239 acres

7032

ATS-09-180

RM

OCD Artesia

0737

R-111-POTASH

SEP 18 2009

Form 3160-3
(April 2004)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5 Lease Serial No.
NM 02952A B

6 If Indian, Allotee or Tribe Name

1a Type of work ☑ DRILL ☐ REENTER

Split Estate

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
James Ranch Unit #104H

2 Name of Operator
BOPCO, L. P.

9 API Well No
30-015-37271

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 *)* SHL: UL P

At surface **SENW, UL F, 2000' FNL & 1730' FWL, Lat: N32.35034 Long:W103.83733**

At proposed prod zone **660' FNL&990' FWL,Sec 35,T22S-R30E,Lat:N32.35406 Long:W103.85711**

11 Sec, T R M or Blk and Survey or Area
Sec 36, T22S, R30E, Mer NMP

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

12 County or Parish
Eddy

13 State
NM

15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drlg unit line, if any)
640'

16 No of acres in lease
5926

17 Spacing Unit dedicated to this well
320

18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft
250'

19 Proposed Depth
13572
~~13,672~~' MD, 7291' (TVD)

20 BLM/BIA Bond No on file
COB 000050

21 Elevations (Show whether DF, KDB, RT, GL, etc)
3332' GL

22 Approximate date work will start*
09/01/2009

23 Estimated duration
26 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 6-22-09

Title **Regulatory Clerk**

Approved by *(Signature)* Jerry J. Herrell (DM) — Name *(Printed/Typed)* — Date SEP 11 2009

Title for 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 APPROVAL

Approval Subject to General Requirements
& Special Stipulations Attached

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
30-015-37271	50443	Quahada Ridge, SE (Delaware) ✓

Property Code	Property Name	Well Number
306407	JAMES RANCH UNIT	104H

OGRID No.	Operator Name	Elevation
260737	BOPCO, L.P.	3332'

Surface Location

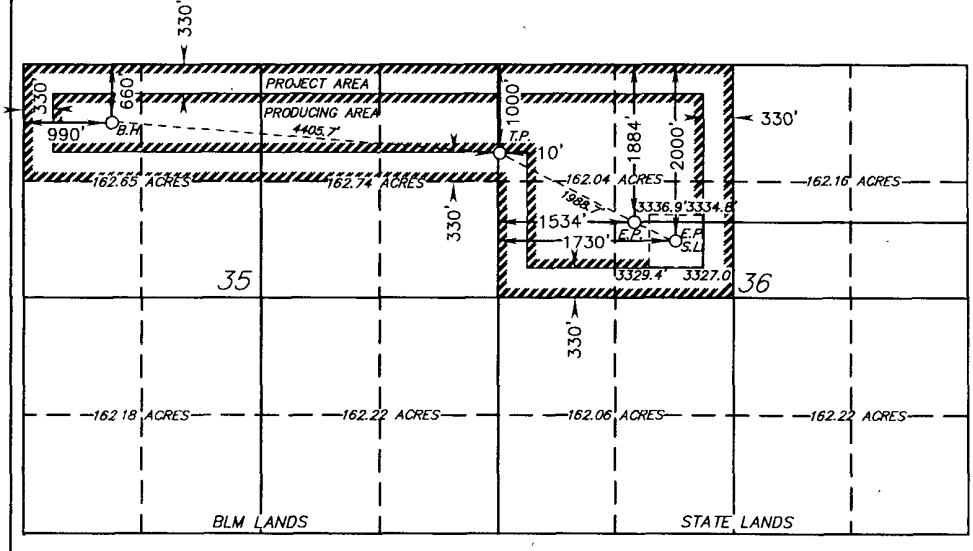
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	36	22 S	30 E		2000	NORTH	1730	WEST	EDDY

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
D	35	22 S	30 E		660	NORTH	990	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
320	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



PROPOSED BOTTOM HOLE LOCATION
Lat – N 32°21'14.61"
Long – W 103°51'25.61"
NMSPCE– N 492865.435
E 688390.113
(NAD-83)

PROPOSED DELAWARE ENTRY POINT
Lat – N 32°21'01.22"
Long – W 103°50'14.39"
NMSPCE– N 491539.8
E 694505.4
(NAD-83)

SURFACE LOCATION
Lat – N 32°21'01.22"
Long – W 103°50'14.39"
NMSPCE– N 491539.8
E 694505.4
(NAD-83)

PROPOSED TURN POINT
Lat – N 32°21'11.14"
Long – W 103°50'34.42"
NMSPCE– N 492534.522
E 692783.403
(NAD-83)

PROPOSED BRUSHY CANYON ENTRY POINT
Lat – N 32°21'02.35"
Long – W 103°50'16.68"
NMSPCE– N 491652.98
E 694308.49
(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 6/22/09

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.

JUNE 17, 2009
Date Surveyed

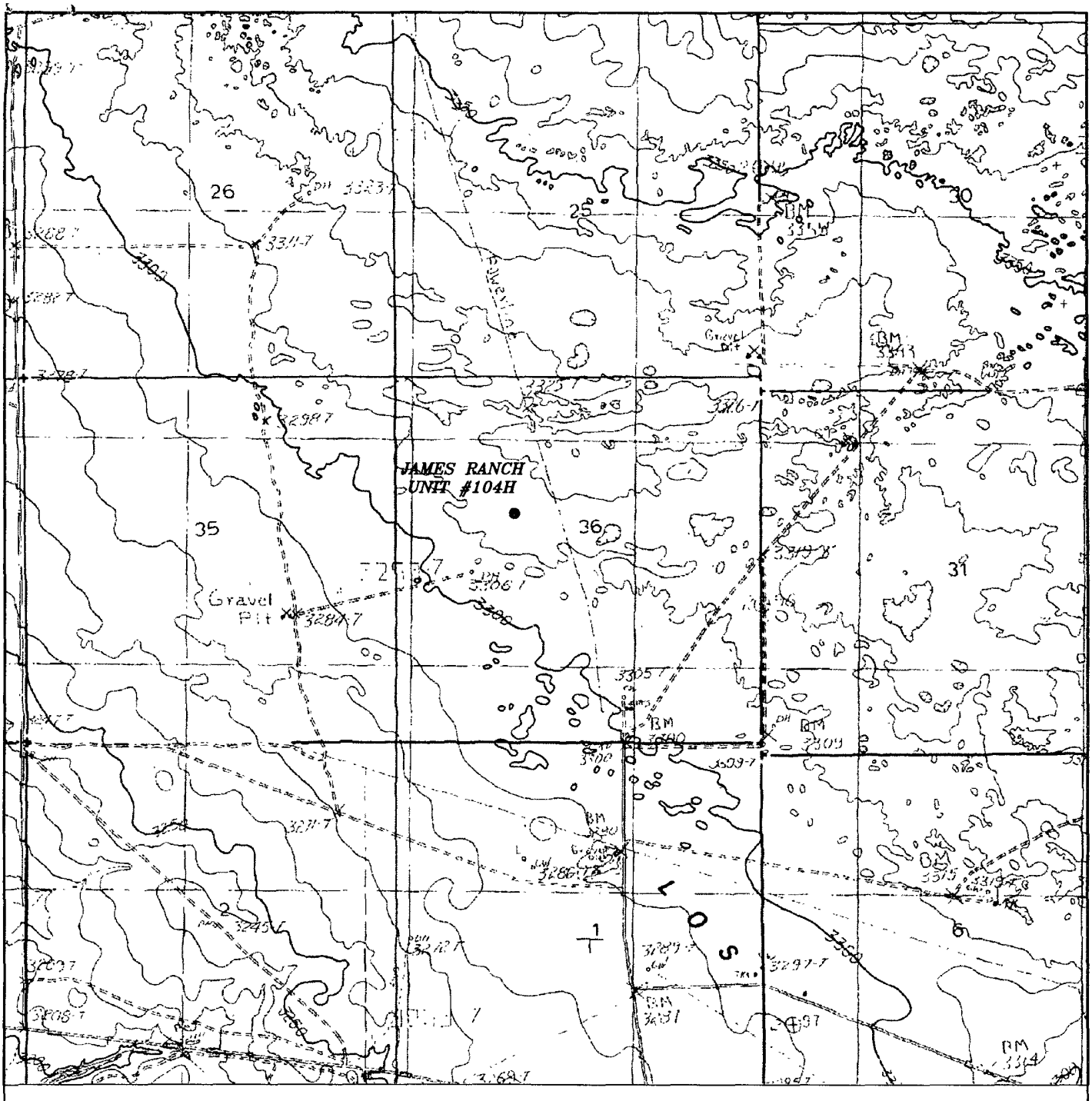
Signature & Seal of Professional Surveyor

GARY L. JONES
NEW MEXICO
7977
REGISTERED PROFESSIONAL LAND SURVEYOR

W.O. 2130

Certificate No. Gary L. Jones 7977

BASIN SURVEYS



JAMES RANCH UNIT #104H
Located 2000' FNL and 1730' FWL
Section 36, Township 22 South, Range 30 East,
N.M.P.M., Eddy County, New Mexico.

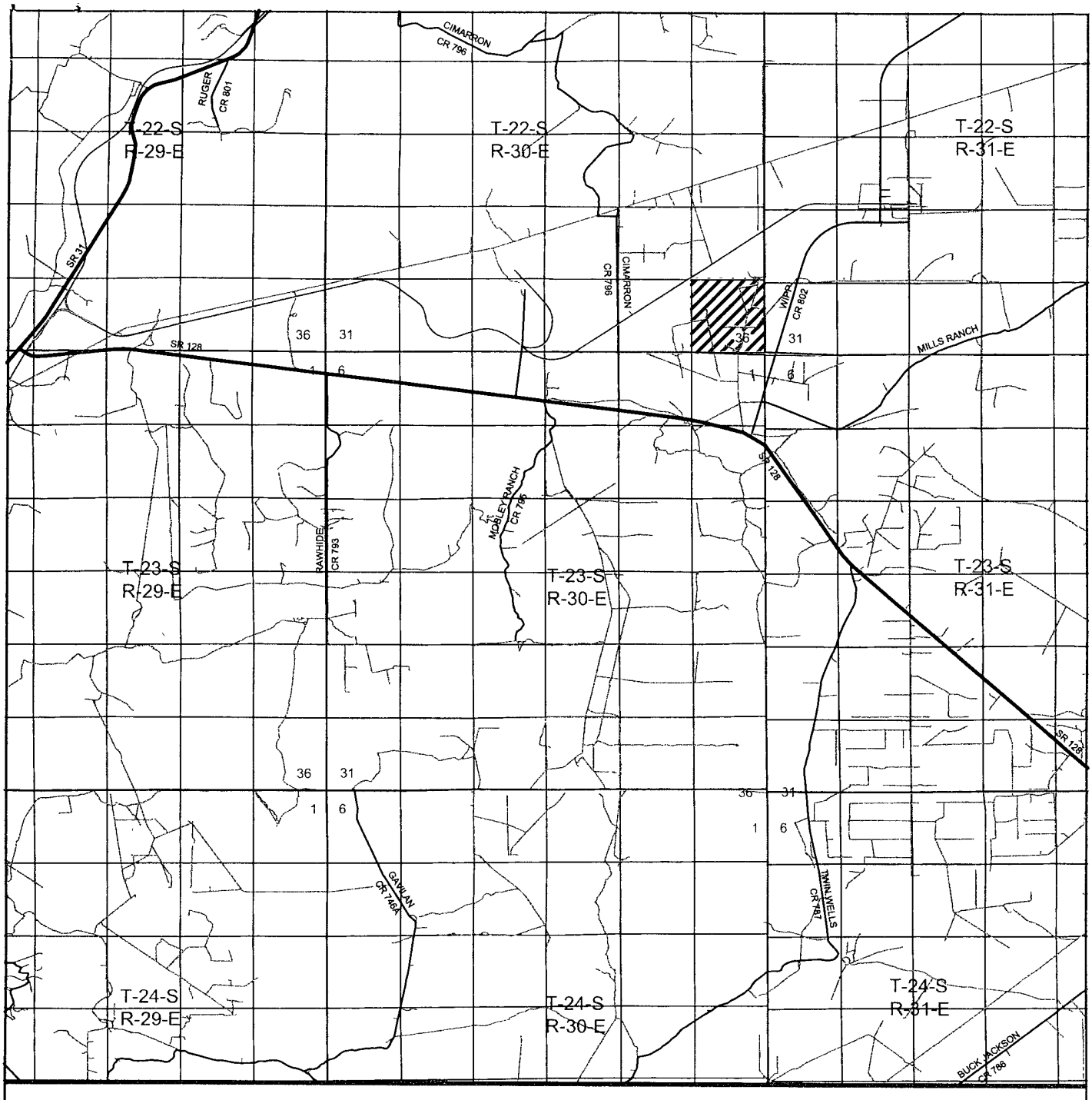
basin surveys
focused on excellence in the oilfield

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 21200
Survey Date: 06-17-2009
Scale: 1" = 2000'
Date: 06-17-2009

N

BOPCO, L.P.



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(575) 392-2206 - Fax
basinsurveys.com

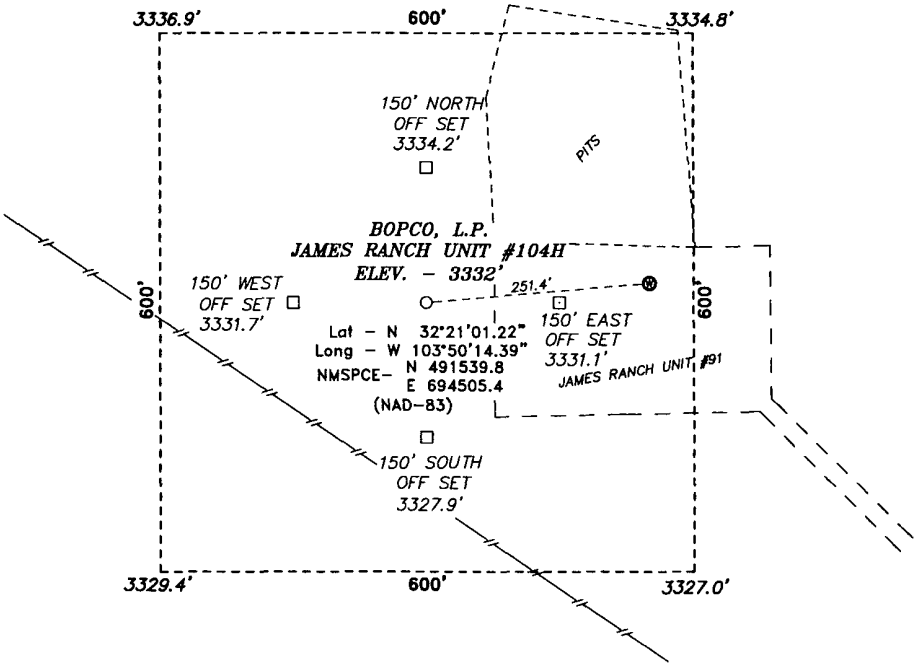
W.O. Number:	JMS 21200
Survey Date:	06-17-2009
Scale:	1" = 2 Miles
Date:	06-17-2009

N

BOPCO, L.P.

SECTION 36, TOWNSHIP 22 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 WEST WINDING NORTHERLY 0.4 MILES TO PROPOSED LOCATION.

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

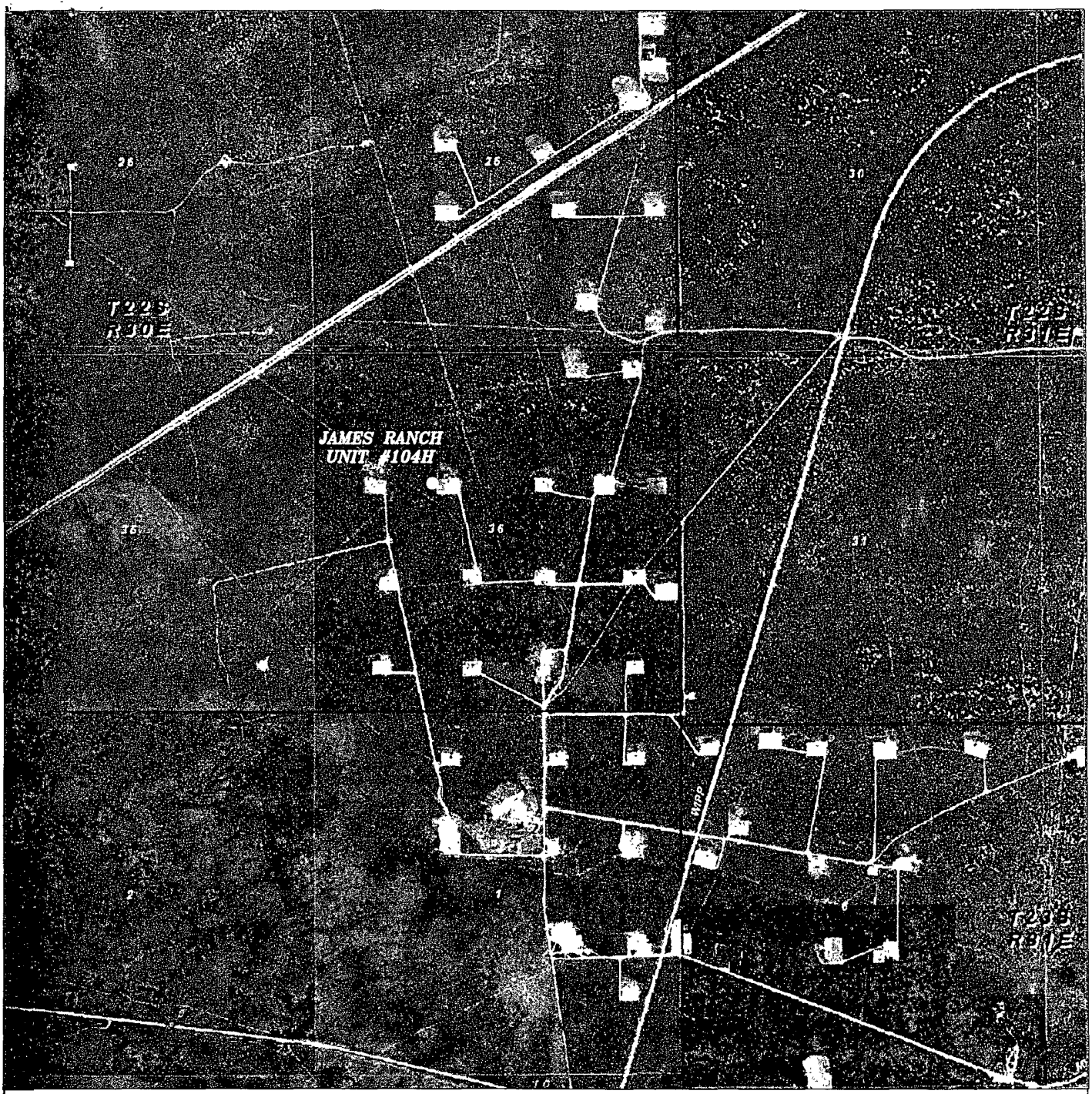
W.O. Number: 21200	Drawn By: J. SMALL
Date: 06-17-2009	Disk: JMS 21200

BOPCO, L.P.

REF: JAMES RANCH UNIT #104H / WELL PAD TOPO

THE JAMES RANCH UNIT #104H LOCATED 2000' FROM THE NORTH LINE AND 1730' FROM THE WEST LINE OF SECTION 30, TOWNSHIP 22 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

Survey Date: 06-17-2009 | Sheet 1 of 1 Sheets



JAMES RANCH UNIT #104H
Located 2000' FNL and 1730' FWL
Section 36, Township 22 South, Range 30 East,
N.M.P.M., Eddy County, New Mexico.

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(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

W.O. Number: JMS 21200

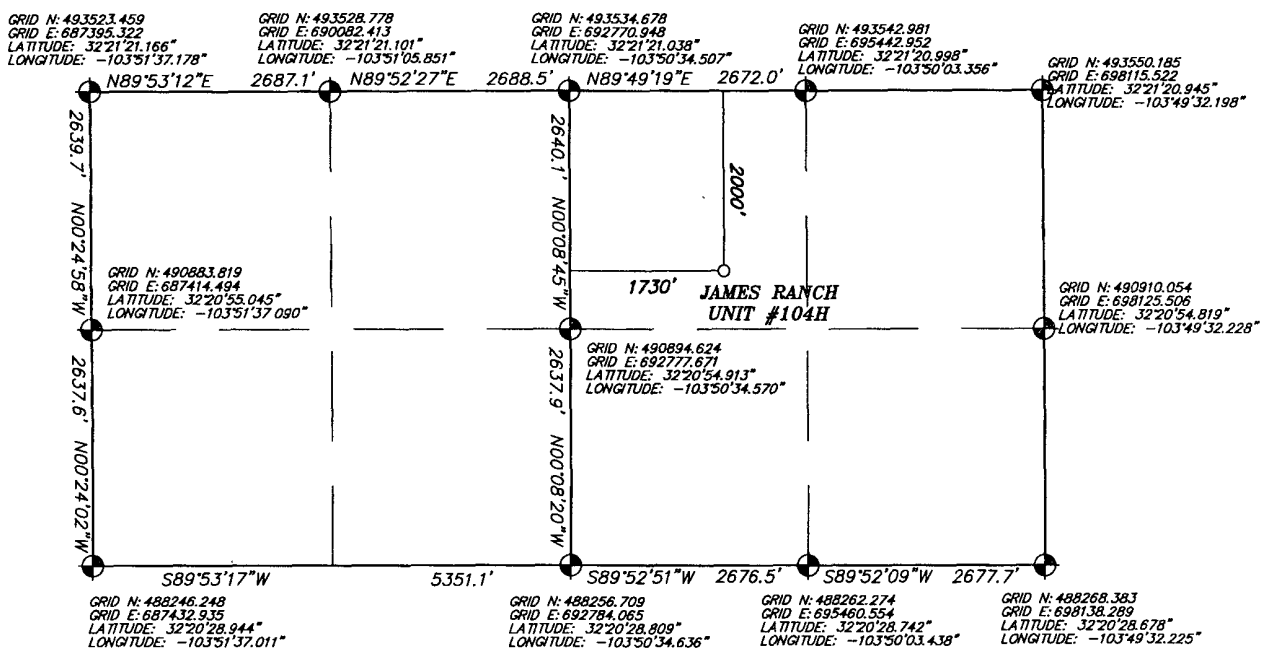
Scale: 1" = 2000'

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

N

BOPCO, L.P.

SECTION 36, TOWNSHIP 22 SOUTH, RANGE 30 EAST, N.M.P.M.,
EDDY COUNTY, **NEW MEXICO.**



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Section 36, Township 22 South, Range 30 East,
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basinsurveys.com

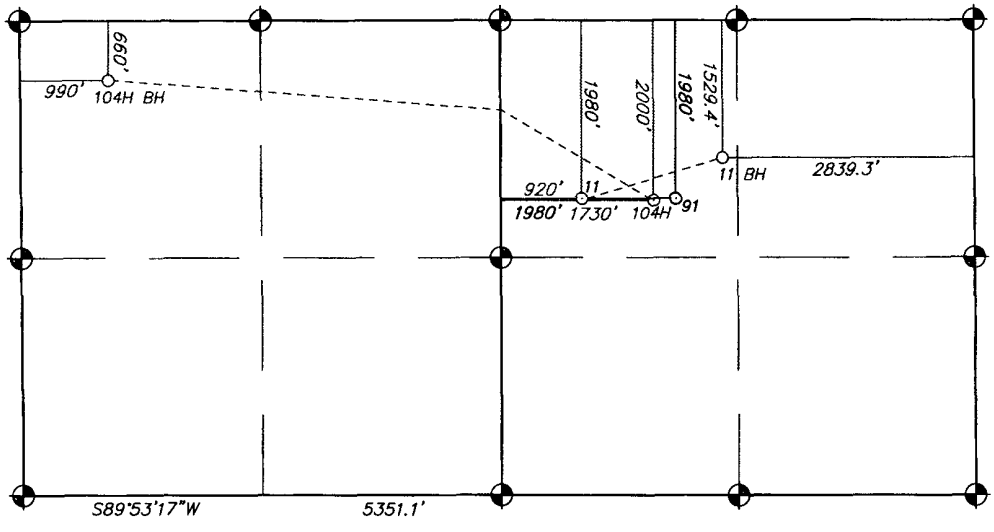
W.O. Number:	JMS 21200
Survey Date:	06-17-2009
Scale:	1" = 2000'
Date:	06-17-2009

N

BOPCO, L.P.

SECTION 36, TOWNSHIP 22 SOUTH, RANGE 30 EAST, N.M.P.M.,

EDDY COUNTY, **NEW MEXICO.**



PROXIMITY SKETCH
Sections 35&36, Township 22 South, Range 30 East,
N.M.P.M., Eddy County, New Mexico.

basin surveys
focused on excellence in the oilfield

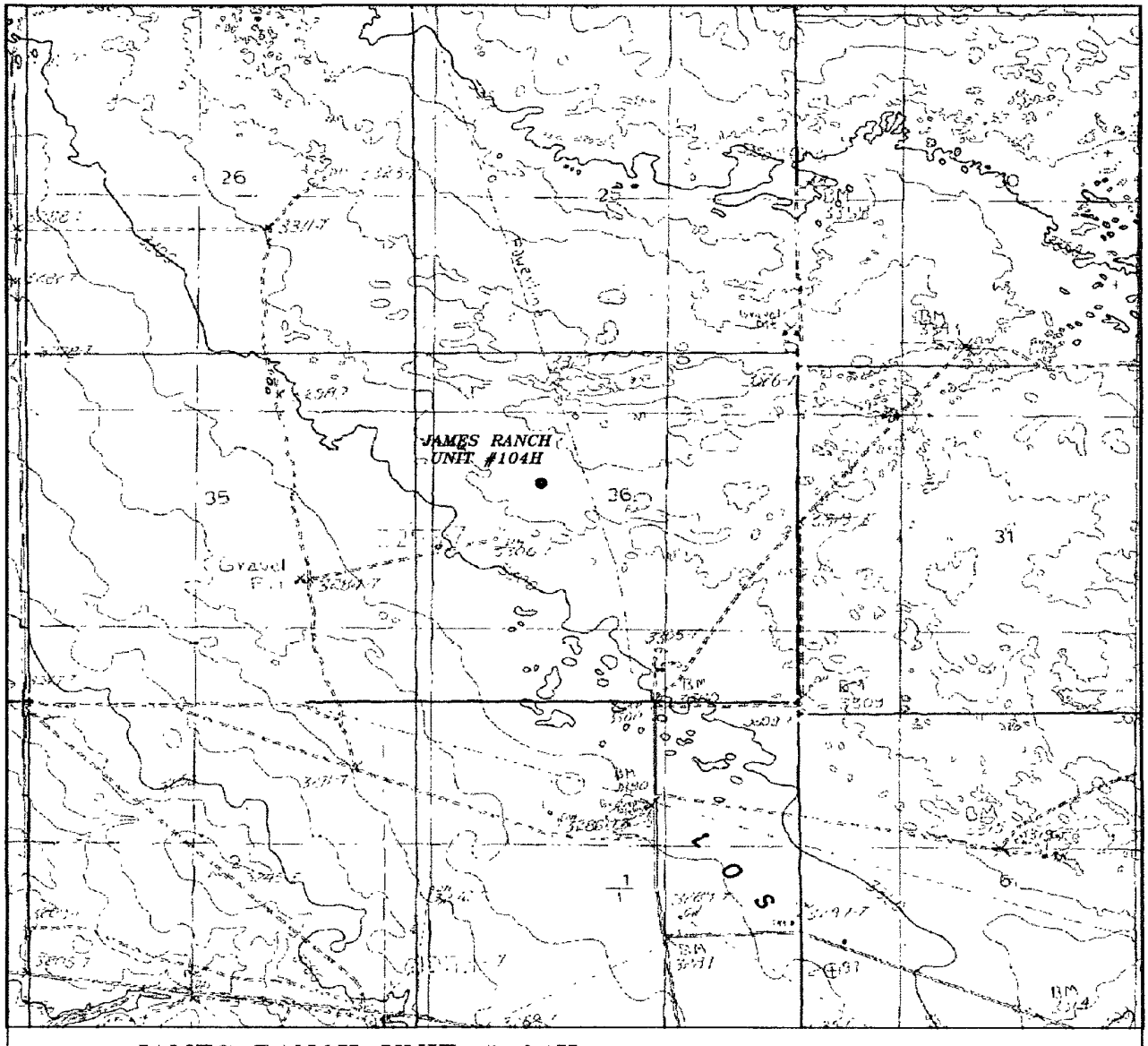
P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

W.O. Number:	JMS 21200
Survey Date:	06-17-2009
Scale:	1" = 2000'
Date:	06-17-2009

N

BOPCO, L.P.

James Ranch Unit #104H
Exhibit "A"



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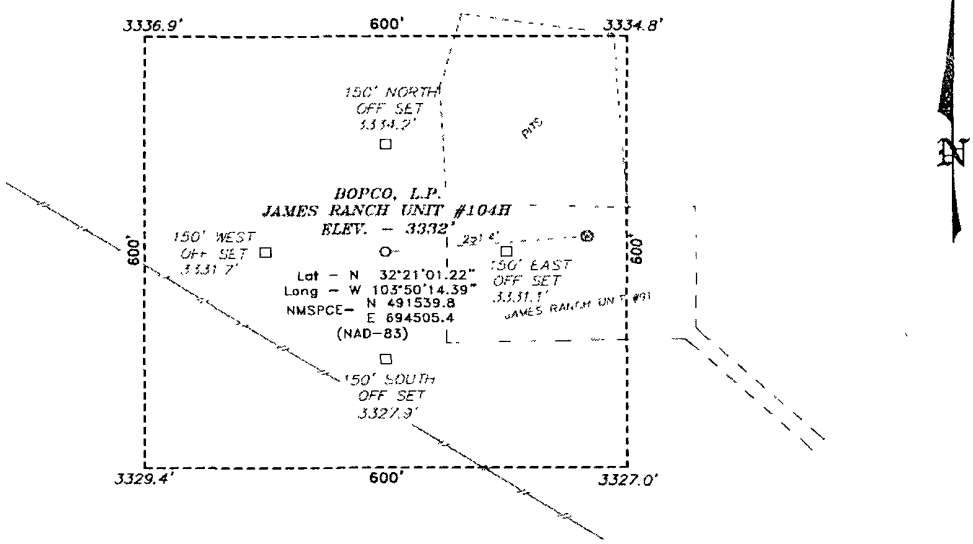
Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

W.O. Number	JMS 21200
Survey Date	03-02-2009
Scale	1" = 2000'
Date	03-03-2009

BOPCO, L.P.

James Ranch Unit #104H
Exhibit "B"

SECTION 36, TOWNSHIP 22 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 WEST WINDING NORTHERLY 0.4 MILES TO PROPOSED LOCATION.

BOPCO, L.P.

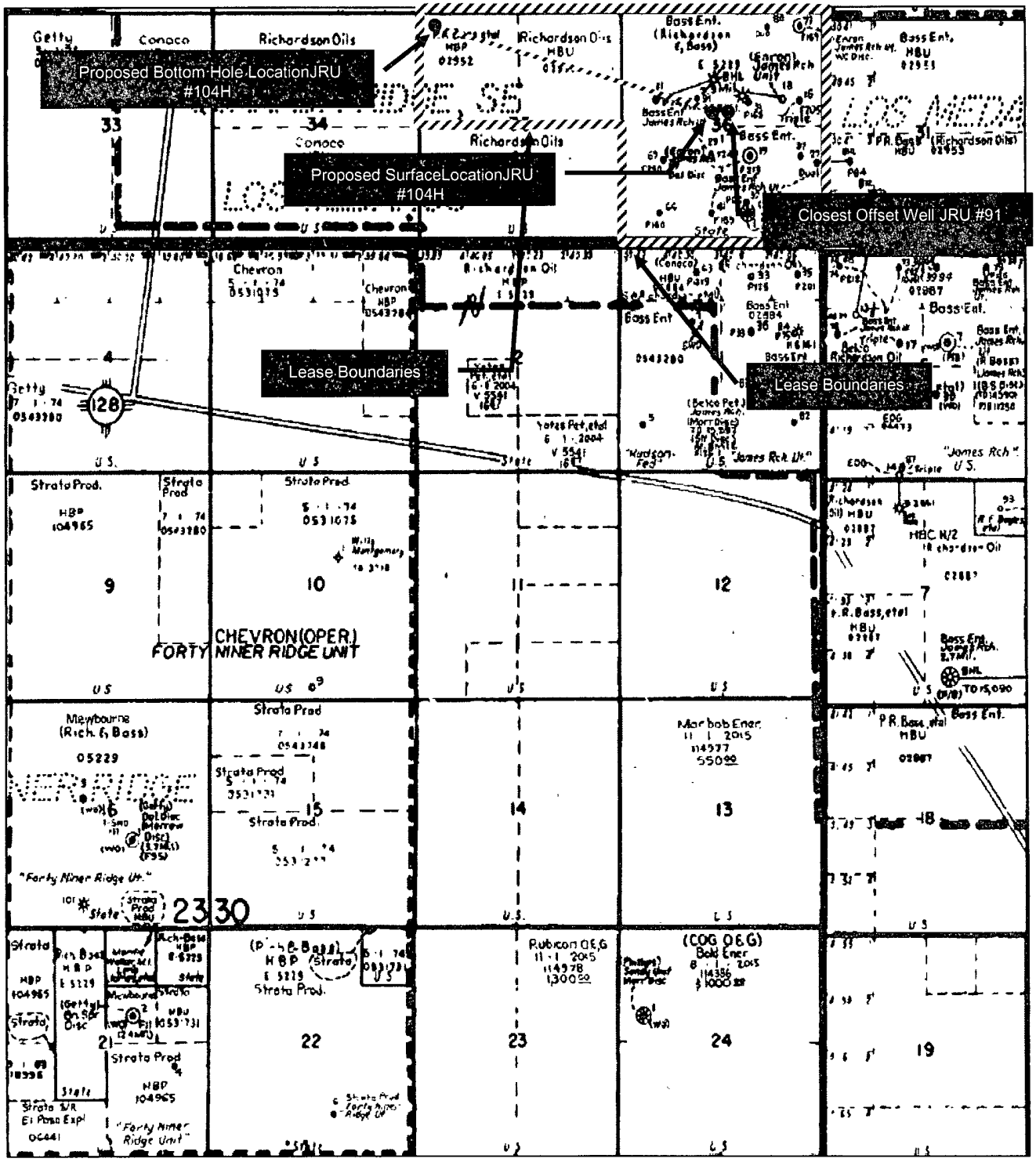
REF JAMES RANCH UNIT #104H / WELL PAD TOPO

THE JAMES RANCH UNIT #104H LOCATED 2000' FROM THE NORTH LINE AND 1730' FROM THE WEST LINE OF SECTION 30, TOWNSHIP 22 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

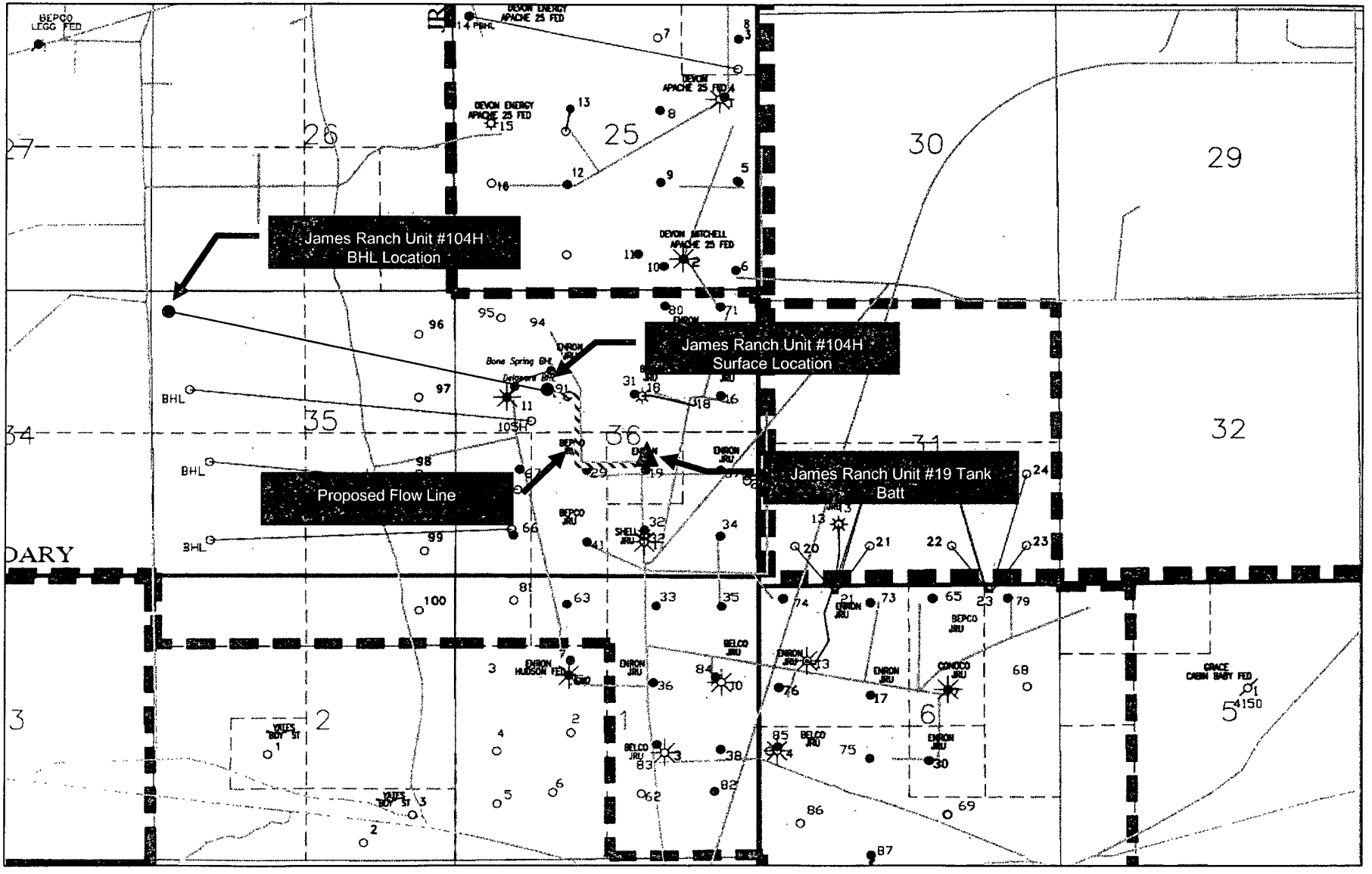
BASIN SURVEYS P.O. BOX 1786 - HOBBS, NEW MEXICO

W.O. Number 21200	Drawn By: J. SMALL		
Date: 03-03-2009	Disk: JMS 21200	Survey Date: 03-02-2009	Sheet 1 of 1 Sheets

James Ranch Unit #104H Exhibit "C"



James Ranch Unit #104H
Exhibit "E"



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

7" casing will be set at approximately 7668' (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 Baker or Halliburton (either hydraulic set or diesel reactive) 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. Potash waiver attached.

The surface location is on state land and the bottom hole location is on BLM land. Both are orthodox.

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

YF

Mosaic Potash Carlsbad Inc
PO Box 71
1361 Potash Mines Road
Carlsbad, NM 88220
www mosaicco com

Tel 505-887-2871
Fax 505-887-0589

February 2, 2009

Mr. Monte Montgomery
Bass Enterprises Production Co.
201 Main Street
Fort Worth, TX 76102-3131
(817) 339-7185

Dear Mr. Montgomery:

Per our discussions this morning concerning James Ranch Unit wells 104H, located at 2000' FNL and 1730' FEL of Section 36, T-22-S, R-30-E; Mosaic Potash Carlsbad Inc. does have a potash lease for this area and an LMR within 1 mile. The location of this well is east of (further away from our reserves) an existing gas well (JRU11). The drilling of this well should cause no further loss of potash reserves, therefore Mosaic does not object to this location at this time.

As more information becomes available, our estimates of the extent of potash resources in any given area may change. Therefore, please consider a "no objection" or "objection" to these locations to be valid for one year only. Do not consider a "no objection offered" or an "objection offered" decision to be permanent.

Mosaic Potash submits this letter in lieu of the forms requested.

Sincerely,

Dan Morehouse
Mine Engineering Superintendent

EIGHT POINT DRILLING PROGRAM
BOPCO, L.P.

NAME OF WELL: James Ranch Unit #104H
LEGAL DESCRIPTION - SURFACE: 2000' FNL, 1730' FWL, Section 36, T22S, R30E, Eddy County, NM.
BHL: 660' FNL, 990' FWL, Section 35, T22S, 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 3351' (estimated)
GL 3332'

FORMATION	ESTIMATED TOP FROM KB TVD	MD	ESTIMATED SUB-SEA TOP	BEARING
T/Rustler	295'	295'	+ 3056'	Barren
B/Rustler	596'	596'	+ 2755'	Barren
T/Salt	646'	646'	+ 2705'	Barren
B/Salt	3595'	3595'	- 244'	Barren
T/Lamar Lime	3834'	3834'	- 483'	Barren
T/Ramsey	3890'	3890'	- 539'	Oil/Gas
T/Lower Cherry Canyon	5991'	5991'	- 2640'	Oil/Gas
KOP (Kick Off Point)	6863'	6863'	- 3518'	N/A
T/Brushy Canyon "U" Sand	7274'	7354'	- 3923'	Oil/Gas
EOC Target	7341'	7618'	- 3990'	Oil/Gas
Target 2	7326'	9143'	- 3975'	Oil/Gas
TD (end of lateral)	7291'	13,672'	- 3940'	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' - 636'	17-1/2"	Surface	New
9-5/8", 40#, J-55, LT&C	0' - 3854'	12-1/4"	Intermediate	New
7", 26#, N-80, LT&C	0' - 7668'	8-3/4"	Production	New
4-1/2", 11.6#, N-80, Ultra Flush JT	6650' – 13,672'	6-1/8"	Production	New

CASING DESIGN SAFETY FACTORS:

TYPE	TENSION	COLLAPSE	BURST
13-3/8", 48#, H-40, ST&C	12.80	2.48	5.12
9-5/8", 40#, J-55, LT&C	3.95	1.23	1.82
7", 26#, N-80, LT&C	3.16	1.56	1.77
4-1/2", 11.6#, N-80, Ultra Flush Jt	3 06	1.84	1.91

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" intermediated 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 250-300 psig & 2000 psig by independent tester. The BOPE when rigged up on the intermediated 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.

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' - 636'	FW Spud Mud	8.5 – 9.2	38-70	NC	NC	NC	10.0
636' - 3854'	Brine Water	9.8 – 10.2	28-30	NC	NC	NC	9.5 – 10.5
3854' - 7668'	FW/Gel	8.7 – 9.0	28-36	NC	NC	NC	9.5 – 10.0
7668' - 13,672'	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" hole.
Run#2: Drill pipe conveyed GR-NL-Density-Caliper TD thru curve.

C) CONVENTIONAL CORING

None anticipated

D)CEMENT See COA

INTERVAL	AMOUNT SXS	FT OF FILL	TYPE	GALS/SX	PPG	FT^3/SX
SURFACE:						
Lead: 0 – 336' (100% excess Circ to surface)	270	336	ExtendaCem - CZ + 4% Bentonite + 2% $CaCl_2$	9.2	13.5	1.75
Tail: 336' – 636' (100% excess)	310	300	HalCem-C + 2% $CaCl_2$	6.39	14.8	1.35
INTERMEDIATE:						
Lead: 0' – 3354' (100% excess Circ to surface)	740	3354	EconoCem-HLC + 5% salt + 5lb/sk Gilsonite	9.59	12.6	1.88
Tail: 3354' – 3854' (100% excess)	271	500	HalCem-C	6.34	14.8	1.33
2^{nd} INTERMEDIATE TWO STAGE WITH DV TOOL @ 5000':						
Stage 1:						
Lead: 5000' – 6863'	150	1863	Halco Tuned Lite	14.4	9.7	3.13
(50% excess)						
Tail: 6863' – 7668' (50% excess)	150	805	HalCem H + 0.6% Halad 9	5.20	15.6	1.18
DV Tool @ 5,000'						
Stage 2:						
Lead: 0' – 4900'	450	4900	EconoCem-C	14.3	11.9	2.47
(50% excess)						
Tail: 4900' – 5000'	100	100	Hal-Cem C	6.34	14.8	1.33
(50% excess)						

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 6864' at which point a directional hole will be kicked off and drilled at an azimuth of 299.89°, building angle at 12.00°/100' to a max angle of 90.56° at a TVD of 7341' (MD 7618'). This 90.56° angle will be maintained to a MD of 13,672' or TVD of 7291'. At 7668'; 7", 26#, N-80, LTC casing will be installed and cemented in two stages (DV Tool @ 5000') with cement being circulated to the surface. A 6-1/8" openhole lateral will be drilled out from under the 7" casing to a measured depth of 13,672'. 4-1/2", 11.6#, N-80, LTC casing will be installed with Halliburton or Baker (either hydraulic or diesel reactive) packers installed for zone isolation.

POINT 7: ANTICIPATED RESERVOIR CONDITIONS

Normal pressures are anticipated throughout Delaware section. A BHP of 3157 psi (max) or MWE of 8.4 ppg is expected. Lost circulation may exist in the Delaware Section from 3834'-7291' 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

24 days drilling operations

20 days completion operations

Gary Gerhard

GEG/jdb
June 18, 2009

BOPCO, L.P.

Eddy County
James Ranch Unit
#104H
OH

Plan: Plan #1

Pathfinder X & Y Survey Report

29 April, 2009

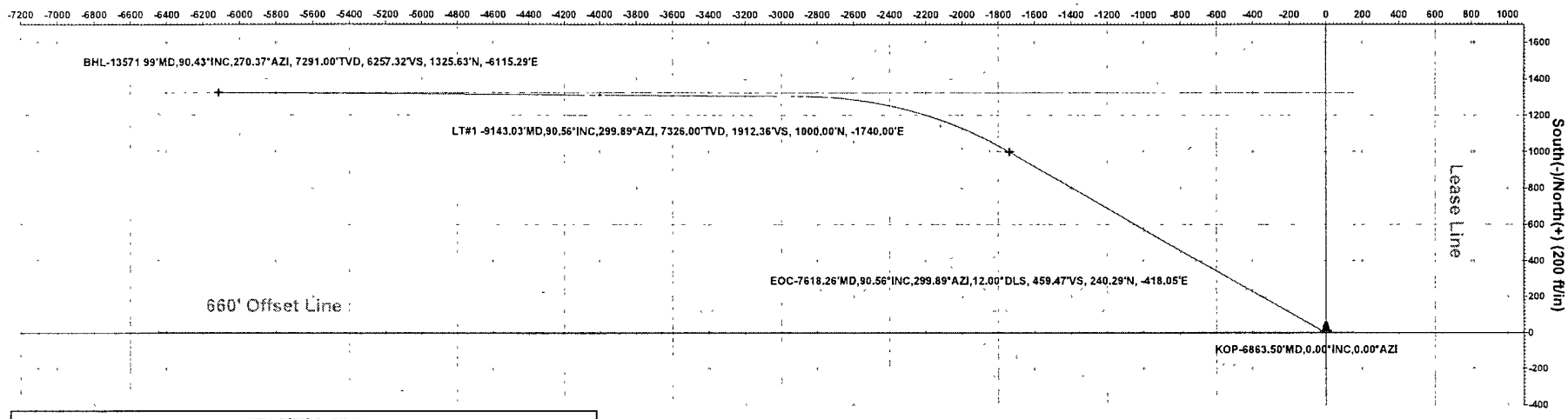
PATHFINDER

BOPCO, L.P.

PROJECT DETAILS Eddy County
Geodetic System US State Plane 1927 (Exact solution)
Datum NAD 1927 (NADCON CONUS)
Ellipsoid Clarke 1866
Zone New Mexico East 3001
System Datum: Mean Sea Level
Local North Grid

PATHFINDER

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



WELL DETAILS #104H

Ground Elevation 3332.00
RKB Elevation WELL #1 @ 3351.00ft (19' KB Correction)
Rig Name 19' KB Correction

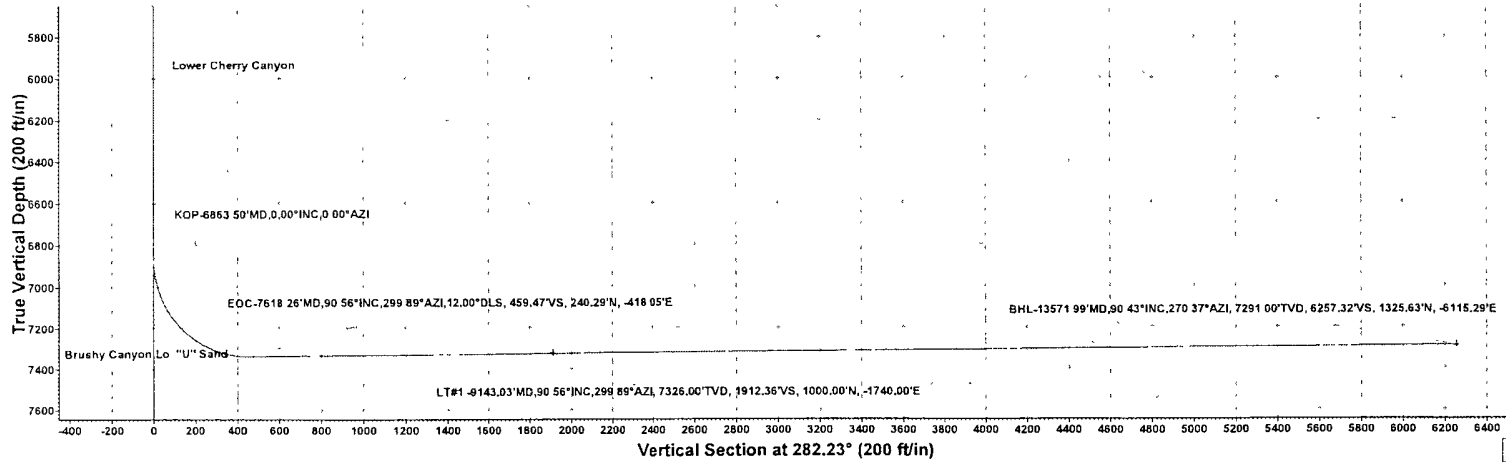
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	491539.800	694505.400	32° 20' 59.229 N	103° 42' 12.559 W	

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	6863.50	0.00	0.00	6863.50	0.00	0.00	0.00	0.00	0.00	
3	7618.26	90.56	299.89	7341.00	240.29	-418.05	12.00	299.89	459.47	
4	7713.26	90.56	299.89	7340.07	287.63	-500.41	0.01	0.00	549.99	
5	9143.03	90.56	299.89	7326.00	1000.00	-1740.00	0.00	0.00	1912.36	TGT1(#104H)
6	10323.63	90.43	270.37	7315.51	1304.69	-2867.08	2.50	-90.12	3078.41	
7	13571.99	90.43	270.37	7291.00	1325.64	-6115.29	0.00	0.00	6257.32	PBHL(#104H)

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PBHL(#104H)	7291.00	1325.64	-6115.29	492865.435	688390.113	Point
TGT1(#104H)	7326.00	1000.00	-1740.00	492539.800	692765.400	Point



Azimuths to Grid North
True North: -0.34°
Magnetic North: 7.57°

Magnetic Field
Strength: 48922.3snT
Dip Angle: 60.35°
Date: 04/15/2009
Model: IGRF200510

Project: Eddy County
Site: James Ranch Unit
Well: #104H
Wellbore: OH
Plan: Plan #1 (#104H/OH)

Plan Plan #1 (#104H/OH)
Created By Nate Bingham Date: 10:38, April 29 2009

Pathfinder Energy Services

Pathfinder X & Y Survey Report

Company:	BOPCO, L.P.	**Local Co-ordinate Reference:**	Well #104H
Project:	Eddy County	**TVD Reference:**	WEll #1 @ 3351.00ft (19' KB Correction)
Site:	James Ranch Unit	**MD Reference:**	WEll #1 @ 3351.00ft (19' KB Correction)
Well:	#104H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	Midland Database

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 James Ranch Unit

Site Position:		**Northing:**	491,539.800 ft	**Latitude:**	32° 20' 59.229 N
From:	Map	**Easting:**	694,505.400 ft	**Longitude:**	103° 42' 12.559 W
Position Uncertainty:	0.00 ft	**Slot Radius:**	"	**Grid Convergence:**	0.34 °

Well #104H

Well Position	**+N/-S**	0.00 ft	**Northing:**	491,539.800 ft	**Latitude:**	32° 20' 59.229 N
	+E/-W	0.00 ft	**Easting:**	694,505.400 ft	**Longitude:**	103° 42' 12.559 W
Position Uncertainty		0 00 ft	**Wellhead Elevation:**	ft	**Ground Level:**	3,332.00 ft

Wellbore OH

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF200510	04/15/2009	7.90	60.35	48,922

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	282.23	

Survey Tool Program **Date** 04/29/2009

From (ft)	**To (ft)**	**Survey (Wellbore)**	**Tool Name**	**Description**
0.00	13,571.99	Plan #1 (OH)	MWD	MWD - Standard

Pathfinder Energy Services

Pathfinder X & Y Survey Report

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Project:	Eddy County	**TVD Reference:**	WEll #1 @ 3351.00ft (19' KB Correction)
Site:	James Ranch Unit	**MD Reference:**	WEll #1 @ 3351.00ft (19' KB Correction)
Well:	#104H	**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)
0.00	0.00	0.00	0.00	-3,351.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
100.00	0.00	0.00	100.00	-3,251.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
200.00	0.00	0.00	200.00	-3,151.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
300 00	0.00	0.00	300.00	-3,051.00	0 00	0.00	0.00	0.00	491,539 80	694,505.40
400.00	0.00	0 00	400.00	-2,951.00	0 00	0.00	0.00	0.00	491,539.80	694,505.40
500 00	0.00	0.00	500.00	-2,851.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
600.00	0.00	0.00	600.00	-2,751.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
700.00	0.00	0.00	700.00	-2,651.00	0.00	0.00	0.00	0.00	491,539.80	694,505 40
800.00	0 00	0.00	800.00	-2,551 00	0.00	0.00	0 00	0.00	491,539.80	694,505.40
900 00	0.00	0.00	900.00	-2,451.00	0.00	0.00	0 00	0.00	491,539.80	694,505.40
1,000 00	0.00	0.00	1,000.00	-2,351.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
1,100.00	0.00	0.00	1,100.00	-2,251 00	0.00	0.00	0.00	0.00	491,539.80	694,505 40
1,200 00	0.00	0.00	1,200.00	-2,151 00	0.00	0 00	0.00	0.00	491,539.80	694,505.40
1,300.00	0.00	0.00	1,300.00	-2,051.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
1,400.00	0.00	0.00	1,400.00	-1,951.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
1,500.00	0.00	0.00	1,500.00	-1,851.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
1,600.00	0.00	0.00	1,600.00	-1,751.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
1,700.00	0.00	0.00	1,700.00	-1,651.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
1,800.00	0.00	0.00	1,800 00	-1,551.00	0 00	0.00	0.00	0.00	491,539.80	694,505.40
1,900.00	0.00	0.00	1,900.00	-1,451.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
2,000 00	0 00	0.00	2,000.00	-1,351.00	0.00	0 00	0.00	0.00	491,539.80	694,505.40
2,100 00	0 00	0 00	2,100.00	-1,251.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
2,200 00	0 00	0.00	2,200 00	-1,151.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
2,300 00	0 00	0.00	2,300.00	-1,051.00	0.00	0 00	0 00	0.00	491,539.80	694,505.40
2,400.00	0 00	0 00	2,400.00	-951.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
2,500 00	0.00	0.00	2,500.00	-851 00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
2,600.00	0.00	0.00	2,600.00	-751.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40

Pathfinder Energy Services

Pathfinder X & Y Survey Report

Company:	BOPCO, L.P	**Local Co-ordinate Reference:**	Well #104H
Project:	Eddy County	**TVD Reference:**	WEll #1 @ 3351.00ft (19' KB Correction)
Site:	James Ranch Unit	**MD Reference:**	WEll #1 @ 3351.00ft (19' KB Correction)
Well:	#104H	**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)
2,700.00	0.00	0 00	2,700.00	-651.00	0 00	0.00	0.00	0.00	491,539.80	694,505.40
2,800.00	0.00	0.00	2,800.00	-551.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
2,900.00	0.00	0.00	2,900.00	-451.00	0.00	0.00	0 00	0.00	491,539.80	694,505.40
3,000.00	0.00	0.00	3,000.00	-351.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
3,100.00	0.00	0.00	3,100.00	-251.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
3,200 00	0.00	0.00	3,200.00	-151.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
3,300.00	0.00	0.00	3,300.00	-51.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
3,400 00	0.00	0.00	3,400 00	49.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
3,500.00	0.00	0.00	3,500.00	149.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
3,600.00	0.00	0.00	3,600.00	249.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
3,700.00	0.00	0.00	3,700.00	349.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
3,800 00	0.00	0.00	3,800.00	449.00	0.00	0.00	0 00	0.00	491,539.80	694,505.40
3,900 00	0.00	0.00	3,900.00	549.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
4,000.00	0.00	0.00	4,000.00	649.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
4,100 00	0.00	0.00	4,100.00	749.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
4,200.00	0.00	0.00	4,200.00	849.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
4,300 00	0.00	0.00	4,300.00	949.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
4,400.00	0.00	0.00	4,400.00	1,049.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
4,500 00	0.00	0.00	4,500.00	1,149.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
4,600.00	0.00	0.00	4,600.00	1,249.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
4,700.00	0.00	0.00	4,700.00	1,349.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
4,800 00	0.00	0.00	4,800.00	1,449.00	0.00	0.00	0 00	0.00	491,539.80	694,505.40
4,900 00	0.00	0.00	4,900.00	1,549.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
5,000 00	0.00	0.00	5,000.00	1,649.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
5,100 00	0 00	0.00	5,100.00	1,749 00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
5,200 00	0 00	0.00	5,200.00	1,849.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
5,300.00	0.00	0.00	5,300.00	1,949.00	0.00	0.00	0.00	0 00	491,539.80	694,505.40

Pathfinder Energy Services

Pathfinder X & Y Survey Report

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Project:	Eddy County	**TVD Reference:**	WEll #1 @ 3351.00ft (19' KB Correction)
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Well:	#104H	**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)
5,400 00	0.00	0.00	5,400.00	2,049.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
5,500.00	0.00	0.00	5,500.00	2,149.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
5,600.00	0.00	0.00	5,600.00	2,249.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
5,700.00	0.00	0.00	5,700.00	2,349.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
5,800.00	0.00	0.00	5,800.00	2,449.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
5,900.00	0.00	0.00	5,900 00	2,549.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
6,000 00	0.00	0.00	6,000.00	2,649 00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
6,100 00	0.00	0.00	6,100.00	2,749.00	0 00	0.00	0.00	0.00	491,539.80	694,505.40
6,200.00	0.00	0.00	6,200.00	2,849.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
6,300.00	0 00	0.00	6,300.00	2,949.00	0.00	0.00	0.00	0 00	491,539.80	694,505.40
6,400 00	0.00	0.00	6,400.00	3,049.00	0.00	0 00	0.00	0.00	491,539:80	694,505.40
6,500 00	0.00	0.00	6,500.00	3,149.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
6,600.00	0.00	0.00	6,600.00	3,249 00	0.00	0.00	0 00	0.00	491,539.80	694,505.40
6,700.00	0.00	0.00	6,700.00	3,349.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
6,800.00	0.00	0.00	6,800.00	3,449.00	0.00	0.00	0.00	0.00	491,539.80	694,505.40
6,863.50	0.00	0.00	6,863.50	3,512.50	0.00	0.00	0.00	0.00	491,539 80	694,505.40
KOP-6863.50'MD,0.00°INC,0.00°AZI										
6,875.00	1.38	299.89	6,875.00	3,524.00	0.07	-0.12	0.13	12.00	491,539.87	694,505.28
6,900.00	4.38	299.89	6,899.96	3,548.96	0.69	-1.21	1.33	12.00	491,540.49	694,504.19
6,925 00	7.38	299.89	6,924 83	3,573.83	1.97	-3.43	3.77	12.00	491,541.77	694,501.97
6,950 00	10 38	299.89	6,949.53	3,598.53	3.89	-6.77	7.44	12.00	491,543.69	694,498.63
6,975.00	13.38	299.89	6,973.99	3,622.99	6.46	-11.23	12.35	12.00	491,546.26	694,494.17
7,000.00	16.38	299 89	6,998.15	3,647.15	9.66	-16.80	18.46	12.00	491,549.46	694,488.60
7,025.00	19.38	299.89	7,021.94	3,670.94	13.48	-23.45	25.78	12.00	491,553.28	694,481.95
7,050 00	22.38	299.89	7,045.29	3,694.29	17.92	-31.18	34.26	12.00	491,557.72	694,474.22
7,075 00	25.38	299 89	7,068.15	3,717.15	22.96	-39.95	43.91	12.00	491,562.76	694,465.45
7,100.00	28.38	299.89	7,090.45	3,739.45	28.59	-49.75	54.67	12.00	491,568.39	694,455.65

Pathfinder Energy Services

Pathfinder X & Y Survey Report

Company:	BOPCO, L.P.	**Local Co-ordinate Reference:**	Well #104H
Project:	Eddy County	**TVD Reference:**	WEll #1 @ 3351.00ft (19' KB Correction)
Site:	James Ranch Unit	**MD Reference:**	WEll #1 @ 3351.00ft (19' KB Correction)
Well:	#104H	**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)
7,125 00	31 38	299.89	7,112.12	3,761.12	34.80	-60.54	66.54	12.00	491,574.60	694,444.86
7,150.00	34.38	299 89	7,133.12	3,782.12	41.56	-72.31	79.47	12.00	491,581.36	694,433.09
7,175.00	37.38	299.89	7,153.37	3,802.37	48 86	-85.01	93.43	12.00	491,588.66	694,420.39
7,200.00	40 38	299.89	7,172.83	3,821.83	56.68	-98.61	108.38	12.00	491,596.48	694,406.79
7,225.00	43.37	299.89	7,191.45	3,840.45	64.99	-113.07	124.28	12.00	491,604.79	694,392.33
7,250.00	46.37	299 89	7,209.16	3,858.16	73.78	-128 36	141.08	12.00	491,613.58	694,377.04
7,275.00	49.37	299.89	7,225.93	3,874.93	83.02	-144.44	158.75	12.00	491,622.82	694,360.96
7,300.00	52.37	299.89	7,241.70	3,890.70	92.69	-161.25	177.23	12.00	491,632 49	694,344.15
7,325.00	55 37	299 89	7,256.44	3,905.44	102.75	-178.76	196.47	12.00	491,642.55	694,326.64
7,350.00	58.37	299.89	7,270.10	3,919.10	113.18	-196.91	216.41	12.00	491,652.98	694,308.49
7,375.00	61.37	299.89	7,282.65	3,931.65	123.95	-215.65	237.01	12.00	491,663.75	694,289.75
7,400.00	64 37	299.89	7,294.05	3,943.05	135.04	-234.94	258.21	12.00	491,674.84	694,270 46
7,425.00	67.37	299.89	7,304.26	3,953.26	146.41	-254.72	279.95	12.00	491,686.21	694,250.68
7,450.00	70.37	299.89	7,313.27	3,962.27	158.03	-274.93	302.17	12.00	491,697.83	694,230.47
7,475.00	73 37	299.89	7,321.05	3,970.05	169.87	-295.53	324.81	12.00	491,709.67	694,209.87
7,500.00	76.37	299.89	7,327.58	3,976.58	181.89	-316.45	347.80	12.00	491,721.69	694,188.95
7,525.00	79.37	299.89	7,332.83	3,981.83	194.07	-337.64	371.09	12.00	491,733.87	694,167.76
7,550.00	82 37	299.89	7,336.79	3,985.79	206.37	-359.03	394.61	12.00	491,746.17	694,146.37
7,575.00	85 37	299.89	7,339.46	3,988.46	218.76	-380.58	418.29	12.00	491,758.56	694,124.82
7,600.00	88.37	299.89	7,340 83	3,989.83	231.19	-402.22	442.07	12.00	491,770.99	694,103.18
7,618.26	90.56	299.89	7,341.00	3,990.00	240.29	-418.05	459.47	12.00	491,780.09	694,087.35
EOC-7618.26'MD,90.56°INC,299.89°AZI,12.00°DLS, 459.47'VS, 240.29'N, -418.05'E										
7,700.00	90.57	299.89	7,340.20	3,989.20	281.03	-488.92	537.35	0 01	491,820.83	694,016.48
7,713.26	90.56	299 89	7,340.07	3,989.07	287.63	-500.41	549.99	0.04	491,827.43	694,004.99
7,800.00	90 56	299.89	7,339.21	3,988.21	330.85	-575.62	632.64	0.00	491,870.65	693,929.78
7,900 00	90.56	299.89	7,338.23	3,987.23	380.67	-662.31	727.93	0.00	491,920.47	693,843.09
8,000 00	90.56	299.89	7,337.25	3,986.25	430.50	-749.01	823.21	0.00	491,970.30	693,756.39

Pathfinder Energy Services

Pathfinder X & Y Survey Report

Company:	BOPCO, L.P.	**Local Co-ordinate Reference:**	Well #104H
Project:	Eddy County	**TVD Reference:**	WEll #1 @ 3351.00ft (19' KB Correction)
Site:	James Ranch Unit	**MD Reference:**	WEll #1 @ 3351.00ft (19' KB Correction)
Well:	#104H	**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)
8,100.00	90.56	299.89	7,336.26	3,985.26	480.32	-835.71	918.50	0.00	492,020.12	693,669.69
8,200.00	90 56	299.89	7,335.28	3,984.28	530.14	-922.41	1,013.78	0.00	492,069.94	693,582.99
8,300.00	90.56	299.89	7,334.30	3,983.30	579.97	-1,009.11	1,109.07	0.00	492,119.77	693,496.29
8,400 00	90.56	299.89	7,333.31	3,982.31	629.79	-1,095.81	1,204.36	0.00	492,169.59	693,409.59
8,500.00	90.56	299.89	7,332.33	3,981.33	679.62	-1,182.50	1,299.64	0.00	492,219.42	693,322.90
8,600 00	90.56	299 89	7,331.34	3,980.34	729.44	-1,269.20	1,394.93	0.00	492,269.24	693,236.20
8,700 00	90.56	299.89	7,330.36	3,979.36	779.26	-1,355.90	1,490.21	0 00	492,319.06	693,149.50
8,800 00	90.56	299.89	7,329.38	3,978 38	829.09	-1,442.60	1,585.50	0.00	492,368.89	693,062.80
8,900.00	90.56	299 89	7,328.39	3,977.39	878.91	-1,529.30	1,680.78	0 00	492,418.71	692,976.10
9,000 00	90.56	299.89	7,327.41	3,976.41	928.74	-1,616.00	1,776.07	0 00	492,468.54	692,889.40
9,100.00	90.56	299.89	7,326.42	3,975.42	978.56	-1,702.69	1,871.36	0.00	492,518.36	692,802.71
9,143 03	90.56	299 89	7,326.00	3,975.00	1,000.00	-1,740.00	1,912.36	0.00	492,539.80	692,765.40
LT#1 -9143.03'MD,90.56°INC,299.89°AZI, 7326.00'TVD, 1912.36'VS, 1000.00'N, -1740.00'E - TGT1(#104H)										
9,200 00	90.56	298.46	7,325.44	3,974.44	1,027.77	-1,789.74	1,966.85	2.50	492,567.57	692,715.66
9,300 00	90.55	295.96	7,324 47	3,973.47	1,073.49	-1,878.66	2,063.44	2.50	492,613.29	692,626.74
9,400.00	90 55	293.46	7,323.51	3,972.51	1,115.29	-1,969.49	2,161.07	2.50	492,655.09	692,535.91
9,500.00	90.54	290.96	7,322.56	3,971.56	1,153.08	-2,062.06	2,259.54	2.50	492,692.88	692,443.34
9,600.00	90.53	288.46	7,321.63	3,970.63	1,186.81	-2,156.19	2,358.68	2.50	492,726.61	692,349.21
9,700.00	90.52	285.96	7,320.71	3,969.71	1,216.39	-2,251.70	2,458.29	2.50	492,756.19	692,253.70
9,800.00	90.51	283 46	7,319.82	3,968.82	1,241.78	-2,348.41	2,558.18	2.50	492,781.58	692,156.99
9,900.00	90.49	280.96	7,318.94	3,967.94	1,262.93	-2,446.14	2,658.17	2.50	492,802.73	692,059.26
10,000.00	90.48	278.46	7,318 09	3,967.09	1,279.79	-2,544.69	2,758.06	2.50	492,819.59	691,960.71
10,100.00	90.47	275.96	7,317.26	3,966.26	1,292.34	-2,643.89	2,857.67	2.50	492,832.14	691,861.51
10,200.00	90.45	273.46	7,316.46	3,965.46	1,300.55	-2,743.54	2,956.80	2.50	492,840.35	691,761.86
10,300.00	90.44	270.96	7,315.68	3,964.68	1,304.41	-2,843.46	3,055.26	2.50	492,844.21	691,661.94
10,323.63	90.43	270.37	7,315.51	3,964.51	1,304.69	-2,867.08	3,078.41	2.50	492,844.49	691,638.32
10,400.00	90.43	270.37	7,314.93	3,963.93	1,305.18	-2,943.45	3,153.15	0.00	492,844.98	691,561.95

Pathfinder Energy Services

Pathfinder X & Y Survey Report

Company:	BOPCO, L.P.	**Local Co-ordinate Reference:**	Well #104H
Project:	Eddy County	**TVD Reference:**	WEll #1 @ 3351.00ft (19' KB Correction)
Site:	James Ranch Unit	**MD Reference:**	WEll #1 @ 3351.00ft (19' KB Correction)
Well:	#104H	**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)
10,500.00	90.43	270 37	7,314.17	3,963.17	1,305.82	-3,043.45	3,251.01	0.00	492,845.62	691,461.95
10,600.00	90.43	270.37	7,313.42	3,962.42	1,306.47	-3,143.44	3,348.87	0.00	492,846.27	691,361.96
10,700.00	90.43	270.37	7,312.67	3,961.67	1,307.11	-3,243.44	3,446.73	0.00	492,846.91	691,261.96
10,800.00	90 43	270.37	7,311 91	3,960.91	1,307.76	-3,343 43	3,544.59	0.00	492,847.56	691,161.97
10,900.00	90.43	270.37	7,311.16	3,960.16	1,308.40	-3,443.43	3,642.46	0.00	492,848.20	691,061.97
11,000.00	90.43	270.37	7,310.40	3,959.40	1,309.05	-3,543.42	3,740.32	0.00	492,848.85	690,961.98
11,100.00	90.43	270.37	7,309.65	3,958.65	1,309.69	-3,643.42	3,838.18	0.00	492,849.49	690,861.98
11,200.00	90 43	270.37	7,308.89	3,957.89	1,310 34	-3,743.41	3,936.04	0.00	492,850.14	690,761.99
11,300.00	90.43	270.37	7,308.14	3,957.14	1,310.98	-3,843.41	4,033.90	0.00	492,850.78	690,661.99
11,400.00	90 43	270.37	7,307.39	3,956.39	1,311.63	-3,943.40	4,131.77	0.00	492,851 43	690,562.00
11,500.00	90.43	270.37	7,306.63	3,955.63	1,312.27	-4,043.40	4,229.63	0.00	492,852.07	690,462.00
11,600.00	90.43	270.37	7,305.88	3,954.88	1,312.92	-4,143.39	4,327.49	0.00	492,852.72	690,362.01
11,700.00	90.43	270.37	7,305.12	3,954.12	1,313.56	-4,243.39	4,425.35	0.00	492,853.36	690,262.01
11,800.00	90.43	270.37	7,304.37	3,953 37	1,314.21	-4,343.38	4,523.21	0.00	492,854.01	690,162.02
11,900.00	90.43	270.37	7,303.61	3,952.61	1,314.85	-4,443.38	4,621.08	0.00	492,854.65	690,062.02
12,000.00	90.43	270.37	7,302.86	3,951.86	1,315.50	-4,543.37	4,718.94	0.00	492,855.30	689,962.03
12,100.00	90.43	270.37	7,302.10	3,951.10	1,316 14	-4,643.37	4,816.80	0.00	492,855.94	689,862.03
12,200 00	90 43	270.37	7,301.35	3,950.35	1,316.79	-4,743.36	4,914.66	0.00	492,856.59	689,762.04
12,300.00	90.43	270.37	7,300.60	3,949.60	1,317.43	-4,843.36	5,012.52	0.00	492,857.23	689,662.04
12,400.00	90.43	270.37	7,299.84	3,948.84	1,318.08	-4,943.35	5,110.39	0.00	492,857.88	689,562.05
12,500.00	90 43	270.37	7,299.09	3,948.09	1,318.72	-5,043.35	5,208.25	0.00	492,858.52	689,462.05
12,600.00	90.43	270.37	7,298.33	3,947.33	1,319.37	-5,143.34	5,306.11	0.00	492,859.17	689,362.06
12,700.00	90 43	270.37	7,297.58	3,946.58	1,320.01	-5,243.34	5,403.97	0.00	492,859.81	689,262.06
12,800.00	90 43	270 37	7,296.82	3,945 82	1,320 66	-5,343.33	5,501.83	0.00	492,860.46	689,162.07
12,900.00	90.43	270.37	7,296.07	3,945.07	1,321.30	-5,443 33	5,599.70	0.00	492,861.10	689,062.07
13,000.00	90.43	270 37	7,295.32	3,944.32	1,321.95	-5,543.32	5,697.56	0.00	492,861.75	688,962.08
13,100.00	90 43	270 37	7,294.56	3,943.56	1,322 59	-5,643.32	5,795.42	0.00	492,862.39	688,862.08

Pathfinder Energy Services

Pathfinder X & Y Survey Report

Company:	BOPCO, L.P.	**Local Co-ordinate Reference:**	Well #104H
Project:	Eddy County	**TVD Reference:**	WEll #1 @ 3351.00ft (19' KB Correction)
Site:	James Ranch Unit	**MD Reference:**	WEll #1 @ 3351.00ft (19' KB Correction)
Well:	#104H	**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)
13,200.00	90 43	270.37	7,293.81	3,942.81	1,323.24	-5,743.31	5,893.28	0.00	492,863.04	688,762.09
13,300.00	90.43	270.37	7,293.05	3,942.05	1,323.88	-5,843 31	5,991.14	0.00	492,863.68	688,662.09
13,400.00	90.43	270.37	7,292.30	3,941.30	1,324.53	-5,943.30	6,089.00	0.00	492,864.33	688,562.10
13,500.00	90.43	270.37	7,291.54	3,940.54	1,325.17	-6,043.30	6,186.87	0.00	492,864.97	688,462.10
13,571.99	90.43	270.37	7,291.00	3,940.00	1,325.63	-6,115.29	6,257.32	0.00	492,865.43	688,390.11

BHL-13571.99'MD,90.43°INC,270.37°AZI, 7291.00'TVD, 6257.32'VS, 1325.63'N, -6115.29'E - PBHL(#104H)

Pathfinder Energy Services

Pathfinder X & Y Survey Report

Company:	BOPCO, L.P.	**Local Co-ordinate Reference:**	Well #104H
Project:	Eddy County	**TVD Reference:**	WEll #1 @ 3351.00ft (19' KB Correction)
Site:	James Ranch Unit	**MD Reference:**	WEll #1 @ 3351.00ft (19' KB Correction)
Well:	#104H	**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(#104H) - plan hits target - Point	0.00	0.00	7,291.00	1,325.64	-6,115.29	492,865.435	688,390.113	32° 21' 12.698 N	103° 43' 23.756 W
TGT1(#104H) - plan hits target - Point	0 00	0.00	7,326.00	1,000.00	-1,740.00	492,539.800	692,765.400	32° 21' 9.226 N	103° 42' 32.774 W

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,890.00	3,890.00	Ramsey		0.00	
7,357 53	7,274 00	Brushy Canyon Lo. "U" Sand		0.00	
3,834.00	3,834 00	Delaware MTN Group/Lame Lime		0.00	
295.00	295.00	Rustler		0.00	
646.00	646 00	Salt		0.00	
596.00	596.00	Base/Rustler		0.00	
5,991 00	5,991.00	Lower Cherry Canyon		0.00	
3,595 00	3,595.00	Base/Salt		0.00	

Plan Annotations

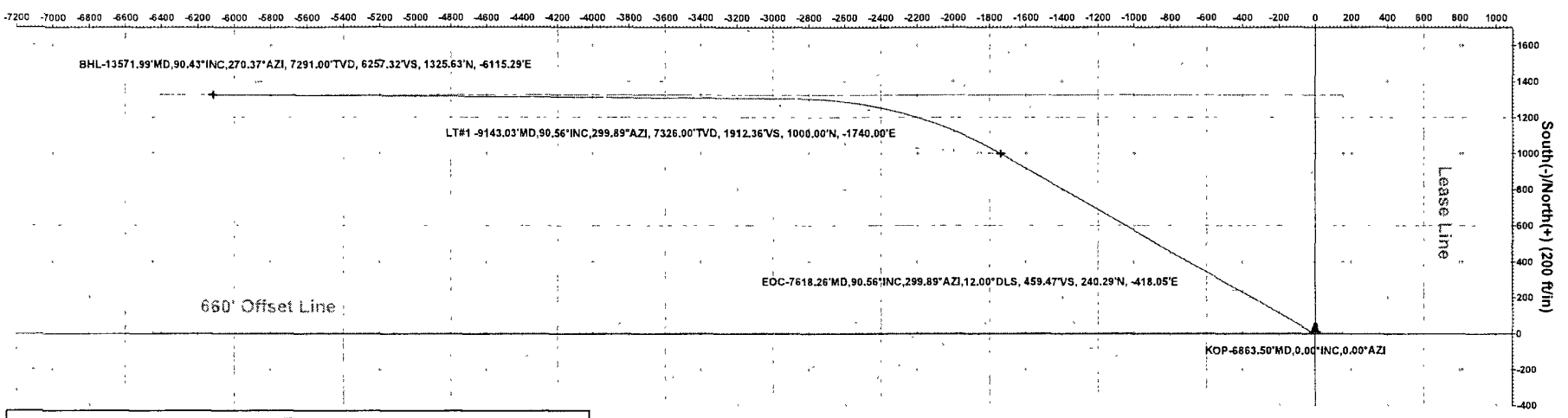
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
6,863.50	6,863.50	0.00	0.00	KOP-6863.50'MD,0.00°INC,0.00°AZI
7,618.26	7,341 00	240.29	-418.05	EOC-7618 26'MD,90.56°INC,299.89°AZI,12.00°DLS, 459.47'VS, 240.2
9,143.03	7,326 00	287 63	-500.41	LT#1 -9143.03'MD,90.56°INC,299.89°AZI, 7326.00'TVD, 1912.36'VS, 1
13,571.99	7,291 00	1,000.00	-1,740.00	BHL-13571.99'MD,90.43°INC,270.37°AZI, 7291.00'TVD, 6257.32'VS, 1

Checked By: _____ Approved By: _____ Date: _____

BOPCO, L.P.

PROJECT DETAILS: Eddy County
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level
Local North: Grid

PATHFINDER



WELL DETAILS #104H

Ground Elevation 3332.00
RKB Elevation WELL #1 @ 3351.00ft (19' KB Correction)
Rig Name 19' KB Correction

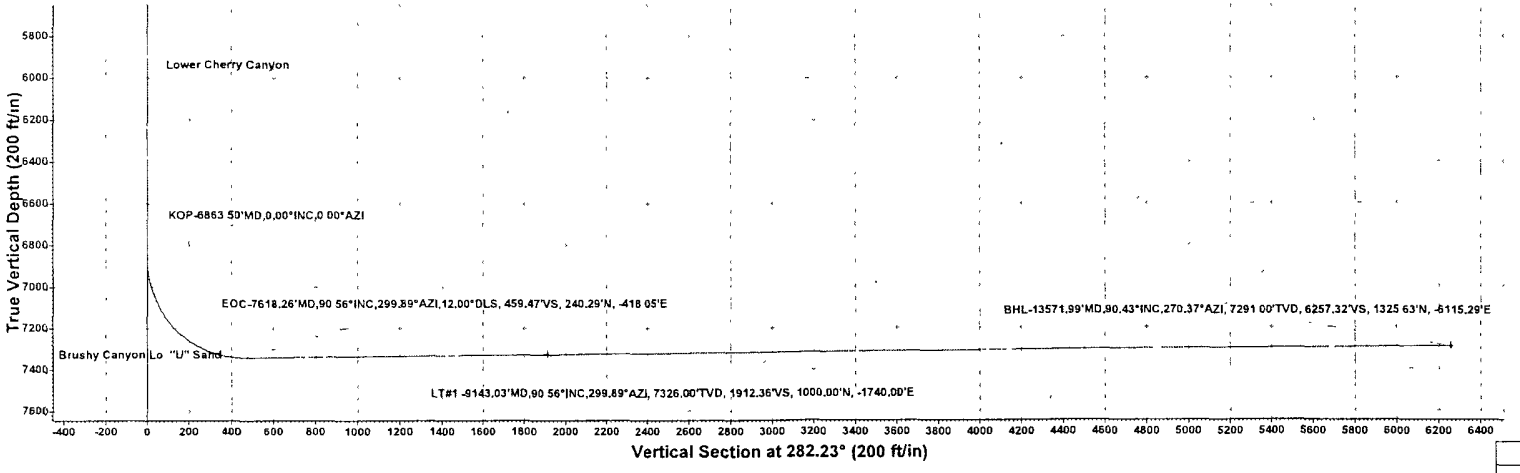
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	491539.800	694505.400	32° 20' 59.229 N	103° 42' 12.559 W	

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	6863.50	0.00	0.00	6863.50	0.00	0.00	0.00	0.00	0.00	
3	7618.26	90.56	299.89	7341.00	240.29	-418.05	12.00	299.89	459.47	
4	7713.26	90.56	299.89	7340.07	287.63	-500.41	0.01	0.00	549.99	
5	9143.03	90.56	299.89	7326.00	1000.00	-1740.00	0.00	0.00	1912.36	TGT1(#104H)
6	10323.63	90.43	270.37	7315.51	1304.69	-2867.08	2.50	-90.12	3078.41	
7	13571.99	90.43	270.37	7291.00	1325.64	-6115.29	0.00	0.00	6257.32	PBHL(#104H)

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PBHL(#104H)	7291.00	1325.64	-6115.29	492865.435	688390.113	Point
TGT1(#104H)	7326.00	1000.00	-1740.00	492539.800	692765.400	Point



Azimuths to Grid North
True North: -0.34°
Magnetic North: 7.57°

Magnetic Field
Strength: 48922.3snT
Dip Angle: 60.35°
Date: 04/15/2009
Model: IGRF200510

Project: Eddy County
Site: James Ranch Unit
Well: #104H
Wellbore: OH
Plan: Plan #1 (#104H/OH)

Plan: Plan #1 (#104H/OH)
Created By: Nate Bingham Date: 10:38, April 29 2009

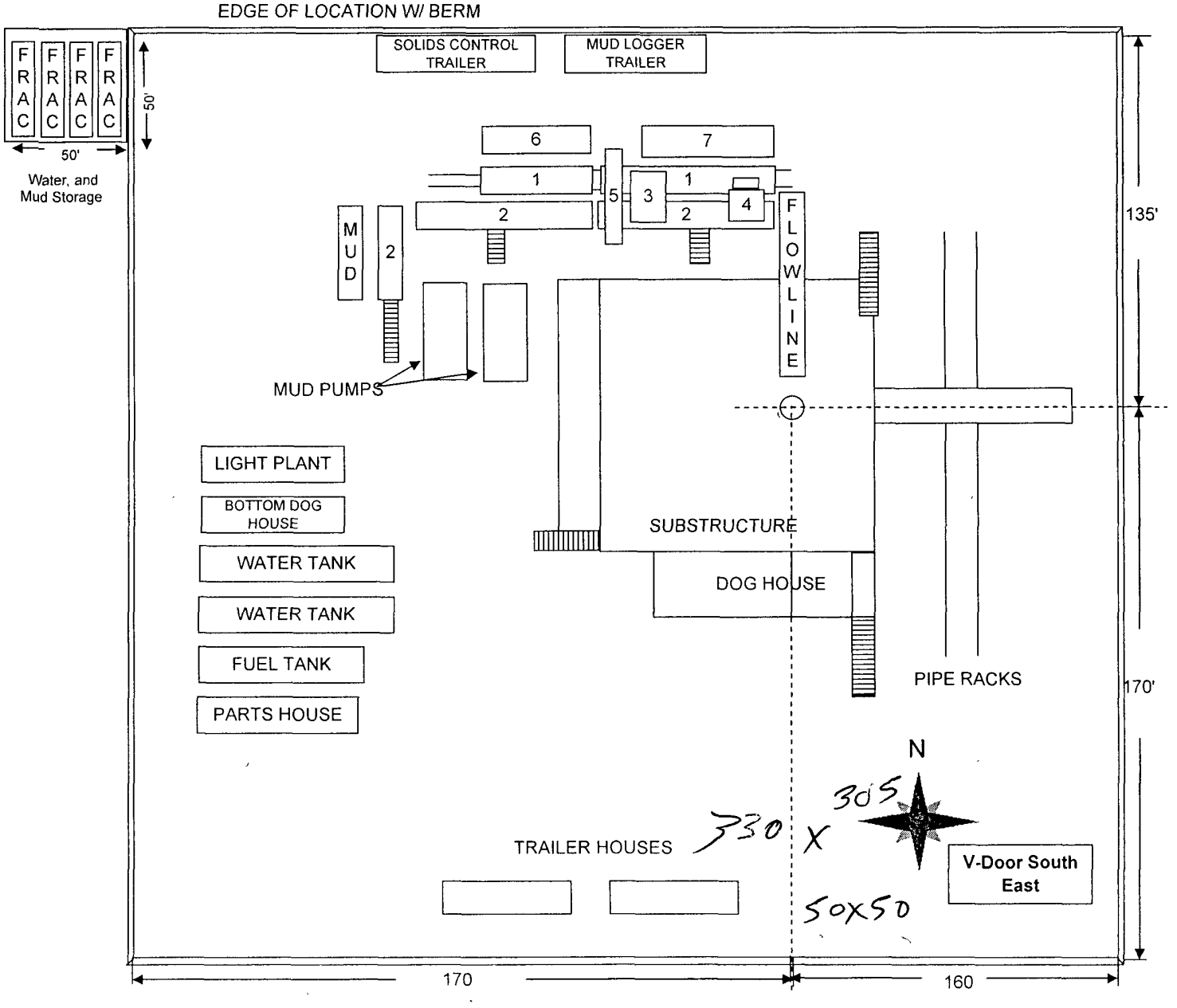
Exhibit "D"

BOPCO, L.P.
James Ranch Unit #104H
Sec 36, T22S-R30E
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) Shaker
5) Centrifuge
6) Dewatering Unit
7) Catch Tank



Wtd-ser/Drilling/DrillingDiagrams/McVay#5 Rig Pad deminsions - Closed Loop Location size Res Pit Exibit D w-rig

McVay Rig #7,5

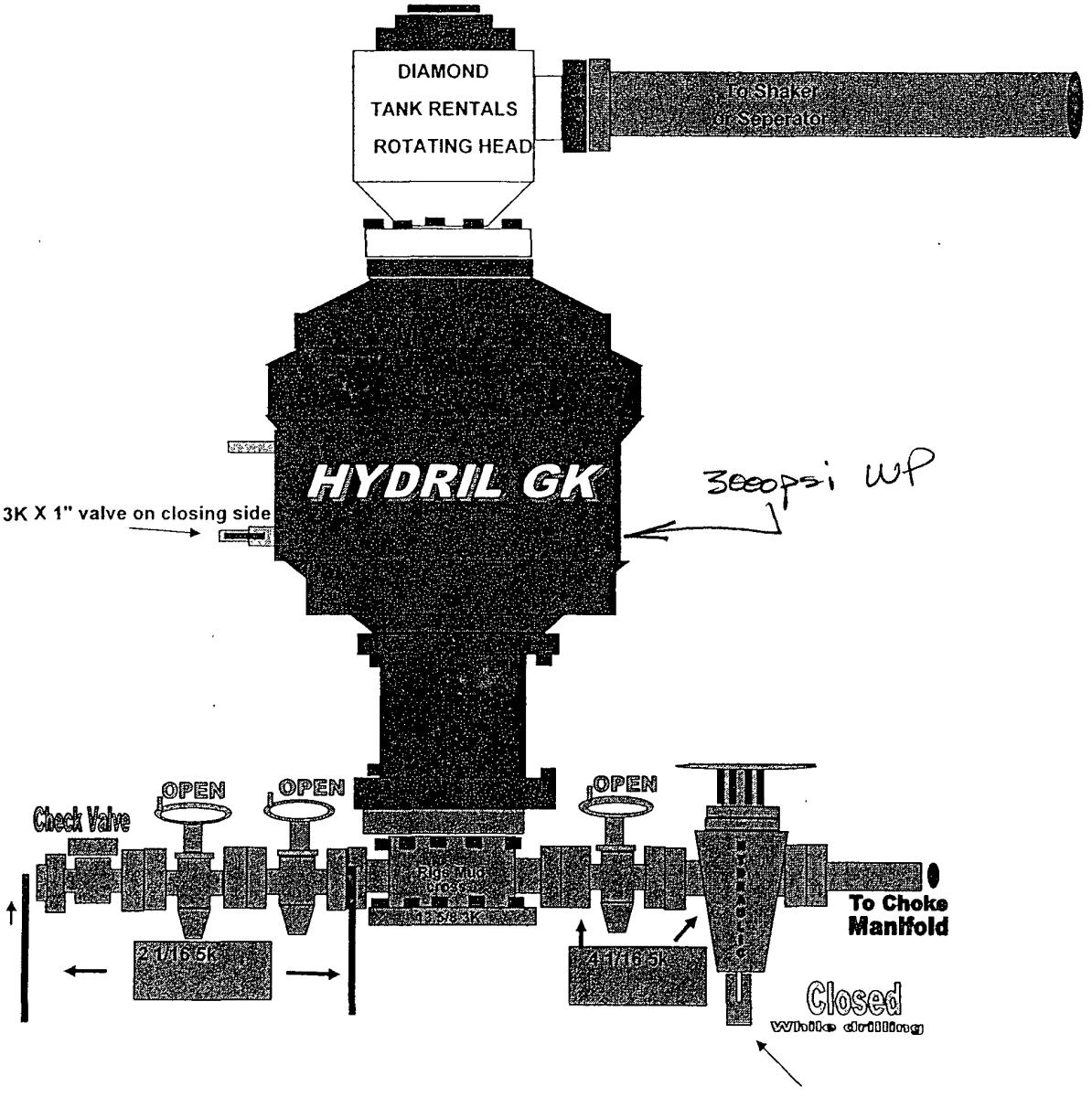
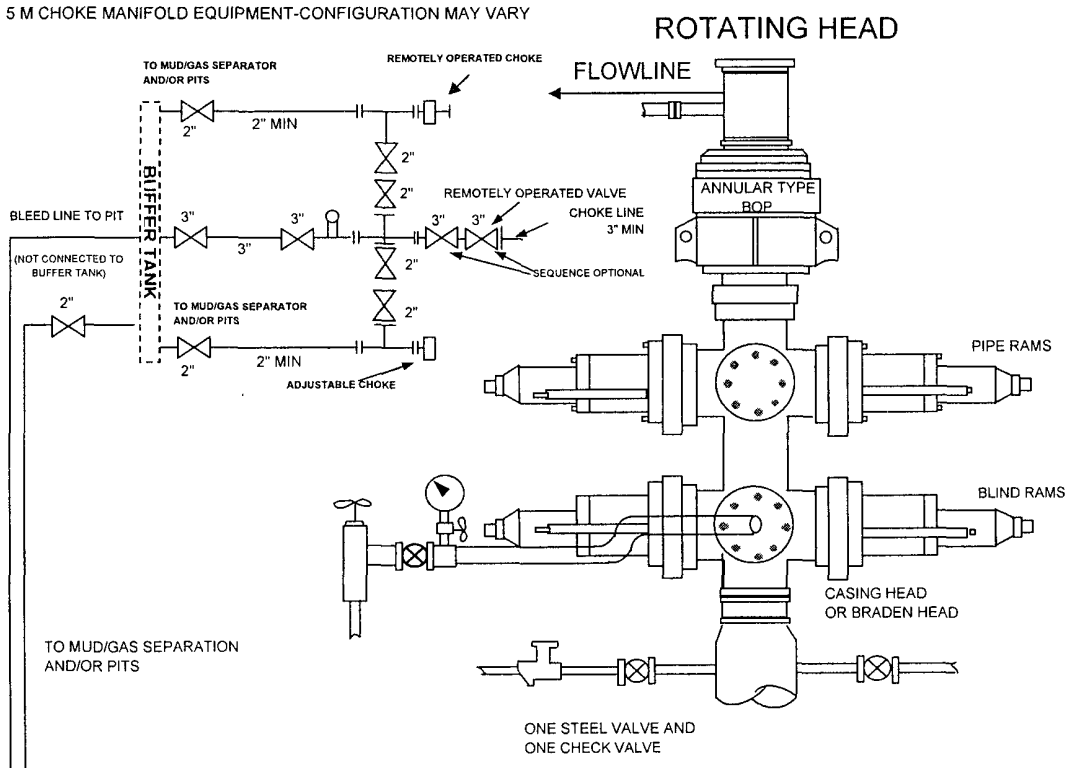


Diagram #1

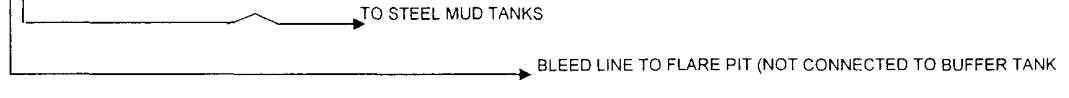
BOPCO, L. P.
5-M WP BOPE WITH 5-M WP ANNULAR



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 mininum 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



MULTI-POINT SURFACE USE PLAN

NAME OF WELL: James Ranch Unit #104H
LEGAL DESCRIPTION - SURFACE: 2000' FNL, 1730' FWL, Section 36, T22S, R30E, Eddy County, NM.
BHL: 660' FNL, 990' FWL, Section 35, T22S, R30E, Eddy County, New Mexico.

POINT 1: EXISTING ROADS

A) Proposed Well Site Location:

See Exhibit "A" & "C".

B) Existing Roads:

From the junction of State Hwy 128 and WIPP Road, go north on WIPP Road 0.5 miles to lease road. On lease road go 0.4 miles west to lease road, on lease road go west winding northley 0.4 miles to lease road and proposed location.

C) Existing Road Maintenance or Improvement Plan:

See Exhibit "E"

POINT 2: NEW PLANNED ACCESS ROUTE

A) Route Location:

Existing lease roads will be used.

B) Width

12' wide

C) Maximum Grade

Grade to match existing topography or as per BLM requirements.

D) Turnout Ditches

As required by BLM stipulations

E) Culverts, Cattle Guards, and Surfacing Equipment

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

POINT 3: LOCATION OF EXISTING WELLS

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

POINT 4: LOCATION OF EXISTING OR PROPOSED FACILITIES

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

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

B) New Facilities in the Event of Production:

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

C) Rehabilitation of Disturbed Areas Unnecessary for Production:

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

POINT 5: LOCATION AND TYPE OF WATER SUPPLY

A) Location and Type of Water Supply

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

B) Water Transportation System

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

POINT 6: SOURCE OF CONSTRUCTION MATERIALS

A) Materials

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

B) Land Ownership

Federally Owned

C) Materials Foreign to the Site

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

D) Access Roads

See Exhibits "A" & "E".

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" shows the dimensions of the well pad and closed loop system, and the location of major rig components. Only minor leveling of the well site will be required. No significant cuts or fills will be necessary.

B) Locations of closed loop system and access road

See Exhibits "D".

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.

E) Surface Water

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

F) Water Wells

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

G) Residences and Buildings

None in the immediate vicinity.

H) Historical Sites

None observed.

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 state owned 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
William R. Dannels
Box 2760
Midland, Texas 79702
(432) 683-2277

PRODUCTION
Dean Clemmer
3104 East Green Street
Carlsbad, New Mexico 88220
(505) 887-7329

Carlos Cruz
Box 2760
Midland, Texas 79702
(432) 683-2277

6/22/09
Date

Gary Gerhard

GEG/jdb

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.

6/22/09
Date

Gary Gerhard
Gary Gerhard

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	BOPCO, L. P.
LEASE NO.:	NM02952B
WELL NAME & NO.:	James Ranch Unit # 104H
SURFACE HOLE FOOTAGE:	2000' FNL & 1730' FWL Section 36
BOTTOM HOLE FOOTAGE	600' FNL & 990' FWL Section 35
LOCATION:	Section 35, T. 22 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)

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

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

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

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. RESERVE PITS

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.

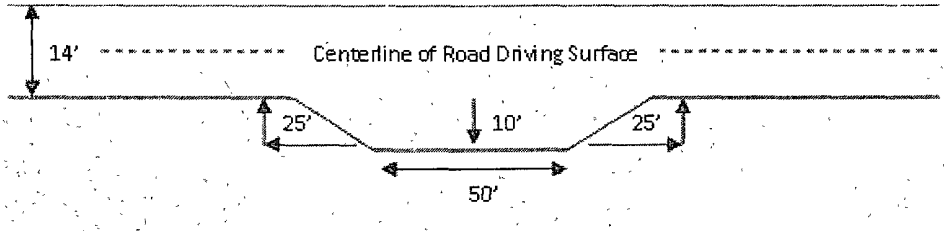
Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

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

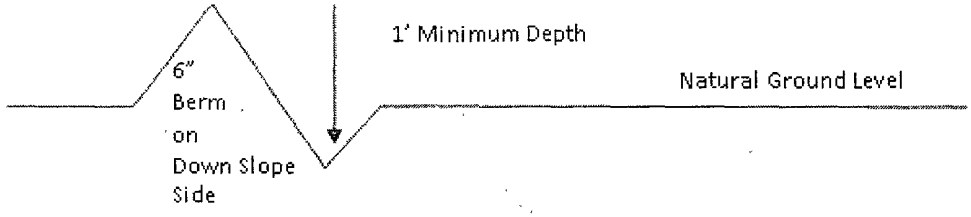


Drainage

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 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: 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

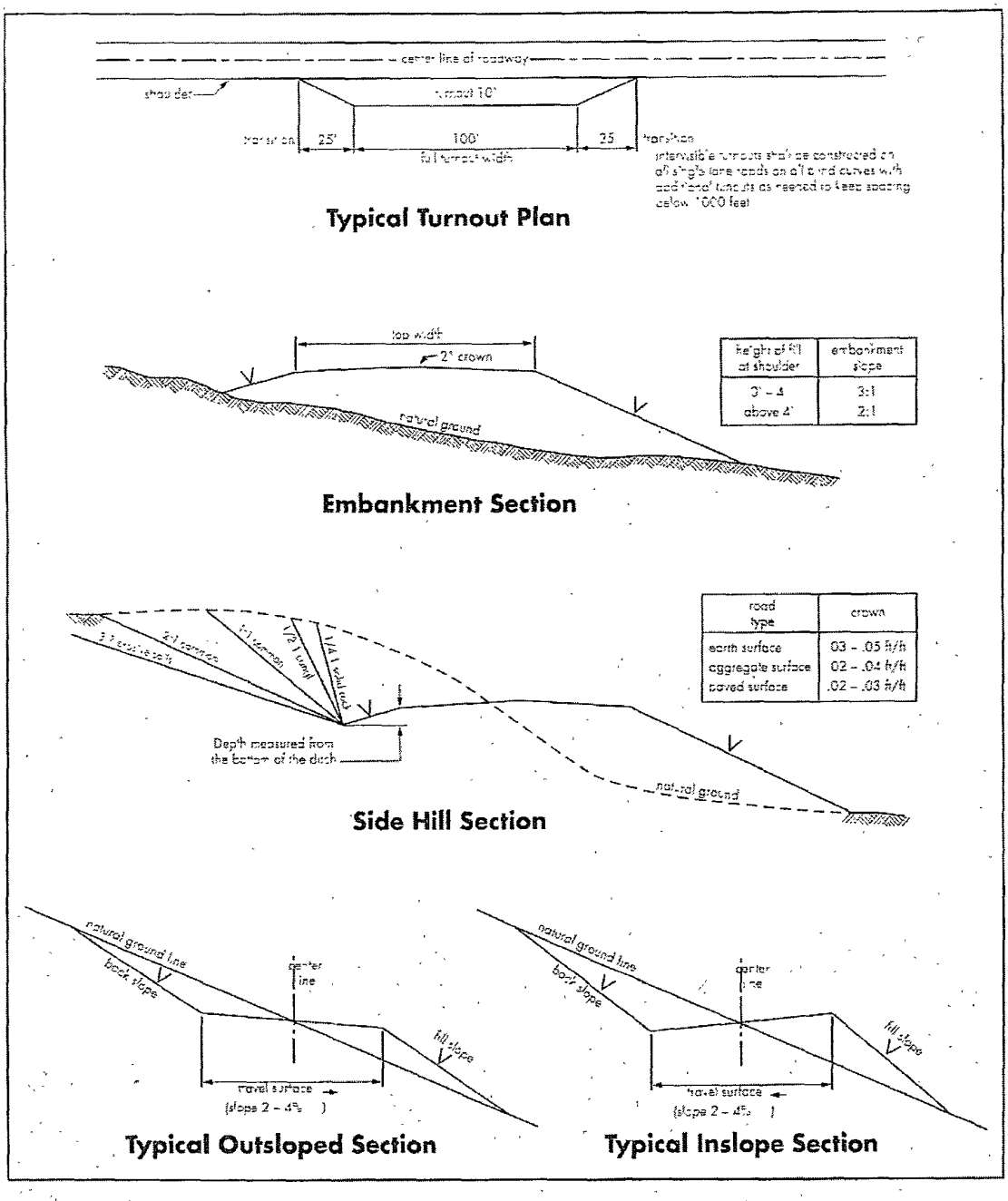
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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 water flows in the Salado Group and Castille formation.
Possible lost circulation and water flows in the Delaware and Bone Spring formations.

1. The **13-3/8** inch surface casing shall be set **at approximately 636 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface. **If the salt is encountered at a shallower depth, the casing is to be set a minimum of 25 feet above the salt.**

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.

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

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

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

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.

4. The minimum required fill of cement behind the **4-1/2** inch production liner is:

   ☒ No cement required. Operator using the Halliburton or Baker packer liner systerm. Liner to be set 200' above the KOP at approximately 6650'.

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 072409

VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

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

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

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color
Shale Green, Munsell Soil Color Chart # 5Y 4/2

B. PIPELINES

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

A copy of the 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.

(Insert Seed Mixture Here)

Seed Mixture for LPC Sand/Shinnery Sites

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

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

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

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

* This can be used around well pads and other areas where caliche cannot be removed.

*Pounds of pure live seed:

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

X. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS

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

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

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.