

Submit 1 Copy To Appropriate District Office

District I - (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II - (575) 748-1283
811 S. First St., Artesia, NM 88210
District III - (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV - (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-103
Revised August 1, 2011

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)		WELL API NO. 30-015-39950
1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐		5. Indicate Type of Lease STATE ☒ FEE ☐
2. Name of Operator COG Operating LLC		6. State Oil & Gas Lease No. B03105 0009
3. Address of Operator One Concho Center - 600 W Illinois Ave Midland, TX 79701		7. Lease Name or Unit Agreement Name Burkett 16 State
4. Well Location Unit Letter B : 990 feet from the NORTH line and 1650 feet from the EAST line Section 16 Township 17S Range 31E NMPM County EDDY		8. Well Number 16
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3849'		9. OGRID Number 229137
		10. Pool name or Wildcat Fren; Glorieta-Yeso 26770

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐
TEMPORARILY ABANDON ☐ CHANGE PLANS ☐
PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐
DOWNHOLE COMMINGLE ☐

OTHER: **Add BHL** ☒

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐
COMMENCE DRILLING OPNS. ☐ P AND A ☐
CASING/CEMENT JOB ☐

OTHER: ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

COG respectfully requests to change the name of this well to BURKETT 16 STATE #16H.

COG Operating submitted APD for this well at this location:
SHL: 990 FNL 1650 FEL, Unit B

COG Operating respectfully requests permission to add BHL to this well and change from a vertical well to a horizontal well:
SHL: 990 FNL 1650 FEL, Unit B
BHL: 990 FNL 330 FWL, Unit D

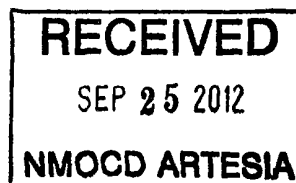
A revised C-102 and Directional Plan is attached for your review.

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE [Signature] TITLE Permitting Tech DATE 09/24/2012
Type or print name Kelly J. Holly E-mail address: kholly@concho.com PHONE: 432-685-4384
For State Use Only
APPROVED BY: [Signature] TITLE Geologist DATE 9/25/2012
Conditions of Approval (if any):



DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
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811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
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1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

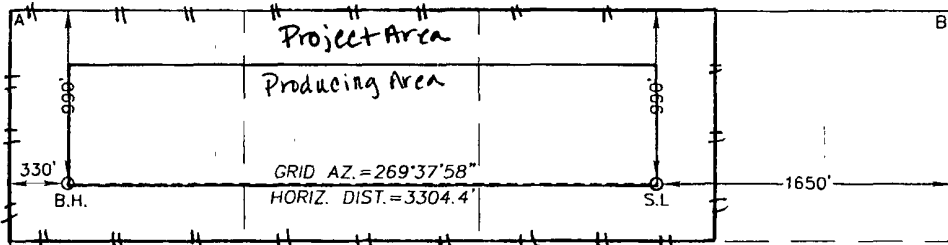
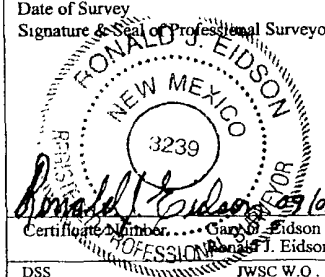
API Number 30-015-39950	Pool Code 26770	Pool Name Fren; Glorieta Yeso
Property Code 39075	Property Name BURKETT 16 STATE	Well Number 16H
OGRID No. 229137	Operator Name COG OPERATING, LLC	Elevation 3849'

Surface Location									
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	16	17-S	31-E		990	NORTH	1650	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
D	16	17-S	31-E		990	NORTH	330	WEST	EDDY

Dedicated Acres 120	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

 Project Area Producing Area GRID AZ. = 269°37'58" HORIZ. DIST. = 3304.4'		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>Kelly J. Holly</i> 9-10-12 Signature Date Kelly J. Holly Printed Name kholly@concho.com E-mail Address	
GEODETTIC COORDINATES NAD 27 NME SURFACE LOCATION Y=669245.9 N X=642018.1 E LAT. = 32.838988° N LONG. = 103.870945° W BOTTOM HOLE LOCATION Y=669224.8 N X=638716.2 E		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. JANUARY 16, 2012 Date of Survey Signature & Seal of Professional Surveyor:  Certificate Number: 3239 DSS JWSC W.O. 12 13.1509	



COG Operating LLC

Eddy County, NM

Burkett 16 State

#16H

OH

Plan: Plan #1

Surface: 990' FNL, 1650' FEL, Sec 16, T17S, R31E, Unit B
BHL: 990' FNL, 330' FWL, Sec 16, T17S, R31E, Unit D

Standard Survey Report

19 September, 2012





Survey Report



Company: COG Operating LLC
 Project: Eddy County, NM
 Site: Burkett 16 State
 Well: #16H
 Wellbore: OH
 Design: Plan #1

Local Co-ordinate Reference: Well #16H
 TVD Reference: Well @ 3863 0usft (UDI #40 - 14' KB)
 MD Reference: Well @ 3863 0usft (UDI #40 - 14' KB)
 North Reference: Gnd
 Survey Calculation Method: Minimum Curvature
 Database: Houston R5000 Database

Project	Eddy County, NM		
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	Burkett 16 State		
Site Position:		Northing:	669,419 27 usft
From:	Map	Easting:	641,980 82 usft
Position Uncertainty:	0 0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 50' 22.075 N
		Longitude:	103° 52' 15.830 W
		Grid Convergence:	0.25 °

Well	#16H		
Well Position	+N-S	0 0 usft	Northing: 669,245 90 usft
	+E-W	0 0 usft	Easting: 642,018 10 usft
Position Uncertainty	2 0 usft	Wellhead Elevation:	usft
		Latitude:	32° 50' 20.358 N
		Longitude:	103° 52' 15.402 W
		Ground Level:	3,849 0 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2010	9/19/2012	7 62
			Dip Angle (°) 60 67
			Field Strength (nT) 48,853

Design	Plan #1		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0 0
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)
	0.0	0.0	0 0
			Direction (°) 269 63

Survey Tool Program	Date 9/19/2012		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
0 0	9,197 0	Plan #1 (OH)	MWD
			Description MWD - Standard

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	0 00	0 0	0 0	0 0	0 0	0 00	0 00	0 00
100 0	0 00	0 00	100 0	0 0	0 0	0 0	0 00	0 00	0 00
200 0	0 00	0 00	200 0	0 0	0 0	0 0	0 00	0 00	0 00
300 0	0 00	0 00	300 0	0 0	0 0	0 0	0 00	0 00	0 00
400 0	0 00	0 00	400 0	0 0	0 0	0 0	0 00	0 00	0 00
500 0	0 00	0 00	500 0	0 0	0 0	0 0	0 00	0 00	0 00
600 0	0 00	0 00	600 0	0 0	0 0	0 0	0 00	0 00	0 00
700 0	0 00	0 00	700 0	0 0	0 0	0 0	0 00	0 00	0 00
800 0	0 00	0 00	800 0	0 0	0 0	0 0	0 00	0 00	0 00
900 0	0 00	0 00	900 0	0 0	0 0	0 0	0 00	0 00	0 00



Survey Report

Company: COG Operating LLC
Project: Eddy County, NM
Site: Burkett 16 State
Well: #16H
Wellbore: CH
Design: Plan #1

Local Co-ordinate Reference:

TVD Reference: Well #16H
MID Reference: Well @ 3863.0usft (UDI #40 - 14' KB)
North Reference: Well @ 3863.0usft (UDI #40 - 14' KB)
Survey Calculation Method: Grd
Database: Minimum Curvature
Houston R5000 Database

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)
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00



Survey Report



Company: COG Operating LLC
Project: Eddy County, NM
Site: Burkett 16 State
Well: #16H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #16H
TVD Reference: Well @ 3863.0usft (UDI #40 - 14' KB)
MD Reference: Well @ 3863.0usft (UDI #40 - 14' KB)
North Reference: Gnd
Survey Calculation Method: Minimum Curvature
Database: Houston R5000 Database

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)
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00
5,622.5	0.00	0.00	5,622.5	0.0	0.0	0.0	0.00	0.00	0.00
KOP - 5622.5' MD, 5622.5' TVD, 0.00° INC, 0.00° AZI, 0.0° VS									
5,625.0	0.30	269.63	5,625.0	0.0	0.0	0.0	12.00	12.00	0.00
5,650.0	3.30	269.63	5,650.0	0.0	-0.8	0.8	12.00	12.00	0.00
5,675.0	6.30	269.63	5,674.9	0.0	-2.9	2.9	12.00	12.00	0.00
5,700.0	9.30	269.63	5,699.7	0.0	-6.3	6.3	12.00	12.00	0.00
5,725.0	12.30	269.63	5,724.2	-0.1	-11.0	11.0	12.00	12.00	0.00
5,750.0	15.30	269.63	5,748.5	-0.1	-16.9	16.9	12.00	12.00	0.00
5,775.0	18.30	269.63	5,772.4	-0.2	-24.1	24.1	12.00	12.00	0.00
5,800.0	21.30	269.63	5,795.9	-0.2	-32.6	32.6	12.00	12.00	0.00
5,825.0	24.30	269.63	5,819.0	-0.3	-42.3	42.3	12.00	12.00	0.00
5,850.0	27.30	269.63	5,841.5	-0.3	-53.2	53.2	12.00	12.00	0.00
5,875.0	30.30	269.63	5,863.4	-0.4	-65.2	65.2	12.00	12.00	0.00
5,900.0	33.30	269.63	5,884.6	-0.5	-78.4	78.4	12.00	12.00	0.00
5,925.0	36.30	269.63	5,905.2	-0.6	-92.7	92.7	12.00	12.00	0.00
5,950.0	39.30	269.63	5,924.9	-0.7	-108.0	108.0	12.00	12.00	0.00
5,975.0	42.30	269.63	5,943.8	-0.8	-124.3	124.3	12.00	12.00	0.00
6,000.0	45.30	269.63	5,961.9	-0.9	-141.6	141.6	12.00	12.00	0.00
6,025.0	48.30	269.63	5,979.0	-1.0	-159.8	159.8	12.00	12.00	0.00
6,050.0	51.30	269.63	5,995.1	-1.2	-178.9	178.9	12.00	12.00	0.00
6,075.0	54.30	269.63	6,010.3	-1.3	-198.8	198.8	12.00	12.00	0.00
6,100.0	57.30	269.63	6,024.3	-1.4	-219.5	219.5	12.00	12.00	0.00
6,125.0	60.30	269.63	6,037.3	-1.6	-240.9	240.9	12.00	12.00	0.00
6,150.0	63.30	269.63	6,049.1	-1.7	-262.9	262.9	12.00	12.00	0.00
6,175.0	66.30	269.63	6,059.7	-1.8	-285.5	285.5	12.00	12.00	0.00
6,200.0	69.29	269.63	6,069.2	-2.0	-308.7	308.7	12.00	12.00	0.00
6,225.0	72.29	269.63	6,077.4	-2.1	-332.3	332.3	12.00	12.00	0.00
6,250.0	75.29	269.63	6,084.4	-2.3	-356.3	356.3	12.00	12.00	0.00
6,275.0	78.29	269.63	6,090.1	-2.5	-380.6	380.6	12.00	12.00	0.00
6,300.0	81.29	269.63	6,094.5	-2.6	-405.2	405.2	12.00	12.00	0.00
6,325.0	84.29	269.63	6,097.6	-2.8	-430.0	430.0	12.00	12.00	0.00
6,350.0	87.29	269.63	6,099.5	-2.9	-454.9	455.0	12.00	12.00	0.00
6,372.6	90.00	269.63	6,100.0	-3.1	-477.5	477.5	11.98	11.98	0.00
EOC - 6372.6' MD, 6100.0' TVD, 90.00° INC, 269.63° AZI, 477.5° VS									
6,400.0	90.00	269.63	6,100.0	-3.3	-504.9	504.9	0.00	0.00	0.00
6,500.0	90.00	269.63	6,100.0	-3.9	-604.9	604.9	0.00	0.00	0.00
6,600.0	90.00	269.63	6,100.0	-4.6	-704.9	704.9	0.00	0.00	0.00
6,700.0	90.00	269.63	6,100.0	-5.2	-804.9	804.9	0.00	0.00	0.00
6,800.0	90.00	269.63	6,100.0	-5.8	-904.9	904.9	0.00	0.00	0.00
6,900.0	90.00	269.63	6,100.0	-6.5	-1,004.9	1,004.9	0.00	0.00	0.00



Survey Report



Company: COG Operating LLC
Project: Eddy County, NM
Site: Burkett 16 State
Well: #16H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #16H
TVD Reference: Well @ 3863.0usft (UDI #40 - 14' KB)
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North Reference: Gnd
Survey Calculation Method: Minimum Curvature
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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)
7,000.0	90.00	269.63	6,100.0	-7.1	-1,104.9	1,104.9	0.00	0.00	0.00
7,100.0	90.00	269.63	6,100.0	-7.8	-1,204.9	1,204.9	0.00	0.00	0.00
7,200.0	90.00	269.63	6,100.0	-8.4	-1,304.9	1,304.9	0.00	0.00	0.00
7,300.0	90.00	269.63	6,100.0	-9.1	-1,404.9	1,404.9	0.00	0.00	0.00
7,400.0	90.00	269.63	6,100.0	-9.7	-1,504.9	1,504.9	0.00	0.00	0.00
7,500.0	90.00	269.63	6,100.0	-10.4	-1,604.9	1,604.9	0.00	0.00	0.00
7,600.0	90.00	269.63	6,100.0	-11.0	-1,704.9	1,704.9	0.00	0.00	0.00
7,700.0	90.00	269.63	6,100.0	-11.7	-1,804.9	1,804.9	0.00	0.00	0.00
7,800.0	90.00	269.63	6,100.0	-12.3	-1,904.9	1,904.9	0.00	0.00	0.00
7,900.0	90.00	269.63	6,100.0	-12.9	-2,004.9	2,004.9	0.00	0.00	0.00
8,000.0	90.00	269.63	6,100.0	-13.6	-2,104.9	2,104.9	0.00	0.00	0.00
8,100.0	90.00	269.63	6,100.0	-14.2	-2,204.9	2,204.9	0.00	0.00	0.00
8,200.0	90.00	269.63	6,100.0	-14.9	-2,304.9	2,304.9	0.00	0.00	0.00
8,300.0	90.00	269.63	6,100.0	-15.5	-2,404.9	2,404.9	0.00	0.00	0.00
8,400.0	90.00	269.63	6,100.0	-16.2	-2,504.9	2,504.9	0.00	0.00	0.00
8,500.0	90.00	269.63	6,100.0	-16.8	-2,604.9	2,604.9	0.00	0.00	0.00
8,600.0	90.00	269.63	6,100.0	-17.5	-2,704.9	2,704.9	0.00	0.00	0.00
8,700.0	90.00	269.63	6,100.0	-18.1	-2,804.9	2,804.9	0.00	0.00	0.00
8,800.0	90.00	269.63	6,100.0	-18.8	-2,904.9	2,904.9	0.00	0.00	0.00
8,900.0	90.00	269.63	6,100.0	-19.4	-3,004.9	3,004.9	0.00	0.00	0.00
9,000.0	90.00	269.63	6,100.0	-20.1	-3,104.9	3,104.9	0.00	0.00	0.00
9,100.0	90.00	269.63	6,100.0	-20.7	-3,204.9	3,204.9	0.00	0.00	0.00
9,197.0	90.00	269.63	6,100.0	-21.3	-3,301.9	3,301.9	0.00	0.00	0.00

TD @ 9197.0' MD, 6100.0' TVD

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
- Shape									
PBHL (B#16H)	0.00	0.00	6,100.0	-21.1	-3,301.9	669,224.80	638,716.20	32° 50' 20.291 N	103° 52' 54.103 W
- plan misses target center by 0.2usft at 9197.0usft MD (6100.0 TVD, -21.3 N, -3301.9 E)									
- Point									

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
5623	5623	0	0	KOP - 5622.5' MD, 5622.5' TVD, 0.00° INC, 0.00° AZI, 0.0' VS
6373	6100	-3	-478	EOC - 6372.6' MD, 6100.0' TVD, 90.00° INC, 269.63° AZI, 477.5' VS
9197	6100	-21	-3302	TD @ 9197.0' MD, 6100.0' TVD

Checked By: _____ Approved By: _____ Date: _____

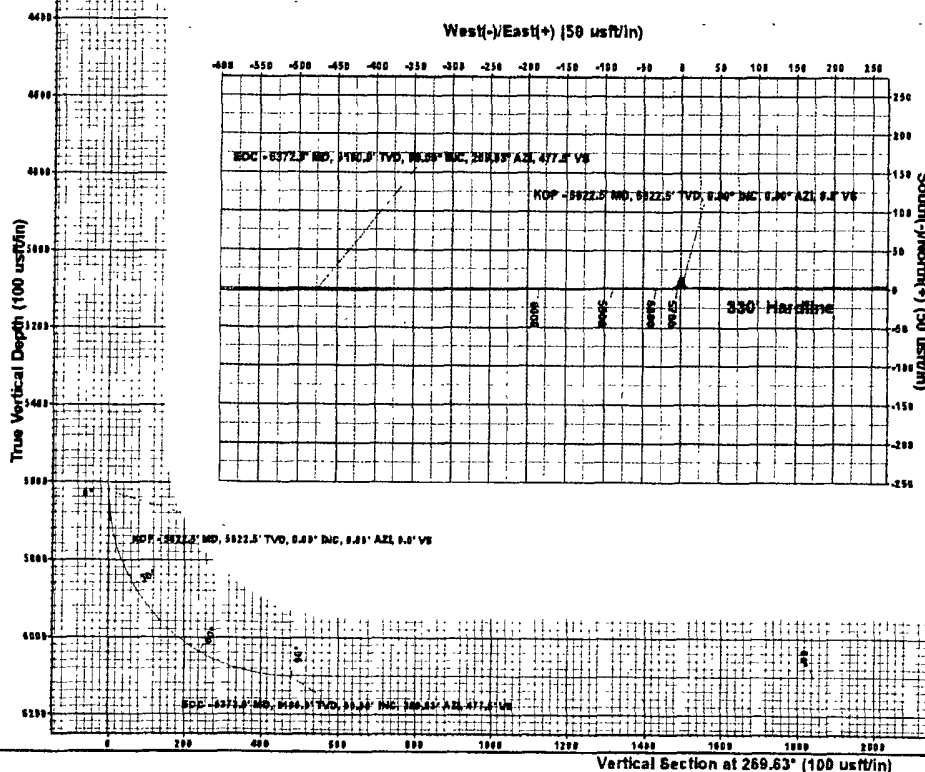
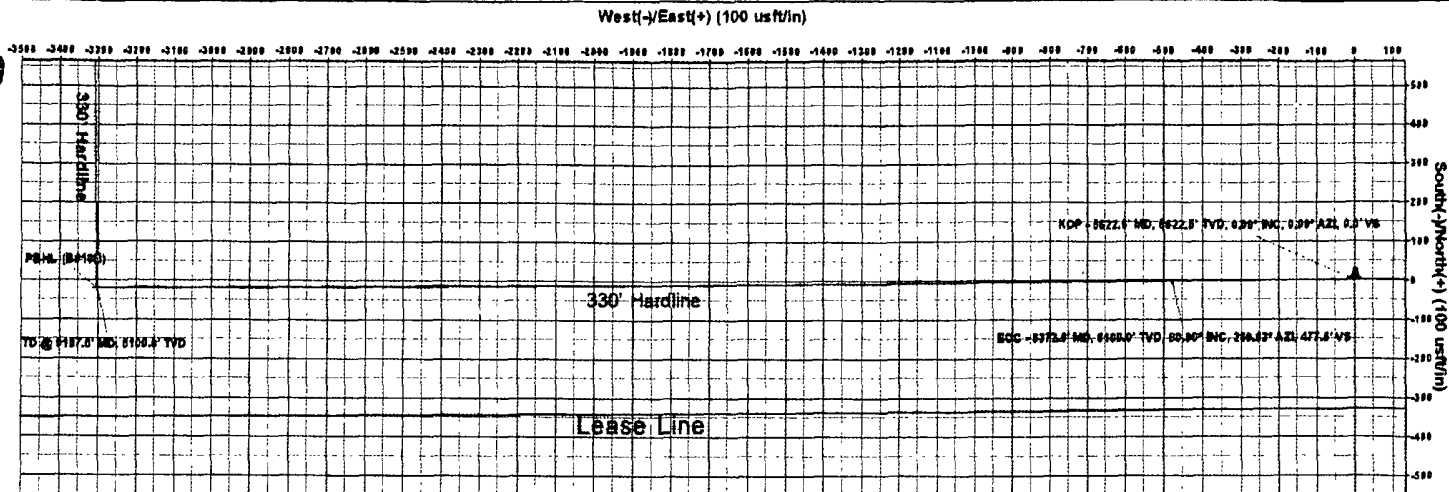


COG Operating LLC
Project: Eddy County, NM
Site: Burkett 16 State
Well: #16H
Wellbore: OH
Plan: Plan #1 (#16H/OH)



Azimuths to Grid North
True North: -0.25°
Magnetic North: 7.37°

Magnetic Field
Strength: 48852.8nT
Dip Angle: 60.67°
Date: 9/18/2012
Model: IGRF2010



Section Details									
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VFace
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0
2	5622.5	0.00	0.00	5622.5	0.0	0.0	0.00	0.00	0.0
3	6372.6	90.00	289.63	6100.0	-3.1	-477.5	12.00	269.63	477.5
4	9197.0	90.00	269.63	6100.0	-21.3	-3301.9	0.00	0.00	3302.0

WELL DETAILS: #16H

Ground Elevation: 3849.0
RKB Elevation: Well @ 3863.0usft (UDI #40 - 14' KB)
Rig Name: UDI #40 - 14' KB

Surface Hole Location
Northing: 669245.90
Easting: 642018.10
Latitude: 32° 50' 20.358 N
Longitude: 103° 52' 15.402 W

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
PBHL (B#16H)	6100.0	-21.1	-3301.9	669224.80	638716.20

PROJECT DETAILS: Eddy County, NM
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 5001
System Datum: Mean Sea Level
Local North: Grid



Crescent Directional Drilling
7715 West Industrial Ave. Midland, Tx 79706
Phone: 432-618-1136

Plan: Plan #1 (#16H/OH)
Created By: Matt Higgins Date: 10/10, September 19 2012