

NM OIL CONSERVATION

ARTESIA DISTRICT

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
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, NM 87505

SEP 16 2014

RECEIVED

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number 30-015-42643		2 Pool Code 3250		3 Pool Name Atoka; Glorieta Yeso	
4 Property Code 313428 313706		5 Property Name PILUM 15 FEE			6 Well Number 1H
7 GRID NO. 229137		8 Operator Name COG OPERATING, LLC			9 Elevation 3352'
10 Surface Location					
UL or lot no. I	Section 16	Township 18S	Range 26E	Lot Idn	Feet from the 2485
				North/South line SOUTH	Feet From the 425
				East/West line EAST	County EDDY
11 Bottom Hole Location If Different From Surface					
UL or lot no. I	Section 15	Township 18S	Range 26E	Lot Idn	Feet from the 2322
				North/South line SOUTH	Feet from the 330
				East/West line EAST	County EDDY
12 Dedicated Acres 160		13 Joint or Infill		14 Consolidation Code	
				15 Order No.	

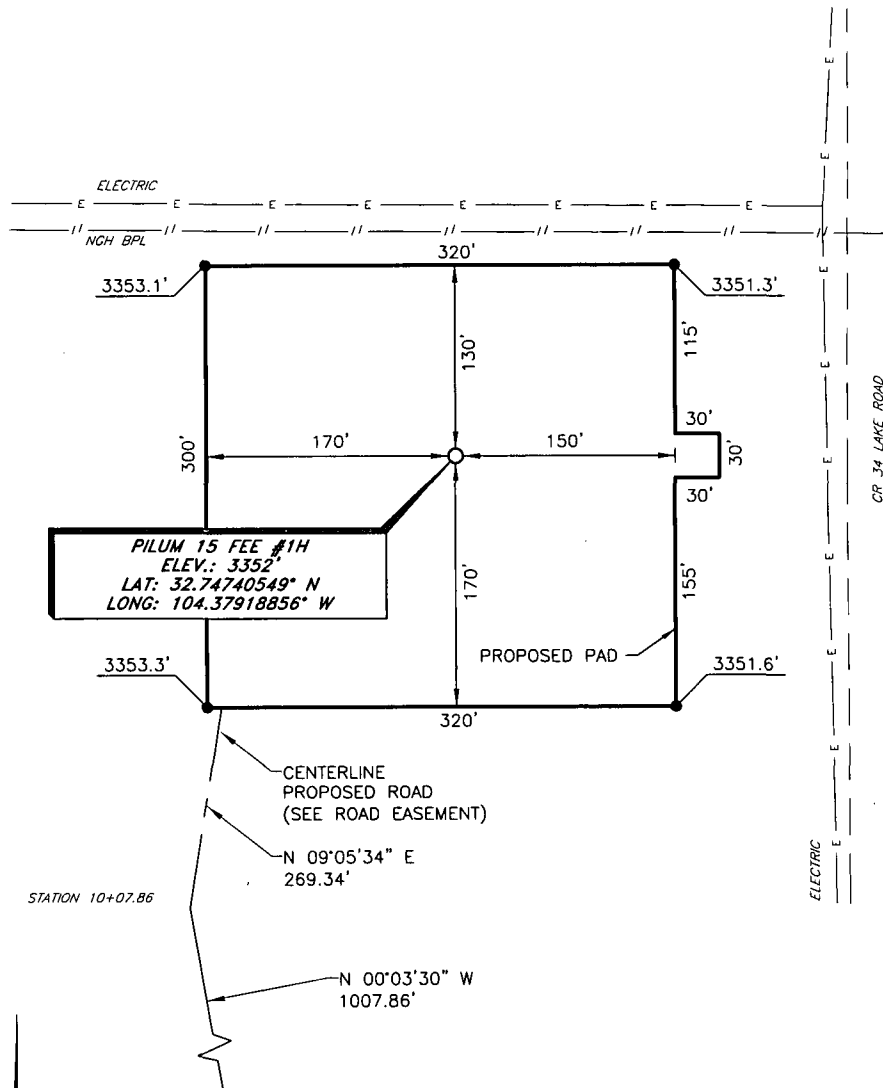
No allowable will be assigned to this completion until all interest have been consolidated or a non-standard unit has been approved by the division.

		17 OPERATOR CERTIFICATION I hereby certify that the information contained 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 a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. Signature: Date: 9-4-14 Printed Name: Kelly J. Holly E-mail Address: kholly@concho.com
CORNER DATA NAD 27 GRID - NM EAST A: FOUND COTTON SPINDLE N: 633133.5 - E: 480997.7 B: CALCULATED CORNER N: 635775.9 - E: 481013.2 C: FOUND COTTON SPINDLE N: 638418.3 - E: 481028.7 D: CALCULATED CORNER N: 638424.6 - E: 483677.7 E: FOUND COTTON SPINDLE N: 638430.8 - E: 486326.6 F: CALCULATED CORNER N: 638414.7 - E: 488971.0 G: FOUND 5/8" RBAR N: 638425.9 - E: 491615.4 H: CALCULATED CORNER N: 635773.4 - E: 491605.6		18 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. Date of Survey: 8-12-14 Signature and Seal of Professional Surveyor: Certificate Number: 19680

RRC - Firm No.: TX 10193838 NM 4655451 - Job No.: LS140319

COG OPERATING, LLC

PILUM 15 FEE #1H
(2485' FSL & 425' FEL)
SECTION 16, T18S, R26E,
N. M. P. M., EDDY CO., NEW MEXICO



DIRECTIONS TO LOCATION

From the intersection of CR-39 (Four Dinkus) and CR-34 (Lake Road);
Go Southwest on CR-34 (Lake Road) approx. 0.5 miles;
Location is approx. 283 feet West of CR-34 (Lake Road).

SCALE: 1" = 100'
0 50 100
BEARINGS ARE
NAD 27 GRID - NM EAST
DISTANCES ARE
GROUND.

Firm No.: TX 10193838 NM 4655451

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NO.	REVISION	DATE
JOB NO.: LS140319		
DWG. NO.: 140319PAD		

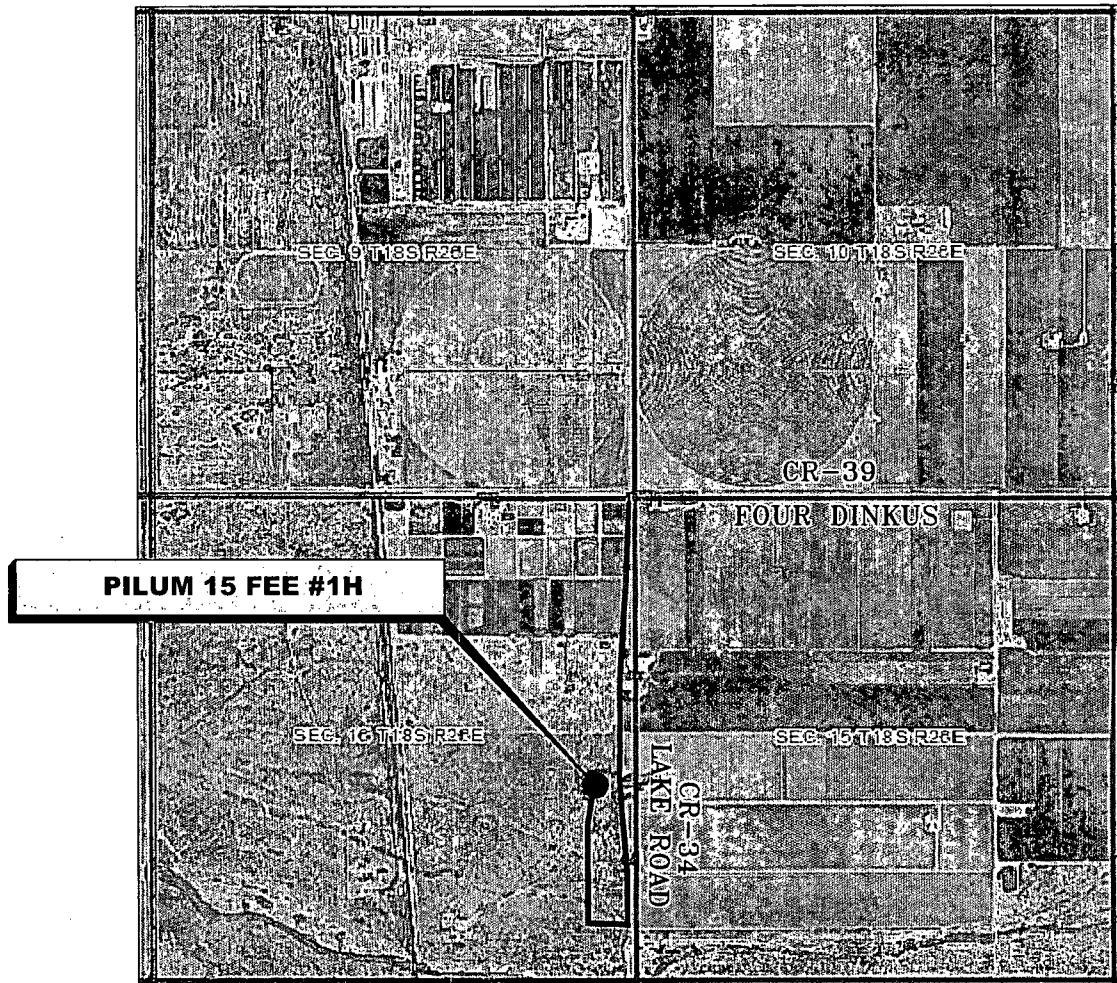
RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 100'
DATE: 8-12-14
SURVEYED BY: GB/IE
DRAWN BY: ARJ
APPROVED BY: RMH
SHEET: 1 OF 1

VICINITY MAP

NOT TO SCALE



*SECTION 16, TWP. 18 SOUTH, RGE. 26 EAST,
N. M. P. M., EDDY COUNTY, NEW MEXICO*

OPERATOR: COG Operating, LLC
 LEASE: Pilum 15 Fee
 WELL NO.: 1H

LOCATION: 2485' FSL & 425' FEL
 ELEVATION: 3352'

Firm No.: TX 10193838 NM 4655451

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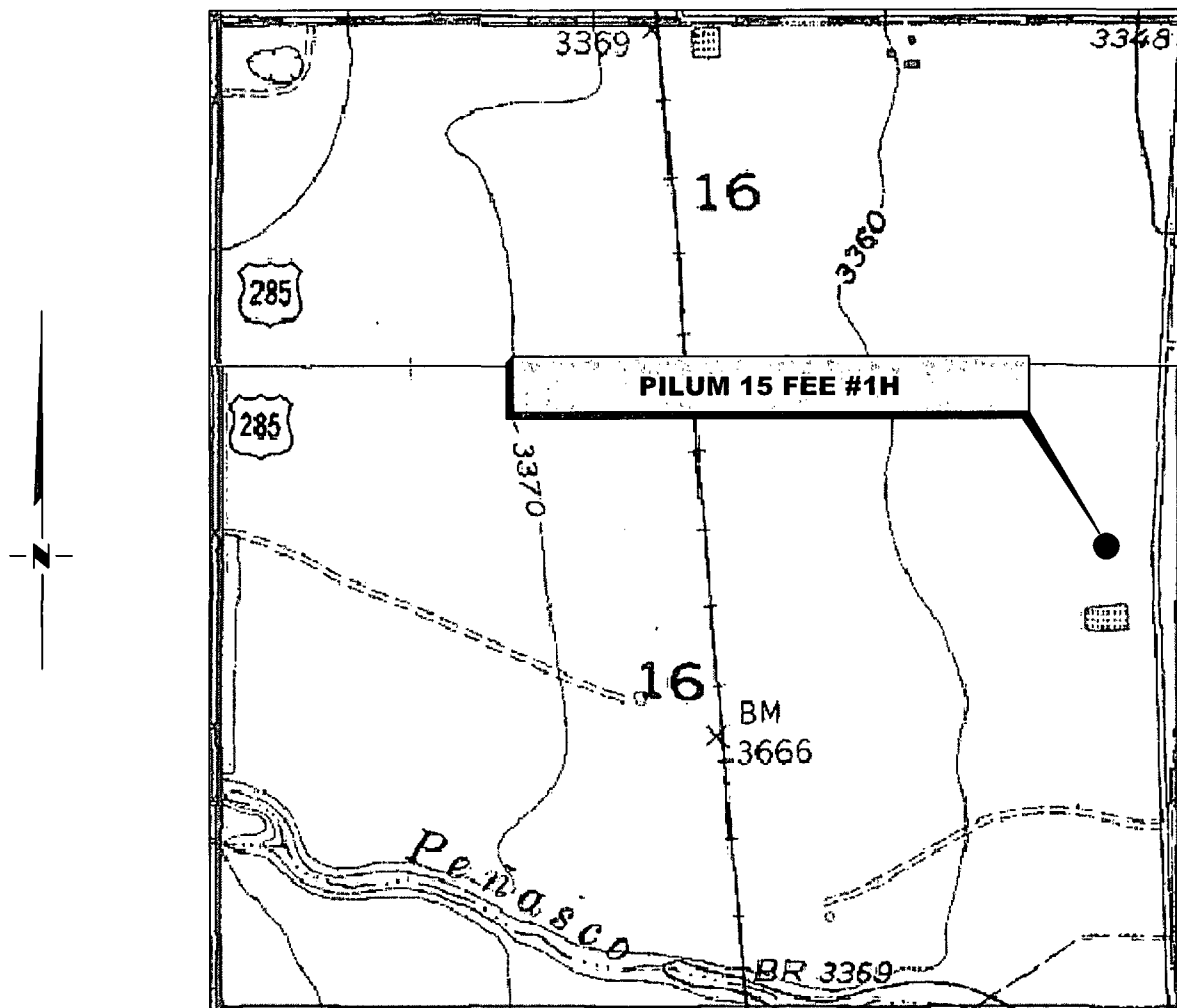
NO.	REVISION	DATE
JOB NO.: LS140319		
DWG. NO.: 140319VM		

RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: N.T.S.
DATE: 8-12-14
SURVEYED BY: GB/IE
DRAWN BY: ARJ
APPROVED BY: RMH
SHEET : 1 OF 1

LOCATION VERIFICATION MAP



SECTION 16, TWP. 18 SOUTH, RGE. 26 EAST,
N. M. P. M., EDDY COUNTY, NEW MEXICO

OPERATOR: COG Operating, LLC
LEASE: Pilum 15 Fee
WELL NO.: 1H
ELEVATION: 3352'

LOCATION: 2485' FSL & 425' FEL
CONTOUR INTERVAL: 10'
USGS TOPO. SOURCE MAP:
Dayton, N. M. (1955)

Firm No.: TX 10193838 NM 4655451

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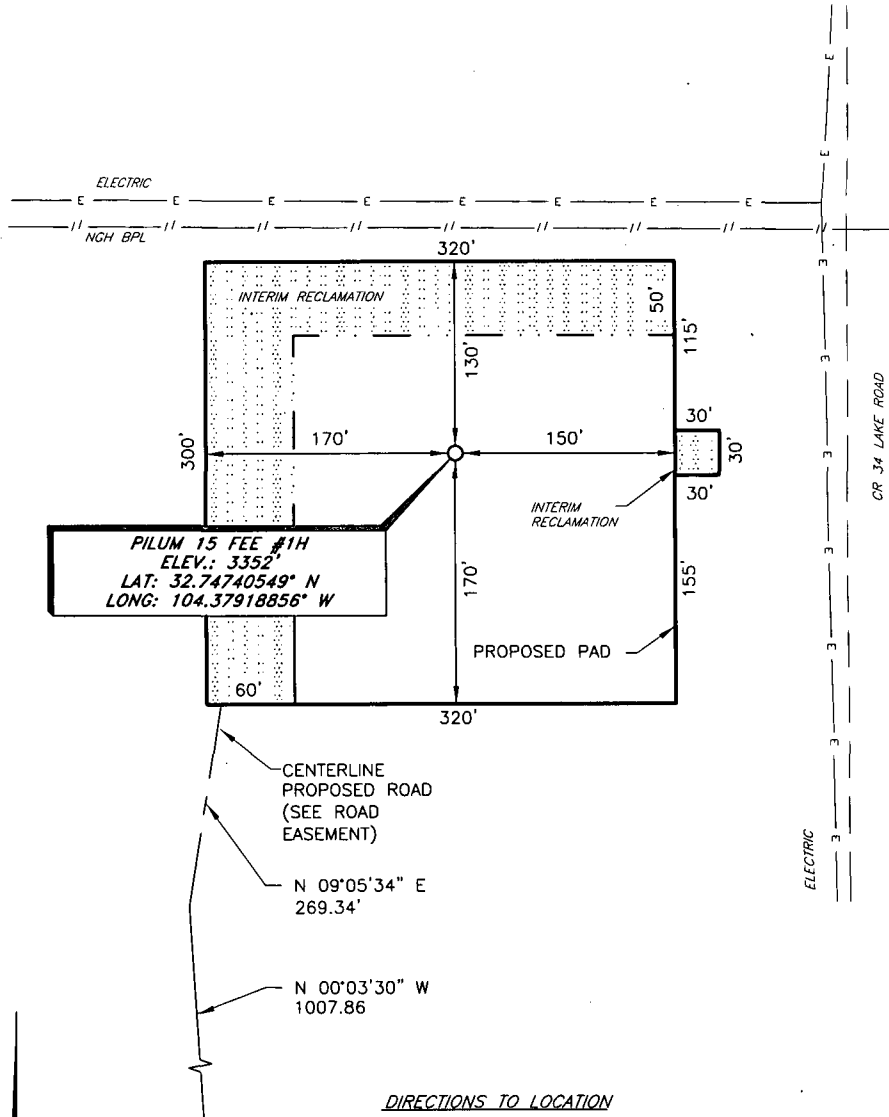
NO.	REVISION	DATE
JOB NO.: LS140319		
DWG. NO.: 140319LVM		

RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 1000'
DATE: 8-12-14
SURVEYED BY: GB/IE
DRAWN BY: ARJ
APPROVED BY: RMH
SHEET : 1 OF 1

COG OPERATING, LLC
 INTERIM RECLAMATION
 PILUM 15 FEE #1H
 (2485' FSL & 425' FEL)
 SECTION 16, T18S, R26E,
 N. M. P. M., EDDY CO., NEW MEXICO



DIRECTIONS TO LOCATION

From the intersection of CR-39 (Four Dinkus) and CR-34 (Lake Road);
 Go Southwest on CR-34 (Lake Road) approx. 0.5 miles;
 Location is approx. 283 feet West of CR-34 (Lake Road).

SCALE: 1" = 100'
 0 50 100
 BEARINGS ARE
 NAD 27 GRID - NM EAST
 DISTANCES ARE
 GROUND.

Firm No.: TX 10193838 NM 4655451

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NO.	REVISION	DATE
JOB NO.:	LS140319	
DWG. NO.:	140319REC	

RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 100'
DATE: 8-12-14
SURVEYED BY: GB/IE
DRAWN BY: ARJ
APPROVED BY: RMH
SHEET : 1 OF 1



COG Operating LLC

Eddy County, NM (NAD27 NME)

Pilum 15 Fee

#1H

WB1

Plan: Plan #2 08-25-14

Surface: 2485' FSL, 425' FEL, Sec 16, T18S, R26E, Unit I

PP: 330' FWL, 2322' FSL, Sec 15, T18S, R26E, Unit L

BHL: 2322' FSL, 330' FEL, Sec 15, T18S, R26E, Unit I

Standard Planning Report

25 August, 2014





Phoenix Technology Services
Planning Report



Database:	GCR DB	Local Co-ordinate Reference:	Well #1H
Company:	COG Operating LLC	TVD Reference:	KB @ 3370.00usft (Silver Oak 3)
Project:	Eddy County, NM (NAD27 NME)	MD Reference:	KB @ 3370.00usft (Silver Oak 3)
Site:	Pilum 15 Fee	North Reference:	Grid
Well:	#1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	WB1		
Design:	Plan #2 08-25-14		

Project:	Eddy County, NM (NAD27 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:	Pilum 15 Fee		
Site Position:		Northing:	632,879.50 usft
From:	Map	Easting:	487,958.90 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 44' 23.54811 N
		Longitude:	104° 22' 20.97828 W
		Grid Convergence:	-0.02 °

Well:	#1H		
Well Position	+N/-S	2,740.60 usft	Northing:
	+E/-W	-2,057.30 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	Ground Level:
			3,352.00 usft

Wellbore:	WB1		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010_14	08/25/14	7.61
			Dip Angle
			60.45
			Field Strength
			48,523

Design:	Plan #2 08-25-14		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			91.88

Plan Sections:										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)	(°)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,240.00	0.00	0.00	2,240.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,062.73	90.50	103.70	2,760.85	-124.44	510.47	11.00	11.00	0.00	103.70	
3,520.58	90.50	89.96	2,756.82	-178.77	963.96	3.00	0.00	-3.00	-89.93	
7,929.59	90.50	89.96	2,718.10	-176.00	5,372.80	0.00	0.00	0.00	0.00	BHL-Pilum 15 Fee #1



Phoenix Technology Services

Planning Report



Database:	GCR.DB	Local Co-ordinate Reference:	Well #1H
Company:	COG Operating LLC	TVD Reference:	KB @ 3370.00usft (Silver Oak 3)
Project:	Eddy County, NM (NAD27 NME)	MD Reference:	KB @ 3370.00usft (Silver Oak 3)
Site:	Pilum-15 Fee	North Reference:	Grid
Well:	#1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	WB1		
Design:	Plan #2.08-25-14		

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,240.00	0.00	0.00	2,240.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP, Start 11°/100' Build									
2,300.00	6.60	103.70	2,299.87	-0.82	3.35	3.38	11.00	11.00	0.00
2,400.00	17.60	103.70	2,397.50	-5.77	23.69	23.86	11.00	11.00	0.00
2,500.00	28.60	103.70	2,489.34	-15.05	61.75	62.21	11.00	11.00	0.00
2,600.00	39.60	103.70	2,572.02	-28.31	116.13	117.00	11.00	11.00	0.00
2,700.00	50.60	103.70	2,642.49	-45.06	184.85	186.22	11.00	11.00	0.00
2,800.00	61.60	103.70	2,698.18	-64.69	265.36	267.34	11.00	11.00	0.00
2,900.00	72.60	103.70	2,737.04	-86.47	354.72	357.36	11.00	11.00	0.00
3,000.00	83.60	103.70	2,757.62	-109.61	449.64	452.99	11.00	11.00	0.00
3,043.84	88.42	103.70	2,760.67	-119.97	492.12	495.78	11.00	11.00	0.00
TL, 2765' TVD @ 0.5° Inc									
3,062.73	90.50	103.70	2,760.85	-124.44	510.47	514.27	11.00	11.00	0.00
LP, Begin 3°/100' Turn									
3,100.00	90.50	102.58	2,760.53	-132.91	546.76	550.82	3.00	0.00	-3.00
3,200.00	90.50	99.58	2,759.65	-152.13	644.88	649.52	3.00	0.00	-3.00
3,300.00	90.51	96.58	2,758.77	-166.19	743.87	748.92	3.00	0.00	-3.00
3,311.19	90.51	96.25	2,758.67	-167.44	755.00	760.08	3.00	0.00	-3.00
PP, Pilum 15 Fee #1H									
3,400.00	90.51	93.58	2,757.88	-175.04	843.47	848.74	3.00	0.00	-3.00
3,500.00	90.50	90.58	2,757.00	-178.67	943.38	948.73	3.00	0.00	-3.00
3,520.58	90.50	89.96	2,756.82	-178.77	963.96	969.30	3.00	0.00	-3.00
Begin Hold 90.5° Inc, 103.70° Azm									
3,600.00	90.50	89.96	2,756.13	-178.72	1,043.38	1,048.67	0.00	0.00	0.00
3,700.00	90.50	89.96	2,755.25	-178.66	1,143.38	1,148.61	0.00	0.00	0.00
3,800.00	90.50	89.96	2,754.37	-178.60	1,243.37	1,248.55	0.00	0.00	0.00
3,900.00	90.50	89.96	2,753.49	-178.53	1,343.37	1,348.49	0.00	0.00	0.00
4,000.00	90.50	89.96	2,752.61	-178.47	1,443.37	1,448.43	0.00	0.00	0.00
4,100.00	90.50	89.96	2,751.73	-178.41	1,543.36	1,548.38	0.00	0.00	0.00
4,200.00	90.50	89.96	2,750.86	-178.34	1,643.36	1,648.32	0.00	0.00	0.00
4,300.00	90.50	89.96	2,749.98	-178.28	1,743.35	1,748.26	0.00	0.00	0.00
4,400.00	90.50	89.96	2,749.10	-178.22	1,843.35	1,848.20	0.00	0.00	0.00
4,500.00	90.50	89.96	2,748.22	-178.16	1,943.35	1,948.14	0.00	0.00	0.00
4,600.00	90.50	89.96	2,747.34	-178.09	2,043.34	2,048.08	0.00	0.00	0.00
4,700.00	90.50	89.96	2,746.46	-178.03	2,143.34	2,148.02	0.00	0.00	0.00
4,800.00	90.50	89.96	2,745.59	-177.97	2,243.33	2,247.96	0.00	0.00	0.00
4,900.00	90.50	89.96	2,744.71	-177.90	2,343.33	2,347.90	0.00	0.00	0.00
5,000.00	90.50	89.96	2,743.83	-177.84	2,443.33	2,447.84	0.00	0.00	0.00
5,100.00	90.50	89.96	2,742.95	-177.78	2,543.32	2,547.78	0.00	0.00	0.00
5,200.00	90.50	89.96	2,742.07	-177.72	2,643.32	2,647.72	0.00	0.00	0.00
5,300.00	90.50	89.96	2,741.20	-177.65	2,743.31	2,747.66	0.00	0.00	0.00
5,400.00	90.50	89.96	2,740.32	-177.59	2,843.31	2,847.60	0.00	0.00	0.00
5,500.00	90.50	89.96	2,739.44	-177.53	2,943.31	2,947.54	0.00	0.00	0.00
5,600.00	90.50	89.96	2,738.56	-177.46	3,043.30	3,047.48	0.00	0.00	0.00
5,700.00	90.50	89.96	2,737.68	-177.40	3,143.30	3,147.42	0.00	0.00	0.00
5,800.00	90.50	89.96	2,736.80	-177.34	3,243.30	3,247.36	0.00	0.00	0.00
5,900.00	90.50	89.96	2,735.93	-177.28	3,343.29	3,347.30	0.00	0.00	0.00
6,000.00	90.50	89.96	2,735.05	-177.21	3,443.29	3,447.24	0.00	0.00	0.00
6,100.00	90.50	89.96	2,734.17	-177.15	3,543.28	3,547.18	0.00	0.00	0.00
6,200.00	90.50	89.96	2,733.29	-177.09	3,643.28	3,647.12	0.00	0.00	0.00
6,300.00	90.50	89.96	2,732.41	-177.02	3,743.28	3,747.07	0.00	0.00	0.00
6,400.00	90.50	89.96	2,731.53	-176.96	3,843.27	3,847.01	0.00	0.00	0.00



Phoenix Technology Services
Planning Report



Database:	GCR/DB	Local Co-ordinate Reference:	Well #1H
Company:	COG Operating LLC	TVD Reference:	KB @ 3370.00usft (Silver Oak 3)
Project:	Eddy County, NM (NAD27 NME)	MD Reference:	KB @ 3370.00usft (Silver Oak 3)
Site:	Pilum 15 Fee	North Reference:	Grid
Well:	#1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	WB1		
Design:	Plan #2.08-25-14		

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)
6,500.00	90.50	89.96	2,730.66	-176.90	3,943.27	3,946.95	0.00	0.00	0.00
6,600.00	90.50	89.96	2,729.78	-176.84	4,043.26	4,046.89	0.00	0.00	0.00
6,700.00	90.50	89.96	2,728.90	-176.77	4,143.26	4,146.83	0.00	0.00	0.00
6,800.00	90.50	89.96	2,728.02	-176.71	4,243.26	4,246.77	0.00	0.00	0.00
6,900.00	90.50	89.96	2,727.14	-176.65	4,343.25	4,346.71	0.00	0.00	0.00
7,000.00	90.50	89.96	2,726.26	-176.58	4,443.25	4,446.65	0.00	0.00	0.00
7,100.00	90.50	89.96	2,725.39	-176.52	4,543.25	4,546.59	0.00	0.00	0.00
7,200.00	90.50	89.96	2,724.51	-176.46	4,643.24	4,646.53	0.00	0.00	0.00
7,300.00	90.50	89.96	2,723.63	-176.40	4,743.24	4,746.47	0.00	0.00	0.00
7,400.00	90.50	89.96	2,722.75	-176.33	4,843.23	4,846.41	0.00	0.00	0.00
7,500.00	90.50	89.96	2,721.87	-176.27	4,943.23	4,946.35	0.00	0.00	0.00
7,600.00	90.50	89.96	2,720.99	-176.21	5,043.23	5,046.29	0.00	0.00	0.00
7,700.00	90.50	89.96	2,720.12	-176.14	5,143.22	5,146.23	0.00	0.00	0.00
7,800.00	90.50	89.96	2,719.24	-176.08	5,243.22	5,246.17	0.00	0.00	0.00
7,900.00	90.50	89.96	2,718.36	-176.02	5,343.21	5,346.11	0.00	0.00	0.00
7,929.59	90.50	89.96	2,718.10	-176.00	5,372.80	5,375.68	0.00	0.00	0.00

TD at 7929.59 - BHL-Pilum 15 Fee #1H

Design Targets

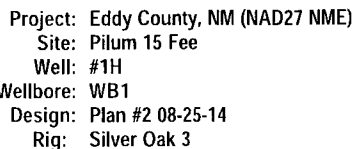
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
hit/miss target									
Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
BHL-Pilum 15 Fee #1H	0.00	0.00	2,718.10	-176.00	5,372.80	635,444.10	491,274.40	32° 44' 48.93671 N	104° 21' 42.16816 W
- plan hits target center									
- Point									
PP-Pilum 15 Fee #1H	0.00	360.00	2,758.67	-167.44	755.00	635,452.67	486,656.60	32° 44' 49.00597 N	104° 22' 36.23806 W
- plan hits target center									
- Point									

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,043.84	2,760.67	TL, 2765' TVD @ 0 VZ, 90.5° Inc		-0.50	91.88

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,240.00	2,240.00	0.00	0.00	KOP, Start 11°/100' Build
3,062.73	2,760.85	-124.44	510.47	LP, Begin 3°/100' Turn
3,520.58	2,756.82	-178.77	963.96	Begin Hold 90.5° Inc, 103.70° Azm
7,929.59	2,718.10	-176.00	5,372.80	TD at 7929.59



PHOENIX
TECHNOLOGY SERVICES



Azimuths to Grid North
True North: 0.03°
Magnetic North: 7.63°
Magnetic Field
Strength: 48523.1nT
Dip Angle: 60.45°
Date: 08/25/2014
Model: IGRF2010 14

WELL DETAILS				
		Ground Level:	3352.00	
+N/-S	+E/-W	Northing	Easting	Latitude Longitude
0.00	0.00	635620.10	485901.60	32° 44' 50.65970 N 104° 22' 45.07921 W

FORMATION TOP DETAILS				
TVDPPath	MDPath	Formation	DipAngle	DipDir
2760.67	3043.84	TL 2765' TVD @ 0 VZ 90.5° Inc	-0.50	91.88

Map System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone Name: New Mexico East 3001

Local Origin: Well #1H, Grid North

Latitude: 32° 44' 50.65970 N
Longitude: 104° 22' 45.07921 W

Grid East: 485901.60
Grid North: 635620.10
Scale Factor: 1.000

Geomagnetic Model: IGRF2010_14
Sample Date: 25-Aug-14
Magnetic Declination: 7.61°
Dip Angle from Horizontal: 60.45°
Magnetic Field Strength: 48523

To convert a Magnetic Direction to a Grid Direction, Add 7.63°
To convert a Magnetic Direction to a True Direction, Add 7.61° East
To convert a True Direction to a Grid Direction, Add 0.02°

SECTION: DETAILS											
Sec	MD	Inc	Azi	TVD	+N/S	+E/W	Oleg	TFace	V Sect	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2	2240.00	0.00	0.00	2240.00	6.00	0.00	0.00	0.00	0.00		
3	3062.73	90.50	103.70	2760.85	-124.44	510.47	11.00	103.70	514.27		KOP, Start 11°11'00" Turn Lp, Begin 3°10'00" Build
4	3520.58	50.50	89.96	2756.82	-178.77	963.96	3.00	-89.93	969.30		Begin Hold 90.5° Inc, 103.70° Azm
5	7329.59	50.50	89.96	2718.10	-176.00	5372.80	0.00	0.00	5375.68	BHL-Pilum 15 Fee #11	End at 7929.59

DESIGN TARGET DETAILS								
Name	TVD	+N/S	+E/W	Northing	Easting	Latitude	Longitude	Shape
BHL-Pilum 15 Fee #1H	2718.10	-178.00	5372.80	835444.10	491274.40	32° 44' 48.93671 N	104° 21' 42.16816 W	Point
		- plan hds target center						
PP-Pilum 15 Fee #1H	2758.67	-167.44	755.00	835452.66	48856.60	32° 44' 49.00597 N	104° 22' 36.23806 W	Point
		- plan hds target center						

LEGEND

Plan #2 08-25-14

