

COO-ARTESIA

Form 3160-3  
(April 2004)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

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

EA 552

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. LE 068284
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator BOPCO, L. P.		7. If Unit or CA Agreement, Name and No.
3a. Address P. O. Box 2760 Midland, TX 79702		8. Lease Name and Well No. North Indian Flats 24 Federal #15H
3b. Phone No. (include area code) 432-683-2277		9. API Well No. 30-015-39137
4. Location of Well (Report location clearly and in accordance with any State requirements *) At surface NWNW, UL D, 330' FNL & 660' FWL, Lat N32.472006, Lon W104.045975 At proposed prod zone NWNW, UL D, 1130' FNL & 660' FWL, Lat N32.469806, Lon W104.045983		10. Field and Pool, or Exploratory Indian Flats, West (Delaware)
14. Distance in miles and direction from nearest town or post office* 6 miles east of Carlsbad		11. Sec., T R. M. or Blk and Survey or Area Sec 24, T21S-R28E
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 330'	16. No. of acres in lease 781.1	12. County or Parish Eddy County
17. Spacing Unit dedicated to this well 40	18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1650'	13. State NM
19. Proposed Depth 3628' MD & 2951' TVD PH 3250'	20. BLM/BIA Bond No. on file COB000050	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3303' ✓	22. Approximate date work will start* 05/01/2011	23. Estimated duration 15 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.                                                                                               | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above)     |
| 2. A Drilling Plan.                                                                                                                            | 5. Operator certification                                                                          |
| 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) | 6. Such other site specific information and/or plans as may be required by the authorized officer. |

25. Signature <i>K. Holster</i>	Name (Printed/Typed) Katy Holster	Date 3/11/11
Title Administrative Assistant		

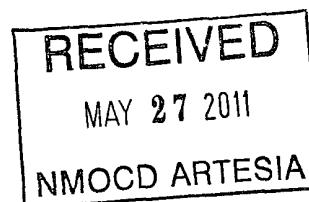
Approved by (Signature) /s/ Don Peterson	Name (Printed/Typed)	Date MAY 26 2011
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

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

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)



Capitan Controlled Water Basin

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

Approval Subject to General Requirements  
& Special Stipulations Attached

## OCD-ARTESIA

Form 3160-5  
(April 2004)UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENTFORM APPROVED  
OMB No. 1004-0137  
Expires: March 31, 2007

## SUNDRY NOTICES AND REPORTS ON WELLS

*Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.***SUBMIT IN TRIPLICATE- Other instructions on reverse side.**1 Type of Well  
☒ Oil Well ☐ Gas Well ☐ Other2 Name of Operator **BOPCO, L. P.**3a Address  
**P. O. Box 2760 Midland, TX 79702**3b. Phone No. (include area code)  
**432-683-2277**

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

**NWNE, UL D, 330' FNL, 660' FEL, Lat N32.472006, Long W104.045975, Sec 24, T21S-R28E  
BHL: NWNE, UL D, 1130' FNL, 660' FWL, Lat N32.469806, Long W104.045983, Sec 25, T21S-R28E**

5. Lease Serial No.

**LC 068284**

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.

**North Indian Flats 24 Federal #15H**

9. API Well No.

**30-015-39137**10. Field and Pool, or Exploratory Area  
**Indian Flats (Delaware)**

11. County or Parish, State

**Eddy Co., NM**

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

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input type="checkbox"/> Other _____
	<input checked="" type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

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

**BOPCO, L.P. requests approval of new BOP description (attached) and plug back cement design. Plug back cement will be as follows: 360 sks (approximately) Rising Star (or similar) Class "C" + 1.5% C-35 (friction reducer) + 0.25% R-38 (defoamer) mixed at 17 ppg, 1.0 cu ft/sk.**

**RECEIVED**  
**MAY 27 2011**  
**NMOCD ARTESIA**

14 I hereby certify that the foregoing is true and correct  
Name (Printed/Typed)**Katy Holster**Title **Administrative Assistant**

Signature

*KHASTER*

Date

**3/14/11****THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved by

**/s/ Don Peterson**

Title

Date **MAY 26 2011**

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

Office

**CARLSBAD FIELD OFFICE**

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

(Instructions on page 2)

*[Handwritten signature]*

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

Production casing will be 5-1/2" with ECP (External Casing Packer) and DV Tool set at end of curve (EOC) at approximately 3100'. The 5-1/2" casing will be cemented from DV Tool to surface using Rising Star Class "C" plus additives. The 5-1/2" casing will be pre-perforated and not cemented thru lateral.

Drilling procedure, BOP diagram, anticipated tops and surface plans attached.

This well is located outside the Secretary's Potash area and outside the R-111 Potash area. There are potash leases within 5 miles of the location. (4 miles southeast)

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

# EIGHT POINT DRILLING PROGRAM BOPCO, L.P.

**NAME OF WELL:** North Indian Flats 24 Federal #15H

**LEGAL DESCRIPTION - SURFACE:** 330' FNL & 660' FWL, Section 24, T21S, R28E, Eddy County, New Mexico.

**Lateral BHL:** 1130' FNL & 660' FWL, Section 24, T21S, R28E, 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 3316'  
GL 3303'

Formation	Estimated Top From KB TVD	MD	Estimated Subsea Top	BEARING
T/Rustler	13'	13'	+3,303'	Barren
T/Fresh Water	170'	170'	+3,146'	Fresh Water
T/Salt	406'	406'	+2,910'	Barren
B/Salt	2,356'	2,356'	+960'	Barren
T/Delaware Mtn Grp	2,766'	2,766'	+550'	Barren
Clean Carb above R. Sand	2,916'	2,916'	+400'	Oil/Gas
T/Ramsey "74" Sand	Not Present	Not Present		
T/Ramsey "66" Sand	2,934'	2,934'	+382'	Oil/Gas
B/Ramsey "66" Sand	3,034'	3,034'	+282'	Oil/Gas
TD	3,250'	3,250'	+66'	Oil/Gas
KOP	2,664'	2,664'	+652'	Oil/Gas
EOC "74" Sand Target	2,952'	3,114'	+364'	Oil/Gas
TD (Horizontal)	2,952'	3,828'	+364'	Oil/Gas

*3628 dir  
plan*

## POINT 3: CASING PROGRAM

TYPE	HOLE SIZE	INTERVALS	PURPOSE	CONDITION
14"	20"	0' - 40'	Conductor	Contractor Discretion
8-5/8", 24#, K-55, 8rd STC	12-1/4"	0' - 396'	Surface	New
5-1/2", 17#, K-55, 8rd STC	7-7/8"	0' - 3,100'	Production	New
5-1/2", 17#, J or K-55, 8rd	7-7/8"	3,100' - 3,828'	Production	New
STC Perforated (1/4" holes, 6 SPF, 60 degrees phasing)				

*3628  
dir plan*

### CASING DESIGN SAFETY FACTORS:

TYPE	TENSION	COLLAPSE	BURST
8-5/8", 24#, K-55, 8rd, STC	28.3	6.72	7.16
5-1/2", 17#, J or K-55, 8rd, STC	6.01	3.27	5.31
5-1/2", 17#, J or K-55, 8rd, STC Perforated	6.01	3.27	5.31

## 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 at 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.

## PRODUCTION CASING

Tension	A 1.6 design factor utilizing the effects of buoyancy (11.0 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 (0.57 psi/ft). The effects of axial load on collapse will be considered.
Burst	A 1.25 design factor with anticipated maximum tubing pressure (5,045 psig) on top of the maximum anticipated packer fluid gradient. Backup on production strings will be formation pore pressure (0.43 psi/ft). The effects of tension on burst will not be utilized.

## **POINT 4: PRESSURE CONTROL EQUIPMENT (SEE ATTACHED DIAGRAM)**

A BOP equivalent to Diagram 1 will be nipped up on the surface casing head. The BOP stack, blind and pipe rams, chokes, kill line, Upper and lower Kelly valves, inside BOP, choke manifold when rigged up on the surface casing will be tested to 2000 psig (~~working pressure of BOP~~) and 250 psi by independent tester.

These tests will be performed:

- a) When initially installed
- b) Whenever any seal subject to test pressure is broken
- c) Following related repairs
- d) At 30 day intervals

A function test to insure that the preventers are operating correctly will be performed on each trip. See the attached Diagram 1 for the minimum criteria for the choke manifold.

# POINT 5: MUD PROGRAM

3

DEPTH	MUD TYPE	WEIGHT	FV	PV	YP	FL	Ph
0' - 396'	FW	8.5 - 9.2	45-35	NC	NC	NC	9.5
618' - 3,250'	BW	10.0 - 10.3	28-30	NC	NC	NC	9.5
2,664' - 3,628'	BW	10.0 - 10.3	28-34	2-4	2-4	20 or less	9.5

# POINT 6: TECHNICAL STAGES OF OPERATION

## A) TESTING

No drill stem tests are planned

## B) LOGGING.

Run #1:

PEX (GR-CNL/LDT-AIT) @ TD. GR/CNL to surface. *see CO #*

FMI possible at TD of pilot hole.

Mud Logger: Rig up at surface to assist in picking top of salt.

GR while drilling lateral.

## C) CORING

No cores are anticipated.

## C) CEMENT

INTERVAL	AMOUNT SXS	FT OF FILL	TYPE	GALS/SX	PPG	FT3/SX
Tail: 0'-396' (100% excess) <i>35%</i>	225	<u>300</u> <i>396</i>	Rising Star Class "C"+2% CaCL2	6.39	14.8	1.35
<i>2nd stage</i> PRODUCTION: Stage Lead: 0'-2,665' (50% excess circ to surface)	420	2,665	Rising Star Class "C" 35/65+6% gel+5% salt	14.27	12.8	1.90
Tail: 2,665'-3,100' (50% excess circ to surface)	200	<u>100</u> <i>935</i>	Rising Star Class "C"	6.39	14.8	1.35

**E) DIRECTIONAL DRILLING**

BOPCO, L.P. plans to drill out the 8-5/8" surface casing with an 7-7/8" bit to a TVD of approximately 3,250'. Open hole logs will be run and the 7-7/8" hole then plugged back to 2,400'. This cement plug will be drilled out to 2,664', tested and then a directional hole will be kicked off building angle at 20 deg/100' and 180 degrees. Azimuth will be maintained for 513' to a measured depth of 3,628' (2,951' TVD)'. At this depth 5-1/2", 17#, J or K-55, LTC casing will be installed and cemented with DV Tool and ECP @ approximately 3,100' with cement being circulated to surface. The 5-1/2" casing in the lateral will be perforated, 17#, J or K-55, 8rd, LTC with 1/4" perforations, 6 SPF, 60 degree phasing. This casing will not be cemented thru lateral.

**POINT 7: ANTICIPATED RESERVOIR CONDITIONS**

Normal pressures are anticipated throughout the Delaware section. A BHP of 1472 psi (max) or MWE of 8.33 ppg is expected. See attached H<sub>2</sub>S contingency plan.

**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**

Spud date is 5/01/2011.

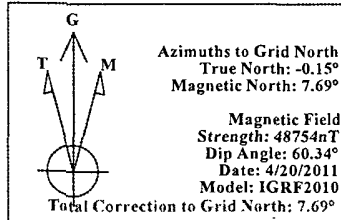
8 days drilling operations

7 days completion operations

GEG/jdb

**BOPCO, L.P.**

**North Indian Flats 24 Fed #15  
Eddy Co., New Mexico**



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	180.02	0.00	0.00	0.00	0.00	0.00	0.00	
2	2664.52	0.00	180.02	2664.52	0.00	0.00	0.00	0.00	0.00	
3	3114.52	90.00	180.02	2951.00	-286.48	-0.11	20.00	180.02	286.48	
4	3628.27	90.00	180.02	2951.00	-800.22	-0.30	0.00	0.00	800.22	Pbhl

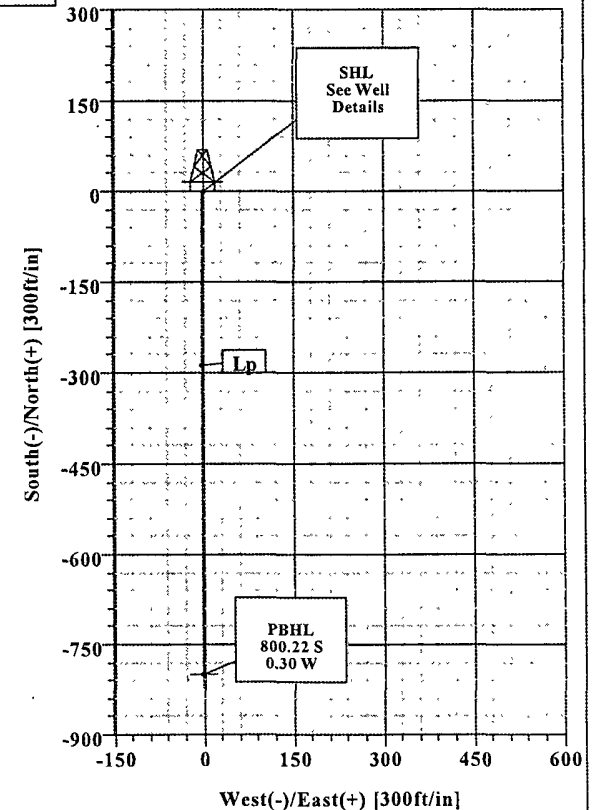
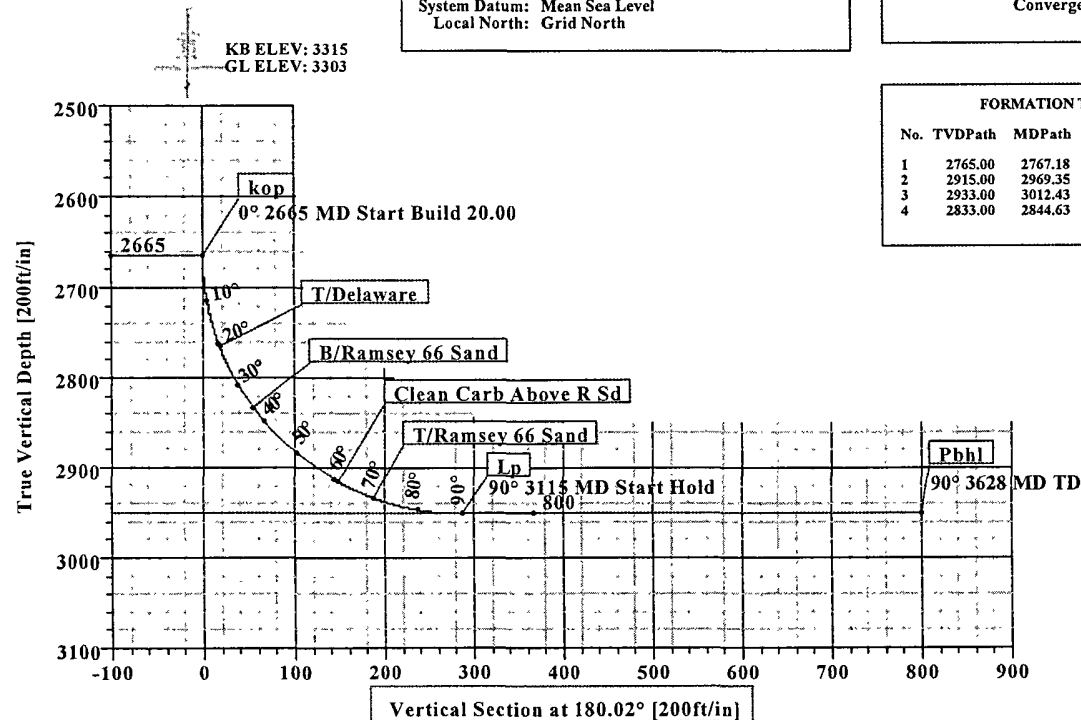
WELL DETAILS						
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Fed #15	0.00	0.00	535548.10	588620.24	32°28'19.220N	104°02'45.512W

TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Pbhl	2951.00	-800.22	-0.30	534747.88	588619.94	Point

FIELD DETAILS	
Eddy County, NM (Nad 27)	
Geodetic System: US State Plane Coordinate System 1927	
Ellipsoid: NAD27 (Clarke 1866)	
Zone: New Mexico, Eastern Zone	
Magnetic Model: IGRF2010	
System Datum: Mean Sea Level	
Local North: Grid North	

SITE DETAILS	
North Indian Flats 24 Fed #15	
Site Centre Northing: 535548.10	
Easting: 588620.24	
Ground Level: 3303.00	
Positional Uncertainty: 0.00	
Convergence: 0.15	

FORMATION TOP DETAILS		
No.	TVDPath	MDPath Formation
1	2765.00	2767.18 T/Delaware
2	2915.00	2969.35 Clean Carb Above R Sd
3	2933.00	3012.43 T/Ramsey 66 Sand
4	2833.00	2844.63 B/Ramsey 66 Sand





# Weatherford International Ltd.

## WFT Plan Report - X & Y's



Weatherford

Company: BOPCO L.P.		Date: 2/15/2011	Time: 06:54:06	Page: 1
Field: Eddy County, NM (Nad 27)		Co-ordinate(NE) Reference:	Well: Fed #15, Grid North	
Site: North Indian Flats 24 Fed #15		Vertical (TVD) Reference:	SITE 3315.0	
Well: Fed #15		Section (VS) Reference:	Well (0.00N;0.00E;180.02Azi)	
Wellpath: 1		Survey Calculation Method:	Minimum Curvature Db: Sybase	

Plan: Plan #2	Date Composed: 2/15/2011
Principal: Yes	Version: 1
	Tied-to: From Surface

Field: Eddy County, NM (Nad 27)	
Map System: US State Plane Coordinate System 1927	Map Zone: New Mexico, Eastern Zone
Geo Datum: NAD27 (Clarke 1866)	Coordinate System: Well Centre
Sys Datum: Mean Sea Level	Geomagnetic Model: IGRF2010

Site: North Indian Flats 24 Fed #15				
Site Position:	Northing:	535548.10 ft	Latitude:	32 28 19.220 N
From: Map	Easting:	588620.24 ft	Longitude:	104 2 45.512 W
Position Uncertainty: 0.00 ft			North Reference:	Grid
Ground Level: 3303.00 ft			Grid Convergence:	0.15 deg

Well: Fed #15		Slot Name:		
Well Position:	+N/-S 0.00 ft	Northing:	535548.10 ft	Latitude: 32 28 19.220 N
	+E/-W 0.00 ft	Easting:	588620.24 ft	Longitude: 104 2 45.512 W
Position Uncertainty:	0.00 ft			

Wellpath: 1		Drilled From: Surface	
Current Datum: SITE	Height 3315.00 ft	Tie-on Depth:	0.00 ft
Magnetic Data: 4/20/2011		Above System Datum:	Mean Sea Level
Field Strength: 48754 nT		Declination:	7.84 deg
Vertical Section: Depth From (TVD)	+N/-S	Mag Dip Angle:	60.34 deg
ft	ft	+E/-W	Direction
		ft	deg
0.00	0.00	0.00	180.02

Plan Section Information										
MD	Incl	Azim	TVD	+N/-S	+E/-W	DLS	Build	Turn	TFO	Target
ft	deg	deg	ft	ft	ft	deg/100ft	deg/100ft	deg/100ft	deg	
0.00	0.00	180.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2664.52	0.00	180.02	2664.52	0.00	0.00	0.00	0.00	0.00	0.00	
3114.52	90.00	180.02	2951.00	-286.48	-0.11	20.00	20.00	0.00	180.02	
3628.27	90.00	180.02	2951.00	-800.22	-0.30	0.00	0.00	0.00	0.00	Pbhl

Survey										
MD	Incl	Azim	TVD	N/S	E/W	VS	DLS	MapN	MapE	Comment
ft	deg	deg	ft	ft	ft	ft	deg/100ft	ft	ft	
2600.00	0.00	180.02	2600.00	0.00	0.00	0.00	0.00	535548.10	588620.24	
2664.52	0.00	180.02	2664.52	0.00	0.00	0.00	0.00	535548.10	588620.24	kop
2700.00	7.10	180.02	2699.91	-2.19	0.00	2.19	20.00	535545.91	588620.24	
2767.18	20.53	180.02	2765.00	-18.20	-0.01	18.20	20.00	535529.91	588620.24	T/Delaware
2800.00	27.10	180.02	2795.01	-31.44	-0.01	31.44	20.00	535516.66	588620.23	
2844.63	36.02	180.02	2833.00	-54.78	-0.02	54.78	20.00	535493.33	588620.22	B/Ramsey 66 Sand
2900.00	47.10	180.02	2874.36	-91.45	-0.03	91.45	20.00	535456.65	588620.21	
2969.35	60.97	180.02	2915.00	-147.44	-0.06	147.44	20.00	535400.66	588620.19	Clean Carb Above R
3000.00	67.10	180.02	2928.41	-174.98	-0.07	174.98	20.00	535373.12	588620.18	
3012.43	69.58	180.02	2933.00	-186.53	-0.07	186.53	20.00	535361.57	588620.17	T/Ramsey 66 Sand
3100.00	87.10	180.02	2950.63	-271.96	-0.10	271.96	20.00	535276.14	588620.14	
3114.52	90.00	180.02	2951.00	-286.48	-0.11	286.48	20.00	535261.63	588620.14	Lp
3200.00	90.00	180.02	2951.00	-371.96	-0.14	371.96	0.00	535176.15	588620.10	
3300.00	90.00	180.02	2951.00	-471.96	-0.18	471.96	0.00	535076.15	588620.07	
3400.00	90.00	180.02	2951.00	-571.96	-0.22	571.96	0.00	534976.15	588620.03	
3500.00	90.00	180.02	2951.00	-671.96	-0.25	671.96	0.00	534876.15	588619.99	
3600.00	90.00	180.02	2951.00	-771.96	-0.29	771.96	0.00	534776.15	588619.95	

# Weatherford International Ltd.

## WFT Plan Report - X & Y's



**Weatherford**

<b>Company:</b> BOPCO, L.P. <b>Field:</b> Eddy County, NM (Nad 27) <b>Site:</b> North Indian Flats 24 Fed #15 <b>Well:</b> Fed #15 <b>Wellpath:</b> 1	<b>Date:</b> 2/15/2011 <b>Time:</b> 06:54:06 <b>Page:</b> 2 <b>Co-ordinate(NE) Reference:</b> Well: Fed #15, Grid North <b>Vertical (TVD) Reference:</b> SITE 3315.0 <b>Section (VS) Reference:</b> Well (0.00N,0.00E,180.02Azi) <b>Survey Calculation Method:</b> Minimum Curvature <b>Db:</b> Sybase
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### Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
3628.27	90.00	180.02	2951.00	-800.22	-0.30	800.22	0.00	534747.88	588619.94	Pbhl

### Targets

Name	Description Dip.	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	Latitude Deg Min Sec	Longitude Deg Min Sec
Pbhl			2951.00	-800.22	-0.30	534747.88	588619.94	32 28 11.301 N	104 2 45.540 W

### Casing Points

MD ft	TVD ft	Diameter	Hole Size	Name

### Annotation

MD ft	TVD ft	
2664.52	2664.52	kop
3114.52	2951.00	Lp
3628.26	2951.00	Pbhl

### Formations

MD ft	TVD ft	Formations	Lithology	Dip Angle deg	Dip Direction deg
2767.18	2765.00	T/Delaware		0.00	0.00
2969.35	2915.00	Clean Carb Above R Sd		0.00	0.00
3012.43	2933.00	T/Ramsey 66 Sand		0.00	0.00
2844.63	2833.00	B/Ramsey 66 Sand		0.00	0.00

**Weatherford****Weatherford Drilling Services**

GeoDec v5.03

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Report Date: February 10, 2011  
Job Number: \_\_\_\_\_  
Customer: BOPCO  
Well Name: North Indian Flats 24 Fed #15  
API Number: \_\_\_\_\_  
Rig Name: \_\_\_\_\_  
Location: Eddy Co, NM  
Block: \_\_\_\_\_  
Engineer: RWJ

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US State Plane 1927	Geodetic Latitude / Longitude
System: New Mexico East 3001 (NON-EXACT)	System: Latitude / Longitude
Projection: SPC27 Transverse Mercator	Projection: Geodetic Latitude and Longitude
Datum: NAD 1927 (NADCON CONUS)	Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866	Ellipsoid: Clarke 1866
North/South 535548.100 USFT	Latitude 32.4720055 DEG
East/West 588620.240 USFT	Longitude -104.0459754 DEG
Grid Convergence: .15°	
Total Correction: +7.69°	

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Geodetic Location WGS84	Elevation =	0.0 Meters
Latitude =	32.47201° N	32° 28 min 19.220 sec
Longitude =	104.04598° W	104° 2 min 45.512 sec

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Magnetic Declination =	7.84°	[True North Offset]	
Local Gravity =	.9988 g	Checksum =	6678
Local Field Strength =	48747 nT	Magnetic Vector X =	23899 nT
Magnetic Dip =	60.34°	Magnetic Vector Y =	3290 nT
Magnetic Model =	IGRF-2010g11	Magnetic Vector Z =	42359 nT
Spud Date =	Apr 30, 2011	Magnetic Vector H =	24124 nT

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Signed: \_\_\_\_\_

Date: \_\_\_\_\_

11" X 3000 PSI WP

*3/14/11*

