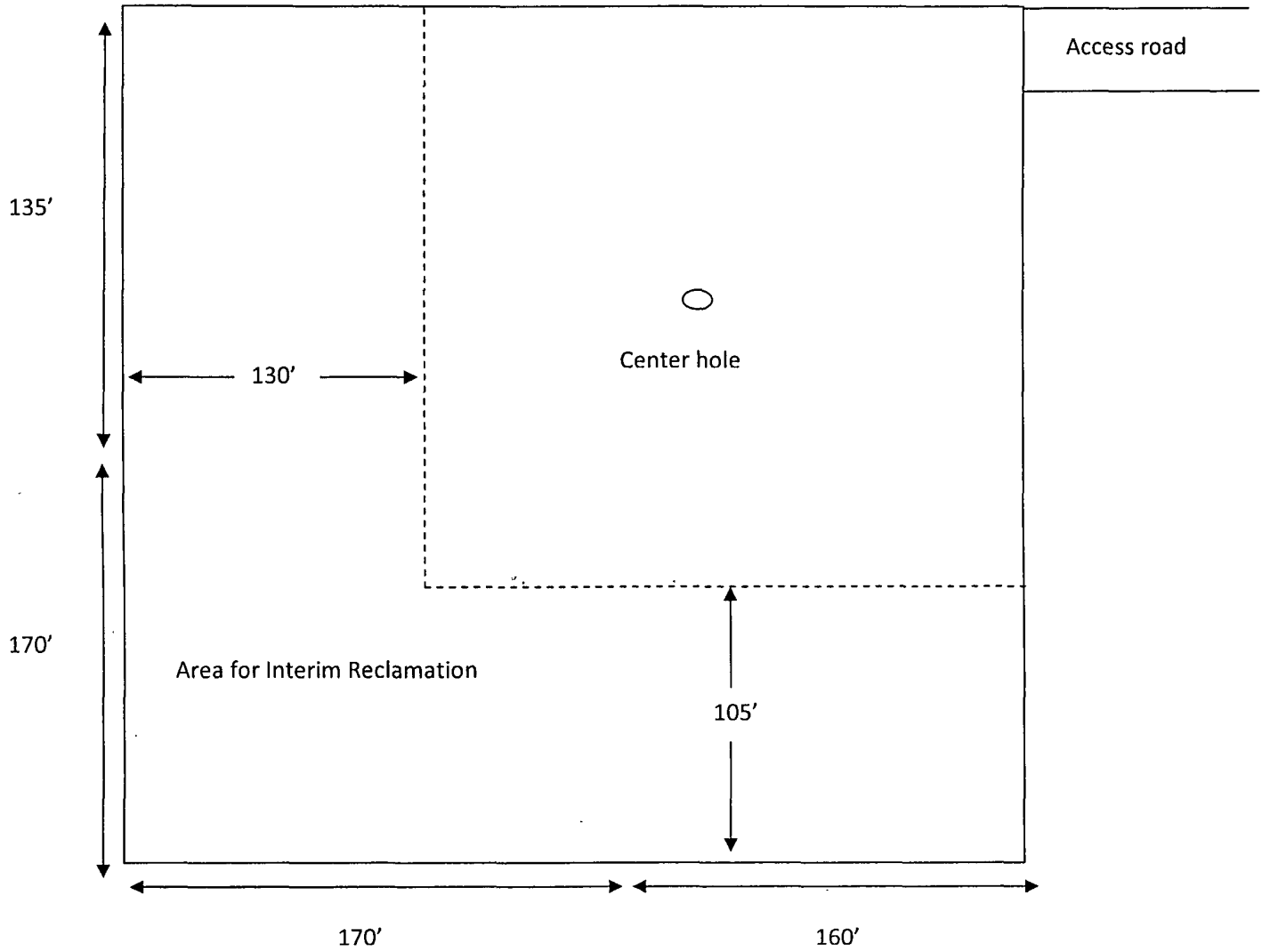
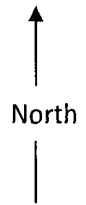
Other

Boots & Coots IWC	800-256-9688 or 281-931-8884
Cudd PressureControl	432-580-3544 or 432-570-5300
Halliburton	575-746-2757
B. J. Services	575-746-3569
Flight For Life – 4000 24 th St. Lubbock, Texas	806-743-9911
Aerocare – R3, Box 49F, Lubbock, Texas	806-747-8923
Med Flight Air Amb – 2301 Yale Blvd SE #D3, Albuquerque, NM	505-842-4433
S B Air Med Service – 2505 Clark Carr Loop SE, Albuquerque, NM	505-842-4949

Diagram 3

BOPCO, Poker Lake Unit 413H

Interim Reclamation Well Pad Layout



Location On-Site Notes

Location on-site conducted by Cecil Watkins-BOPCO L.P., Randy Rust-BLM, and Robert Gomez-Basin Survey on 09/20/2011. The Poker Lake Unit 413H was moved in Section 28 to a new surface footage call located at 2140' FSL & 2200' FWL of Sec 28-T24S-R31E. V-Door will face the east

MULTI-POINT SURFACE USE PLAN

NAME OF WELL: Poker Lake Unit #413H

LEGAL DESCRIPTION - SURFACE: 2140' FSL, 2200' FWL, Section 28, T24S, R31E, Eddy County, NM.
BHL: 1900' FSL, 2300' FWL, Section 34, T24S, R31E, Eddy County, New Mexico.

POINT 1: EXISTING ROADS

A) Proposed Well Site Location:

See Form C-102 (Survey Plat).

B) Existing Roads:

From the junction of Buck Thorn and Buck Jackson, go southwest on Buck Jackson for 0.2 miles to lease road, on lease road go south for 0.4 miles to proposed lease road

C) Existing Road Maintenance or Improvement Plan:

See the Well Pad Layout and Topo Map of the survey plat (Sheet 1 and 2 of plat package)

POINT 2: NEW PLANNED ACCESS ROUTE

A) Route Location:

Approximately 14' of new lease road will be built. (See the Well Pad Layout of the survey plat (Sheet 1 of plat package).

B) Width

14' wide

C) Maximum Grade

Grade to match existing topography or as per BLM requirements.

D) Turnout Ditches

As required by BLM stipulations

E) Culverts, Cattle Guards, and Surfacing Equipment

If required, culverts and cattle guards will be set per BLM Specs.

POINT 3: LOCATION OF EXISTING WELLS

The following wells are located within a one-mile radius of the location site. See the One-Mile Radius Map (Sheet 5 of the plat package).

Existing wells..... 18 (eighteen)
 Water wells..... 3 (three)

POINT 4: LOCATION OF EXISTING OR PROPOSED FACILITIES

- A) No existing production facilities operated by BOPCO, L.P. are located within one mile of the Poker Lake Unit #413H.

- B) New Facilities in the Event of Production:

New production facilities will be built at Poker Lake Unit #68 battery (located in NENW quarter Sec 20, T24S, R31E. A new separator / treater will be set at the Poker Lake Unit #57 battery. A 2-7/8" or a 3 1/2" flowline carrying oil, water, and gas will be laid on top of ground from Poker Lake Unit #413H to Poker Lake Unit #68 battery following existing lease roads and right of ways (see the Aerial Map labeled diagram 4). A rental generator will be set at #413H for the initial testing. A sundry describing the permanent power line will be submitted at a later date.

- C) Rehabilitation of Disturbed Areas Unnecessary for Production:

Following the construction, those access areas required for continued production will be graded to provide drainage and minimize erosion. The areas unnecessary for use will be graded to blend in with the surrounding topography (see Point 10)

POINT 5: LOCATION AND TYPE OF WATER SUPPLY

- A) Location and Type of Water Supply

Fresh water will be hauled from Johnson Station 50 miles east of Carlsbad, New Mexico or other commercial facilities. Brine water will be hauled from commercial facilities.

- B) Water Transportation System

Water hauling to the location will be over the existing and proposed roads.

POINT 6: SOURCE OF CONSTRUCTION MATERIALS

- A) Materials

On-site caliche will be used. If this is not sufficient, caliche will be hauled from a BLM approved pit.

- B) Land Ownership

Federally Owned

- C) Materials Foreign to the Site

No construction materials foreign to this area are anticipated for this drill site

- D) Access Roads

See the Well Pad Layout and Aerial Map of the survey plat (Sheet 1 and 4 of plat package)

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	BOPCO, LP
LEASE NO.:	NM031382
WELL NAME & NO.:	413H POKER LAKE UNIT
SURFACE HOLE FOOTAGE:	2140' FSL & 2200' FWL
BOTTOM HOLE FOOTAGE:	1900' FSL & 2300' FWL (Sec. 34)
LOCATION:	Section 28, T.24 S., R.31 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

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

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
 - Lesser Prairie-Chicken Timing Stipulations
 - Ground-level Abandoned Well Marker
 - Commercial Well Determination
- ☐ **Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
 - Logging Requirements
 - Waste Material and Fluids
- ☐ **Production (Post Drilling)**
 - Well Structures & Facilities
 - Pipelines
 - Electric Lines
- ☐ **Interim Reclamation**
- ☐ **Final Abandonment & Reclamation**

- 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 (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. DRILL STEM TEST

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

E. WASTE MATERIAL AND FLUIDS

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

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

CRW 121411

Seed Mixture for LPC Sand/Shinnery Sites

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

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

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

<u>Species</u>	<u>lb/acre</u>
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A
Four-winged Saltbush	5lbs/A

*Pounds of pure live seed:

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