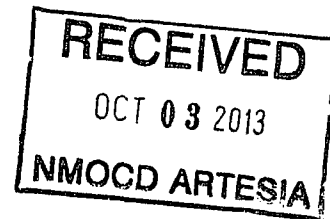




PHOENIX
TECHNOLOGY SERVICES

May 29, 2013

COG Operating LLC
Concho Resources Inc.
Attention: Regulatory Department
550 W. Texas Ave., Suite 100
Midland, Texas 79701



Re: Concho Resources Inc.
Sherman 4 Fee #4H
Eddy Co., NM
API #30-015-39720
Job No. 1310484

Dear Regulatory Department;

Phoenix Technology Services, Inc. has filed the survey certification, surveys, and lease plat for the above referenced well with the State of New Mexico Oil Conservation Division – District 2 via certified mail. A copy of the filing is attached for your records.

Name of Surveyor	Drainhole Number	Surveyed Depths		Dates Performed		Type of Survey
		From	To	Start	End	
Eric Burchinal	4H	2,521	7,557	04/30/2013	05/08/2013	MWD

Thank you for the opportunity to be of service. Please contact me if you have any questions or require additional information.

Best Regards,

Kelly Jo Walter

Kelly Jo Walter
Operations Administrator

PHOENIX TECHNOLOGY SERVICES SURVEY DATA CERTIFICATION



PHOENIX JOB NUMBER 1310484

OPERATOR COG OPERATING LLC

WELL NAME SHERMAN 4 FEE #4H

COUNTY & STATE EDDY COUNTY, NEW MEXICO

API WELL NUMBER	30-015-39720
-----------------	--------------

PROPOSED DIRECTION	0.85
--------------------	------

TIE-IN DATA						
MEASURED DEPTH	VERTICAL DEPTH	INCLIN	AZIMUTH	N-S COORD	E-W COORD	DATA SOURCE
2,453 ft	16.32 ft	1.73	272.08	16.32	-45.1	GYRO

FIRST SURVEY DATE	FIRST SURVEY DEPTH	INCLIN	AZIMUTH
30-Apr-13	2,521 ft	1.7	277.4

SURVEY INSTRUMENT TYPE
PHOENIX MWD

LAST SURVEY DATE	LAST SURVEY DEPTH	INCLIN	AZIMUTH
8-May-13	7,557 ft	91.4	359

TO THE BEST OF MY KNOWLEDGE I
CERTIFY THIS SURVEY DATA TO BE
TRUE AND CORRECT.

PROJECTED TD SURVEY DATE	PROJECTED TD SURVEY DEPTH	INCLIN	AZIMUTH
8-May-13	7,644 ft	91.4	359

Eric Burchinal

PRINT YOUR NAME ABOVE

Eric Burchinal

SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	7.8
DECLINATION OR GRID	GRID

5-8-13

TODAY'S DATE

MWD SUPERVISOR 1 ERIC BURCHINAL

DIRECTIONAL DRILLER 1

ANDREW HODGKINS

MWD SUPERVISOR 2 JUSTIN LEE

DIRECTIONAL DRILLER 2

NATHAN HODGKINS

1805 Brittmore Road

Houston, Texas 77043

(713)3370609 (Voice), (713)337-0599 (Fax)

Company: COG Operating LLC (Concho)

Lease/Well: Sherman 4 Fee / No. 004H



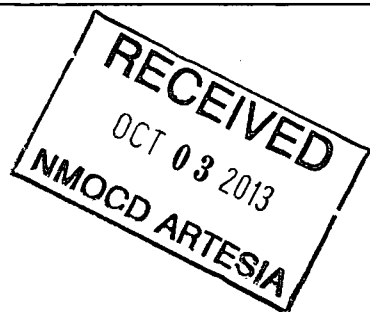
Rig Name: JW 4

State/County: New Mexico / Eddy

Latitude: 32.68, Longitude: -104.38

GRID North is 0.03 Degrees West of True North

VS-Azi: 0.00 Degrees



Depth Reference : RKB=13'

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: survey.ut

Minimum Curvature Method

Report Date/Time: 5/1/2013 / 10:50

Vaughn Energy Services

Gardendale, Texas

432-563-5444

Survey Engineer: Kyle Willis

Sherman 4 Fee No. 004H / API 30-015-39720

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	0.50	337.11	100.00	0.40	-0.17	0.40	0.43	337.11	0.50
200.00	0.62	314.93	199.99	1.18	-0.72	1.18	1.38	328.59	0.25
300.00	0.88	320.09	299.99	2.15	-1.60	2.15	2.68	323.42	0.27
400.00	1.23	317.78	399.97	3.54	-2.81	3.54	4.52	321.51	0.36
500.00	1.39	315.00	499.94	5.19	-4.40	5.19	6.80	319.76	0.17
600.00	0.99	302.37	599.92	6.52	-5.99	6.52	8.85	317.43	0.47
700.00	0.91	281.66	699.91	7.14	-7.50	7.14	10.36	313.61	0.35
800.00	1.15	281.22	799.89	7.50	-9.26	7.50	11.92	308.99	0.24
900.00	1.07	262.14	899.87	7.57	-11.18	7.57	13.50	304.10	0.38
1000.00	1.33	272.15	999.85	7.48	-13.26	7.48	15.22	299.44	0.33
1100.00	0.87	280.06	1099.83	7.66	-15.16	7.66	16.99	296.80	0.48
1200.00	0.98	283.30	1199.82	7.99	-16.75	7.99	18.55	295.50	0.12
1300.00	1.07	291.79	1299.80	8.53	-18.45	8.53	20.33	294.82	0.18
1400.00	1.06	274.46	1399.79	8.95	-20.24	8.95	22.14	293.86	0.32
1500.00	1.32	283.71	1499.76	9.30	-22.29	9.30	24.15	292.65	0.32
1600.00	1.29	287.94	1599.74	9.92	-24.48	9.92	26.42	292.06	0.10
1700.00	1.48	298.92	1699.71	10.89	-26.69	10.89	28.82	292.20	0.32
1800.00	1.32	292.51	1799.68	11.96	-28.88	11.96	31.26	292.49	0.22

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
1900.00	1.53	289.46	1899.65	12.84	-31.20	12.84	33.74	292.37	0.22
2000.00	1.42	286.77	1999.61	13.64	-33.64	13.64	36.31	292.07	0.13
2100.00	1.60	285.82	2099.58	14.38	-36.17	14.38	38.93	291.68	0.18
2200.00	1.43	284.63	2199.55	15.08	-38.72	15.08	41.55	291.28	0.18
2300.00	1.31	284.79	2299.52	15.68	-41.03	15.68	43.92	290.92	0.12
2400.00	1.64	278.44	2399.48	16.18	-43.55	16.18	46.46	290.39	0.37
2453.00	1.73	272.08	2452.46	16.32	-45.10	16.32	47.96	289.90	0.39



COG Operating LLC

Eddy County, New Mexico (NAD 27 NME)

Sherman 4 Fee

#4H

OH / Job #1310484

Survey: Phoenix MWD Survey

Phoenix Final Survey Report

08 May, 2013





Phoenix Technology Services

Phoenix Final Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #4H
Project:	Eddy County, New Mexico (NAD 27 NME)	TVD Reference:	KB @ 3353.00usft (JW 4)
Site:	Sherman 4 Fee	MD Reference:	KB @ 3353.00usft (JW 4)
Well:	#4H	North Reference:	Grid
Wellbore:	OH / Job #1310484	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (JW 4)	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	Sherman 4 Fee		
Site Position:		Northing:	612,151.80 usft
From:	Map	Easting:	485,212.40 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"
		Latitude:	32° 40' 58.423805 N
		Longitude:	104° 22' 53.024523 W
		Grid Convergence:	-0.03 °

Well	#4H		
Well Position	+N-S	0.00 usft	Northing:
	+E-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 40' 58.423805 N
		Longitude:	104° 22' 53.024523 W
		Ground Level:	3,340.00 usft

Wellbore	OH / Job #1310484		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010_14	04/19/13	7.77
			Dip Angle
			(°)
			60.43
			Field Strength
			(nT)
			48,619

Design	Surveys (JW 4)		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N-S	+E-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			0.85

Survey Program	Date 05/07/13		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
100.00	2,453.00	VES Gyro Survey (OH / Job #1310484)	VES-ISCWSA-GYRO-3
2,521.00	7,644.62	Phoenix MWD Survey (OH / Job #1310484)	MWD
			Description
			Biaxial Semi-Cont. Gyro
			MWD - Standard

Survey	MD	Inc	Azi (azimuth)	TVD	N/S	E/W	V. Sec	D Leg
	(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(°/100usft)
	2,453.00	1.73	272.08	2,452.46	16.32	-45.07	15.65	0.00
Tie-on to VES Gyro								
	2,521.00	1.70	277.40	2,520.43	16.48	-47.10	15.78	0.24
Phoenix First MWD Survey								
	2,552.00	1.70	306.00	2,551.42	16.81	-47.93	16.10	2.71
	2,583.00	2.80	344.00	2,582.39	17.81	-48.51	17.09	5.80
	2,615.00	4.30	355.50	2,614.33	19.76	-48.82	19.03	5.17
	2,646.00	6.10	359.90	2,645.20	22.56	-48.91	21.84	5.94
	2,677.00	8.30	3.60	2,675.96	26.44	-48.78	25.72	7.25
	2,707.00	10.80	5.10	2,705.54	31.41	-48.39	30.68	8.37
	2,739.00	15.70	8.10	2,736.68	38.68	-47.51	37.97	15.46



Phoenix Technology Services

Phoenix Final Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #4H
Project:	Eddy County, New Mexico (NAD 27 NME)	TVD Reference:	KB @ 3353.00usft (JW 4)
Site:	Sherman 4 Fee	MD Reference:	KB @ 3353.00usft (JW 4)
Well:	#4H	North Reference:	Grid
Wellbore:	OH / Job #1310484	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (JW 4)	Database:	GCR DB

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (%/100usft)	
2,770.00	20.70	9.40	2,766.12	48.25	-46.03	47.56	16.18	
2,801.00	24.90	9.50	2,794.69	60.09	-44.05	59.43	13.55	
2,832.00	26.80	9.00	2,822.59	73.43	-41.88	72.81	6.17	
2,863.00	30.30	10.80	2,849.81	88.02	-39.32	87.43	11.63	
2,894.00	34.50	12.30	2,875.98	104.29	-35.99	103.75	13.79	
2,926.00	37.70	14.20	2,901.84	122.64	-31.65	122.15	10.59	
2,957.00	41.10	15.40	2,925.79	141.65	-26.62	141.24	11.24	
2,988.00	44.30	15.80	2,948.57	161.90	-20.97	161.57	10.36	
3,019.00	48.40	15.70	2,969.96	183.48	-14.88	183.24	13.23	
3,050.00	52.30	15.70	2,989.74	206.46	-8.42	206.31	12.58	
3,081.00	55.80	15.60	3,007.93	230.62	-1.65	230.57	11.29	
3,112.00	58.80	16.60	3,024.68	255.68	5.58	255.73	10.05	
3,143.00	62.10	16.90	3,039.97	281.50	13.36	281.66	10.68	
3,175.00	65.80	15.90	3,054.02	309.07	21.47	309.36	11.90	
3,206.00	68.40	14.00	3,066.08	336.66	28.83	337.05	10.11	
3,237.00	71.60	12.60	3,076.68	365.01	35.53	365.49	11.16	
3,268.00	73.80	11.90	3,085.90	393.93	41.80	394.50	7.42	
3,300.00	76.50	11.70	3,094.10	424.20	48.13	424.87	8.46	
3,331.00	79.50	11.10	3,100.54	453.92	54.12	454.68	9.86	
3,362.00	82.00	10.50	3,105.53	483.98	59.85	484.81	8.29	
3,394.00	84.00	9.90	3,109.43	515.23	65.48	516.15	6.52	
3,425.00	86.00	10.00	3,112.13	545.65	70.81	546.64	6.46	
3,456.00	87.90	9.70	3,113.78	576.15	76.11	577.21	6.20	
3,487.00	88.80	9.30	3,114.67	606.71	81.22	607.85	3.18	
3,518.00	88.90	9.10	3,115.29	637.30	86.18	638.51	0.72	
3,613.00	89.00	8.70	3,117.03	731.14	100.87	732.56	0.43	
3,706.00	89.30	8.50	3,118.41	823.09	114.78	824.70	0.39	
3,800.00	89.00	5.90	3,119.81	916.33	126.56	918.11	2.78	
3,893.00	89.20	3.80	3,121.27	1,008.98	134.42	1,010.86	2.27	
3,987.00	89.70	2.30	3,122.17	1,102.84	139.42	1,104.79	1.68	
4,080.00	91.50	1.30	3,121.20	1,195.78	142.34	1,197.76	2.21	
4,174.00	91.90	359.50	3,118.41	1,289.74	143.00	1,291.71	1.96	
4,267.00	91.70	359.60	3,115.49	1,382.69	142.27	1,384.65	0.24	
4,361.00	92.00	0.10	3,112.45	1,476.64	142.02	1,478.58	0.62	
4,454.00	91.30	358.50	3,109.77	1,569.59	140.88	1,571.51	1.88	
4,548.00	91.10	358.90	3,107.81	1,663.54	138.75	1,665.42	0.48	
4,641.00	92.10	358.60	3,105.21	1,756.48	136.72	1,758.32	1.12	
4,735.00	91.70	358.90	3,102.09	1,850.41	134.67	1,852.20	0.53	
4,829.00	91.50	357.50	3,099.47	1,944.32	131.72	1,946.06	1.50	
4,874.00	91.50	357.70	3,098.29	1,989.27	129.84	1,990.98	0.44	
4,936.00	91.00	357.70	3,096.94	2,051.20	127.35	2,052.87	0.81	
5,030.00	92.00	357.30	3,094.48	2,145.08	123.25	2,146.67	1.15	
5,123.00	91.60	357.30	3,091.56	2,237.93	118.87	2,239.45	0.43	
5,217.00	91.10	357.50	3,089.34	2,331.81	114.61	2,333.25	0.57	



Phoenix Technology Services

Phoenix Final Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #4H
Project:	Eddy County, New Mexico (NAD 27 NME)	TVD Reference:	KB @ 3353.00usft (JW.4)
Site:	Sherman 4 Fee	MD Reference:	KB @ 3353.00usft (JW.4)
Well:	#4H	North Reference:	Grid
Wellbore:	OH / Job #1310484	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (JW.4)	Database:	GCR DB

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
5,310.00	92.70	358.60	3,086.26	2,424.70	111.45	2,426.09	2.09
5,404.00	92.10	358.20	3,082.32	2,518.58	108.83	2,519.92	0.77
5,497.00	92.00	358.20	3,078.99	2,611.47	105.91	2,612.76	0.11
5,591.00	91.60	358.20	3,076.04	2,705.38	102.96	2,706.61	0.43
5,684.00	92.40	359.20	3,072.80	2,798.30	100.85	2,799.49	1.38
5,778.00	91.80	359.10	3,069.35	2,892.22	99.45	2,893.38	0.65
5,871.00	91.70	359.70	3,066.51	2,985.18	98.48	2,986.31	0.65
5,965.00	91.00	0.20	3,064.30	3,079.15	98.40	3,080.27	0.92
6,059.00	91.80	359.90	3,062.00	3,173.12	98.48	3,174.23	0.91
6,152.00	91.40	359.50	3,059.40	3,266.08	97.99	3,267.18	0.61
6,246.00	91.00	359.70	3,057.44	3,360.06	97.34	3,361.13	0.48
6,340.00	92.20	359.90	3,054.81	3,454.02	97.01	3,455.08	1.29
6,433.00	92.00	0.20	3,051.40	3,546.96	97.09	3,548.01	0.39
6,526.00	91.70	0.30	3,048.40	3,639.91	97.50	3,640.95	0.34
6,620.00	92.10	1.50	3,045.28	3,733.84	98.97	3,734.90	1.34
6,714.00	92.30	0.30	3,041.68	3,827.76	100.45	3,828.83	1.29
6,808.00	91.20	358.70	3,038.80	3,921.71	99.63	3,922.75	2.06
6,901.00	91.60	358.50	3,036.53	4,014.65	97.35	4,015.65	0.48
6,995.00	92.00	358.80	3,033.58	4,108.58	95.14	4,109.54	0.53
7,089.00	91.90	358.80	3,030.38	4,202.50	93.17	4,203.42	0.11
7,182.00	92.30	359.00	3,026.97	4,295.42	91.39	4,296.31	0.48
7,275.00	90.70	358.30	3,024.54	4,388.36	89.20	4,389.20	1.88
7,369.00	90.40	358.60	3,023.64	4,482.32	86.66	4,483.12	0.45
7,463.00	91.30	358.50	3,022.24	4,576.28	84.28	4,577.03	0.96
7,557.00	91.40	359.00	3,020.03	4,670.23	82.23	4,670.94	0.54
Phoenix Last MWD Survey							
7,644.00	91.40	359.00	3,017.90	4,757.19	80.71	4,757.87	0.00
Projection to TD							

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,453.00	2,452.46	16.32	-45.07	Tie-on to VES Gyro
2,521.00	2,520.43	16.48	-47.10	Phoenix First MWD Survey
7,557.00	3,020.21	4,670.24	82.09	Phoenix Last MWD Survey
7,644.00	3,018.08	4,757.20	80.57	Projection to TD

Checked By: _____ Approved By: _____ Date: _____