NM OIL CONSERVATION
ARTESIA DISTRICT
FEB 06 2015
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OCD Artesia

ATS-15-85

Form 3160-3
(March 2012)

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM 02447

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.
Big Eddy Unit NM68294X

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.
Big Eddy Unit #322H

2. Name of Operator BOPCO, L.P.

9. API Well No.
30-015-42943

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

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

10. Field and Pool, or Exploratory
Hackberry; Bone Spring, East

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface SESE, ULP, 700' FSL &-195' FEL, Lat:N32.625992,Long:W103.848614

At proposed prod. zone 660' FSL,330'FWL,Sec27, T19S-R31E,Lat:N32.62586, Long:W103.86405

11. Sec., T. R. M. or Blk. and Survey or Area
Section 27, T19S-R31E

14. Distance in miles and direction from nearest town or post office*
26 miles northeast of Carlsbad, NM

UNORTHODOX LOCATION

12. County or Parish
Eddy County

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 195'

16. No. of acres in lease
1,360

17. Spacing Unit dedicated to this well
160

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 40'

19. Proposed Depth
12,869 MD / 8,382' TVD

20. BLM/BIA Bond No. on file
COB 000050

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3472' GL

22. Approximate date work will start*
01/01/2015

23. Estimated duration
30 days

24. Attachments

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

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
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 BLM.

25. Signature Whitney B McKee
Name *(Printed/Typed)* Whitney McKee
Date 10/13/14

Title
Engineering Assistant

Approved by *(Signature)* /S/ STEPHEN J. CAFFEY
Name *(Printed/Typed)*
Date FEB 3 2015

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.

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

(Continued on page 2)

Capitan Controlled Water Basin

*(Instructions on page 2)

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

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

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

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

Form C-102
Revised August 1, 2011

Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-42943	96746	HACKBERRY; BONE SPRING, EAST

Property Code	Property Name	Well Number
305860	BIG EDDY UNIT	322H

OGRID No.	Operator Name	Elevation
260737	BOPCO, L.P.	3472'

Surface Location

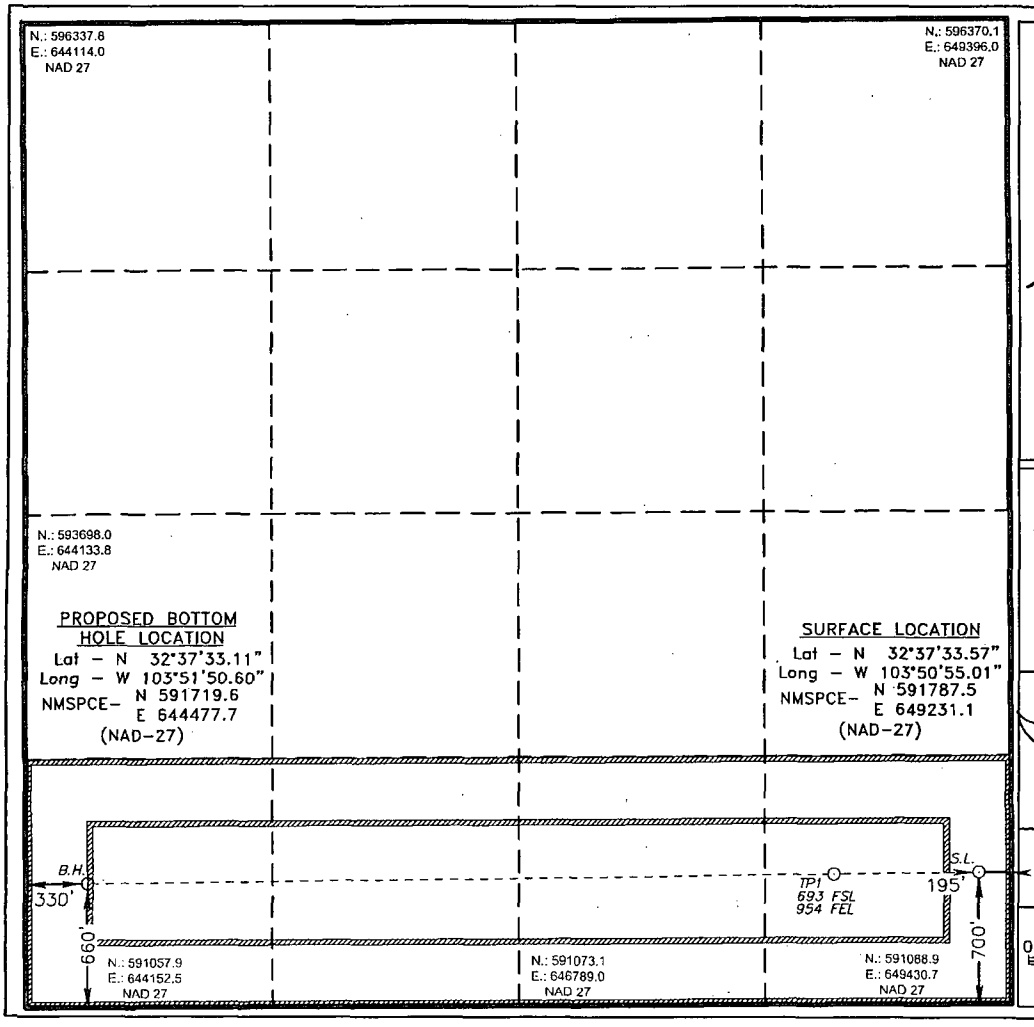
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	27	19 S	31 E		700	SOUTH	195	EAST	EDDY

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
M	27	19 S	31 E		660	SOUTH	330	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160			

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.

Whitney B McKee 10/13/14
Signature Date

Whintey McKee
Printed Name

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

AUGUST 1, 2014
Date Surveyed

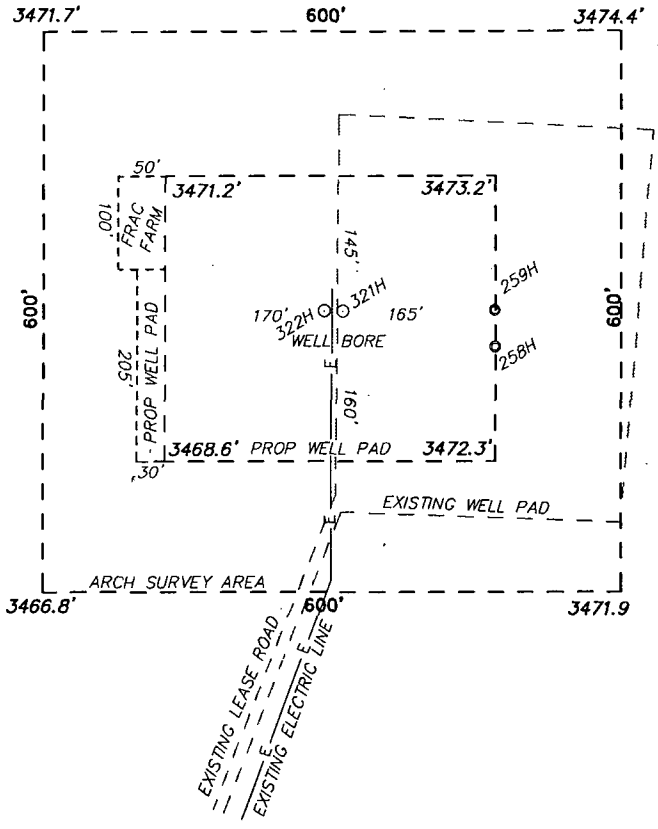
Signature & Seal of Professional Surveyor

GARY L. JONES NEW MEXICO 7977 REGISTERED PROFESSIONAL LAND SURVEYOR

Certificate No. Gary L. Jones 7977
BASIN SURVEYS

0' 500' 1000' 1500' 2000'
SCALE: 1" = 1000'
WO Num.: 30748

SECTION 27, TOWNSHIP 19 SOUTH, RANGE 31 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



BOPCO, L.P.
BIG EDDY UNIT 321H
ELEV. - 3472'

Lat - N 32°37'33.57"
Long - W 103°50'55.01"
NMSPCE- N 591787.5
E 649231.1
(NAD-27)

LOCO HILLS, NM IS ±15 MILES TO THE NORTHWEST OF LOCATION.

200 0 200 400 FEET
SCALE: 1" = 200'

Directions to Location:

FROM THE INTERSECTION OF OF LUSK AND SHUGART, GO SOUTHWEST 2.8 MILES TO A LEASE ROAD, GO SOUTHEAST 0.4 MILES WINDING EAST AND CONTINUE 1.3 MILES TURNING NORTHEAST 0.1 MILES TO PROPOSED LOCATION.

BOPCO, L.P.

REF: BIG EDDY UNIT 322H / WELL PAD TOPO

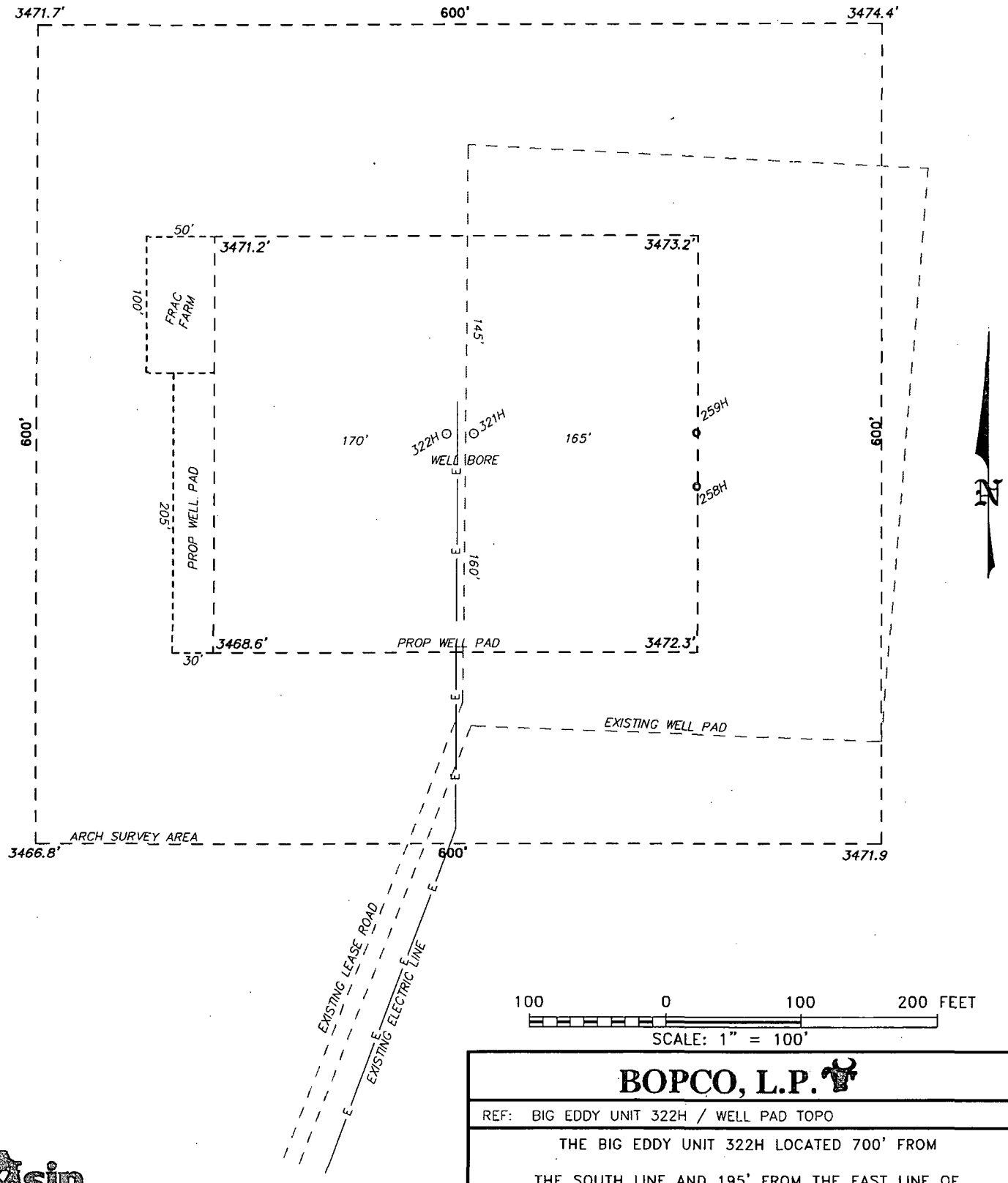
THE BIG EDDY UNIT 322H LOCATED 700' FROM THE SOUTH LINE AND 195' FROM THE EAST LINE OF SECTION 27, TOWNSHIP 19 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

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: 30748	Drawn By: J. SMALL	Date: 08-13-2014	Survey Date: 08-01-2014	Sheet 1 of 1 Sheets

SECTION 27, TOWNSHIP 19 SOUTH, RANGE 31 EAST, N.M.P.M.,

EDDY COUNTY, NEW MEXICO.



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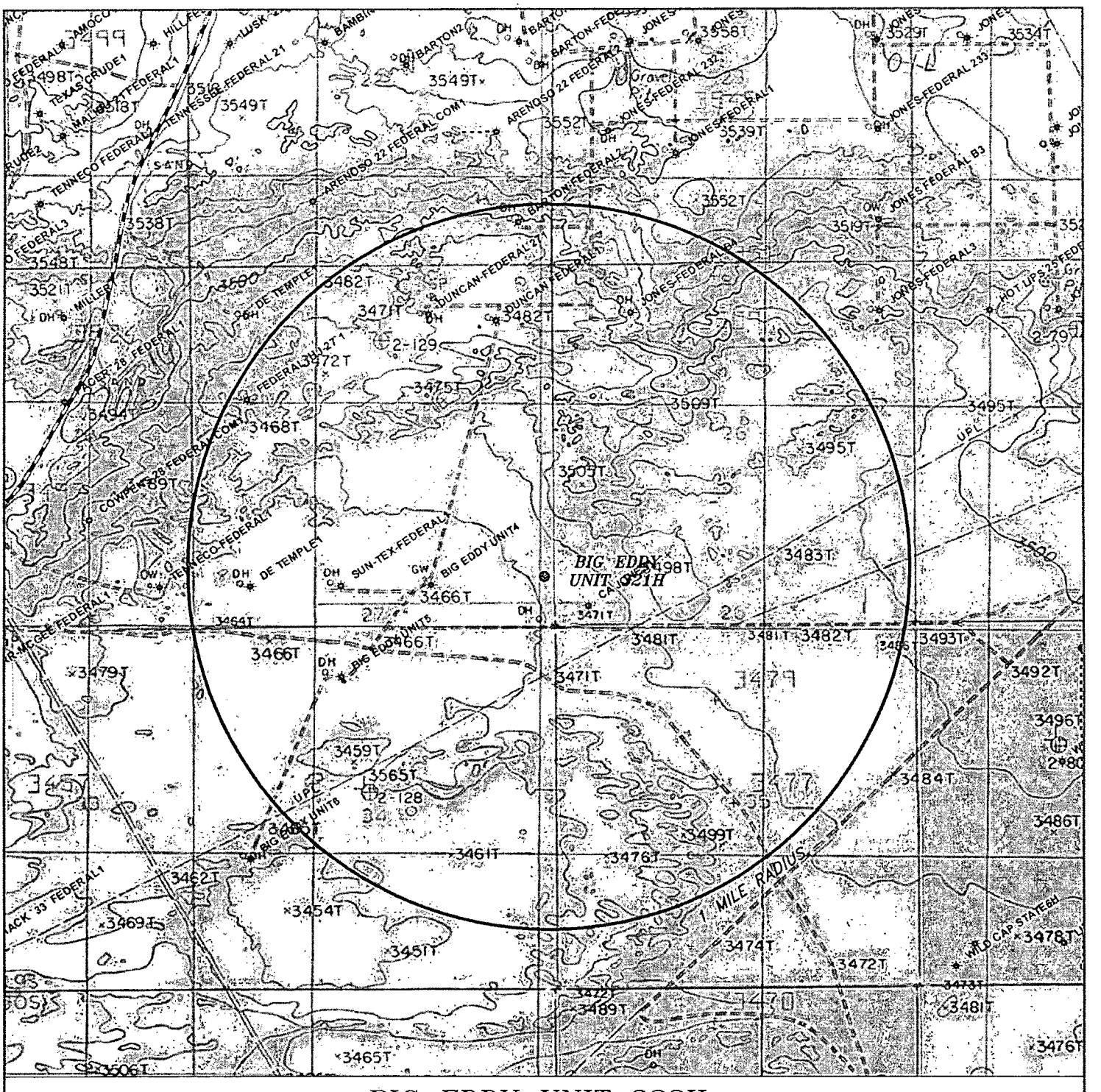

BIG EDDY UNIT 322H

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0' 1000' 2000' 3000' 4000'

SCALE: 1" = 2000'

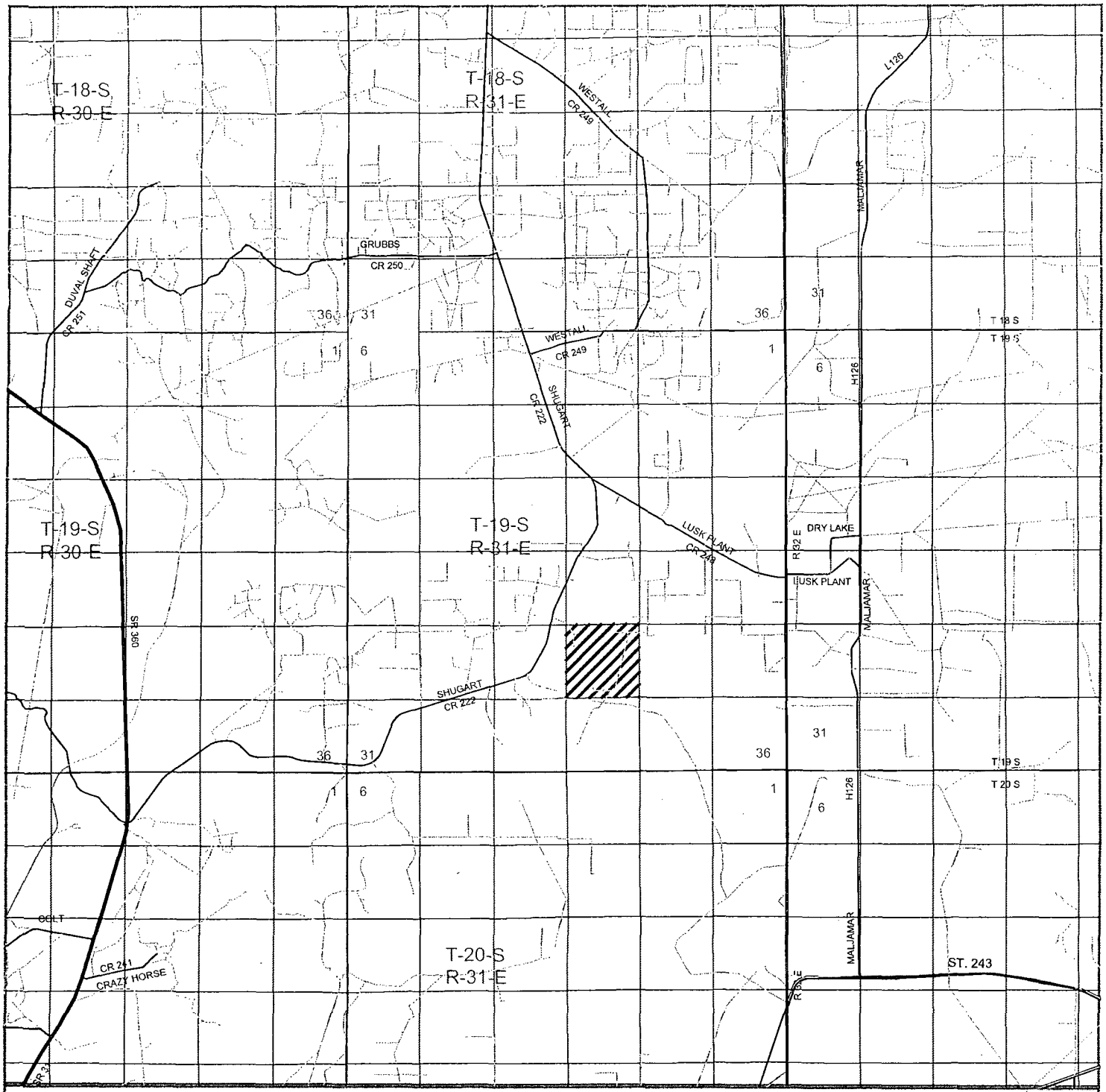
W.O. Number: JMS 30748

Survey Date: 08-01-2014

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

N

BOPCO, L.P.



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0 1 MI 2 MI 3 MI 4 MI
SCALE: 1" = 2 MILES

W.O. Number: JMS 30748

Survey Date: 08-01-2014

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NATURAL COLOR - FEE LAND

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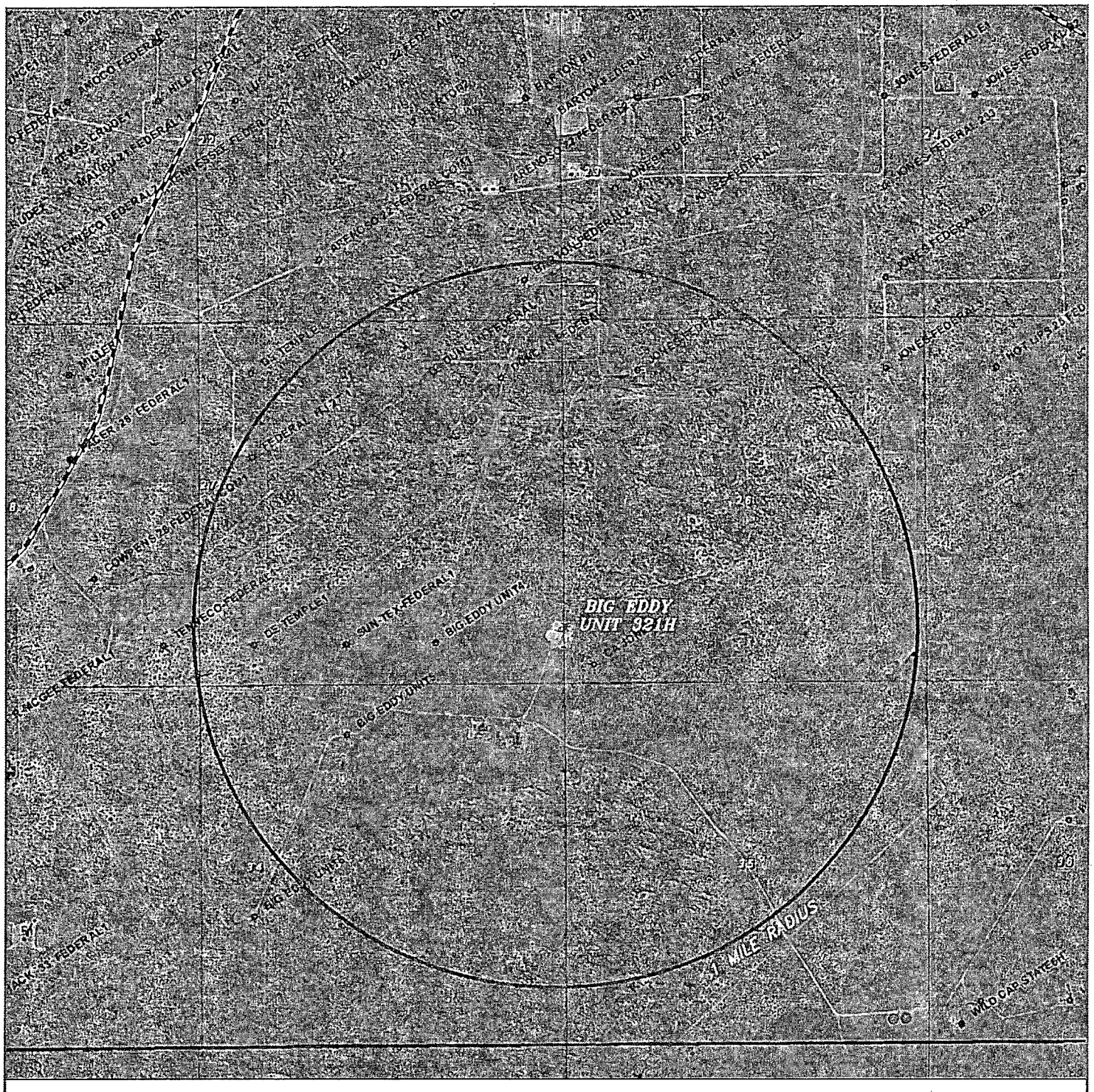

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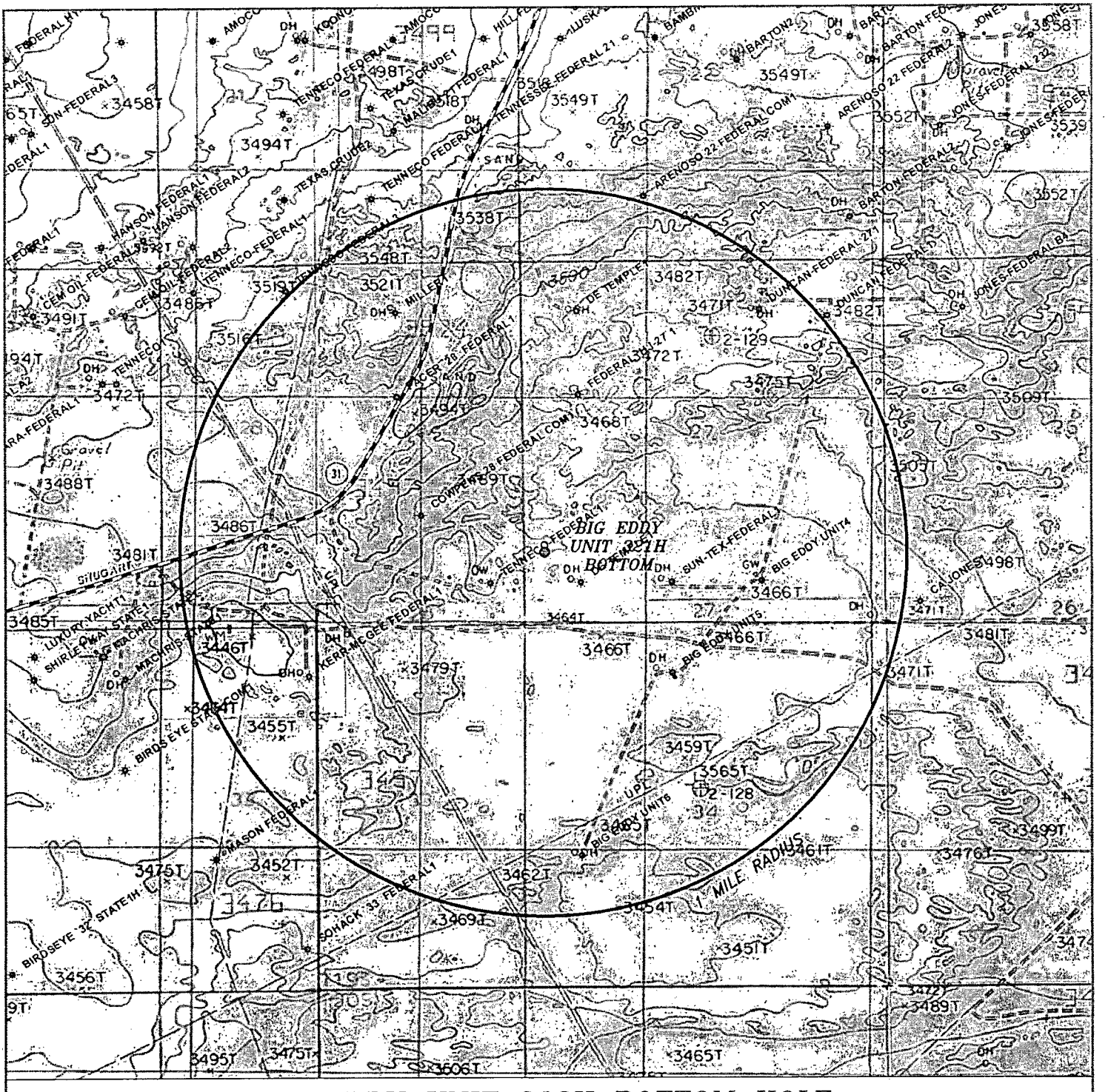

BIG EDDY UNIT 322H BOTTOM HOLE
Located 660' FSL and 330' FWL
Section 27, Township 19 South, Range 31 East, N.M.P.M., Eddy County, New Mexico.

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0' 1000' 2000' 3000' 4000'
SCALE: 1" = 2000'

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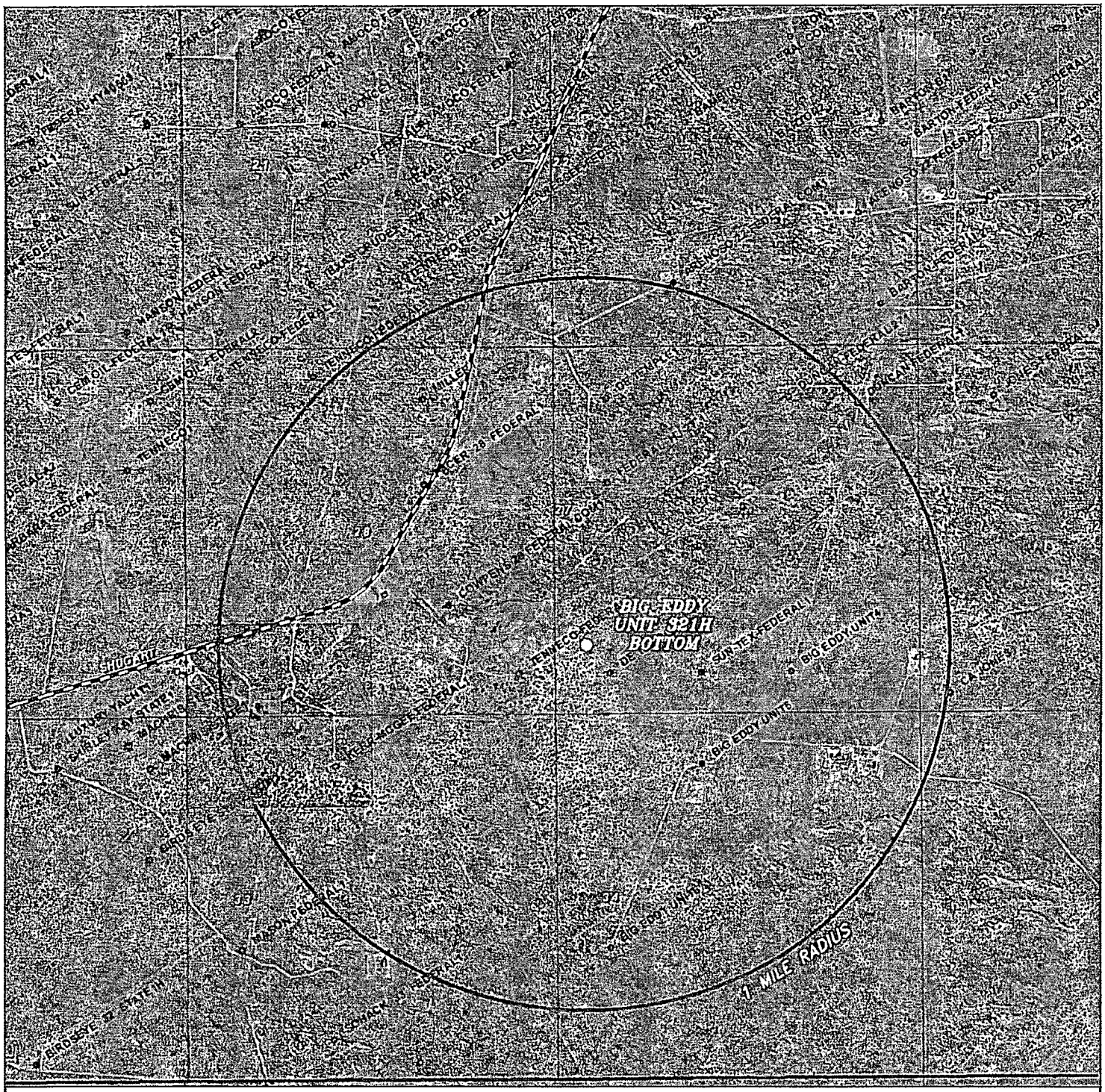
N

BOPCO, L.P.



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

N

BOPCO, L.P.

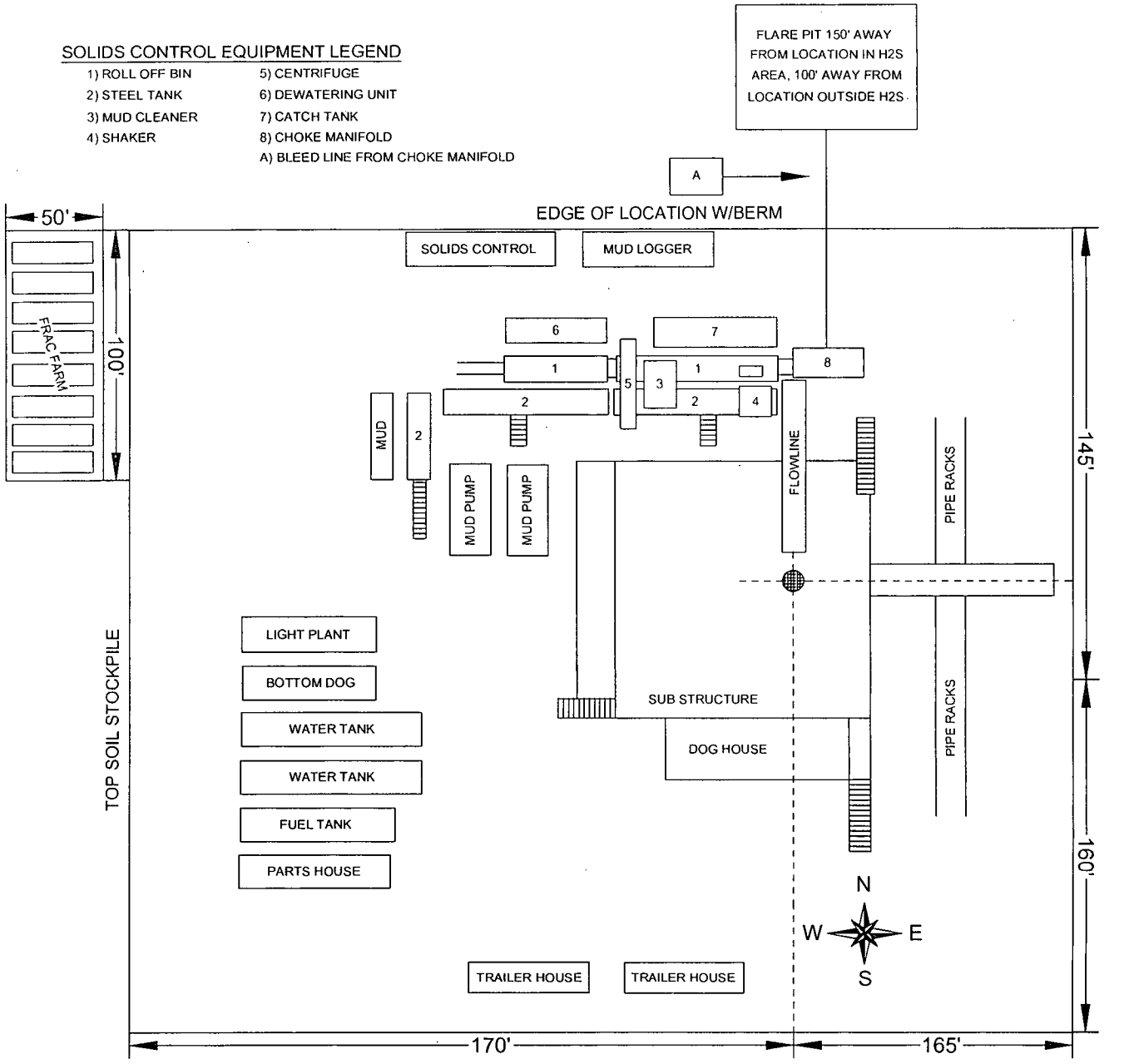
EXHIBIT "D"

RIG LAYOUT SCHEMATIC

INCLUSIVE OF CLOSED-LOOP DESIGN PLAN

SOLIDS CONTROL EQUIPMENT LEGEND

1) ROLL OFF BIN
2) STEEL TANK
3) MUD CLEANER
4) SHAKER
5) CENTRIFUGE
6) DEWATERING UNIT
7) CATCH TANK
8) CHOKE MANIFOLD
A) BLEED LINE FROM CHOKE MANIFOLD



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SCALE: NONE

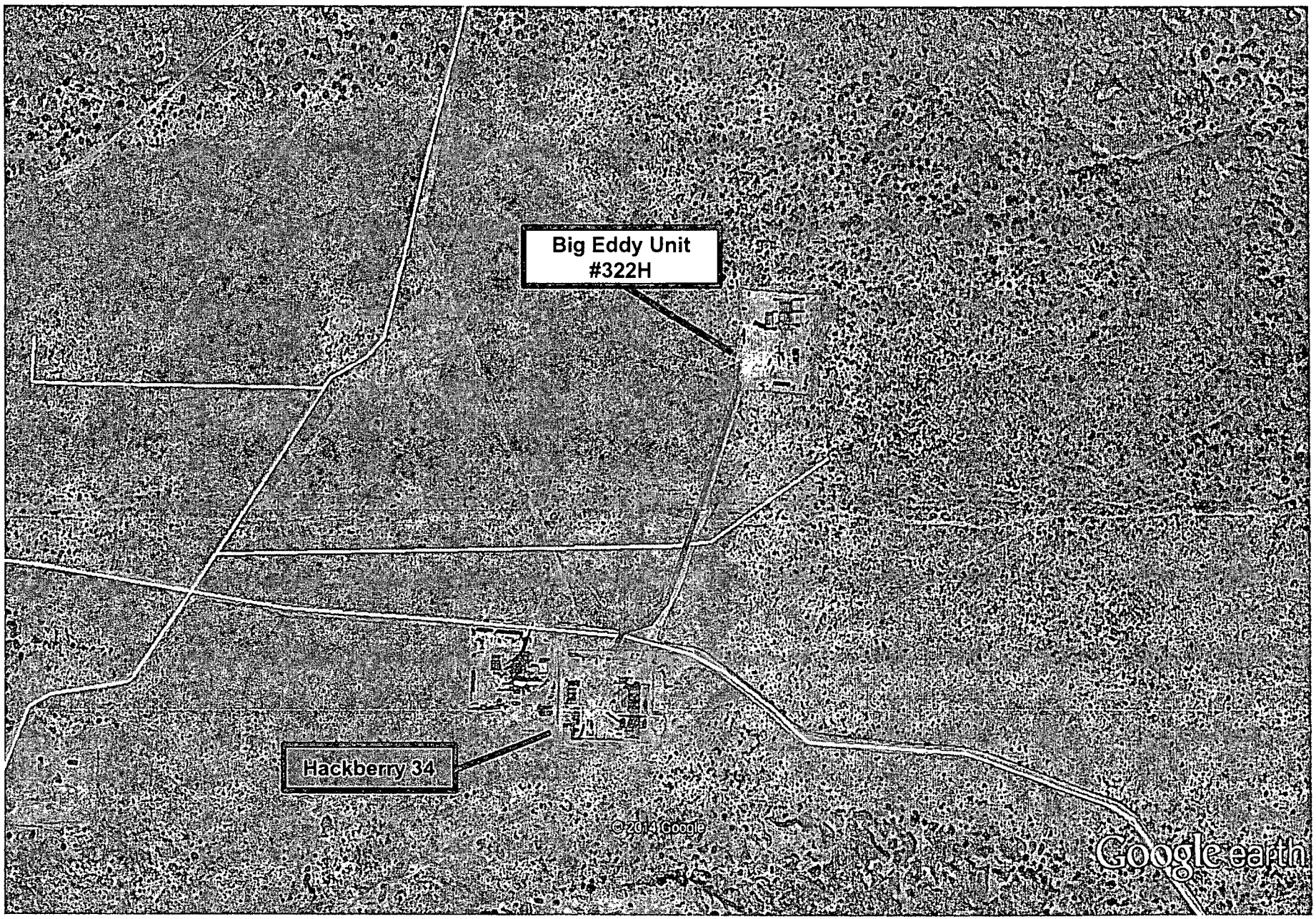
W.O. Number: JMS 30748

Survey Date: 08-01-2014

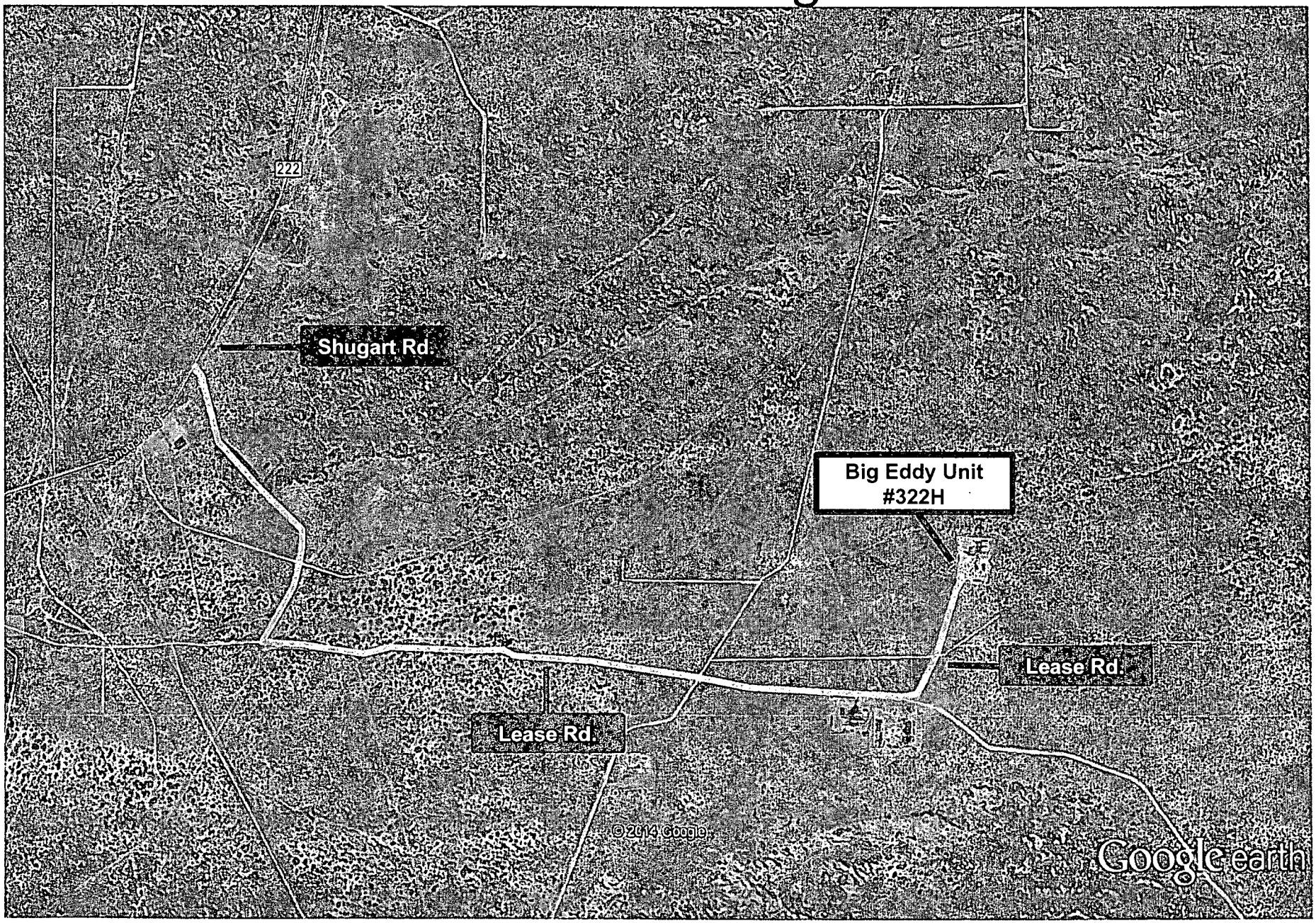
N

BOPCO, L.P.

Flowline Route Diagram 4



Access Road Diagram



BOPCO, L.P.; Big Eddy Unit #322H

1. Geologic Formations

TVD of target	8382	Pilot hole depth	NA
MD at TD:	12869	Deepest expected fresh water:	135

The Surface hole location is nonstandard, and inside the Big Eddy Unit.

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Fill	Surface	Water	
Rustler	879	Water	
Top of Salado	1306	Salt	
Base of Salt	2294	Salt	
Top of Yates	2474	Oil/Gas	
Top Capitan Reef	2744	Water	Loss of circulation
Top Lamar	4289	Oil/Gas	
Top Cherry Canyon	4884	Oil/Gas	
Top Brushy Canyon	5364	Oil/Gas	
Top Bone Spring Lime	7011	Oil/Gas	
Top 1st Bone Spring Sand	8314	Target Zone	
Top Bone Spring Carbonate	8637	Oil/Gas	

*H2S, water flows, loss of circulation, abnormal pressures, etc.

2. Casing Program

Hole Size	Casing Interval From	Casing Interval To	Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
18.125"	0	905	16"	84	J55	BTC	3.20	1.93	20.29
14.75"	0	2694	13.375"	68	HCL80 Ultra Flush Joint	STC	1.96	3.34	10.06
12.25"	0	4309	9.625"	40	J55	LTC	1.14	1.64	4.24
8.75"	0	8673	7"	26	HCP110	LTC	1.79	2.18	3.79
8.75"	8673	12869	4.5"	11.6	HCP110	LTC	1.83	2.28	3.33
				BLM Minimum Safety Factor			1.125	1	1.6 Dry 1.8 Wet

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

Must have table for contingency casing

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

3. Cementing Program

Casing	#Sks	Wt. lb/ gal	Yld ft3/ sack	H_20 gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	280	13.5	1.75	8.69	14	Lead: Class C +2% CACL + 4% Bentonite + 0.25 LB/SK Cello Flake + 3 lb/sk LCM-1
	220	14.8	1.35	6.35	8	Tail: Class C + 2% CACL + 0.25 LB/Sk CF + 3 LB/Sk LCM-1
Inter.	440	12.9	1.85	9.32	14	Lead: EconoCEM HLC + 5% CaCl + 5#/sk Gilsonite
	220	14.8	1.33	6.34	6	Tail: Class C neat
2nd Inter.	450	13.5	1.75	8.69	14	1st primary: HalCem C 4% bentonite + 0.6% Halad(R)-9 **DV Tool and ECP @ 2744'**

2nd Inter.	560 180	12.9 14.8	1.85 1.33	9.83 6.34	14 6	2nd Lead: EconoCem HLC + NaCL 2nd Tail: Class C neat
Prod.	840	11	2.64	14.87	11	1st Lead: Tuned Light + 0.125 pps Poly – E- Flake
	390	12	2.03	11.41	14	1st Tail: Class H + 0.5% Halad-344 + 0.25% CFR-3 + 0.5% Econolite
	DV Tool 5000'					
	280	11	2.35	11.7	11	2nd stage Primary: Tuned Light + 0.125 pps Poly – E-Flake

DV tool depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe.

Casing String	TOC	%Excess
Surface	0'	100%
Intermediate	0'	30%
2nd Intermediate	0'	50%
Production	~~2694'~~ see COA	50%

4. Pressure Control Equipment

X	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.

BOP installed and tested before drilling which hole?	Size?	System Rated WP	Type	✓	Tested to:
14-3/4"	13-5/8"	3M	Annular	x	50% of working pressure
			Blind Ram	x	3000
			Pipe Ram	x	
			Double Ram		
			Other*		
12-1/4"	13-5/8"	3M	Annular	x	50% of working pressure
			Blind Ram	x	3000
			Pipe Ram	x	
			Double Ram		
			Other*		
8-3/4"	13-5/8"	3M	Annular	x	50% of working pressure
			Blind Ram	x	3000
			Pipe Ram	x	
			Double Ram		
			Other*		

*Specify if additional ram is utilized.

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

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

	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
X	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
	N — Are anchors required by manufacturer?
	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. See attached schematic.

see COA

see COA

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	Surf. shoe	FW Gel	8 -9.2	38-70	N/C
Surf csg	Int shoe	Saturated Brine	9.8-10.2	28-30	N/C
Int. shoe	2nd Int Shoe	FW/Gel	8.7-9.2	28-36	N/C
2nd Int shoe	Prod. Shoe	Cut Brine	8.7-9.2	28-36	N/C

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

What will be used to monitor the loss or gain of fluid?	Pason/Visual Monitoring

6. Logging and Testing Procedures

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

Additional logs planned		Interval
	Resistivity	Int. shoe to KOP
	Density	Int. shoe to KOP
	CBL	Production casing
	Mud log	Intermediate shoe to TD
	PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	4036 psi
Abnormal Temperature	No

Mitigation measure for abnormal conditions. Describe. Standard LCM will be on location to use when needed.

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

8. Other facets of operation

Is this a walking operation? Yes

see COA

BOPCO, L.P. plans to drill this well in conjunction with the BEU 321H utilizing rig skidding operations. BOPCO, L.P. requests a variance to the approved APD for Item #2 under VII. Drilling, Section A. Drilling Operations Requirements, which states the rig shall not be moved off of the hole until production casing is set. The request is to allow the rig to skid in between wellbores and drill both wells sequentially.

The rig will be used to drill the same hole interval on all of the wells in sequence by skidding between the wells. Once a hole section has been drilled, it will be cased and cemented according to all applicable rules and regulations. The wellhead will be nippled up and tested as soon as casing is cut off after the applicable WOC time has been reached. A blind flange of the same pressure rating as the wellhead will be utilized to seal the wellbore on all casing strings except the second intermediate and lateral well sections in which the tubing head will be utilized. Pressure will be monitored via wing valves on each wellhead section and a means for intervention will be maintained while rig is not over the well. The BOP stack will be nippled up and tested on the wellhead before drilling operations resume on each casing string. The rig will skid between the wells until each well has been drilled to TD.

Will be pre-setting casing? No

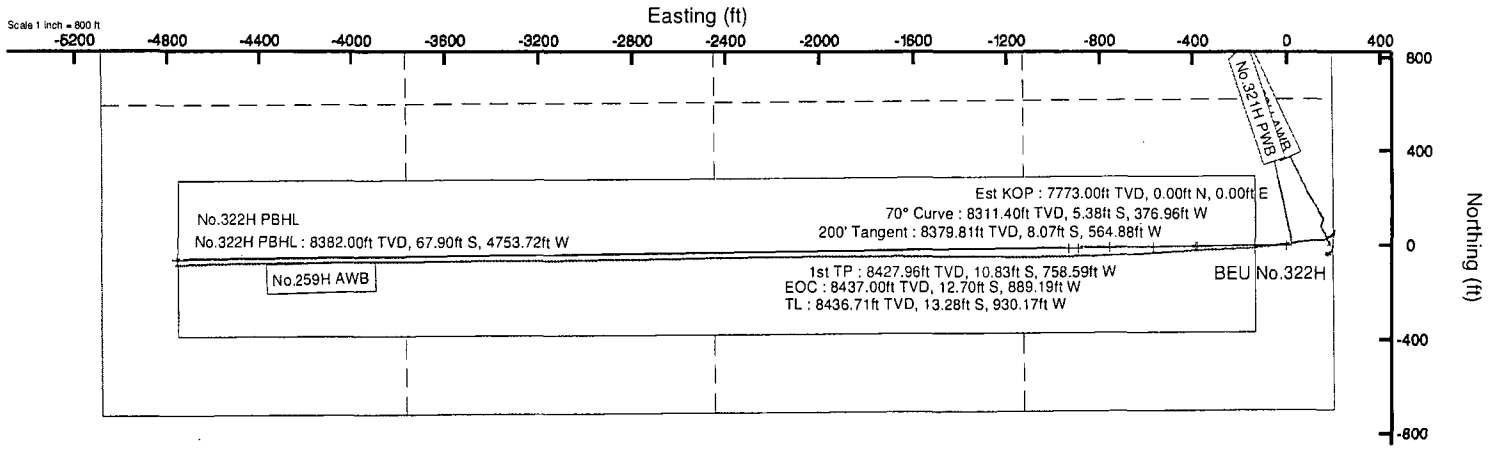
Attachments
_X_ Directional Plan
___ Other, describe

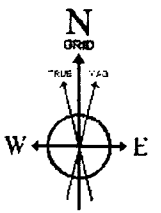
WTD - West Texas Division

Location: Eddy County, NM
Field: Big Eddy Unit
Facility: Drilling Island 2

Slot: BEU No.322H
Well: No.322H
Wellbore: No.322H PWB

BOPCO, L.P.



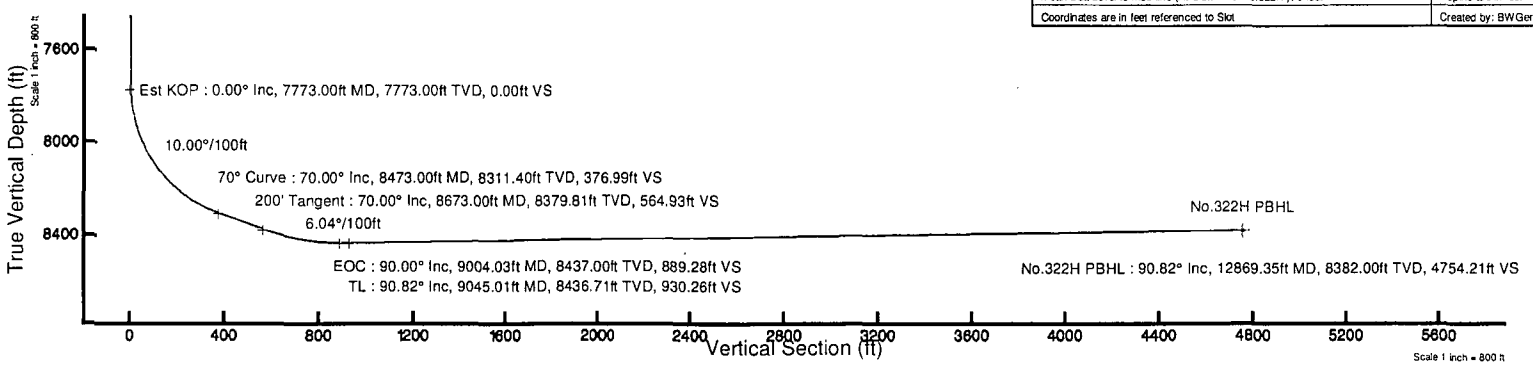


IGRF-11 (1900.0 thru 2014.0) Dip: 60.43° Field: 48496.7 nT
Magnetic North is 7.34 degrees East of True North (at 10/7/2014)
Grid North is 0.26 degrees East of True North
To correct azimuth from True to Grid subtract 0.26 degrees
To correct azimuth from Magnetic to Grid add 7.08 degrees

Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	26.00	0.000	269.182	26.00	0.00	0.00	0.00	0.00
Est KOP	7773.00	0.000	269.182	7773.00	0.00	0.00	0.00	0.00
70° Curve	8473.00	70.000	269.182	8311.40	-5.38	-376.96	10.00	376.99
200' Tangent	8673.00	70.000	269.182	8379.81	-8.07	-564.88	0.00	564.93
EOC	9004.03	90.000	269.182	8437.00	-12.70	-889.19	6.04	889.28
TL	9045.01	90.820	269.182	8436.71	-13.28	-930.17	2.00	930.26
No.322H PBHL	12869.35	90.820	269.182	8382.00	-67.90	-4753.72	0.00	4754.21

Plot reference wellpath is B-1	
True vertical depths are referenced to Rig on BEU No.322H (KB)	Grid System: NAD27 / TM New Mexico SP, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on BEU No.322H (KB)	North Reference: Grid north
Rig on BEU No.322H (KB) to Mean Sea Level: 3498 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: BEU No.322H): 0 feet	*Depths are in feet*
Coordinates are in feet referenced to Slot	Created by: BWGentry on 10/7/2014



Azimuth 269.18° with reference 0.00 N, 0.00 E

Planned Wellpath Report

B-1

BOPCO, L.P.

REFERENCE WELLPATH IDENTIFICATION			
Operator	**WTD - West Texas Division**	Slot	**BEU No.322H**
Area	**Eddy County, NM**	Well	**No.322H**
Field	**Big Eddy Unit**	Wellbore	**No.322H PWB**
Facility	**Drilling Island 2**		

REPORT SETUP INFORMATION			
Projection System	**NAD27 / TM New Mexico SP, Eastern Zone (3001), US feet**	Software System	**WellArchitect® 4.0.1**
North Reference	**Grid**	User	**BWGentry**
Scale	**0.999935**	Report Generated	**10/7/2014** at **3:43:07 PM**
Convergence at slot	**0.26° East**	Database/Source file	**WellArchitectDB/No.322H_PWB.xml**

WELLPATH LOCATION	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	**East[ft]**	**Easting[US ft]**	**Northing[US ft]**	**Latitude**	**Longitude**
Slot Location	-1.20	-185.14	**649231.10**	**591787.50**	32°37'33.570"N	103°50'55.014"W
Facility Reference Pt			**649416.23**	**591788.70**	32°37'33.574"N	103°50'52.849"W
Field Reference Pt			**640125.10**	**530502.80**	32°27'27.522"N	103°52'44.545"W

WELLPATH DATUM			
Calculation method	**Minimum curvature**	Rig on BEU No.322H (KB) to Facility Vertical Datum	**3498.00ft**
Horizontal Reference Pt	**Slot**	Rig on BEU No.322H (KB) to Mean Sea Level	**3498.00ft**
Vertical Reference Pt	**Rig on BEU No.322H (KB)**	Rig on BEU No.322H (KB) to Mud Line at Slot (BEU No.322H)	**3498.00ft**
MD Reference Pt	**Rig on BEU No.322H (KB)**	Section Origin	**N 0.00, E 0.00 ft**
Field Vertical Reference	**Mean Sea Level**	Section Azimuth	**269.18°**

Planned Wellpath Report

B-1

BOPCO, L.P.

REFERENCE WELLPATH IDENTIFICATION			
Operator	WTD - West Texas Division	Slot	BEU No.322H
Area	Eddy County, NM	Well	No.322H
Field	Big Eddy Unit	Wellbore	No.322H PWB
Facility	Drilling Island 2		

WELLPATH DATA (147 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	269.182	0.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
26.00	0.000	269.182	26.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	Tie On
126.00†	0.000	269.182	126.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
226.00†	0.000	269.182	226.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
326.00†	0.000	269.182	326.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
426.00†	0.000	269.182	426.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
526.00†	0.000	269.182	526.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
626.00†	0.000	269.182	626.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
726.00†	0.000	269.182	726.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
826.00†	0.000	269.182	826.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
879.00†	0.000	269.182	879.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	Rustler
926.00†	0.000	269.182	926.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
1026.00†	0.000	269.182	1026.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
1126.00†	0.000	269.182	1126.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
1226.00†	0.000	269.182	1226.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
1306.00†	0.000	269.182	1306.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	Top of Salado
1326.00†	0.000	269.182	1326.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
1426.00†	0.000	269.182	1426.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
1526.00†	0.000	269.182	1526.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
1626.00†	0.000	269.182	1626.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
1726.00†	0.000	269.182	1726.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
1826.00†	0.000	269.182	1826.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
1926.00†	0.000	269.182	1926.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
2026.00†	0.000	269.182	2026.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
2126.00†	0.000	269.182	2126.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
2226.00†	0.000	269.182	2226.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
2294.00†	0.000	269.182	2294.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	Base of Salt
2326.00†	0.000	269.182	2326.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
2426.00†	0.000	269.182	2426.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
2474.00†	0.000	269.182	2474.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	Top of Yates
2526.00†	0.000	269.182	2526.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
2626.00†	0.000	269.182	2626.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
2726.00†	0.000	269.182	2726.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
2744.00†	0.000	269.182	2744.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	Top Capitan Reef
2826.00†	0.000	269.182	2826.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
2926.00†	0.000	269.182	2926.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
3026.00†	0.000	269.182	3026.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
3126.00†	0.000	269.182	3126.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
3226.00†	0.000	269.182	3226.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
3326.00†	0.000	269.182	3326.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
3426.00†	0.000	269.182	3426.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
3526.00†	0.000	269.182	3526.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
3626.00†	0.000	269.182	3626.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
3726.00†	0.000	269.182	3726.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
3826.00†	0.000	269.182	3826.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	

Planned Wellpath Report

B-1

BOPCO, L.P.

REFERENCE WELLPATH IDENTIFICATION			
Operator	WTD - West Texas Division	Slot	BEU No.322H
Area	Eddy County, NM	Well	No.322H
Field	Big Eddy Unit	Wellbore	No.322H PWB
Facility	Drilling Island 2		

WELLPATH DATA (147 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
3926.00†	0.000	269.182	3926.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
4026.00†	0.000	269.182	4026.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
4126.00†	0.000	269.182	4126.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
4226.00†	0.000	269.182	4226.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
4289.00†	0.000	269.182	4289.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	Top Lamar
4326.00†	0.000	269.182	4326.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
4426.00†	0.000	269.182	4426.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
4526.00†	0.000	269.182	4526.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
4626.00†	0.000	269.182	4626.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
4726.00†	0.000	269.182	4726.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
4826.00†	0.000	269.182	4826.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
4884.00†	0.000	269.182	4884.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	Top Cherry Canyon
4926.00†	0.000	269.182	4926.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
5026.00†	0.000	269.182	5026.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
5126.00†	0.000	269.182	5126.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
5226.00†	0.000	269.182	5226.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
5326.00†	0.000	269.182	5326.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
5364.00†	0.000	269.182	5364.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	Top Brushy Canyon
5426.00†	0.000	269.182	5426.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
5526.00†	0.000	269.182	5526.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
5626.00†	0.000	269.182	5626.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
5726.00†	0.000	269.182	5726.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
5826.00†	0.000	269.182	5826.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
5926.00†	0.000	269.182	5926.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
6026.00†	0.000	269.182	6026.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
6126.00†	0.000	269.182	6126.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
6226.00†	0.000	269.182	6226.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
6326.00†	0.000	269.182	6326.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
6426.00†	0.000	269.182	6426.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
6526.00†	0.000	269.182	6526.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
6626.00†	0.000	269.182	6626.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
6726.00†	0.000	269.182	6726.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
6826.00†	0.000	269.182	6826.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
6926.00†	0.000	269.182	6926.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
7011.00†	0.000	269.182	7011.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	Top Bone Spring Lime
7026.00†	0.000	269.182	7026.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
7126.00†	0.000	269.182	7126.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
7226.00†	0.000	269.182	7226.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
7326.00†	0.000	269.182	7326.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
7426.00†	0.000	269.182	7426.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
7526.00†	0.000	269.182	7526.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
7626.00†	0.000	269.182	7626.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
7726.00†	0.000	269.182	7726.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	
7773.00	0.000	269.182	7773.00	0.00	0.00	0.00	649231.10	591787.50	32°37'33.570"N	103°50'55.014"W	0.00	Est KOP
7826.00†	5.300	269.182	7825.92	-2.45	-0.03	-2.45	649228.65	591787.47	32°37'33.570"N	103°50'55.042"W	10.00	

Planned Wellpath Report

B-1

BOPCO, L.P.

REFERENCE WELLPATH IDENTIFICATION			
Operator	WTD - West Texas Division	Slot	BEU No.322H
Area	Eddy County, NM	Well	No.322H
Field	Big Eddy Unit	Wellbore	No.322H PWB
Facility	Drilling Island 2		

WELLPATH DATA (147 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
7926.00†	15.300	269.182	7924.19	20.31	-0.29	-20.31	649210.80	591787.21	32°37'33.568"N	103°50'55.251"W	10.00	
8026.00†	25.300	269.182	8017.86	54.96	-0.78	-54.95	649176.15	591786.72	32°37'33.565"N	103°50'55.656"W	10.00	
8126.00†	35.300	269.182	8104.09	105.35	-1.50	-105.33	649125.77	591786.00	32°37'33.560"N	103°50'56.245"W	10.00	
8226.00†	45.300	269.182	8180.26	169.94	-2.43	-169.92	649061.19	591785.07	32°37'33.554"N	103°50'57.000"W	10.00	
8326.00†	55.300	269.182	8244.05	246.78	-3.52	-246.76	648984.36	591783.98	32°37'33.546"N	103°50'57.899"W	10.00	
8426.00†	65.300	269.182	8293.54	333.54	-4.76	-333.50	648897.62	591782.74	32°37'33.538"N	103°50'58.913"W	10.00	
8473.00	70.000	269.182	8311.40	376.99	-5.38	-376.96	648854.17	591782.12	32°37'33.534"N	103°50'59.421"W	10.00	70° Curve
8480.59†	70.000	269.182	8314.00	384.13	-5.48	-384.09	648847.04	591782.02	32°37'33.533"N	103°50'59.505"W	0.00	Top 1st Bone Spring San
8526.00†	70.000	269.182	8329.53	426.80	-6.09	-426.75	648804.37	591781.41	32°37'33.529"N	103°51'00.004"W	0.00	
8626.00†	70.000	269.182	8363.73	520.77	-7.43	-520.71	648710.42	591780.07	32°37'33.520"N	103°51'01.102"W	0.00	
8673.00	70.000	269.182	8379.81	564.93	-8.07	-564.88	648666.26	591779.44	32°37'33.516"N	103°51'01.619"W	0.00	200' Tangent
8726.00†	73.202	269.182	8396.53	615.22	-8.78	-615.15	648615.99	591778.72	32°37'33.511"N	103°51'02.206"W	6.04	
8826.00†	79.244	269.182	8420.34	712.30	-10.17	-712.22	648518.93	591777.33	32°37'33.502"N	103°51'03.341"W	6.04	
8873.00†	82.083	269.182	8427.96	758.67	-10.83	-758.59	648472.56	591776.67	32°37'33.497"N	103°51'03.884"W	6.04	1st TP
8926.00†	85.286	269.182	8433.79	811.34	-11.58	-811.26	648419.90	591775.92	32°37'33.492"N	103°51'04.499"W	6.04	
9004.03	90.000	269.182	8437.00	889.28	-12.70	-889.19	648341.97	591774.81	32°37'33.484"N	103°51'05.411"W	6.04	EOC
9026.00†	90.439	269.182	8436.92	911.25	-13.01	-911.16	648320.00	591774.49	32°37'33.482"N	103°51'05.668"W	2.00	
9045.01	90.820	269.182	8436.71	930.26	-13.28	-930.17	648300.99	591774.22	32°37'33.480"N	103°51'05.890"W	2.00	TL
9126.00†	90.820	269.182	8435.55	1011.24	-14.44	-1011.14	648220.03	591773.06	32°37'33.473"N	103°51'06.837"W	0.00	
9226.00†	90.820	269.182	8434.12	1111.23	-15.87	-1111.12	648120.06	591771.64	32°37'33.463"N	103°51'08.006"W	0.00	
9326.00†	90.820	269.182	8432.69	1211.22	-17.29	-1211.10	648020.08	591770.21	32°37'33.453"N	103°51'09.175"W	0.00	
9426.00†	90.820	269.182	8431.26	1311.21	-18.72	-1311.08	647920.11	591768.78	32°37'33.444"N	103°51'10.344"W	0.00	
9526.00†	90.820	269.182	8429.83	1411.20	-20.15	-1411.06	647820.14	591767.35	32°37'33.434"N	103°51'11.513"W	0.00	
9626.00†	90.820	269.182	8428.40	1511.19	-21.58	-1511.04	647720.17	591765.92	32°37'33.424"N	103°51'12.682"W	0.00	
9726.00†	90.820	269.182	8426.97	1611.18	-23.01	-1611.02	647620.19	591764.49	32°37'33.415"N	103°51'13.851"W	0.00	
9826.00†	90.820	269.182	8425.53	1711.17	-24.44	-1711.00	647520.22	591763.07	32°37'33.405"N	103°51'15.020"W	0.00	
9926.00†	90.820	269.182	8424.10	1811.16	-25.86	-1810.98	647420.25	591761.64	32°37'33.395"N	103°51'16.189"W	0.00	
10026.00†	90.820	269.182	8422.67	1911.15	-27.29	-1910.95	647320.27	591760.21	32°37'33.386"N	103°51'17.358"W	0.00	
10126.00†	90.820	269.182	8421.24	2011.14	-28.72	-2010.93	647220.30	591758.78	32°37'33.376"N	103°51'18.527"W	0.00	
10226.00†	90.820	269.182	8419.81	2111.13	-30.15	-2110.91	647120.33	591757.35	32°37'33.366"N	103°51'19.696"W	0.00	
10326.00†	90.820	269.182	8418.38	2211.12	-31.58	-2210.89	647020.36	591755.92	32°37'33.357"N	103°51'20.865"W	0.00	
10426.00†	90.820	269.182	8416.95	2311.11	-33.01	-2310.87	646920.38	591754.50	32°37'33.347"N	103°51'22.034"W	0.00	
10526.00†	90.820	269.182	8415.52	2411.10	-34.43	-2410.85	646820.41	591753.07	32°37'33.337"N	103°51'23.203"W	0.00	
10626.00†	90.820	269.182	8414.09	2511.09	-35.86	-2510.83	646720.44	591751.64	32°37'33.328"N	103°51'24.372"W	0.00	
10726.00†	90.820	269.182	8412.66	2611.08	-37.29	-2610.81	646620.46	591750.21	32°37'33.318"N	103°51'25.541"W	0.00	
10826.00†	90.820	269.182	8411.23	2711.07	-38.72	-2710.79	646520.49	591748.78	32°37'33.308"N	103°51'26.710"W	0.00	
10926.00†	90.820	269.182	8409.80	2811.06	-40.15	-2810.77	646420.52	591747.36	32°37'33.298"N	103°51'27.879"W	0.00	
11026.00†	90.820	269.182	8408.37	2911.05	-41.58	-2910.75	646320.55	591745.93	32°37'33.289"N	103°51'29.048"W	0.00	
11126.00†	90.820	269.182	8406.94	3011.04	-43.00	-3010.73	646220.57	591744.50	32°37'33.279"N	103°51'30.217"W	0.00	
11226.00†	90.820	269.182	8405.51	3111.03	-44.43	-3110.71	646120.60	591743.07	32°37'33.269"N	103°51'31.386"W	0.00	
11326.00†	90.820	269.182	8404.08	3211.02	-45.86	-3210.69	646020.63	591741.64	32°37'33.260"N	103°51'32.555"W	0.00	
11426.00†	90.820	269.182	8402.65	3311.01	-47.29	-3310.67	645920.65	591740.21	32°37'33.250"N	103°51'33.725"W	0.00	
11526.00†	90.820	269.182	8401.22	3411.00	-48.72	-3410.65	645820.68	591738.79	32°37'33.240"N	103°51'34.894"W	0.00	
11626.00†	90.820	269.182	8399.79	3510.99	-50.15	-3510.63	645720.71	591737.36	32°37'33.230"N	103°51'36.063"W	0.00	
11726.00†	90.820	269.182	8398.36	3610.98	-51.57	-3610.61	645620.74	591735.93	32°37'33.221"N	103°51'37.232"W	0.00	

Planned Wellpath Report

B-1

BOPCO, L.P.

REFERENCE WELLPATH IDENTIFICATION			
Operator	WTD - West Texas Division	Slot	BEU No.322H
Area	Eddy County, NM	Well	No.322H
Field	Big Eddy Unit	Wellbore	No.322H PWB
Facility	Drilling Island 2		

WELLPATH DATA (147 stations) † = interpolated/extrapolated station

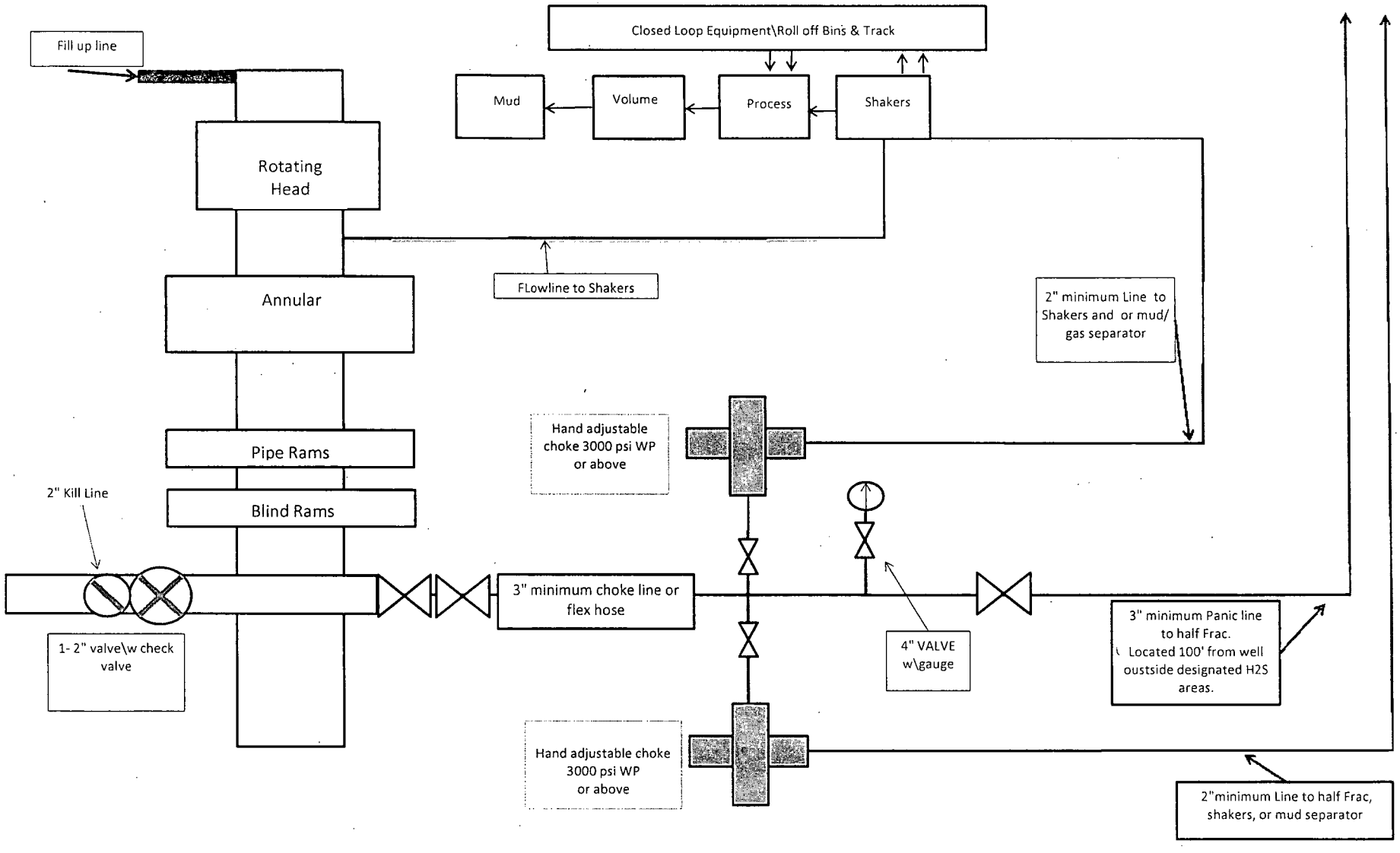
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11826.00†	90.820	269.182	8396.93	3710.97	-53.00	-3710.59	645520.76	591734.50	32°37'33.211"N	103°51'38.401"W	0.00	
11926.00†	90.820	269.182	8395.49	3810.96	-54.43	-3810.57	645420.79	591733.07	32°37'33.201"N	103°51'39.570"W	0.00	
12026.00†	90.820	269.182	8394.06	3910.95	-55.86	-3910.55	645320.82	591731.64	32°37'33.192"N	103°51'40.739"W	0.00	
12126.00†	90.820	269.182	8392.63	4010.93	-57.29	-4010.53	645220.84	591730.22	32°37'33.182"N	103°51'41.908"W	0.00	
12226.00†	90.820	269.182	8391.20	4110.92	-58.72	-4110.51	645120.87	591728.79	32°37'33.172"N	103°51'43.077"W	0.00	
12326.00†	90.820	269.182	8389.77	4210.91	-60.14	-4210.48	645020.90	591727.36	32°37'33.162"N	103°51'44.246"W	0.00	
12426.00†	90.820	269.182	8388.34	4310.90	-61.57	-4310.46	644920.93	591725.93	32°37'33.153"N	103°51'45.415"W	0.00	
12526.00†	90.820	269.182	8386.91	4410.89	-63.00	-4410.44	644820.95	591724.50	32°37'33.143"N	103°51'46.584"W	0.00	
12626.00†	90.820	269.182	8385.48	4510.88	-64.43	-4510.42	644720.98	591723.08	32°37'33.133"N	103°51'47.753"W	0.00	
12726.00†	90.820	269.182	8384.05	4610.87	-65.86	-4610.40	644621.01	591721.65	32°37'33.123"N	103°51'48.922"W	0.00	
12826.00†	90.820	269.182	8382.62	4710.86	-67.29	-4710.38	644521.03	591720.22	32°37'33.114"N	103°51'50.091"W	0.00	
12869.35	90.820	269.182	8382.00	4754.21	-67.90	-4753.72	644477.70	591719.60	32°37'33.109"N	103°51'50.598"W	0.00	No.322H PBHL

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
1) No.322H PBHL	12869.35	8382.00	-67.90	-4753.72	644477.70	591719.60	32°37'33.109"N	103°51'50.598"W	point

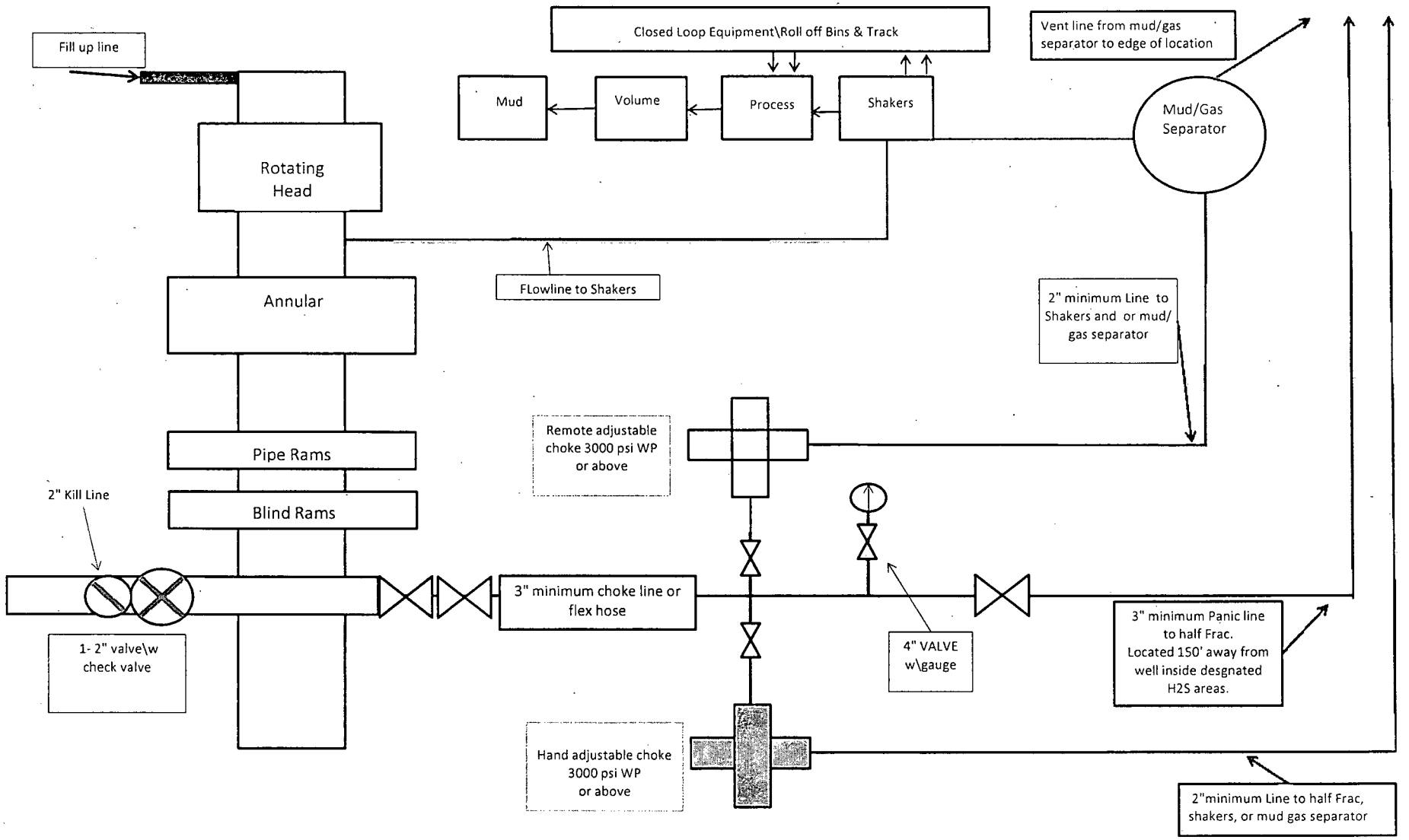
SURVEY PROGRAM - Ref.Wellbore: No.322H PWB - Ref Wellpath: B-1

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
26.00	500.00	Generic gyro - northseeking (Standard)		No.322H PWB
500.00	12869.35	NaviTrak (Standard)		No.322H PWB



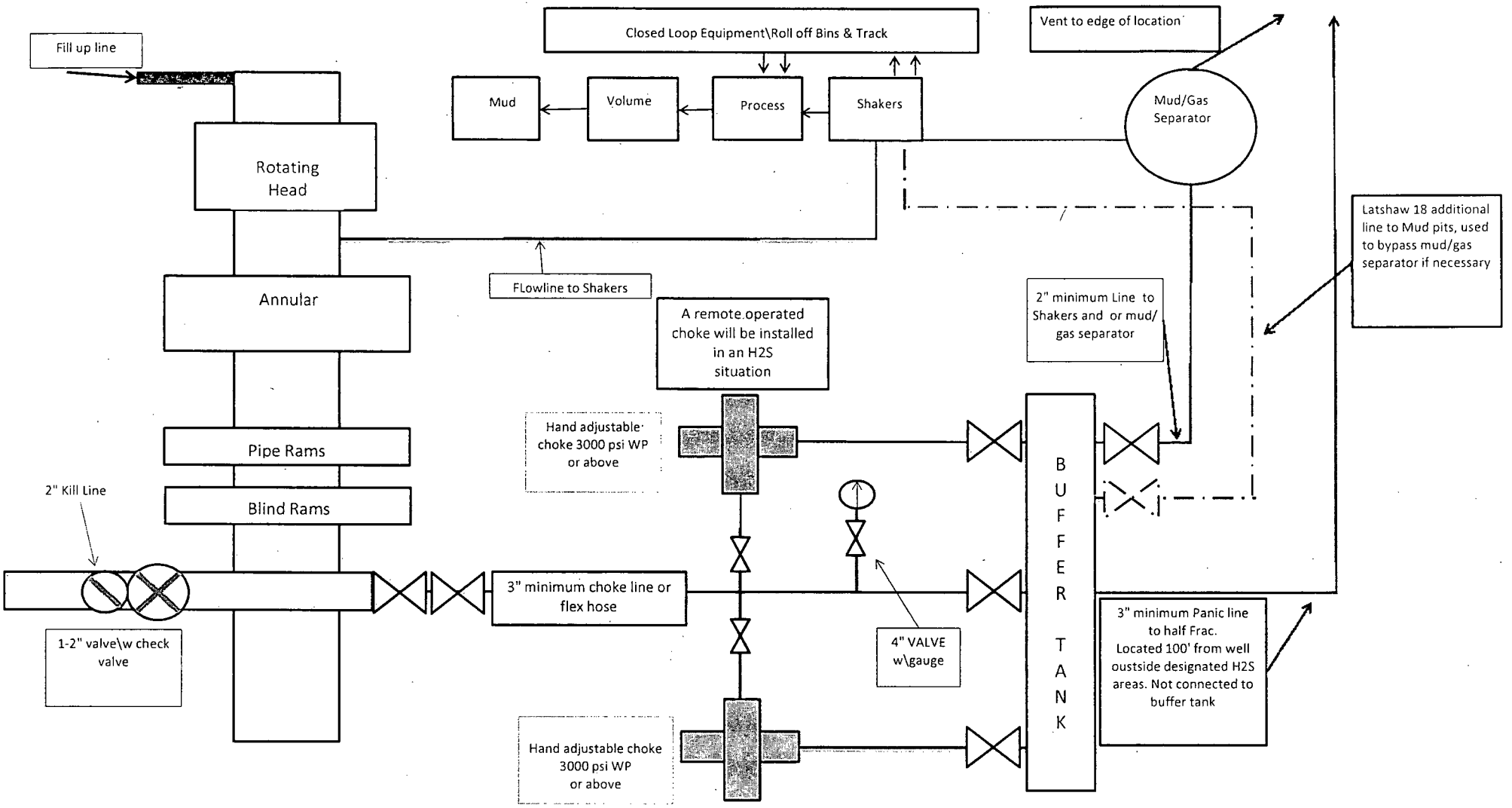
13-5/8" X 3-M BOPE (2 Rams and Rotating Head) & Closed Loop System Equipment Schematic
Diagram A

Note: all valves & lines on choke manifold are 3" unless otherwise noted. Exact manifold configuration may vary.



13-5/8" X 3-M BOPE (2 Rams and Rotating Head) & Closed Loop System Equipment Schematic
H2S contingency
Diagram B

Note: all valves & lines on choke manifold are 3" unless otherwise noted. Exact manifold configuration may vary.

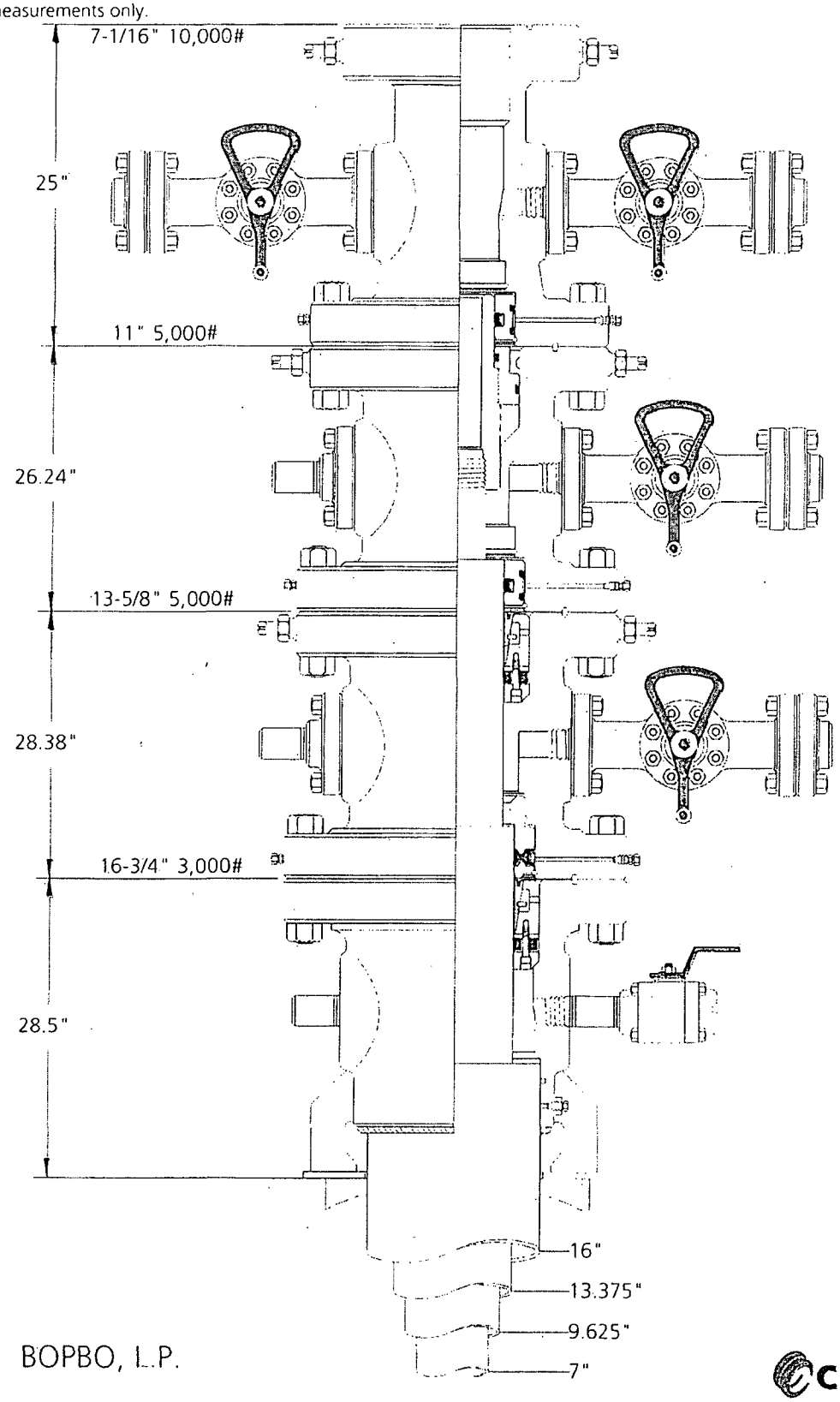


Latshaw 4 closed loop system, with Latshaw 18 addition "clouded."

Latshaw 13-5/8" X 3-M BOPE (2 Rams and Rotating Head) & Closed Loop System Equipment Schematic Diagram C

Note: all valves & lines on choke manifold are 3" unless otherwise noted. Exact manifold configuration may vary.

Note: Dimensional information reflected on this drawing are estimated measurements only.



BOPBO, L.P.

CAMERON

Casing Design: 16" x 13.375" x 9.625" x 7"	Jeanette	3-26-13	# J-8968

Midwest Hose & Specialty, Inc.

Internal Hydrostatic Test Graph

April 4, 2012

Customer: Latshaw

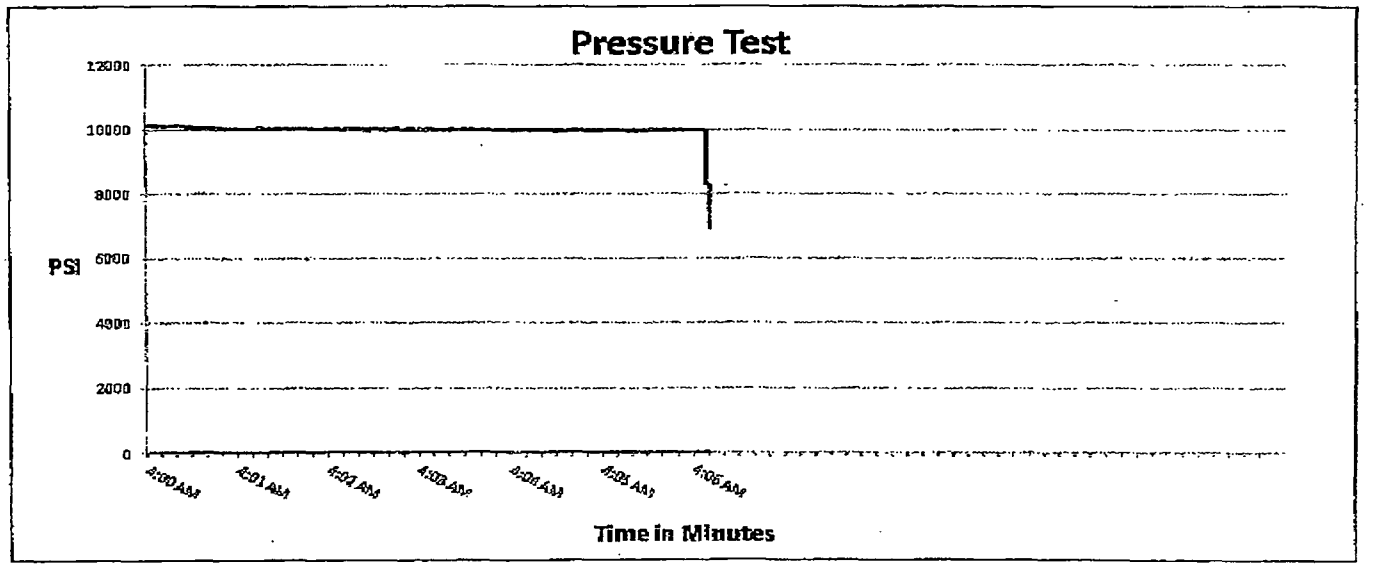
Pick Ticket #: 81610

Hose Specifications

Hose Type	Length
D	30'
I.D.	O.D.
3"	4 15/32
Working Pressure	Burst Pressure
5000 PSI	Standard Safety Multiplier Applies

Verification

Type of Fitting	Coupling Method
41/16 5K	Swage
Die Size	Final O.D.
5.12"	5.16"
Hose Serial #	Hose Assembly Serial #
6884	81610



Test Pressure	Time Held at Test Pressure	Actual Burst Pressure	Peak Pressure
10000 PSI	6 1/4 Minutes		10195 PSI

Comments: Hose assembly pressure tested with water at ambient temperature.

Tested By: *Donnie Mclemore*

Approved By: *Bobby Fink*

MIDWEST

HOSE AND SPECIALTY INC.

INTERNAL HYDROSTATIC TEST REPORT

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

HOSE SPECIFICATIONS

Type: CHOKE LINE		Length: 30'	
I.D. 3"	*INCHES*	O.D. 6"	*INCHES*

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

COUPLINGS

Type of End Fitting
4 1/16 5K FLANGE

Type of Coupling:	MANUFACTURED BY
SWEDGED	MIDWEST HOSE & SPECIALTY

PROCEDURE

Hose assembly pressure tested with water at ambient temperature.

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

COMMENTS:
SO#81610
Hose is covered with stainless steel armour cover and wraped with fire resistant vermiculite coated fiberglass insulation rated for 1500 degrees complete with lifting eyes

Date:	Tested By:	Approved:
3/2/2011	BOBBY FINK	MENDI JACKSON

TABLE OF CONTENTS

H_2S CONTINGENCY PLAN SECTION

Scope:

This contingency plan provides an organized plan of action for alerting and protecting the public within an area of exposure prior to an intentional release, or following the accidental release of a potentially hazardous volume of hydrogen sulfide. The plan establishes guidelines for all personnel whose work activity may involve exposure to Hydrogen Sulfide Gas (H_2S).

Objective:

Prevent any and all accidents, and prevent the uncontrolled release of H_2S into the atmosphere.

Provide proper evacuation procedures to cope with emergencies.

Provide immediate and adequate medical attention should an injury occur.

Discussion of Plan:

Suspected Problem Zones:

Implementation: This plan, with all details, is to be fully implemented 500' above or three days prior to drilling into the first known sour zone

Emergency Response and Public Protection Procedure: This section outlines the conditions and denotes steps to be taken in the event of an emergency.

Emergency Equipment and Procedure: This section outlines the safety and emergency equipment that will be required for the drilling of this well.

Training Provisions: This section outlines the training provisions that must be adhered to 500 feet above or three days prior to drilling into the first known sour zone.

Emergency call lists: Included are the telephone numbers of all persons that would need to be contacted should an H_2S emergency occur.

Briefing: This section deals with the briefing of all persons involved with the drilling of this well.

Public Safety: Public Safety Personnel will be made aware of the drilling of this well.

EMERGENCY PROCEDURES AND PUBLIC PROTECTION SECTION

I. In the event of any evidence of H_2S levels above 10 ppm, take the following steps immediately:

A. Secure breathing apparatus.

B. Order non-essential personnel out of the danger zone.

C. Take steps to determine if the H_2S level can be corrected or suppressed, and if so, proceed with normal operations.

II. If uncontrollable conditions occur, proceed with the following:

A. Take steps to protect and/or remove any public downwind of the rig, including partial evacuation or isolation. Notify necessary public safety personnel and the New Mexico Oil & Gas of the situation.

B. Isolate area and prevent entry by unauthorized persons into the 100 ppm ROE.

C. Remove all personnel to the Safe Briefing Area.

D. Notify public safety personnel for help with maintaining roadblocks and implementing evacuation. Phone number list attached.

E. Determine and proceed with the best possible plan to regain control of the well. Maintain tight security and safety measures.

III. Responsibility:

A. The Company Approved Supervisor shall be responsible for the total implementation of the plan.

B. The Company Approved Supervisor shall be in complete command during any emergency.

C. The Company Approved Supervisor shall designate a back up Supervisor in the event that he/she is not available.

EMERGENCY PROCEDURE IMPLEMENTATION

I. Drilling or Tripping

A. All Personnel

1. When alarm sounds, don escape unit and report to upwind Safe Briefing Area.
2. Check status of other personnel (buddy system).
3. Secure breathing apparatus.
4. Wait for orders from supervisor.

B. Drilling Foreman

1. Report to the upwind Safe Briefing Area.
2. Don Breathing Apparatus and return to the point of release with the Tool Pusher or Driller (buddy system).
3. Determine the concentration of H_2S.
4. Assess the situation and take appropriate control measures.

C. Tool Pusher

1. Report to the upwind Safe Briefing Area.
2. Don breathing apparatus and return to the point of release with the Drilling Foreman or the Driller (buddy system).
3. Determine the concentration.
4. Assess the situation and take appropriate control measures.

D. Driller

1. Check the status of other personnel (in a rescue attempt, always use the buddy system).
2. Assign the least essential person to notify the Drilling Foreman and Tool Pusher, in the event of their absence.

3. Assume the responsibility of the Drilling Foreman and the Tool Pusher until they arrive, in the event of their absence.

E. Derrick Man and Floor Hands

1. Remain in the upwind Safe Briefing Area until otherwise instructed by a supervisor.

F. Mud Engineer

1. Report to the upwind Safe Briefing Area.

2. When instructed, begin check of mud for pH level and H_2S level.

G. On-site Safety Personnel

1. Don Breathing Apparatus.

2. Check status of all personnel.

3. Wait for instructions from Drilling Foreman or Tool Pusher.

II. Taking a Kick

A. All personnel report to the upwind Safe Briefing Area.

B. Follow standard BOP procedures.

III. Open Hole Logging

A. All unnecessary personnel should leave the rig floor.

B. Drilling Foreman and Safety Personnel should monitor the conditions and make necessary safety equipment recommendations.

IV. Running Casing or Plugging

A. Follow "Drilling or Tripping" procedures.

B. Assure that all personnel have access to protective equipment.

SIMULATED BLOWOUT CONTROL DRILLS

All drills will be initiated by activating alarm devices (air horn). Use one long blast on the air horn for ACTUAL and SIMULATED Blowout Control Drills. This operation will be performed by the Drilling Foreman or Tool Pusher at least one time per week for each of the following conditions, with each crew:

Drill # 1 Bottom Drilling

Drill # 2 Tripping Drill Pipe

In each of these drills, the initial reaction time to shutting in the well shall be timed as well as the total time for the crew to complete its entire pit drill assignment. The times must be recorded on the IADC Driller's Log as "Blowout Control Drill".

Drill No.:		
Reaction Time to Shut-In:	minutes,	seconds.
Total Time to Complete Assignment:	minutes,	seconds.

I. Drill Overviews

A. Drill No. 1- Bottom Drilling

1. Sound the alarm immediately.
2. Stop the rotary and hoist kelly joint above the rotary table.
3. Stop the circulatory pump.
4. Close the drill pipe rams.
5. Record casing and drill pipe shut-in pressures and pit volume increases.

B. Drill No. 2 – Tripping Drill Pipe

1. Sound the alarm immediately.
2. Position the upper tool joint just above the rotary table and set the slips.

3. Install a full opening valve or inside blowout preventor tool in order to close the drill pipe.

4. Close the drill pipe rams.

5. Record the shut-in annular pressure.

II. Crew Assignments

A. Drill No. 1 – Bottom Drilling

1. Driller

   a) Stop the rotary and hoist kelly joint above the rotary table.

   b) Stop the circulatory pump.

   c) Check flow.

   d) If flowing, sound the alarm immediately.

   e) Record the shut-in drill pipe pressure.

   f) Determine the mud weight increase needed or other courses of action.

2. Derrickman

   a) Open choke line valve at BOP.

   b) Signal Floor Man # 1 at accumulator that choke line is open.

   c) Close choke and upstream valve after pipe tams have been closed.

   d) Read the shut-in annular pressure and report readings to Driller.

3. Floor Man # 1

   a) Close the pipe rams after receiving the signal from the Derrickman.

   b) Report to Driller for further instructions.

4. Floor Man # 2

   a) Notify the Tool Pusher and Operator Representative of the H_2S alarms.

   b) Check for open fires and, if safe to do so, extinguish them.

   c) Stop all welding operations.

   d) Turn-off all non-explosion proof lights and instruments.

   e) Report to Driller for further instructions.

5. Tool Pusher

   a) Report to the rig floor.

   b) Have a meeting with all crews.

   c) Compile and summarize all information.

   d) Calculate the proper kill weight.

   e) Ensure that proper well procedures are put into action.

6. Operator Representative

   a) Notify the Drilling Superintendent.

   b) Determine if an emergency exists and if so, activate the contingency plan.

B. Drill No. 2 – Tripping Pipe

1. Driller

   a) Sound the alarm immediately when mud volume increase has been detected.

   b) Position the upper tool joint just above the rotary table and set slips.

   c) Install a full opening valve or inside blowout preventor tool to close the drill pipe.

   d) Check flow.

e) Record all data reported by the crew.

f) Determine the course of action.

2. Derrickman

a) Come down out of derrick.

b) Notify Tool Pusher and Operator Representative.

c) Check for open fires and, if safe to do so, extinguish them.

d) Stop all welding operations.

e) Report to Driller for further instructions.

3. Floor Man # 1

a) Pick up full opening valve or inside blowout preventor tool and stab into tool joint above rotary table (with Floor Man # 2).

b) Tighten valve with back-up tongs.

c) Close pipe rams after signal from Floor Man # 2.

d) Read accumulator pressure and check for possible high pressure fluid leaks in valves or piping.

e) Report to Driller for further instructions.

4. Floor Man # 2

a) Pick-up full opening valve or inside blowout preventor tool and stab into tool joint above rotary table (with Floor Man # 1).

b) Position back-up tongs on drill pipe.

c) Open choke line valve at BOP.

d) Signal Floor Man # 1 at accumulator that choke line is open.

e) Close choke and upstream valve after pipe rams have been closed.

f) Check for leaks on BOP stack and choke manifold.

g) Read annular pressure.

h) Report readings to the Driller.

5. Tool Pusher

a) Report to the rig floor.

b) Have a meeting with all of the crews.

c) Compile and summarize all information.

d) See that proper well kill procedures are put into action.

6. Operator Representative

a) Notify Drilling Superintendent

b) Determine if an emergency exists, and if so, activate the contingency plan.

IGNITION PROCEDURES

Responsibility:

The decision to ignite the well is the responsibility of the DRILLING FOREMAN in concurrence with the STATE POLICE. The State Police shall be the Incident Command on the scene of any major release. Intentional ignition must be coordinated with the NMOCD and local officials. In the event the Drilling Foreman is incapacitated, it becomes the responsibility of the RIG TOOL PUSHER. This decision should be made only as a last resort and in a situation where it is clear that:

1. Human life and property are endangered.

2. There is no hope of controlling the blowout under the prevailing conditions.

If time permits, notify the main office, but do not delay if human life is in danger. Initiate the first phase of the evacuation plan.

Instructions for Igniting the Well:

1. Two people are required for the actual igniting operation. Both men must wear self-contained breathing apparatus and must use a full body harness and attach a retrievable safety line to the D-Ring in the back. One man must monitor the atmosphere for explosive gases with the LEL monitor, while the Drilling Foreman is responsible for igniting the well.

2. The primary method to ignite is a 25mm flare gun with a range of approximately 500 feet.

3. Ignite from upwind and do not approach any closer than is warranted.

4. Select the ignition site best suited for protection and which offers an easy escape route.

5. Before igniting, check for the presence of combustible gases.

6. After igniting, continue emergency actions and procedures as before.

7. All unassigned personnel will limit their actions to those directed by the Drilling Foreman.

NOTE: After the well is ignited, burning Hydrogen Sulfide will convert to Sulfur Dioxide (SO_2), which is also highly toxic. Do not assume the area is safe after the well is ignited.

TRAINING REQUIREMENTS

When working in an area where Hydrogen Sulfide (H_2S) might be encountered, definite training requirements must be carried out. The Company Supervisor will ensure that all personnel at the well site, whether regularly assigned, contracted, or employed on an unscheduled basis, have had adequate training by a qualified instructor in the following:

1. Hazards and Characteristics of Hydrogen Sulfide and Sulfur Dioxide.
2. Physicals effects of Hydrogen Sulfide on the human body.
3. Toxicity of Hydrogen Sulfide and Sulfur Dioxide.
4. H_2S detection, emergency alarm and sensor location.
5. Emergency rescue.
6. First aid and artificial resuscitation.
7. The effects of Hydrogen Sulfide on metals.
8. Location safety.

In addition, Supervisory Personnel will be trained in the following areas:

1. If high tensile tubular are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well as well as blowout prevention and well control procedures.
3. The contents and requirements of the H_2S Drilling Operations Contingency Plan and the Public Protection Plan.

Service company personnel and visiting personnel must be notified if the zone contains H_2S, and each service company must provide adequate training and equipment for their employees before they arrive at the well site.

EMERGENCY EQUIPMENT

As stated in the BLM Onshore Order 6, for wells located in a known H_2S areas, H_2S equipment will be rigged up after setting surface casing. For wells located inside known H_2S areas, the flare pit will be located 150' from the location and for wells located outside known H_2S areas, the flare pit will be located 100' away from the location. (See page 6 of Survey plat package and diagram B or C.)

It is not anticipated that any H_2S is in the area, however in the event that H_2S is encountered, the attached H_2S Contingency Plan will be implemented. (Please refer to diagrams B or C for choke manifold and closed loop system layout.) See H_2S location layout diagram for location of all H_2S equipment on location.

All H_2S safety equipment and systems will be installed, tested and be operational when drilling reaches a depth of 500' above, or three days prior to penetrating a known formation containing H_2S.

Lease Entrance Sign:

Caution signs should be located at all roads providing direct access to the location. Signs shall have a yellow background with black lettering and contain the words "CAUTION" and "POISON GAS" that is legible from a distance of at least 50 feet.

LEASE NAME
CAUTION – POTENTIAL POISON GAS
HYDROGEN SULFIDE
NO ADMITTANCE WITHOUT AUTHORIZATION

Windsocks or Wind Streamers:

- A minimum of two 10" windsocks located at strategic locations so that they may be seen from any point on location.
- Wind streamers (if preferred) should be placed at various locations on the well site to ensure wind consciousness at all times. (Corners of location)

Hydrogen Sulfide Detector and Alarms:

- H_2S monitors with alarms will be located on the rig floor, at the cellar, and at the mud pits. These monitors will be set to alarm at 10 PPM with a red light and to alarm at 15 PPM with a red light and audible alarm.

Well Condition Flags:

The Well Condition flags should be located at all roads providing direct access to the location. It should have three (3) color coded flags (green, yellow and red) that will be used to denote the following location conditions:

GREEN – Normal Operating Conditions
YELLOW – Potential Danger
RED – Danger, H_2S Gas Present

Respiratory Equipment:

- Fresh air breathing equipment should be placed at the company supervision trailer and the safe briefing areas and should include the following:
  - A minimum of two SCBA's at each briefing area and the supervisor company supervision trailer.
  - Enough air line units to operate safely, anytime the H_2S concentration reaches the IDLH level (100 PPM).
  - Cascade system with enough breathing air hose and manifolds to reach the rig floor, the derrickman and the other operation areas.

Fire Extinguishers:

Adequate fire extinguishers shall be located at strategic locations.

Mud Program:

The mud program has been designed to minimize the volume of H_2S circulated to the surface. Proper mud weight, safe drilling practices and the use of H_2S scavengers will minimize hazards when penetrating H_2S bearing zones.

Metallurgy:

All drill strings, casing, tubing, wellhead; blowout preventer, drilling spools, kill lines, choke manifold and lines, and valves shall be suitable for H_2S service.

Well Control Equipment:

- Flare Line (See page 6 of survey plat package for flare line reference).
- Choke manifold (See diagram B or C and refer to H2S location diagram for location of important H2S safety items).
- Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing units.
- Auxiliary equipment may include, if applicable, annular preventer & rotating head.

Communication Equipment:

- Proper communication equipment such as cell phones or 2 – way radios should be available for communication between the company man's trailer, rig floor and tool pusher's trailer.

Well Testing:

- There will be no drill stem testing.

Evacuation Plan:

- Evacuation routes should be established prior to spudding the well.
- Should be discussed with all rig personnel.

Designated Areas:

Parking and Visitor area:

- All vehicles are to be parked at a pre-determined safe distance from the wellhead.
- A smoking area will be designated at a pre-determined safe distance from the wellhead and any other possible flammable areas.

Safe Briefing Areas:

- Two Safe Briefing Areas shall be designated on either side of the location at the maximum allowable distance from the well bore so they offset prevailing winds or they are at a 180 degree angle if wind directions tend to shift in the area.

- Personal protective equipment should be stored at both briefing areas or if a moveable cascade trailer is used, it should be kept upwind of existing winds. When wind is from the prevailing direction, both briefing areas should be accessible.

NOTE:

- Additional equipment will be available at Indian Fire and Safety in Hobbs, NM or at Total Safety in Hobbs, NM.

EVACUATION PLAN

General Plan

The direct lines of action to protect the public from hazardous gas situations are as follows:

1. When the company approved supervisor (Drilling Foremen, Tool Pusher or Driller) determine that Hydrogen Sulfide gas cannot be limited to the well location, and the public will be involved, he will activate the evacuation plan. Escape routes are noted on the Area Map.

2. Company safety personnel or designee will notify the appropriate local government agency that a hazardous condition exists and evacuation needs to be implemented.

3. Company approved safety personnel that have been trained in the use of the proper emergency equipment will be utilized.

4. Law enforcement personnel (State Police, Local Police Department, Fire Department, and the Sheriff's Department) will be called to aid in setting up and maintaining road blocks. Also, they will aid in evacuation of the public if necessary.

NOTE: Law enforcement personnel will not be asked to come into a contaminated area. Their assistance will be limited to uncontaminated areas. Constant radio contact will be maintained with them.

5. After the discharge of gas has been controlled, Company approved safety personnel will determine when the area is safe for re-entry.

See Emergency Action Plan

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).

H_2S CONTINGENCY PLAN EMERGENCY CONTACTS

BOPCO L.P. Midland Office 432-683-2277

Key Personnel

Name	Title	Cell Phone Number
Stephen Martinez	Drilling & Completions Manager	432-556-0262
Charles Warne	Division Engineer	432-312-4431
Don Wood	Division Drilling Specialist	432-266-2674
Leo Bojorquez	Area Drilling Superintendent	702-280-4424
Chris Giese	Engineer	432-661-7328
Chris Volek	Engineer	785-979-2643
Brian Braun	Engineer	210-683-9849
Jeremy Braden	Engineer	432-312-1113
Kevin Burns	Engineer	432-934-5499

Artesia

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

Wild Well Control	432-550-6202 (Permian Basin)
Cudd PressureControl	432-580-3544 or 432-570-5300 (Permian Basin)
Flight For Life – 4000 24th St. Lubbock, Texas	806-743-9911
Aerocare – R3, Box 49F, Lubbock, Texas	806-747-8923
Med Flight Air Amb – 2301 Yale Blvd SE #D3, Albuq., NM	505-842-4433
S B Air Med Service – 2505 Clark Carr Loop SE, Albuq., NM	505-842-4949
Indian Fire and Safety – 3317 NW Cnty Rd, Hobbs, NM	575-393-3093
Total Safety – 3229 Industrial Dr., Hobbs, NM	575-392-2973

TOXIC EFFECTS OF HYDROGEN SULFIDE

Hydrogen Sulfide is extremely toxic. The acceptable ceiling concentration for eight-hour exposure is 10 PPM, which is .001% by volume. Hydrogen Sulfide is heavier than air (specific gravity = 1.192) and colorless. It forms an explosive mixture with air between 4.3 and 46.0 percent by volume. Hydrogen sulfide is almost as toxic as hydrogen cyanide and is between five and six times more toxic than carbon monoxide. Toxicity data for hydrogen sulfide and various other gases are compared in Table I. Physical effects at various Hydrogen Sulfide exposure levels are shown in Table II.

Table I - TOXICITY OF VARIOUS GASES

Common Name	Chemical Formula	Specific Gravity (SC=1)	Threshold Limit (1)	Hazardous Limit (2)	Lethal Concentration (3)
Hydrogen Cyanide	HCN	0.94	10 PPM	150 PPM/HR	300 PPM
Hydrogen Sulfide	H2S	1.18	10 PPM	250 PPM/HR	600 PPM
Sulfur Dioxide	SO2	2.21	5 PPM	--	1000 PPM
Chlorine	CL2	2.45	1 PPM	4 PPM/HR	1000 PPM
Carbon Monoxide	CO	0.97	50 PPM	400 PPM/HR	1000 PPM
Carbon Dioxide	CO2	1.52	5000 PPM	5%	10%
Methane	CH4	0.55	90,000 PPM	Combustible in air	Above 5%

1) **Threshold Limit – Concentration at which it is believed that all worker may be repeatedly exposed day after day without adverse effects.**

2) **Hazardous Limit – Concentration that will cause death with short-term exposure.**

3) **Lethal Concentration – Concentration that will cause death with short-term exposure.**

Table II – PHYSICAL EFFECTS OF HYDROGEN SULFIDE

Percent (%)	PPM	Concentration Grains 100 STD. FT3*	Physical Effects
0.001	< 10	00.65	Obvious & unpleasant odor.
0.002	10	01.30	Safe for 8 hours of exposure.
0.010	100	06.48	Kills smell in 3-15 minutes. May sting eyes & throat.
0.020	200	12.96	Kills smell shortly; stings eyes & throat.
0.050	500	32.96	Dizziness; Breathing ceases in a few minutes. Needs prompt artificial respiration.
0.070	700	45.36	Unconscious quickly; Death will result if not rescued promptly.
0.100	1000	64.30	Unconscious at once; Followed by death within minutes.

- At 15.00 PSIA and 60° F.

USE OF SELF-CONTAINED BREATHING APPARATUS

1. Anyone who uses an SCBA shall: Be approved by a physician or licensed health care practitioner; Pass a fit test; Be trained in donning and doffing, proper use, including how to ensure a proper face seal, conducting an inspection of the SCBA, and conduct proper maintenance.

2. Such items as facial hair (beard or sideburns) and eyeglasses will not allow a proper face mask seal.

3. Anyone reasonably expected to wear SCBA's shall have these items removed before entering a toxic atmosphere.

4. A special mask with a mount for prescription glasses must be obtained for anyone who must wear eyeglasses in order to see while using an SCBA.

5. SCBA's should be worn in H_2S concentrations above 10 PPM.

RESCUE & FIRST AID FOR H_2S POISONING

DO NOT PANIC – REMAIN CALM – THINK

1. Hold your breath – do not inhale first.

2. Put on SCBA.

3. Remove victim(s) to fresh air as quickly as possible. Go upwind from source or at right angle to the wind. Do not go downwind.

4. Briefly apply chest pressure – using arm lift method of artificial respiration to clean victim's lungs and to avoid inhaling any toxic gas directly from victim's lungs.

5. Provide artificial respiration if needed.

6. Provide for prompt transportation to the hospital and continue giving artificial respiration if needed.

7. Inform hospital/medical facilities of the possibility of H2S gas poisoning before they treat.

Besides basic first aid, everyone on location should have a good working knowledge of artificial respiration and CPR, as well as first aid for eyes and skin contact with liquid H_2S.

Proposed H2S Safety Schematic

1) Location of windsocks.

2) Location of H2S alarms

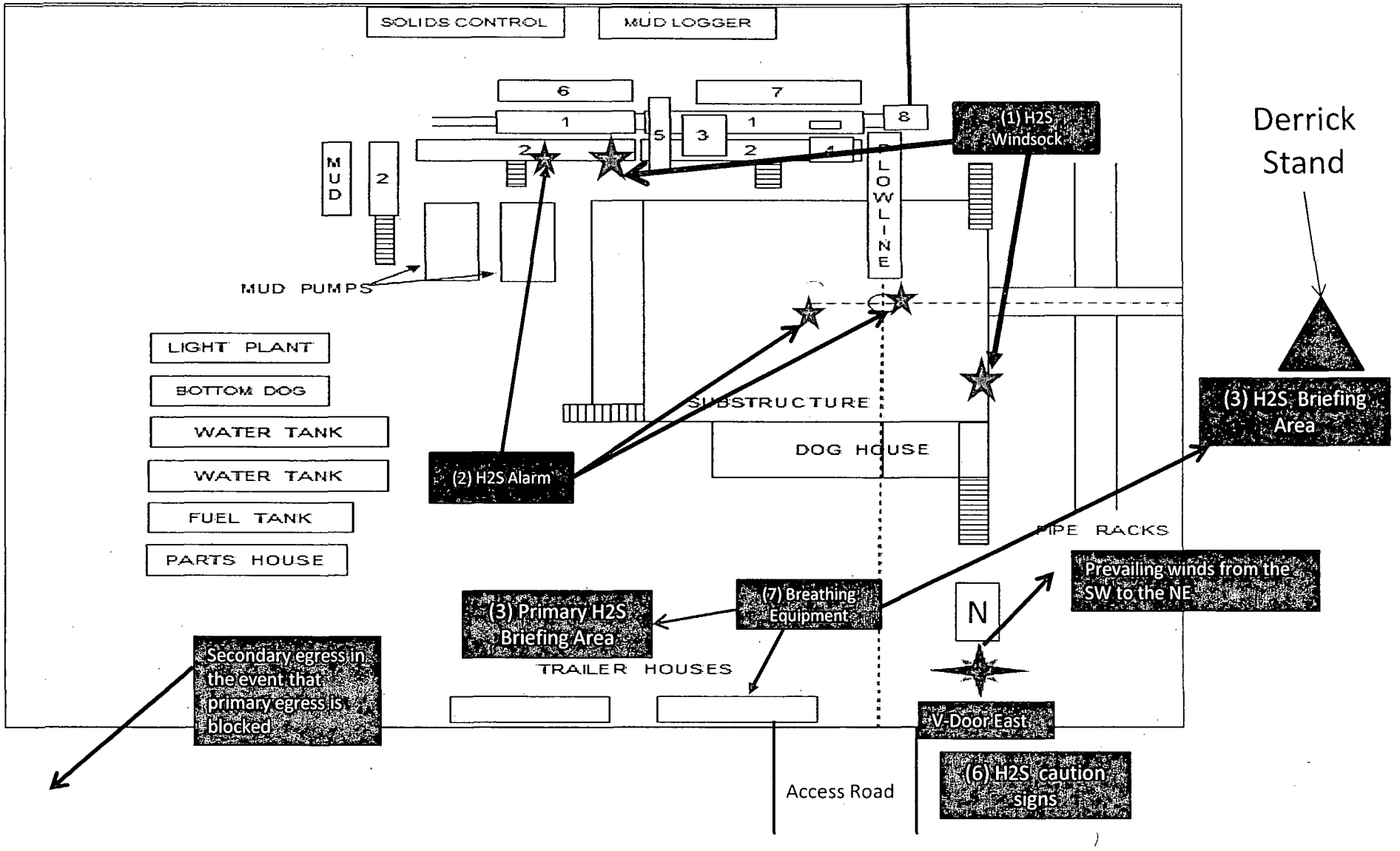
3) Location of briefing areas.

4) Terrain of surrounding area (Please refer to page 2 of survey plat package also see point 11 of multi-surface use plan)

5) Location of flare line(s) and pit(s) (Please refer to diagram 2 choke manifold diagram and or page six of survey plat packet)

6) Location of caution and/or danger signs.

(7) Location of Breathing Equipment



Location On-Site Notes

On July 29, 2014 an onsite was conducted by Todd Carpenter- BOPCO, L.P., Amanda Lynch- BLM, John Sherman- State Biologist, Jay Summers- Biology tech and Chris Freeman- CEHM. The Big Eddy Unit DI 2 #322H dual well pad was approved as is with the surface footage call of 700' FSL & 195' FEL, Sec 27-T19S-31E. Location layout is as follows: V-door is to the east, frac tank pad is to the WNW corner, and top soil is to the west, access road to the south.

MULTI-POINT SURFACE USE PLAN

NAME OF WELL: Big Eddy Unit #322H

LEGAL DESCRIPTION
SURFACE: 700' FSL, 195' FEL, Section 27, T19S, R31E, Eddy County, NM.
BHL: 660' FSL, 330' FWL, Section 27, T19S, R31E, Eddy County, NM.

POINT 1: EXISTING ROADS

A) Proposed Well Site Location:

See Form C-102 (Survey Plat).

B) Existing Roads:

From the junction of Lusk and Shugart, go southwest on Shugart for 2.8 miles to a lease road. On the lease road go southeast 0.4 miles winding east and continue 1.3 miles turning northwest 0.1 mile to the proposed location.

C) Existing Road Maintenance or Improvement Plan:

Existing roads will be maintained and kept in the same or better condition than before operations began. 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:

There will be no new road 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..... 9 (Nine)
Water wells..... 6 (Six)

POINT 4: LOCATION OF EXISTING OR PROPOSED FACILITIES

A) The existing BEU Hackberry 34 Federal battery is located 0.3 miles southwest of the proposed BEU #322H location. A sundry has been submitted to construct a new tank battery, the BEU DI 2 battery, 0.5 miles southwest of location to accommodate production and other planned wells.

B) In the Event of Production:

New production facilities will be built at BEU DI 2 battery (located in NWNE quarter Sec 34, T19S, R31E. New tanks, separators, heater treater(s), and metering equipment will be set at the BEU DI 2 battery. A 2-7/8" or 3-1/2" steel flowline carrying oil, water, and gas will be laid on top of ground from Big Eddy Unit #321H to BEU DI 2 battery following existing lease roads and right of ways (see the Aerial Map labeled diagram 4). Permanent power will be run to this location from the nearby BEU #258H location following existing disturbances.

In the event plans for additional wells being drilled in the area do not materialize, BOPCO may elect to take production to the existing BEU Hackberry 34 Federal battery in order to defer unnecessary capital expenditure. New separators, heater treater(s), and metering equipment will be set at the BEU Hackberry 34 Federal battery. A 2-7/8" or 3-1/2" steel flowline carrying oil, water, and gas will be laid on top of ground from Big Eddy Unit #322H to BEU Hackberry 34 Federal battery following existing lease roads and right of ways (see the Aerial Map labeled diagram 4). Permanent power will be run to this location from the nearby BEU #258H location following existing disturbances.

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).

POINT 7: METHODS FOR HANDLING WASTE MATERIAL

A) Cuttings

Cuttings will be contained in the roll off bins and disposed at R360 Environmental located in Lea County, NM.

B) Drilling Fluids

Drilling fluids will be contained in the steel pits, frac tanks and disposed at licensed disposal sites.

C) Produced Fluids

Water production will be contained in the steel pits.

Hydrocarbon fluid or other fluids that may be produced during testing will be retained in test tanks. Prior to cleanup operations, any hydrocarbon material in the reserve pit will be removed by skimming or burning as the situation would dictate.

D) Sewage

Current laws and regulations pertaining to the disposal of human waste will be complied with.

E) Garbage

Portable containers will be utilized for garbage disposal during the drilling of this well.

F) Cleanup of Well Site

Upon release of the drilling rig, the surface of the drilling pad will be graded to accommodate a completion rig if electric log analysis indicate potential productive zones. Reasonable cleanup will be performed prior to the final restoration of the site.

POINT 8: ANCILLARY FACILITIES

None required.

POINT 9: WELL SITE LAYOUT

A) Rig Orientation and Layout

The "Rig Layout Schematic" (Sheet 6 of plat package) shows the dimensions of the well pad, closed loop system, and the location of major rig components. Only minor leveling of the well site will be required. No significant cuts or fills will be necessary. **The top soil will be stockpiled on the west side of the location.**

B) Locations of Access Road

See the Well Pad Layout, Topo Map, and Vicinity Map of the survey plat (Sheet 1, 2, and 3 of plat package).

C) Lining of the Pits

No reserve pits - closed loop system.

POINT 10: PLANS FOR RESTORATION OF THE SURFACE

A) Reserve Pit Cleanup - Not applicable. Closed loop drilling fluid system will be used

B) Restoration Plans - Production Developed

BOPCO, L.P. has no plans for interim reclamation to allow for additional wells to be drilled on this pad

C) Restoration Plans - No Production Developed

BOPCO, L.P. has no plans for interim reclamation to allow for additional wells to be drilled on this pad

POINT 11: OTHER INFORMATION

A) On-Site

On July 29, 2014 an onsite was conducted by Todd Carpenter- BOPCO, L.P., Amanda Lynch- BLM, John Sherman- State Biologist, Jay Summers- Biology tech and Chris Freeman- CEHM. The Big Eddy Unit DI 2 #322H dual well pad was approved as is with the surface footage call of 700' FSL & 195' FEL, Sec 27-T19S-31E. Location layout is as follows: V-door is to the east, frac tank pad is to the WNW corner, and top soil is to the west, access road to the south.

B) Soil

Caliche and sand.

C) Vegetation

Sparse, primarily grasses and mesquite with very little grass.

D) Surface Use

Primarily grazing.

E) Surface Water

There are no ponds, lakes, streams or rivers within several miles of the wellsite.

F) Water Wells

There are six water wells located within a 1 mile radius of the proposed location.

G) Residences and Buildings

None in the immediate vicinity.

H) Historical Sites

None observed.

I) Archeological Resources

No independent archeological survey has been done. This well location is located in the area covered by Memorandum of Agreement – Permian Basin. This is a dual well pad and the Payment of $1,552.00 fee for this project is included in the application for Big Eddy Unit #321H. Any location or construction conflicts will be resolved before construction begins. Please see diagram 4 for flowline route.

J) Surface Ownership

The well site is on federally owned land. There will be no new road required for this location.

K) Well signs will be posted at the drilling site.

L) Open Pits

No open pits will be used for drilling or production. Any open top tanks will be netted.

M) Terrain

Slightly rolling hills.

POINT 12: OPERATOR'S FIELD REPRESENTATIVE

(Field personnel responsible for compliance with development plan for surface use).

DRILLING
Stephen Martinez
Box 2760
Midland, Texas 79702
(432) 683-2277

PRODUCTION
Gary Fletcher
3104 East Green Street
Carlsbad, New Mexico 88220
(575) 887-7329

Fritz Schoch
Box 2760
Midland, Texas 79702
(432) 683-2277

WBM

OPERATOR'S CERTIFICATION

APPLICATION FOR PERMIT TO DRILL
BIG EDDY UNIT #322H
700' FSL, 195' FEL, Section 27, T19S, R31E, Eddy County, NM.

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

Executed this 13th day of October, 2014.

If you have any questions regarding the accuracy of the plan provided herein, please do not hesitate to contact me at (432) 683-2277.

Whitney McKee
Engineering Assistant

Confirmation of Payment

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

Permian Basin Cultural Resource Mitigation Fund

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

Company Name: BOPCO, L.P.

Address: P.O. BOX 2760, Midland, TX 79702

Project description:
Big Eddy Unit #322H. The PA is covered on Big Eddy Unit #321H, dual pad.

T. 19S, R. 31E, Section 27 NMPM, Eddy County, New Mexico

Amount of contribution: $0.00

Provisions of the PA:

A. No new Class III inventories are required of industry within the project area for those projects where industry elects to contribute to the mitigation fund.

B. The amount of funds contributed was derived from the rate schedule established within Appendix B of the PA. The amount of the funding contribution acknowledged on this form reflects those rates.

C. The BLM will utilize the funding to carry out a program of mitigation at high-priority sites whose study is needed to answer key questions identified within the Regional Research Design.

D. Donating to the fund is voluntary. Industry acknowledges that it is aware it has the right to pay for a Class III survey rather than contributing to the mitigation fund. Industry must avoid or fund data recovery at those sites already recorded that are eligible for nomination to the National Register or whose eligibility is unknown. Any such payments are independent of the mitigation funds established by this PA.

E. Previously recorded archaeological sites determined eligible for nomination to the National Register, or whose eligibility remains undetermined, must be avoided or mitigated.

F. If any skeletal remains that might be human or funerary objects are discovered by any activities, the land-use applicant will cease activities in the area of discovery, protect the remains, and notify the BLM within 24 hours. The BLM will determine the appropriate treatment of the remains in consultation with culturally-affiliated Indian Tribe(s) and lineal descendants. Applicants will be required to pay for treatment of the cultural items, independent and outside of the mitigation fund.

Company-Authorized Officer	10/13/14 Date
BLM-Authorized Officer	Date

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

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

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

Form C-102
Revised August 1, 2011

Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
	96746	HACKBERRY; BONE SPRING, EAST

Property Code	Property Name	Well Number
305860	BIG EDDY UNIT	322H

OGRID No.	Operator Name	Elevation
260737	BOPCO, L.P.	3472'

Surface Location

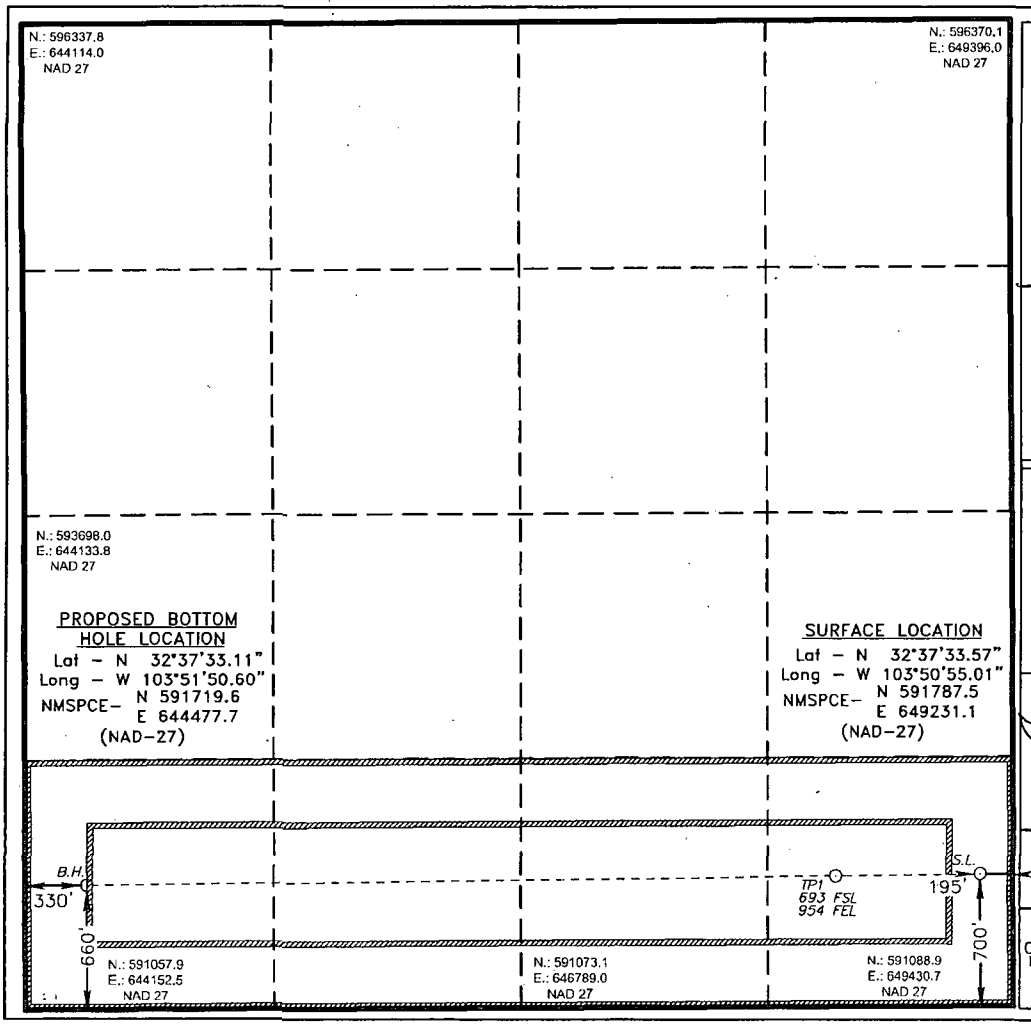
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	27	19 S	31 E		700	SOUTH	195	EAST	EDDY

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
M	27	19 S	31 E		660	SOUTH	330	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160			

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.

Whintey McKee 10/13/14
Signature Date

Whintey McKee
Printed Name

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

AUGUST 1, 2014
Date Surveyed

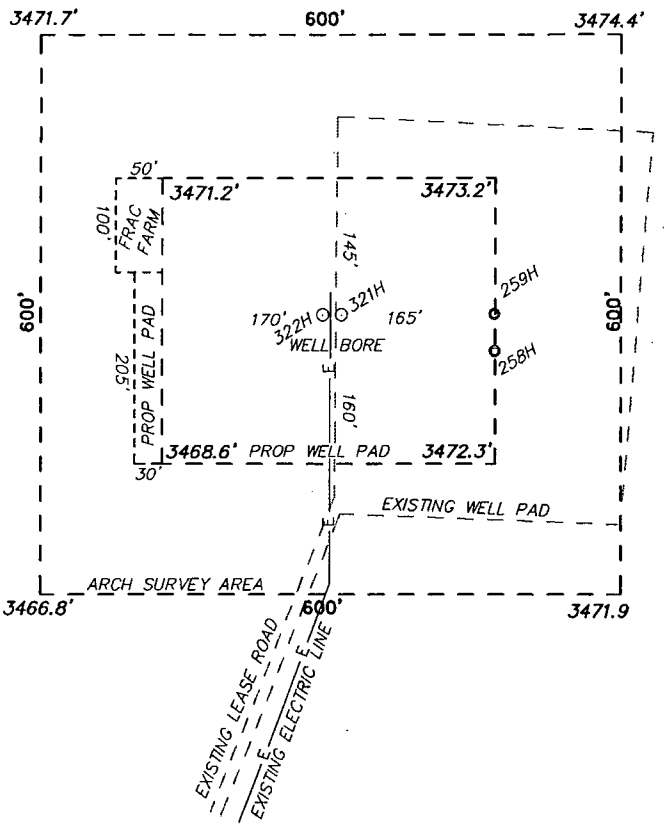
Signature & Seal of Professional Surveyor

GARY L. JONES NEW MEXICO 7977 REGISTERED PROFESSIONAL LAND SURVEYOR

Certificate No. Gary L. Jones 7977
BASIN SURVEYS

0' 500' 1000' 1500' 2000'
SCALE: 1" = 1000'
WO Num.: 30748

SECTION 27, TOWNSHIP 19 SOUTH, RANGE 31 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



BOPCO, L.P.
BIG EDDY UNIT 321H
ELEV. - 3472'

Lat - N 32°37'33.57"
Long - W 103°50'55.01"
NMSPCE- N 591787.5
E 649231.1
(NAD-27)

LOCO HILLS, NM IS ±15 MILES TO THE NORTHWEST OF LOCATION.

200 0 200 400 FEET
SCALE: 1" = 200'

Directions to Location:

FROM THE INTERSECTION OF OF LUSK AND SHUGART, GO SOUTHWEST 2.8 MILES TO A LEASE ROAD, GO SOUTHEAST 0.4 MILES WINDING EAST AND CONTINUE 1.3 MILES TURNING NORTHEAST 0.1 MILES TO PROPOSED LOCATION.

BOPCO, L.P.

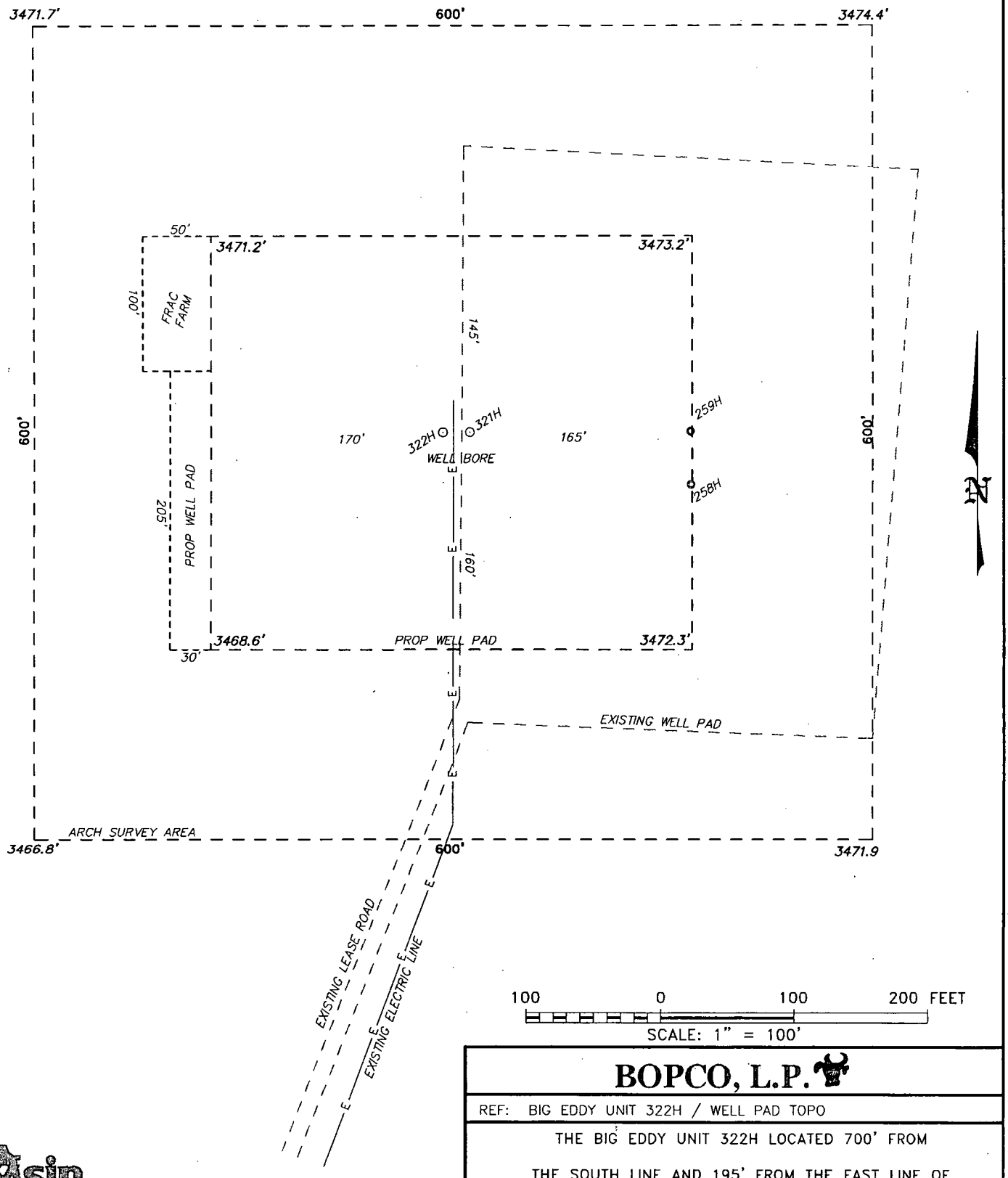
REF: BIG EDDY UNIT 322H / WELL PAD TOPO

THE BIG EDDY UNIT 322H LOCATED 700' FROM THE SOUTH LINE AND 195' FROM THE EAST LINE OF SECTION 27, TOWNSHIP 19 SOUTH, RANGE 31 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: 30748	Drawn By: J. SMALL	Date: 08-13-2014	Survey Date: 08-01-2014	Sheet 1 of 1 Sheets

SECTION 27, TOWNSHIP 19 SOUTH, RANGE 31 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



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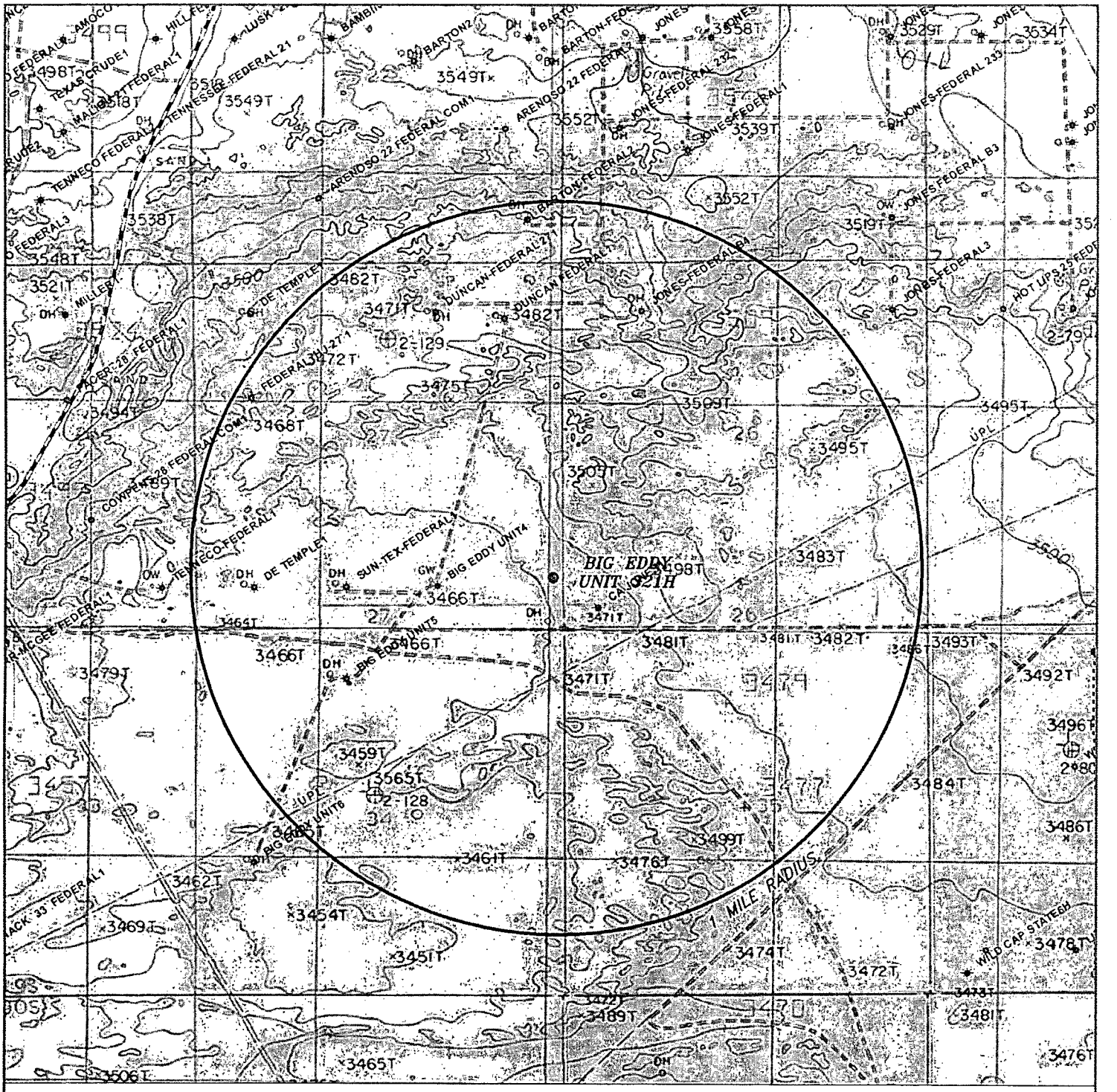

BIG EDDY UNIT 322H

Located 700' FSL and 195' FEL

Section 27, Township 19 South, Range 31 East, N.M.P.M., Eddy County, New Mexico.

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0' 1000' 2000' 3000' 4000'

SCALE: 1" = 2000'

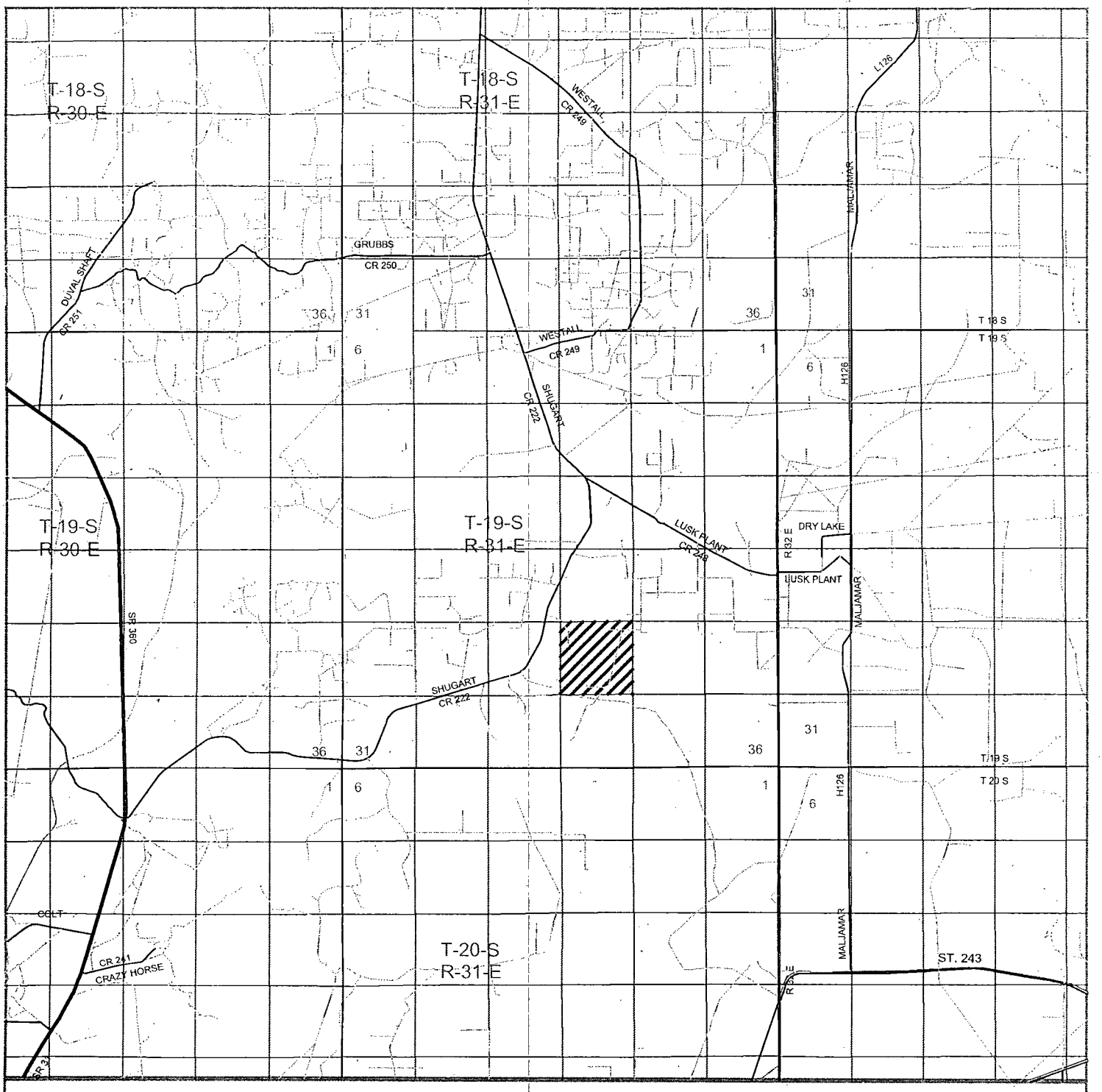
W.O. Number: JMS 30748

Survey Date: 08-01-2014

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

N

BOPCO, L.P.



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0 1 MI 2 MI 3 MI 4 MI

SCALE: 1" = 2 MILES

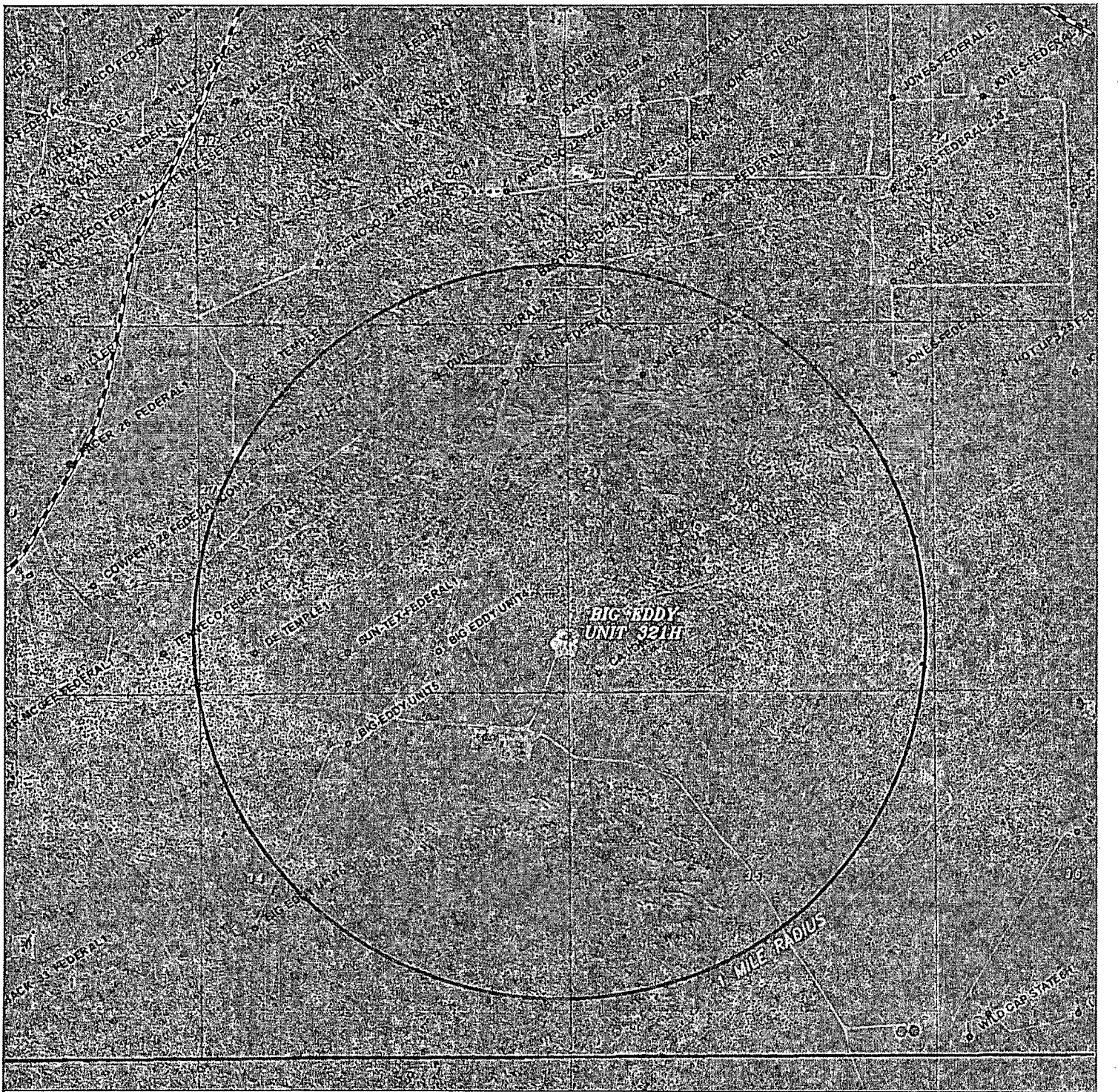
W.O. Number: JMS 30748

Survey Date: 08-01-2014

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

N

BOPCO, L.P.



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0' 1000' 2000' 3000' 4000'

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YELLOW TINT - USA LAND
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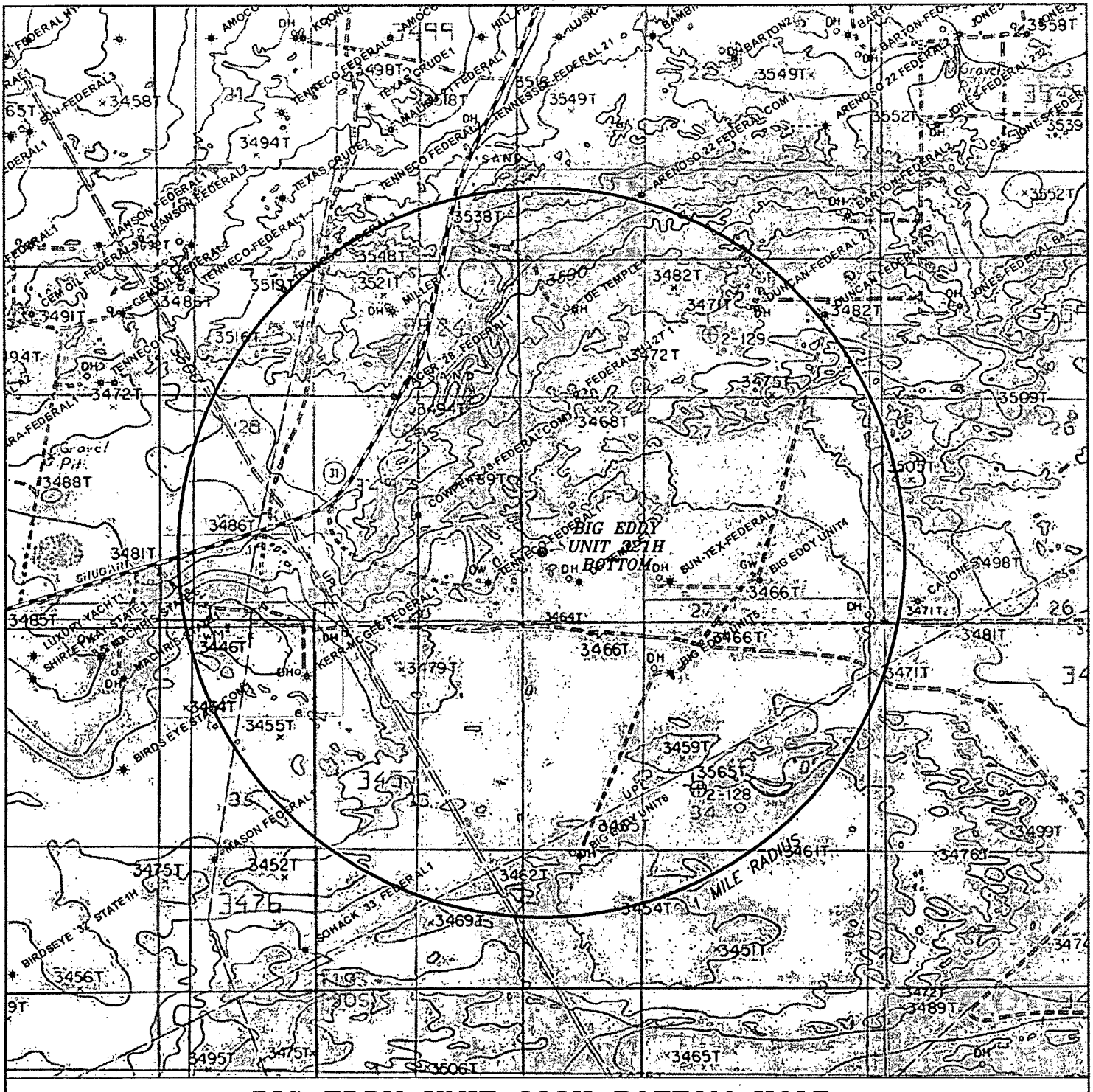
BOPCO, L.P.



BIG EDDY UNIT 322H BOTTOM HOLE
Located 660' FSL and 330' FWL
Section 27, Township 19 South, Range 31 East, N.M.P.M., Eddy County, New Mexico.

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0' 1000' 2000' 3000' 4000'
SCALE: 1" = 2000'

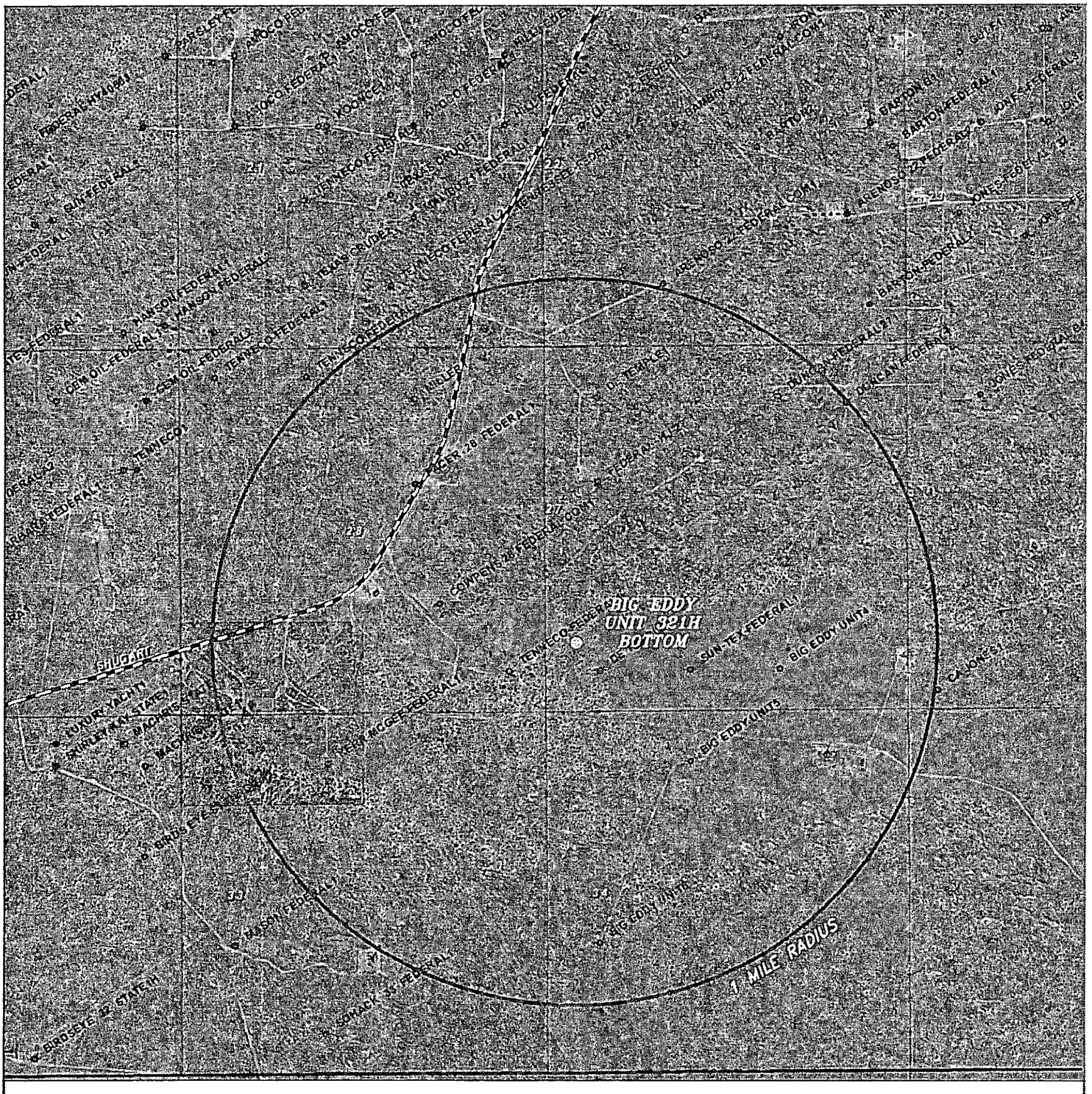
W.O. Number: JMS 30748

Survey Date: 08-01-2014

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

N

BOPCO, L.P.



BIG EDDY UNIT 322H BOTTOM HOLE

Located 660' FSL and 330' FWL

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0' 1000' 2000' 3000' 4000'
SCALE: 1" = 2000'

W.O. Number: JMS 30748

Survey Date: 08-01-2014

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

N

BOPCO, L.P.

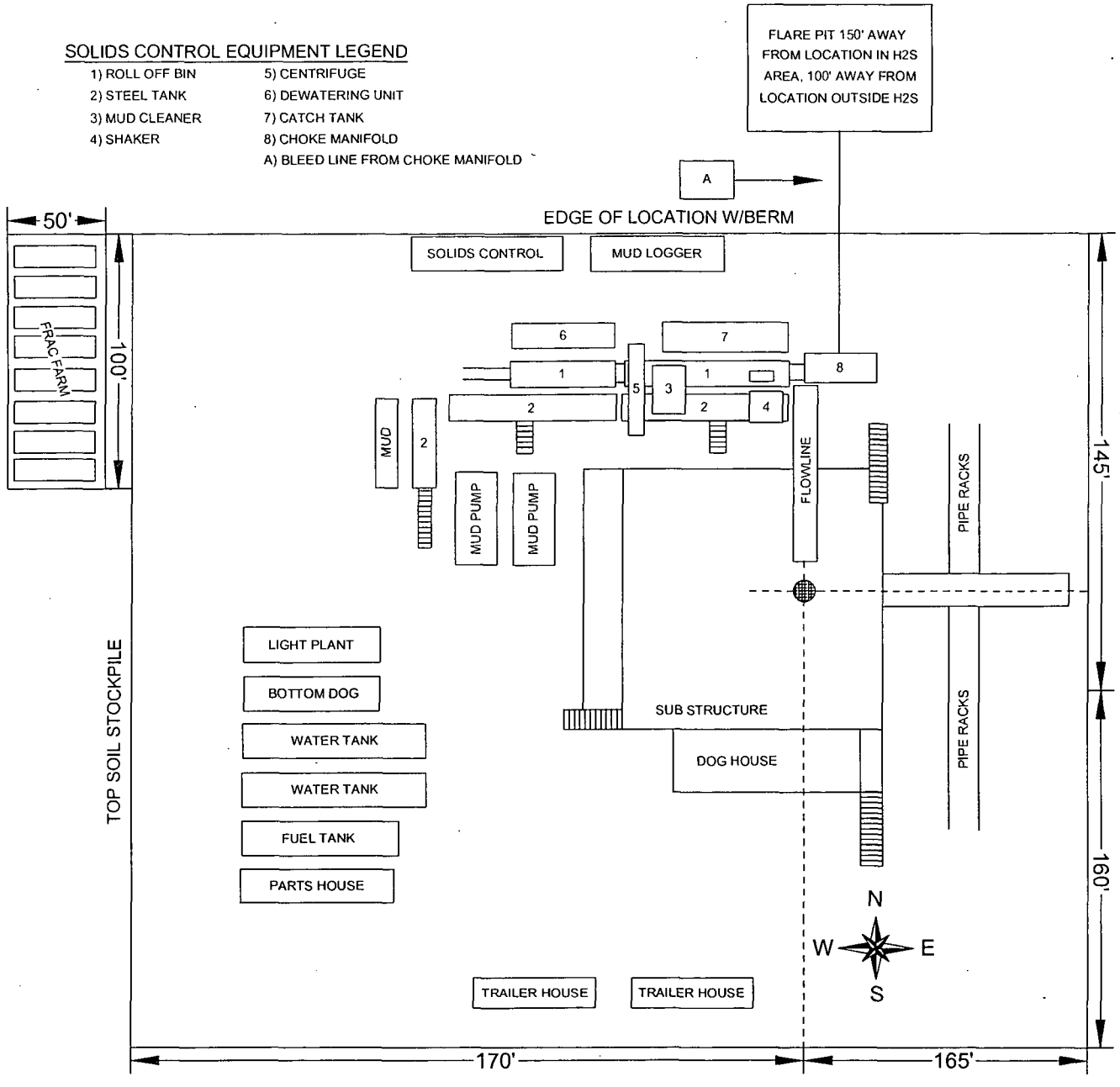
EXHIBIT "D"

RIG LAYOUT SCHEMATIC

INCLUSIVE OF CLOSED-LOOP DESIGN PLAN

SOLIDS CONTROL EQUIPMENT LEGEND

1) ROLL OFF BIN
2) STEEL TANK
3) MUD CLEANER
4) SHAKER
5) CENTRIFUGE
6) DEWATERING UNIT
7) CATCH TANK
8) CHOKE MANIFOLD
A) BLEED LINE FROM CHOKE MANIFOLD



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SCALE: NONE

W.O. Number: JMS 30748

Survey Date: 08-01-2014

N

BOPCO, L.P.

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**BOPCO, L.P.**
LEASE NO.:	**NMNM-02447**
WELL NAME & NO.:	**Big Eddy Unit 322H**
SURFACE HOLE FOOTAGE:	**0700' FSL & 0195' FEL**
BOTTOM HOLE FOOTAGE	**0660' FSL & 0330' FWL**
LOCATION:	**Section 27, T. 19 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.

I. GENERAL PROVISIONS

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

II. PERMIT EXPIRATION

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

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

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

IV. NOXIOUS WEEDS

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

V. SPECIAL REQUIREMENT(S)

Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

Commercial Well Determination
A commercial well determination shall be submitted after production has been established for at least six months.

Unit Wells
The well sign for a unit well shall include the unit number in addition to the surface and bottom hole lease numbers. This also applies to participating area numbers. If a participating area has not been established, the operator can use the general unit designation, but will replace the unit number with the participating area number when the sign is replaced.

VI. CONSTRUCTION

A. NOTIFICATION

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

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

B. TOPSOIL

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

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

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

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

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

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

F. EXCLOSURE FENCING (CELLARS & PITS)

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

G. ON LEASE ACCESS ROADS

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

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

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

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

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

Ditching
Ditching shall be required on both sides of the road.

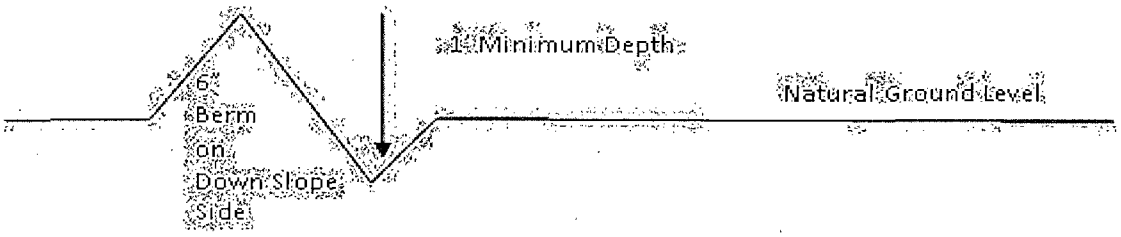
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

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

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

Cross Section of a Typical Lead-off Ditch



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

Formula for Spacing Interval of Lead-off Ditches

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

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

Cattleguards

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

Fence Requirement

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

Public Access

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

Construction Steps

1. Salvage topsoil
2. Construct road
3. Redistribute topsoil
4. Revegetate slopes

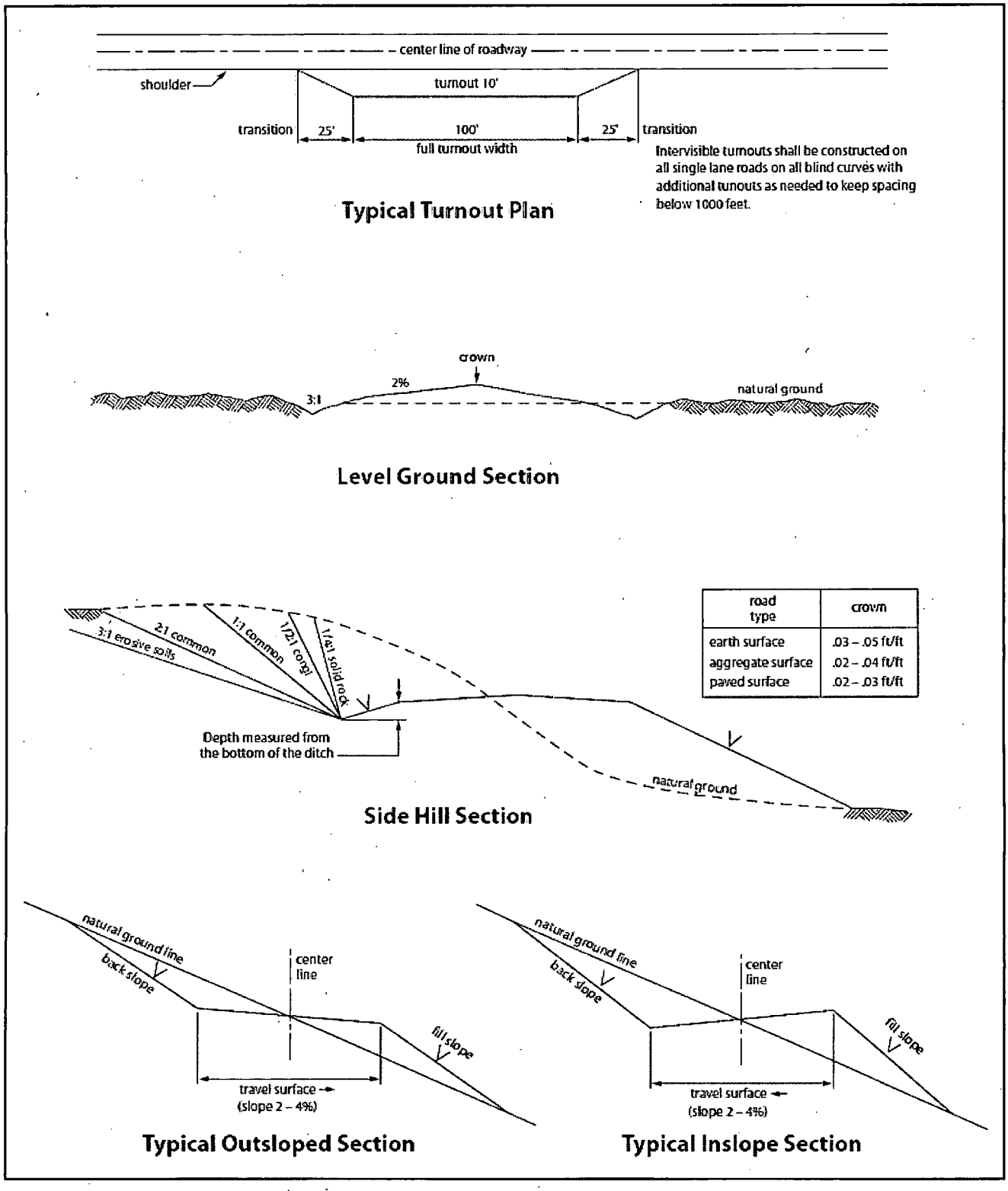


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

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

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

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

1. **Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.**

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

3. **The operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well as proposed.**

4. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.

5. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

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

Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. 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.

Capitan Reef
Possibility of water flows in the Salado, Artesia Group, and Capitan Reef.
Possibility of lost circulation in the Rustler, Artesia Group, Capitan Reef, and Delaware.

1. The **16** inch surface casing shall be set at approximately **905** feet (**in a competent bed <u>below the Magenta Dolomite</u>, which is a <u>Member of the Rustler</u>, and if salt is encountered, set casing at least 25 feet above the salt**) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

    b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **13-3/8** inch 1st intermediate casing is:

☒ Cement to surface. If cement does not circulate see B.1.a, c-d above.

3. The minimum required fill of cement behind the **9-5/8** inch 2nd intermediate casing is:

Operator has proposed DV tool at depth of 2744', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range. If an ECP is used, it is to be set a minimum of 50' below the shoe to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.

a. First stage to DV tool:

☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.

b. Second stage above DV tool:

☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office._**Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to Capitan Reef.**

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

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

Operator has proposed DV tool at depth of 5000', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range.

a. First stage to DV tool:

☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve approved top of cement on the next stage.

b. Second stage above DV tool:

☒ Cement should tie-back at least **50 feet above the Capitan Reef** (Top of Capitan Reef estimated at 2708'). Operator shall provide method of verification.

5. Cement not required on the **4-1/2"** casing. **Packer system being used.**

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

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

3. **A variance is granted for the use of a diverter on the 16" surface casing (part of multibowl).**

4. **Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 3000 (3M) psi.**
    a. **Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.**
    b. **If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.**
    c. **Manufacturer representative shall install the test plug for the initial BOP test.**
    d. **Operator shall perform the 9-5/8" and 7" casing integrity tests to 70% of the casing burst. This will test the multi-bowl seals.**
    e. **If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.**

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

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

    b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.

    c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

    d. The results of the test shall be reported to the appropriate BLM office.

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

f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

D. DRILL STEM TEST

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

E. WASTE MATERIAL AND FLUIDS

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

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

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VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

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

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

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

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

Containment Structures
Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the

largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

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

VRM Facility Requirement
Low-profile tanks not greater than eight-feet-high shall be used.

IX. INTERIM RECLAMATION

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

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

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

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

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

X. FINAL ABANDONMENT & RECLAMATION

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

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory

revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

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

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

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

SEED MIXTURE LPC (SAND/SHINNERY LOCATIONS)

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 months prior to purchase. Commercial seed will be 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 to 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 double the amounts listed below. 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 (note: if broadcasting seed, amounts are to be doubled):

Species	**Pound/acre**
Plains Bristlegrass (*Setaria macrostachya)*	5
Sand Bluestem (*Andropogon hallii)*	5
Little Bluestem (*Schizachyrium scoparium)*	3
Big Bluestem (*Andropogon gerardii)*	6
Plains Coreopsis (*Coreopsis tinctoria)*	2
Sand Dropseed (*Sporobolus cryptandrus)*	1
Four-winged Saltbush** (*Atriplex canescens*)	5

** Four-winged Saltbush can be used around well pads and other areas where caliche cannot be removed

* Pounds of pure live seed = (Pounds of seed) x (Percent purity) x (Percent germination)