OCD Artesia

ATS-09-436

SEP 28 2009

Form 3160-3
(April 2004)

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

STATE BHL

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5 Lease Serial No. ~~NM 02884 & E5229~~ NM U5432804 NM 02884B SHL

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER **R-111-POTASH**

7 If Unit or CA Agreement, Name and No

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

8. Lease Name and Well No
Hudson 1 Federal #9H

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

9 API Well No. 30-015-37310

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

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

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

4 Location of Well (Report location clearly and in accordance with any State requirements *)
At surface **NWSE, UL J, 2375' FSL, 1780' FEL, Lat N32.33330, Lon W103.83138**
At proposed prod zone **2300' FSL, 1800' FEL. Sec 2, T23S, R30E, Lat N32.33311, Lon W103.84878**

11 Sec., T R. M or Blk and Survey or Area
Sec 1, T23S, R30E, Mer NMP

14 Distance in miles and direction from nearest town or post office*
20 miles North East of Loving, NM

12 County or Parish **Eddy County**
13 State **NM**

15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig. unit line, if any) **265'**

16 No. of acres in lease **6026.34**

17. Spacing Unit dedicated to this well **200'**

18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. **295'**

19 Proposed Depth **12,657'MD, 7338'TVD**

20 BLM/BIA Bond No. on file **COB000050**

21 Elevations (Show whether DF, KDB, RT, GL, etc) **3271' GL**

22 Approximate date work will start* **08/01/2009**

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

25 Signature Annette Childers | Name (Printed/Typed) **Annette Childers** | Date 5-20-09

Title **Regulatory Clerk**

Approved by (Signature) /s/ Jesse J. Juen | Name (Printed/Typed) | Date SEP 24 2009

Title STATE DIRECTOR | Office 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
Conditions of approval, if any, are attached

APPROVAL FOR TWO YEARS

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 APPRO

Approval Subject to General Requirements & Special Stipulations Attached

NM-02-456

CARLSBAD FIELD OFFICE

Form 3160-5
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

***SUBMIT IN TRIPLICATE*- Other instructions on reverse side.**

5 Lease Serial No
NM 02884 B cR 6/8/09 SHL:

6 If Indian, Allottee or Tribe Name

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

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

8 Well Name and No
Hudson 1 Federal #9H

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

9 API Well No.

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

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

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

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

NWNE, UL J, 2375' FSL, 1780' FEL, Lat N32.33330, Lon W103.83138
Sec 1, T23S, R30E, Mer NMP

11 County or Parish, State
Eddy Co., NM

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

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☑ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☑ Other **H2S Contingency Plan**
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

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

Review of offset wells found that a sulfur water flow occurred in the Hudson 1 Federal #7 (1690' FNL & 1930' FWL, Sec 1, T23S, R30E) at a depth of 2794'. Therefore BOPCO, L.P. is submitting this H2S Contingency Plan to be included with the APD for the subject well.

Onshore Order 6 requirements for equipment are not met with this plan
7/24/09

Engineering review - OK
RGH 7/24/09

14. I hereby certify that the foregoing is true and correct
Name *(Printed/Typed)*
Annette Childers Title **Regulatory Clerk**

Signature Annette Childers Date 6-4-09

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by **STATE DIRECTOR** Title Date

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

Office NM STATE OFFICE

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

(Instructions on page 2)

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

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

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

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

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

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

Form C-102
Revised October 12, 2005

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-37310	50470	Quahada Ridge, SE (Delaware)

Property Code	Property Name	Well Number
306408	HUDSON "1" FEDERAL	9H

OGRID No.	Operator Name	Elevation
260737	BOPCO, L.P.	3271'

Surface Location

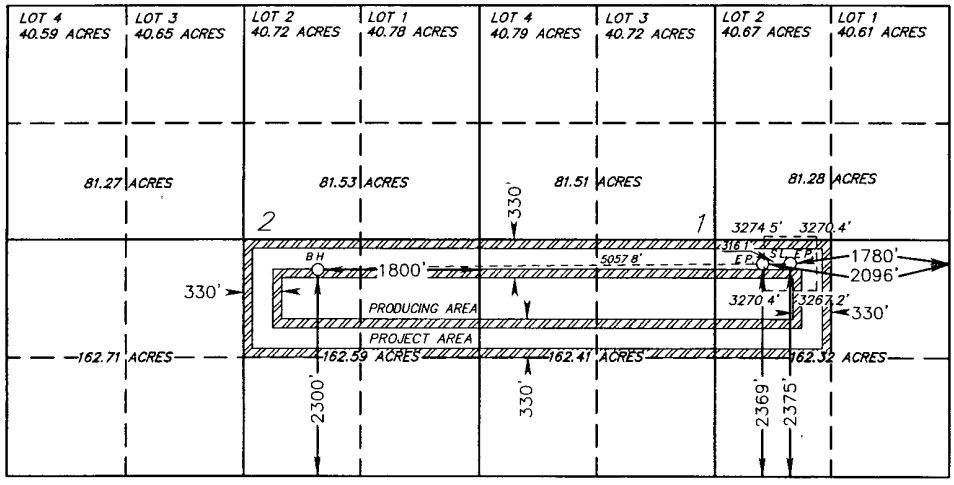
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	1	23 S	30 E		2375	SOUTH	1780	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	2	23 S	30 E		2300	SOUTH	1800	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
200	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



BOTTOM HOLE LOCATION	BRUSHY CANYON E.P.	DELAWARE E.P.	SURFACE LOCATION
Lat - N 32°19'59.20"	Lat - N 32°19'59.83"	Lat - N 32°19'59.89"	Lat - N 32°19'59.89"
Long - W 103°50'55.61"	Long - W 103°49'56.66"	Long - W 103°49'52.98"	Long - W 103°49'52.98"
NMSPCE- N 485256.458	NMSPCE- N 485343.068	NMSPCE- N 485350.5	NMSPCE- N 485350.5
E 690998.230	E 696055.279	E 696371.3	E 696371.3
(NAD-83)	(NAD-83)	(NAD-83)	(NAD-83)

OPERATOR CERTIFICATION

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

Signature Date 5/19/09

Gary E. Gerhard
Printed Name

SURVEYOR CERTIFICATION

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

MAY 18, 2009
Date Surveyed

Signature & Seal of Professional Surveyor

GARY L. JONES
NEW MEXICO
7977
REGISTERED PROFESSIONAL LAND SURVEYOR

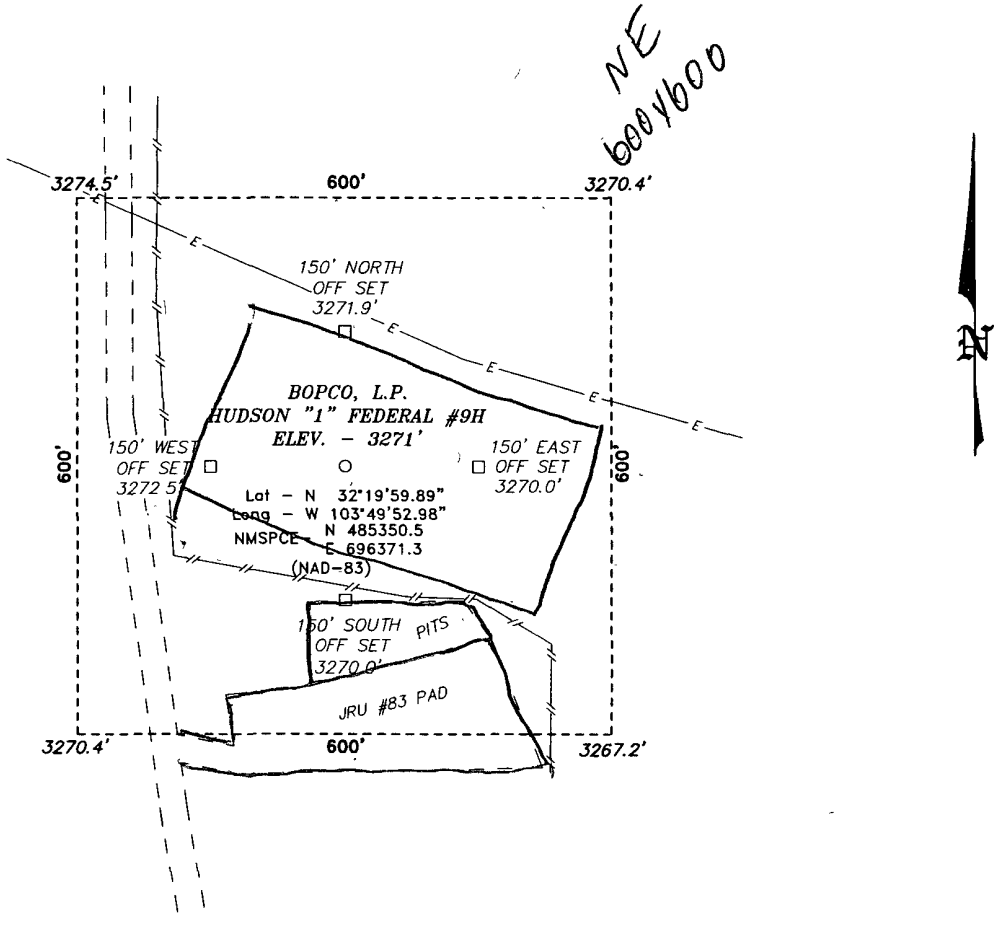
W.O. No. 2118

Certificate No. Gary L. Jones 7977

BASIN SURVEYS

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

EDDY COUNTY, **NEW MEXICO.**



200 0 200 400 FEET

SCALE: 1" = 200'

Directions to Location:

FROM THE JUNCTION OF 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 0 4 TO PROPOSED LOCATION

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

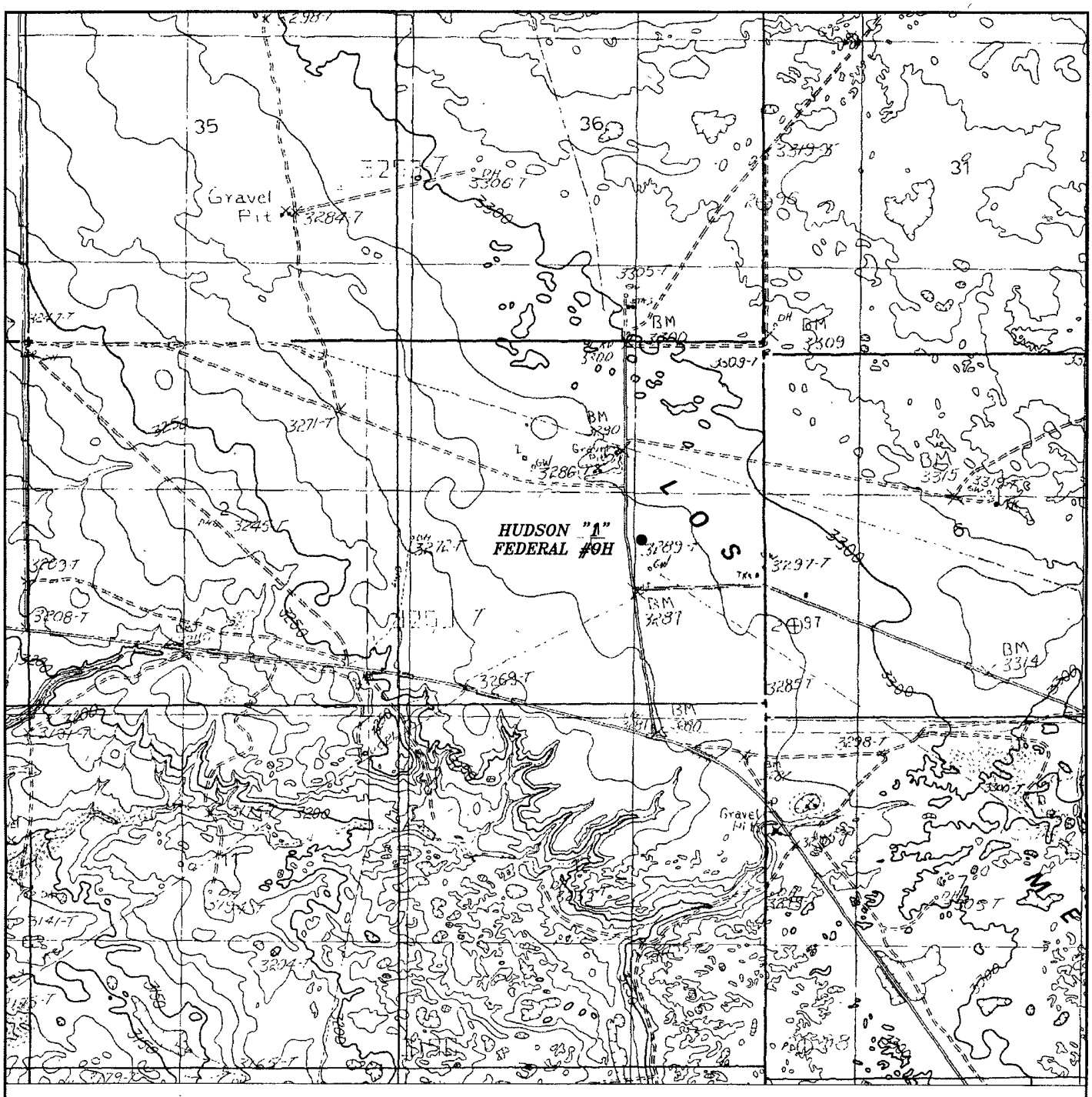
W.O. Number 21181	Drawn By J. SMALL
Date: 05-18-2009	Disk: JMS 21181

BOPCO, L.P.

REF: HUDSON "1" FEDERAL #9H / WELL PAD TOPO

THE HUDSON "1" FEDERAL #9H LOCATED 2375' FROM THE SOUTH LINE AND 1780' FROM THE EAST LINE OF SECTION 1, TOWNSHIP 23 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

Survey Date 05-18-2009 | Sheet 1 of 1 Sheets



HUDSON "1" FEDERAL #9H
Located 2375' FSL and 1780' FEL
Section 1, Township 23 South, Range 30 East,
N.M.P.M., Eddy County, New Mexico.

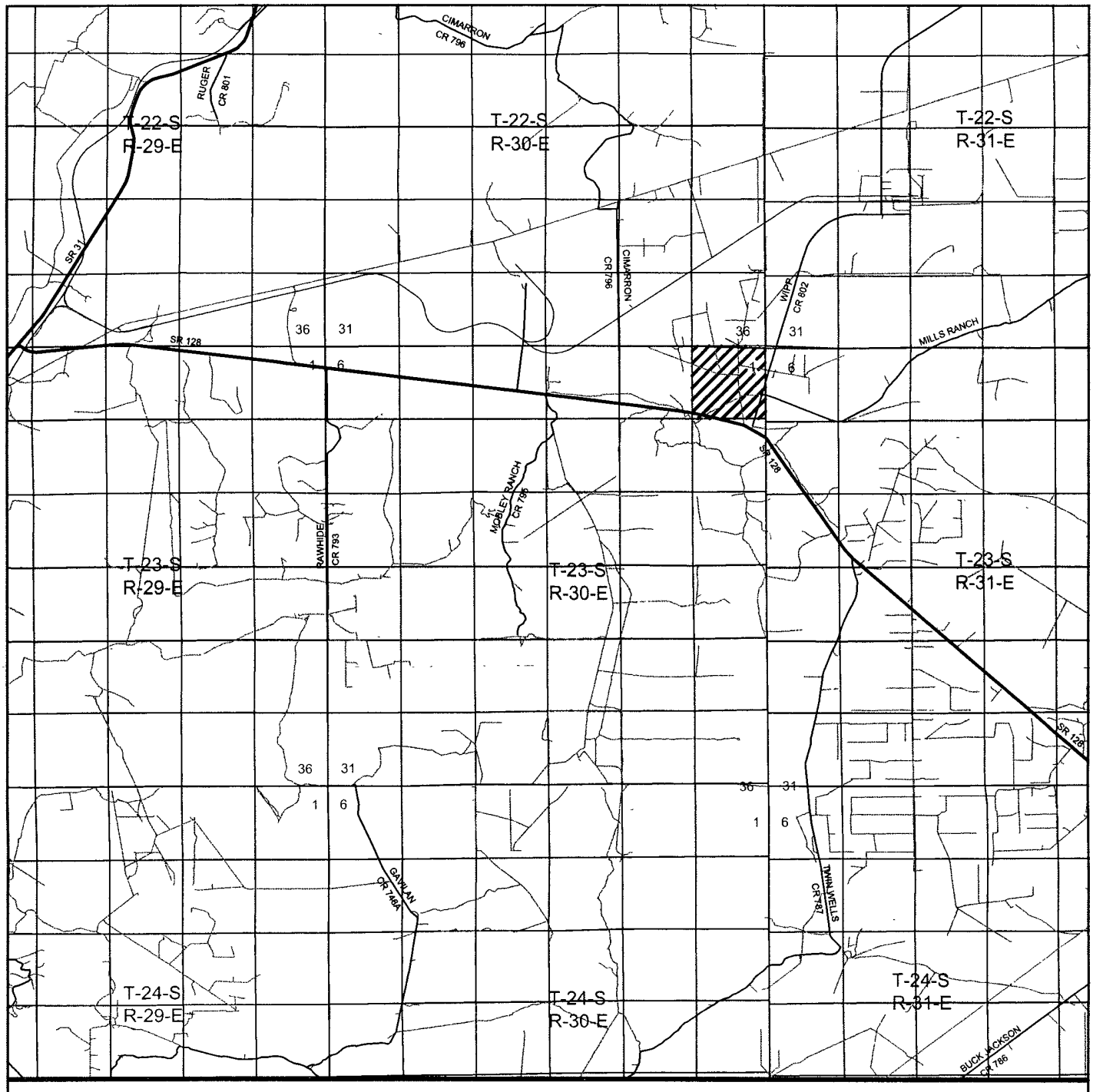
basin surveys
focused on excellence in the oilfield

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

W.O. Number:	JMS 21181
Survey Date.	05-18-2009
Scale:	1" = 2000'
Date	05-18-2009

N

BOPCO, L.P.



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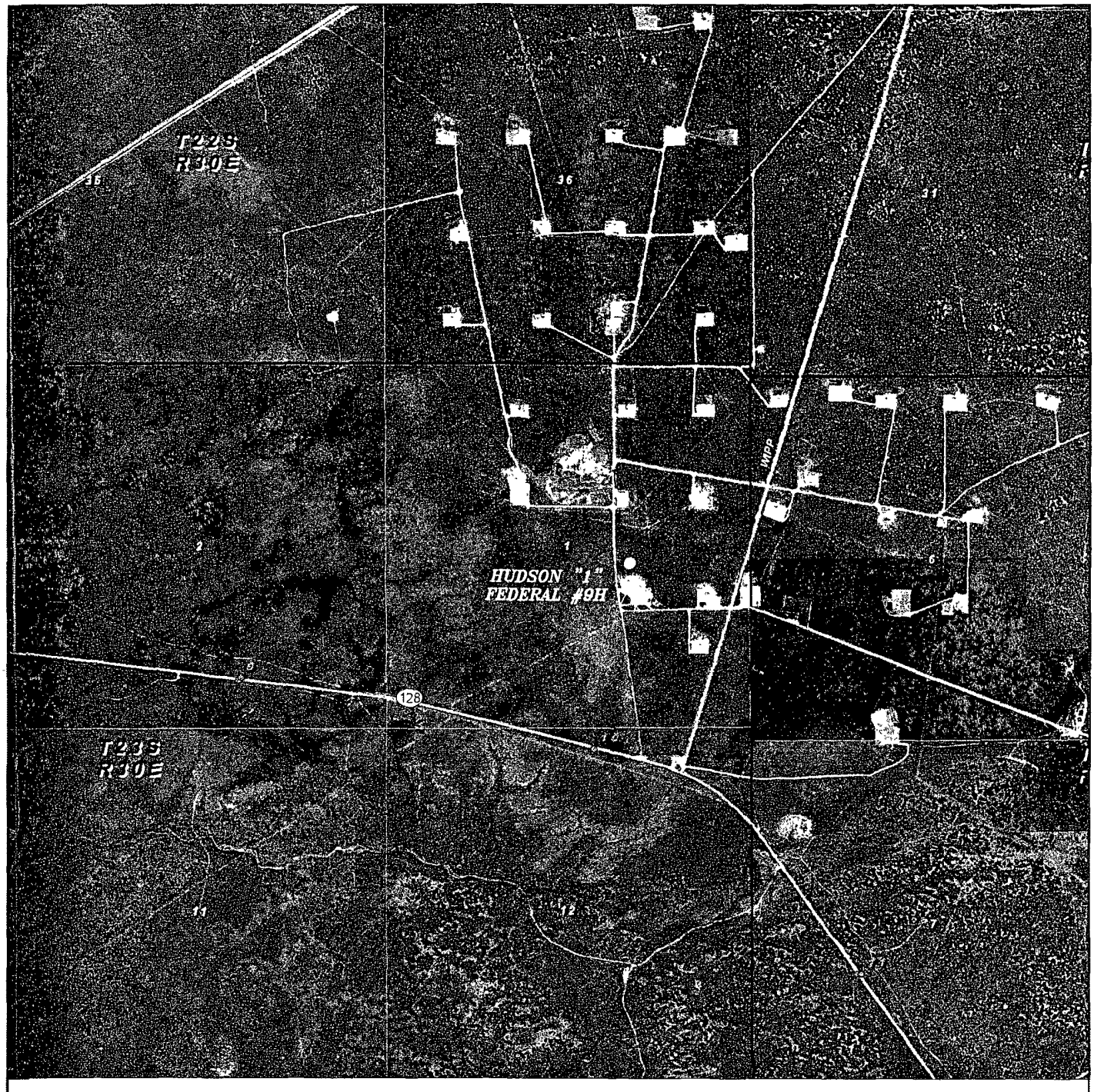
basinsurveys.com

W.O. Number:	JMS 21181
Survey Date:	05-18-2009
Scale:	1" = 2 Miles
Date:	05-18-2009

N

BOPCO, L.P.



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basinsurveys.com

W O Number JMS 21181

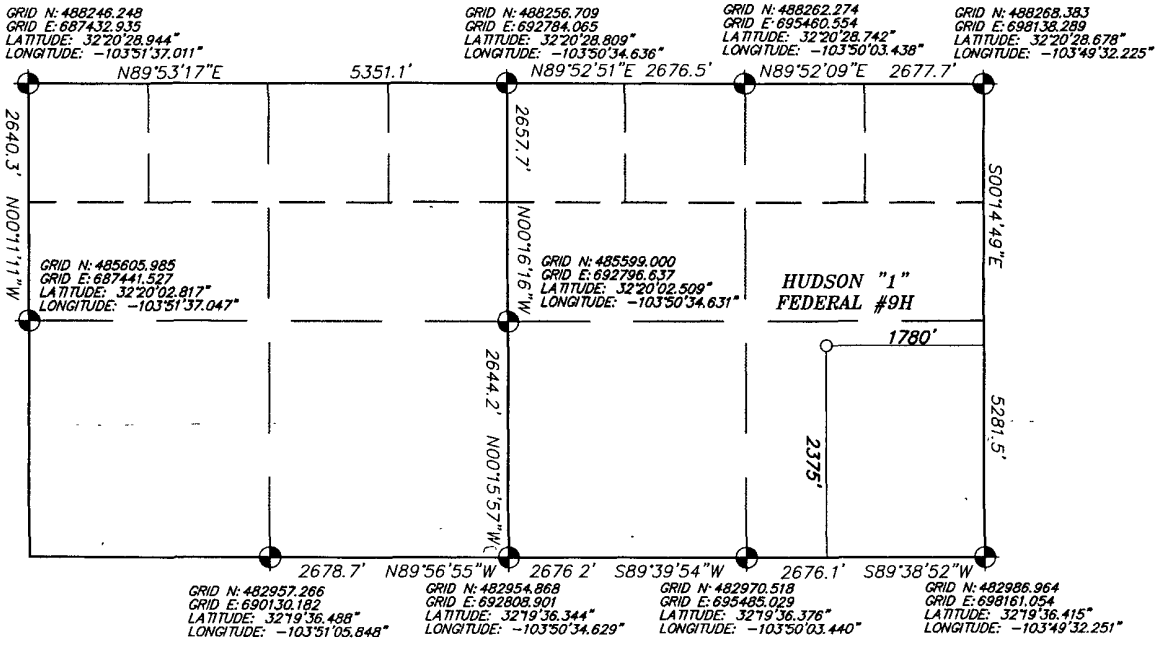
Scale 1" = 2000'

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

N

BOPCO, L.P.

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



HUDSON "1" FEDERAL #9H
Located 2375' FSL and 1780' FEL
Section 1, Township 23 South, Range 30 East,
N.M.P.M., Eddy County, New Mexico.

basin surveys
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P.O. Box 1786
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Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

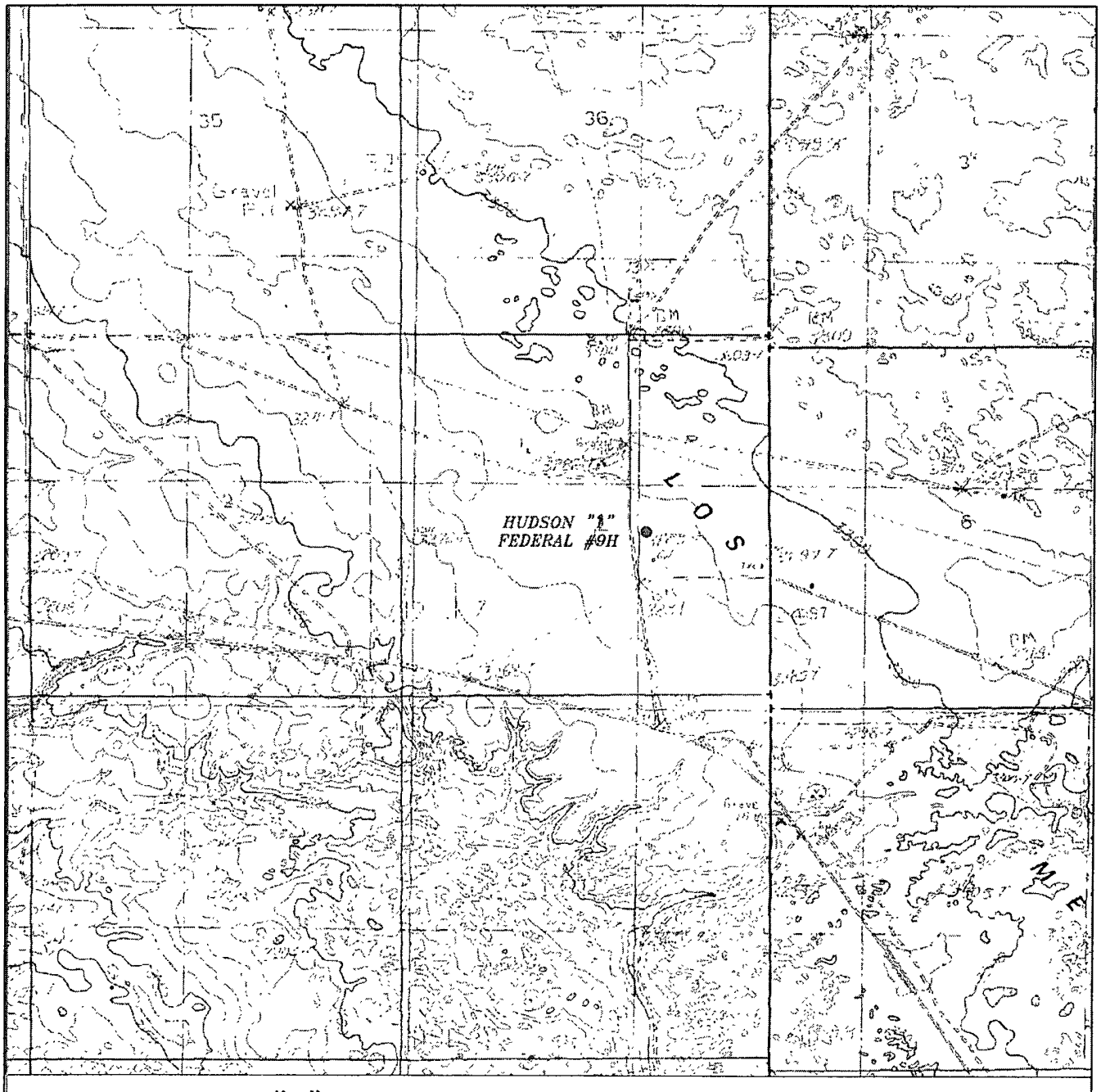
W.O. Number:	JMS 21181
Survey Date:	05-18-2009
Scale:	1" = 1000'
Date:	05-18-2009

N

BOPCO, L.P.

BOPCO L.P.

Hudson 1 Federal #9H Exhibit "A"

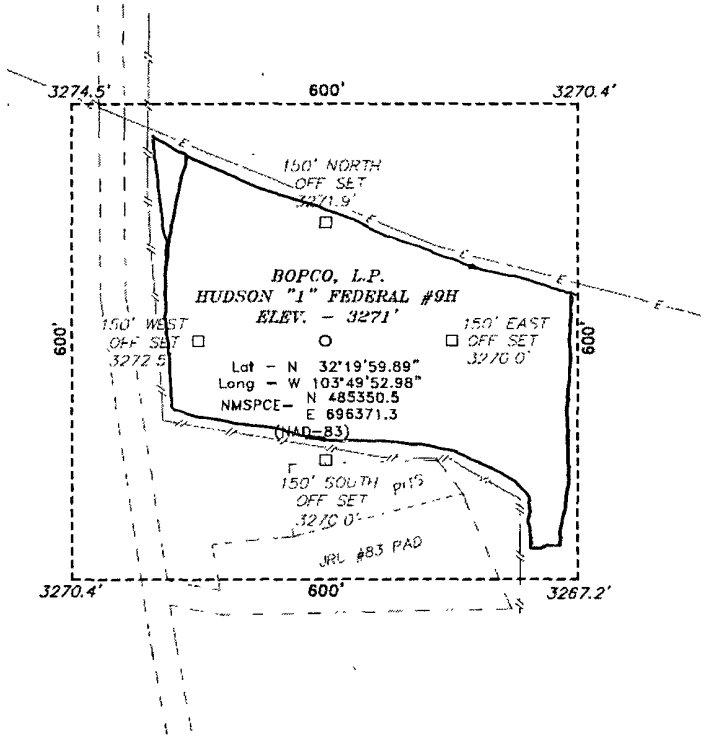


HUDSON "1" FEDERAL #9H
Located 2375' FSL and 1780' FEL
Section 1, Township 23 South, Range 30 East,
N.M.P.M., Eddy County, New Mexico.

BOPCO L.P

Hudson 1 Federal #9H Exhibit "B"

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



200 0 200 400 FEET

SCALE: 1" = 200'

Directions to Location

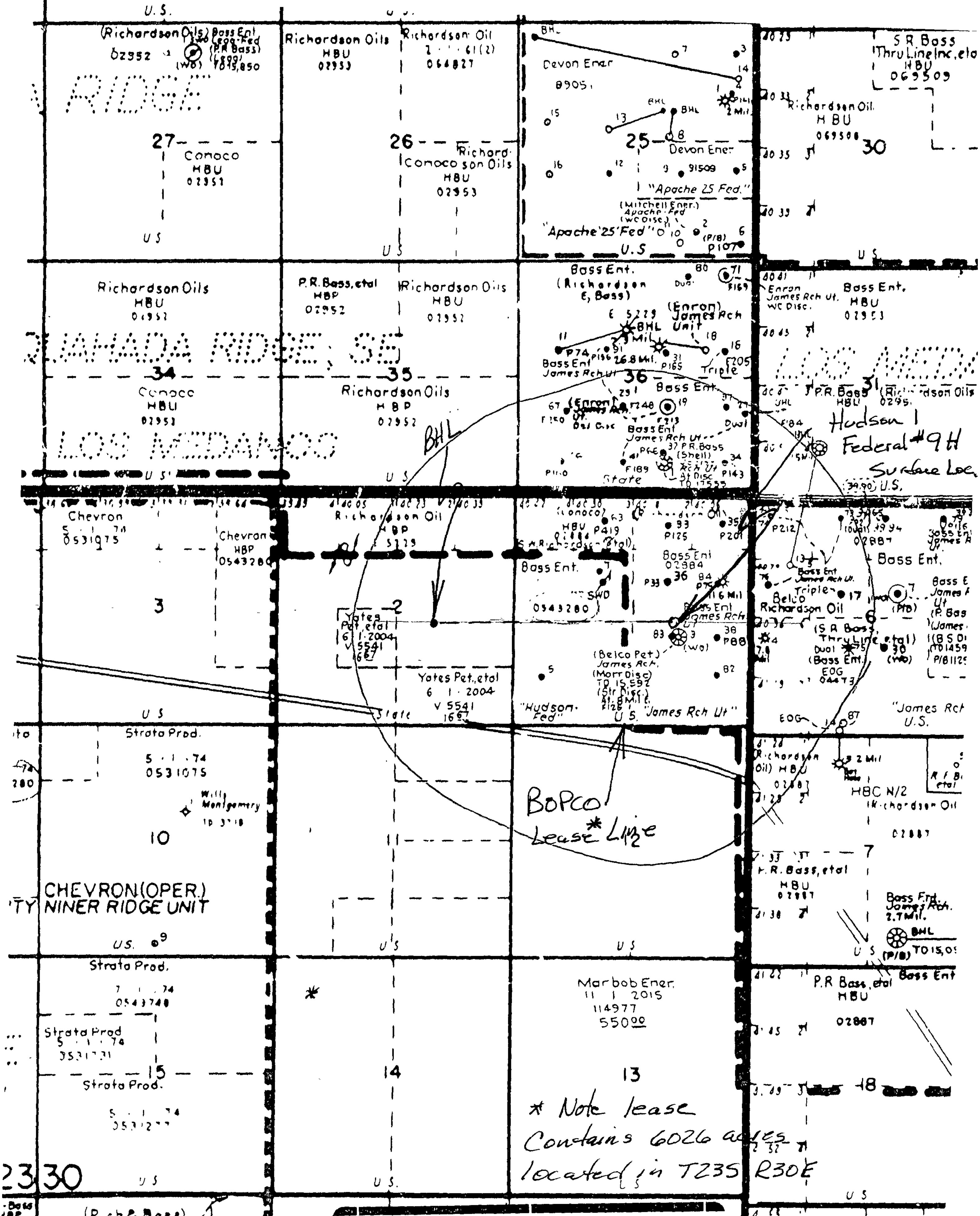
FROM THE JUNCTION OF HWY 128 AND WIPP ROAD, GO NORTH 0.8 MILES TO LEASE ROAD, ON LEASE ROAD GO WEST 0.4 MILES TO LEASE ROAD, ON LEASE ROAD GO SOUTH 0.4 TO PROPOSED LOCATION.

BOPCO, L.P.

REF. HUDSON "1" FEDERAL #9H / WELL PAD TOPO

THE HUDSON "1" FEDERAL #9H LOCATED 2375' FROM THE SOUTH LINE AND 1780' FROM THE EAST LINE OF SECTION 1, TOWNSHIP 23 SOUTH, RANGE 30 EAST,

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



Richardson Oils
Richardson Oil
Devon Ener
89051
S R Bass
Thru Line Inc, etal
HBU
069509
27
26
25
30
Conoco
HBU
02951
Conoco
Richardson Oils
HBU
02953
Devon Ener
91509
"Apache 25 Fed."
"Apache 25 Fed"
Richardson Oils
HBU
P.R. Bass, etal
HBP
02952
Bass Ent.
(Richardson E. Bass)
(Enron) James Rch Unit
Bass Ent.
HBU
02953
34
35
36
31
Conoco
HBU
02951
Richardson Oils
HBP
02952
Bass Ent.
James Rch Ut
Hudson 1 Federal #9H Surface Loc.
BHL
Chevron
0531075
Chevron
HBP
0543280
Richardson Oil
HBP
Bass Ent.
0543280
Yates Pet, etal
6-1-2004
V 5541
1667
Yates Pet, etal
6-1-2004
V 5541
1667
(Belco Pet)
James Rch
"Hudson Fed"
"James Rch Ut"
Belco
Richardson Oil
Bass Ent.
EOG
"James Rch
3
2
1
6
Strata Prod.
5-1-74
0531075
Willy Montgomery
10
11
7
BoPCo Lease Line
CHEVRON (OPER.)
NINER RIDGE UNIT
P.R. Bass, etal
HBU
Strata Prod.
0543748
Marbob Ener.
11-1-2015
114977
550.00
P.R. Bass, etal
HBU
02887
Strata Prod
15
14
13
18
Strata Prod.
* Note lease Contains 6026 acres located in T23S R30E
23 30

Exhibit "C"

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 is unorthodox and bottom hole location is orthodox. Penetration point of Lwr Brushy Canyon "U" Sand is unorthodox.

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 #9H
LEGAL DESCRIPTION - SURFACE: 2375' FSL, 1780' FEL, Section 1, T23S, R30E, Eddy County, NM.
BHL: 2300' FSL, 1800' FEL, 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 3290' (estimated)
GL 3271'

FORMATION	ESTIMATED TOP FROM KB TVD	MD	ESTIMATED SUB-SEA TOP	BEARING
T/Rustler	178'	178'	+ 3112'	Barren
B/Rustler	488'	488'	+ 2802'	Barren
T/Salt	496'	496'	+ 2794'	Barren
B/Salt	3635'	3635'	- 345'	Barren
T/Delaware Mountain Group	3873'	3873'	- 583'	Barren
T/Lamar Lime	3873'	3873'	- 583'	Barren
T/Ramsey	3919'	3919'	- 629'	Oil/Gas
T/Lower Cherry Canyon	6028'	6028'	- 2738'	Oil/Gas
KOP (Kick Off Point)	6910'	6910'	- 3620'	N/A
T/Brushy Canyon "U" Sand	7360'	7496'	- 4070'	Oil/Gas
EOC Target	7388'	7650'	- 4098'	Oil/Gas
TD (end of lateral)	7338'	12657'	- 4048'	Oil/Gas

POINT 3: CASING PROGRAM

TYPE	INTERVALS (MD)	Hole Size	PURPOSE	CONDITION
20"	0' - 40'	24"	Conductor	Contractor Discretion
13-3/8", 48#, H-40, ST&C	0' - 486'	17-1/2"	Surface	New
9-5/8", 40#, J-55, LT&C	0' - 3893'	12-1/4"	Intermediate	New
7", 26#, N-80, LT&C	0' - 7700'	8-3/4"	Production	New
4-1/2", 11.6#, N-80, Ultra Flush JT	~~7500~~ 6710' - 12657'	6-1/8"	Production	New

See COA

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 mud 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 250 psig & 2000 psig by independent tester. The BOPE Diagram #2, 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 (250 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	PV	YP	FL	Ph
0' - 486'	FW Spud Mud	8.5 – 9.2	38-70	NC	NC	NC	10.0
486' - 3893'	Brine Water	9.8 – 10.2	28-30	NC	NC	NC	9.5 – 10.5
3893' - 7665'	FW/Gel	8.7 – 9.0	28-36	NC	NC	NC	9.5 – 10.0
7665' - 12657'	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: GR with MWD during drilling of build and horizontal portions of 8-3/4" hole and 6-1/8" openhole.
Run #2: Drill pipe conveyed GR-NL-Density-Caliper TD thru curve.

C) CONVENTIONAL CORING

None anticipated.

D) CEMENT — COA

INTERVAL	AMOUNT SXS	FT OF FILL	TYPE	GALS/SX	PPG	FT^3/SX
SURFACE:						
Lead: 0 – 286' (100% excess Circ to surface)	250	286	EconoCem-HLC + 2.7 #/sk Salt	10.25	12.8	1.88
Tail: 286' – 486' (100% excess)	210	200	HalCem-C + 2% $CaCl_2$	6.39	14.8	1.35
INTERMEDIATE:						
Lead: 0' – 3393' (100% excess Circ to surface)	1100	3393	EconoCem-HLC + 2.7 #/sk Salt	10.27	12.8	1.89
Tail: 3383' – 3893' (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' – 7700' (50% excess)	200	1050	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 6910' at which point a directional hole will be kicked off and drilled at an azimuth of 269.0°, building angle at 12.00°/100' to a max angle of 90.58° at a TVD of 7385' (MD 7665'). This 90.58° angle will be maintained to a MD of 12,657' or TVD of 7338'. At 7700'; 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 12,657'. 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 3873'-7338' 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 20, 2009

BOPCO, L.P.

Eddy County
Hudson "1" Federal
#9H
OH

Plan: Plan #1

Pathfinder X & Y Survey Report

12 May, 2009

PATHFINDER

Pathfinder Energy Services

Pathfinder X & Y Survey Report

Company:	BOPCO, L.P.	**Local Co-ordinate Reference:**	Well #9H
Project:	Eddy County	**TVD Reference:**	WELL @ 3290.00ft (McVay #5 19' KB Correction)
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Well:	#9H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
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Project Eddy County

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site Hudson "1" Federal

Site Position:		**Northing:**	487,246.300 ft	**Latitude:**	32° 20' 16.721 N
From:	Map	**Easting:**	694,868.400 ft	**Longitude:**	103° 42' 8.622 W
Position Uncertainty:	0.00 ft	**Slot Radius:**	"	**Grid Convergence:**	0.34 °

Well #9H

Well Position	**+N/-S**	0.00 ft	**Northing:**	485,350.500 ft	**Latitude:**	32° 19' 57.873 N
	+E/-W	0.00 ft	**Easting:**	696,371.300 ft	**Longitude:**	103° 41' 51.236 W
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	ft	**Ground Level:**	3,271.00 ft

Wellbore OH

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF200510	04/16/2009	7.90	60.33	48,913

Design Plan #1

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	**Depth From (TVD) (ft)**	**+N/-S (ft)**	**+E/-W (ft)**	**Direction (°)**
	0.00	0.00	0.00	269.00

Survey Tool Program **Date** 05/12/2009

From (ft)	**To (ft)**	**Survey (Wellbore)**	**Tool Name**	**Description**
0.00	12,557.00	Plan #1 (OH)	MWD	MWD - Standard

Pathfinder Energy Services

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Planned Survey

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0.00	0.00	0.00	0.00	-3,290.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
100.00	0.00	0.00	100.00	-3,190.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
200.00	0.00	0.00	200.00	-3,090.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
300.00	0.00	0.00	300.00	-2,990.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
400.00	0.00	0.00	400.00	-2,890.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
500.00	0.00	0.00	500.00	-2,790.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
600.00	0.00	0.00	600.00	-2,690.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
700.00	0.00	0.00	700.00	-2,590.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
800.00	0.00	0.00	800.00	-2,490.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
900.00	0.00	0.00	900.00	-2,390.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
1,000.00	0.00	0.00	1,000.00	-2,290.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
1,100.00	0.00	0.00	1,100.00	-2,190.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
1,200.00	0.00	0.00	1,200.00	-2,090.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
1,300.00	0.00	0.00	1,300.00	-1,990.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
1,400.00	0.00	0.00	1,400.00	-1,890.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
1,500.00	0.00	0.00	1,500.00	-1,790.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
1,600.00	0.00	0.00	1,600.00	-1,690.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
1,700.00	0.00	0.00	1,700.00	-1,590.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
1,800.00	0.00	0.00	1,800.00	-1,490.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
1,900.00	0.00	0.00	1,900.00	-1,390.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
2,000.00	0.00	0.00	2,000.00	-1,290.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
2,100.00	0.00	0.00	2,100.00	-1,190.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
2,200.00	0.00	0.00	2,200.00	-1,090.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
2,300.00	0.00	0.00	2,300.00	-990.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
2,400.00	0.00	0.00	2,400.00	-890.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
2,500.00	0.00	0.00	2,500.00	-790.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
2,600.00	0.00	0.00	2,600.00	-690.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30

Pathfinder Energy Services

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Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
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Planned Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
2,700.00	0.00	0.00	2,700.00	-590.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
2,800.00	0.00	0.00	2,800.00	-490.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
2,900.00	0.00	0.00	2,900.00	-390.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
3,000.00	0.00	0.00	3,000.00	-290.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
3,100.00	0.00	0 00	3,100.00	-190.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
3,200 00	0.00	0.00	3,200.00	-90.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
3,300 00	0.00	0.00	3,300.00	10.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
3,400.00	0 00	0 00	3,400 00	110.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
3,500.00	0.00	0.00	3,500.00	210.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
3,600.00	0.00	0.00	3,600.00	310.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
3,700.00	0.00	0.00	3,700.00	410.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
3,800.00	0.00	0.00	3,800.00	510.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
3,900.00	0.00	0.00	3,900.00	610.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
4,000.00	0.00	0.00	4,000.00	710.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
4,100.00	0.00	0.00	4,100.00	810.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
4,200.00	0.00	0.00	4,200.00	910.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
4,300.00	0.00	0.00	4,300.00	1,010.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
4,400.00	0.00	0.00	4,400.00	1,110.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
4,500.00	0.00	0.00	4,500.00	1,210.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
4,600.00	0.00	0.00	4,600.00	1,310.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
4,700 00	0.00	0.00	4,700.00	1,410.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
4,800 00	0.00	0.00	4,800.00	1,510.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
4,900 00	0.00	0.00	4,900.00	1,610.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
5,000.00	0 00	0.00	5,000.00	1,710.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
5,100 00	0 00	0.00	5,100.00	1,810.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
5,200.00	0.00	0.00	5,200.00	1,910.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
5,300 00	0.00	0.00	5,300.00	2,010.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30

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5,400.00	0.00	0.00	5,400.00	2,110.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
5,500.00	0.00	0.00	5,500.00	2,210.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
5,600.00	0.00	0.00	5,600.00	2,310.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
5,700.00	0.00	0.00	5,700.00	2,410.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
5,800.00	0.00	0.00	5,800.00	2,510.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
5,900.00	0.00	0.00	5,900.00	2,610.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
6,000.00	0.00	0.00	6,000.00	2,710.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
6,028.00	0.00	0.00	6,028.00	2,738.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
Lower Cherry Canyon										
6,100.00	0.00	0.00	6,100.00	2,810.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
6,200.00	0.00	0.00	6,200.00	2,910.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
6,300.00	0.00	0.00	6,300.00	3,010.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
6,400.00	0.00	0.00	6,400.00	3,110.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
6,500.00	0.00	0.00	6,500.00	3,210.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
6,600.00	0.00	0.00	6,600.00	3,310.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
6,700.00	0.00	0.00	6,700.00	3,410.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
6,800.00	0.00	0.00	6,800.00	3,510.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
6,900.00	0.00	0.00	6,900.00	3,610.00	0.00	0.00	0.00	0.00	485,350.50	696,371.30
6,910.50	0.00	0.00	6,910.50	3,620.50	0.00	0.00	0.00	0.00	485,350.50	696,371.30
KOP-6910.50'MD,0.00°INC,0.00°AZI										
6,925.00	1.74	269.00	6,925.00	3,635.00	0.00	-0.22	0.22	12.00	485,350.50	696,371.08
6,950.00	4.74	269.00	6,949.95	3,659.95	-0.03	-1.63	1.63	12.00	485,350.47	696,369.67
6,975.00	7.74	269.00	6,974.80	3,684.80	-0.08	-4.35	4.35	12.00	485,350.42	696,366.95
7,000.00	10.74	269.00	6,999.48	3,709.48	-0.15	-8.36	8.36	12.00	485,350.35	696,362.94
7,025.00	13.74	269.00	7,023.91	3,733.91	-0.24	-13.66	13.66	12.00	485,350.26	696,357.64
7,050.00	16.74	269.00	7,048.02	3,758.02	-0.35	-20.23	20.23	12.00	485,350.15	696,351.07
7,075.00	19.74	269.00	7,071.77	3,781.77	-0.49	-28.05	28.05	12.00	485,350.01	696,343.25

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7,100.00	22.74	269.00	7,095.07	3,805.07	-0.65	-37.10	37.11	12.00	485,349.85	696,334.20
7,125.00	25.74	269.00	7,117.86	3,827.86	-0.83	-47.36	47.37	12.00	485,349.67	696,323.94
7,150.00	28.74	269.00	7,140.08	3,850.08	-1.03	-58.80	58.81	12.00	485,349.47	696,312.50
7,175.00	31.74	269.00	7,161.68	3,871.68	-1.25	-71.39	71.40	12.00	485,349.25	696,299.91
7,200.00	34.74	269.00	7,182.59	3,892.59	-1.49	-85.09	85.10	12.00	485,349.01	696,286.21
7,225.00	37.74	269.00	7,202.75	3,912.75	-1.74	-99.86	99.88	12.00	485,348.76	696,271.44
7,250.00	40.73	269.00	7,222.11	3,932.11	-2.02	-115.67	115.69	12.00	485,348.48	696,255.63
7,275.00	43.73	269.00	7,240.62	3,950.62	-2.31	-132.47	132.49	12.00	485,348.19	696,238.83
7,300.00	46.73	269.00	7,258.22	3,968.22	-2.62	-150.21	150.24	12.00	485,347.88	696,221.09
7,325.00	49.73	269.00	7,274.87	3,984.87	-2.95	-168.86	168.88	12.00	485,347.55	696,202.44
7,350.00	52.73	269.00	7,290.53	4,000.53	-3.29	-188.34	188.37	12.00	485,347.21	696,182.96
7,375.00	55.73	269.00	7,305.14	4,015.14	-3.64	-208.62	208.65	12.00	485,346.86	696,162.68
7,400.00	58.73	269.00	7,318.67	4,028.67	-4.01	-229.64	229.67	12.00	485,346.49	696,141.66
7,425.00	61.73	269.00	7,331.08	4,041.08	-4.39	-251.33	251.37	12.00	485,346.11	696,119.97
7,450.00	64.73	269.00	7,342.34	4,052.34	-4.78	-273.65	273.69	12.00	485,345.72	696,097.65
7,475.00	67.73	269.00	7,352.41	4,062.41	-5.18	-296.52	296.57	12.00	485,345.32	696,074.78
7,496.18	70.27	269.00	7,360.00	4,070.00	-5.52	-316.30	316.34	12.00	485,344.98	696,055.00
Lo. Brushy Canyon "8A"										
7,500.00	70.73	269.00	7,361.27	4,071.27	-5.58	-319.89	319.94	12.00	485,344.92	696,051.41
7,525.00	73.73	269.00	7,368.90	4,078.90	-6.00	-343.69	343.75	12.00	485,344.50	696,027.61
7,544.58	76.08	269.00	7,374.00	4,084.00	-6.33	-362.59	362.64	12.00	485,344.17	696,008.71
LBC "Marker" Sand										
7,550.00	76.73	269.00	7,375.27	4,085.27	-6.42	-367.86	367.92	12.00	485,344.08	696,003.44
7,575.00	79.73	269.00	7,380.37	4,090.37	-6.85	-392.33	392.39	12.00	485,343.65	695,978.97
7,600.00	82.73	269.00	7,384.19	4,094.19	-7.28	-417.03	417.09	12.00	485,343.22	695,954.27
7,625.00	85.73	269.00	7,386.70	4,096.70	-7.71	-441.90	441.96	12.00	485,342.79	695,929.40
7,650.00	88.73	269.00	7,387.91	4,097.91	-8.15	-466.86	466.93	12.00	485,342.35	695,904.44

Pathfinder Energy Services

Pathfinder X & Y Survey Report

Company:	BOPCO, L P.	**Local Co-ordinate Reference:**	Well #9H
Project:	Eddy County	**TVD Reference:**	WELL @ 3290.00ft (McVay #5 19' KB Correction)
Site:	Hudson "1" Federal	**MD Reference:**	WELL @ 3290.00ft (McVay #5 19' KB Correction)
Well:	#9H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	Midland Database

Planned Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
7,665.43	90.58	269.00	7,388.00	4,098.00	-8.42	-482.28	482.36	12.00	485,342.08	695,889.02
EOC-7665.43'MD,90.58°INC,269.00°AZI,12.00°DLS, 482.36'VS, -8.42'N, -482.29'E										
7,700 00	90.58	269.00	7,387.65	4,097.65	-9.02	-516.85	516.93	0.00	485,341.48	695,854.45
7,800.00	90.58	269.00	7,386.64	4,096.64	-10.77	-616.83	616.92	0.00	485,339.73	695,754.47
7,900.00	90.58	269.00	7,385.63	4,095.63	-12.51	-716.81	716.92	0.00	485,337.99	695,654.49
8,000 00	90.58	269.00	7,384.61	4,094.61	-14.26	-816.79	816.91	0.00	485,336.24	695,554.51
8,100.00	90.58	269 00	7,383.60	4,093.60	-16.00	-916.77	916.91	0.00	485,334.50	695,454.53
8,200.00	90.58	269.00	7,382.59	4,092.59	-17.75	-1,016.75	1,016.90	0.00	485,332.75	695,354.55
8,300.00	90.58	269.00	7,381.58	4,091.58	-19.49	-1,116.73	1,116.90	0.00	485,331.01	695,254.57
8,400 00	90.58	269.00	7,380.56	4,090.56	-21.24	-1,216.71	1,216.89	0.00	485,329.26	695,154.59
8,500.00	90.58	269.00	7,379.55	4,089.55	-22.98	-1,316.69	1,316.89	0.00	485,327.52	695,054.61
8,600.00	90.58	269.00	7,378.54	4,088 54	-24.73	-1,416.67	1,416.88	0.00	485,325.77	694,954.63
8,700.00	90.58	269.00	7,377.53	4,087.53	-26.47	-1,516.65	1,516.88	0.00	485,324.03	694,854.65
8,800 00	90.58	269.00	7,376.52	4,086.52	-28.22	-1,616.63	1,616.87	0.00	485,322.28	694,754.67
8,900.00	90.58	269.00	7,375.50	4,085.50	-29.96	-1,716.61	1,716.87	0.00	485,320.54	694,654.69
9,000.00	90.58	269.00	7,374.49	4,084.49	-31.71	-1,816.59	1,816.86	0.00	485,318.79	694,554.71
9,100.00	90.58	269.00	7,373.48	4,083.48	-33.45	-1,916.57	1,916.86	0.00	485,317.05	694,454.73
9,200 00	90 58	269.00	7,372.47	4,082.47	-35.20	-2,016.54	2,016.85	0.00	485,315.30	694,354.76
9,300.00	90.58	269.00	7,371.45	4,081.45	-36.94	-2,116.52	2,116.85	0.00	485,313.56	694,254.78
9,400.00	90.58	269 00	7,370.44	4,080.44	-38.69	-2,216.50	2,216.84	0.00	485,311.81	694,154.80
9,500.00	90 58	269.00	7,369.43	4,079.43	-40.43	-2,316.48	2,316.84	0.00	485,310.07	694,054.82
9,600.00	90.58	269.00	7,368.42	4,078.42	-42.18	-2,416.46	2,416.83	0.00	485,308.32	693,954.84
9,700 00	90.58	269.00	7,367.40	4,077.40	-43.92	-2,516.44	2,516.83	0.00	485,306.58	693,854.86
9,800.00	90 58	269 00	7,366.39	4,076.39	-45.67	-2,616.42	2,616.82	0.00	485,304.83	693,754.88
9,900 00	90 58	269.00	7,365 38	4,075.38	-47.41	-2,716.40	2,716.82	0.00	485,303.09	693,654.90
10,000.00	90.58	269.00	7,364.37	4,074.37	-49.16	-2,816.38	2,816.81	0.00	485,301.34	693,554.92
10,100.00	90.58	269.00	7,363.36	4,073.36	-50.91	-2,916.36	2,916.81	0.00	485,299.59	693,454.94

Company:	BOPCO, L.P.	**Local Co-ordinate Reference:**	Well #9H
Project:	Eddy County	**TVD Reference:**	WELL @ 3290.00ft (McVay #5 19' KB Correction)
Site:	Hudson "1" Federal	**MD Reference:**	WELL @ 3290.00ft (McVay #5 19' KB Correction)
Well:	#9H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	Midland Database

Planned Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
10,200.00	90.58	269.00	7,362.34	4,072.34	-52.65	-3,016.34	3,016.80	0.00	485,297.85	693,354.96
10,300.00	90.58	269.00	7,361.33	4,071.33	-54.40	-3,116.32	3,116.80	0.00	485,296.10	693,254.98
10,400.00	90.58	269.00	7,360.32	4,070.32	-56.14	-3,216.30	3,216.79	0.00	485,294.36	693,155.00
10,500.00	90.58	269.00	7,359.31	4,069.31	-57.89	-3,316.28	3,316.79	0.00	485,292.61	693,055.02
10,600.00	90.58	269.00	7,358.29	4,068.29	-59.63	-3,416.26	3,416.78	0.00	485,290.87	692,955.04
10,700.00	90.58	269.00	7,357.28	4,067.28	-61.38	-3,516.24	3,516.78	0.00	485,289.12	692,855.06
10,800.00	90.58	269.00	7,356.27	4,066.27	-63.12	-3,616.22	3,616.77	0.00	485,287.38	692,755.08
10,900.00	90.58	269.00	7,355.26	4,065.26	-64.87	-3,716.20	3,716.76	0.00	485,285.63	692,655.10
11,000.00	90.58	269.00	7,354.25	4,064.25	-66.61	-3,816.18	3,816.76	0.00	485,283.89	692,555.12
11,100.00	90.58	269.00	7,353.23	4,063.23	-68.36	-3,916.16	3,916.75	0.00	485,282.14	692,455.14
11,200.00	90.58	269.00	7,352.22	4,062.22	-70.10	-4,016.14	4,016.75	0.00	485,280.40	692,355.16
11,300.00	90.58	269.00	7,351.21	4,061.21	-71.85	-4,116.12	4,116.74	0.00	485,278.65	692,255.18
11,400.00	90.58	269.00	7,350.20	4,060.20	-73.59	-4,216.10	4,216.74	0.00	485,276.91	692,155.20
11,500.00	90.58	269.00	7,349.18	4,059.18	-75.34	-4,316.08	4,316.73	0.00	485,275.16	692,055.22
11,600.00	90.58	269.00	7,348.17	4,058.17	-77.08	-4,416.06	4,416.73	0.00	485,273.42	691,955.24
11,700.00	90.58	269.00	7,347.16	4,057.16	-78.83	-4,516.04	4,516.72	0.00	485,271.67	691,855.26
11,800.00	90.58	269.00	7,346.15	4,056.15	-80.57	-4,616.02	4,616.72	0.00	485,269.93	691,755.28
11,900.00	90.58	269.00	7,345.13	4,055.13	-82.32	-4,716.00	4,716.71	0.00	485,268.18	691,655.30
12,000.00	90.58	269.00	7,344.12	4,054.12	-84.06	-4,815.98	4,816.71	0.00	485,266.44	691,555.32
12,100.00	90.58	269.00	7,343.11	4,053.11	-85.81	-4,915.95	4,916.70	0.00	485,264.69	691,455.35
12,200.00	90.58	269.00	7,342.10	4,052.10	-87.55	-5,015.93	5,016.70	0.00	485,262.95	691,355.37
12,300.00	90.58	269.00	7,341.09	4,051.09	-89.30	-5,115.91	5,116.69	0.00	485,261.20	691,255.39
12,400.00	90.58	269.00	7,340.07	4,050.07	-91.04	-5,215.89	5,216.69	0.00	485,259.46	691,155.41
12,500.00	90.58	269.00	7,339.06	4,049.06	-92.79	-5,315.87	5,316.68	0.00	485,257.71	691,055.43
12,557.21	90.58	269.00	7,338.48	4,048.48	-93.79	-5,373.07	5,373.89	0.00	485,256.71	690,998.23

BHL-12557.21'MD,90.58°INC,269.00°AZI, 7338.48'TVD, 5373.89'VS, -93.79'N, -5373.07'E - PBHL(#9H)

Pathfinder Energy Services

Pathfinder X & Y Survey Report

PATHFINDER

Company:	BOPCO, L.P.	**Local Co-ordinate Reference:**	Well #9H
Project:	Eddy County	**TVD Reference:**	WELL @ 3290.00ft (McVay #5 19' KB Correction)
Site:	Hudson "1" Federal	**MD Reference:**	WELL @ 3290.00ft (McVay #5 19' KB Correction)
Well:	#9H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	Midland Database

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
PBHL(#9H) - plan hits target - Point	0.00	0.00	7,338.00	-94.04	-5,373.07	485,256.458	690,998.230	32° 19' 57.254 N	103° 42' 53.864 W

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,496.18	7,360.00	Lo. Brushy Canyon "8A"		0.00	
7,544.58	7,374.00	LBC "Marker" Sand		0.00	
6,028.00	6,028.00	Lower Cherry Canyon		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
6,910.50	6,910.50	0.00	0.00	KOP-6910.50'MD,0.00°INC,0.00°AZI
7,665.43	7,388.00	-8.42	-482.28	EOC-7665.43'MD,90.58°INC,269.00°AZI,12.00°DLS, 482.36'VS, -8.42'I
12,557.21	7,338.48	-93.79	-5,373.07	BHL-12557.21'MD,90.58°INC,269.00°AZI, 7338.48'TVD, 5373.89'VS, -9

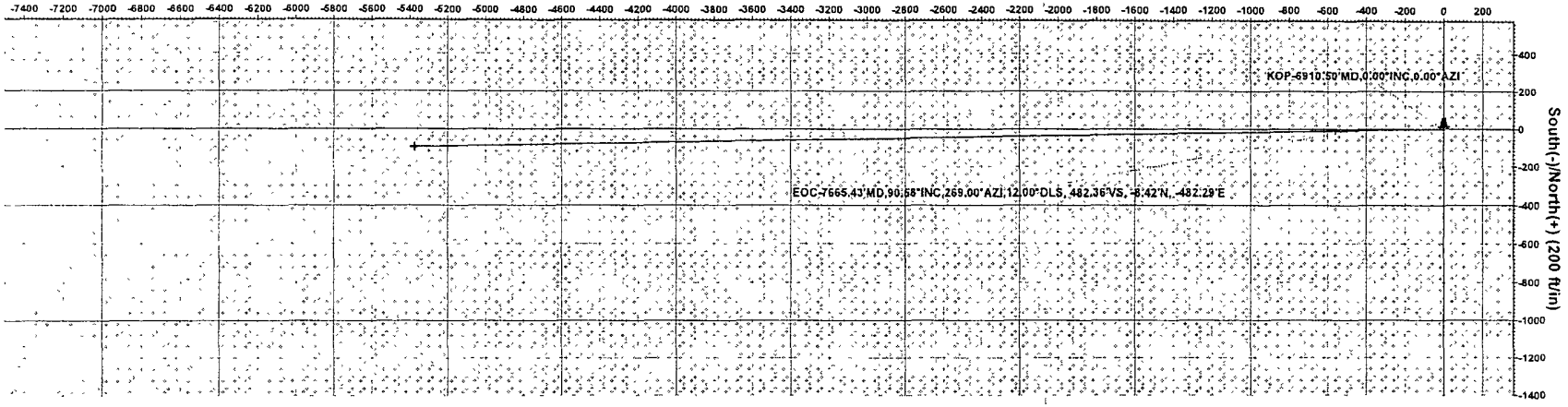
Checked By: _____ Approved By: _____ Date: _____

BOPCO, L.P.

PROJECT DETAILS: Eddy County
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level
Local North: Grid

PATHFINDER

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



WELL DETAILS #9H

Ground Elevation: 3271.00
RKB Elevation: WELL @ 3290.00ft (McVay #5 19' KB Correction)
Rig Name: McVay #5 19' KB Correction

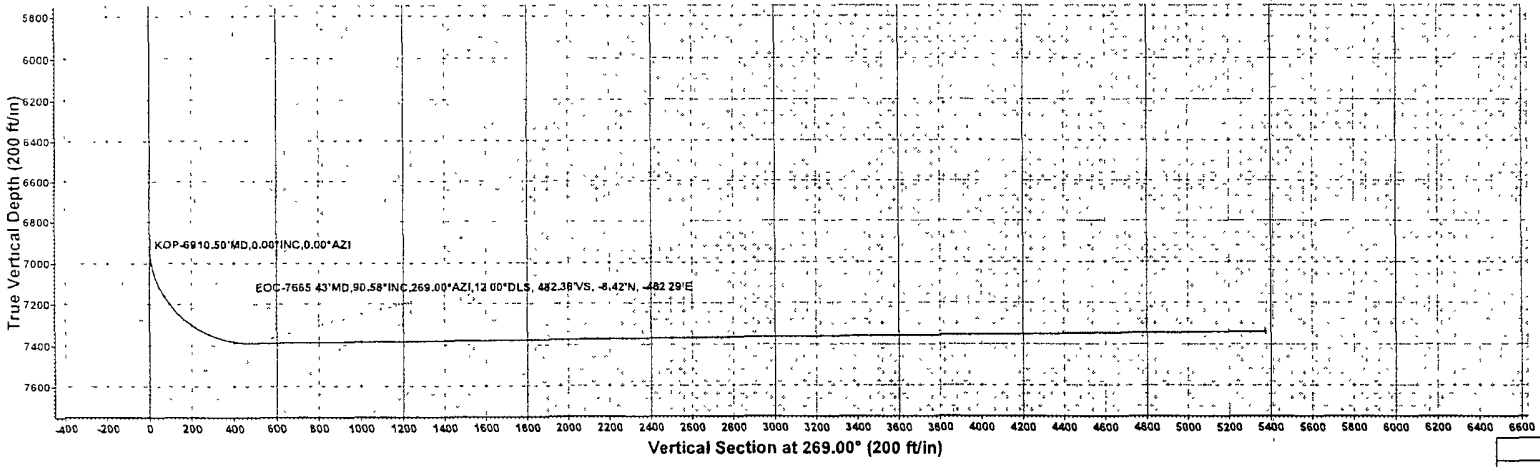
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	485350.500	596371.300	32° 19' 59.887 N	103° 49' 52.961 W	

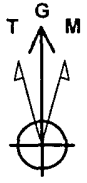
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	6910.50	0.00	0.00	6910.50	0.00	0.00	0.00	0.00	0.00	
3	7665.43	90.58	269.00	7388.00	-8.42	-482.28	12.00	269.00	482.36	
4	12557.21	90.58	269.00	7338.48	-93.79	-5373.07	0.00	0.00	5373.89	PBHL(#9H)

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PBHL(#9H)	7338.00	-94.04	-5373.07	485256.458	690998.230	Point





Azimuths to Grid North
True North: -0.27°
Magnetic North: 7.63°

Magnetic Field
Strength: 48937.6snT
Dip Angle: 60.33°
Date: 04/16/2009
Model: IGRF200510

Project: Eddy County
Site: Hudson "1" Federal
Well: #9H
Wellbore: OH
Plan: Plan #1 (#9H/OH)

Plan: Plan #1 (#9H/OH)
Created By: Nate Bingham Date: 10:48, May 17 2009

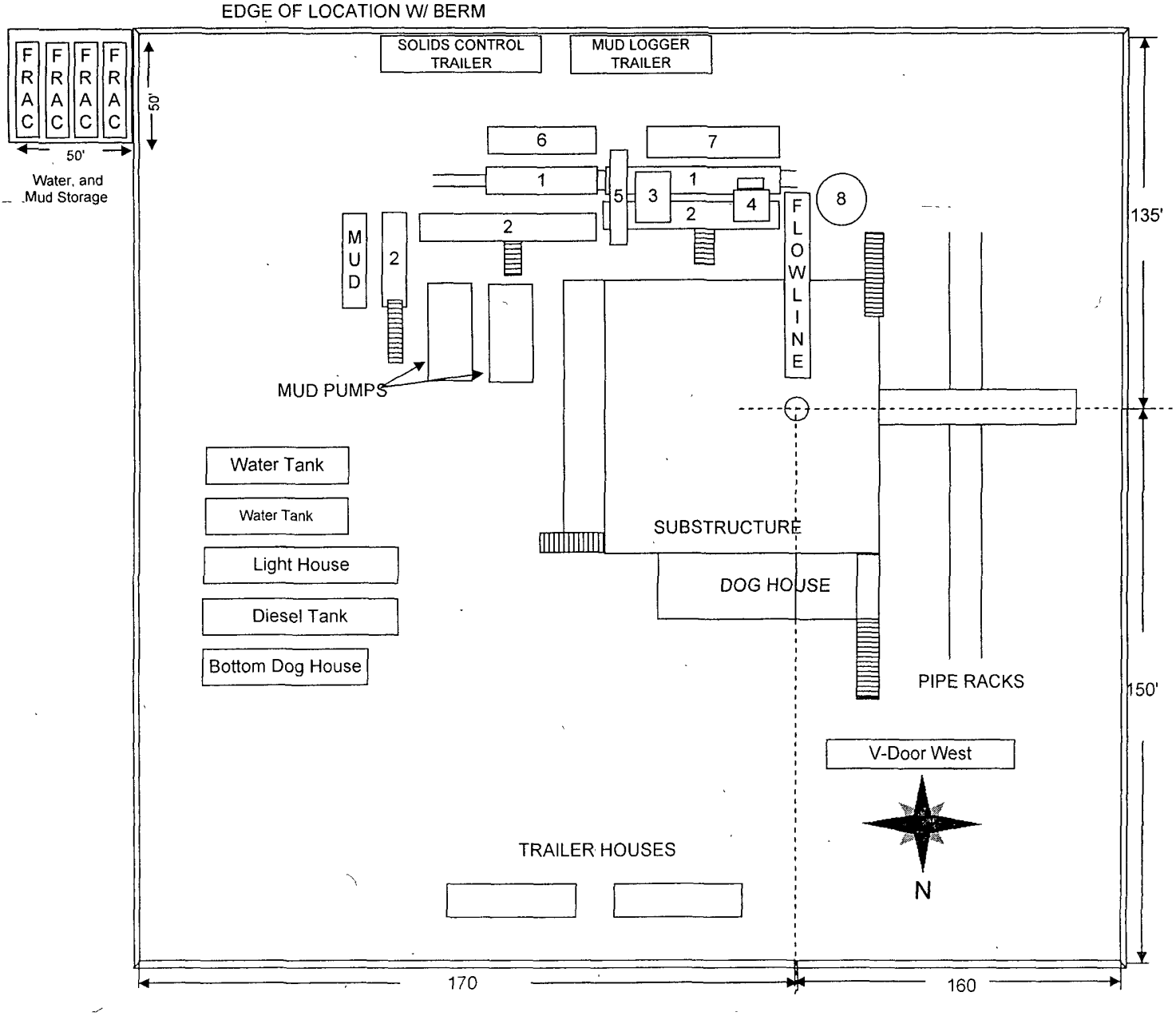
Exhibit "D"

BOPCO, L.P.
Hudson 1 Federal #9H
Sec1, Township 23S & Range 30E
Eddy County, NM

RIG LAYOUT SCHEMATIC
INCLUSIVE OF CLOSED-LOOP DESIGN PLAN

Solids Control Equipment Legend

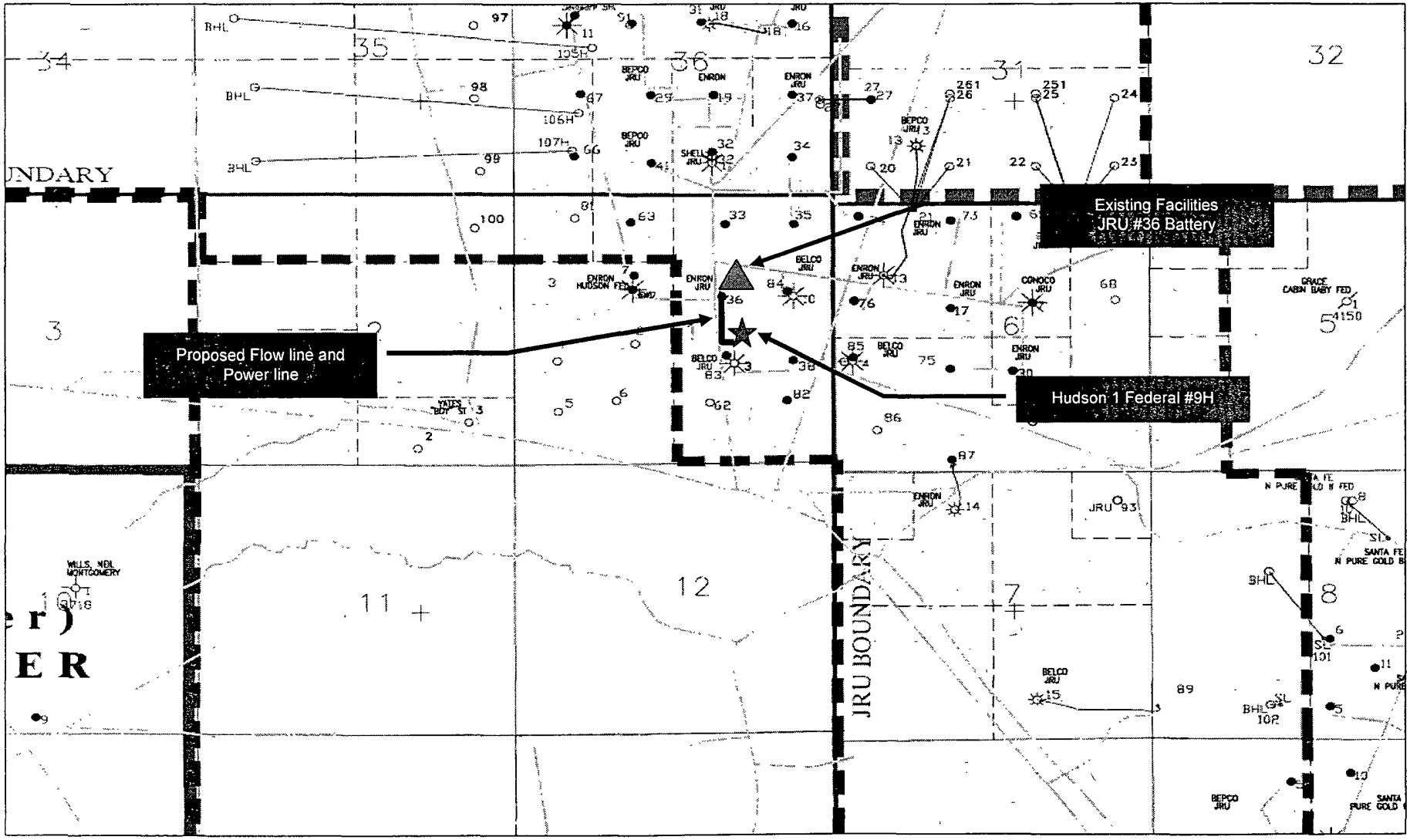
1) Roll Off Bin
2) Steel Tank
3) Mud Cleaner
4) Shakers
5) Centrifuge
6) Dewatering Unit
7) Catch Tank
8) Separator



BOPCO L.P

Hudson 1 Federal #9H "E"

Proposed Facilities and Flow line



McVay Rig #7,5

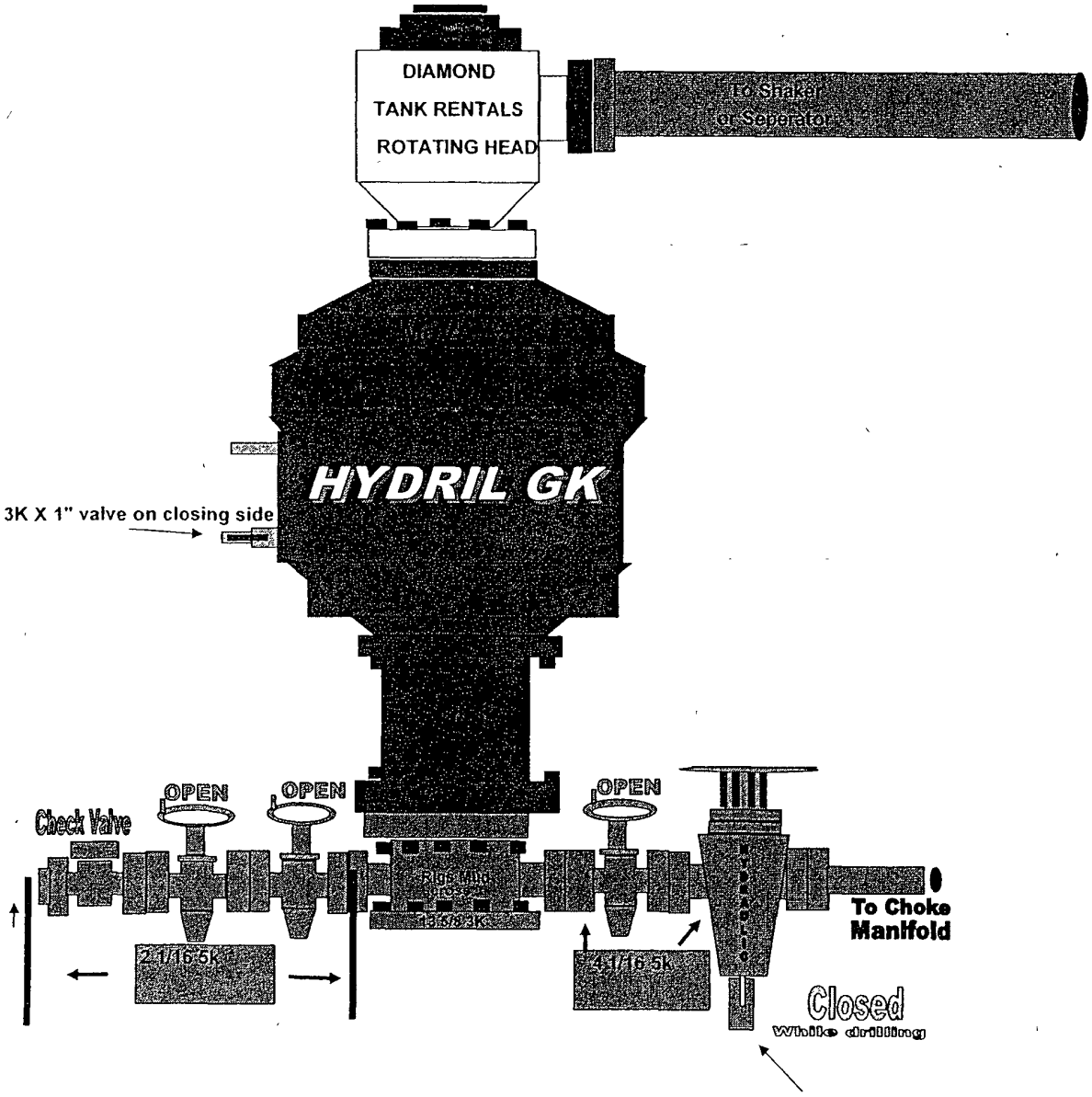


Diagram #1

McVay Rig #7,5

This Stack is for 7 7/8" or 8 3/4" hole.

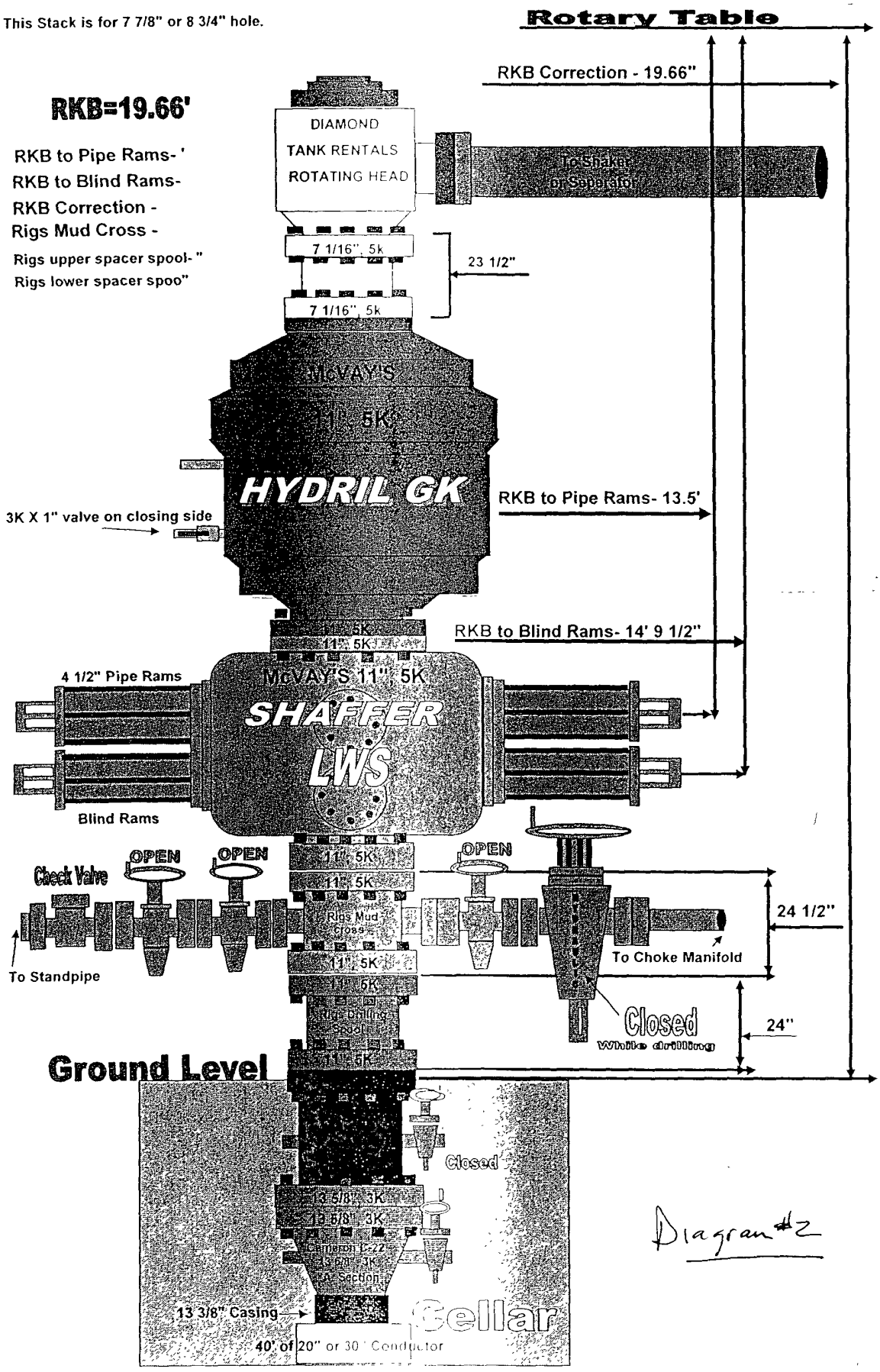
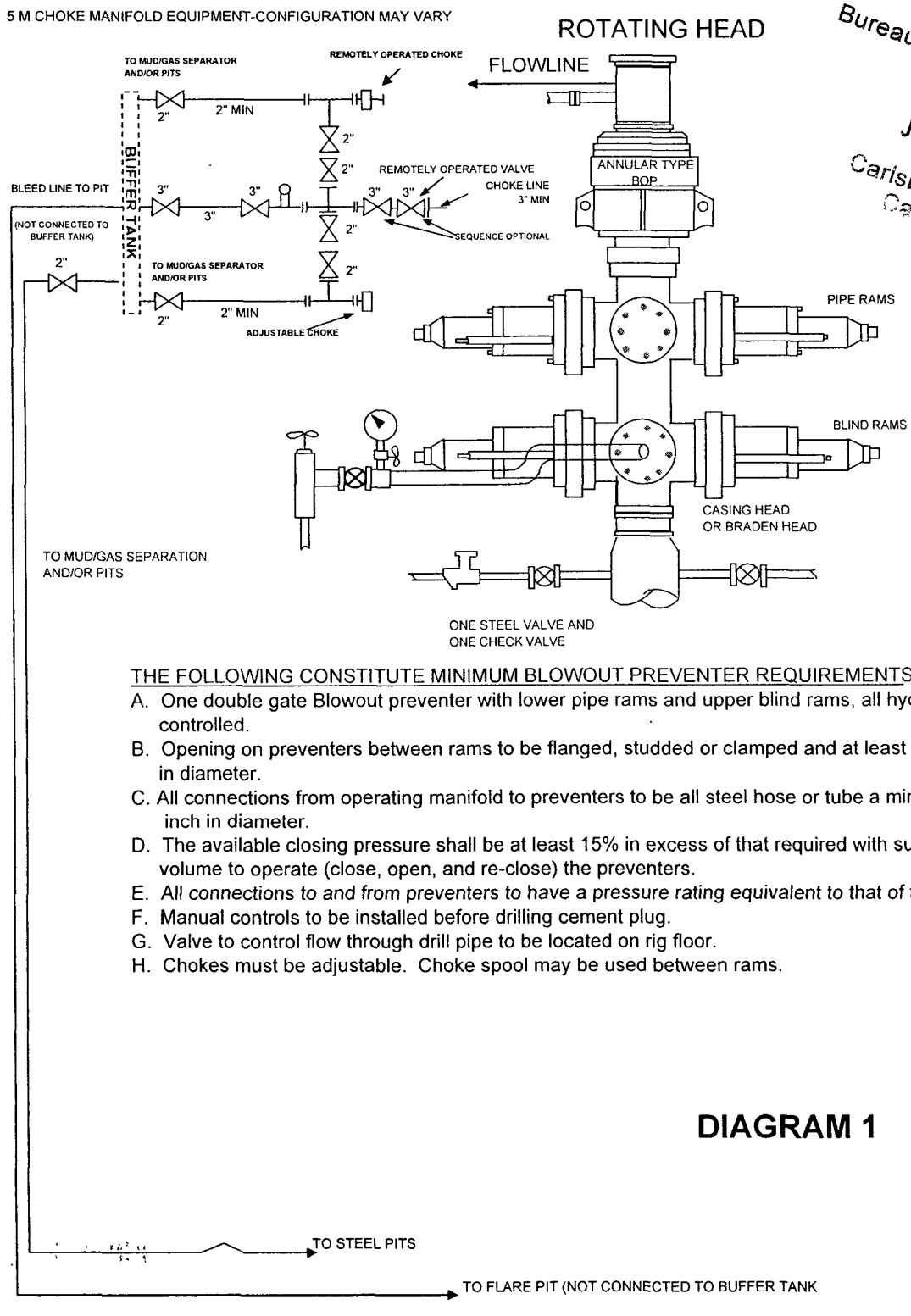


Diagram #2

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

Hudson 1 Federal #9H



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.

DIAGRAM 1

Hudson 1 Federal #9H
Exhibit "E"

HYDROGEN SULFIDE (H_2S) CONTINGENCY PLAN

Assumed 100 ppm ROE = 3000'

100 ppm H_2S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing H_2S, 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 H_2S monitors and air packs in order to control the release.**
- **Use the "buddy system" to ensure no injuries occur during the response**
- **Take precautions to avoid personal injury during this operation.**
- **Contact operator and/or local officials to aid in operation. See list of phone numbers attached.**
- **Have received training in the**
  - **Detection of H_2S, and**
  - **Measures for protection against the gas,**
  - **Equipment used for protection and emergency response.**

Ignition of Gas source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO_2). 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 H_2S and SO_2

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H_2S	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).

H_2S CONTINGENCY PLAN EMERGENCY CONTACTS

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

Key Personnel

Name	Title	Cell Phone Number
Bill Dannels	Drilling Supt.	432-638-9463
Buddy Jenkins	Assistant Supt.	432-238-3295
Stephen Martinez	Engineer	432-556-0262
Gary Gerhard	Engineer	432-238-2197

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

Carlsbad

Ambulance	911
State Police	575-8885-3137
City Police	575-885-2111
Sheriff's Office	575-887-7551
Fire Department	575-887-3798
Local Emergency Planning Committee	575-887-6544
US Bureau of Land Management	575-887-6544

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

Other

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

B O P C O, L.P.

P. O. Box 2760
Midland, Texas 79702

432-683-2277 FAX-432-687-0329

May 20, 2009

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

To Whom It May Concern:

BOPCO, L.P. respectfully request exception to the Prairie Chicken timing restrictions for this location - 2375' FSL, 1780' FEL, of Section 1, T23S, R30E, Eddy County, New Mexico.

Sincerely,

Gary E. Gerhard
Drilling Engineer

GEG/mac

MULTI-POINT SURFACE USE PLAN

NAME OF WELL: Hudson 1 Federal #9H
LEGAL DESCRIPTION - SURFACE: 2375' FSL, 1780' FEL, Section 1, T23S, R30E, Eddy County, NM.
BHL: 2300' FSL, 1800' FEL, 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 0.8 miles to lease road. On lease road go 0.4 miles west to lease road, on lease road to south 0.4 miles to lease road of 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. See Exhibit "B".

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 #36 Battery is located in the NW quarter of NW quarter of Sec 1, 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 #36 Battery. Proposed flow lines and power lines are displayed in Exhibit "E". Flow lines will follow existing roads to JRU #36 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" & "B".

POINT 7: METHODS FOR HANDLING WASTE MATERIAL

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-1" shows the dimensions of the well pad and Exhibit "D-2" 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) Location of closed loop system.

See Exhibit "D-1".

C) Lining of the Pits

No reserve pit. Closed loop system.

POINT 10: PLANS FOR RESTORATION OF THE SURFACE

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...

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 well is located in Section 1 (Approximately 1/2 mile east). Additional freshwater wells are located in Sections 12, 14, 19, & 34 of T23S, R30E.

G) Residences and Buildings

None in the immediate vicinity.

H) Historical Sites

None observed.

I) 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.

J) Surface Ownership

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

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

L) 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	PRODUCTION	PRODUCTION
William R. Dannels	Carlos Cruz	Dean Clemmer
Box 2760	Box 2760	104 East Green Street
Midland, Texas 79702	Midland, Texas 79702	Carlsbad, New Mexico 88220
(432) 683-2277	(432) 683-2277	(505) 887-7329

5/19/09
Date

Gary E. Gerhard
Gary E. Gerhard

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.

5/19/09
Date

Gary E. Gerhard
Gary E. Gerhard

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	BOPCO, L. P.
LEASE NO.:	NM0543280A
WELL NAME & NO.:	Hudson 1 Federal 9H
SURFACE HOLE FOOTAGE:	2375' FSL & 1780' FEL Section 1
BOTTOM HOLE FOOTAGE	2300' FSL & 1800' FEL Section 2 Fee
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.

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)

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.

Cave and Karst

** Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

Cave/Karst Surface Mitigation

The following stipulations will be applied to minimize impacts during construction, drilling and production.

Construction:
In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

No Blasting:
No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

Pad Berming:
The pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the pad. All sides will be bermed.

Tank Battery Liners and Berms:
Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

Leak Detection System:
A method of detecting leaks is required. The method could incorporate gauges to measure loss, situating values and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

Automatic Shut-off Systems:

Automatic shut off, check values, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

Cave/Karst Subsurface Mitigation

The following stipulations will be applied to protect cave/karst and ground water concerns:

Rotary Drilling with Fresh Water:
Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

Directional Drilling:
Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

Lost Circulation:
ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

Abandonment Cementing:
Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

Pressure Testing:
Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

VI. CONSTRUCTION

AVOID POWER LINE TO THE NORTHEAST

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 to be stripped is approximately 6 inches in depth. 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 west

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.

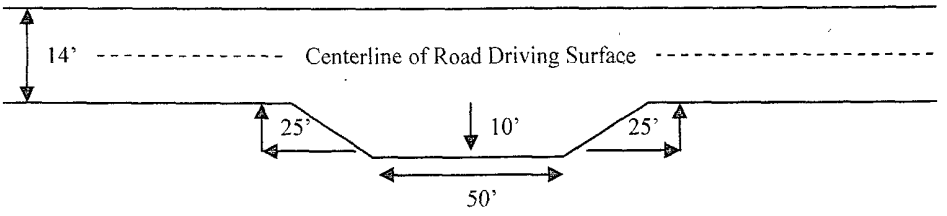
Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

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:

Standard Turnout – Plan View

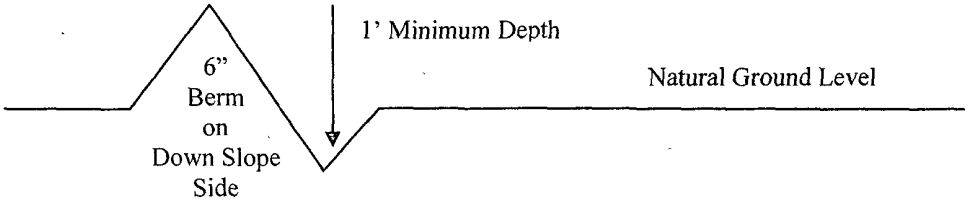


Drainage

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

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

Cross Section of a Typical Lead-off Ditch



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

Formula for Spacing Interval of Lead-off Ditches

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

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

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.

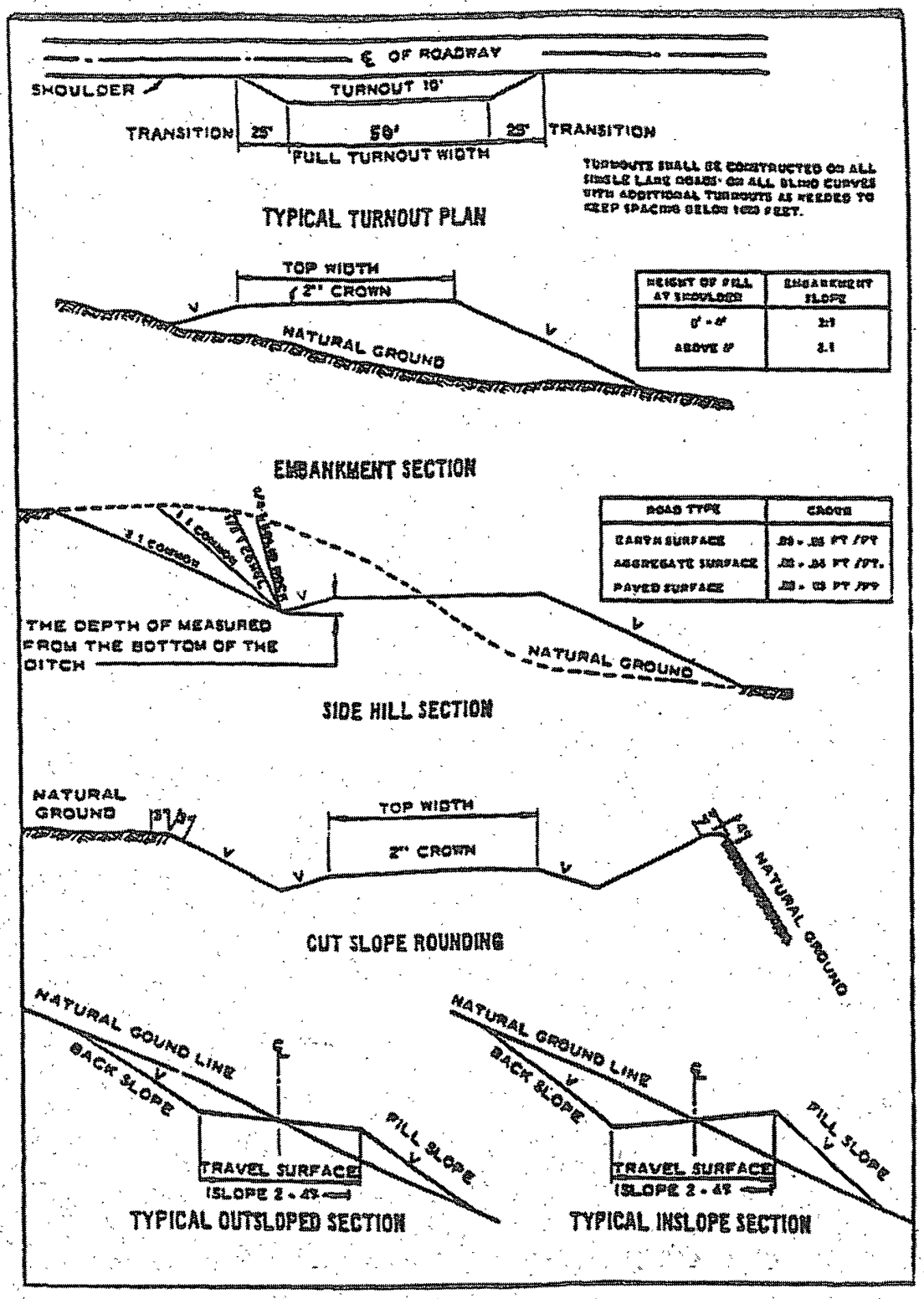
A gate shall be constructed and fastened securely to H-braces.

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.

Figure 1 – Cross Sections and Plans For Typical Road Sections



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.**

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
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 486 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 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.

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

    ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above.
    Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to potash and cave/karst concerns.

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

    a. First stage to DV tool, cement shall:

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

b. Second stage above DV tool, cement shall:

☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office. **Additional cement may be required as the excess calculates to less than 25%.**

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 systerm. 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 is using a 5M system but testing as a 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. **Operator to submit copies of test done for each casing string with the subsequent sundry detailing the casing/cementing details.**

   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.

RGH 072309

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 APD 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.

c. 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 of any responsibility as provided herein.

6. All construction and maintenance activity will be confined to the authorized right-of-way 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, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.

14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

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 APD 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.

Seed Mixture 1, for Loamy Sites

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

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (small/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	lb/acre
Plains lovegrass (Eragrostis intermedia)	0.5
Sand dropseed (Sporobolus cryptandrus)	1.0
Sideoats grama (Bouteloua curtipendula)	5.0

*Pounds of pure live seed:

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

(Insert Seed Mixture Here)

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.