

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

Form C-103
Revised August 1, 2011

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

WELL API NO. 30-025-40899 ✓
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 2H ✓
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 A WELL IN A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐ **OCT 24 2014**

2. Name of Operator
COG Operating LLC

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

4. Well Location
Unit Letter **D** : **330** feet from the **NORTH** line and **990** 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 ☐

OTHER: **Change TVD** ☒

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 Operating LLC respectfully requests permission to change TVD & MD:

FROM: 6682' TVD & 13849' MD
TO: 5825' TVD & 11542' MD

A revised 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  TITLE **Permitting Tech** DATE **10/22/14**

Type or print name **Kelly J. Holly** E-mail address: **kholly@concho.com** PHONE: **432-685-4384**

For State Use Only

APPROVED BY:  TITLE **Petroleum Engineer** DATE **10/24/14**

Conditions of Approval (if any):

OCT 27 2014



COG OPERATING, LLC

Lea County, NM
Pan Head Fee 2H
2H

Lateral

Plan: Plan #6

Standard Planning Report

23 May, 2014

Section Distances
Sec11,T17S,R32E
SHL - Unit D
330'FNL, 990'FWL
PP
386'FNL, 989'FWL
Sec14,T17S,R32E
PBHL - Unit E
990'FNL, 990'FWL

Archer

Planning Report

Database:	EDM R5000.1 MULTI	Local Co-ordinate Reference:	Well 2H
Company:	COG OPERATING, LLC	TVD Reference:	4163'GL+17'KB @ 4180.00usft (Planning)
Project:	Lea County, NM	MD Reference:	4163'GL+17'KB @ 4180.00usft (Planning)
Site:	Pan Head Fee 2H	North Reference:	Grid
Well:	2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #6		

Project	Lea 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	Pan Head Fee 2H				
Site Position:		Northing:	675,380.80 usft	Latitude:	32° 51' 19.11 N
From:	Map	Easting:	681,600.10 usft	Longitude:	103° 44' 31.08 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.32 °

Well	2H					
Well Position	+N/-S	0.00 usft	Northing:	675,380.80 usft	Latitude:	32° 51' 19.11 N
	+E/-W	0.00 usft	Easting:	681,600.10 usft	Longitude:	103° 44' 31.08 W
Position Uncertainty	0.00 usft		Wellhead Elevation:	Ground Level: 4,163.00 usft		

Wellbore	Lateral				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/23/2014	7.35	60.67	48,677

Design	Plan #6				
Audit Notes:					
Version:	Phase:	PROTOTYPE		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N-S	+E-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.00	0.00	0.00	179.67	

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	
5,304.13	0.00	0.00	5,304.13	0.00	0.00	0.00	0.00	0.00	0.00	
6,122.31	90.00	181.00	5,825.00	-520.79	-9.09	11.00	11.00	0.00	181.00	
9,122.31	90.00	181.00	5,825.00	-3,520.33	-61.45	0.00	0.00	0.00	0.00	
9,233.90	90.00	177.65	5,825.00	-3,631.90	-60.14	3.00	0.00	-3.00	-90.00	
11,541.84	90.00	177.65	5,825.00	-5,937.90	34.40	0.00	0.00	0.00	0.00	Pan Head Fee 2H PB

Archer

Planning Report

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Company:	COG OPERATING, LLC	TVD Reference:	4163'GL+17'KB @ 4180.00usft (Planning)
Project:	Lea County, NM	MD Reference:	4163'GL+17'KB @ 4180.00usft (Planning)
Site:	Pan Head Fee 2H	North Reference:	Grid
Well:	2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #6		

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
5,304.13	0.00	0.00	5,304.13	0.00	0.00	0.00	0.00	0.00	0.00

Archer

Planning Report

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Company:	COG OPERATING, LLC	TVD Reference:	4163'GL+17'KB @ 4180.00usft (Planning)
Project:	Lea County, NM	MD Reference:	4163'GL+17'KB @ 4180.00usft (Planning)
Site:	Pan Head Fee 2H	North Reference:	Grid
Well:	2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #6		

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)
Start Build 11.00									
5,350.00	5.05	181.00	5,349.94	-2.02	-0.04	2.02	11.00	11.00	0.00
5,400.00	10.55	181.00	5,399.46	-8.80	-0.15	8.80	11.00	11.00	0.00
5,450.00	16.05	181.00	5,448.10	-20.29	-0.35	20.29	11.00	11.00	0.00
5,500.00	21.55	181.00	5,495.42	-36.39	-0.64	36.39	11.00	11.00	0.00
5,550.00	27.05	181.00	5,540.97	-56.95	-0.99	56.94	11.00	11.00	0.00
5,600.00	32.55	181.00	5,584.34	-81.78	-1.43	81.77	11.00	11.00	0.00
5,650.00	38.05	181.00	5,625.14	-110.66	-1.93	110.65	11.00	11.00	0.00
5,700.00	43.55	181.00	5,662.98	-143.31	-2.50	143.29	11.00	11.00	0.00
5,750.00	49.05	181.00	5,697.51	-179.44	-3.13	179.41	11.00	11.00	0.00
5,800.00	54.55	181.00	5,728.42	-218.70	-3.82	218.68	11.00	11.00	0.00
5,850.00	60.05	181.00	5,755.42	-260.76	-4.55	260.72	11.00	11.00	0.00
5,900.00	65.55	181.00	5,778.27	-305.20	-5.33	305.17	11.00	11.00	0.00
5,950.00	71.05	181.00	5,796.76	-351.63	-6.14	351.59	11.00	11.00	0.00
6,000.00	76.55	181.00	5,810.71	-399.62	-6.98	399.57	11.00	11.00	0.00
6,050.00	82.05	181.00	5,819.99	-448.72	-7.83	448.67	11.00	11.00	0.00
6,100.00	87.55	181.00	5,824.52	-498.49	-8.70	498.43	11.00	11.00	0.00
6,122.31	90.00	181.00	5,825.00	-520.79	-9.09	520.73	11.00	11.00	0.00
Start 3000.00 hold at 6122.31 MD									
6,200.00	90.00	181.00	5,825.00	-598.47	-10.45	598.40	0.00	0.00	0.00
6,300.00	90.00	181.00	5,825.00	-698.45	-12.19	698.37	0.00	0.00	0.00
6,400.00	90.00	181.00	5,825.00	-798.44	-13.94	798.34	0.00	0.00	0.00
6,500.00	90.00	181.00	5,825.00	-898.42	-15.68	898.32	0.00	0.00	0.00
6,600.00	90.00	181.00	5,825.00	-998.41	-17.43	998.29	0.00	0.00	0.00
6,700.00	90.00	181.00	5,825.00	-1,098.39	-19.17	1,098.26	0.00	0.00	0.00
6,800.00	90.00	181.00	5,825.00	-1,198.38	-20.92	1,198.24	0.00	0.00	0.00
6,900.00	90.00	181.00	5,825.00	-1,298.36	-22.66	1,298.21	0.00	0.00	0.00
7,000.00	90.00	181.00	5,825.00	-1,398.35	-24.41	1,398.18	0.00	0.00	0.00
7,100.00	90.00	181.00	5,825.00	-1,498.33	-26.15	1,498.16	0.00	0.00	0.00
7,200.00	90.00	181.00	5,825.00	-1,598.32	-27.90	1,598.13	0.00	0.00	0.00
7,300.00	90.00	181.00	5,825.00	-1,698.30	-29.64	1,698.10	0.00	0.00	0.00
7,400.00	90.00	181.00	5,825.00	-1,798.29	-31.39	1,798.07	0.00	0.00	0.00
7,500.00	90.00	181.00	5,825.00	-1,898.27	-33.13	1,898.05	0.00	0.00	0.00
7,600.00	90.00	181.00	5,825.00	-1,998.25	-34.88	1,998.02	0.00	0.00	0.00
7,700.00	90.00	181.00	5,825.00	-2,098.24	-36.62	2,097.99	0.00	0.00	0.00
7,800.00	90.00	181.00	5,825.00	-2,198.22	-38.37	2,197.97	0.00	0.00	0.00
7,900.00	90.00	181.00	5,825.00	-2,298.21	-40.12	2,297.94	0.00	0.00	0.00
8,000.00	90.00	181.00	5,825.00	-2,398.19	-41.86	2,397.91	0.00	0.00	0.00
8,100.00	90.00	181.00	5,825.00	-2,498.18	-43.61	2,497.89	0.00	0.00	0.00
8,200.00	90.00	181.00	5,825.00	-2,598.16	-45.35	2,597.86	0.00	0.00	0.00
8,300.00	90.00	181.00	5,825.00	-2,698.15	-47.10	2,697.83	0.00	0.00	0.00
8,400.00	90.00	181.00	5,825.00	-2,798.13	-48.84	2,797.81	0.00	0.00	0.00
8,500.00	90.00	181.00	5,825.00	-2,898.12	-50.59	2,897.78	0.00	0.00	0.00
8,600.00	90.00	181.00	5,825.00	-2,998.10	-52.33	2,997.75	0.00	0.00	0.00
8,700.00	90.00	181.00	5,825.00	-3,098.09	-54.08	3,097.72	0.00	0.00	0.00
8,800.00	90.00	181.00	5,825.00	-3,198.07	-55.82	3,197.70	0.00	0.00	0.00
8,900.00	90.00	181.00	5,825.00	-3,298.06	-57.57	3,297.67	0.00	0.00	0.00
9,000.00	90.00	181.00	5,825.00	-3,398.04	-59.31	3,397.64	0.00	0.00	0.00
9,100.00	90.00	181.00	5,825.00	-3,498.03	-61.06	3,497.62	0.00	0.00	0.00
9,122.31	90.00	181.00	5,825.00	-3,520.33	-61.45	3,519.92	0.00	0.00	0.00
Start DLS 3.00 TFO 90.00									
9,200.00	90.00	178.67	5,825.00	-3,598.02	-61.22	3,597.60	3.00	0.00	-3.00
9,233.90	90.00	177.65	5,825.00	-3,631.90	-60.14	3,631.49	3.00	0.00	-3.00

Archer

Planning Report

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Project:	Lea County, NM	MD Reference:	4163'GL+17'KB @ 4180.00usft (Planning)
Site:	Pan Head Fee 2H	North Reference:	Grid
Well:	2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #6		

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)
Start 2307.94 hold at 9233.90 MD									
9,300.00	90.00	177.65	5,825.00	-3,697.94	-57.43	3,697.55	0.00	0.00	0.00
9,400.00	90.00	177.65	5,825.00	-3,797.86	-53.33	3,797.49	0.00	0.00	0.00
9,500.00	90.00	177.65	5,825.00	-3,897.78	-49.24	3,897.43	0.00	0.00	0.00
9,600.00	90.00	177.65	5,825.00	-3,997.69	-45.14	3,997.37	0.00	0.00	0.00
9,700.00	90.00	177.65	5,825.00	-4,097.61	-41.04	4,097.30	0.00	0.00	0.00
9,800.00	90.00	177.65	5,825.00	-4,197.52	-36.95	4,197.24	0.00	0.00	0.00
9,900.00	90.00	177.65	5,825.00	-4,297.44	-32.85	4,297.18	0.00	0.00	0.00
10,000.00	90.00	177.65	5,825.00	-4,397.36	-28.76	4,397.12	0.00	0.00	0.00
10,100.00	90.00	177.65	5,825.00	-4,497.27	-24.66	4,497.06	0.00	0.00	0.00
10,200.00	90.00	177.65	5,825.00	-4,597.19	-20.56	4,596.99	0.00	0.00	0.00
10,300.00	90.00	177.65	5,825.00	-4,697.10	-16.47	4,696.93	0.00	0.00	0.00
10,400.00	90.00	177.65	5,825.00	-4,797.02	-12.37	4,796.87	0.00	0.00	0.00
10,500.00	90.00	177.65	5,825.00	-4,896.94	-8.27	4,896.81	0.00	0.00	0.00
10,600.00	90.00	177.65	5,825.00	-4,996.85	-4.18	4,996.75	0.00	0.00	0.00
10,700.00	90.00	177.65	5,825.00	-5,096.77	-0.08	5,096.68	0.00	0.00	0.00
10,800.00	90.00	177.65	5,825.00	-5,196.68	4.01	5,196.62	0.00	0.00	0.00
10,900.00	90.00	177.65	5,825.00	-5,296.60	8.11	5,296.56	0.00	0.00	0.00
11,000.00	90.00	177.65	5,825.00	-5,396.52	12.21	5,396.50	0.00	0.00	0.00
11,100.00	90.00	177.65	5,825.00	-5,496.43	16.30	5,496.44	0.00	0.00	0.00
11,200.00	90.00	177.65	5,825.00	-5,596.35	20.40	5,596.37	0.00	0.00	0.00
11,300.00	90.00	177.65	5,825.00	-5,696.27	24.49	5,696.31	0.00	0.00	0.00
11,400.00	90.00	177.65	5,825.00	-5,796.18	28.59	5,796.25	0.00	0.00	0.00
11,500.00	90.00	177.65	5,825.00	-5,896.10	32.69	5,896.19	0.00	0.00	0.00
11,541.84	90.00	177.65	5,825.00	-5,937.90	34.40	5,938.00	0.00	0.00	0.00
TD at 11541.84									

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 2H PP	0.00	0.00	0.00	-55.99	-0.98	675,324.81	681,599.12	32° 51' 18.56 N	103° 44' 31.09 W
- plan misses target center by 56.00usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									
Pan Head Fee 2H Surfa	0.00	0.00	0.00	0.00	0.00	675,380.80	681,600.10	32° 51' 19.11 N	103° 44' 31.08 W
- plan hits target center									
- Point									
Pan Head Fee 2H PBHL	0.00	0.00	5,825.00	-5,937.90	34.40	669,442.90	681,634.50	32° 50' 20.35 N	103° 44' 31.06 W
- plan hits target center									
- Point									

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Planning Report

Database:	EDM R5000.1 MULTI	Local Co-ordinate Reference:	Well 2H
Company:	COG OPERATING, LLC	TVD Reference:	4163'GL+17'KB @ 4180.00usft (Planning)
Project:	Lea County, NM	MD Reference:	4163'GL+17'KB @ 4180.00usft (Planning)
Site:	Pan Head Fee 2H	North Reference:	Grid
Well:	2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #6		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,304.13	5,304.13	0.00	0.00	Start Build 11.00
6,122.31	5,825.00	-520.79	-9.09	Start 3000.00 hold at 6122.31 MD
9,122.31	5,825.00	-3,520.33	-61.45	Start DLS 3.00 TFO -90.00
9,233.90	5,825.00	-3,631.90	-60.14	Start 2307.94 hold at 9233.90 MD
11,541.84	5,825.00	-5,937.90	34.40	TD at 11541.84

COG OPERATING, LLC

Field: Lea County, NM
Site: Pan Head Fee 2H
Well: 2H
Wellbore: Lateral
Plan: Plan #6



TARGET DETAILS

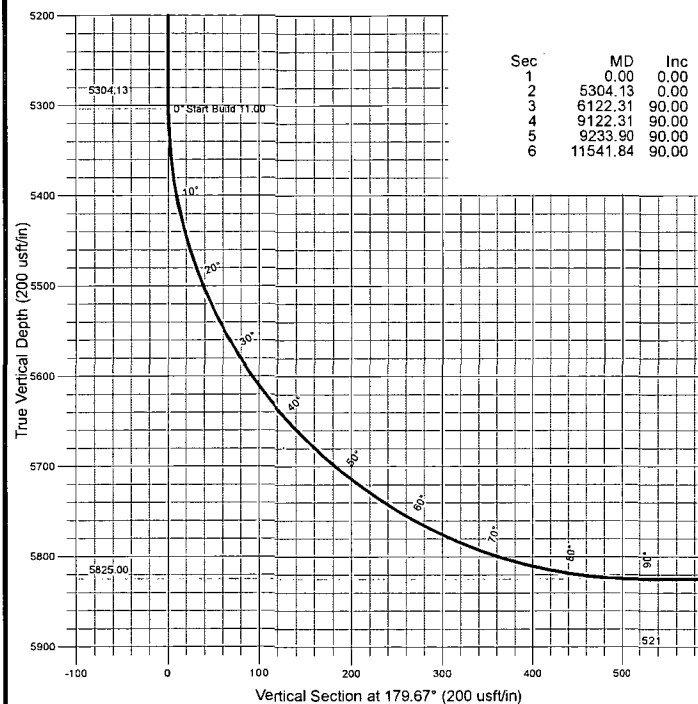
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Pan Head Fee 2H PP	0.00	-55.99	-0.98	675324.81	681599.12	32° 51' 18.56 N	103° 44' 31.09 W	Point
Pan Head Fee 2H Surface	0.00	0.00	0.00	675380.80	681600.10	32° 51' 19.11 N	103° 44' 31.08 W	Point
Pan Head Fee 2H PBHL	5825.00	-5937.90	34.40	669442.90	681634.50	32° 50' 20.35 N	103° 44' 31.06 W	Point

Section Distances

Sec11, T17S, R32E
SHL - Unit D
330° FNL, 990° FWL
PP
386° FNL, 989° FWL
Sec14, T17S, R32E
PBHL - Unit E
990° FNL, 990° FWL

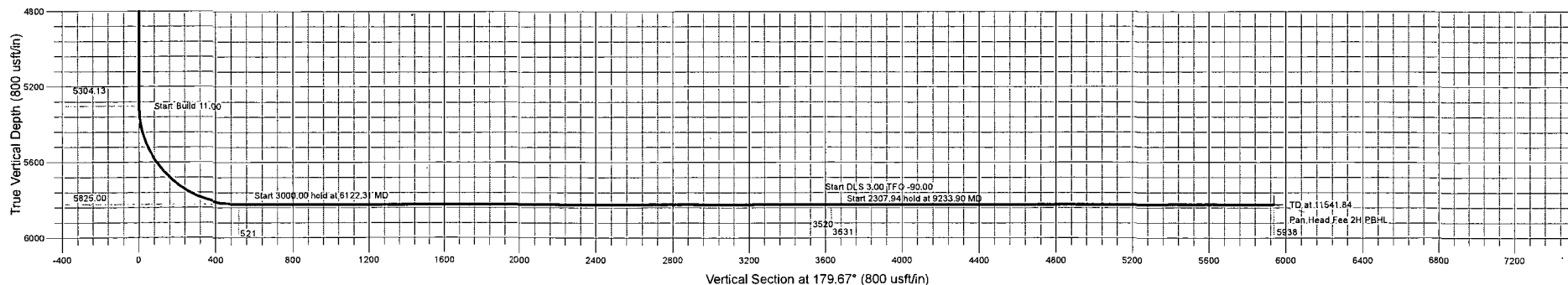
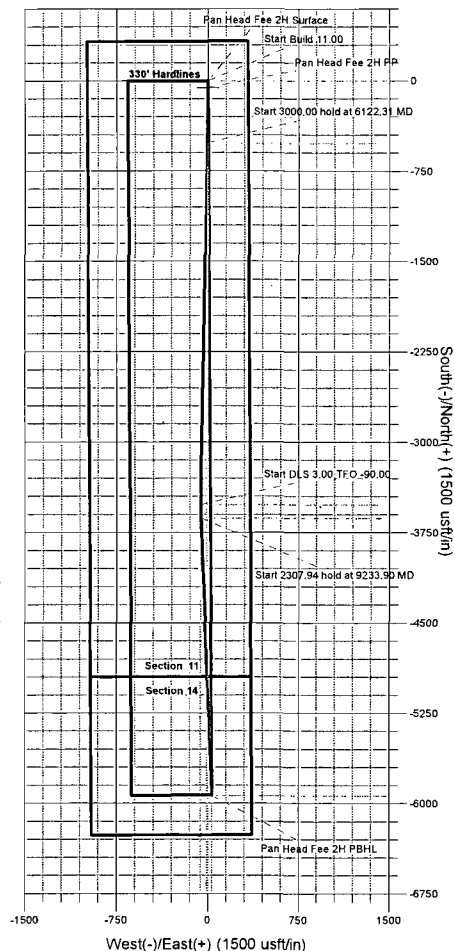
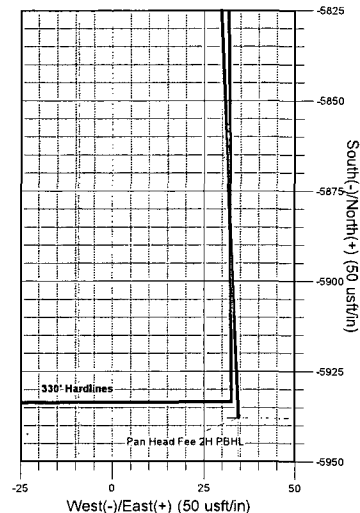
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dlog	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	5304.13	0.00	0.00	5304.13	0.00	0.00	0.00	0.00	0.00	
3	6122.31	90.00	181.00	5825.00	-520.79	-9.09	11.00	181.00	520.73	
4	9122.31	90.00	181.00	5825.00	-3520.33	-61.45	0.00	0.00	3519.92	
5	9233.90	90.00	177.65	5825.00	-3631.90	-60.14	3.00	-90.00	3631.49	
6	11541.84	90.00	177.65	5825.00	-5937.90	34.40	0.00	0.00	5938.00	Pan Head Fee 2H PBHL



Azimuths to Grid North
True North: -0.32°
Magnetic North: 7.03°

Magnetic Field
Strength: 48677.3snT
Dip Angle: 60.67°
Date: 5/23/2014
Model: IGRF2010



Archer

ARCHER DIRECTIONAL DRILLING SERVICES
12101 Cutten Rd. Houston, Texas 77066
Phone: 281-301-2600 Fax: 281-301-2795

Design: Plan #6 (2H/Lateral)
Created By: Ivonne Gonzalez
Date: 10:38, May 23 2014