

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD-ARTESIA

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

SUNDRY NOTICES AND REPORTS ON WELLS

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

SUBMIT IN TRIPLICATE- Other instructions on reverse side.

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

JAN 16 2009

2 Name of Operator **COG Operating LLC**

OCD-ARTESIA

3a Address
550 W. Texas Ave., Suite 1300 Midland, TX 79701

3b. Phone No (include area code)
432-685-4385

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

**630' FSL & 780' FEL
SEC. 9, T17S, R30E, UNIT P**

5 Lease Serial No

NMLC-029342B

6 If Indian, Allottee or Tribe Name

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

8 Well Name and No.

POLARIS B FEDERAL #32

9. API Well No

30-015-36667

10. Field and Pool, or Exploratory Area

Loco Hills; Glorieta Yeso 96718

11 County or Parish, State

EDDY, NM

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

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

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomple 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 recomple 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)

This well was approved at the location: 630 FSL & 780 FEL, Section 9, R17S, R30E, UL P

COG Operating LLC respectfully requests permission to drill this well directionally.

SHL 630 FSL & 780 FEL, Section 9, R17S, R30E, UL P

BHL 330 FSL & 990 FEL, Section 9, R17S, R30E, UL P

A directional plan and a revised C-102 attached for your review.

14 I hereby certify that the foregoing is true and correct
Name (Printed/Typed)

Robyn Odom

Title **Agent**

Signature

Date

12/01/2008

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

APPROVED

Approved by

Title

Date

JAN 13 2009

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

WESLEY W. INGRAM

Title 18 USC Section 1001 and Title 43 USC 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)

Accepted for record - NMOCD

State of New Mexico

Energy, Minerals and Natural Resources Department

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

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-015-36667	Pool Code 96718	Pool Name LOCO HILLS; GLOREITA YESO
Property Code 3025547	Property Name POLARIS B FEDERAL	Well Number 32
OGRID No. 229137	Operator Name COG OPERATING, LLC	Elevation 3692'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	9	17-S	30-E		630	SOUTH	780	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	9	17-S	30-E		330	SOUTH	990	EAST	EDDY

Dedicated Acres 40	Joint or Infill	Consolidation Code	Order No.
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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

GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y=670730.5 N X=611468.4 E LAT.=32.843397° N LONG.=103.970391° W		SEE DETAIL		OPERATOR CERTIFICATION I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>Robyn Odom</i> 12/01/2008 Signature Date Robyn Odom Printed Name
		BOTTOM HOLE LOCATION Y=670430.0 N X=611259.5 E GRID. AZ.-214°47'54" HORZ. DIST.-366.0' SEE DETAIL		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 supervision, and that the same is true and correct to the best of my belief. GARY G. EIDSON AUGUST 12, 2008 Date Surveyed LA Signature & Seal of Professional Surveyor <i>Gary G. Eidson</i> 8/24/08 08.13.2020 Certificate No. GARY EIDSON 12641 RONALD J. EIDSON 3239

COG Operating

Eddy County, NM (NAN27 NME)

Polaris B Federal #32

Polaris B Federal #32

OH

Plan: Plan #1 - 7-7/8" Hole

Standard Planning Report

06 January, 2009



Scientific Drilling
Directional Drilling Operations

Scientific Drilling Planning Report



Database: EDM 2003 16 Single User Db
Company: COG Operating
Project: Eddy County, NM (NAN27 NME)
Site: Polaris B Federal #32
Well: Polaris B Federal #32
Wellbore: OH
Design: Plan #1 - 7-7/8" Hole

Local Co-ordinate Reference: Well Polaris B Federal #32
TVD Reference: Ground Elev @ 3692.00ft (Rig ?)
MD Reference: Ground Elev @ 3692.00ft (Rig ?)
North Reference: Grd
Survey Calculation Method: Minimum Curvature

Project: Eddy County, NM (NAN27 NME)
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: Polaris B Federal #32
Site Position: **From:** Map **Northing:** 670,730.500 ft **Latitude:** 32° 50' 36.229 N
Position Uncertainty: 0.00 ft **Easting:** 611,468.400 ft **Longitude:** 103° 58' 13.409 W
Slot Radius: " **Grid Convergence:** 0.20 °

Well: Polaris B Federal #32
Well Position: **+N/-S** 0.00 ft **Northing:** 670,730.500 ft **Latitude:** 32° 50' 36.229 N
+E/-W 0.00 ft **Easting:** 611,468.400 ft **Longitude:** 103° 58' 13.409 W
Position Uncertainty: 0.00 ft **Wellhead Elevation:** ft **Ground Level:** 3,692.00 ft

Wellbore: OH
Magnetics: **Model Name:** IGRF200510 **Sample Date:** 1/6/2009 **Declination:** 8.10 **Dip Angle:** 60.76 **Field Strength:** 49,213 (nT)

Design: Plan #1 - 7-7/8" Hole
Audit Notes:
Version: **Phase:** PLAN **Tie On Depth:** 0.00
Vertical Section: **Depth From (TVD)** **+N/-S** **+E/-W** **Direction**
 (ft) (ft) (ft) (°)
 0.00 0.00 0.00 219.83

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,450.00	0.00	0.00	1,450.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,807.21	7.14	219.83	1,806.28	-17.08	-14.24	2.00	2.00	0.00	219.83	
4,072.23	7.14	219.83	4,053.72	-233.42	-194.66	0.00	0.00	0.00	0.00	
4,429.43	0.00	0.00	4,410.00	-250.50	-208.90	2.00	-2.00	0.00	180.00	PP-PBF #32
6,019.43	0.00	0.00	6,000.00	-250.50	-208.90	0.00	0.00	0.00	0.00	PBHL-PBF #32

Scientific Drilling

Planning Report



Database: EDM 2003 16 Single User Db
 Company: COG Operating
 Project: Eddy County, NM (NAN27 NME)
 Site: Polaris B Federal #32
 Well: Polaris B Federal #32
 Wellbore: OH
 Design: Plan #1 - 7-7/8" Hole

Local Co-ordinate Reference: Well Polaris B Federal #32
 TVD Reference: Ground Elev @ 3692 00ft (Rig ?)
 MD Reference: Ground Elev @ 3692 00ft (Rig ?)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,350.00	0.00	0.00	1,350.00	0.00	0.00	0.00	0.00	0.00	0.00
8 5/8" Casing									
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,450.00	0.00	0.00	1,450.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP Start Build 2.00°/100'									
1,500.00	1.00	219.83	1,500.00	-0.34	-0.28	0.44	2.00	2.00	0.00
1,600.00	3.00	219.83	1,599.93	-3.02	-2.51	3.93	2.00	2.00	0.00
1,700.00	5.00	219.83	1,699.68	-8.37	-6.98	10.90	2.00	2.00	0.00
1,800.00	7.00	219.83	1,799.13	-16.40	-13.68	21.35	2.00	2.00	0.00
1,807.21	7.14	219.83	1,806.28	-17.08	-14.24	22.24	2.00	2.00	0.00
EOC hold 7.14°									
1,900.00	7.14	219.83	1,898.35	-25.94	-21.64	33.78	0.00	0.00	0.00
2,000.00	7.14	219.83	1,997.58	-35.50	-29.60	46.22	0.00	0.00	0.00
2,100.00	7.14	219.83	2,096.80	-45.05	-37.57	58.65	0.00	0.00	0.00
2,200.00	7.14	219.83	2,196.03	-54.60	-45.53	71.09	0.00	0.00	0.00
2,300.00	7.14	219.83	2,295.25	-64.15	-53.50	83.53	0.00	0.00	0.00
2,400.00	7.14	219.83	2,394.47	-73.70	-61.46	95.96	0.00	0.00	0.00
2,500.00	7.14	219.83	2,493.70	-83.25	-69.43	108.40	0.00	0.00	0.00
2,600.00	7.14	219.83	2,592.92	-92.80	-77.39	120.84	0.00	0.00	0.00
2,700.00	7.14	219.83	2,692.14	-102.35	-85.36	133.27	0.00	0.00	0.00
2,800.00	7.14	219.83	2,791.37	-111.91	-93.32	145.71	0.00	0.00	0.00
2,900.00	7.14	219.83	2,890.59	-121.46	-101.29	158.15	0.00	0.00	0.00
3,000.00	7.14	219.83	2,989.81	-131.01	-109.25	170.58	0.00	0.00	0.00
3,100.00	7.14	219.83	3,089.04	-140.56	-117.22	183.02	0.00	0.00	0.00
3,200.00	7.14	219.83	3,188.26	-150.11	-125.18	195.46	0.00	0.00	0.00
3,300.00	7.14	219.83	3,287.49	-159.66	-133.15	207.89	0.00	0.00	0.00
3,400.00	7.14	219.83	3,386.71	-169.21	-141.11	220.33	0.00	0.00	0.00
3,500.00	7.14	219.83	3,485.93	-178.76	-149.08	232.77	0.00	0.00	0.00
3,600.00	7.14	219.83	3,585.16	-188.32	-157.04	245.20	0.00	0.00	0.00
3,700.00	7.14	219.83	3,684.38	-197.87	-165.01	257.64	0.00	0.00	0.00
3,800.00	7.14	219.83	3,783.60	-207.42	-172.97	270.08	0.00	0.00	0.00
3,900.00	7.14	219.83	3,882.83	-216.97	-180.94	282.51	0.00	0.00	0.00
4,000.00	7.14	219.83	3,982.05	-226.52	-188.90	294.95	0.00	0.00	0.00
4,072.23	7.14	219.83	4,053.72	-233.42	-194.66	303.93	0.00	0.00	0.00
Start Drop 2.00°/100'									
4,100.00	6.59	219.83	4,081.29	-235.97	-196.78	307.25	2.00	-2.00	0.00
4,200.00	4.59	219.83	4,180.81	-243.45	-203.02	316.99	2.00	-2.00	0.00
4,300.00	2.59	219.83	4,280.61	-248.25	-207.03	323.25	2.00	-2.00	0.00
4,400.00	0.59	219.83	4,380.57	-250.38	-208.80	326.02	2.00	-2.00	0.00

Scientific Drilling

Planning Report



Database: EDM 2003 16 Single User Db
 Company: COG Operating
 Project: Eddy County, NM (NAN27 NME)
 Site: Polaris B Federal #32
 Well: Polaris B Federal #32
 Wellbore: OH
 Design: Plan #1 - 7-7/8" Hole

Local Co-ordinate Reference:
 TVD Reference:
 MD Reference:
 North Reference:
 Survey Calculation Method:

Well Polaris B Federal #32
 Ground Elev @ 3692 00ft (Rig ?)
 Ground Elev @ 3692 00ft (Rig ?)
 Grid
 Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,429.43	0.00	0.00	4,410.00	-250.50	-208.90	326.17	2.00	-2.00	0.00
EOC hold 0.0°									
4,500.00	0.00	0.00	4,480.57	-250.50	-208.90	326.17	0.00	0.00	0.00
4,600.00	0.00	0.00	4,580.57	-250.50	-208.90	326.17	0.00	0.00	0.00
4,700.00	0.00	0.00	4,680.57	-250.50	-208.90	326.17	0.00	0.00	0.00
4,800.00	0.00	0.00	4,780.57	-250.50	-208.90	326.17	0.00	0.00	0.00
4,900.00	0.00	0.00	4,880.57	-250.50	-208.90	326.17	0.00	0.00	0.00
5,000.00	0.00	0.00	4,980.57	-250.50	-208.90	326.17	0.00	0.00	0.00
5,100.00	0.00	0.00	5,080.57	-250.50	-208.90	326.17	0.00	0.00	0.00
5,200.00	0.00	0.00	5,180.57	-250.50	-208.90	326.17	0.00	0.00	0.00
5,300.00	0.00	0.00	5,280.57	-250.50	-208.90	326.17	0.00	0.00	0.00
5,400.00	0.00	0.00	5,380.57	-250.50	-208.90	326.17	0.00	0.00	0.00
5,500.00	0.00	0.00	5,480.57	-250.50	-208.90	326.17	0.00	0.00	0.00
5,600.00	0.00	0.00	5,580.57	-250.50	-208.90	326.17	0.00	0.00	0.00
5,700.00	0.00	0.00	5,680.57	-250.50	-208.90	326.17	0.00	0.00	0.00
5,800.00	0.00	0.00	5,780.57	-250.50	-208.90	326.17	0.00	0.00	0.00
5,900.00	0.00	0.00	5,880.57	-250.50	-208.90	326.17	0.00	0.00	0.00
6,000.00	0.00	0.00	5,980.57	-250.50	-208.90	326.17	0.00	0.00	0.00
6,019.43	0.00	0.00	6,000.00	-250.50	-208.90	326.17	0.00	0.00	0.00

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL-PBF #32	0.00	0.00	6,000.00	-250.50	-208.90	670,480.000	611,259.500	32° 50' 33.758 N	103° 58' 15.867 W
- plan hits target									
- Point									
HardL-PBF #32	0.00	0.00	0.00	-300.50	-208.90	670,430.000	611,259.500	32° 50' 33.263 N	103° 58' 15.870 W
- plan misses by 365.98ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Rectangle (sides W0.00 H300.00 D0.00)									
PP-PBF #32	0.00	0.00	4,410.00	-250.50	-208.90	670,480.000	611,259.500	32° 50' 33.758 N	103° 58' 15.867 W
- plan hits target									
- Circle (radius 0.00)									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
1,350.00	1,350.00	8 5/8" Casing	8-5/8	10-5/8

Plan Annotations

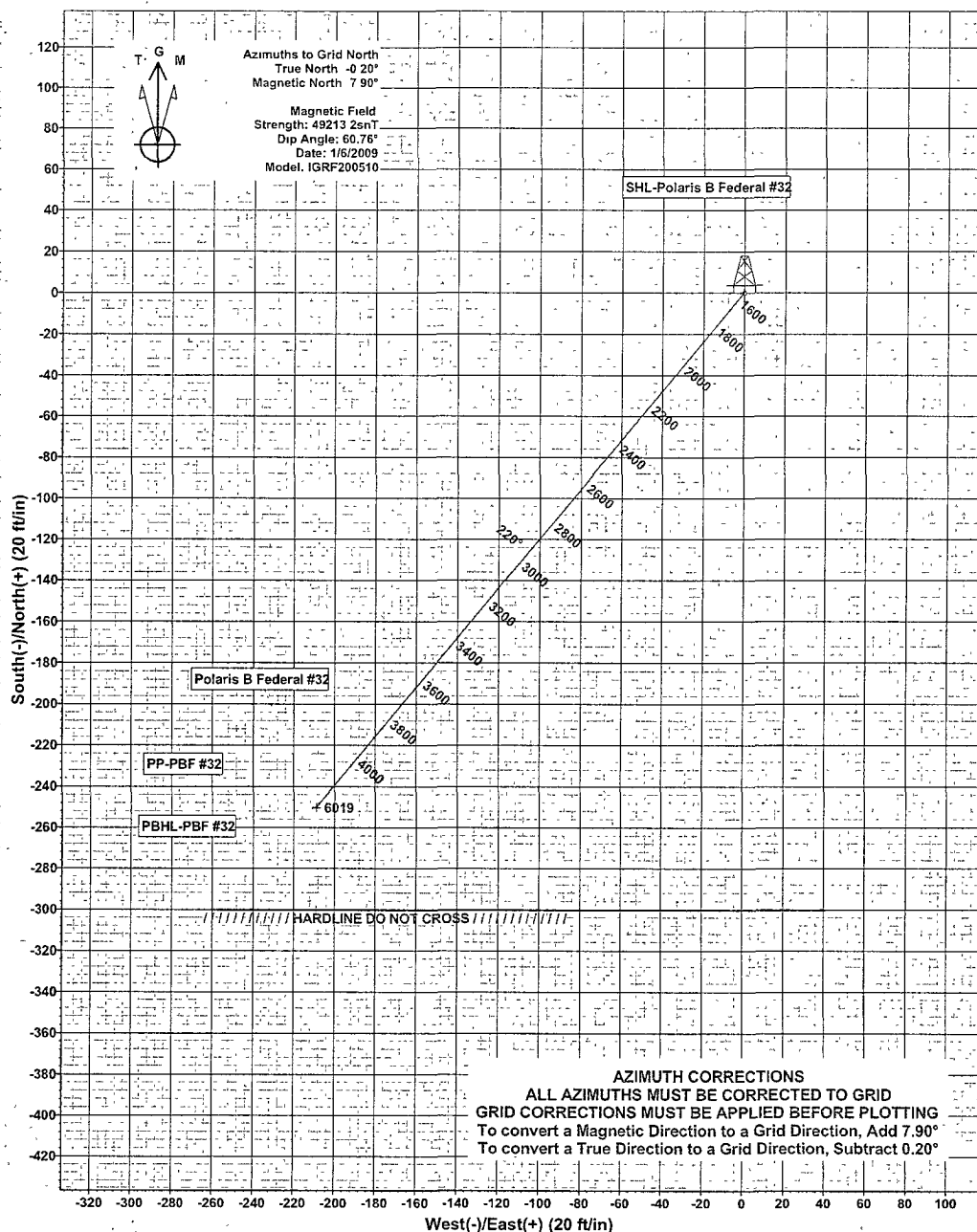
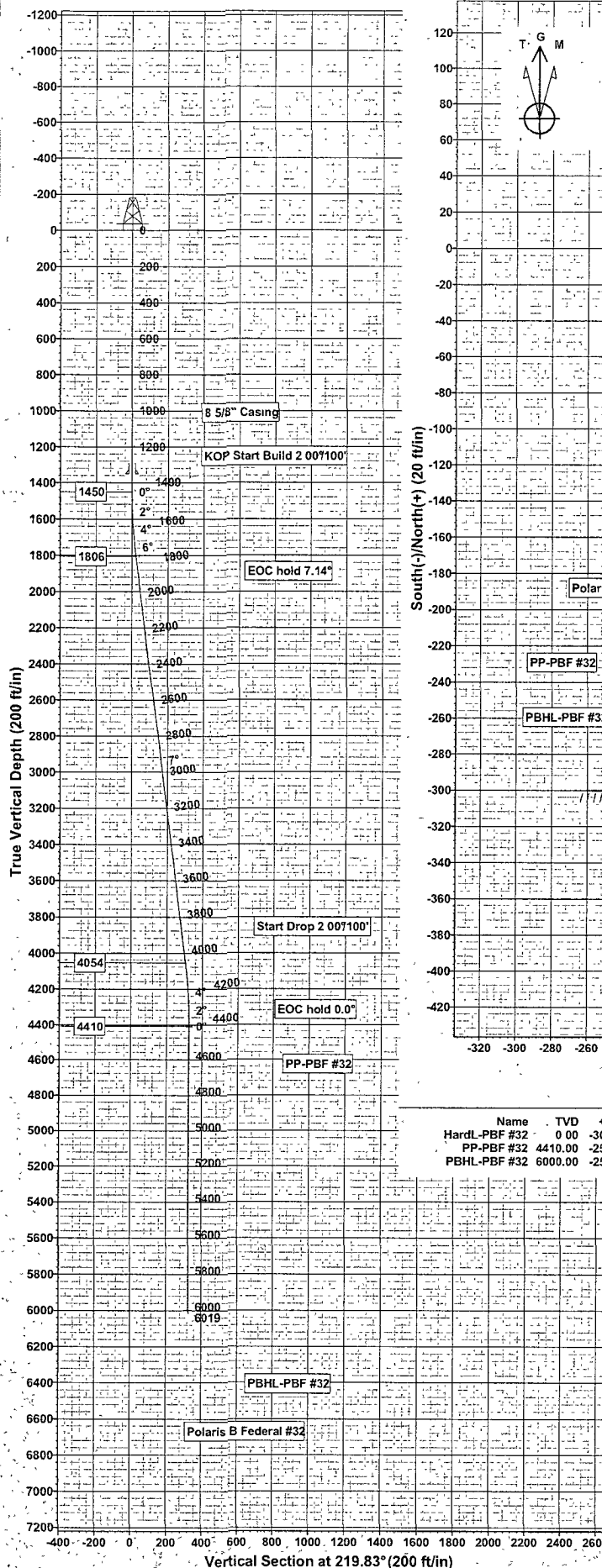
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
1,450.00	1,450.00	0.00	0.00	KOP Start Build 2.00°/100'
1,807.21	1,806.28	-17.08	-14.24	EOC hold 7.14°
4,072.23	4,053.72	-233.42	-194.66	Start Drop 2.00°/100'
4,429.43	4,410.00	-250.50	-208.90	EOC hold 0.0°

COG Operating

Scientific Drilling for COG Operating
Site: Eddy County, NM (NAN27 NME)
Well: Polaris B Federal #32
Wellbore: OH
Design: Plan #1 - 7-7/8" Hole



Scientific Drilling
Directional Drilling Operations



WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
HardL-PBF #32	0.00	-300.50	-208.90	670430.000	611259.500	32°50' 33.263 N	103°58' 15.870 W	Rectangle (Sides: L:0.00 W:300.00)
PP-PBF #32	4410.00	-250.50	-208.90	670480.000	611259.500	32°50' 33.758 N	103°58' 15.867 W	Circle (Radius: 0.00)
PBHL-PBF #32	6000.00	-250.50	-208.90	670480.000	611259.500	32°50' 33.758 N	103°58' 15.867 W	Point

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	1450.00	0.00	0.00	1450.00	0.00	0.00	0.00	0.00	0.00	
3	1807.21	7.14	219.83	1806.28	-17.08	-14.24	2.00	219.83	22.24	
4	4072.23	7.14	219.83	4053.72	-233.42	-194.66	0.00	0.00	303.93	
5	4429.43	0.00	0.00	4410.00	-250.50	-208.90	2.00	180.00	326.17	PP-PBF #32
6	6019.43	0.00	0.00	6000.00	-250.50	-208.90	0.00	0.00	326.17	PBHL-PBF #32

WELL DETAILS: Polaris B Federal #32

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	670730.500	611468.400	32°50' 36.229 N	103°58' 13.409 W	

PROJECT DETAILS: Eddy County, NM (NAN27 NME) Plan: Plan #1 - 7-7/8" Hole (Polaris B Federal #32/OH)

Geodetic System: US State Plane 1927 (Exact solution) Created By: Julio Pina Date: 06-Jan-09
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866 Checked: Date:
Zone: New Mexico East 3001 Reviewed: Date:
System Datum: Mean Sea Level Approved: Date: