

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

Energy, Minerals and Natural Resources

HOBBS OGD
MAY 31 2013
RECEIVED

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

WELL API NO. 30-025-40888	
5. Indicate Type of Lease STATE ☐ FEE ☒	
6. State Oil & Gas Lease No.	
7. Lease Name or Unit Agreement Name Pan Head Fee	
8. Well Number 4H	
9. OGRID Number 229137	
10. Pool name or Wildcat Maljamar; Yeso, West 44500	

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.)

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

2. Name of Operator
COG Operating LLC

3. Address of Operator
One Concho Center - 600 W Illinois Ave Midland, TX 79701

4. Well Location

Unit Letter **C** : **330** feet from the **NORTH** line and **2320** feet from the **WEST** line

Section **11** Township **17S** Range **32E** NMPM County **LEA**

11. Elevation (Show whether DR, RKB, RT, GR, etc.)
4163'

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 ☐

SUBSEQUENT REPORT OF:

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

OTHER: **Change BHL**

☒

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 Operating LLC submitted APD for this well at this location:

SHL: 330' FNL & 2320' FWL, Unit C, Section 11

BHL: 2300' FNL & 2307' FWL, Unit F, Section 14

COG Operating LLC respectfully requests permission to change the BHL:

SHL: 330' FNL & 2320' FWL, Unit C, Section 11

BHL: 980' FNL & 2306' FWL, Unit C, Section 14

A revised C-102 and directional plan are 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

TITLE **Permitting Tech**

DATE **05/30/2013**

Type or print name **Kelly J. Holly** E-mail address: **kholly@concho.com**

PHONE: **432-685-4384**

For State Use Only

APPROVED BY:

TITLE **Dist. Mgr**

DATE **6-4-2013**

Conditions of Approval (if any):

JUN 04 2013

DISTRICT I ---
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
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Phone: (575) 748-1283 Fax: (575) 748-9720
DISTRICT III
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 30-025-40888	Pool Code 44500	Pool Name Maljamar; Yeso West
Property Code 39256	Property Name PAN HEAD FEE	Well Number 4H
OGRID No. 229137	Operator Name COG OPERATING, LLC	Elevation 4163

Surface Location

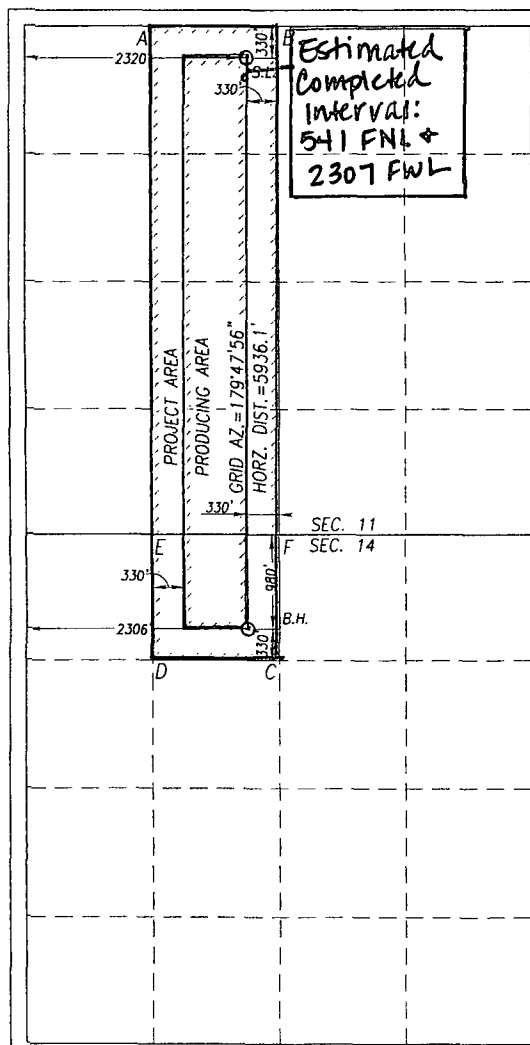
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	11	17-S	32-E		330	NORTH	2320	WEST	LEA

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
C	14	17-S	32-E		980	NORTH	2306	WEST	LEA

Dedicated Acres 200	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=675386.6 N
X=682929.8 E

LAT.=32.855303° N
LONG.=103.737636° W

BOTTOM HOLE LOCATION
Y=669452.1 N
X=682950.5 E

CORNER COORDINATES TABLE

A - Y=675712.2 N, X=681927.0 E
B - Y=675717.9 N, X=683245.7 E
C - Y=669123.4 N, X=683282.9 E
D - Y=669118.6 N, X=681964.8 E
E - Y=670432.4 N, X=681956.0 E
F - Y=670431.5 N, X=683273.3 E

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.

[Signature]
Signature

5-30-13
Date

Kelly J. Holly

Printed Name

kholly@concho.com

E-mail Address

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.

OCTOBER 11, 2012

Date of Survey

Signature & Seal of Professional Surveyor:

[Signature]
RONALD J. EIDSON
NEW MEXICO
3239
Certificate Number Gary J. Eidson 12641
Ronald J. Eidson 3239
BKL REG. NO. 1310153 JWSC W.O.: 13.13.0519

Plan Proposal

FOR

COG Operating, LLC
Pan Head Fee #4H
Lea Co., NM

Design #2

Presented By:

Aaron Boger
Account Manager

Bret Wolford
Well Planner

SHL

330' FNL & 2320' FWL

Penetration Point

541' FNL & 2307' FWL

Sec.14-T17S-R32E

PBHL

980' FNL & 2306' FWL

Sec.14-T17S-R32E

Vertical



COG Operating, LLC

Lea County(NM27E)

Sec.11-T17S-R32E

Pan Head Fee #4H

Wellbore #1

Plan: Design #2

Standard Planning Report

24 May, 2013

Archer

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Pan Head Fee #4H
Company:	COG Operating, LLC	TVD Reference:	WELL @ 4180.00usft (Original Well Elev)
Project:	Lea County(NM27E)	MD Reference:	WELL @ 4180.00usft (Original Well Elev)
Site:	Sec.11-T17S-R32E	North Reference:	Grid
Well:	Pan Head Fee #4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Project	Lea County(NM27E)		
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	Sec.11-T17S-R32E		
Site Position:		Northing:	675,378.000 usft
From:	Map	Easting:	680,940.300 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"
		Latitude:	32° 51' 19.118 N
		Longitude:	103° 44' 38.811 W
		Grid Convergence:	0.32 °

Well	Pan Head Fee #4H		
Well Position	+N/-S	8.60 usft	Northing:
	+E/-W	1,989.50 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 51' 19.093 N
		Longitude:	103° 44' 15.489 W
		Ground Level:	4,163.00 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	11/28/12	7.53
			Dip Angle
			(°)
			Field Strength
			(nT)
			48,827

Design	Design #2		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	6,705.65	0.00	0.00
			Direction
			(°)
			179.80

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,279.21	0.00	0.00	6,279.21	0.00	0.00	0.00	0.00	0.00	0.00	
7,106.48	91.00	183.00	6,800.00	-529.23	-27.74	11.00	11.00	0.00	183.00	
7,224.87	91.00	179.45	6,797.93	-647.56	-30.26	3.00	0.00	-3.00	-89.97	Pan Head Fee #4H PI
12,512.76	91.00	179.45	6,705.65	-5,934.40	20.70	0.00	0.00	0.00	0.00	Pan Head Fee #4H PI



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Pan Head Fee #4H
Company:	COG Operating, LLC	TVD Reference:	WELL @ 4180.00usft (Original Well Elev)
Project:	Lea County(NM27E)	MD Reference:	WELL @ 4180.00usft (Original Well Elev)
Site:	Sec.11-T17S-R32E	North Reference:	Grid
Well:	Pan Head Fee #4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

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)
0.00	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
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Pan Head Fee #4H
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Wellbore:	Wellbore #1		
Design:	Design #2		

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)	
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
KOP / Start Build 11.00°										
6,279.21	0.00	0.00	6,279.21	0.00	0.00	0.00	0.00	0.00	0.00	
6,300.00	2.29	183.00	6,299.99	-0.41	-0.02	0.41	11.00	11.00	0.00	
6,350.00	7.79	183.00	6,349.78	-4.80	-0.25	4.80	11.00	11.00	0.00	
6,400.00	13.29	183.00	6,398.92	-13.92	-0.73	13.92	11.00	11.00	0.00	
6,450.00	18.79	183.00	6,446.96	-27.71	-1.45	27.71	11.00	11.00	0.00	
6,500.00	24.29	183.00	6,493.45	-46.04	-2.41	46.03	11.00	11.00	0.00	
6,550.00	29.79	183.00	6,537.97	-68.72	-3.60	68.71	11.00	11.00	0.00	
6,600.00	35.29	183.00	6,580.10	-95.57	-5.01	95.55	11.00	11.00	0.00	
6,650.00	40.79	183.00	6,619.47	-126.32	-6.62	126.30	11.00	11.00	0.00	
6,700.00	46.29	183.00	6,655.70	-160.70	-8.42	160.67	11.00	11.00	0.00	
6,750.00	51.79	183.00	6,688.47	-198.40	-10.40	198.36	11.00	11.00	0.00	
PP @ 6767' MD										
6,767.00	53.66	183.00	6,698.76	-211.90	-11.11	211.86	11.00	11.00	0.00	
6,800.00	57.29	183.00	6,717.46	-239.05	-12.53	239.00	11.00	11.00	0.00	
6,850.00	62.79	183.00	6,742.43	-282.29	-14.79	282.24	11.00	11.00	0.00	
6,900.00	68.29	183.00	6,763.12	-327.72	-17.18	327.66	11.00	11.00	0.00	
6,950.00	73.79	183.00	6,779.36	-374.92	-19.65	374.85	11.00	11.00	0.00	
7,000.00	79.29	183.00	6,791.00	-423.47	-22.19	423.39	11.00	11.00	0.00	
7,050.00	84.79	183.00	6,797.92	-472.90	-24.78	472.81	11.00	11.00	0.00	
7,100.00	90.29	183.00	6,800.07	-522.76	-27.40	522.66	11.00	11.00	0.00	
EOC / Start DLS 3.00° TFO -89.97										
7,106.48	91.00	183.00	6,800.00	-529.23	-27.74	529.13	11.00	11.00	0.00	
7,200.00	91.00	180.19	6,798.37	-622.69	-30.34	622.58	3.00	0.00	-3.00	
EOT / Start 5287.89° hold at 7224.87 MD										
7,224.87	91.00	179.45	6,797.93	-647.56	-30.26	647.45	3.00	0.00	-3.00	
7,300.00	91.00	179.45	6,796.62	-722.67	-29.54	722.57	0.00	0.00	0.00	
7,400.00	91.00	179.45	6,794.88	-822.65	-28.58	822.55	0.00	0.00	0.00	
7,500.00	91.00	179.45	6,793.13	-922.63	-27.61	922.53	0.00	0.00	0.00	
7,600.00	91.00	179.45	6,791.39	-1,022.61	-26.65	1,022.52	0.00	0.00	0.00	
7,700.00	91.00	179.45	6,789.64	-1,122.60	-25.68	1,122.50	0.00	0.00	0.00	
7,800.00	91.00	179.45	6,787.90	-1,222.58	-24.72	1,222.48	0.00	0.00	0.00	
7,900.00	91.00	179.45	6,786.15	-1,322.56	-23.76	1,322.46	0.00	0.00	0.00	
8,000.00	91.00	179.45	6,784.41	-1,422.54	-22.79	1,422.45	0.00	0.00	0.00	
8,100.00	91.00	179.45	6,782.66	-1,522.52	-21.83	1,522.43	0.00	0.00	0.00	
8,200.00	91.00	179.45	6,780.91	-1,622.50	-20.87	1,622.41	0.00	0.00	0.00	
8,300.00	91.00	179.45	6,779.17	-1,722.48	-19.90	1,722.40	0.00	0.00	0.00	
8,400.00	91.00	179.45	6,777.42	-1,822.46	-18.94	1,822.38	0.00	0.00	0.00	
8,500.00	91.00	179.45	6,775.68	-1,922.44	-17.97	1,922.36	0.00	0.00	0.00	
8,600.00	91.00	179.45	6,773.93	-2,022.42	-17.01	2,022.34	0.00	0.00	0.00	
8,700.00	91.00	179.45	6,772.19	-2,122.40	-16.05	2,122.33	0.00	0.00	0.00	
8,800.00	91.00	179.45	6,770.44	-2,222.38	-15.08	2,222.31	0.00	0.00	0.00	
8,900.00	91.00	179.45	6,768.70	-2,322.36	-14.12	2,322.29	0.00	0.00	0.00	
9,000.00	91.00	179.45	6,766.95	-2,422.34	-13.16	2,422.28	0.00	0.00	0.00	

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Pan Head Fee #4H
Company:	COG Operating, LLC	TVD Reference:	WELL @ 4180.00usft (Original Well Elev)
Project:	Lea County(NM27E)	MD Reference:	WELL @ 4180.00usft (Original Well Elev)
Site:	Sec.11-T17S-R32E	North Reference:	Grid
Well:	Pan Head Fee #4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

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)
9,100.00	91.00	179.45	6,765.21	-2,522.32	-12.19	2,522.26	0.00	0.00	0.00
9,200.00	91.00	179.45	6,763.46	-2,622.30	-11.23	2,622.24	0.00	0.00	0.00
9,300.00	91.00	179.45	6,761.72	-2,722.28	-10.26	2,722.22	0.00	0.00	0.00
9,400.00	91.00	179.45	6,759.97	-2,822.26	-9.30	2,822.21	0.00	0.00	0.00
9,500.00	91.00	179.45	6,758.23	-2,922.24	-8.34	2,922.19	0.00	0.00	0.00
9,600.00	91.00	179.45	6,756.48	-3,022.22	-7.37	3,022.17	0.00	0.00	0.00
9,700.00	91.00	179.45	6,754.74	-3,122.20	-6.41	3,122.16	0.00	0.00	0.00
9,800.00	91.00	179.45	6,752.99	-3,222.18	-5.45	3,222.14	0.00	0.00	0.00
9,900.00	91.00	179.45	6,751.25	-3,322.16	-4.48	3,322.12	0.00	0.00	0.00
10,000.00	91.00	179.45	6,749.50	-3,422.14	-3.52	3,422.10	0.00	0.00	0.00
10,100.00	91.00	179.45	6,747.76	-3,522.12	-2.55	3,522.09	0.00	0.00	0.00
10,200.00	91.00	179.45	6,746.01	-3,622.10	-1.59	3,622.07	0.00	0.00	0.00
10,300.00	91.00	179.45	6,744.26	-3,722.08	-0.63	3,722.05	0.00	0.00	0.00
10,400.00	91.00	179.45	6,742.52	-3,822.06	0.34	3,822.04	0.00	0.00	0.00
10,500.00	91.00	179.45	6,740.77	-3,922.04	1.30	3,922.02	0.00	0.00	0.00
10,600.00	91.00	179.45	6,739.03	-4,022.02	2.27	4,022.00	0.00	0.00	0.00
10,700.00	91.00	179.45	6,737.28	-4,122.00	3.23	4,121.99	0.00	0.00	0.00
10,800.00	91.00	179.45	6,735.54	-4,221.98	4.19	4,221.97	0.00	0.00	0.00
10,900.00	91.00	179.45	6,733.79	-4,321.96	5.16	4,321.95	0.00	0.00	0.00
11,000.00	91.00	179.45	6,732.05	-4,421.94	6.12	4,421.93	0.00	0.00	0.00
11,100.00	91.00	179.45	6,730.30	-4,521.92	7.08	4,521.92	0.00	0.00	0.00
11,200.00	91.00	179.45	6,728.56	-4,621.90	8.05	4,621.90	0.00	0.00	0.00
11,300.00	91.00	179.45	6,726.81	-4,721.88	9.01	4,721.88	0.00	0.00	0.00
11,400.00	91.00	179.45	6,725.07	-4,821.86	9.98	4,821.87	0.00	0.00	0.00
11,500.00	91.00	179.45	6,723.32	-4,921.84	10.94	4,921.85	0.00	0.00	0.00
11,600.00	91.00	179.45	6,721.58	-5,021.82	11.90	5,021.83	0.00	0.00	0.00
11,700.00	91.00	179.45	6,719.83	-5,121.80	12.87	5,121.81	0.00	0.00	0.00
11,800.00	91.00	179.45	6,718.09	-5,221.78	13.83	5,221.80	0.00	0.00	0.00
11,900.00	91.00	179.45	6,716.34	-5,321.76	14.79	5,321.78	0.00	0.00	0.00
12,000.00	91.00	179.45	6,714.60	-5,421.74	15.76	5,421.76	0.00	0.00	0.00
12,100.00	91.00	179.45	6,712.85	-5,521.72	16.72	5,521.75	0.00	0.00	0.00
12,200.00	91.00	179.45	6,711.11	-5,621.70	17.69	5,621.73	0.00	0.00	0.00
12,300.00	91.00	179.45	6,709.36	-5,721.68	18.65	5,721.71	0.00	0.00	0.00
12,400.00	91.00	179.45	6,707.61	-5,821.66	19.61	5,821.69	0.00	0.00	0.00
12,500.00	91.00	179.45	6,705.87	-5,921.64	20.58	5,921.68	0.00	0.00	0.00
TD at 12512.76 - Pan Head Fee #4H PBHL									
12,512.76	91.00	179.45	6,705.65	-5,934.40	20.70	5,934.43	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Pan Head Fee #4H PBH	0.00	0.00	6,705.65	-5,934.40	20.70	669,452.200	682,950.500	32° 50' 20.371 N	103° 44' 15.638 W
- hit/miss target									
- Shape									
- Point									



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Pan Head Fee #4H
Company:	COG Operating, LLC	TVD Reference:	WELL @ 4180.00usft (Original Well Elev)
Project:	Lea County(NM27E)	MD Reference:	WELL @ 4180.00usft (Original Well Elev)
Site:	Sec.11-T17S-R32E	North Reference:	Grid
Well:	Pan Head Fee #4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,279.21	6,279.21	0.00	0.00	KOP / Start Build 11.00°
6,767.00	6,698.76	-211.90	-11.11	PP @ 6767' MD
7,106.48	6,800.00	-529.23	-27.74	EOC / Start DLS 3.00° TFO -89.97
7,224.87	6,797.93	-647.56	-30.26	EOT / Start 5287.89' hold at 7224.87 MD
12,512.76	6,705.65	-5,934.40	20.70	TD at 12512.76



Project: Lea County(NM27E)
Site: Sec.11-T17S-R32E
Well: Pan Head Fee #4H
Wellbore: Wellbore #1
Design: Design #2
Lat: 32° 51' 19.093 N
Long: 103° 44' 15.489 W
GL: 4163.00
KB: WELL @ 4180.00usft (Original Well Elev)

Archer

SECTION DETAILS

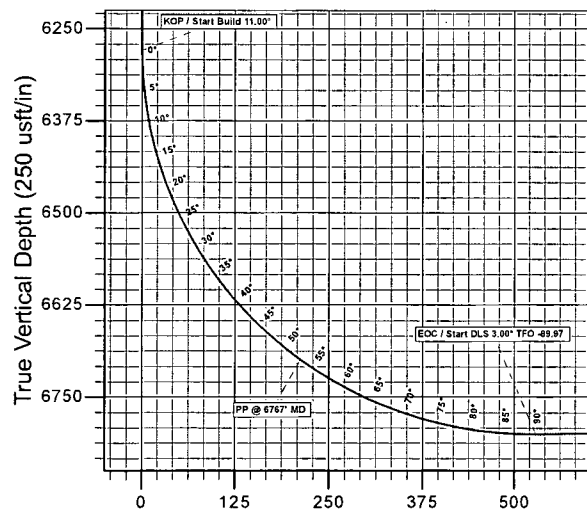
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6279.21	0.00	0.00	6279.21	0.00	0.00	0.00	0.00	0.00	KOP / Start Build 11.00°
7106.48	91.00	183.00	6800.00	-529.23	-27.74	11.00	183.00	529.13	EOC / Start DLS 3.00° TFO -89.97
7224.87	91.00	179.45	6797.93	-647.56	-30.26	3.00	-89.97	647.45	EOT / Start 5287.89' hold at 7224.87 MD
12512.76	91.00	179.45	6705.65	-5934.40	20.70	0.00	0.00	5934.44	TD at 12512.76

WELL DETAILS: Pan Head Fee #4H

+N/-S	+E/-W	Northing	Ground Level:	4163.00	Longitude	Slot
0.00	0.00	675386.600	Easting	682929.800	32° 51' 19.093 N 103° 44' 15.489 W	

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape Point
Pan Head Fee #4H PBHL	6705.65	-5934.40	20.70	32° 50' 20.371 N	103° 44' 15.638 W	



PROJECT DETAILS: Lea County(NM27E)

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

SITE DETAILS: Sec.11-T17S-R32E

Site Centre Latitude: 32° 51' 19.118 N
Longitude: 103° 44' 38.811 W
Positional Uncertainty: 0.00
Convergence: 0.32
Local North: Grid

