

February 12, 2015

Concho Resources, Inc.
One Concho Center
600 W. Illinois Avenue
Midland, Texas 79701

NM OIL CONSERVATION
ARTESIA DISTRICT

MAR 20 2015

RECEIVED

30-015-40751

Attn: Kanicia Castillo

RE: Dodd Federal Unit 578

Please find enclosed a copy of the survey from 0.00' to 860.00' ran on the above referenced well.

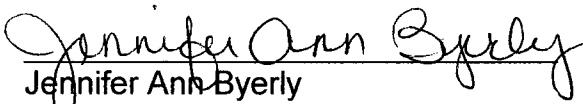
If I can be of any further service, please do not hesitate to call me at 800-606-4976.

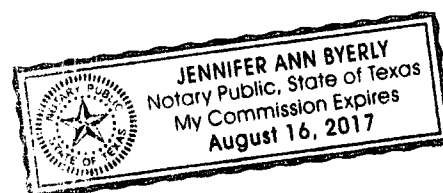
Sincerely,


Kimberly D Moller
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 12 day of Feb,
A.D., 2015, by Kimberly D Moller.


Jennifer Ann Byerly
Notary Public, State of Texas





Company: COG Operating
Lease/Well: Dodd Federal Unit/578

Location: Sec10 T17S R29E

Rig Name: Basic 38

State/County: New Mexico/Eddy

Latitude: 32.84, Longitude: -104.06

GRID North is 0.15 Degrees East of True North

VS-Azi: 0.00 Degrees



Depth Reference : 13 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: gyro survey.ut

Minimum Curvature Method

Report Date/Time: 2/12/2015 / 16:03

VES Survey International

West Texas

(432) 563-5444

Surveyor: Noe Garza

Dodd Federal Unit 578 / API 30-015-40751

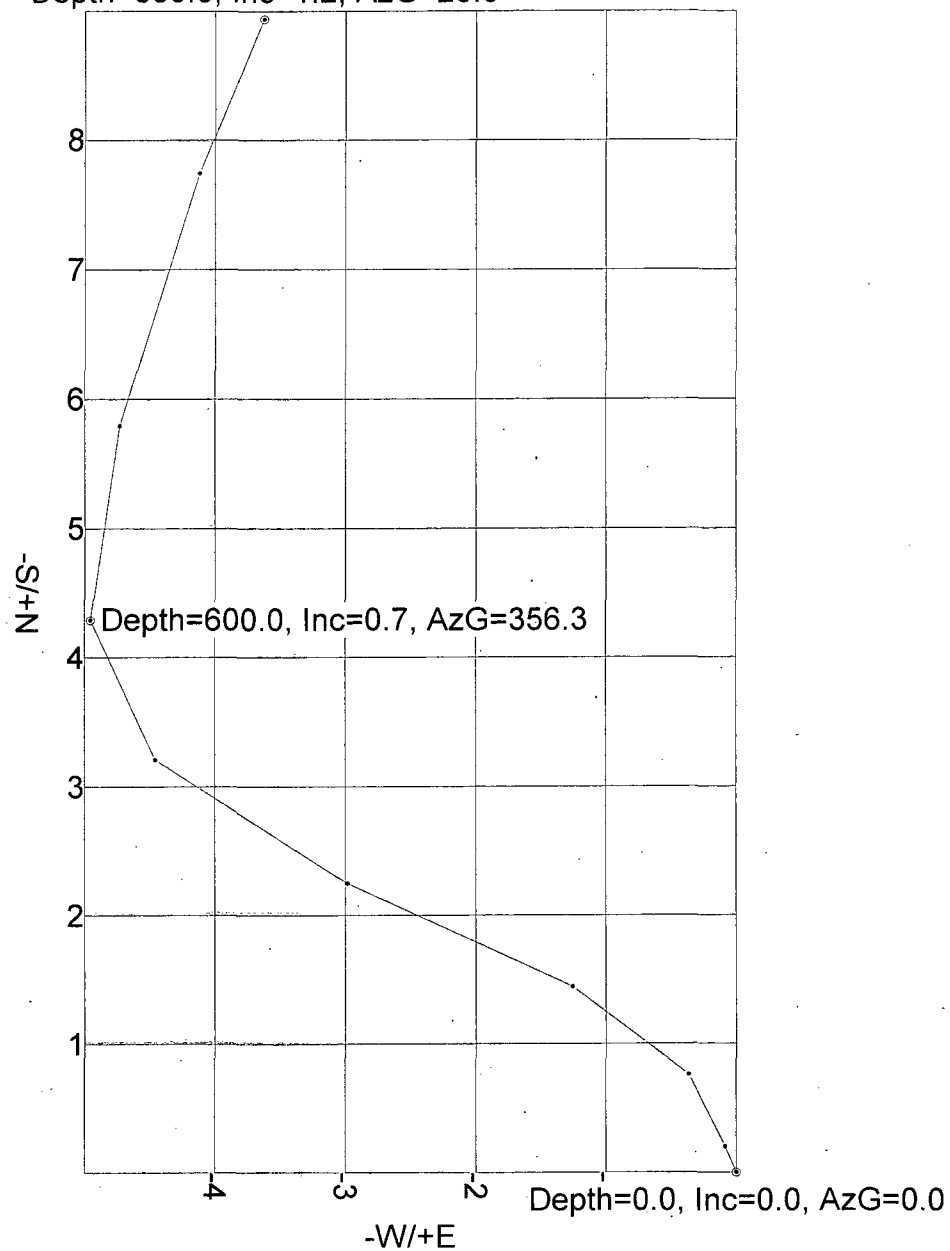
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.25	337.62	100.00	0.20	-0.08	0.20	0.22	337.62	0.25
200.00	0.46	331.35	200.00	0.76	-0.36	0.76	0.84	334.62	0.21
300.00	0.89	295.25	299.99	1.44	-1.26	1.44	1.92	318.94	0.59
400.00	1.29	294.83	399.97	2.25	-2.98	2.25	3.73	307.01	0.39
500.00	0.77	317.00	499.96	3.21	-4.46	3.21	5.49	305.76	0.64
600.00	0.68	356.26	599.95	4.29	-4.95	4.29	6.55	310.91	0.49
700.00	1.08	16.03	699.94	5.79	-4.73	5.79	7.48	320.76	0.50
800.00	1.26	18.66	799.92	7.74	-4.12	7.74	8.77	331.99	0.19
860.00	1.21	26.51	859.90	8.94	-3.62	8.94	9.64	337.93	0.29



VES Survey International
West Texas
(432) 563-5444
Surveyor: Noe Garza
Dodd Federal Unit 578 / API 30-015-40751



Depth=860.0, Inc=1.2, AzG=26.5



VES Survey Date: 02/06/2015

OPERATOR COG Operating
WELL/LEASE Dodd Federal Unit #578
COUNTY Eddy Co., NM.

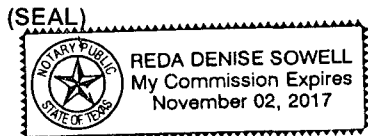
STATE OF NEW MEXICO
DEVIATION REPORT

228	1.50
590	0.84
900	1.00
957	1.10
1147	2.90
1337	4.30
1526	3.70
1716	4.80
1906	3.80
2096	4.00
2286	4.20
2476	4.60
2634	4.70
2724	4.50
3013	4.40
3203	4.10
3393	4.10
3583	3.90
3678	3.90
3883	3.80
3868	3.80
3963	3.90
4058	3.80
4152	4.00

SIGNED BY: *Ron Scandolari*
RON SCANDOLARI, VP-CONTRACT DRILLING

STATE OF TEXAS
COUNTY OF MIDLAND

ON THIS 19 DAY OF February, 2015, BEFORE ME, R SOWELL, A NOTARY
PUBLIC, PERSONALLY APPEARED RON SCANDOLARI, WHO ACKNOWLEDGED AND EXECUTED
THIS DOCUMENT. WITNESS MY HAND AND OFFICIAL SEAL.



Reda Denise Sowell
NOTARY PUBLIC



COG Operating LLC

Eddy County, NM (NAD27 NME)

Dodd Federal Unit

#578

WB1 / Job #1512922

Design: Surveys (Basic 38)

Standard Survey Report

10 February, 2015





Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #578
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3602.00usft (Basic 38)
Site:	Dodd Federal Unit	MD Reference:	KB @ 3602.00usft (Basic 38)
Well:	#578	North Reference:	Grid
Wellbore:	WB1 / Job #1512922	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Basic 38)	Database:	Compass 5000 GCR

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	Dodd Federal Unit		
Site Position:		Northing:	669,009.70 usft
From:	Map	Easting:	585,704.90 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 50' 19.97600 N
		Longitude:	104° 3' 15.44871 W
		Grid Convergence:	0.15 °

Well	#578		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 50' 35.78957 N
		Longitude:	104° 3' 40.06966 W
		Ground Level:	3,590.00 usft

Wellbore	WB1 / Job #1512922		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2015	2/5/2015	7.48
			Dip Angle
			(°)
			60.58
			Field Strength
			(nT)
			48,496

Design	Surveys (Basic 38)		
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
			(°)
			174.87

Survey Program	Date 2/10/2015		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
100.00	860.00	VES Gyro Surveys (WB1 / Job #1512922)	NS-GYRO-MS
957.00	4,420.00	Phoenix MWD Survey (WB1 / Job #15129	PHX+MWD+IGRF
			Description
			North sensing gyrocompassing m/s
			PHX+MWD+IGRF v3: standard declination

Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn	
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate	
(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	
100.00	0.25	337.62	100.00	0.20	-0.08	-0.21	0.25	0.25	0.00	
200.00	0.46	331.35	200.00	0.76	-0.36	-0.78	0.21	0.21	-6.27	
300.00	0.89	295.25	299.99	1.44	-1.25	-1.55	0.58	0.43	-36.10	
400.00	1.29	294.83	399.97	2.24	-2.98	-2.50	0.40	0.40	-0.42	
500.00	0.77	317.00	499.96	3.21	-4.46	-3.59	0.65	-0.52	22.17	
600.00	0.68	356.26	599.95	4.29	-4.95	-4.72	0.49	-0.09	39.26	
700.00	1.08	16.03	699.94	5.79	-4.73	-6.19	0.50	0.40	19.77	
800.00	1.26	18.66	799.92	7.74	-4.12	-8.07	0.19	0.18	2.63	
860.00	1.21	26.51	859.90	8.93	-3.63	-9.22	0.29	-0.08	13.08	



Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #578
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3602.00usft (Basic 38)
Site:	Dodd Federal Unit	MD Reference:	KB @ 3602.00usft (Basic 38)
Well:	#578	North Reference:	Grid
Wellbore:	WB1 / Job #1512922	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Basic 38)	Database:	Compass 5000 GCR

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)
Tie-on to VES Gyro Survey:									
957.00	1.10	34.20	956.88	10.61	-2.65	-10.81	0.20	-0.11	7.93
First Phoenix MWD Survey:									
1,020.00	0.70	59.50	1,019.88	11.31	-1.97	-11.44	0.88	-0.63	40.16
1,083.00	1.10	180.70	1,082.87	10.90	-1.65	-11.00	2.51	0.63	192.38
1,147.00	2.90	183.20	1,146.83	8.67	-1.75	-8.79	2.82	2.81	3.91
1,210.00	4.40	177.50	1,209.70	4.66	-1.73	-4.80	2.45	2.38	-9.05
1,273.00	4.60	176.80	1,272.51	-0.27	-1.49	0.14	0.33	0.32	-1.11
1,337.00	4.30	177.50	1,336.31	-5.23	-1.24	5.10	0.48	-0.47	1.09
1,400.00	4.10	177.90	1,399.14	-9.84	-1.05	9.71	0.32	-0.32	0.63
1,463.00	3.90	177.20	1,461.99	-14.23	-0.87	14.10	0.33	-0.32	-1.11
1,526.00	3.70	177.80	1,524.85	-18.40	-0.68	18.27	0.32	-0.32	0.95
1,590.00	4.10	173.70	1,588.70	-22.74	-0.35	22.62	0.76	0.63	-6.41
1,653.00	4.80	172.60	1,651.51	-27.59	0.23	27.50	1.12	1.11	-1.75
1,716.00	4.80	174.10	1,714.29	-32.83	0.84	32.77	0.20	0.00	2.38
1,779.00	4.40	174.80	1,777.09	-37.86	1.33	37.83	0.64	-0.63	1.11
1,843.00	4.10	176.30	1,840.91	-42.59	1.71	42.57	0.50	-0.47	2.34
1,906.00	3.80	177.40	1,903.76	-46.92	1.95	46.91	0.49	-0.48	1.75
1,969.00	4.30	174.50	1,966.61	-51.36	2.27	51.35	0.86	0.79	-4.60
2,032.00	4.40	173.70	2,029.42	-56.11	2.76	56.13	0.19	0.16	-1.27
2,096.00	4.00	174.20	2,093.25	-60.77	3.25	60.82	0.63	-0.63	0.78
2,159.00	3.70	174.20	2,156.11	-64.98	3.68	65.05	0.48	-0.48	0.00
2,223.00	3.50	174.20	2,219.98	-68.98	4.09	69.07	0.31	-0.31	0.00
2,286.00	4.20	173.00	2,282.84	-73.18	4.56	73.29	1.12	1.11	-1.90
2,349.00	4.60	173.30	2,345.66	-77.98	5.14	78.13	0.64	0.63	0.48
2,412.00	4.70	174.20	2,408.45	-83.06	5.69	83.23	0.20	0.16	1.43
2,476.00	4.60	176.20	2,472.24	-88.22	6.13	88.42	0.30	-0.16	3.13
2,539.00	4.60	176.40	2,535.03	-93.27	6.45	93.47	0.03	0.00	0.32
2,634.00	4.70	177.00	2,629.72	-100.96	6.90	101.17	0.12	0.11	0.63
2,729.00	4.70	166.90	2,724.40	-108.63	7.98	108.91	0.87	0.00	-10.63
2,824.00	4.50	174.10	2,819.10	-116.13	9.25	116.49	0.64	-0.21	7.58
2,918.00	4.40	175.50	2,912.82	-123.39	9.91	123.79	0.16	-0.11	1.49
3,013.00	4.40	173.40	3,007.54	-130.65	10.62	131.07	0.17	0.00	-2.21
3,108.00	4.50	173.80	3,102.25	-137.97	11.44	138.44	0.11	0.11	0.42
3,203.00	4.10	175.60	3,196.98	-145.06	12.10	145.56	0.44	-0.42	1.89
3,298.00	4.10	174.30	3,291.74	-151.83	12.70	152.36	0.10	0.00	-1.37
3,393.00	4.10	172.90	3,386.50	-158.58	13.45	159.15	0.11	0.00	-1.47
3,488.00	4.00	173.30	3,481.26	-165.24	14.26	165.85	0.11	-0.11	0.42
3,583.00	3.90	174.60	3,576.03	-171.75	14.95	172.39	0.14	-0.11	1.37
3,678.00	3.90	174.50	3,670.81	-178.18	15.57	178.86	0.01	0.00	-0.11
3,773.00	3.80	174.60	3,765.60	-184.53	16.17	185.23	0.11	-0.11	0.11
3,868.00	3.80	175.20	3,860.39	-190.80	16.73	191.53	0.04	0.00	0.63
3,963.00	3.90	174.90	3,955.17	-197.15	17.28	197.91	0.11	0.11	-0.32



Survey Report



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well: #578
Project:	Eddy County, NM (NAD27-NME)	TVD Reference:	KB @ 3602.00usft (Basic 38)
Site:	Dodd Federal Unit	MD Reference:	KB @ 3602.00usft (Basic 38)
Well:	#578	North Reference:	Grid
Wellbore:	WB1 // Job #1512922	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Basic 38)	Database:	Compass 5000 GCR

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)
4,058.00	3.80	174.40	4,049.96	-203.50	17.88	204.29	0.11	-0.11	-0.53
4,153.00	4.00	176.10	4,144.74	-209.94	18.41	210.75	0.24	0.21	1.79
4,247.00	4.00	174.80	4,238.51	-216.48	18.93	217.30	0.10	0.00	-1.38
4,342.00	4.00	174.80	4,333.28	-223.08	19.53	223.93	0.00	0.00	0.00
4,370.00	4.00	174.60	4,361.21	-225.02	19.71	225.88	0.05	0.00	-0.71
Last Phoenix MWD Survey									
4,420.00	4.00	174.60	4,411.09	-228.50	20.04	229.37	0.00	0.00	0.00
Projection to TD									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
860.00	859.90	8.93	-3.63	Tie-on to VES Gyro Survey
957.00	956.88	10.61	-2.65	First Phoenix MWD Survey
4,370.00	4,361.21	-225.02	19.71	Last Phoenix MWD Survey
4,420.00	4,411.09	-228.50	20.04	Projection to TD

Checked By: _____ Approved By: _____ Date: _____