EA-09-679

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ATS-09-175

R-111-POTASH

FORM APPROVED Form 3160-3 OMB No 1004-0137 Expires March 31, 2007 (April 2004) UNITED STATES Lease Serial No. DEPARTMENT OF THE INTERIOR NM02884A 4146 & 41449 BUREAU OF LAND MANAGEMENT 6 If Indian, Allotee or Tribe Name APPLICATION FOR PERMIT TO DRILL OR REENTER 7 If Unit or CA Agreement, Name and No DRILL REENTER la Type of work 8 Lease Name and Well No Type of Well ✓ Oil Well Gas Well ✓ Single Zone Multiple Zone Hudson 1 Federal #8H Name of Operator 9 API Well No. BOPCO, L. P. 3a Address P.O. Box 2760 3b Phone No. (include area code) 10 Field and Pool, or Exploratory Midland, TX 79702 Quahada Ridge SE (Delaware) 432-683-2277 11 Sec, T. R. M. or Blk and Survey or Area Location of Well (Report location clearly and in accordance with any State requirements *) NENW, UL E, 1015' FNL, 2080' FWL, Lat N32.33853, Lon W103.83622 Sec 1, T23S, R30E, Mer NMP At proposed prod zone 1980' FNL, 990 FWL, Sec 2-T23S-R30E, Lat N32.33592, Lon W103.857083 12 County or Parish 14 Distance in miles and direction from nearest town or post office 20 miles Northeast of Malaga, NM **Eddy County** .15 Distance from proposed* 17 Spacing Unit dedicated to this well 16 No of acres in lease 560 per AC 6/4/09 location to nearest property or lease line, ft (Also to nearest drig unit line, if any) 5706.11 160 300 18 Distance from proposed location* to nearest well, drilling, completed, 19 Proposed Depth 20 BLM/BIA Bond No on file 13,812' MD, 7267' TVD COB000050 applied for, on this lease, ft 22 Approximate date work will start' 23 Estimated duration Elevations (Show whether DF, KDB, RT, GL, etc.) 07/01/2009 32 days 24. Attachments The following, completed in accordance with the requirements of Onshore Oil and Gas Order No 1, shall be attached to this form 1 Well plat certified by a registered surveyor Bond to cover the operations unless covered by an existing bond on file (see Item 20 above) 2 A Drilling Plan A Surface Use Plan (if the location is on National Forest System Lands, the Operator certification SUPO shall be filed with the appropriate Forest Service Office) Such other site specific information and/or plans as may be required by the Name (Printed Typed) Signature **Annette Childers** Title Regulatory Clerk Approved by Signal Linda S.C. Rundell AUG 3 1 isi Linda S.C. Rundell 2009 Title STATE DIRECTOR NM STATE 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 APPROVAL FOR TWO YEARS

Conditions of approval, if any, are attached

APPRO

Title 18 LISC Section 1001 and Title 43 LISC Section 1212 make it a crime for any person knowingly and willfully to make it as crime for any person knowingly and willfully to make it as crime for any person knowingly and willfully to make it as crime for any person knowingly and willfully to make it as crime for any person knowingly and willfully to make it as crime for any person knowingly and willfully to make it as crime for any person knowingly and willfully to make it as crime for any person knowingly and willfully to make it as crime for any person knowingly and willfully to make it as crime for any person knowingly and willfully to make it as crime for any person knowingly and willfully to make it as crime for any person knowingly and willfully to make it as crime for any person knowingly and willfully to make it as crime for any person knowingly and willfully to make it as crime for any person knowingly and willfully to make it as crime for any person knowingly and willfully to make it as crime for any person knowingly and willfully to make it as crime for any person knowingly and willfully to make it as crime for any person knowingly and willfully to make it as crime for any person knowingly and will as crime for any person knowingly and will also consider the contraction of the

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

*(Instructions on page 2)

Carlsbad Controlled Water Basin

SEE ATTACHED FOR CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

CARLSBAD FIELD OFFICE

Form 3160-5 (April 2004)

		UNIT	TED ST	ATES			
D	EPAI			THE IN	ITERI	OR	
B	UREA	U OF	LAND	MANAC	EMEN	TV	
Υ	NOT	ICES	AND	REPO	RTS	ON	W
46:	_ 4	· 6					

	PARIMENT OF THE			Expires: March 31, 2007	
1	REAU OF LAND MAN			5. Lease Serial No	
	IOTICES AND REF			NM02884A 6 If Indian, Allottee or Tribe Name	
Do not use this abandoned well	form for proposals t . Use Form 3160-3 (/	o drill or to re APD) for such p	-enter an roposals.	6 II Indian, Allottee or Thee Name	
	LICATE - Other instr	ructions on reve	erse side.	7 If Unit or CA/Agreement, Name a	nd/or No.
. Type of Well ☐ ☐ ☐ Oil Well ☐ ☐ ☐ 0	Gas Well□□			8 Well Name and No.	
Name of Operator BOPCO, L. P.				Hudson 1 Federal #8H 9. API Well No	<u>-</u>
a. Address P. O. Box 2760 Midland, TX 797	702	3b. Phone No. (inclu 432-683-2277	de area code)	10 Field and Pool, or Exploratory Ar	
Location of Well (Footage, Sec., T.,	R., M., or Survey Description)			Quahada Ridge SE (Delawar	
NENW, UL E, 1015' FNL, 2080'	FWL. Lat N32.33853, Lon	W103.83622		11. County or Parish, State	
Sec 1, T23S, R30E, Mer NMP		,		Eddy Co., NM	
	ROPRIATE BOX(ES) TO	INDICATE NATU	TRE OF NOTICE, R	EPORT, OR OTHER DATA	
TYPE OF SUBMISSION		T	YPE OF ACTION		
Notice of Intent	Acidize	Deepen	Production (Sta	. —	
Subsequent Report	Alter Casing Casing Repair	Fracture Treat New Construction	Reclamation Recomplete	₩ell Integrity Other H2S Conti	ngency
	Change Plans	Plug and Abandon	L1	oandon Plan	
Final Abandonment Notice	Convert to Injection	Plug Back	Water Disposal		
	that a sulfur water flow occ	urred in the Hudson is H2S Contingency	1 Federal #7 (1690' F) Plan to be included w hore reguirem equipm not	NL & 1930' FWL, Sec 1, T23S, R30 ith the APD for the subject well. Jer 6 ents for ent are ent Nith his P MA 1/29	
14. I hereby certify that the foregon Name (Printed/Typed) Annette Childers	ing is true and correct	Title	Regulatory Clerk		
Signature Connet	ti Cailde	Date Date	6-4-09	•	
	THIS SPACE FOR F	EDERAL OR	STATE OFFICE	USE	
Approved by A Table 1			TATE DIR	ECTGR Date	
Conditions of approval, if any, are atta			,		
certify that the applicant holds legal or which would entitle the applicant to co		i die subject lease	Office NM	STATE OFFICE	

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(Instructions on page 2)

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

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102 Revised October 12, 2005

Submit to Appropriate District Office

State Lease - 4 Copies Fee Lease - 3 Copies

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

1301 W. Grand Avenue, Artesia, NM 88210

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

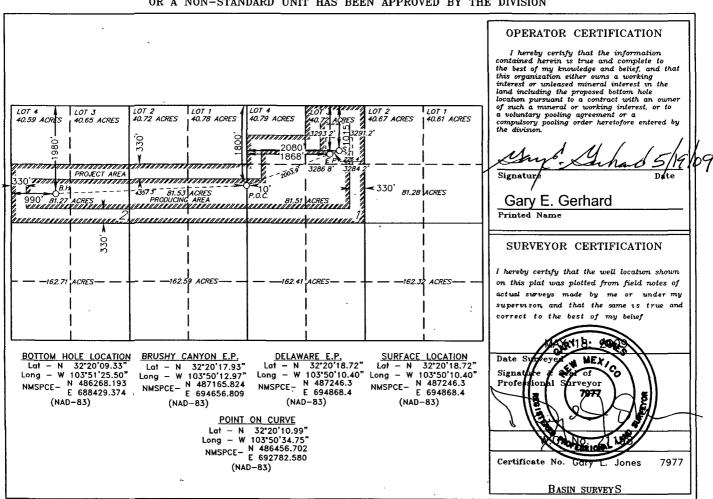
DISTRICT IV 1220 S. St. Francis Dr., Santa Fe, NM 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

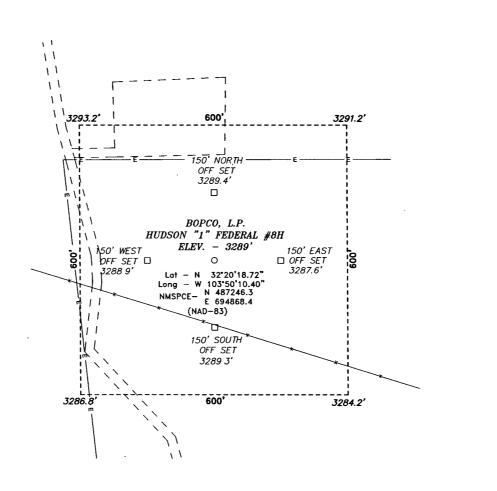
☐ AMENDED REPORT

API Number Pool Code Pool Name										
30.0	15.3	ก วาล	50)470	Qu	Quahada Ridge, SE (Delaware)				
Property (Property Nam	ie		Well Nu	mber	
306408				HU	DSON "1" FE	EDERAL		8H	8H	
OGRID No	o.				Operator Nam	ıe		Elevat		
260737			•		BOPCO, L.	Р.		3289	э'	
,	Surface Location									
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County	
C	1	23 S	30 E	•	1015	NORTH	2080	WEST	EDDY	
		<u>-</u>	Bottom	Hole Loc	cation If Diffe	erent From Sur	face			
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County	
E	2	23 S	30 E		1980	NORTH	990	WEST	EDDY	
Dedicated Acres	s Joint o	r Infill (onsolidation	Code Or	der No.	,	\			
300	N									

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



1, TOWNSHIP 23 SOUTH, RANGE 30 EAST, N.M.P.M., SECTION EDDY COUNTY, NEW MEXICO.



Directions to Location:

FROM THE JUNCTION OF HWY 128 AND WIPP ROAD, GO NORTH 0.8 MILES TO LEASE ROAD, ON LEASE ROAD GO WEST 0.4 MILES TO LEASE ROAD, ON LEASE ROAD GO SOUTH 700' THENCE WEST 0.2 MILES WINDING NORTH 0.25 MILES TO PROPOSED LOCATION.

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

W.O. Number: 21198 Drawn By: J. SMALL 05-18-2009 Disk: JMS 21198

Survey Date: 05-18-2009

200

Sheet

200

Sheets

400 FEET

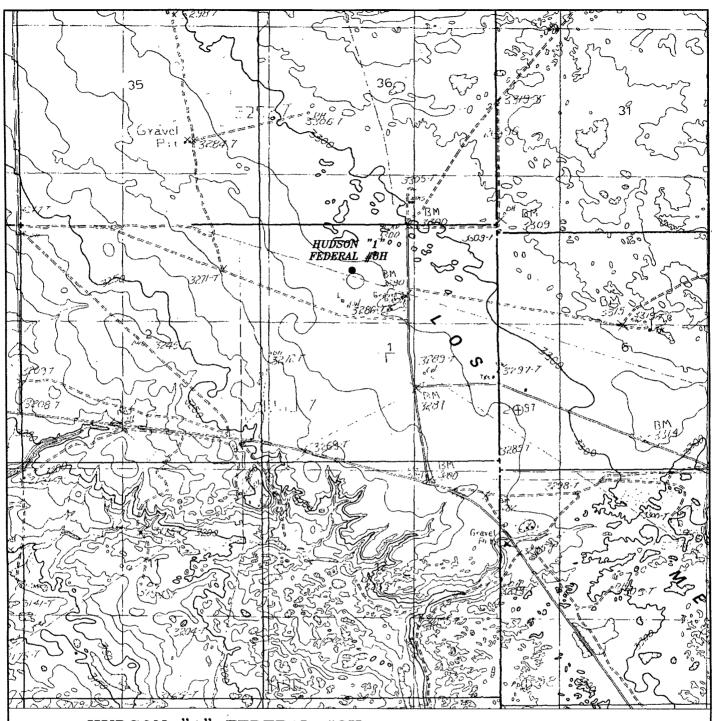
HUDSON "1" FEDERAL #8H / WELL PAD TOPO THE HUDSON "1" FEDERAL #8H LOCATED 1015'

FROM THE NORTH LINE AND 2080' FROM THE WEST LINE OF

SCALE: 1" = 200'

BOPCO, L.P.

SECTION 1, TOWNSHIP 23 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

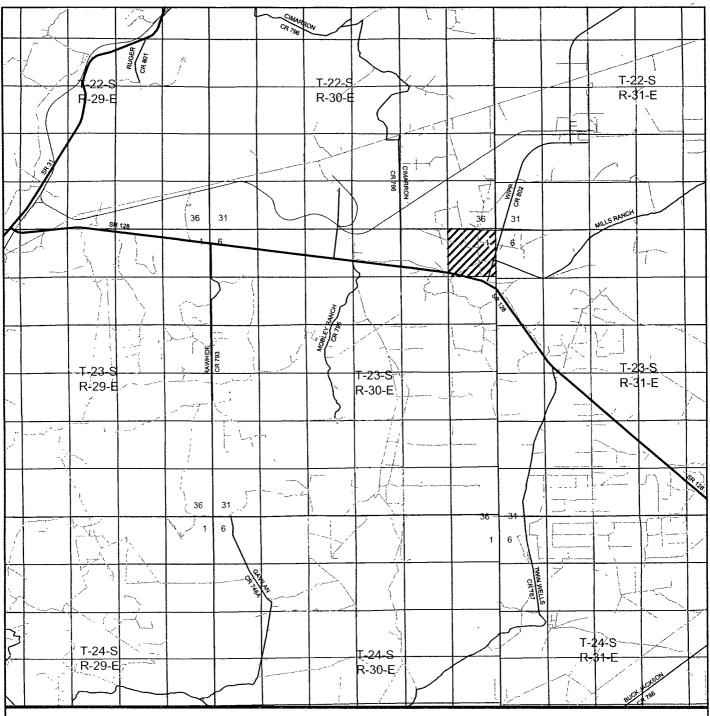


HUDSON "1" FEDERAL #8H Located 1015' FNL and 2080' FWL Section 1, Township 23 South, Range 30 East, N.M.P.M., Eddy County, New Mexico.



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

W.O. Number: JMS 21198	
Survey Date: 05-18-2009	
Scale: 1" = 2000'	
Date: 05-18-2009 .	

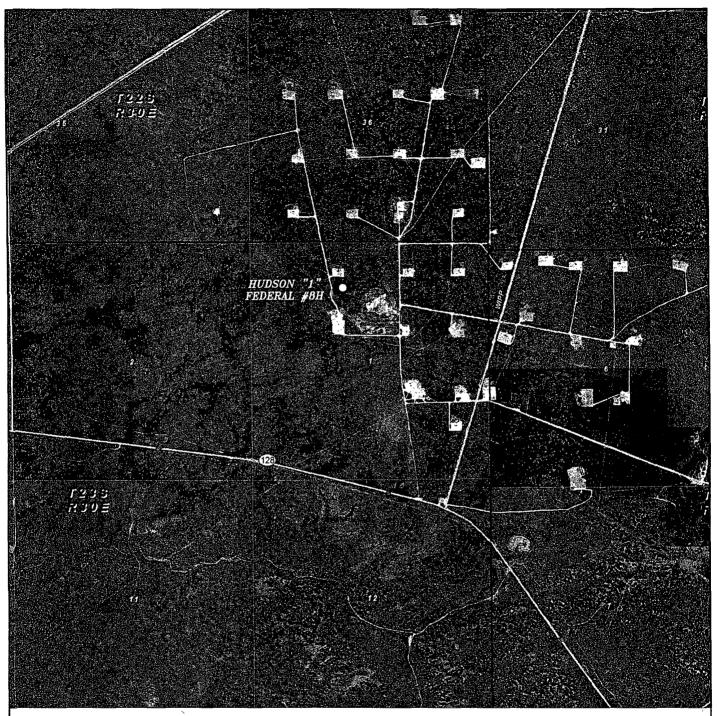


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W.O. Number: JMS 21198	1
Survey Date: 05-18-2009	1
Scale: 1" = 2 Miles	W
Date: 05-18-2009	1



HUDSON "1" FEDERAL #8H Located 1015' FNL and 2080' FWL Section 1, Township 23 South, Range 30 East, N.M.P.M., Eddy County, New Mexico.



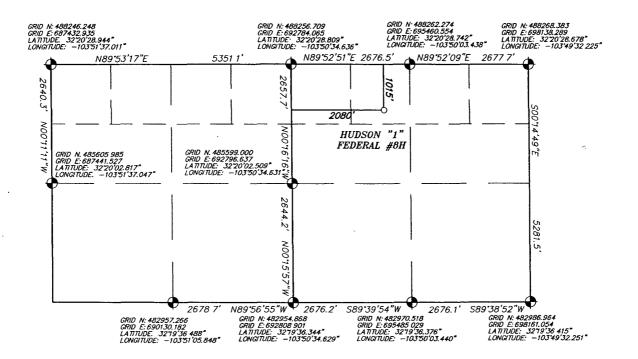
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(575) 392-2206 - Fax basinsurveys.com W O. Number: JMS 21198

Scale: 1" = 2000'

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

SECTION 1, TOWNSHIP 23 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY. NEW MEXICO.



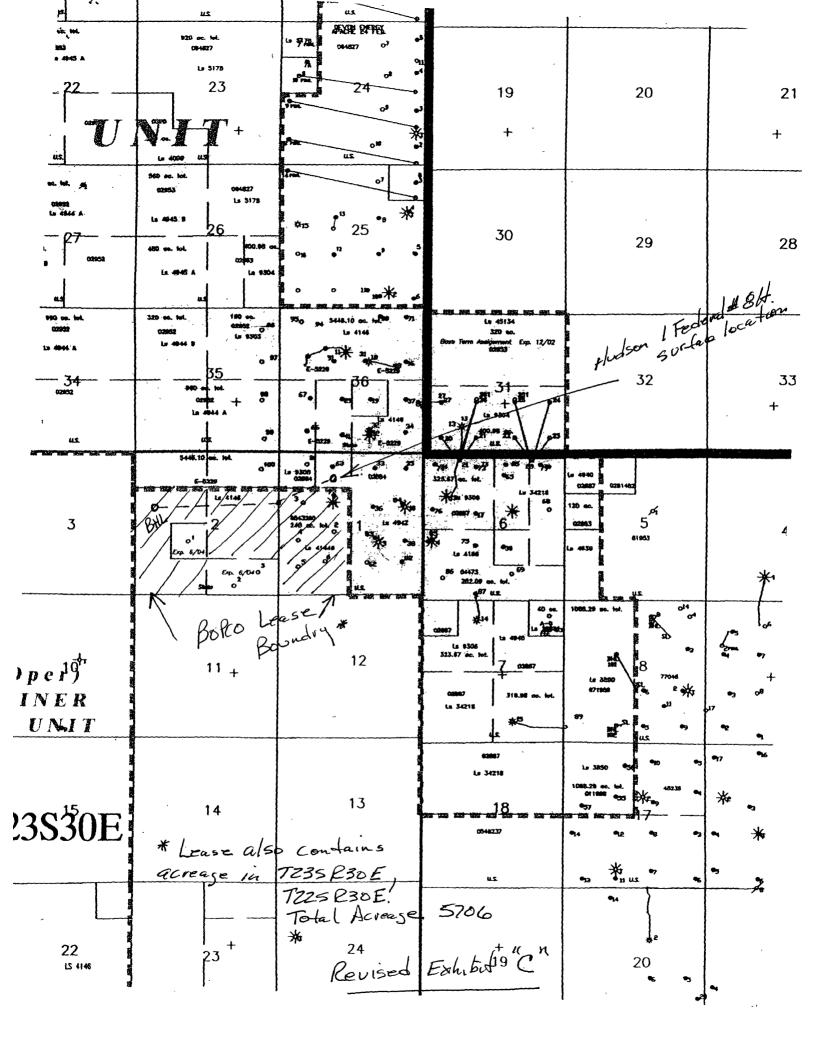
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P.O. Box 1786 1120 N. West County Rd. Hobbs, New Mexico 88241 (575) 393-7316 - Office (575) 392-2206 - Fax basinsurveys.com

JMS 21198 Survey Date: 05-18-2009 Scale: 1" = 2000'Date: 05-18-2009

W.O. Number:



Surface casing to be set into the Rustler below all fresh water sands.

7" casing will be set at approximately 7660' (thru curve) and cemented in two stages with DV Tool set at approximately 5000'. Cement will be circulated to surface.

Production casing will be 4-1/2" run with Halliburton "Swell" packers. Top of 4-1/2" liner will be approximately 200' above KOP (±6650').

Drilling procedure, BOP diagram, and anticipated tops attached.

This well is located within the R111 Potash area.

The surface location and bottom hole location are both orthodox.

BOPCO, L.P., at P. O. Box 2760, Midland, TX, 79702 is a subsidiary of BOPCO, L.P., 201 Mail Street, Ft. Worth, TX, 76102. Bond No. COB000050 (Nationwide).

EIGHT POINT DRILLING PROGRAM BOPCO, L.P.

NAME OF WELL: Hudson 1 Federal #8H

LEGAL DESCRIPTION - SURFACE: 1015' FNL, 2080' FWL, Section 1, T23S, R30E, Eddy County, NM.

BHL: 1980' FNL, 990' FWL, Section 2, T23S, R30E, Eddy County, New Mexico.

POINT 1: ESTIMATED FORMATION TOPS

(See No. 2 Below)

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

Anticipated Formation Tops: KB 3308' (estimated)

GL 3289'

	ESTIMATED								
	TOP FR	OM KB	ESTIMATED						
FORMATION	<u>TVD</u>	<u>MD</u>	SUB-SEA TOP	BEARING					
T/Rustler	191'	191'	+ 3117'	Barren					
B/Rustler	495'	495'	+ 2813'	Barren					
T/Salt	501'	501'	+ 2807'	Barren					
B/Salt	3566'	3566'	- 258'	Barren					
T/Delaware Mountain Group	3795'	3795'	- 487' [,]	Barren					
T/Lamar Lime	3795'	3795'	- 487'	Barren					
T/Ramsey	3833'	3833'	- 525'	Oil/Gas					
T/Lower Cherry Canyon	5969'	5969'	- 2661'	Oil/Gas					
KOP (Kick Off Point)	6839'	6845'	- 3511'	N/A					
T/Brushy Canyon "U" Sand	7247'	7325'	- 3939'	Oil/Gas					
EOC Target	7317'	7595'	- 4009'	Oil/Gas					
Target 2	7297'	9345'	- 3989'	Oil/Gas					
TD (end of lateral)	7267'	13812'	- 3959'	Oil/Gas					

POINT 3: CASING PROGRAM

TYPE	INTERVALS (MD)	Hole Size	PURPOSE	CONDITION
20"	0' - 60'	24"	Conductor	Contractor Discretion
13-3/8", 48#, H-40, ST&C	0' - 491'	17-1/2"	Surface	New
9-5/8", 40#, J-55, LT&C	0' - 3815'	12-1/4"	Intermediate	New
7", 26#, N-80, LT&C	0' - 7660'	8-3/4"	Production	New
4-1/2", 11.6#, N-80, Ultra Flush JT	6650' - 13812'	6-1/8"	Production	New

CASING DESIGN SAFETY FACTORS:

TYPE	TENSION	COLLAPSE	BURST
13-3/8", 48#, H-40, ST&C	16.10	2.85	3.49
9-5/8", 40#, J-55, LT&C	4.03	1.30	1.13
7", 26#, N-80, LT&C	3.04	1.51	2.99
4-1/2", 11.6#, N-80, Ultra Flush JT	6.10	2.11	1.90

DESIGN CRITERIA AND CASING LOADING ASSUMPTIONS:

SURFACE CASING

Tension A 1.6 design factor utilizing the effects of buoyancy (9.2 ppg).

Collapse A 1.0 design factor with full internal evacuation and a collapse force equal to the mud gradient in

which the casing will be run (0.48 psi/ft). The effects of axial load on collapse will be considered.

Burst A 1.3 design factor with a surface pressure equal to the fracture gradient at setting depth less a

gas gradient to the surface. Internal burst force at the shoe will be fracture pressure a that depth. Backup pressure will be formation pore pressure. In all cases a conservative fracture pressure will be used such that it represents the upper limit of potential fracture resistance up to a 1.0

psi/ft gradient. The effects of tension on burst will not be utilized.

PROTECTIVE CASING

Tension A 1.6 design factor utilizing the effects of buoyancy (10 ppg).

Collapse A 1.0 design factor with full internal evacuation and a collapse force equal to the mud gradient in

which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.

In the case of development drilling, collapse design should be analyzed using internal evacuation equal to 1/3 the proposed total depth of the well. This criterion will be used when there is

absolutely no potential of the protective string being used as a production casing string.

Burst A 1.0 surface design factor and a 1.3 downhole design factor with a surface pressure equivalent

to the fracture gradient at setting depth less a gas gradient to the surface. Internal burst force at the shoe will be fracture pressure at that depth. Back pressure will be formation pore pressure. In all cases a conservative fracture pressure will be used such that it represents the upper limit of

potential fracture resistance up to a 1.0 psi/ft gradient.

PRODUCTION CASING

Tension A 1.6 design factor utilizing the effects of buoyancy (9.2 ppg).

Collapse A 1.0 design factor with full internal evacuation and a collapse force equal to the mud gradient in

which the casing will be run (0.48 psi/ft). The effects of axial load on collapse will be considered.

Burst A 1.25 design factor with anticipated maximum tubing pressure (3529 psig) on top of the

maximum anticipated packer fluid gradient. Backup on production strings will be formation pore

pressure. The effects of tension on burst will not be utilized.

POINT 4: PRESSURE CONTROL EQUIPMENT (SEE ATTACHED DIAGRAM)

The blowout preventer for 12-1/4" intermediate hole will consist of Annular with myd cross, and choke manifold & chokes as per Diagram 1 (3000 psi WP). The BOP stack, choke, kill lines, kelly cocks, inside BOP, etc. when installed on the surface casinghead will be hydro-tested to 200 psig & 2000 psig by independent tester. The BOPE when rigged up on the intermediate casing spool will be tested to 3000 psig by independent tester. In addition to the high pressure test, a low pressure (200 psig) test will be required.

These tests will be performed:

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

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

POINT 5: MUD PROGRAM

DEPTH	MUD TYPE	WEIGHT	_FV	<u>PV</u>	<u>YP</u>	_FL	Ph
0' - 491'	FW Spud Mud	8.5 - 9.2	38-70	NC	NC_	NC	10 0
491' - 3815'	Brine Water	9.8 - 10.2	28-30	NC	NC	NC	9.5 - 10.5
3815' - 7660'	FW/Gel	8.7 - 9.0	28-36	NC	NC	NC .	9.5 - 10.0
7660' - 13812'	FW/Gel	8.7 - 9.0	28-36	NC	NC	NC	9.5 10.0

NOTE: May increase vis for logging purposes only.

POINT 6: TECHNICAL STAGES OF OPERATION

A) TESTING

None anticipated.

B) LOGGING

Run #1: PEX (GR-CNL/LDT-AIT) from as deep as possible in deviated hole (±7075') to 3815' with GR-CNL to surface.

Run #2: GR with MWD during drilling of build and horizontal portions of 8-3/4" hole and 6-1/8" openhole.

Run #3: Drill pipe conveyed GR-NL-Density-Caliper TD thru curve.

C) CONVENTIONAL CORING

None anticipated.

D) CEMENT COA

INTERVAL SURFACE:	AMOUNT SXS	FT OF FILL	TYPE	GALS/SX	PPG	FT ³ /SX
Lead: 0 – 291' (100% excess Circ to surface)	250	291	EconoCem-HLC + 2.7 #/sk Salt	10.25	12.8	1.88
Tail: 291' – 491' (100% excess)	210	200	HalCem-C + 2% CaCl ₂	6.39	14.8	1.35
INTERMEDIATE: Lead: 0' – 3315' (100% excess Circ to surface)	1100	3315	EconoCem-HLC + 2.7 #/sk Salt	10.27	12.8	1.89
Tail: 3315' – 3815' (100% excess)	250	500	HalCem-C	6.34	14.8	1.33
2 ND INTERMEDIATE Stage 1:	≣:			,		
Lead: 5000' – 6650 (50% excess)	200	1650	EconoCem-HLH	11.06	12.5	1.97
Tail: 6650' – 7660' (50% excess)	200	1000	HalcoCem-H + 0.5% Halad-9	4.89	16	1.13
DV Tool @ 5,000'						
Stage 2: Lead: 0' – 4900' (50% excess)	400	4900	EconoCem-HLC	11.6	12.5	1.97
Tail. 4900' – 5000' (50% excess)	50	100	Class "C" Neat	6 34	14.8	1.34

E) DIRECTIONAL DRILLING

BOPCO, L.P. plans to drill out the 9-5/8" intermediate casing with an 8-3/4" bit to a TVD of approximately 6840' at which point a directional hole will be kicked off and drilled at an azimuth of 272.39°, building angle at 12.00°/100' to a max angle of 90.65° at a TVD of 7273' (MD 7660'). This 90.65° angle will be maintained to a MD of 13,812' or TVD of 7267'. At 7660'; 7", 26#, N-80, LTC casing will be installed and cemented in two stages (DV Tool @ 5000') with cement being circulated to the surface. A 6-1/8" openhole lateral will be drilled out from under the 7" casing to a measured depth of 13,812'. 4-1/2", 11.6#, N-80, LTC casing will be installed with Halliburton "Swell" packers installed for zone isolation.

POINT 7: ANTICIPATED RESERVOIR CONDITIONS

Normal pressures are anticipated throughout Delaware section. A BHP of 3190 psi (max) or MWE of 8.4 ppg is expected. Lost circulation may exist in the Delaware Section from 3833'-7317' TVD. No H_2S is anticipated.

POINT 8: OTHER PERTINENT INFORMATION

A) Auxiliary Equipment

Upper and lower kelly cocks. Full opening stab in valve on the rig floor.

B) Anticipated Starting Date

Upon approval

32 days drilling operations

20 days completion operations

Gary E. Gerhard

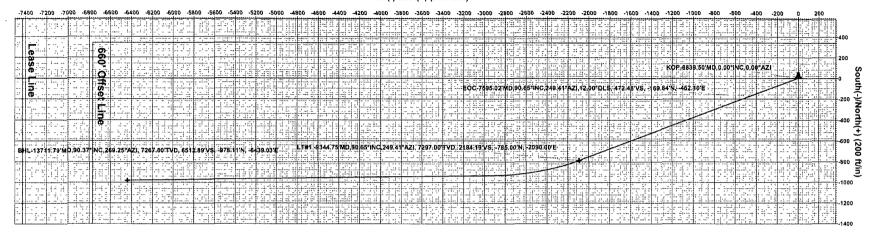
GEG/mac May 7, 2009 BOPCO, L.P.

PROJECT DETAILS: Eddy County
Geodetic System: US State Plane 1927 (Exact solution) Datum: NAD 1927 (NADCON CONUS)

Ellipsoid: Clarke 1866 Zone: New Mexico East 3001 System Datum. Mean Sea Level Local North Grid



West(-)/East(+) (200 ft/in)



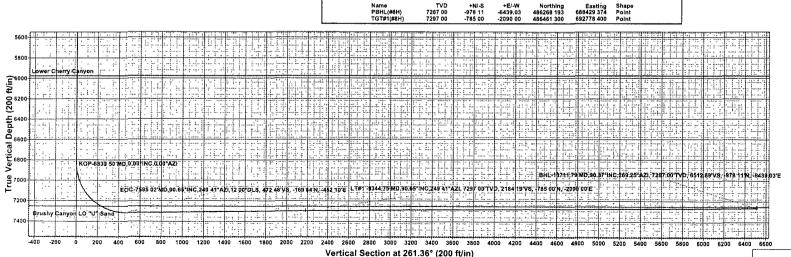
WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

WELL DETAILS: #8H

Ground Elevation 3289 00
RKB Elevation: Weil1 @ 3308 00ft (19' KB Correction)
Rig Name 19' KB Correction

+N/-S +E/-W Northind Easting Latittude Longitude 694868 400 32° 20' 16 721 N 103° 42' 8 622 W Slot 0 00 487246 300

	SECTION DETAILS										
Se Se	C	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
l	1	0 00	0 00	0 00	0 00	0.00	0.00	0.00	0.00	0.00	
i	2	6839 50	0.00	0.00	6839 50	0 00	0 00	0.00	0.00	0 00	
l	3	7595.02	90 65	249 41	7317 00	-169 84	-452.10	12.00	249 41	472 48	
l	4	7595.37	90.65	249 41	7317.00	-169.97	-452.43	2 00	0.00	472.82	
	5	9344.75	90.65	249 41	7297 00	-785 00	-2090.00	0.00	0.00	2184 19	TGT#1(#8H)
l	6	10138.07	90 37	269 25	7289,86	-931.13	-2865.69	2.50	90 74	2973.03	
l	7	13711.79	90.37	269 25	7267.00	-978.11	-6439.03	0 00	0.00	6512.89	PBHL(#8H)





Azimuths to Grid North True North: -0.34° Magnetic North: 7.56°

Magnetic Field Strength: 48915.3snT Dip Angle: 60.34° Date: 04/16/2009 Model. IGRF200510

Project: Eddy County Site: Hudson "1" Federal Well: #8H

Wellbore: OH Plan: Plan #1 (#8H/OH)

Plan Plan#1 (#8H/OH)

Created By Nate Bingham Date. 6 54, May 05 2009

BOPCO, L.P.

Eddy County Hudson "1" Federal #8H OH

Plan: Plan #1

Pathfinder X & Y Survey Report

05 May, 2009



Pathfinder X & Y Survey Report



Company: 🍀 BOPCO, L.P.

Project: Eddy County

Site:

Hudson "1" Federal

Well:

Wellbore: Design:

OH Plan #1 Local Co-ordinate Reference:

TVD Reference:

System Datum:

MD Reference: North Reference:

Survey Calculation Method:

Database:

Well #8H

Well1 @ 3308.00ft (19' KB Correction) Well1 @ 3308.00ft (19' KB Correction)

Grid

Minimum Curvature

Midland Database

Mean Sea Level

Project

Map System:

US State Plane 1927 (Exact solution)

Geo Datum:

NAD 1927 (NADCON CONUS)

Map Zone:

New Mexico East 3001

From:

Site Hudson "1" Federal

Site Position:

Northing: Easting:

487,246.300 ft 694,868.400 ft

Latitude: Longitude:

32° 20' 16.721 N 103° 42' 8.622 W

Grid Convergence:

0.34°

Position Uncertainty:

0.00 ft

Slot Radius:

Well Position

+N/-S +E/-W Northing:

487.246.300 ft 694,868.400 ft

Latitude: Longitude:

32° 20' 16.721 N 103° 42' 8.622 W

Position Uncertainty

0.00 ft 0.00 ft

0.00 ft

Easting: Wellhead Elevation:

Ground Level:

3,289,00 ft

Model Name

Sample Date

04/16/2009

Declination

Dip Angle Field Strength

IGRF200510

Design And Andrews

Magnetics

Audit Notes: Version:

Vertical Section: Depth From (TVD)

Phase:

PLAN

Tie On Depth:

Andrews (ft)

+E/-W

Direction Committee (S) 261.36

Survey Tool Program Date 05/05/2009

From To Survey (Wellbore)

0.00 13,711.79 Plan #1 (OH)

MWD - Standard

Pathfinder X & Y Survey Report



Company:

Project: Site:

Hudson "1" Federal

Wellbore: Design: ОН Plan #1

Eddy County

Local Co-ordinate Reference: Well #8H TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method: Database:

Well1 @ 3308.00ft (19' KB Correction)
Well1 @ 3308.00ft (19' KB Correction)

Grid

Minimum Curvature Midland Database

Planned Survey		es and the		and the second s	" mpp vs , .	100 Marie 1	. 18 1 1	The sections of the section of the s	\$5.50 S.50 S.50 S.50 S.50 S.50 S.50 S.50	And the second second
MD	(Inc	Azi	TVD	TVDSS	S 65	E/W V. Se		DLeg	Northing	Easting
(ft)	(°)*58° <	્રે.([™]) ંુ.	(ft)	(ft) (f		(ft) (ft)		(°/100ft)	(ft)	(ft)
0.00	0.00	0.00	0.00	-3,308.00	0.00	0.00	0.00	0.00	487,246.30	694,868.40
100.00	0.00	0.00	100.00	-3,208.00	0.00	0.00	0.00	0.00	487,246.30	694,868.40
200.00	0.00	0.00	200.00	-3,108.00	0.00	0.00	0.00	0.00	487,246.30	694,868.40
300.00	0.00	0.00	300.00	-3,008.00	0.00	0.00	0.00	0.00	487,246.30	694,868.40
400 00	0.00	0.00	400.00	-2,908.00	0.00	0.00	0.00	0.00	487,246.30	694,868.40
500.00	0.00	0.00	500.00	-2,808.00	0.00	0.00	0.00	0.00	487,246.30	694,868.40
600.00	0.00	0.00	600.00	-2,708.00	0.00	0.00	0.00	0.00	487,246.30	694,868.40
700.00	0.00	0.00	700.00	-2,608.00	0.00	0.00	0.00	0.00	487,246.30	694,868.40
800 00	0.00	0.00	800.00	-2,508.00	0.00	0.00	0.00	0.00	487,246.30	694,868.40
900.00	0.00	0.00	900.00	-2,408.00	0.00	0.00	0.00	0.00	487,246.30	694,868.40
1,000.00	0.00	0.00	1,000.00	-2,308.00	0.00	0.00	0.00	0.00	487,246.30	694,868.40
1,100.00	0.00	0.00	1,100.00	-2,208.00	0.00	0.00	0.00	0.00	487,246.30	694,868.40
1,200.00	0.00	0.00	1,200.00	-2,108.00	0.00	0.00	0.00	0.00	487,246.30	694,868.40
1,300.00	0.00	0.00	1,300.00	-2,008.00	0.00	0.00	0.00	0.00	487,246.30	694,868.40
1,400.00	0.00	0.00	1,400.00	-1,908.00	0.00	0.00	0.00	0.00	487,246.30	694,868.40
1,500.00	0.00	0.00	1,500.00	-1,808.00	0.00	0.00	0.00	0.00	487,246.30	694,868.40
1,600.00	0.00	0.00	1,600.00	-1,708.00	0.00	0.00	0.00	0.00	487,246.30	694,868.40
1,700.00	0.00	0.00	1,700.00	-1,608.00	0.00	0.00	0.00	0.00	487,246.30	694,868.40
1,800.00	0.00	0.00	1,800.00	-1,508.00	0.00	0.00	0.00	0.00	487,246.30	694,868.40
1,900.00	0.00	0.00	1,900.00	-1,408.00	0.00	0.00	0.00	0.00	487,246.30	694,868.40
2,000.00	0.00	0.00	2,000.00	-1,308.00	0.00	0.00	0.00	0.00	487,246.30	694,868.40
2,100.00	0.00	0.00	2,100.00	-1,208.00	0.00	0.00	0.00	0.00	487,246.30	694,868.40
2,200.00	0.00	0.00	2,200.00	-1,108.00	0.00	0.00	0.00	0.00	487,246.30	694,868.40
2,300.00	0.00	0 00	2,300.00	-1,008.00	0.00	0.00	0.00	0.00	487,246.30	694,868.40
2,400 00	0.00	0.00	2,400.00	-908.00	0.00	0.00	0.00	0.00	487,246.30	694,868.40
2,500.00	0.00	0.00	2,500 00	-808.00	0.00	0.00	0.00	0.00	487,246.30	694,868.40
2,600.00	0.00	0.00	2,600.00	-708.00	0.00	0.00	0.00	0.00	487,246.30	694,868.40

Pathfinder X & Y Survey Report



Company: BOPCO, L.P.
Project: Eddy County
Site: Hudson "1" Federal

Welli: Art 2 / 2 / 2 / 2 / 8 H Wellbore: Art 2 / 3 / 4 / OH Design: Plan #1 Local Co-ordinate Reference: TVD Reference: MD Reference: North Reference: Survey Calculation Method:

Database:

Well1 @ 3308.00ft (19' KB Correction) Well1 @ 3308.00ft (19' KB Correction) Grid

Minimum Curvature Midland Database

Well #8H

Planned Survey の物では異数などのでは MD Inc TVD **TVDSS** N/S EW V. Sec DLeg Northing Easting : (ft) ∴ (ft)‡ (°/100ft) (ft) (ft) (°) (°) (ft) (ft) (ft) (ft) \$100 \$ 2,700.00 0.00 0.00 2,700.00 -608.00 0.00 0.00 0.00 0.00 487,246.30 694,868.40 2,800.00 0.00 0.00 2.800.00 -508.00 0 00 0.00 0.00 0.00 487.246.30 694.868.40 2.900.00 0.00 0.00 2,900.00 -408.00 0.00 0.00 0.00 0.00 487,246,30 694.868.40 3,000.00 0.00 0.00 3,000.00 -308.00 0.00 0.00 0.00 0.00 487,246,30 694,868,40 3,100 00 0.00 0.00 3.100.00 -208.00 0.00 0.00 0.00 0.00 487.246.30 694,868.40 3,200.00 0.00 0.00 3,200.00 -108.00 0.00 0.00 0.00 0.00 487.246.30 694.868.40 3,300 00 0.00 0.00 3,300.00 -8.00 0.00 0.00 0.00 0.00 487,246.30 694,868.40 3,400.00 0.00 0.00 3,400.00 92.00 0.00 0.00 0.00 0.00 487,246,30 694.868.40 3,500.00 0.00 0.00 3,500,00 192.00 0.00 0.00 0.00 0.00 487.246.30 694.868.40 3,600.00 0.00 3,600.00 292.00 0.00 0.00 0.00 0.00 0.00 487,246,30 694.868.40 3.700 00 0.00 0.00 3,700.00 392.00 0.00 0.00 0.00 0.00 487,246,30 694,868.40 3.800.00 0.00 0.00 3,800.00 492.00 0.00 0.00 0.00 0.00 487,246.30 694,868,40 3.900.00 592.00 0.00 0.00 3.900.00 0.00 0.00 0.00 0.00 487.246.30 694.868.40 0.00 692.00 4,000.00 0.00 4,000.00 0.00 0.00 0.00 0.00 487,246.30 694.868.40 4,100.00 0.00 0.00 4,100.00 792.00 0.00 0.00 0.00 0.00 487.246.30 694.868.40 4.200.00 0.00 0.00 4,200.00 892.00 0.00 0.00 0.00 0.00 487,246.30 694,868.40 4.300.00 4.300.00 992.00 0.00 0.00 0.00 0.00 0.00 0.00 487,246.30 694,868.40 4,400.00 0.00 4,400.00 0.00 1,092.00 0.00 0.00 0.00 0.00 487,246.30 694,868.40 4.500.00 0.00 0.00 4,500.00 1,192.00 0.00 0.00 0.00 0.00 487,246.30 694,868.40 4,600.00 0.00 4,600.00 1.292.00 0.00 0.00 0.00 0.00 0.00 487,246.30 694.868.40 4,700.00 0.00 0.00 4,700.00 1,392.00 0.00 0.00 0.00 0.00 487,246,30 694,868.40 4.800.00 4,800.00 0.00 0.00 1,492.00 0.00 0.00 0.00 0.00 487,246,30 694,868.40 4,900.00 0.00 0.00 4,900.00 1,592.00 0.00 0.00 0.00 0.00 487,246.30 694,868.40 5,000.00 0.00 5,000.00 1,692.00 0.00 0.00 0.00 0.00 0.00 487,246.30 694.868.40 5,100.00 0.00 0.00 5,100.00 1,792.00 0.00 0.00 0.00 0.00 487,246.30 694,868.40 5,200 00 0.00 0.00 5,200.00 1,892.00 0.00 0.00 0.00 0.00 487,246.30 694,868.40 5,300.00 0.00 0.00 5,300.00 1,992.00 0.00 0.00 0.00 0.00 487,246.30 694,868.40

Pathfinder X & Y Survey Report



Company: Project: BOPCO, L.P.

Site: Well: Hudson "1" Federal

HO

Plan #1

Wellbore: Design:

Eddy County

TVD Reference: MD Reference: North Reference: Survey Calculation Method: Database:

Local Co-ordinate Reference:

(a) 1000 - PREMARKANA (Well#8H

> Well1 @ 3308.00ft (19' KB Correction) Well1 @ 3308.00ft (19' KB Correction)

Grid

Minimum Curvature Midland Database

anned Survey	ja er	, 1/4 ,	5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	C 5 224 5 1887 6	5 1/2 88 BBC		2000 10 10 10 10 10 10 10 10 10 10 10 10	Problem Philips of Print	400 1151 1 W	41. 48 x 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.
	iga / i re		P. S. Control				ja mija minist		Northing	Tarakian
MD, + ; (ft) 1 + >-;	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	4.486	E/W	V. Sec	DLeg (°/100ft)	Northing (ft)	Easting (ft)
5,400.00	0.00	0.00	5,400.00	2,092.00	0.00	0.00	0.00	0.00	487,246.30	694,868.4
5,500.00	0.00	0.00	5,500.00	2,192.00	0.00	0.00	0.00	0.00	487,246.30	694,868.4
5,600.00	0.00	0.00	5,600.00	2,292 00	0.00	0.00	0.00	0.00	487,246.30	694,868.
5,700.00	0.00	0.00	5,700.00	2,392.00	0.00	0.00	0.00	0.00	487,246.30	694,868.
5,800.00	0.00	0.00	5,800.00	2,492.00	0.00	0.00	0.00	0.00	487,246.30	694,868
5,900.00	0.00	0.00	5,900.00	2,592.00	0.00	0.00	0.00	0.00	487,246.30	694,868.
5,975.00	0.00	0.00	5,975.00	2,667.00	0.00	0.00	0.00	0.00	487,246.30	694,868
Lower Cherry Ca		0.00	0.000.00	2 602 02	0.00	0.00	0.00	0.00	487,246.30	694,868
6,000.00	0.00	0.00	6,000.00	2,692.00	0.00		0.00 0.00	0.00	•	•
6,100.00	0.00	0.00	6,100.00	2,792.00	0.00	0.00		0.00	487,246.30	694,868
6,200.00	0.00	0.00	6,200.00	2,892.00	0.00	0.00	0.00	0.00	487,246.30	694,868
6,300.00	0.00	0.00	6,300.00	2,992.00	0.00	0.00	0.00	0.00	487,246.30	694,868
6,400.00	0.00	0.00	6,400.00	3,092.00	0.00	0.00	0.00	0.00	487,246.30	694,868
6,500.00	0.00	0.00	6,500.00	3,192.00	0.00	0.00	0.00	0.00	487,246.30	694,868
6,600.00	0.00	0.00	6,600.00	3,292.00	0.00	0.00	0.00	0.00	487,246.30	694,868
6,700.00	0.00	0.00	6,700.00	3,392.00	0.00	0.00	0.00	0.00	487,246.30	694,868
6,800.00	0.00	0.00	6,800.00	3,492.00	0.00	0.00	0.00	0.00	487,246.30	694,868
6,839.50	0.00	0.00	6,839.50	3,531.50	0.00	0.00	0.00	0.00	487,246.30	694,868
	,0.00°INC,0.00°A									
6,850.00	1.26	249.41	6,850.00	3,542.00	-0.04	-0.11	0.11	12.00	487,246.26	694,868
6,875.00	4.26	249.41	6,874.97	3,566.97	-0.46	-1.23	1.29	12.00	487,245.84	694,867
6,900.00	7.26	249.41	6,899.84	3,591.84	-1.35	-3.58	3.74	12.00	487,244.95	694,864
6,925.00	10.26	249.41	6,924.54	3,616.54	-2.68	-7.15	7.47	12.00	487,243.62	694,86
6,950.00	13.26	249.41	6,949.02	3,641.02	-4.48	-11.91	12.45	12.00	487,241.82	694,856
6,975.00	16.26	249.41	6,973.19	3,665.19	-6.72	-17.88	18.68	12.00	487,239.58	694,85
7,000.00	19.26	249 41	6,997.00	3,689.00	-9.40	-25.01	26.14	12.00	487,236.90	694,84
7,025.00	22.26	249.41	7,020.37	3,712.37	-12.51	-33.31	34.81	12.00	487,233.79	694,83

Pathfinder X & Y Survey Report



Company:

BOPCO, L.P.

Project: Eddy County

Site: Well:

Hudson "1" Federal

Wellbore: Design:

#8H OH Plan #1

Local Co-ordinate Reference: Well #8H
TVD Reference: Well @ 3
Well 1 @ 3
North Reference: Grid
Survey Calculation Method: Minimum Database:

Well1 @ 3308.00ft (19' KB Correction) Well1 @ 3308.00ft (19' KB Correction)

Mınimum Curvature Midland Database

anned Survey (inc.) MD (ft) (°)		Azi.	Ť.Ť VĎ	TVDSS (ft)	N/S (ft)	EW (ft)	V. Sec	DLeg (°/100ft)	Northing (Easting (ft)
7,050.00	25.26	249.41	7,043.25	3,735.25	-16.05	-42.73	44.66	12.00	487,230.25	694,825.67
7,075.00	28.26	249.41	7,065.57	3,757.57	-20.01	-53.27	55.67	12.00	487,226.29	694,815.13
7,100.00	31.26	249.41	7,087.27	3,779.27	-24.37	-64.88	67.81	12.00	487,221.93	694,803.52
7,125.00	34.26	249.41	7,108.29	3,800.29	-29.13	-77.54	81.04	12.00	487,217.17	694,790.86
7,150.00	37.25	249.41	7,128.58	3,820.58	-34.27	-91.22	95.33	12.00	487,212.03	694,777.18
7,175.00	40.25	249.41	7,148.07	3,840.07	-39.77	-105.86	110.64	12.00	487,206.53	694,762.5
7,200.00	43.25	249.41	7,166.72	3,858.72	-45.62	-121.45	126.92	12.00	487,200.68	694,746.9
7,225.00	46.25	249.41	7,184.47	3,876.47	-51.81	-137.92	144.14	12.00	487,194.49	694,730.4
7,250.00	49.25	249.41	7,201.28	3,893.28	-58.32	-155.24	162.24	12.00	487,187.98	694,713.1
7,275.00	52.25	249.41	7,217.09	3,909.09	-65.13	-173.37	181.18	12.00	487,181.17	694,695.0
7,300.00	55.25	249.41	7,231.87	3,923.87	-72.22	-192.24	200.90	12.00	487,174.08	694,676.1
7,325.00	58.25	249.41	7,245.58	3,937.58	-79.57	-211.81	221.36	12.00	487,166.73	694,656.5
7,339.46	59.99	249.41	7,253.00	3,945.00	-83.94	-223.43	233.50	12.00	487,162.36	694,644.9
Brushy Canyon LO.						000.00	0.40.40	40.00	407 450 40	604.606.0
7,350.00	61.25	249.41	7,258.17	3,950.17	-87.17	-232.02	242.48	12.00	487,159.13	694,636.3
7,375.00	64.25	249.41	7,269.62	3,961.62	-94.98	-252.83	264.22	12.00	487,151.32	694,615.5
7,400.00	67.25	249.41	7,279.88	3,971.88	-103.00	-274.16	286.52	12.00	487,143.30	694,594.2
7,425.00	70.25	249.41	7,288.94	3,980.94	-111.19	-295.97	309.31	12.00	487,135.11	694,572.4
7,450.00	73.25	249.41	7,296.77	3,988.77	-119.54	-318.19	332.54	12.00	487,126.76	694,550.2
7,475.00	76.25	249.41	7,303.34	3,995.34	-128.02	-340.77	356.13	12.00	487,118.28	694,527.6
7,500.00	79.25	249.41	7,308.65	4,000.65	-136.61	-363.64	380.03	12.00	487,109.69	694,504.7
7,525.00	82.25	249.41	7,312.67	4,004.67	-145.29	-386.73	404.17	12.00	487,101.01	694,481.6
7,550.00	85.25	249.41	7,315.39	4,007.39	-154.03	-410.00	428.48	12.00	487,092.27	694,458.4
7,575.00	88.25	249.41	7,316.81	4,008.81	-162.80	-433.36	452.89	12.00	487,083.50	694,435.0
7,595.02	90.65	249.41	7,317.00	4,009.00	-169.84	-452.10	472.48	12.00	487,076.46	694,416.3
EOC-7595.02'MD,90 7,595.37	90.65°1NC,249.4	1° AZI,12.00°D L 249.41	S, 472.48'VS, -16 7,317.00	69.84'N, -452.10'E 4,009.00	-169.97	-452.43	472.82	2.02	487,076.33	694,415.9

Pathfinder X & Y Survey Report



Company:

BOPCO, L.P.

Eddy County

Site:

Hudson "1" Federal

Well:

#8H

Wellbore:

○ OH
○ Plan #1

Local Co-ordinate Reference: Well #8H

TVD Reference:

Well Well

Well1 @ 3308.00ft (19' KB Correction) Well1 @ 3308.00ft (19' KB Correction)

North Reference: Gr

Survey Calculation Method:

Grid

Minimum Curvature
Midland Database

Planned Survey				e të isai e :		m for			'X',	
MD 4	Inc.	Azi	TVĎ	TVDSS	NS.	, E/W	V. Sec	DLeg	Northing	Easting
(ft)	(°) 🐑 🐹	(°)	(ft)	*(ft)********	· 🖟 (ft) - 广泛(李	(ft):	^{ें हु} (ft)ू	् (°/100ft)	`** (ft)	a signification
7,600.00	90.65	249.41	7,316.94	4,008.94	-171.59	-456.76	477.35	0.00	487,074.71	694,411.64
7,700.00	90.65	249.41	7,315.80	4,007.80	-206.75	-550.37	575.18	0.00	487,039.55	694,318.03
7,800.00	90.65	249.41	7,314.66	4,006.66	-241.91	-643.98	673.00	0.00	487,004.39	694,224.42
7,900.00	90.65	249.41	7,313.51	4,005.51	-277.06	-737.59	770.83	0.00	486,969.24	694,130.81
8,000.00	90.65	249.41	7,312.37	4,004.37	-312,22	-831.19	868.66	0.00	486,934.08	694,037.21
8,100.00	90.65	249.41	7,311.23	4,003.23	-347.38	-924.80	966.48	0.00	486,898.92	693,943.60
8,200.00	90.65	249.41	7,310.08	4,002.08	-382.54	-1,018.41	1,064.31	0.00	486,863.76 ·	693,849.99
8,300.00	90.65	249.41	7,308.94	4,000.94	-417.69	-1,112.02	1,162.14	0.00	486,828.61	693,756.38
8,400.00	90.65	249.41	7,307.80	3,999.80	-452.85	-1,205.63	1,259.97	0.00	486,793.45	693,662.77
8,500.00	90.65	249.41	7,306.66	3,998.66	-488.01	-1,299.24	1,357.79	0.00	486,758.29	693,569.16
8,600.00	90.65	249.41	7,305.51	3,997.51	-523.17	-1,392.85	1,455.62	0.00	486,723.13	693,475.55
8,700.00	90.65	249.41	7,304.37	3,996.37	-558.32	-1,486.46	1,553.45	0.00	486,687.98	693,381.94
8,800.00	90.65	249.41	7,303.23	3,995.23	-593.48	-1,580.07	1,651.28	0.00	486,652.82	693,288.33
8,900.00	90.65	249.41	7,302.08	3,994.08	-628.64	-1,673.68	1,749.10	0.00	486,617.66	693,194.72
9,000.00	90.65	249.41	7,300.94	3,992.94	-663.80	-1,767.29	1,846.93	0.00	486,582.50	693,101.11
9,100.00	90.65	249.41	7,299.80	3,991.80	-698.95	-1,860.89	1,944.76	0.00	486,547.35	693,007.51
9,200.00	90.65	249,41	7,298.65	3,990.65	-734.11	-1,954.50	2,042.59	0.00	486,512.19	692,913.90
9,300.00	90.65	249.41	7,297.51	3,989.51	-769.27	-2,048.11	2,140.41	0.00	486,477.03	692,820.29
9,344.75	90.65	249.41	7,297.00	3,989.00	-785.00	-2,090.00	2,184.19	0.00	486,461.30	692,778.40
LT#1 -9344.75'M	D,90.65°INC,249.	.41°AZI, 7297.00	TVD, 2184.19'VS,	-785.00'N, -2090	.00'E - TGT#1(#8H)					
9,400.00	90.64	250.80	7,296.38	3,988.38	-803.80	-2,141.95	2,238.37	2.50	486,442.50	692,726.45
9,500.00	90.60	253.30	7,295.29	3,987.29	-834.62	-2,237.07	2,337.04	2.50	486,411.68	692,631.33
9,600.00	90.57	255.80	7,294.27	3,986.27	-861.26	-2,333.44	2,436.32	2.50	486,385.04	692,534.96
9,700.00	90.53	258.30	7,293.31	3,985.31	-883.68	-2,430.88	2,536.02	2.50	486,362.62	692,437.52
9,800.00	90.50	260.80	7,292.41	3,984.41	-901.82	-2,529.21	2,635.96	2.50	486,344.48	692,339.19
9,900.00	90.46	263.30	7,291.57	3,983.57	-915.66	-2,628.24	2,735.94	2.50	486,330.64	692,240.16
10,000.00	90.42	265.80	7,290.81	3,982.81	- 925.16	-2,727.77	2,835.78	2.50	486,321.14	692,140.63

Pathfinder X & Y Survey Report



Company: Project:

BOPCO, L.P

Site:

Eddy County Hudson "1" Federal

Well: #8H

Wellbore: ОН Plan #1 Design:

Local Co-ordinate Reference: Well #8H

TVD Reference: Well @ 3

MD Reference: Well @ 3

North Reference: Survey Calculation Method:

Database:

Well1 @ 3308.00ft (19' KB Correction) Well1 @ 3308.00ft (19' KB Correction)

Grid

Mınimum Curvature Midland Database

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MD	no ⊶	Azi	TVD	TVDSS	N/S	E/W	V. Sec	DLég (Northing	Easting
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)		°/100ft)	(ft)	(ft) 2
10,100.00	90.38	268.30	7,290.11	3,982.11	-930.32	-2,827.63	2,935.28	2.50	486,315.98	692,040.77
10,138.07	90.37	269.25	7,289.86	3,981.86	-931.13	-2,865.69	2,973.03	2.50	486,315.17	692,002.71
10,200.00	90.37	269.25	7,289.46	3,981.46	-931.95	-2,927.61	3,034.37	0.00	486,314.35	691,940.79
10,300.00	90.37	269.25	7,288.82	3,980.82	-933.26	-3,027.60	3,133.42	0.00	486,313.04	691,840.80
10,400.00	90.37	269.25	7,288.18	3,980.18	-934.57	-3,127.59	3,232.48	0.00	486,311.73	691,740.81
10,500 00	90.37	269.25	7,287.54	3,979.54	-935 89	-3,227.58	3,331.53	0.00	486,310.41	691,640 82
10,600.00	90.37	269.25	7,286.90	3,978.90	-937.20	-3,327.57	3,430.58	0.00	486,309.10	691,540.83
10,700.00	90.37	269.25	7,286.26	3,978.26	-938.52	-3,427.56	3,529.63	0.00	486,307.78	691,440.84
10,800.00	90.37	269.25	7,285.62	3,977.62	-939.83	-3,527.55	3,628.69	0.00	486,306.47	691,340.85
10,900.00	90.37	269.25	7,284.98	3,976.98	-941.15	-3,627.54	3,727.74	0.00	486,305.15	691,240.86
11,000.00	90.37	269.25	7,284.34	3,976.34	-942.46	-3,727.53	3,826.79	0.00	486,303.84	691,140.87
11,100.00	90.37	269.25	7,283.70	3,975.70	-943.78	-3,827.52	3,925.85	0.00	486,302.52	691,040.88
11,200.00	90.37	269.25	7,283.07	3,975.07	-945.09	-3,927.51	4,024.90	0.00	486,301.21	690,940.89
11,300.00	90.37	269.25	7,282.43	3,974.43	-946.41	-4,027.50	4,123.95	0.00	486,299.89	690,840.90
11,400.00	90.37	269.25	7,281.79	3,973.79	-947.72	-4,127.49	4,223.00	0.00	486,298.58	690,740.91
11,500.00	90.37	269.25	7,281.15	3,973.15	-949.03	-4,227.48	4,322.06	0.00	486,297.27	690,640.92
11,600.00	90.37	269.25	7,280.51	3,972.51	-950.35	-4,327.46	4,421.11	0.00	486,295.95	690,540.94
11,700.00	90.37	269.25	7,279.87	3,971.87	-951.66	-4,427.45	4,520.16	0.00	486,294.64	690,440.95
11,800.00	90.37	269.25	7,279.23	3,971.23	-952.98	-4,527.44	4,619.21	0.00	486,293.32	690,340.96
11,900.00	90.37	269.25	7,278.59	3,970.59	-954.29	-4,627.43	4,718.27	0.00	486,292.01	690,240.97
12,000.00	90.37	269.25	7,277.95	3,969.95	-955.61	-4,727.42	4,817.32	0.00	486,290.69	690,140.98
12,100.00	90.37	269.25	7,277.31	3,969.31	-956.92	-4,827.41	4,916.37	0.00	486,289.38	690,040.99
12,200.00	90.37	269.25	7,276.67	3,968.67	-958.24	-4,927.40	5,015.42	0.00	486,288.06	689,941.00
12,300.00	90.37	269.25	7,276.03	3,968.03	-959.55	-5,027.39	5,114.48	0.00	486,286.75	689,841.01
12,400 00	90.37	269.25	7,275.39	3,967.39	-960.86	-5,127.38	5,213.53	0.00	486,285.44	689,741.02
12,500 00	90.37	269.25	7,274.75	3,966.75	-962.18	-5,227.37	5,312.58	0.00	486,284.12	689,641.03
12,600.00	90.37	269.25	7,274.11	3,966.11	-963 49	-5,327.36	5,411.64	0.00	486,282.81	689,541.04

Pathfinder X & Y Survey Report



Company:

BOPCO, L.P.

Project: Eddy County

Hudson "1" Federal

Well: Wellbore: Design:

*OH Plan #1

Local Co-ordinate Reference: Well #8H TVD Reference: North Reference: North Reference: Survey Calculation Method:

Database:

Well1 @ 3308.00ft (19' KB Correction) Well1 @ 3308.00ft (19' KB Correction)

Minimum Curvature Midland Database

Pla	nne	ed∵	Sur	vèv
1.0		-		

B							o na			3 3 3	
	MD ₂	Înc	Azi	ŢVD	TVDSS	N/S	E/W	V. Sec	DLeg	Northing	Easting
	(ft))	(°)	(°)≥ ' ;	(ft)	(ft)	(ft)	(ft)	(ft) (°/100ft)	***(ft)*****	å, ''` (ft) ⊅
	12,700.00	90.37	269.25	7,273.47	3,965.47	-964.81	-5,427.35	5,510.69	0.00	486,281.49	689,441.05
	12,800.00	90.37	269.25	7,272.83	3,964.83	-966.12	-5,527.34	5,609.74	0.00	486,280.18	689,341.06
	12,900.00	90.37	269.25	7,272.19	3,964.19	-967.44	-5,627.33	5,708.79	0.00	486,278.86	689,241.07
	13,000.00	90.37	269.25	7,271.55	3,963.55	-968.75	-5,727.31	5,807.85	0.00	486,277.55	689,141.09
	13,100.00	90.37	269.25	7,270.91	3,962.91	-970.07	-5,827.30	5,906.90	0.00	486,276.23	689,041.10
	13,200.00	90.37	269.25	7,270.27	3,962.27	-971.38	-5,927.29	6,005.95	0.00	486,274.92	688,941.11
	13,300.00	90.37	269.25	7,269.63	3,961.63	-972.69	-6,027.28	6,105.00	0.00	486,273.61	688,841.12
	13,400.00	90.37	269.25	7,268.99	3,960.99	-974.01	-6,127.27	6,204.06	0.00	486,272.29	688,741.13
	13,500.00	90.37	269.25	7,268.35	3,960.35	-975.32	-6,227.26	6,303.11	0.00	486,270.98	688,641.14
	13,600.00	90.37	269.25	7,267.71	3,959.71	-976.64	-6,327.25	6,402.16	0.00	486,269.66	688,541.15
	13,700.00	90.37	269.25	7,267.08	3,959.08	-977.95	-6,427.24	6,501.22	0.00	486,268.35	688,441.16
	13,711.79	90.37	269.25	7,267.00	3,959.00	978.11	-6,439.03	6,512.89	0.00	486,268.19	688,429.37
	PBHL(#8H)							· ·			

Pathfinder X & Y Survey Report



Company: BOPCO, L.P.
Project: Eddy County
Site: Hudson "1" Federal

Well: #8H Wellbore: OH Design: Plan #1 Local Co-ordinate Reference: Well #8H

TVD Reference: Well1 @ 3308.00ft (19' KB Correction)
MD Reference: Well1 @ 3308.00ft (19' KB Correction)

North Reference: Grid

Survey Calculation Method: Minimum Curvature Database: Midland Database

Targets Target Name - hit/miss target - Shape	Dip Angle	Dip Dir.	TVD	+N/-S (ft)	+E/-W	和 Morthing	Easting (ft)	Latitude	Longitude
TGT#1(#8H) - plan hits target - Point	0.00	0.00	7,297.00	-785.00	-2,090.00	486,461.300	692,778.400	32° 20′ 9.075 N	N 103° 42′ 33.035 W
PBHL(#8H) - plan hits target - Point	0.00	0.00	7,267.00	-978.11	-6,439.03	486,268.193	688,429.374	32° 20′ 7.412 N	l 103° 43′ 23.736 W

Formations	Measured Depth	Vertical Depth	Name	Dip	3 338827 MARCH 2 T	er kalandar er			
^ 3 [′]	7,339.46 5,975.00	7,253.00	Brushy Canyon LO."U" S Lower Cherry Canyon	 0.0 0.0			`, # _n ' ,	, , , , , , , , , , , , , , , , , , ,	*

Plan Annotati	ions	1 (%) 48 (1)	325	*	The state of the s	77	. 4., 6	
		1. 11. 11.	Secretary Sing S.	ALL MARKET		A CONTRACTOR OF THE SECOND SECURITY	San San J	
2 14 5	Measured	Vertical	Local Coordi	nates			e di Brown	
	Depth	Depth	+N/-S	+E/-W			, , , , , , , , , , , , , , , , , , ,	
1. 1. 1. 1. 1.	(ft)	(ft)	도본(ft) 교육	(ft)	Comment		(-:	
	6,839.50	6,839.50	0.00	0.00	KOP-6839.50'MD,0.00°INC,0.00°AZI			
	7,595.02	7,317.00	-169.84	-452.10	EOC-7595.02'MD,90.65°INC,249.41°AZI,1	2.00°DLS, 472.48'VS, -169.8		
	9,344.75	7,297.00	-785.00	-2,090.00	LT#1 -9344.75'MD,90.65°INC,249.41°AZI,	7297.00'TVD, 2184.19'VS, -		
	13,711.79	7,267.00	-931.13	-2,865.69	BHL-13711.79'MD,90.37°INC,269.25°AZI,	7267.00'TVD, 6512.89'VS, -		

1				
1	Checked Bv:	Approved Dur	Data	
1	CHECKEU Dy.	Approved By:	Date:	
1	•			



BOPCO, L.P. Hudson 1 Federal #8H Sec 36, T22S-R30E Eddy County, NM McVay Rig #5

RIG LAYOUT SCHEMATIC INCLUSIVE OF CLOSED-LOOP DESIGN PLAN

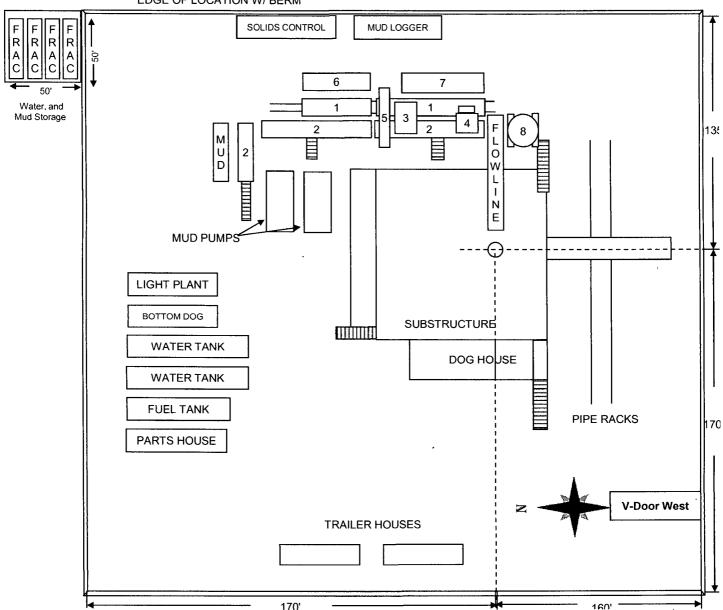
Solids Control Equipment Legend

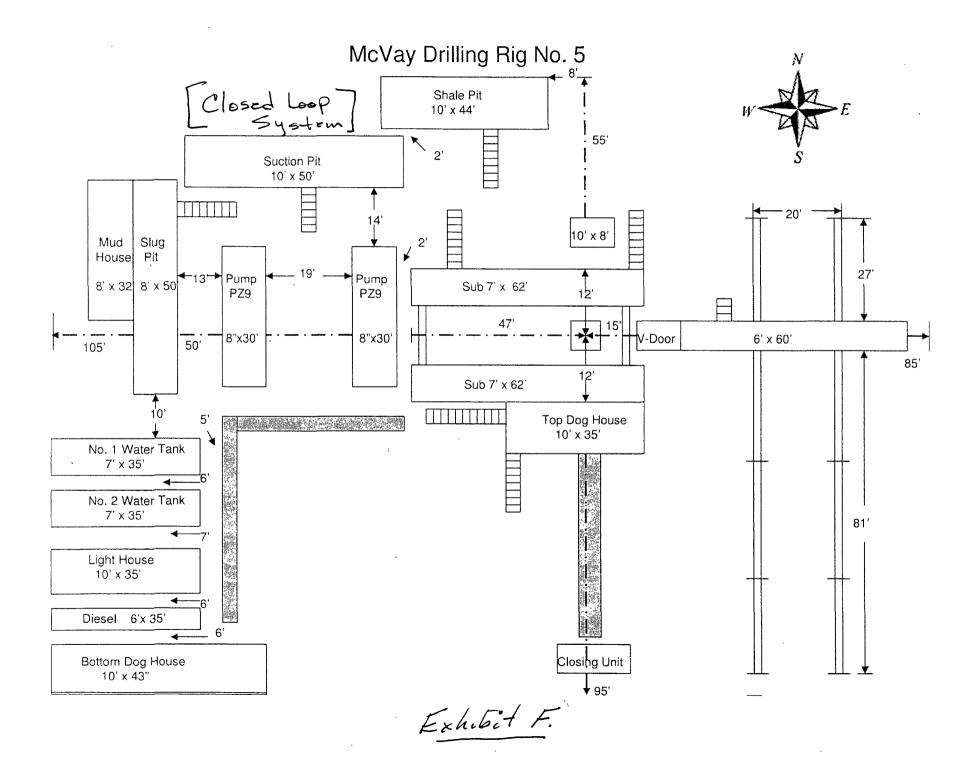
- 1) Roll Off Bin
- 5) Centrifuge
- 2) Steel Tank
- 6) Dewatering Unit
- 3) Mud Cleaner
- 7) Catch Tank

4) Shaker

8) Gas Seperator

EDGE OF LOCATION W/ BERM





McVay Rig #7,5

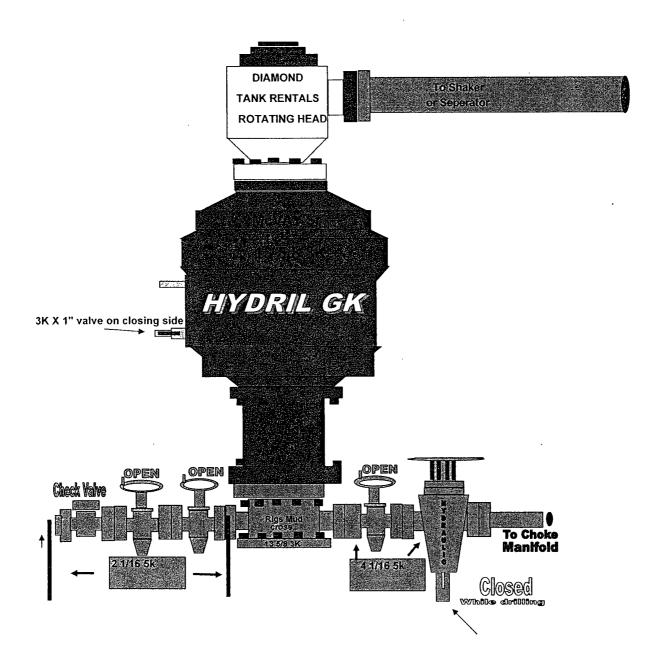
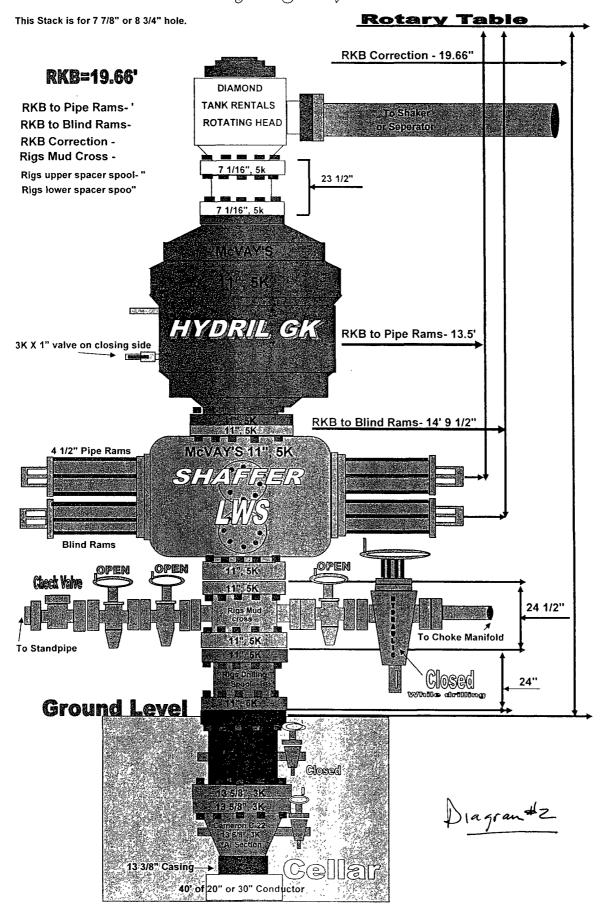
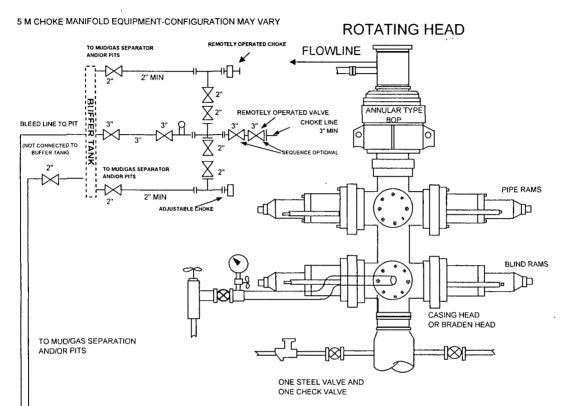


Diagram #1



BOPCO, L. P. 5-M WP BOPE WITH 5-M WP ANNULAR

Hudson 1 Federal #8H



THE FOLLOWING CONSTITUTE MINIMUM BLOWOUT PREVENTER REQUIREMENTS

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



TO STEEL PITS

TO FLARE PIT (NOT CONNECTED TO BUFFER TANK

MA

Hudson 1 Federal #8H

Exhibit "E"



HYDROGEN SULFIDE (H2S) CONTINGENCY PLAN

Assumed 100 ppm ROE = 3000'

100 ppm H₂S concentration shall trigger activation of this plan.

Emergency Procedures

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

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

Ignition of Gas source

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

Characteristics of H₂S and SO₂

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

Contacting Authorities

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

H₂S CONTINGENCY PLAN EMERGENCY CONTACTS

BOPCO L.P. Midland Office

432-683-2277

Key Personnel			
Name	Title	Cell Phone	Number
Bill Dannels	Drilling Supt.	432-63	8-9463
Buddy Jenkins	Assistant Supt	432-23	8-3295
Stephen Martinez	Engineer	432-55	6-0262
	Engineer		
Ambulanco		911	
State Police			6-2703
Shariff's Office		575-7 <i>4</i>	6-2703 6-0888
Fire Denartment		575-7 <i>4</i>	6-9000 6-9701
Local Emergency Pla	anning Committee	575-7 <i>4</i>	6-2101 6-2122
	servation Division		
Mew Mickley Oll Colls	Servation Division		0-1203
Carlsbad			
Ambulance		911	
State Police		575-88	
City Police		575-88	5-2111
Sheriff's Office		575-88	7-7551
Fire Department		575-88	7-3798
	inning Committee	5/5-88	7-6544
US Bureau of Land N	lanagement	575-88	7-6544
	ncy Response Commission (S	anta Fe)	_505-476-9600
24 Hour			_505-827-9126
New Mexico State En	nergency Operations Center_	- DO)	_505-476-9635
National Emergency	Response Center (Washington	n, DC)	_800-424-8802
Other			
Boots & Coots IWC_		800-256-9688	or 281-931-8884
Cudd PressureContre	ol	432-580-3544	or 432-570-5300
Halliburton		575-746-2757	
B. J. Services		575-746-3569	
Flight For Life - 4000	24 th St. Lubbock, Texas		_806-743-9911
Aerocare - R3, Box 4	9F, Lubbock, Texas		806-747-8923
Med Flight Air Amb -	2301 Yale Blvd SE #D3, Albud	q., NM	505-842-4433
S B Air Med Service -	- 2505 Clark Carr Loop SE, All	buq., NM	505-842-4949

MULTI-POINT SURFACE USE PLAN

NAME OF WELL: Hudson 1 Federal #8H

LEGAL DESCRIPTION - SURFACE: 1015' FNL, 2080' FWL, Section 1, T23S, R30E, Eddy County, NM.

BHL: 1980' FNL, 990' FWL, Section 2, T23S, R30E, Eddy County, New Mexico.

POINT 1: EXISTING ROADS

A) Proposed Well Site Location:

See Exhibit "A" & "C".

B) Existing Roads:

From the junction of State Hwy 128 and WIPP Road, go north on WIPP Road 0.5 miles to lease road. On lease road go 0.3 miles west to lease road, on lease road to north 0.2 miles to lease road, on lease road go west 0.2 miles to lease road, go north to proposed location.

C) Existing Road Maintenance or Improvement Plan:

See Exhibit "E"

POINT 2: NEW PLANNED ACCESS ROUTE

A) Route Location:

Existing lease roads will be used.

B) Width

12' 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

Exhibits "C" indicates existing wells within the surrounding area.

POINT 4: LOCATION OF EXISTING OR PROPOSED FACILITIES

A) Existing facilities within one mile owned or controlled by lessee/operator:

The BOPCO operated JRU #19 Battery is located in the NW quarter of SE quarter of Sec 36, T22S, R30E.

B) New Facilities in the Event of Production:

New production facilities will not be installed at the new location. Additional separators and heater/treaters will be added as needed at the James Ranch Unit #19 Battery. Proposed flow lines and power lines are displayed in Exhibit "E". Flow lines will follow existing roads to JRU #19 Battery. Power lines will be extended from existing lines and will also follow roads.

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 Exhibits "A" & "E".

A) Cuttings - Closed Loop System

Cuttings will be contained in the steel pits and will be hauled to an approved disposal facility.

B) Drilling Fluids – Closed Loop System

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

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.

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

Exhibit "D" shows the dimensions of the well pad and Exhibit "F" the 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.

B) Locations of closed loop system and access road

See Exhibits "E".

C) Lining of the Pits

No reserve pit. Closed loop system.

A) Reserve Pit Cleanup - Not applicable (see Point 9C above).

The pits will be fenced immediately after construction and shall be maintained until they are backfilled. Previous to backfill operations, any hydrocarbon material on the pits' surfaces shall be removed. The fluids and solids contained in the pits shall be backfilled with soil excavated from the site and soil adjacent to the reserve pits. The restored surface of the pits shall be contoured to prevent impoundment of surface water flow. Water-bars will be constructed as needed to prevent excessive erosion. Topsoil, as available, shall be placed over the restored surface in a uniform layer. The area will be seeded according to the Bureau of Land Management stipulations during the appropriate season following restoration.

B) Restoration Plans - Production Developed

In addition, those areas not required for production will be graded to blend with the surrounding topography. Topsoil, as available, will be placed upon those areas and seeded. The portion of the site required for production will be graded to minimize erosion and provide access during inclement conditions. Following depletion and abandonment of the site, restoration procedures will be those that follow under Item C.

C) Restoration Plans - No Production Developed

With no production developed, the entire surface disturbed by construction of the well site will be restored. The site will be contoured to blend with the surrounding topography and provide drainage of surface water. The topsoil, as available, shall be replaced in a uniform layer and seeded according to the Bureau of Land Management's stipulations.

D) Rehabilitation's Timetable

Upon completion of drilling operations, the initial cleanup of the site will be performed as soon as weather and site conditions allow economic execution of the work.

POINT 11: OTHER INFORMATION

A) Terrain

Relatively flat.

B) Soil

Caliche and sand.

C) Vegetation

Sparse, primarily grasses and mesquite with very little grass.

D) Surface Use

Primarily grazing.

POINT 11: OTHER INFORMATION - con't ...

Page 5

E) Surface Water

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

F) Water Wells

The closest known fresh water wells are located in Sec 35 and Sec 24, T22S, R30E and in Sec 5, T23S, R31E. In all cases the wells are over 1 mile from proposed location.

G) Residences and Buildings

None in the immediate vicinity.

H) Historical Sites

None observed.

Archeological Resources

An archeological survey has been performed for this area and will be submitted to the Bureau of Land Management. Any location or construction conflicts will be resolved before construction begins.

Surface Ownership

Surface Ownership

Federally

The well site is on state owned land. There will be no new access roads required for this location.

- Well signs will be posted at the drilling site.
- Open Pits None used. Closed loop system.

POINT 12: OPERATOR'S FIELD REPRESENTATIVE

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

DRILLING William R. Dannels

Box 2760

Midland, Texas 79702

(432) 683-2277

PRODUCTION Carlos Cruz

Box 2760

Midland, Texas 79702

(432) 683-2277

PRODUCTION

Dean Clemmer

104 East Green Street

Carlsbad, New Mexico 88220

(505) 887-7329

GEG/mac

OPERATOR CERTIFICATION

I hereby certify that I, or persons under my direct supervision have inspected the proposed drill site and access route; that I am familiar with the conditions which currently exist; that the statements made in the plan are, to the best of my knowledge, true and correct; and that the work associated with operations proposed herein will be performed by BOPCO, L.P. and it's contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

Date

Gary E. Gerhard



Department of Energy

Carlsbad Field Office P. O. Box 3090 Carlsbad, New Mexico 88221

JUN 9 5 2000

Mr. Jim Stovall
Field Manager
U.S. Department of Interior, Bureau of Land Management
Carlsbad Field Office
620 E. Greene Street
Carlsbad, NM 88221

Subject: Application For Permit To Drill (APD) Hudson 1 Federal #8h Received From

Bureau Of Land Management

Dear Mr. Stovall:

This letter is in reference to your letter numbered 3160 (080) dated June 4, 2009. WIPP land management staff has performed a review of this APD. The proposed location of this well was field verified and found to be located as stated on the APD.

The surface location of the proposed well is more than 330 feet from the WIPP Land Withdrawal Area boundary. Therefore, BOPCO, L.P is requested, but not required, to submit daily logs to the Department of Energy. If it so chooses, BOPCO, L.P. can email the daily logs and deviation surveys to Mr. Joel Siegel at joel.siegel@wipp.ws, or the information can be faxed to Mr. Siegel at (575) 234-6003.

Please feel free to contact me at (575) 234-7349 if you have any further questions regarding this APD.

Sincerely,

Susan McCauslin

NEPA Compliance Officer

BOPCO, L.P.

P. O. Box 2760 Midland, Texas 79702

432-683-2277

FAX-432-687-0329

May 7, 2009

Bureau of Land Management 620 E. Greene St. Carlsbad, NM 88220

To Whom It May Concern:

GEG/mac

BOPCO, L.P. respectfully request exception to the Prairie Chicken timing restrictions for this location - 940' FNL, 2080' FWL, of Section 1, T23S, R30E, Eddy County, New Mexico.

Sincerely,

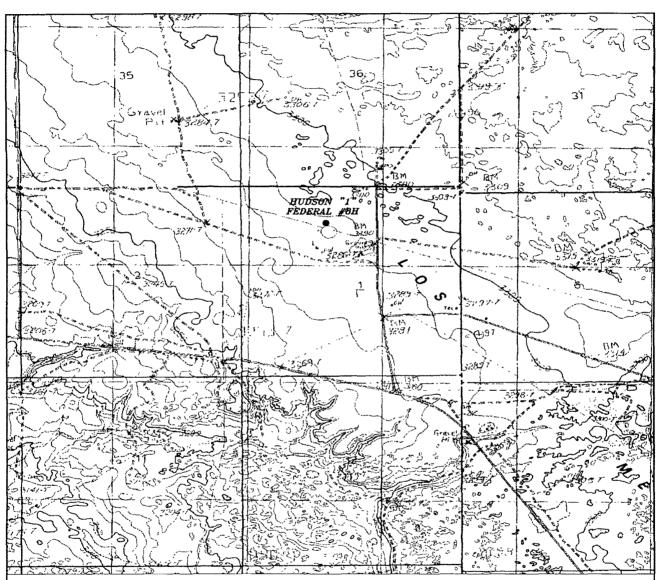
Gary E. Gerhard

Drilling Engineer

Hudson 1 Federal 8H 8-PT doc

Hudson 1 Federal #8H Exhibit "A"





HUDSON "1" FEDERAL #8H Located 1015' FNL and 2080' FWL Section 1, Township 23 South, Range 30 East, N.M.P.M., Eddy County, New Mexico.



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

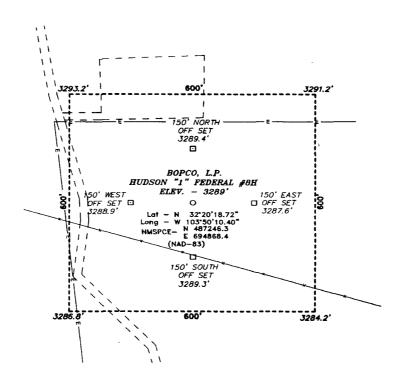
W.O. Number J	MS 21198
Survey Date (3-02-2009
Scale 1" = 2000). I
Date 03-03-20	009

BOPCO, L.P.

Hudson 1 Federal #8H Exhibit "B"



SECTION 1, TOWNSHIP 23 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.



Directions to Location:

FROM THE JUNCTION OF HWY 128 AND WIPP ROAD, GO NORTH 0.8 MILES TO LEASE ROAD, ON LEASE ROAD GO WEST 0.4 MILES TO LEASE ROAD, ON LEASE ROAD GO SOUTH 700' THENCE WEST 0.2 MILES WINDING NORTH 0.25 MILES TO PROPOSED LOCATION.

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

W.O. Number: 21198 Drawn By. J. **SMALL**Date. 03-03-2009 Disk. JMS 21198

200 0 200 400 FEET

| SCALE: 1" = 200'

BOPCO, L.P.

REF: HUDSON "1" FEDERAL #8H / WELL PAD TOPO

THE HUDSON "1" FEDERAL #8H LOCATED 1015"

FROM THE NORTH LINE AND 2080' FROM THE WEST LINE OF SECTION 1, TOWNSHIP 23 SOUTH, RANGE 30 EAST,

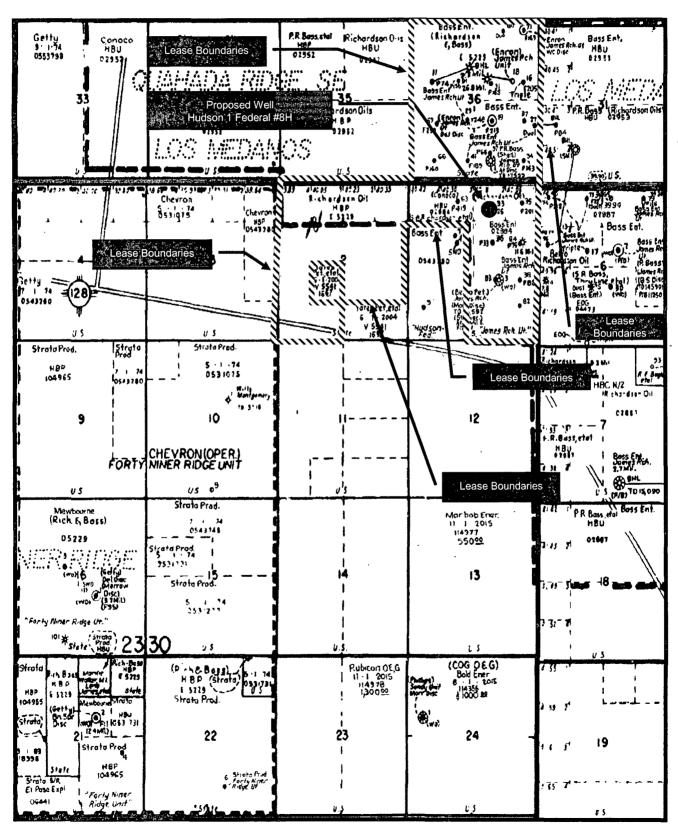
N.M.P.M., EDDY COUNTY, NEW MEXICO.

Sheets

Survey Date: 03-02-2009 | Sheet 1 of

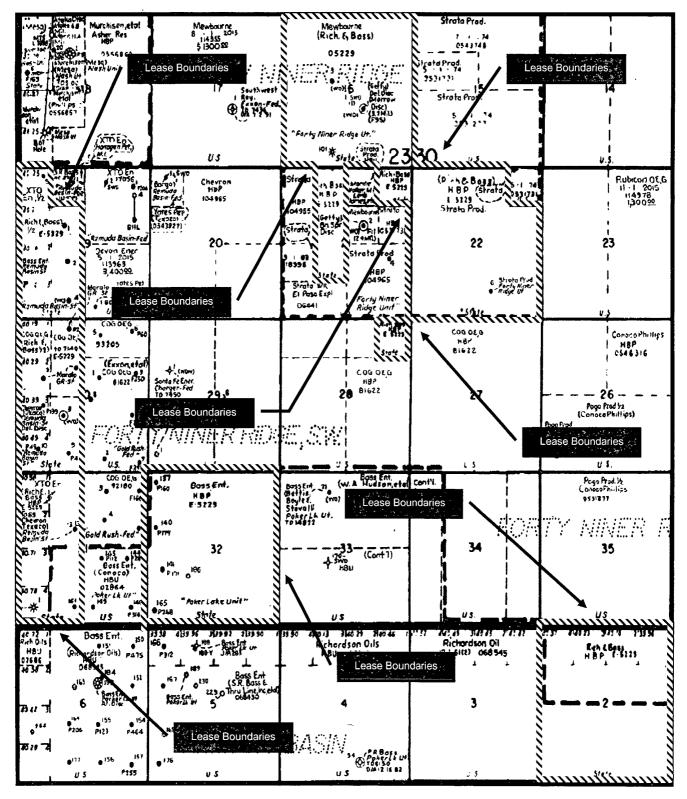
Hudson 1 Federal #8H Exhibit "C"





Hudson 1 Federal #8H Exhibit "C"





McVay Drilling Co. Closed Loop Location Platt Rig 5

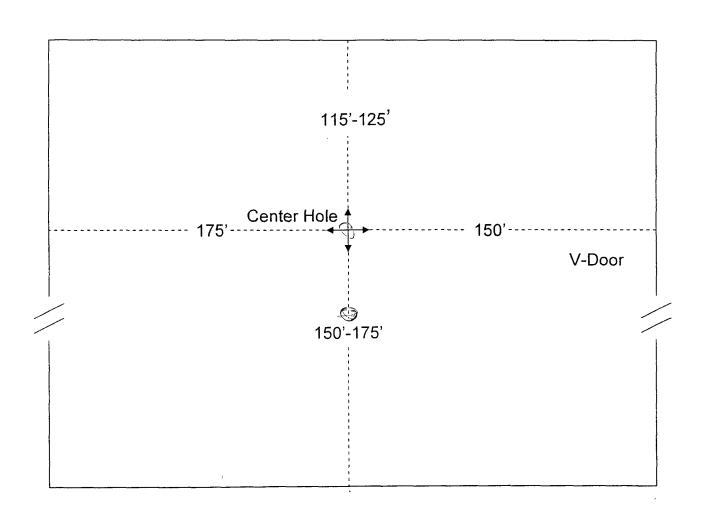
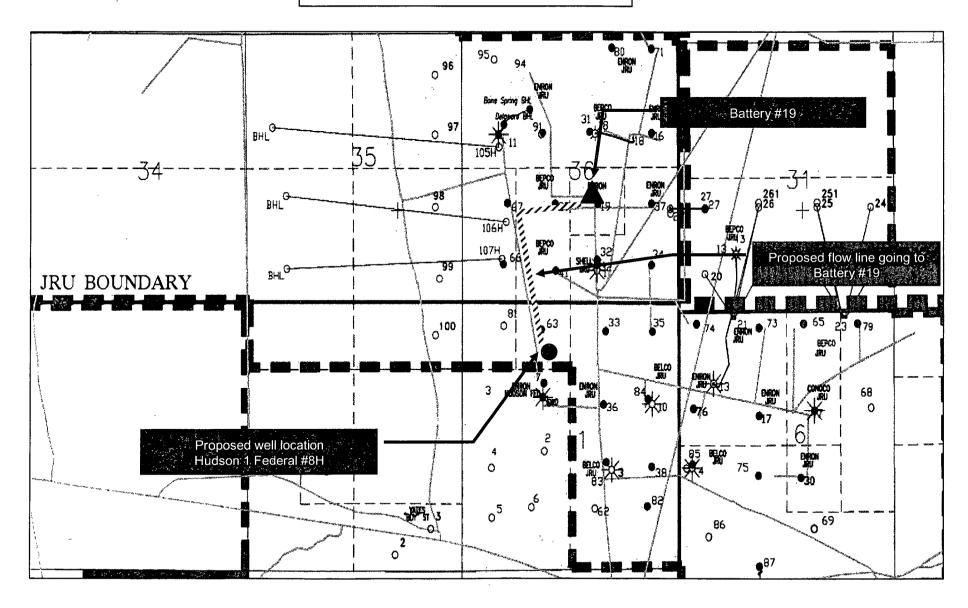


Exhibit D'

Hudson 1 Federal #8H Exhibit "E"







BOPCO, L.P. Hudson 1 Federal #8H Sec 36, T22S-R30E Eddy County, NM McVay Rig #5

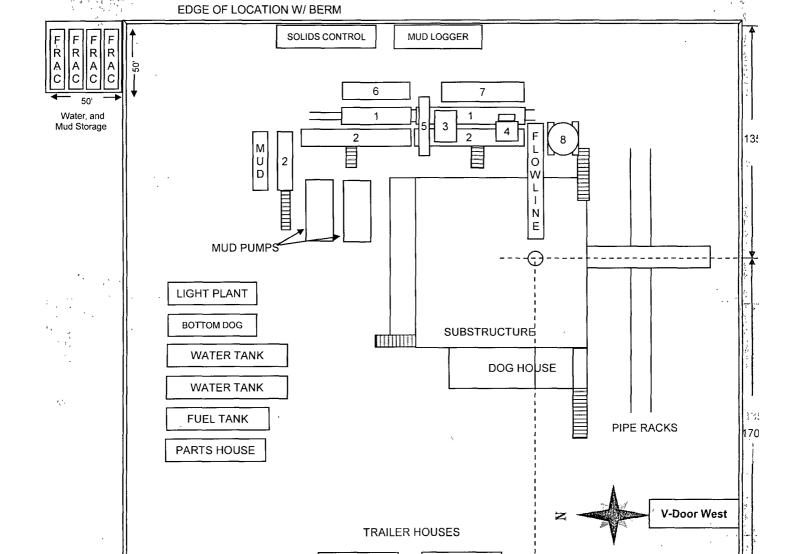
RIG LAYOUT SCHEMATIC INCLUSIVE OF CLOSED-LOOP DESIGN PLAN

Solids Control Equipment Legend

- 1) Roll Off Bin
- 5) Centrifuge
- 2) Steel Tank
- 6) Dewatering Unit
- 3) Mud Cleaner
- 7) Catch Tank

4) Shaker

8) Gas Seperator



170'

PECOS DISTRICT CONDITIONS OF APPROVAL

•	
OPERATOR'S NAME:	Bopco, L. P.
LEASE NO.:	4146, 41449, & NM02884A
WELL NAME & NO.:	Hudson 1 Federal #8H, James Ranch Unit #108H
SURFACE HOLE FOOTAGE:	1015' FNL & 2080' FWL
BOTTOM HOLE FOOTAGE	660' FNL & 990' FWL
SURFACE HOLE FOOTAGE:	940' FNL & 2080' FWL
BOTTOM HOLE FOOTAGE:	1980' FNL & 990' FWL
LOCATION:	Section 1, T. 23 S., R 30 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

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

General Provisions
Permit Expiration
Archaeology, Paleontology, and Historical Sit
Noxious Weeds
Special Requirements
Fencing
Cultural
Communitization Agreement
⊠ Construction
Notification
Topsoil
Closed loop systems
Federal Mineral Material Pits
Well Pads
Roads
Road Section Diagram
☑ Drilling
R-111-P potash/WIPP
High cave/karst
Production (Post Drilling)
Well Structures & Facilities
Pipelines
Electric Lines
☐ Closed Loop System/Interim Reclamation
Final Abandonmont/Poolamation

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)

A. Fencing

The fence located on the south side of the proposed well pad must be rebuilt to accommodate the construction of the well pad.

B. Cultural and Archaeological Resources

Historic properties in the vicinity of this project are protected by federal law. In order to ensure that they are not damaged or destroyed by construction activities, the project proponent and construction supervisors shall ensure that the following stipulations are implemented.

Date of Issue: 6/22/2009 BLM Report No.: 09-0281 and 09-

<u>291.1</u>

Project Name: James Ranch #108H and Hudson #1H flowlines

1. Professional archaeological monitoring. Contact your project archaeologist, or BLM's Cultural Resources Section at (575) 234-2228, 5917, 2236, or 5967, for assistance.

These stipulations must be given to your monitor at least 5 days prior to the start of construction.

No construction, including vegetation removal or other site prep may begin prior to the arrival of the monitor.

2. The archaeological monitor shall:

Observe all ground-disturbing activities within 100 feet of cultural site no. LA:

Ensure that all reroutes are adhered to avoid cultural site no.(s) LA LA47659 as shown on attached map.

Submit a brief monitoring report within 30 days of completion of monitoring.

Other:

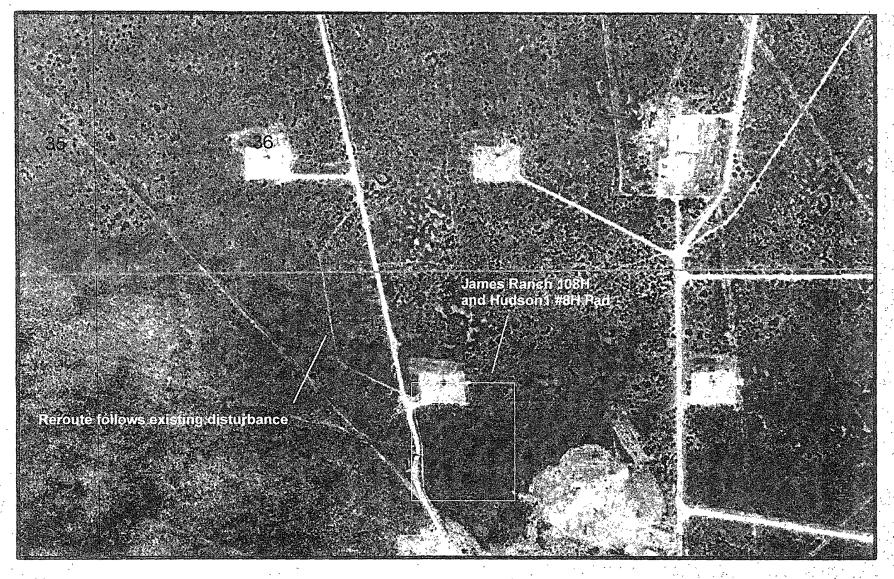
Site Protection and Employee Education: It is the responsibility of the project proponent and his construction supervisor to inform all employees and subcontractors that cultural and archaeological sites are to be avoided by all personnel, vehicles, and equipment; and that it is illegal to collect, damage, or disturb cultural resources on Public Lands

For assistance, contact BLM Cultural Resources:

Bruce Boeke (575) 234-5917 Martin Stein (575) 234-5967 George MacDonell (575) 234-2228 Lynn Robinson (575) 234-2236

Communitization Agreement

A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales. Operator to supply NMOCD order or description of pool which details the vertical and horizontal extent of pool to verify that requested communitization is within an approved and established pool.





James Ranch Unit 108H and 250 500 Hudson 1 #8H Flowline Reroute 75 150 300 Meters

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for narposes not intended by BLM Spatial information may not meet National Map Accuracy Standards This information may be updated without notification. Map created 1/22/2008



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) 234-5972 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 stockpile the topsoil of the well pad. The topsoil shall not be used to backfill the reserve pit and will be used for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Closed loop system- V door east

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

If the operator elects to surface the access road and/or well pad, mineral materials extracted during construction of the reserve pit may be used for surfacing the well pad and access road and other facilities on the lease.

Payment shall be made to the BLM prior to removal of any additional federal mineral materials from any site other than the reserve pit. 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. 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 thirty (30) 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

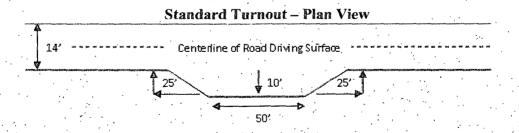
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching

Ditching shall be required on both sides of the road.

Turnouts

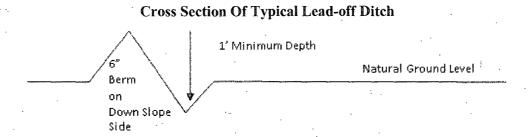
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



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.



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: 400'/4% + 100' = 200' lead-off ditch interval

Culvert Installations

Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

Cattleguards

An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road 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 cattleguard(s) that are in place and are utilized during lease operations.

A gate shall be constructed and fastened securely to H-braces.

Fence Requirement

Where entry is required 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 fence(s).

Public Access.

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

certe: Pre ei roddway ransition

John Ship Timous shall be considered on on single fore scools on all bired curves with addition to head specific curves with addition to head specific process on readed to head specific celow 1000 feet. 100 Typical Turnout Plan empanyment s*cp& 3:1 D' - 4' 2:1 above 4" **Embankment Section** crown type 03 - .05 A/A ezith surface aggregate svita .02 - .04 h/ft paved surface .02 - .03 A/A Depth treasured from the bornon of the ditch Side Hill Section

Figure 1 – Cross Sections and Plans For Typical Road Sections

travel surface 4-(slope 2 - 4%).

Typical Inslope Section

Typical Outsloped Section

VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

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

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

Eddy County

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

- 1. Hydrogen Sulfide has been reported as a hazard, but no measurements have been recorded. It is recommended that monitoring equipment be onsite for potential Hydrogen Sulfide. If Hydrogen Sulfide is encountered, please report measurements and formations to the BLM. Operator has also noted that there has been a sulfur water flow in the Hudson 1 Fed 7.
- 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.
- 3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
- 4. Gamma-Ray/Neutron logs shall be run from the base of the Salado formation to the surface. The logs shall be run at a speed which allows the logs to be legible and no faster than manufacturer of the logging tools recommended speed. (R-111-P area only)

B. CASING

Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.

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

Wait on cement (WOC) time 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. 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.

R-111-P Potash/WIPP

High cave/karst.

Possible lost circulation in the Delaware and Bone Spring formations.

- 1. The 13-3/8 inch surface casing shall be set at approximately 491 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. If the salt is encountered at a shallower depth, the casing is to be set a minimum of 25 feet above the salt.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.
 - 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.
- The minimum required fill of cement behind the 9-5/8 inch intermediate casing is:
 Cement to surface. If cement does not circulate see B.1.a, c-d above.
 Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst and potash.
- 3. The minimum required fill of cement behind the 7 inch production easing is:
 - a. First stage to DV tool, cement shall:
 - Cement to circulate. If cement does not circulate, contact the appropriate BLM office, before proceeding with second stage cement job.

- b. Second stage above DV tool, cement shall:
- Cement to surface. If cement does not circulate, contact the appropriate BLM office. Additional cement may be required as excess cement calculates to 9%.
- 4. The minimum required fill of cement behind the 4-1/2" inch production liner is:
 - No cement required. Operator using the Halliburton "Swell" packer liner system. Liner to be set 200' above the KOP at approximately 6710'.
- 5. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
- 6. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

C. PRESSURE CONTROL

- 1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
- 2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 2000 (2M) psi.
- 3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 9-5/8" intermediate casing shoe shall be 3000 (3M) psi. Operator installing 5M system and testing as 3M.
- 4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. The tests shall be done by an independent service company.
 - b. The results of the test shall be reported to the appropriate BLM office.
 - c. 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.

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

D. DRILL STEM TEST

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

E. WIPP Requirements

The proposed well is located more than 330' from the WIPP Land Withdrawal Area boundary. As a result, BOPCO, L.P. is requested, but not required to submit daily logs and deviation survey information to the Department of Energy per requirements of the Joint Powers Agreement. Information from this well will be included in the Quarterly Drilling Report. Information will also be provided to the New Mexico Oil Conservation Division after drilling activities have been completed. Any future entry into the well for purposes of completing additional drilling will require supplemental information.

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

WWI 072409

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.

Containment Structures

The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

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, Munsell Soil Color Chart # 5Y 4/2

B. PIPELINES

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

- 1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
- 2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

- 3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.
- 4. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:
- a. Activities of the holder including, but not limited to construction, operation, maintenance, and termination of the facility.
- b. Activities of other parties including, but not limited to:
 - (1) Land clearing.
 - (2) Earth-disturbing and earth-moving work.
 - (3) Blasting.
 - (4) Vandalism and sabotage.
- e. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars (\$1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder

6. All construction and maintenance activity will be confined to the authorized right-ofway width of 25 feet. 7. No blading or clearing of any vegetation will be allowed unless approved in writing by the Authorized Officer. 8. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky of duney areas, the pipeline will be "snaked" around hummocks and dunes rather then suspended across these features. 9. The pipeline shall be buried with a minimum of 24 inches under all roads. "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface. 10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer. 11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices. 12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" - Shale Green, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee. 13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name,

of any responsibility as provided herein.

14. The holder shall not use the pipeline route as a road for purposes other than routine

BLM serial number, and the product being transported. Signs will be maintained in a

legible condition for the life of the pipeline.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder 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 will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

C. ELECTRIC LINES

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

- 1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
- 2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
- 3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to

whether a release is caused by the holder, its agent, or unrelated third parties.

- 4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.
- 5. Powerlines shall be constructed in accordance to standards outlined in "Suggested Practices for Raptor Protection on Powerlines," Raptor Research Foundation, Inc., 1981. The holder shall assume the burden and expense of proving that pole designs not shown in the above publication are "raptor safe." Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.
- 6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.
- 7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.
- 8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.
- 9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.
- 10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder 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 will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:

- For reclamation remove poles, lines, transformer, etc. and dispose of properly.
- Fill in any holes from the poles removed.

IX. INTERIM RECLAMATION & RESERVE PIT CLOSURE

A. INTERIM RECLAMATION

If the well is a producer, interim reclamation shall be conducted on the well site in accordance with the orders of the Authorized Officer. The operator shall submit a Sundry Notices and Reports on Wells (Notice of Intent), Form 3160-5, prior to conducting 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.

The operators should work with BLM surface management specialists to devise the best strategies to reduce the size of the location. Any reductions 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 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.

BLM SERIAL #: COMPANY REFERENCE: WELL # & NAME:

Seed Mixture 2, for Sandy Sites

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

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

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

Species		l <u>b/acre</u>
Sand dropseed (Sporobolus cryptandrus) Sand love grass (Eragrostis trichodes)		1.0
Plains bristlegrass (Setaria macrostachya)		2.0

^{*}Pounds of pure live seed:

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

X. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS

Upon abandonment of the well and/or when the access road is no longer in service the Authorized Officer shall issue instructions and/or orders for surface reclamation and restoration of all disturbed areas.

On private surface/federal mineral estate land the reclamation procedures on the road and well pad shall be accomplished in accordance with the private surface land owner agreement.