OCD-ARTESIA

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Form 3160-5
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OM B 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
NM02884A

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 #8H

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

9 API Well No
30-015-37272

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

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

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

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

Surface: NENW, 1015' FNL, 2080' FWL, Sec 1, T23S, R30S, Lat N32.338533, Lon W103.836222
BHL: SENW, 1980' FNL, 350' FWL, Sec 2, T23S, R30E, Lat N32.335928, Long W103.859156

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
	☑ 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)

BOPCO request approval of the revised horizontal drilling plan. The BHL has been moved from 1980' FNL & 990' FWL, Sec 2, T23S. R30E to 1980' FNL & 350' FWL, Sec 2, T23S, R30E, Eddy County, New Mexico. No change in surface location. Well path has been changed, dedicated acreage has been reduced from 300 to 280 acres.

The 4-1/2" casing program will also be changed from 7162' of 4-1/2", 11.6#, N-80, Ultra Flush joint to 7037' of 4-1/2", 11.6#, HCP-110, LTC with Baker packers for zone isolation and 900' of 4-1/2", 11.6#, HCP-110, Ultra Flush joint. Liner hanger will be set at approx 6600'.

The revised horizontal drilling plan along with new plats are attached.

BOPCO L.P. Bond # on file: COB000050

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

Signature Annette Childers Date 12-21-09

APPROVED
DEC 22 2009
/s/ Chris Walls
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by Title Date

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

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

(Instructions on page 2)

EIGHT POINT DRILLING PROGRAM
BOPCO, L.P.

NAME OF WELL: Hudson 1 Federal #8H
LEGAL DESCRIPTION - SURFACE: 1015' FNL, 2080' FWL, Section 1, T23S, R30E, Eddy County, NM.
BHL: 1980' FNL, 350' FWL, Section 2, T23S, R30E, Eddy County, New Mexico.

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

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

Anticipated Formation Tops: KB 3308' (estimated)
GL 3289'

FORMATION	ESTIMATED TOP FROM KB TVD	MD	ESTIMATED SUB-SEA TOP	BEARING
T/Rustler	191'	191'	+ 3117'	Barren
B/Rustler	495'	495'	+ 2813'	Barren
T/Salt	501'	501'	+ 2807'	Barren
B/Salt	3566'	3566'	- 258'	Barren
T/Lamar Lime	3795'	3795'	- 487'	Barren
T/Ramsey	3833'	3833'	- 525'	Oil/Gas
T/Lower Cherry Canyon	5969'	5969'	- 2661'	Oil/Gas
KOP (Kick Off Point)	6840'	6840'	- 3532'	N/A
T/Brushy Canyon "U" Sand	7247'	7328'	- 3939'	Oil/Gas
EOC Target	7278'	7550'	- 3970'	Oil/Gas
Target 2 (End of turn)	7278'	8634'	- 3970'	Oil/Gas
TD (end of lateral)	7278'	14,639'	- 3970'	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' - 550'	17-1/2"	Surface	New
9-5/8", 40#, J-55, LT&C	0' - 3,815'	12-1/4"	Intermediate	New
7", 26#, HCP110, LT&C	0' - 7,600'	8-3/4"	Production	New
4-1/2", 11.6#, HCP110, Ultra Flush JT	6,600' - 7,600'	6-1/8"	Production	New
4-1/2", 11 6#, HCP110, LTC	7,600' - 14,639'	6-1/8"	Production	New

CASING DESIGN SAFETY FACTORS:

TYPE	TENSION	COLLAPSE	BURST
13-3/8", 48#, H-40, ST&C	12.40	2.30	2.78
9-5/8", 40#, J-55, LT&C	4.00	1.29	1.12
7", 26#, HCP110, LT&C	3 09	1.38	1.13
4-1/2", 11.6#, HCP110, Ultra Flush Jt	3.67	2.22	1 46
4-1/2", 11.6#, HCP110, LTC	3.67	2 22	1.46

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 (10.2 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 (0.52 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 0 ppg).

Collapse — A 1 0 design factor with full internal evacuation and a collapse force equal to the mud gradient in which the casing will be run (0 48 psi/ft). The effects of axial load on collapse will be considered

Burst — A 1 25 design factor with anticipated maximum tubing pressure (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 the 12-1/4" intermediate hole will consist of 13-5/8" X 5000 psi dual ram BOPs with mud cross, and choke manifold, chokes, & hydril as per Diagram 2 (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 250-300 psig & 2000 psig by independent tester The BOPE when rigged up on the intermediate casing spool will consist of annular, pipe & blind rams with choke manifold and chokes as in Diagram 2 and will be tested to 3000 psig by independent tester In addition to the high pressure test, a low pressure (250-300 psig) test will be required. Hydril will be tested to 1500 psig.

POINT 4: PRESSURE CONTROL EQUIPMENT - con't. .

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' - 550'	FW Spud Mud	8.5 – 9.2	38-70	NC	NC	NC	10 0
550' - 3,815'	Brine Water	9.8 – 10.2	28-30	NC	NC	NC	9.5 – 10.5
3,815' - 7,600'	FW/Gel	8.7 – 9.0	28-36	NC	NC	NC	9 5 – 10 0
7,600' - 14,639'	FW/Gel/Starch	8.7 – 9 0	28-36	NC	NC	<20	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" & 6-1/8" hole
Run #2: Drill pipe conveyed 4-arm Caliper/GR from TD thru curve.

C) CONVENTIONAL CORING

None anticipated

D) CEMENT

INTERVAL	AMOUNT SXS	FT OF FILL	TYPE	GALS/SX	PPG	FT^3/SX
SURFACE:						
Lead 0 – 250' (100% excess Circ to surface)	250	250	ExtendaCem Premium Plus "C" + 2% CaCl + 4% Bentarite	9 24	13 5	1 75
Tail 250' – 550' (100% excess)	310	300	HalCem-C	6 39	14 8	1 35
INTERMEDIATE:						
Lead 0' – 3315' (100% excess Circ to surface)	740	3315	EconoCem-HLC + 5% salt + 5lb/sk Gilsonite	9 59	12 6	1.88

D) CEMENT - con't. .

INTERVAL	AMOUNT SXS	FT OF FILL	TYPE	GALS/SX	PPG	FT^3/SX
Tail: 3315' – 3815' (100% excess)	271	500	HalCem-C	6 34	14.8	1.33
2nd INTERMEDIATE TWO STAGE WITH DV TOOL @ 5000':						
Stage 1:						
Lead 5000' - 6801' (50% excess)	220	1801	Halco Tuned Lite (Versa Cem) + 20 pps HGS 6000 + 1% Cal-Seal 60 + 1 pps NaCl + 1.25 pps CFR-3 + 0 15 pps FWCA	14 68	9.7	3.16
Tail. 6801' - 7600' (50% excess)	170	799	HalCem H + 0.6% Halad 9 + 2% Bentarite	5 85	15.2	1 28
DV Tool @ 5,000'						
Stage 2:						
Lead 0' – 4900' (50% excess)	450	4900	EconoCem-HLC + 3 pps Gilsonite + 3% NaCl	10 57	12 6	1.87
Tail 4900' – 5000' (50% excess)	100	100	Hal-Cem C	6.34	14 8	1.33

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 6801' at which point a directional hole will be kicked off and drilled at an azimuth of 205°, building angle at 12.00°/100' to a max angle of 90° at a TVD of 7278' (MD 7550'). This 90° angle will be maintained to a MD of 7600' or TVD of 7278'. At 7600', 7", 26#, HCP110, 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 14,639' at an azimuth of 270°. 4-1/2", 11.6#, HCP110, LTC casing will be installed with Baker hydraulic packers installed for zone isolation in the lateral and 4-1/2", 11.6#, HCP110, Ultra FJT thru the curve Liner hanger will be set at approx 6680'

POINT 7: ANTICIPATED RESERVOIR CONDITIONS

Normal pressures are anticipated throughout Delaware section. A BHP of 3165 psi (max) or MWE of 8.4 ppg is expected. Lost circulation may exist in the Delaware Section from 3818'-5800' TVD. Salt water flow occurred in James Ranch Unit #108H (North offset) at 2894' and Hudson 1 Federal #7 (South offset) at 2794'. H2S equipment will be rigged up before drilling out 13-3/8" casing.

POINT 8: OTHER PERTINENT INFORMATION

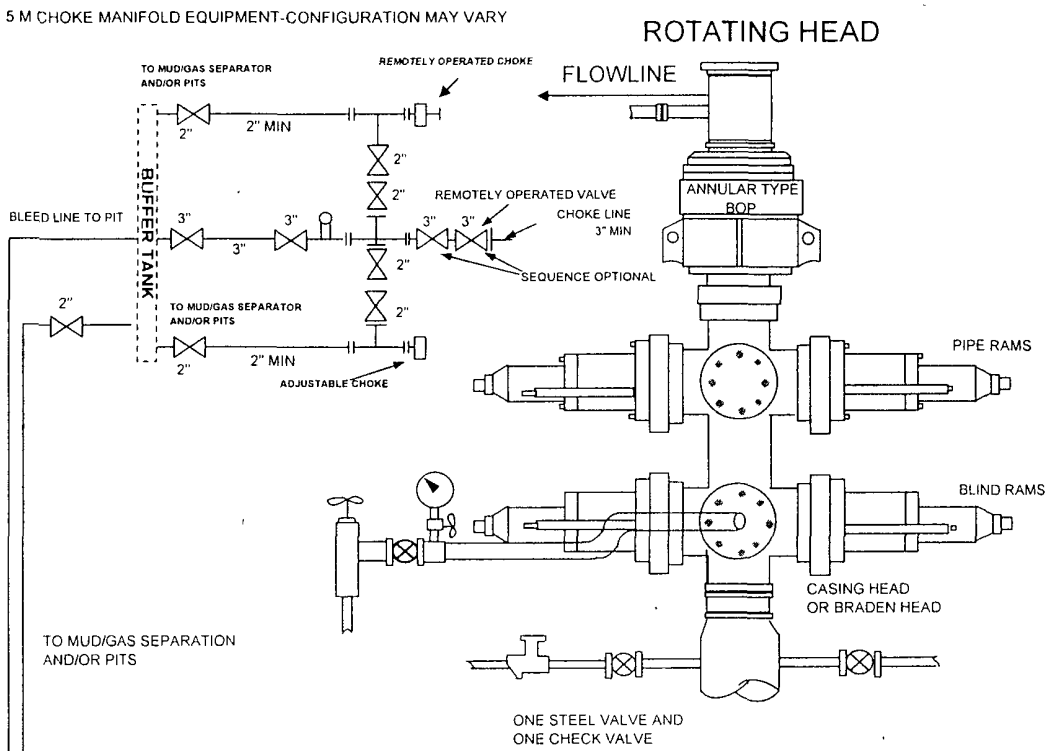
A) Auxiliary Equipment
Upper and lower kelly cocks. Full opening stab in valve on the rig floor.

B) Anticipated Starting Date
Upon approval
30 days drilling operations
20 days completion operations

Gary Gerhard

GEG/mac
December 21, 2009

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



THE FOLLOWING CONSTITUTE MINIMUM BLOWOUT PREVENTER REQUIREMENTS

A One double gate Blowout preventer with lower pipe rams and upper blind rams, all hydraulically controlled

B Opening on preventers between rams to be flanged, studded or clamped and at least two inches in diameter

C All connections from operating manifold to preventers to be all steel hose or tube a minimum of one inch in diameter

D The available closing pressure shall be at least 15% in excess of that required with sufffficient 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 2

TO STEEL MUD TANKS

BLEED LINE TO STEEL PIT (NOT CONNECTED TO BUFFER TANK

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

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

Form C-102
Revised October 15, 2009

Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-37272	50443	Quahada Ridge SE (Delaware)

Property Code	Property Name	Well Number
306408	HUDSON "1" FEDERAL	8H

OGRID No.	Operator Name	Elevation
260737	BOPCO, L.P.	3289'

Surface Location

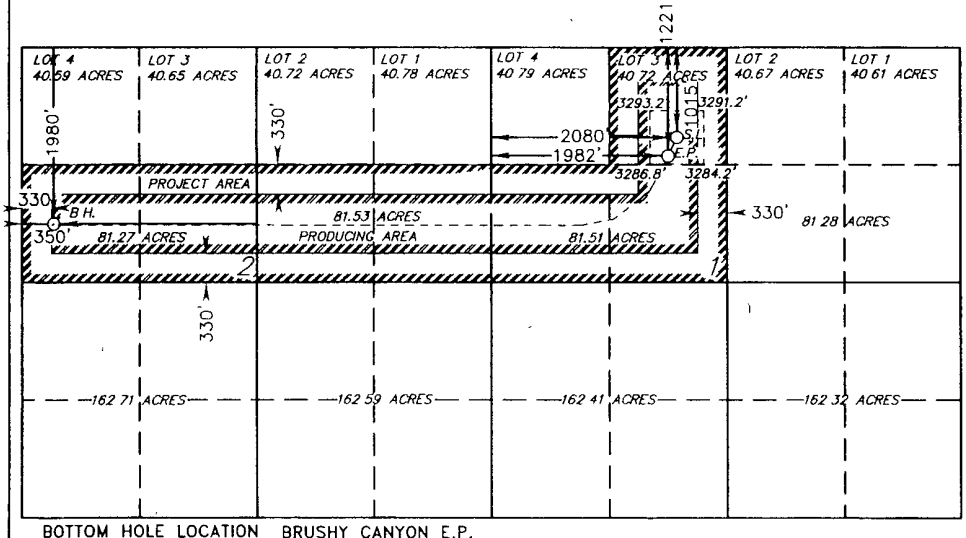
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	1	23 S	30 E		1015	NORTH	2080	WEST	EDDY

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
E	2	23 S	30 E		1980	NORTH	350	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
280	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
PER BOPCO
Lat - N 32°20'09.34"
Long - W 103°51'32.96"
NMSPCE- N 486266.94
E 687789.38
(NAD-83)

BRUSHY CANYON E.P.
PER BOPCO
Lat - N 32°20'16.23"
Long - W 103°50'09.77"
NMSPCE- N 487039.46
E 694771.95
(NAD-83)

DELAWARE E.P.
Lat - N 32°20'18.72"
Long - W 103°50'10.40"
NMSPCE- N 487246.3
E 694868.4
(NAD-83)

SURFACE LOCATION
Lat - N 32°20'18.72"
Long - W 103°50'10.40"
NMSPCE- N 487246.3
E 694868.4
(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 or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature Date 12/18/09

Gary E. Gerhard
Printed Name

SURVEYOR CERTIFICATION

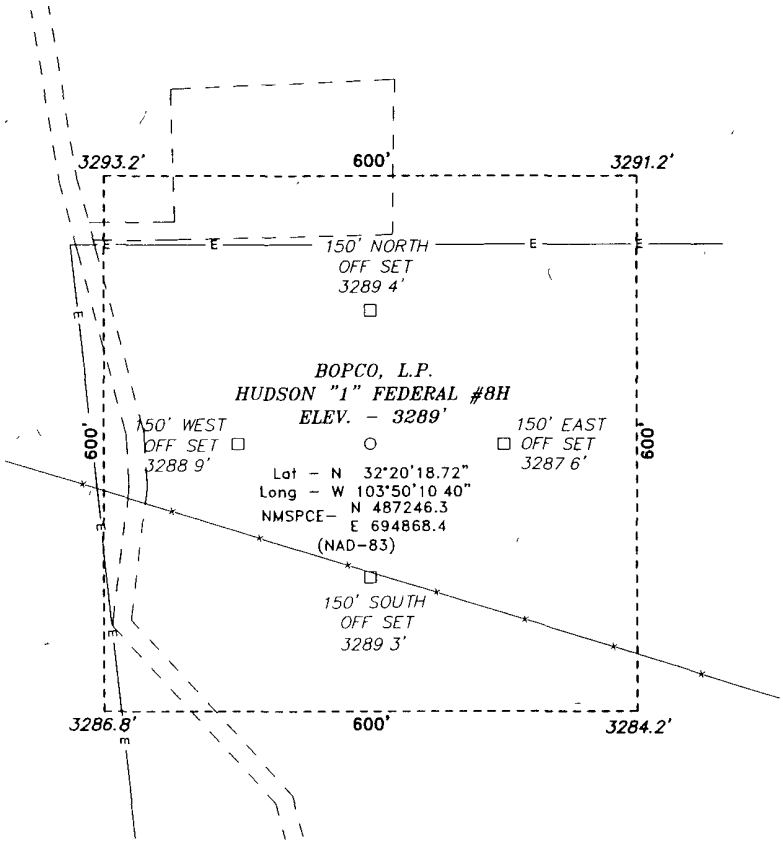
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervison, and that the same is true and correct to the best of my belief

MAY 18, 2009
Date Surveyed
Signature & Seal of Professional Surveyor
NEW MEXICO 7977 REGISTERED PROFESSIONAL LAND SURVEYOR
Certificate No. Gary L. Jones 7977

BASIN SURVEYS

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

EDDY COUNTY, **NEW MEXICO.**



200 0 200 400 FEET

SCALE: 1" = 200'

Directions to Location

FROM THE JUNCTION OF HWY 128 AND WIPP ROAD, GO NORTH 0 8 MILES TO LEASE ROAD, ON LEASE ROAD GO WEST 0 4 MILES TO LEASE ROAD, ON LEASE ROAD GO SOUTH 700' THENCE WEST 0 2 MILES WINDING NORTH 0 25 MILES TO PROPOSED LOCATION

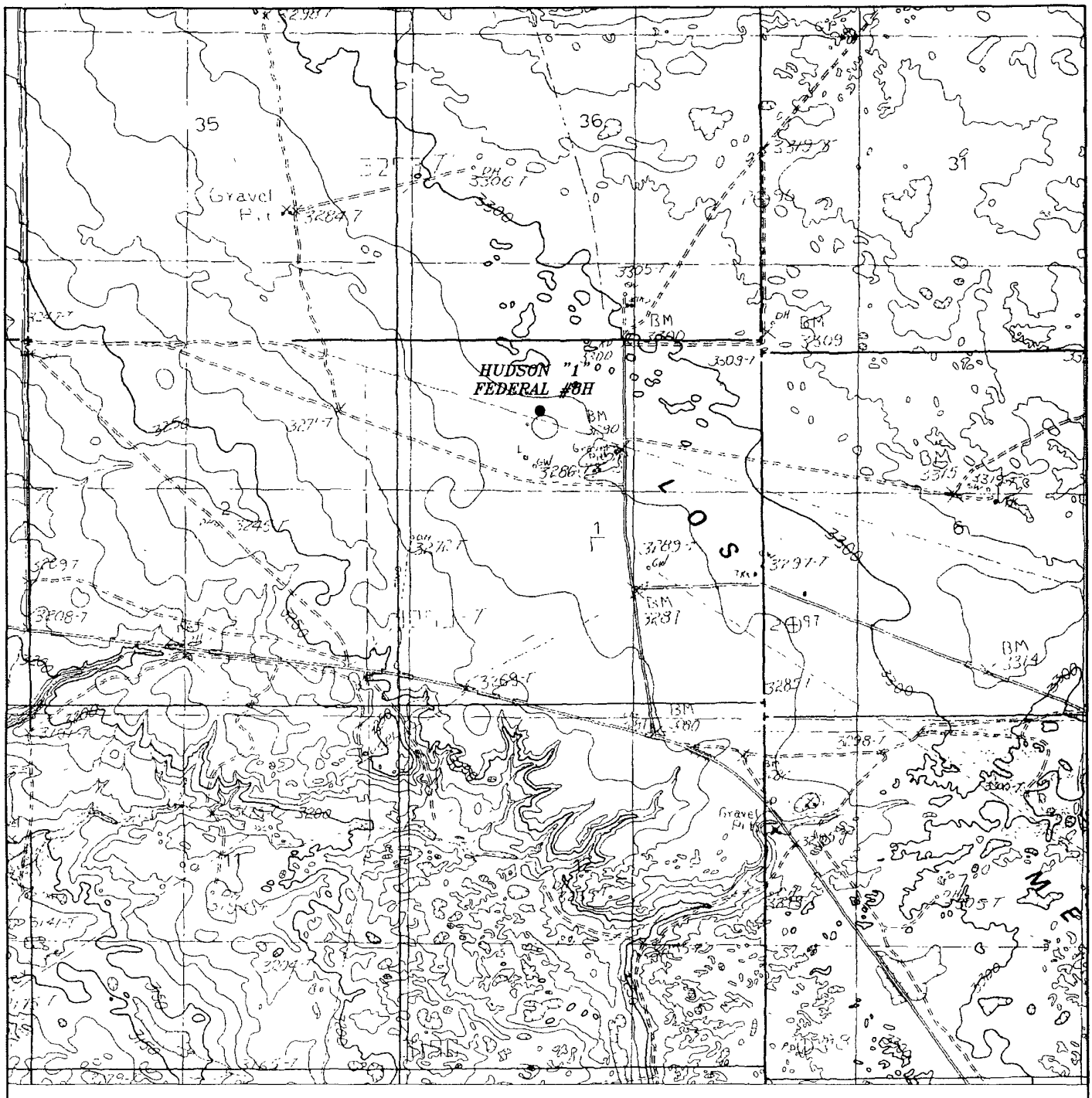
BOPCO, L.P.

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

THE HUDSON "1" FEDERAL #8H LOCATED 1015' FROM THE NORTH LINE AND 2080' FROM THE WEST LINE OF SECTION 1, TOWNSHIP 23 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

BASIN SURVEYS P O BOX 1786 - HOBBS, NEW MEXICO

W O Number 21198	Drawn By J. SMALL		
Date 05-18-2009	Disk JMS 21198	Survey Date 05-18-2009	Sheet 1 of 1 Sheets



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

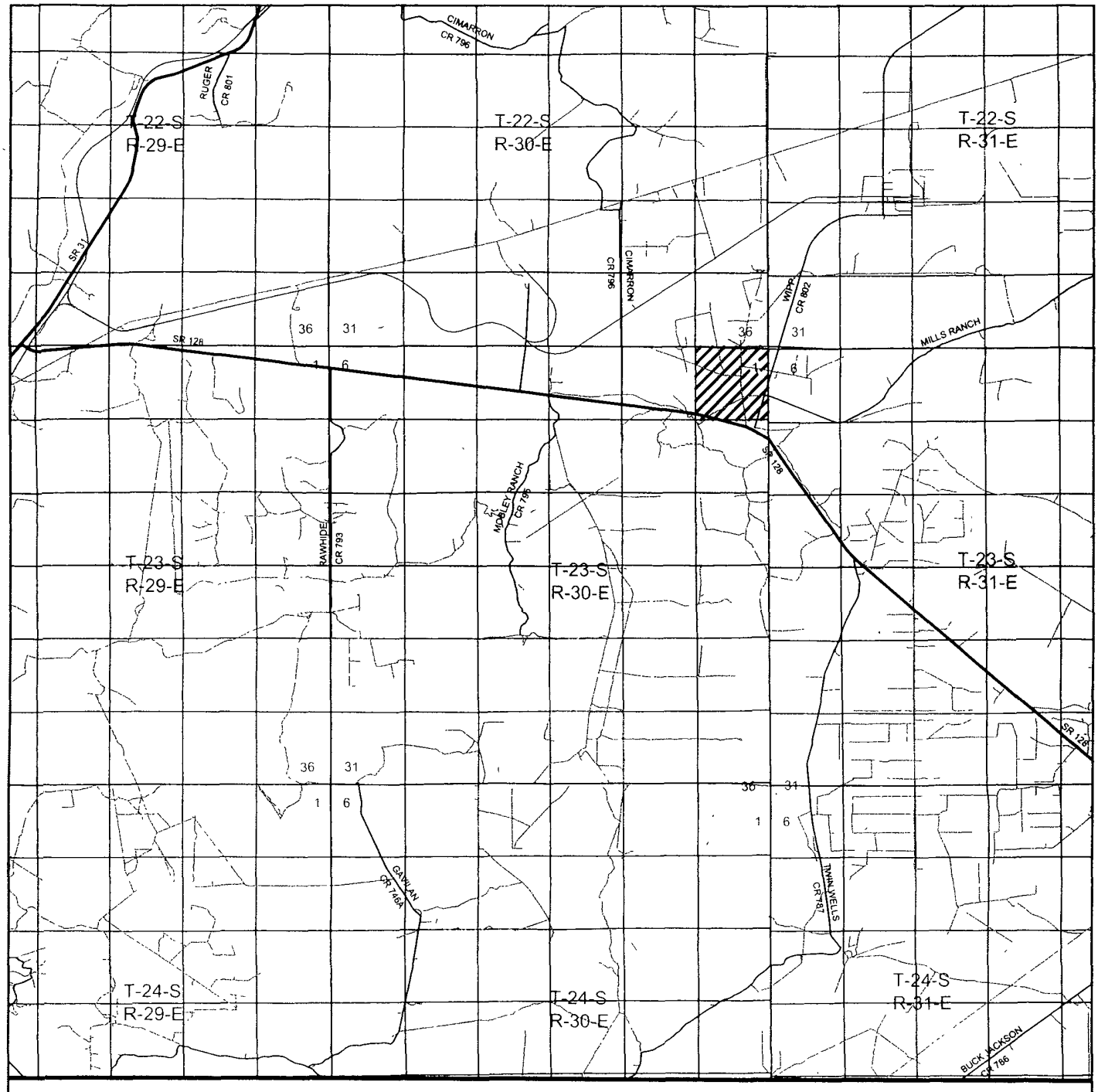
Basin Surveys
focused on excellence in the oilfield

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

N

BOPCO, L.P.



HUDSON "1" FEDERAL #8H
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Section 1, Township 23 South, Range 30 East,
N.M.P.M., Eddy County, New Mexico.

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1120 N. West County Rd.
Hobbs, New Mexico 88241
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(575) 392-2206 - Fax
basinsurveys.com

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

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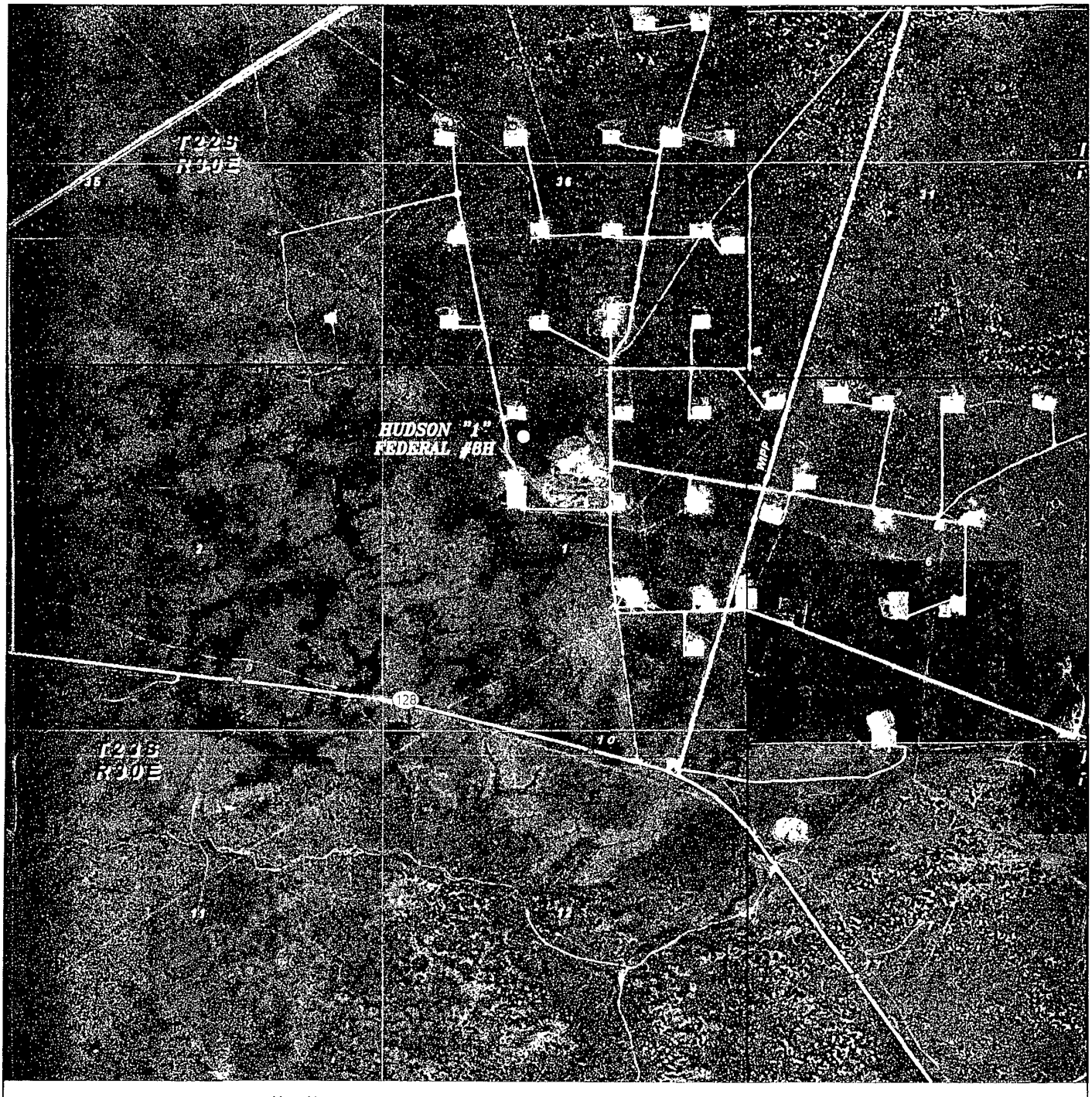
BOPCO, L.P.



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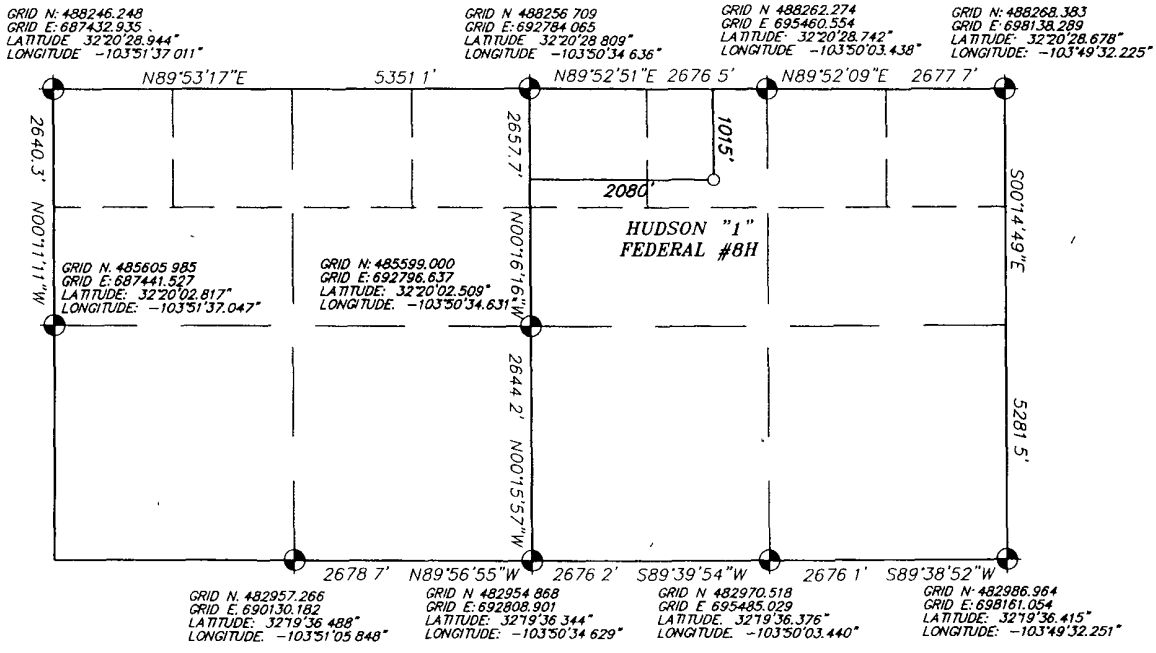
for Integrity and Excellence
in the Oilfield
P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2526 - Fax
BasinSurveys.com

YELLOW TINT = USA LAND
BLUE TINT = STATE LAND
NATURAL COLORS = FEE LAND

BOPCO, L.P.

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



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Section 1, Township 23 South, Range 30 East,
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Hobbs, New Mexico 88241
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(575) 392-2206 - Fax
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W O Number	JMS 21198
Survey Date	05-18-2009
Scale	1" = 2000'
Date	05-18-2009

N

BOPCO, L.P.

BOPCO, L.P.

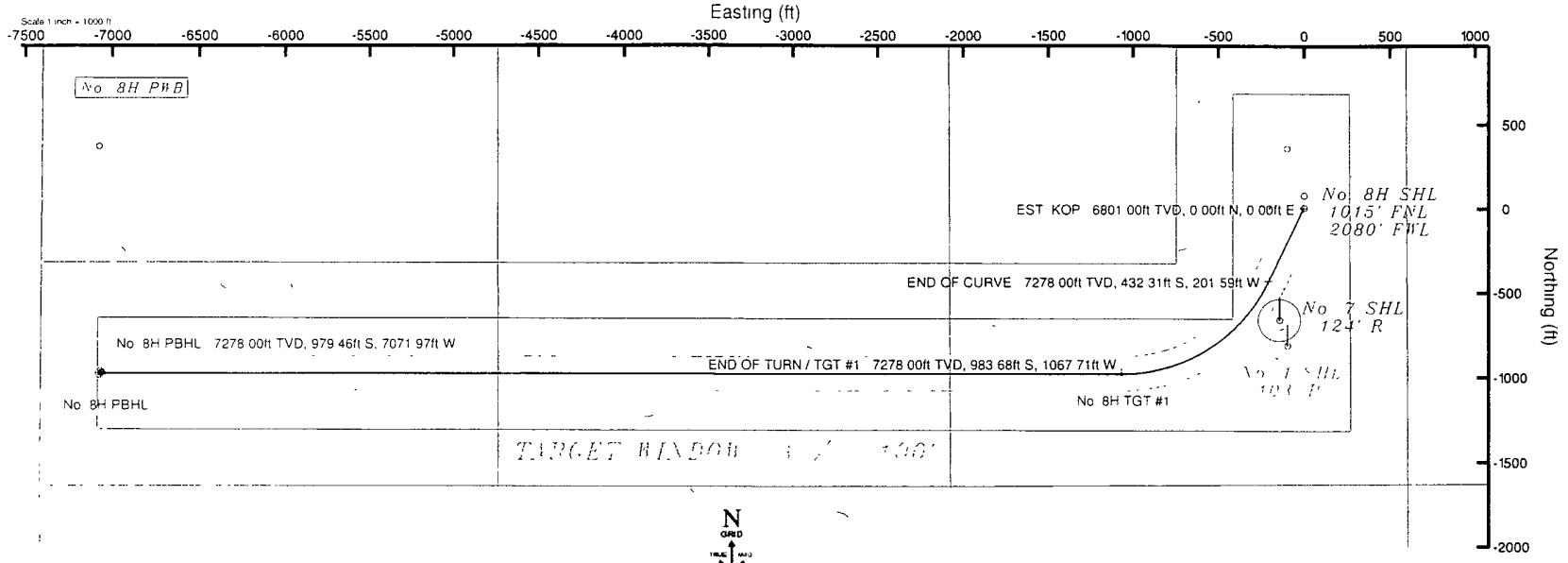
Location Eddy County NM
Field Quahada Ridge SE (Delaware)
Facility Hudson 1 Fed No 8H

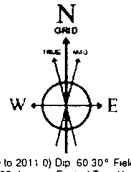
Slot No 8H SHL
Well No 8H
Wellbore No 8H PWB

Plot reference wellpath is Plan v3	
True vertical depths are reference to Rig on No 8H SHL (RT)	Grid System NAD83 / TM New Mexico State Planes Eastern Zone (3001) US feet
Measured depths are referenced to Rig on No 8H SHL (RT)	North Reference Grid north
Rig on No 8H SHL (RT) is Mean Sea Level 3308 feet	Scale True distance
Mean Sea Level is Mud line (Facility Hudson 1 Fed No 8H) -3289 feet	Depths are in feet
Coordinates are in feet referenced to Surface Location	Created by Victor Hernandez on 12/16/2009

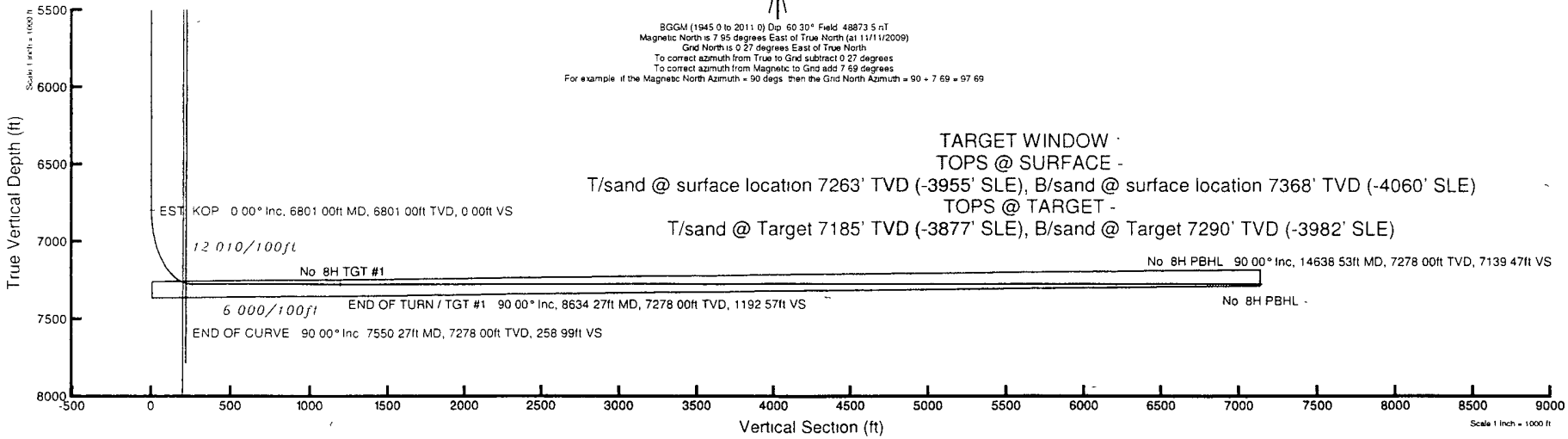
Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	0 00	0 000	205 000	0 00	0 00	0 00	0 00	0 00
EST KOP	6801 00	0 000	205 000	6801 00	0.00	0.00	0 00	0 00
END OF CURVE	7550.27	90 000	205 000	7278.00	-432 31	-201 59	12 01	258 99
END OF TURN / TGT #1	8634 27	90 000	270 038	7278 00	-983.68	-1067 71	6 00	1192 57
No 8H PBHL	14638 53	90.000	270 042	7278 00	-979 46	-7071 97	0 00	7139 47





BGGM (1945 0 to 2011 0) Dip 60 30° Field 48873 5 nT
Magnetic North is 7 95 degrees East of True North (at 11/11/2009)
Grid North is 0 27 degrees East of True North
To correct azimuth from True to Grid subtract 0 27 degrees
To correct azimuth from Magnetic to Grid add 7 69 degrees
For example if the Magnetic North Azimuth = 90 degs then the Grid North Azimuth = 90 + 7 69 = 97 69



TARGET WINDOW -
TOPS @ SURFACE -
T/sand @ surface location 7263' TVD (-3955' SLE), B/sand @ surface location 7368' TVD (-4060' SLE)
TOPS @ TARGET -
T/sand @ Target 7185' TVD (-3877' SLE), B/sand @ Target 7290' TVD (-3982' SLE)

Azimuth 262 11° with reference 0.00 N, 0 00 E

Planned Wellpath Report

Plan #5

BAKER HUGHES INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, L.P.	Slot	No. 8H SHL
Area	Eddy County, NM	Well	No. 8H
Field	Quahada Ridge, SE (Delaware)	Wellbore	No. 8H PWB
Facility	Hudson 1 Fed No. 8H		

REPORT SETUP INFORMATION			
Projection System	NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet	Software System	WellArchitect® 2.0
North Reference	Grid	User	Victor Hernandez
Scale	0.999936	Report Generated	12/16/2009 at 6:31:09 PM
Convergence at slot	0.27° East	Database/Source file	WA_Midland/No._8H_PWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[USft]	Northing[USft]	Latitude	Longitude
Slot Location	0.00	0.00	694868.40	487246.30	32°20'18.716"N	103°50'10.395"W
Facility Reference Pt			694868.40	487246.30	32°20'18.716"N	103°50'10.395"W
Field Reference Pt			696371.30	485350.50	32°19'59.887"N	103°49'52.981"W

WELLPATH DATUM

Calculation method	Minimum curvature / Radius of curvature	Rig on No. 8H SHL (RT) to GL	19.00ft
Horizontal Reference Pt	Surface Location	Rig on No. 8H SHL (RT) to Mean Sea Level	3308.00ft
Vertical Reference Pt	Rig on No. 8H SHL (RT)	GL to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on No. 8H SHL (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	262.11°

REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, L.P.	Slot	No. 8H SHL
Area	Eddy County, NM	Well	No. 8H
Field	Quahada Ridge, SE (Delaware)	Wellbore	No. 8H PWB
Facility	Hudson 1 Fed No. 8H		

WELLPATH DATA (83 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	DLS [°/100ft]	Comments
0 00	0 000	205.000	0.00	0.00	0.00	0 00	694868.40	487246.30	0 00	Tie On
6801 00	0 000	205.000	6801.00	0 00	0 00	0.00	694868.40	487246.30	0.00	EST KOP
6901 00†	12.012	205 000	6900.27	5.67	-9.47	-4 41	694863.99	487236 84	12 01	
7001 00†	24 023	205 000	6995 19	22.43	-37 45	-17 46	694850.94	487208 86	12 01	
7101 00†	36.035	205.000	7081.61	49.56	-82.72	-38.57	694829.83	487163.59	12.01	
7201 00†	48.047	205 000	7155 74	85 85	-143 30	-66.82	694801.58	487103.01	12 01	
7301 00†	60 058	205.000	7214.34	129.72	-216.54	-100.97	694767.43	487029.78	12.01	
7401 00†	72 070	205 000	7254 83	179 26	-299.22	-139.53	694728.88	486947.10	12 01	
7501 00†	84 082	205 000	7275 46	232.29	-387.73	-180 80	694687.61	486858.59	12 01	
7550 27	90.000	205.000	7278.00	258.99	-432.51	-201.59	694666.82	486814.02	12.01	END OF CURVE
7601 00†	90.000	208 044	7278 00	287 65	-477 69	-224.24	694644.18	486768 64	6.00	
7701 00†	90.000	214.044	7278.00	350.46	-563.33	-275.78	694592.63	486683 00	6 00	
7801 00†	90.000	220.043	7278.00	421.05	-643.11	-336.00	694532.42	486603.23	6.00	
7901 00†	90 000	226 043	7278 00	498.65	-716 16	-404.22	694464.20	486530 18	6.00	
8001 00†	90.000	232.043	7278.00	582.41	-781.68	-479.71	694388.72	486464.67	6.00	
8101 00†	90 000	238.043	7278.00	671.42	-838.95	-561.63	694306.81	486407.40	6.00	
8201 00†	90.000	244 043	7278 00	764.69	-887.35	-649.09	694219.35	486359 01	6 00	
8301 00†	90.000	250.043	7278.00	861.20	-926.33	-741.13	694127.32	486320.03	6.00	
8401 00†	90 000	256 043	7278 00	959.91	-955.49	-836.73	694031.72	486290.88	6.00	
8501 00†	90.000	262.043	7278.00	1059.72	-974.49	-934.87	693933.59	486271.86	6.00	
8601 00†	90 000	268.042	7278 00	1159 54	-983.12	-1034.45	693834.02	486263.24	6 00	
8634 27	90.000	270 038	7278.00	1192 57	-983.08	-1067.71	693800.76	486263.28	6.00	END OF TURN / TGT #1
8701 00†	90 000	270.039	7278 00	1258.66	-983.64	-1134.44	693734.03	486262.73	0.00	
8801 00†	90 000	270.039	7278 00	1357.70	-983 57	-1234.44	693634.04	486262 80	0 00	
8901 00†	90.000	270.039	7278.00	1456.75	-983.50	-1334.44	693534.05	486262.86	0.00	
9001 00†	90 000	270.039	7278 00	1555.80	-983 43	-1434.44	693434.05	486262.93	0.00	
9101 00†	90 000	270 039	7278.00	1654.84	-983.37	-1534.44	693334.06	486263.00	0.00	
9201 00†	90 000	270 039	7278.00	1753.89	-983.30	-1634.44	693234.07	486263.07	0.00	
9301 00†	90 000	270 039	7278.00	1852 93	-983.23	-1734.44	693134.07	486263 13	0.00	
9401 00†	90.000	270.039	7278.00	1951.98	-983.16	-1834.44	693034.08	486263.20	0.00	

Planned Wellpath Report

Plan #5

BAKER HUGHES INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, L.P.	Slot	No. 8H SHL
Area	Eddy County, NM	Well	No. 8H
Field	Quahada Ridge, SE (Delaware)	Wellbore	No. 8H PWB
Facility	Hudson 1 Fed No. 8H		

WELLPATH DATA (83 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	DLS [°/100ft]	Comments
9501.00†	90.000	270.039	7278.00	2051.02	-983.09	-1934.44	692934.09	486263.27	0.00	
9601.00†	90.000	270.039	7278.00	2150.07	-983.03	-2034.44	692834.09	486263.34	0.00	
9701.00†	90.000	270.039	7278.00	2249.11	-982.96	-2134.44	692734.10	486263.41	0.00	
9801.00†	90.000	270.039	7278.00	2348.16	-982.89	-2234.44	692634.11	486263.48	0.00	
9901.00†	90.000	270.039	7278.00	2447.20	-982.82	-2334.44	692534.11	486263.54	0.00	
10001.00†	90.000	270.039	7278.00	2546.25	-982.75	-2434.44	692434.12	486263.61	0.00	
10101.00†	90.000	270.039	7278.00	2645.29	-982.68	-2534.44	692334.13	486263.68	0.00	
10201.00†	90.000	270.039	7278.00	2744.34	-982.62	-2634.44	692234.13	486263.75	0.00	
10301.00†	90.000	270.039	7278.00	2843.38	-982.55	-2734.44	692134.14	486263.82	0.00	
10401.00†	90.000	270.040	7278.00	2942.43	-982.48	-2834.44	692034.15	486263.89	0.00	
10501.00†	90.000	270.040	7278.00	3041.47	-982.41	-2934.44	691934.15	486263.96	0.00	
10601.00†	90.000	270.040	7278.00	3140.52	-982.34	-3034.44	691834.16	486264.03	0.00	
10701.00†	90.000	270.040	7278.00	3239.56	-982.27	-3134.44	691734.17	486264.09	0.00	
10801.00†	90.000	270.040	7278.00	3338.61	-982.20	-3234.44	691634.17	486264.16	0.00	
10901.00†	90.000	270.040	7278.00	3437.65	-982.13	-3334.44	691534.18	486264.23	0.00	
11001.00†	90.000	270.040	7278.00	3536.70	-982.06	-3434.44	691434.19	486264.30	0.00	
11101.00†	90.000	270.040	7278.00	3635.74	-981.99	-3534.44	691334.19	486264.37	0.00	
11201.00†	90.000	270.040	7278.00	3734.79	-981.92	-3634.44	691234.20	486264.44	0.00	
11301.00†	90.000	270.040	7278.00	3833.83	-981.85	-3734.44	691134.21	486264.51	0.00	
11401.00†	90.000	270.040	7278.00	3932.88	-981.78	-3834.44	691034.21	486264.58	0.00	
11501.00†	90.000	270.040	7278.00	4031.92	-981.71	-3934.44	690934.22	486264.65	0.00	
11601.00†	90.000	270.040	7278.00	4130.97	-981.64	-4034.44	690834.23	486264.72	0.00	
11701.00†	90.000	270.040	7278.00	4230.01	-981.57	-4134.44	690734.23	486264.79	0.00	
11801.00†	90.000	270.040	7278.00	4329.05	-981.50	-4234.44	690634.24	486264.86	0.00	
11901.00†	90.000	270.040	7278.00	4428.10	-981.43	-4334.44	690534.25	486264.93	0.00	
12001.00†	90.000	270.040	7278.00	4527.14	-981.36	-4434.44	690434.25	486265.00	0.00	
12101.00†	90.000	270.041	7278.00	4626.19	-981.29	-4534.44	690334.26	486265.07	0.00	
12201.00†	90.000	270.041	7278.00	4725.23	-981.22	-4634.44	690234.27	486265.14	0.00	
12301.00†	90.000	270.041	7278.00	4824.28	-981.15	-4734.44	690134.27	486265.22	0.00	
12401.00†	90.000	270.041	7278.00	4923.32	-981.08	-4834.44	690034.28	486265.29	0.00	

Planned Wellpath Report

Plan #5

BAKER HUGHES INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, L.P.	Slot	No. 8H SHL
Area	Eddy County, NM	Well	No. 8H
Field	Quahada Ridge, SE (Delaware)	Wellbore	No. 8H PWB
Facility	Hudson 1 Fed No. 8H		

WELLPATH DATA (83 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	DLS [°/100ft]	Comments
12501.00†	90.000	270.041	7278.00	5022.37	-981.01	-4934.44	689934.29	486265.36	0.00	
12601.00†	90.000	270.041	7278.00	5121.41	-980.94	-5034.44	689834.29	486265.43	0.00	
12701.00†	90.000	270.041	7278.00	5220.46	-980.86	-5134.44	689734.30	486265.50	0.00	
12801.00†	90.000	270.041	7278.00	5319.50	-980.79	-5234.44	689634.30	486265.57	0.00	
12901.00†	90.000	270.041	7278.00	5418.55	-980.72	-5334.44	689534.31	486265.64	0.00	
13001.00†	90.000	270.041	7278.00	5517.59	-980.65	-5434.44	689434.32	486265.71	0.00	
13101.00†	90.000	270.041	7278.00	5616.64	-980.58	-5534.44	689334.32	486265.79	0.00	
13201.00†	90.000	270.041	7278.00	5715.68	-980.51	-5634.44	689234.33	486265.86	0.00	
13301.00†	90.000	270.041	7278.00	5814.73	-980.43	-5734.44	689134.34	486265.93	0.00	
13401.00†	90.000	270.041	7278.00	5913.77	-980.36	-5834.44	689034.34	486266.00	0.00	
13501.00†	90.000	270.041	7278.00	6012.81	-980.29	-5934.44	688934.35	486266.07	0.00	
13601.00†	90.000	270.041	7278.00	6111.86	-980.22	-6034.44	688834.36	486266.15	0.00	
13701.00†	90.000	270.041	7278.00	6210.90	-980.15	-6134.44	688734.36	486266.22	0.00	
13801.00†	90.000	270.041	7278.00	6309.95	-980.07	-6234.44	688634.37	486266.29	0.00	
13901.00†	90.000	270.042	7278.00	6409.00	-980.00	-6334.43	688534.38	486266.36	0.00	
14001.00†	90.000	270.042	7278.00	6508.04	-979.93	-6434.44	688434.38	486266.44	0.00	
14101.00†	90.000	270.042	7278.00	6607.08	-979.86	-6534.44	688334.39	486266.51	0.00	
14201.00†	90.000	270.042	7278.00	6706.13	-979.78	-6634.44	688234.40	486266.58	0.00	
14301.00†	90.000	270.042	7278.00	6805.17	-979.71	-6734.44	688134.40	486266.65	0.00	
14401.00†	90.000	270.042	7278.00	6904.21	-979.64	-6834.44	688034.41	486266.73	0.00	
14501.00†	90.000	270.042	7278.00	7003.26	-979.56	-6934.44	687934.42	486266.80	0.00	
14601.00†	90.000	270.042	7278.00	7102.30	-979.49	-7034.44	687834.42	486266.87	0.00	
14638.53	90.000	270.042	7278.00	7139.47	-979.46	-7071.97	687796.90	486266.90	0.00	No 8H PBHL

Planned Wellpath Report

Plan #5

BAKER HUGHES INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, L.P.	Slot	No. 8H SHL
Area	Eddy County, NM	Well	No. 8H
Field	Quahada Ridge, SE (Delaware)	Wellbore	No. 8H PWB
Facility	Hudson 1 Fed No. 8H		

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
2) No. 8H PBHL	14638.53	7278.00	-979.46	7071.97	687796.90	486266.90	32° 2009.841' N	103° 51' 32.871" W	point
1) No. 8H TGT #1	8634.27	7278.00	-983.68	1067.71	693800.76	479262.68	32° 2009.021' N	103° 50' 22.892" W	point

SURVEY PROGRAM **Ref Wellbore: No. 8H PWB** **Ref Wellpath: Plan #5**

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
19.00	14638.53	NaviTrak (Standard)		No. 8H PWB