



A GYRO TECHNOLOGIES INC. COMPANY

PO Box 261021
Corpus Christi, Texas 78426
(361) 767-0602 • (800) 806-GYRO • Fax (361) 767-0612

August 1, 2013

15-41346

COG Operating LLC (Concho)
One Concho Center
600 W. Illinois Avenue
Midland, TX 79701

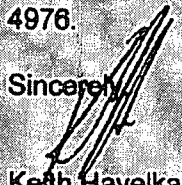
Attn: Kanicia Castillo

Re: Tex Mack 11 Federal No 116H

Please find enclosed a copy of the survey from 0' to 5,843' ran on the above referenced well.

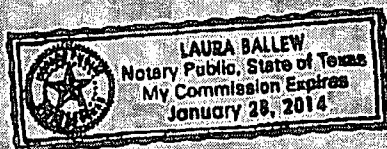
If I can be of any further service, please do not hesitate to call me at 800-806-4976.

Sincerely,


Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 1st day of August
A.D., 2013, by Keith Havelka.




Laura Ballew
Notary Public, State of Texas



Company: COG Operating-Concho
 Lease/Well: Tex Mack 11 Federal/No 116H
 Location: 10 miles NE dir from Loco Hills
 Rig Name: Silveroak 3
 State/County: New Mexico/Eddy
 Latitude: 32.85, Longitude: -103.85
 GRID North is 0.26 Degrees East of True North
 VS-Azi: 0.00 Degrees



Depth Reference : RKB = 17 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: ...1 fed #116h-da_gyro survey.ut

Minimum Curvature Method

Report Date/Time: 8/1/2013 / 08:15

Vaughn Energy Services

Midland, Texas

432-883-6444

Surveyor: Gene Heiss

Tex Mack 11 Federal No 116H / API 30-016-41346

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	----
100.00	0.34	218.70	100.00	-0.23	-0.18	-0.23	0.29	218.70	0.34
200.00	0.80	224.85	200.00	-0.77	-0.67	-0.77	1.02	221.31	0.17
300.00	0.44	228.58	299.99	-1.33	-1.27	-1.33	1.84	223.68	0.06
400.00	0.69	219.67	399.99	-2.05	-1.84	-2.05	2.82	223.50	0.26
500.00	0.85	205.12	499.98	-3.18	-2.64	-3.18	4.13	219.70	0.25
600.00	0.63	195.98	599.97	-4.38	-3.11	-4.38	5.37	215.34	0.25
700.00	0.83	209.12	699.96	-5.54	-3.81	-5.54	6.62	213.07	0.28
800.00	0.58	200.75	799.95	-6.85	-4.14	-6.65	7.83	211.92	0.27
900.00	0.43	205.50	899.95	-7.48	-4.48	-7.48	8.70	211.00	0.15
1000.00	0.47	201.65	999.95	-8.19	-4.80	-8.19	9.49	210.37	0.05
1100.00	0.44	213.08	1099.95	-8.89	-5.16	-8.89	10.28	210.12	0.10
1200.00	0.34	193.78	1199.94	-9.49	-5.44	-9.49	10.94	209.79	0.16
1300.00	0.32	175.04	1299.94	-10.08	-5.48	-10.08	11.46	208.58	0.11
1400.00	0.17	156.73	1399.94	-10.48	-5.40	-10.48	11.79	207.25	0.17
1500.00	0.17	122.04	1499.94	-10.70	-5.22	-10.70	11.90	206.00	0.10
1600.00	0.25	80.42	1599.94	-10.74	-4.88	-10.74	11.79	204.44	0.17
1700.00	0.47	72.93	1699.94	-10.58	-4.27	-10.58	11.41	201.99	0.23
1800.00	0.61	64.59	1799.93	-10.23	-3.40	-10.23	10.78	198.37	0.16

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1800.00	0.64	78.39	1899.93	-9.89	-2.37	-9.89	10.17	183.49	0.16
2000.00	0.42	116.34	1999.92	-9.84	-1.60	-9.94	10.06	188.58	0.40
2100.00	0.49	144.39	2099.92	-10.46	-0.92	-10.46	10.49	186.04	0.23
2200.00	0.41	160.76	2199.92	-11.13	-0.88	-11.13	11.15	182.86	0.15
2300.00	0.37	203.60	2299.91	-11.78	-0.67	-11.78	11.78	182.76	0.29
2400.00	0.38	232.38	2399.91	-12.26	-0.86	-12.26	12.30	184.48	0.19
2600.00	0.30	266.81	2499.91	-12.63	-1.48	-12.63	12.61	186.73	0.17
2800.00	0.69	280.44	2699.91	-12.68	-2.32	-12.68	12.80	190.37	0.40
2700.00	0.74	246.57	2699.90	-13.06	-3.50	-13.06	13.61	195.01	0.19
2800.00	0.69	281.42	2799.89	-13.40	-4.67	-13.40	14.20	199.22	0.20
2900.00	0.76	283.14	2899.88	-13.67	-5.92	-13.67	14.81	203.67	0.07
3000.00	0.97	257.66	2999.87	-13.83	-7.41	-13.83	15.69	208.17	0.23
3100.00	0.83	256.65	3099.88	-14.22	-8.02	-14.22	16.84	212.40	0.06
3200.00	0.87	268.02	3199.85	-14.83	-10.63	-14.83	18.08	216.02	0.05
3300.00	0.88	251.67	3299.83	-16.07	-12.17	-16.07	19.37	218.93	0.14
3400.00	0.91	248.11	3399.82	-16.60	-13.62	-16.60	20.71	221.12	0.08
3600.00	0.89	248.13	3499.81	-16.21	-15.07	-16.21	22.13	222.91	0.04
3800.00	0.97	249.23	3699.79	-16.83	-16.67	-16.83	23.61	224.66	0.09
3700.00	0.99	242.46	3699.78	-17.62	-18.12	-17.62	25.21	225.96	0.12
3800.00	0.96	244.17	3799.77	-18.29	-19.64	-18.29	26.83	227.04	0.04
3900.00	0.91	240.44	3899.75	-19.04	-21.08	-19.04	28.41	227.91	0.08
4000.00	0.81	239.08	3999.74	-19.80	-22.37	-19.80	29.87	228.50	0.10
4100.00	0.83	242.35	4099.73	-20.41	-23.46	-20.41	31.10	228.98	0.19
4200.00	0.64	238.62	4199.73	-20.96	-24.43	-20.96	32.19	229.37	0.04
4300.00	0.68	239.66	4299.72	-21.55	-25.42	-21.55	33.32	229.71	0.04
4400.00	0.76	242.83	4399.71	-22.15	-26.62	-22.15	34.58	230.13	0.09
4600.00	0.80	250.37	4499.70	-22.69	-27.77	-22.69	36.88	230.75	0.11
4800.00	0.88	268.17	4699.70	-22.96	-29.02	-22.96	37.00	231.67	0.26
4700.00	0.80	266.91	4699.69	-23.00	-30.31	-23.00	38.06	232.81	0.13
4900.00	0.67	277.72	4799.68	-22.96	-31.59	-22.96	39.08	233.98	0.19
4900.00	0.76	279.65	4899.67	-22.77	-32.82	-22.77	39.95	235.26	0.09
5000.00	0.60	270.68	4999.66	-22.66	-33.91	-22.66	40.79	236.25	0.27
5100.00	0.49	277.41	5099.66	-22.60	-34.77	-22.60	41.47	236.98	0.06
5200.00	0.66	269.76	5199.66	-22.55	-35.69	-22.55	42.21	237.72	0.10
5300.00	0.81	281.80	5299.65	-22.40	-38.87	-22.40	43.14	238.72	0.28
5400.00	0.68	268.49	5399.64	-22.28	-38.16	-22.28	44.18	239.72	0.22
5600.00	0.60	269.19	5499.64	-22.30	-39.26	-22.30	45.15	240.41	0.08
5600.00	0.73	277.76	5599.63	-22.22	-40.41	-22.22	46.12	241.20	0.16
5700.00	0.78	286.73	5699.62	-21.94	-41.69	-21.94	47.11	242.24	0.13

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
5800.00	0.79	288.65	5799.61	-21.41	-42.84	-21.41	47.99	243.60	0.16
5843.00	0.82	288.59	5842.61	-21.20	-43.43	-21.20	48.32	243.98	0.48



PO Box 1370
Artesia, NM 88211-1370
(575) 748-1288

August 23, 2013

COG, LLC
One Concho Center
600 W. Illinois Ave.
Midland, TX 79701

RE: Tex Mack 11 Federal #116H
1525' FSL & 330' FWL
Sec. 11, T17S, R31E
Eddy County, New Mexico

Dear Sir,

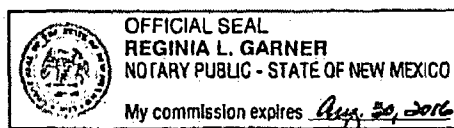
The attached is the Deviation Survey for the above captioned well.

Very truly yours,

Chris Graham
Drilling Superintendent

State of New Mexico }
County of Eddy }

The foregoing was acknowledged before me this 23rd day of August, 2013.

Notary Public

Tex Mack 11 Federal #116H

Date	Depth	Dev/Incl	Dir/Azm
7/17/2013	84	0.30	
7/17/2013	179	0.10	
7/17/2013	415	0.30	
7/17/2013	597	0.90	
7/19/2013	842	1.00	
7/19/2013	1083	0.30	
7/19/2013	1355	0.30	
7/19/2013	1596	0.50	
7/20/2013	1871	0.70	
7/21/2013	2324	0.60	
7/22/2013	2789	0.60	
7/23/2013	3292	0.80	
7/24/2013	3792	1.00	
7/24/2013	4292	0.80	
7/25/2013	4761	0.80	
7/25/2013	5293	0.30	
7/28/2013	5907	0.40	340.90
7/28/2013	5938	2.10	59.90
7/28/2013	5970	4.70	60.00
7/28/2013	6002	8.00	61.31
7/28/2013	6064	15.10	64.20
7/28/2013	6095	18.40	65.90
7/28/2013	6126	21.40	67.70
7/28/2013	6158	24.50	70.30
7/28/2013	6189	27.70	71.60
7/28/2013	6220	30.80	72.50
7/28/2013	6251	33.90	72.80
7/28/2013	6282	36.70	73.10
7/28/2013	6313	39.20	73.30
7/29/2013	6344	41.40	73.80
7/29/2013	6375	43.50	74.20
7/29/2013	6407	46.00	74.50
7/29/2013	6438	50.30	74.20
7/29/2013	6469	54.50	73.60
7/29/2013	6501	57.20	73.20
7/29/2013	6532	59.90	72.60
7/29/2013	6563	63.40	71.90
7/29/2013	6594	66.50	71.11
7/29/2013	6625	69.60	71.00
7/29/2013	6656	73.00	71.10
7/29/2013	6688	76.80	71.20
7/29/2013	6719	79.70	71.30
7/29/2013	6748	83.00	71.30

Date	Depth	Dev/Incl	Dir/Azm
7/30/2013	6812	89.20	71.50
7/30/2013	6905	90.50	74.70
7/30/2013	6998	89.80	77.80
7/30/2013	7093	89.50	79.80
7/30/2013	7187	91.90	81.60
7/30/2013	7281	90.70	84.10
7/30/2013	7374	90.70	86.90
7/30/2013	7468	90.10	89.30
7/31/2013	7561	89.20	92.10
7/31/2013	7655	91.20	92.30
7/31/2013	7748	92.40	92.90
7/31/2013	7841	90.90	93.10
7/31/2013	7937	91.00	91.30
7/31/2013	8030	91.30	90.80
8/1/2013	8128	91.80	90.80
8/12/2013	8265	91.40	91.40
8/12/2013	8359	91.70	91.00
8/12/2013	8452	92.00	91.00
8/13/2013	8546	92.30	90.60
8/13/2013	8640	92.00	90.80
8/14/2013	8826	91.60	90.80
8/14/2013	8920	91.80	90.40
8/15/2013	9013	90.50	90.40
8/15/2013	9107	90.30	90.80
8/15/2013	9200	90.10	90.00
8/15/2013	9294	91.30	90.50
8/15/2013	9387	91.20	92.30
8/15/2013	9482	91.10	92.20
8/15/2013	9576	90.80	92.70
8/15/2013	9669	90.50	92.60
8/16/2013	9763	90.40	91.70
8/16/2013	9857	89.80	91.50
8/16/2013	9950	90.50	91.00
8/17/2013	10043	91.20	90.20
8/17/2013	10136	92.20	90.10
8/17/2013	10230	92.20	91.10
8/18/2013	10363	92.50	91.30
8/18/2013	10457	92.70	91.30
8/18/2013	10511	90.90	91.20
8/18/2013	10604	90.50	90.70
8/18/2013	10698	90.60	90.60
8/18/2013	10850	90.60	90.40



COG Operating LLC

Eddy County, New Mexico (NAD 27 NME)

Tex Mack 11 Federal

#116H

OH/Job #1310779

Survey: Phoenix MWD Surveys

Phoenix Final Survey Report

19 August, 2013





Phoenix Technology Services
Phoenix Final Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #116H
Project:	Eddy County, New Mexico (NAD 27 NME)	TVD Reference:	K8 @ 3845.00usft (Silver Oak 3)
Site:	Tax Map 11: Federal	MD Reference:	K8 @ 3845.00usft (Silver Oak 3)
Well:	#116H	North Reference:	Grid
Wellbore:	OH/Job #1310779	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Silver Oak 3)	Database:	GCR DB

Project:	Eddy County, New Mexico (NAD 27 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		Tax Map 11 Federal			
Site Position:		Northing:	871,073.20 usft	Latitude:	32° 50' 38.11918 N
From:	Map	Easting:	649,227.70 usft	Longitude:	103° 50' 50.80188 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.26 °

Well:	#116H					
Well Position	+N-S	0.00 usft	Northing:	871,813.20 usft	Latitude:	32° 50' 45.43988 N
	+E-W	0.00 usft	Easting:	649,263.50 usft	Longitude:	103° 50' 50.34235 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,927.00 usft

Wellbore	OH/Job #1310779				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	08/25/13	7.51	80.88	48,753

Design:	Surveys (Silver Oak 3)			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)
	0.00	0.00	0.00	87.78

Survey Program		Date	08/18/13	
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.00	5,843.00	VES Gyro Surveys (OH/Job #1310779)	VES-ISCWSA-GYRO-3	Biaxial Semi-Cont. Gyro
5,878.00	10,932.00	Phoenix MWD Surveys (OH/Job #1310779)	MWD	MWD - Standard

Survey	MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	D Leg (1/100usft)
	5,843.00	0.82	288.59	5,842.81	-21.21	-43.48	-44.25	0.00
	5,878.00	0.70	282.10	5,875.80	-21.11	-43.83	-44.82	0.33
First Phoenix MWD Survey	5,907.00	0.40	340.90	5,908.80	-20.97	-44.05	-44.83	1.94
	5,938.00	2.10	59.90	5,937.80	-20.58	-43.80	-44.38	8.65
	5,970.00	4.70	60.00	5,969.54	-18.63	-41.95	-42.88	8.13
	8,002.00	8.00	81.30	8,001.34	-17.91	-38.88	-39.53	10.32
	8,033.00	11.60	82.80	8,031.88	-15.44	-34.20	-34.77	11.84
	8,084.00	15.10	84.20	8,082.04	-12.28	-27.79	-28.24	11.34
	8,095.00	18.40	85.90	8,091.72	-8.50	-19.88	-20.00	10.78
	8,128.00	21.40	87.70	8,120.88	-4.38	-9.98	-10.14	9.88



Phoenix Technology Services
Phoenix Final Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #116H
Project:	Eddy County, New Mexico (NAD 27 NME)	TVD Reference:	KB @ 3845.00usft (Silver Oak 3)
Site:	Tex Mack 11 Federal	12D Reference:	KB @ 3845.00usft (Silver Oak 3)
Well:	#116H	North Reference:	Grid
Wellbore:	OH/Job #1310779	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Silver Oak 3)	Database:	GCR DB

Survey							
NAD (usft)	Inc (°)	Asl (mudmth) (°)	TVD (usft)	N/S (usft)	RAW (usft)	V. Sec (usft)	DLeg (°/100usft)
8,158.00	24.50	70.30	8,150.33	0.09	1.67	1.67	10.19
8,169.00	27.70	71.80	8,178.18	4.54	14.58	14.72	10.49
8,220.00	30.80	72.50	8,205.21	9.20	28.87	29.30	10.10
8,251.00	33.90	72.80	8,231.39	14.14	44.80	45.32	10.01
8,282.00	36.70	73.10	8,258.89	19.39	61.83	62.83	9.05
8,313.00	39.20	73.30	8,281.13	24.90	80.18	81.08	8.07
8,344.00	41.40	73.80	8,304.77	30.58	98.40	100.51	7.17
8,378.00	43.50	74.20	8,328.38	36.53	120.18	121.49	6.82
8,407.00	46.00	74.50	8,350.40	42.41	141.18	142.72	6.08
8,438.00	50.30	74.20	8,371.08	48.64	163.41	165.17	13.69
8,470.00	54.30	73.60	8,390.84	55.87	187.73	189.74	12.58
8,501.00	57.20	73.20	8,408.09	62.89	212.28	214.58	8.42
8,532.00	59.90	72.80	8,424.28	70.77	237.58	240.12	8.88
8,583.00	63.40	71.90	8,438.98	79.08	283.53	286.40	11.48
8,594.00	66.50	71.10	8,452.10	88.00	280.16	293.35	10.27
8,625.00	69.60	71.00	8,483.89	97.33	317.35	320.89	10.00
8,658.00	73.00	71.10	8,473.83	108.87	345.12	349.00	10.97
8,688.00	76.80	71.20	8,481.96	118.85	374.35	378.60	11.88
8,719.00	79.70	71.30	8,488.27	128.60	403.08	407.89	9.38
8,755.00	83.00	71.30	8,493.89	138.01	438.80	441.82	9.17
8,812.00	89.20	71.50	8,497.58	158.14	480.87	488.35	10.88
8,908.00	90.50	74.70	8,497.81	183.48	580.80	587.27	3.87
7,000.00	89.80	77.80	8,497.58	205.80	671.89	679.36	3.38
7,083.00	89.50	79.80	8,488.13	223.88	783.11	771.21	2.17
7,187.00	91.90	81.80	8,498.98	239.05	855.88	884.48	3.19
7,281.00	90.70	84.10	8,494.85	250.75	948.10	958.10	2.95
7,374.00	90.70	88.90	8,493.71	258.04	1,041.79	1,051.01	3.01
7,468.00	90.10	89.30	8,493.08	261.16	1,135.73	1,145.00	2.83
7,581.00	89.20	92.10	8,493.82	280.02	1,228.71	1,237.86	3.18
7,655.00	91.20	92.30	8,493.30	258.41	1,322.64	1,331.58	2.14
7,749.00	92.40	92.80	8,490.34	252.15	1,418.49	1,425.20	1.43
7,842.00	90.90	93.10	8,487.67	247.29	1,509.32	1,517.77	1.83
7,937.00	91.00	91.30	8,488.09	243.84	1,604.24	1,612.47	1.90
8,030.00	91.30	90.80	8,484.22	241.84	1,697.20	1,705.30	0.83
8,128.00	91.80	90.80	8,481.57	240.57	1,795.18	1,803.13	0.51
8,172.00	91.30	91.80	8,480.38	239.85	1,839.13	1,847.03	2.14
8,265.00	91.40	91.20	8,478.18	237.38	1,932.08	1,939.82	0.44
8,359.00	91.70	91.00	8,475.85	235.57	2,028.02	2,033.83	0.38
8,452.00	92.00	91.00	8,472.85	233.95	2,118.98	2,128.43	0.32
8,548.00	92.30	90.80	8,469.12	232.64	2,212.89	2,220.24	0.53
8,640.00	92.00	90.80	8,485.59	231.49	2,308.81	2,314.05	0.38
8,733.00	91.40	90.10	8,482.84	230.78	2,399.77	2,408.91	0.99
8,828.00	91.60	90.80	8,480.40	230.03	2,492.73	2,499.77	0.78
8,920.00	91.80	90.40	8,457.81	229.05	2,588.68	2,593.82	0.48
9,013.00	90.50	90.40	8,455.75	228.40	2,679.68	2,686.50	1.40



Phoenix Technology Services
Phoenix Final Survey Report



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well #116H
Project:	Eddy County, New Mexico (NAD 27 NME)	TVD Reference:	KB @ 3945.00usft (Silver Oak 3)
Site:	Tex Mack 11 Federal	MD Reference:	KB @ 3945.00usft (Silver Oak 3)
Well:	#116H	North Reference:	Grid
Wellbore:	OH Job #1310779	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Silver Oak 3)	Database:	GCR DB

Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (FMDUsft)
9,107.00	90.30	90.80	8,455.09	227.41	2,773.88	2,780.38	0.48
9,200.00	90.10	90.00	8,454.78	228.77	2,888.65	2,873.28	0.89
9,284.00	91.30	90.50	8,453.82	228.38	2,980.64	2,867.19	1.38
9,387.00	91.20	92.30	8,451.59	224.08	3,053.59	3,059.98	1.84
9,482.00	91.10	92.20	8,449.88	220.35	3,148.50	3,154.87	0.15
9,578.00	90.80	92.70	8,448.12	218.34	3,242.40	3,248.34	0.82
9,688.00	90.50	92.60	8,447.07	212.04	3,335.29	3,341.00	0.34
9,783.00	90.40	91.70	8,446.33	208.51	3,429.22	3,434.72	0.98
9,857.00	89.80	91.50	8,446.18	205.88	3,523.18	3,528.51	0.87
9,950.00	90.50	91.00	8,445.82	203.88	3,618.18	3,621.34	0.82
10,043.00	91.20	90.20	8,444.54	202.68	3,709.14	3,714.22	1.14
10,138.00	92.20	90.10	8,441.78	202.84	3,802.10	3,807.10	1.08
10,230.00	92.20	91.10	8,438.17	201.88	3,898.03	3,900.91	1.08
10,323.00	92.50	91.30	8,434.38	199.71	3,986.83	3,993.87	0.39
10,417.00	92.70	91.30	8,430.10	197.58	4,082.81	4,087.40	0.21
10,511.00	90.80	91.20	8,427.14	185.53	4,178.73	4,181.17	1.82
10,604.00	90.50	90.70	8,428.01	183.99	4,269.71	4,274.02	0.89
10,698.00	90.60	90.60	8,425.11	182.92	4,363.70	4,367.90	0.15
10,792.00	90.30	90.10	8,424.37	182.35	4,457.70	4,461.80	0.82
10,850.00	90.60	90.40	8,423.91	182.10	4,515.70	4,519.75	0.73
Current Survey							
10,932.00	90.80	90.40	8,423.05	181.52	4,597.89	4,601.88	0.00
Projection to TD							

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,878.00	5,875.90	-21.11	-43.83	First Phoenix MWD Survey
10,850.00	8,423.91	182.10	4,515.70	Current Survey
10,932.00	8,423.05	181.52	4,597.89	Projection to TD

Checked By:	Approved By:	Date:
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District I
1625 N. French Dr., Hobbs, NM 88240
Phone (505) 397-6161 Fax (505) 397-0725

District II
811 E. First St., Artesia, NM 88210
Phone (505) 748-1283 Fax (505) 748-9720

District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone (505) 334-6170 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

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 30-015-41346	² Pool Code 97213	³ Pool Name Fren;Glorieta-Yeso, East
⁴ Property Code 37516	⁵ Property Name TEX MACK 11 FEDERAL	⁶ Well Number 116H
⁷ OGRID No. 4323	⁸ Operator Name COG OPERATING, LLC	⁹ Elevation 3927'

Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	11	17-S	31-E		1525	SOUTH	330	WEST	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
I	11	17-S	31-E		1717	SOUTH	354	EAST	EDDY
¹¹ Dedicated Acres 160	¹² Joint or Infill	¹³ Consolidation Code	¹⁴ Order No.	NSL-6803					

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.

CORNER DATA NAD 27 GRID - NM EAST A. BRASS CAP "1916" N 6702861 - E 648942.2 B. BRASS CAP "1916" N 6729258 - E 6489271 C. BRASS CAP "1916" N 6729631 - E 6542061 D. BRASS CAP "1916" N 6703234 - E 6542209 E. BRASS CAP "1916" N 6703062 - E 6515816 F. CALCULATED POINT N 6729444 - E 6515667 G. CALCULATED POINT N 6716059 - E 6489347 H. CALCULATED POINT N 6716253 - E 6515741	GEOMETRIC DATA NAD 27 GRID - NM EAST SURFACE LOCATION N 6718132 E 6492635 BOTTOM LOCATION N 6719713 E 6538816 DETAIL "A" 3926.2 800' 3929.5 3920.4 800' 3927.9	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 undivided mineral interest in the land including the proposed bottom hole location or has a right to drill this well as this location pertains 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. <i>Chasity Jackson</i> 10/21/13 Signature Date Chasity Jackson Printed Name cjackson@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. 12/13/12 Date of Survey <i>Robert M. Howey</i> Signature and Seal of Professional Surveyor 19680 Certificate Number Revised: Well No. 2/4/13		PROFESSIONAL SURVEYOR ROBERT M. HOWEY NEW MEXICO 19680