

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Artesia

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010**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		5. Lease Serial No. NMLC029415B
2. Name of Operator COG OPERATING LLC Contact: KELLY J HOLLY E-Mail: kholly@concho.com		6. If Indian, Allottee or Tribe Name
3a. Address ONE CONCHO CENTER 600 W ILLINOIS AVE MIDLAND, TX 79701	3b. Phone No. (include area code) Ph: 432-685-4384	7. If Unit or CA/Agreement, Name and/or No.
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 12 T17S R31E Mer NMP NENE 210FNL 445FEL		8. Well Name and No. PUCKETT 12 FEDERAL 28H
		9. API Well No. 30-015-41445
		10. Field and Pool, or Exploratory FREN; GLORIETA YESO, EAST
		11. County or Parish, and State EDDY COUNTY, NM

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

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

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.)

COG Operating LLC respectfully requests permission to change the TVD:

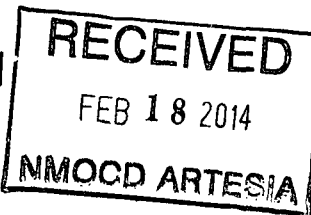
FROM: 5401' TVD & 9994' MD
TO: ~~5500'~~ TVD & 10,019' MD

5126.5 ft directional well plan

Attached is the revised Directional Plan.

Accepted for record
NMOCD-Jes

2-18-2014



Original COAs still stand

14. I hereby certify that the foregoing is true and correct. Electronic Submission #230658 verified by the BLM Well Information System For COG OPERATING LLC, sent to the Carlsbad Committed to AFMSS for processing by JOHNNY DICKERSON on 01/28/2014 ()	
Name (Printed/Typed) KELLY J HOLLY	Title PERMITTING TECH
Signature (Electronic Submission)	Date 12/30/2013
THIS SPACE FOR FEDERAL OR STATE OFFICE USE FEB 4 2014	
Approved By _____	Title _____
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.	Office _____
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.	

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****



COG Operating LLC

Eddy County

Puckett 12 Federal #28H

SHL: 210'FNL, 445'FEL, Sec12, T17S, R31E, Unit A

BHL: 330'FSL, 330'FEL, Sec12, T17S, R31E, Unit P

Plan: Design #1

Standard Planning Report

18 December, 2013



Wellplanning Planning Report

Database:	EDM:5000.1 Single User Db	Local Co-ordinate Reference:	Well SHL: 210 FNL: 445 FEL: Sec12: T17S R31E Unit A
Company:	COG Operating LLC	TVD Reference:	WELL @ 4024.5usft (Original Well Elev)
Project:	Eddy County	MD Reference:	WELL @ 4024.5usft (Original Well Elev)
Site:	Puckett 12 Federal #28H	North Reference:	Grid
Well:	SHL: 210 FNL: 445 FEL: Sec12: T17S R31E Unit A	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 330 FSL: 330 FEL: Sec12: T17S R31E Unit P		
Design:	Design #1		

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: Puckett 12 Federal #28H					
Site Position:		Northing:	675,427.40 usft	Latitude:	32° 51' 20.743 N
From:	Map	Easting:	659,029.50 usft	Longitude:	103° 48' 55.662 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.28

Well:	SHL: 210 FNL: 445 FEL: Sec12: T17S R31E Unit A					
Well Position	+N/-S	0.0 usft	Northing:	675,427.40 usft	Latitude:	32° 51' 20.743 N
	+E/-W	0.0 usft	Easting:	659,029.50 usft	Longitude:	103° 48' 55.662 W
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	4,011.0 usft

Wellbore:	BHL: 330 FSL: 330 FEL: Sec12: T17S R31E Unit P
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (mT)
	IGRF2010	12/18/2013	7.44	60.67	48,714

Design:	Design #1
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Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	178.28

Plan Sections:										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	178.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,979.1	0.00	178.00	4,979.1	0.0	0.0	0.00	0.00	0.00	178.00	
5,806.5	91.00	178.28	5,500.0	-529.8	15.9	11.00	11.00	0.00	178.28	
10,018.5	91.00	178.28	5,426.5	-4,739.3	142.3	0.00	0.00	0.00	0.00	PBHL(Puck12#28H)



Wellplanning Planning Report

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Project:	Eddy County	MD/Reference:	WELL @ 4024.5usft (Original Well Elev)
Site:	Puckett 12 Federal #28H	North Reference:	Grid
Well:	SHL: 210° FNL 445° FEL Sec12 T17S R31E Unit A	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 330° FSL 330° FEL Sec12 T17S R31E Unit P		
Design:	Design# 14		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (%/100usft)	Build Rate (%/100usft)	Turn Rate (%/100usft)
0.0	0.00	178.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	178.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	178.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	178.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	178.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	178.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	178.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	178.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	178.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	178.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	178.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	178.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	178.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	178.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	178.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	178.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	178.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	178.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	178.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	178.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	178.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	178.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	178.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	178.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	178.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	178.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	178.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	178.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	178.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	178.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	178.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	178.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	178.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	178.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	178.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	178.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	178.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	178.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	178.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	178.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	178.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	178.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	178.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	178.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	178.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	178.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	178.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	178.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	178.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	178.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,979.1	0.00	178.00	4,979.1	0.0	0.0	0.0	0.00	0.00	0.00



Wellplanning Planning Report

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Company:	COG Operating LLC	TVD Reference:	WELL @ 4024.5usft (Original Well Elev)
Project:	Eddy County	MD Reference:	WELL @ 4024.5usft (Original Well Elev)
Site:	Puckett 12 Federal #28H	North Reference:	Grid
Well:	SHL 210 FNL 445 FEL Sec12 T17S R31E Unit A	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL 330 FSL 330 FEL Sec12 T17S R31E Unit P		
Design:	Design #		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
KOP: 4979.1 MD: 0.00° INC: 178.00° AZI										
5,000.0	2.30	178.28	5,000.0	-0.4	0.0	0.4	11.00	11.00	0.00	
5,050.0	7.80	178.28	5,049.8	-4.8	0.1	4.8	11.00	11.00	0.00	
5,100.0	13.30	178.28	5,098.9	-14.0	0.4	14.0	11.00	11.00	0.00	
5,150.0	18.80	178.28	5,147.0	-27.8	0.8	27.8	11.00	11.00	0.00	
5,200.0	24.29	178.28	5,193.4	-46.1	1.4	46.1	11.00	11.00	0.00	
5,250.0	29.79	178.28	5,238.0	-68.8	2.1	68.9	11.00	11.00	0.00	
5,300.0	35.29	178.28	5,280.1	-95.7	2.9	95.7	11.00	11.00	0.00	
5,338.4	39.51	178.28	5,310.6	-119.0	3.6	119.1	11.00	11.00	0.00	
Cross Into 330 HL: 5338.4 MD: 39.51° INC: 178.28° AZI										
5,350.0	40.79	178.28	5,319.5	-126.5	3.8	126.5	11.00	11.00	0.00	
5,400.0	46.29	178.28	5,355.7	-160.9	4.8	161.0	11.00	11.00	0.00	
5,450.0	51.79	178.28	5,388.4	-198.6	6.0	198.7	11.00	11.00	0.00	
5,500.0	57.29	178.28	5,417.4	-239.3	7.2	239.4	11.00	11.00	0.00	
5,550.0	62.79	178.28	5,442.4	-282.6	8.5	282.7	11.00	11.00	0.00	
5,600.0	68.28	178.28	5,463.1	-328.1	9.9	328.2	11.00	11.00	0.00	
5,650.0	73.78	178.28	5,479.4	-375.3	11.3	375.5	11.00	11.00	0.00	
5,700.0	79.28	178.28	5,491.0	-423.9	12.7	424.1	11.00	11.00	0.00	
5,750.0	84.78	178.28	5,497.9	-473.4	14.2	473.6	11.00	11.00	0.00	
5,800.0	90.28	178.28	5,500.1	-523.3	15.7	523.5	11.00	11.00	0.00	
5,806.5	91.00	178.28	5,500.0	-529.8	15.9	530.1	11.00	11.00	0.00	
EOC: 5806.5 MD: 91.00° INC: 178.28° AZI										
5,900.0	91.00	178.28	5,498.4	-623.2	18.7	623.5	0.00	0.00	0.00	
6,000.0	91.00	178.28	5,496.6	-723.2	21.7	723.5	0.00	0.00	0.00	
6,100.0	91.00	178.28	5,494.9	-823.1	24.7	823.5	0.00	0.00	0.00	
6,200.0	91.00	178.28	5,493.1	-923.1	27.7	923.5	0.00	0.00	0.00	
6,300.0	91.00	178.28	5,491.4	-1,023.0	30.7	1,023.5	0.00	0.00	0.00	
6,400.0	91.00	178.28	5,489.6	-1,122.9	33.7	1,123.4	0.00	0.00	0.00	
6,500.0	91.00	178.28	5,487.9	-1,222.9	36.7	1,223.4	0.00	0.00	0.00	
6,600.0	91.00	178.28	5,486.2	-1,322.8	39.7	1,323.4	0.00	0.00	0.00	
6,700.0	91.00	178.28	5,484.4	-1,422.7	42.7	1,423.4	0.00	0.00	0.00	
6,800.0	91.00	178.28	5,482.7	-1,522.7	45.7	1,523.4	0.00	0.00	0.00	
6,900.0	91.00	178.28	5,480.9	-1,622.6	48.7	1,623.4	0.00	0.00	0.00	
7,000.0	91.00	178.28	5,479.2	-1,722.6	51.7	1,723.3	0.00	0.00	0.00	
7,100.0	91.00	178.28	5,477.4	-1,822.5	54.7	1,823.3	0.00	0.00	0.00	
7,200.0	91.00	178.28	5,475.7	-1,922.4	57.7	1,923.3	0.00	0.00	0.00	
7,300.0	91.00	178.28	5,473.9	-2,022.4	60.7	2,023.3	0.00	0.00	0.00	
7,400.0	91.00	178.28	5,472.2	-2,122.3	63.7	2,123.3	0.00	0.00	0.00	
7,500.0	91.00	178.28	5,470.4	-2,222.3	66.7	2,223.3	0.00	0.00	0.00	
7,600.0	91.00	178.28	5,468.7	-2,322.2	69.7	2,323.3	0.00	0.00	0.00	
7,700.0	91.00	178.28	5,467.0	-2,422.1	72.7	2,423.2	0.00	0.00	0.00	
7,800.0	91.00	178.28	5,465.2	-2,522.1	75.7	2,523.2	0.00	0.00	0.00	
7,900.0	91.00	178.28	5,463.5	-2,622.0	78.7	2,623.2	0.00	0.00	0.00	
8,000.0	91.00	178.28	5,461.7	-2,722.0	81.7	2,723.2	0.00	0.00	0.00	
8,100.0	91.00	178.28	5,460.0	-2,821.9	84.7	2,823.2	0.00	0.00	0.00	
8,200.0	91.00	178.28	5,458.2	-2,921.8	87.7	2,923.2	0.00	0.00	0.00	
8,300.0	91.00	178.28	5,456.5	-3,021.8	90.7	3,023.1	0.00	0.00	0.00	
8,400.0	91.00	178.28	5,454.7	-3,121.7	93.7	3,123.1	0.00	0.00	0.00	
8,500.0	91.00	178.28	5,453.0	-3,221.7	96.7	3,223.1	0.00	0.00	0.00	
8,600.0	91.00	178.28	5,451.2	-3,321.6	99.7	3,323.1	0.00	0.00	0.00	
8,700.0	91.00	178.28	5,449.5	-3,421.5	102.7	3,423.1	0.00	0.00	0.00	



Wellplanning Planning Report

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Wellbore:	BHL 330 FSL 330 FEL Sec12 T17S R31E Unit P		
Design:	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
8,800.0	91.00	178.28	5,447.8	-3,521.5	105.7	3,523.1	0.00	0.00	0.00	
8,900.0	91.00	178.28	5,446.0	-3,621.4	108.7	3,623.1	0.00	0.00	0.00	
9,000.0	91.00	178.28	5,444.3	-3,721.4	111.7	3,723.0	0.00	0.00	0.00	
9,100.0	91.00	178.28	5,442.5	-3,821.3	114.7	3,823.0	0.00	0.00	0.00	
9,200.0	91.00	178.28	5,440.8	-3,921.2	117.7	3,923.0	0.00	0.00	0.00	
9,300.0	91.00	178.28	5,439.0	-4,021.2	120.8	4,023.0	0.00	0.00	0.00	
9,400.0	91.00	178.28	5,437.3	-4,121.1	123.8	4,123.0	0.00	0.00	0.00	
9,500.0	91.00	178.28	5,435.5	-4,221.1	126.8	4,223.0	0.00	0.00	0.00	
9,600.0	91.00	178.28	5,433.8	-4,321.0	129.8	4,322.9	0.00	0.00	0.00	
9,700.0	91.00	178.28	5,432.0	-4,420.9	132.8	4,422.9	0.00	0.00	0.00	
9,800.0	91.00	178.28	5,430.3	-4,520.9	135.8	4,522.9	0.00	0.00	0.00	
9,900.0	91.00	178.28	5,428.6	-4,620.8	138.8	4,622.9	0.00	0.00	0.00	
10,000.0	91.00	178.28	5,426.8	-4,720.8	141.8	4,722.9	0.00	0.00	0.00	
10,018.5	91.00	178.28	5,426.5	-4,739.3	142.3	4,741.4	0.00	0.00	0.00	
TD at 10018.5 - PBHL(Puck12#28H)										

Design Targets										
Target Name	hit/miss target	Dip Angle (°)	Dip Dir (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL(Puck12#28H)		0.00	0.00	5,426.5	-4,739.3	142.2	670,688.10	659,171.70	32° 50' 33.841 N	103° 48' 54.268 W
- plan misses target center by 0.1usft at 10018.5usft MD (5426.5 TVD, -4739.3 N, 142.3 E)										
- Point										

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
4,979.1	4,979.1	0.0	0.0	KOP - 4979.1 'MD, 0.00° INC, 178.00° AZI	
5,338.4	5,310.6	-119.0	3.6	Cross Into 330' HL- 5338.4 'MD, 39.51° INC, 178.28° AZI	
5,806.5	5,500.0	-529.8	15.9	EOC- 5806.5 'MD, 91.00° INC, 178.28° AZI	
10,018.5	5,426.5	-4,739.3	142.3	TD at 10018.5	



Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	
1	0.0	0.00	178.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	4979.1	0.00	178.00	4979.1	0.0	0.0	0.00	178.00	0.0	
3	5806.5	91.00	178.28	5500.0	-529.8	15.9	11.00	178.28	530.1	
4	10018.5	91.00	178.28	5426.5	-4739.3	142.3	0.00	0.00	4741.4	PBHL(Puck12#28H)

COG Operating LLC
Project: Eddy County
Site: Puckett 12 Federal #28H
Well: SHL: 210'FNL, 445'FEL, Sec12, T17S, R31E, Unit A
Wellbore: BHL: 330'FSL, 330'FEL, Sec12, T17S, R31E, Unit P

Ground Elevation:: 4011.0
RKB Elevation: WELL @ 4024.5usft (Original Well Elev)
Rig Name: Original Well Elev

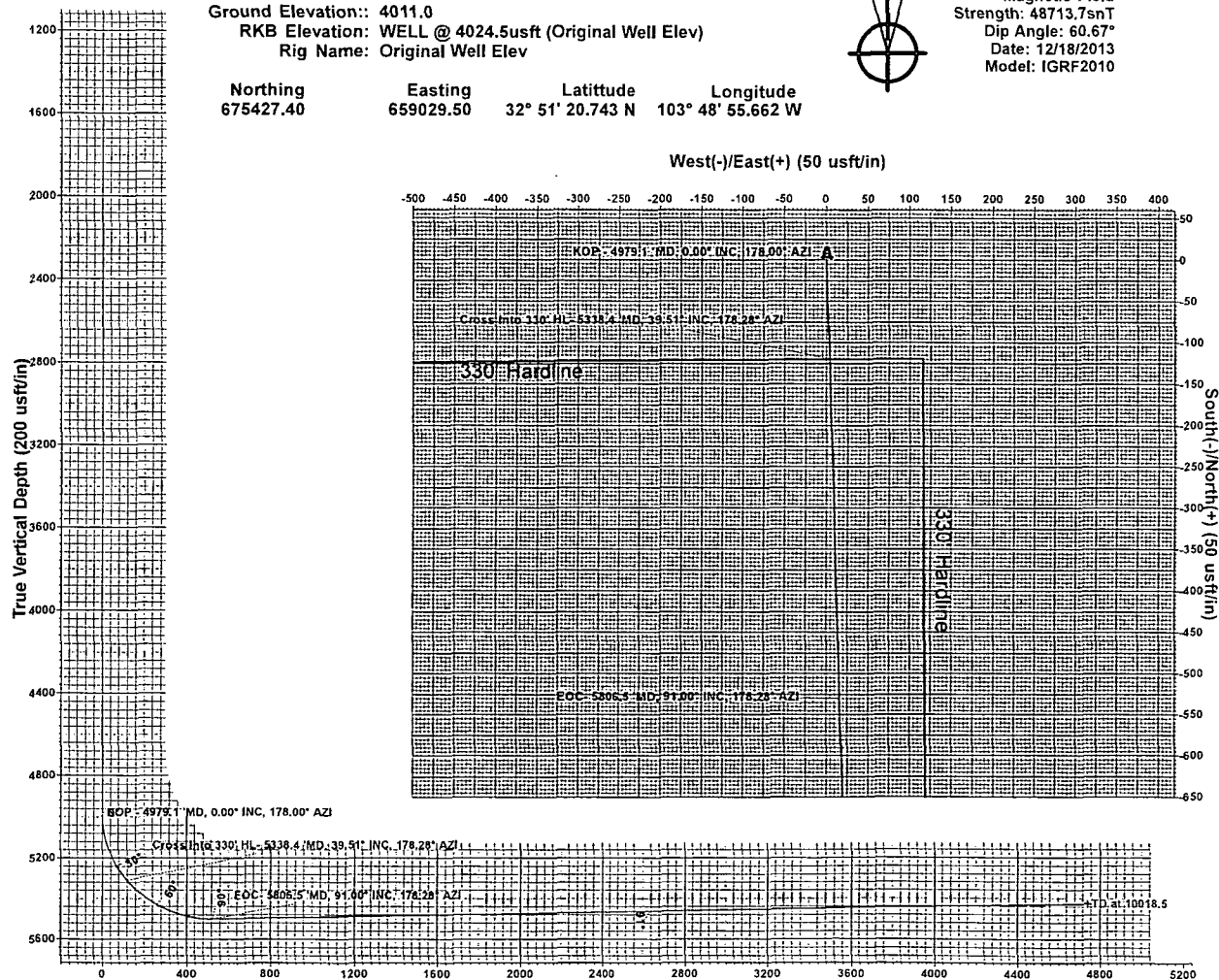
Northing 675427.40 Easting 659029.50 Latitude 32° 51' 20.743 N Longitude 103° 48' 55.662 W



Azimuths to Grid North
True North: -0.28°
Magnetic North: 7.16°

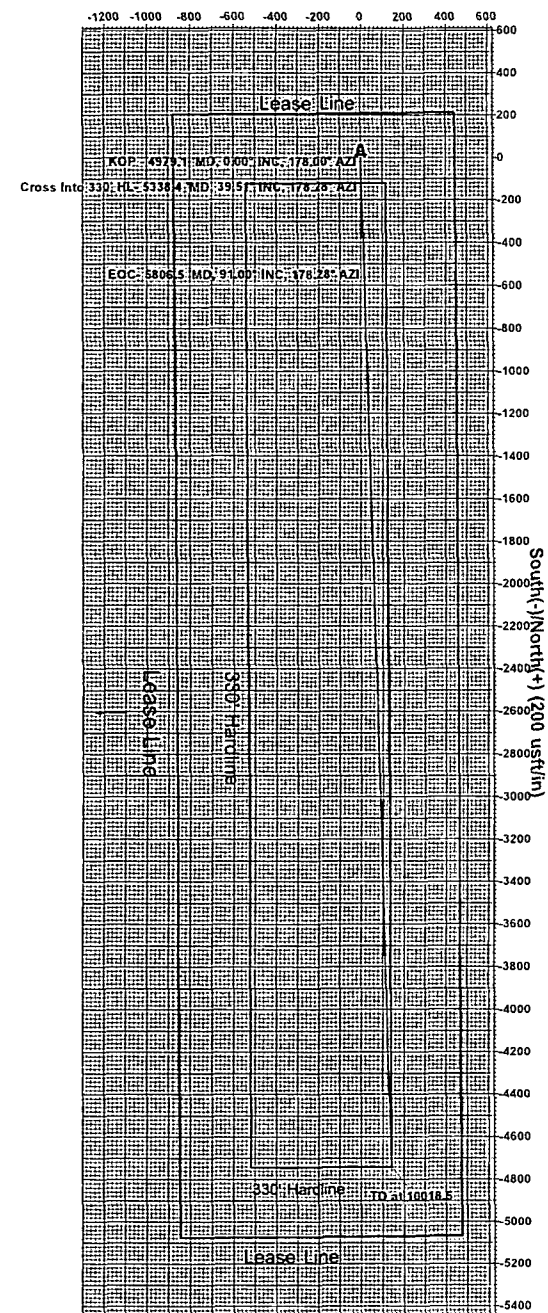
Magnetic Field
Strength: 48713.7snT
Dip Angle: 60.67°
Date: 12/18/2013
Model: IGRF2010

West(-)/East(+) (50 usft/in)



Vertical Section at 178.28° (200 usft/in)

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



Terra Directional Services LLC
322 Spring Hill Drive, Suite A300, Spring, Tx 77386
Phone: 432-425-7532

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