



NM OIL CONSERVATION
ARTESIA DISTRICT

APR 04 2016

RECEIVED

January 20, 2016

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

15-41585

Attn: Kanicia Castillo

RE: Chimay 6 Federal Com No 026H

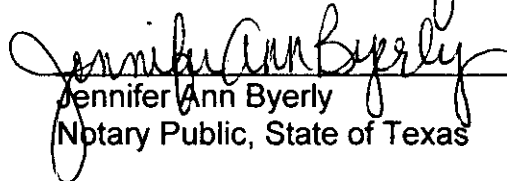
Please find enclosed a copy of the survey from 0' to 1120' ran on the above referenced well.

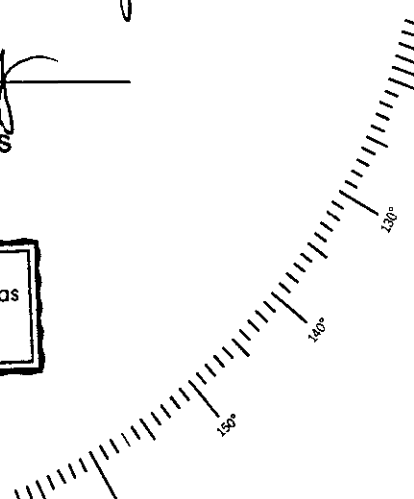
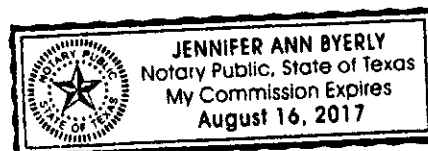
Sincerely,

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 20 day of January
A.D., 2016, by Keith Havelka.


Jennifer Ann Byerly
Notary Public, State of Texas





NM OIL CONSERVATION
ARTESIA DISTRICT

APR 04 2016

RECEIVED

I Brian Brewbaker certify that I am employed by VES Survey International. That I did on the day(s) of 1/15/16-1/16/16 through 1/15/16-1/16/16 conduct or supervise the taking of a Rate Gyro survey from a depth of 0.00 feet to a depth of 1,120.00 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Vaughn Energy Services, that I am authorized and qualified to make this report; that this survey was conducted at the request of Concho for the Chimay 6 Well # Fed Com 26H API # 30-015-41585 in Eddy County / Parish New Mexico; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by VES Survey International.



Brian Brewbaker
Service Technician
VES Survey International



Company: Concho

Well: Chimay 6 Federal Com No 026H

API #: 30-015-41585

Rig Name: Silver Oak 3

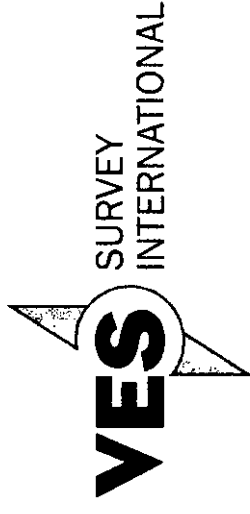
State/County: New Mexico/Eddy

VS-Azi: 0.000 Degrees

Latitude: 32.81655, Longitude: -104.01808

Grid North = True North -0.17 degs (NAD 27)

Grid Correction Applied = -0.17 degs



Depth Reference : RKB= 18 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: hgyro_1130-de_01.ut

Minimum Curvature Method

Report Date/Time: 1/20/2016 / 13:45

VES Survey International
Gardendale, Texas

866-835-8333

Surveyor: Brian Brewbaker

Chimay 6 Federal Com No 026H / API 30-015-41585

NM OIL CONSERVATION

ARTESIA DISTRICT

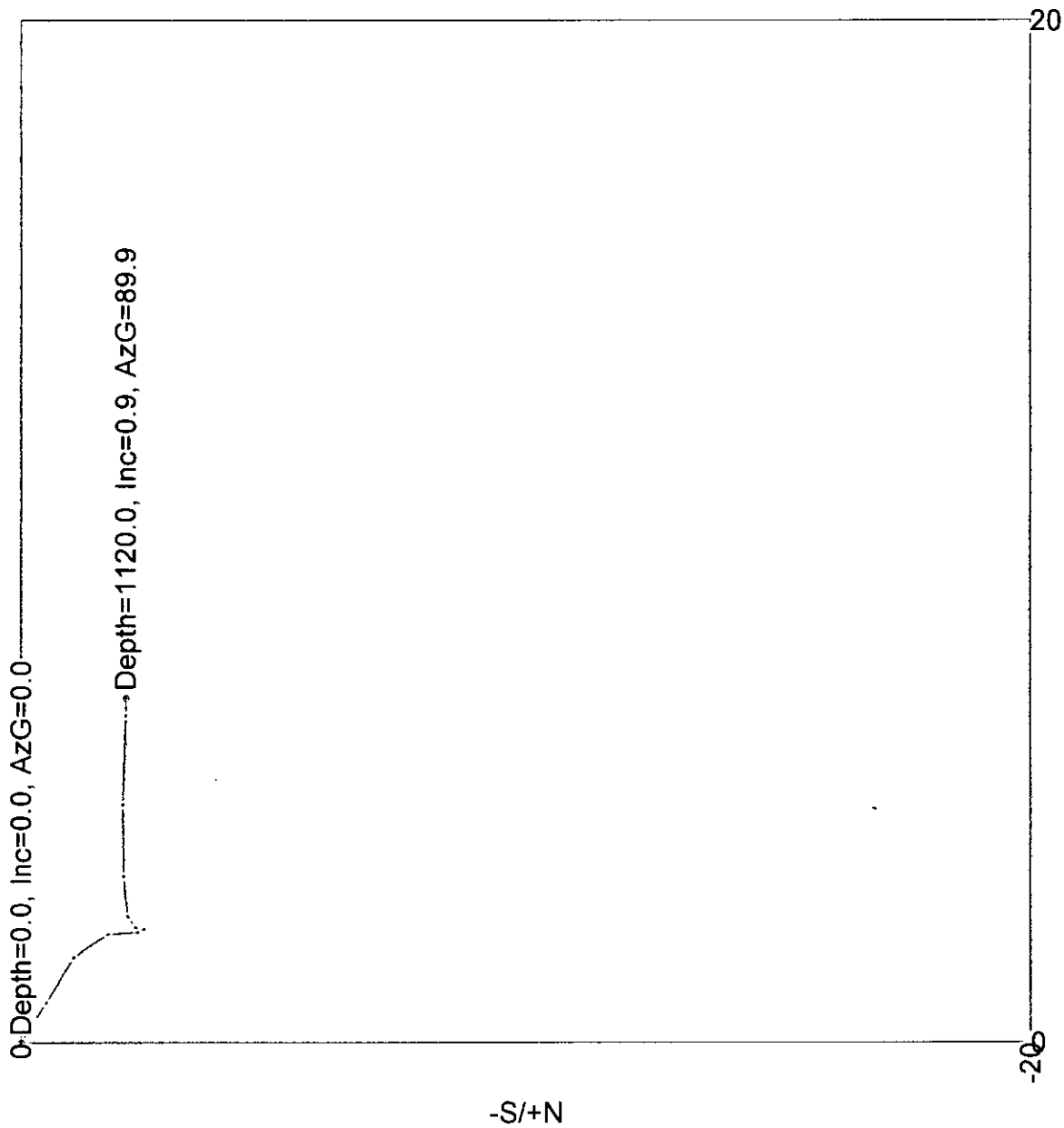
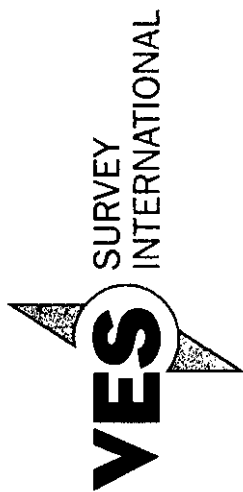
APR 04 2016

RECEIVED

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
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	****
100.000	0.235	122.418	100.000	-0.110	0.173	-0.110	0.205	122.418	0.235
200.000	0.590	122.060	199.997	-0.494	0.783	-0.494	0.926	122.219	0.354
300.000	0.632	121.744	299.991	-1.057	1.688	-1.057	1.992	122.047	0.042
400.000	0.445	181.003	399.988	-1.735	2.150	-1.735	2.762	128.896	0.556
500.000	0.225	167.702	499.986	-2.314	2.185	-2.314	3.183	136.645	0.232
600.000	0.075	19.940	599.986	-2.445	2.249	-2.445	3.322	137.388	0.291
700.000	0.128	4.733	699.985	-2.273	2.280	-2.273	3.219	134.900	0.059
800.000	0.228	77.979	799.985	-2.120	2.484	-2.120	3.266	130.477	0.227
900.000	0.696	86.168	899.981	-2.038	3.285	-2.038	3.866	121.813	0.472
1000.000	0.937	91.886	999.971	-2.024	4.709	-2.024	5.126	113.262	0.254
1100.000	1.060	91.649	1099.956	-2.078	6.451	-2.078	6.778	107.853	0.123
1120.000	0.914	89.933	1119.953	-2.083	6.796	-2.083	7.108	107.041	0.748



VES Survey International
Gardendale, Texas
866-835-8333
Surveyor: Brian Brewbaker
Chimay 6 Federal Com No 026H / API 30-015-41585





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

NM OIL CONSERVATION
ARTESIA DISTRICT

APR 04 2016

RECEIVED

January 26, 2016

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

RE: Chimay 6 Federal Com 26H
1963' FSL & 327' FWL
Sec. 6, T17S, R30E
Eddy County, New Mexico

Dear Sir,

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

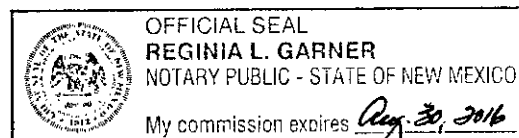
Very truly yours,

A handwritten signature in black ink, appearing to read "Chris Graham".

Chris Graham
Drilling Superintendent

State of New Mexico }
County of Eddy }

The foregoing was acknowledged before me this 26th day of January, 2016.

A handwritten signature in black ink, appearing to read "Regina L. Garner".
Notary Public

Chimay 6 Federal Com 26H
Eddy County, New Mexico

Date	Depth	Deviation	Direction
1/13/2016	177	0.30	
1/14/2016	325	0.30	
1/15/2016	569	0.30	
1/16/2016	1064	0.90	
1/17/2016	1215	1.10	109.30
1/17/2016	1309	1.40	170.20
1/18/2016	1404	3.00	202.00
1/18/2016	1498	4.80	214.70
1/18/2016	1593	1.80	220.40
1/18/2016	1687	7.60	220.90
1/18/2016	1782	7.80	219.60
1/18/2016	1876	8.70	221.30
1/18/2016	1971	9.50	225.80
1/18/2016	2065	10.00	225.90
1/18/2016	2160	9.60	227.50
1/18/2016	2254	8.80	233.60
1/18/2016	2349	9.00	235.20
1/18/2016	2538	9.50	232.50
1/18/2016	2632	9.20	235.60
1/18/2016	2726	9.70	234.80
1/18/2016	2821	9.10	234.30
1/19/2016	3010	8.70	227.00
1/19/2016	3104	9.30	225.60
1/19/2016	3199	8.80	228.50
1/19/2016	3293	9.30	228.60
1/19/2016	3388	8.60	226.50
1/19/2016	3482	8.90	224.50
1/19/2016	3576	9.60	223.10
1/19/2016	3671	9.10	221.00
1/19/2016	3765	8.20	220.40
1/19/2016	3860	7.70	223.10
1/19/2016	4049	7.30	228.90
1/19/2016	4143	6.00	226.10
1/19/2016	4237	4.60	228.80
1/19/2016	4332	2.90	231.30
1/20/2016	4426	1.10	204.60
1/20/2016	4458	0.90	195.30
1/20/2016	4489	1.10	133.40
1/20/2016	4520	2.70	108.40
1/20/2016	4552	5.40	101.90
1/21/2016	4615	11.40	95.80
1/21/2016	4646	14.20	93.20

Date	Depth	Deviation	Direction
1/21/2016	4678	17.30	91.10
1/21/2016	4709	20.40	89.20
1/21/2016	4741	23.40	88.10
1/21/2016	4772	26.00	88.20
1/21/2016	4804	28.90	89.40
1/21/2016	4833	31.70	90.80
1/21/2016	4867	34.00	92.10
1/21/2016	4898	36.40	93.10
1/21/2016	4929	39.10	93.30
1/21/2016	4961	42.10	92.80
1/21/2016	4993	45.20	92.30
1/21/2016	5024	48.30	92.10
1/21/2016	5056	51.60	91.60
1/21/2016	5087	54.60	90.70
1/21/2016	5119	57.60	90.00
1/21/2016	5150	60.20	89.60
1/21/2016	5213	66.50	90.60
1/21/2016	5276	72.20	89.70
1/21/2016	5307	76.00	89.10
1/22/2016	5401	83.10	88.90
1/22/2016	5433	86.00	89.00
1/22/2016	5464	87.10	89.30
1/22/2016	5496	87.90	88.60
1/22/2016	5558	89.10	88.60
1/22/2016	5653	91.20	87.70
1/22/2016	5748	90.90	88.00
1/22/2016	5841	90.50	89.30
1/22/2016	5935	90.30	90.20
1/22/2016	6072	91.90	96.30
1/23/2016	6116	89.90	90.40
1/23/2016	6261	90.50	89.70
1/23/2016	6356	90.90	89.70
1/23/2016	6450	91.30	89.20
1/23/2016	6548	90.10	89.60
1/23/2016	6640	90.40	89.60
1/23/2016	6734	90.30	89.20
1/23/2016	6829	90.60	88.90
1/23/2016	6923	90.80	88.30
1/23/2016	7018	90.20	89.40
1/23/2016	7112	90.30	90.40
1/23/2016	7207	90.40	90.50
1/23/2016	7301	90.30	90.50
1/23/2016	7396	90.20	90.20
1/23/2016	7490	90.60	90.10
1/24/2016	7679	91.00	90.20

Date	Depth	Deviation	Direction
1/24/2016	7773	91.10	90.10
1/24/2016	7868	91.60	90.40
1/24/2016	7962	92.10	90.40
1/24/2016	8057	90.70	90.30
1/24/2016	8152	90.90	90.00
1/24/2016	8316	91.10	89.70
1/24/2016	8341	91.00	89.70
1/24/2016	8434	90.80	89.80
1/25/2016	8529	90.70	90.10
1/25/2016	8624	90.50	90.30
1/25/2016	8718	90.90	89.30
1/25/2016	8813	90.70	89.30
1/25/2016	8907	90.70	90.00
1/25/2016	9002	90.60	90.30
1/25/2016	9096	91.20	89.60
1/25/2016	9191	91.10	90.10
1/25/2016	9286	91.30	89.20
1/25/2016	9380	91.60	89.30
1/25/2016	9475	91.70	89.40



NM OIL CONSERVATION
ARTESIA DISTRICT

APR 04 2016

RECEIVED

2/12/16

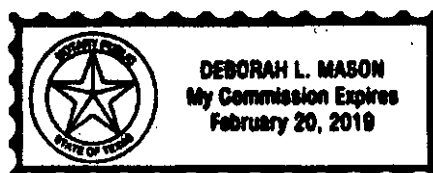
State of New Mexico
County of Eddy

I, Donald D. Mason, certify that: I am employed by Terra Directional Services LLC; that I did on the day(s) of 01/17/2016 through 01/25/2016 conduct or supervise the taking of a MWD survey from a depth of 1215 feet to a depth of 9638 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Terra Directional Services LLC; that I am authorized and qualified to make this report; that this survey was conducted at the request of COG Operating LLC for the Chimay 6 Federal Com #26H Well API 30-015-41585 in Eddy County, New Mexico; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by Terra Directional Services LLC.

Donald D. Mason
President

State of Texas
County of Burnet

Before me, a notary public, on this day personally appeared Donald D. Mason, known to me to be the person whose name is subscribed to the foregoing document and, being by me first duly sworn, declared that the statements therein contained are true and correct.



Notary Public's Signature



NM OIL CONSERVATION
ARTESIA DISTRICT

APR 04 2016

RECEIVED

COG Operating LLC

Eddy County, NM (NAD-27 2015)

Chimay 6 Federal Com #26H

SHL: 1963' FSL, 327' FWL, Sec 6, T17S, R30E, Lot 6

30-015-41585

BHL: 1666' FSL, 350' FEL, Sec 6, T17S, R30E, Unit I

Design: BHL: 1666' FSL, 350' FEL, Sec 6, T17S, R30E, Unit I

Standard Survey Report

12 February, 2016





TDS
Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well SHL: 1963' FSL, 327' FWL, Sec 6, T17S, R30E, Lot 6
Project:	Eddy County, NM (NAD-27 2015)	TVD Reference:	KB @ 3701.00usft (Silver Oak 3)
Site:	Chimay 6 Federal Com #26H	MD Reference:	KB @ 3701.00usft (Silver Oak 3)
Well:	SHL: 1963' FSL, 327' FWL, Sec 6, T17S, R30E, Lot 6	North Reference:	Grid
Wellbore:	BHL: 1666' FSL, 350' FEL, Sec 6, T17S, R30E, Unit I	Survey Calculation Method:	Minimum Curvature
Design:	BHL: 1666' FSL, 350' FEL, Sec 6, T17S, R30E, Unit I	Database:	EDM 5000.1 Single User Db

Project	Eddy County, NM (NAD-27 2015)		
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	Chimay 6 Federal Com #26H		
Site Position:	Map	Northing:	677,288.90 usft
From:		Easting:	596,801.30 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in
		Latitude:	32° 51' 41.592 N
		Longitude:	104° 1' 5.099 W
		Grid Convergence:	0.17 °

Well	SHL: 1963' FSL, 327' FWL, Sec 6, T17S, R30E, Lot 6		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	32° 51' 41.592 N
		Longitude:	104° 1' 5.099 W
		Ground Level:	3,683.00 usft

Wellbore	BHL: 1666' FSL, 350' FEL, Sec 6, T17S, R30E, Unit I		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2015	12/18/2015	7.37
			Dip Angle (°)
			60.59
			Field Strength (nT)
			48,421

Design	BHL: 1666' FSL, 350' FEL, Sec 6, T17S, R30E, Unit I		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.00	0.00	0.00
			Direction (°)
			93.42

Survey Program	Date 1/26/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
100.00	1,120.00	VES Gyro #1 (BHL: 1666' FSL, 350' FEL,	VES-ISCWSA-GYRO-3
1,215.00	9,638.00	TDS MWD #2 (BHL: 1666' FSL, 350' FEL,	MWD
			Description
			Biaxial Semi-Cont. Gyro
			MWD - Standard

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	0.24	122.42	100.00	-0.11	0.17	0.18	0.24	0.24	0.00
200.00	0.59	122.06	200.00	-0.49	0.78	0.81	0.36	0.36	-0.36
300.00	0.63	121.74	299.99	-1.06	1.69	1.75	0.04	0.04	-0.32
400.00	0.45	181.00	399.99	-1.74	2.15	2.25	0.56	-0.19	59.26
500.00	0.23	167.70	499.99	-2.32	2.19	2.32	0.23	-0.22	-13.30
600.00	0.08	19.94	599.99	-2.45	2.25	2.39	0.29	-0.15	-147.76

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well SHL: 1963' FSL, 327' FWL, Sec 6, T17S, R30E, Lot 6
Project:	Eddy County, NM (NAD-27 2015)	TVD Reference:	KB @ 3701.00usft (Silver Oak 3)
Site:	Chimay 6 Federal Com #26H	MD Reference:	KB @ 3701.00usft (Silver Oak 3)
Well:	SHL: 1963' FSL, 327' FWL, Sec 6, T17S, R30E, Lot 6	North Reference:	Grid
Wellbore:	BHL: 1666' FSL, 350' FEL, Sec 6, T17S, R30E, Unit I	Survey Calculation Method:	Minimum Curvature
Design:	BHL: 1666' FSL, 350' FEL, Sec 6, T17S, R30E, Unit I	Database:	EDM 5000.1 Single User Db

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)
700.00	0.13	4.73	699.99	-2.27	2.28	2.41	0.06	0.05	-15.21
800.00	0.23	77.98	799.99	-2.12	2.48	2.61	0.23	0.10	73.25
900.00	0.70	86.17	899.98	-2.04	3.29	3.40	0.47	0.47	8.19
1,000.00	0.94	91.89	999.97	-2.02	4.71	4.82	0.25	0.24	5.72
1,100.00	1.06	91.65	1,099.96	-2.08	6.45	6.56	0.12	0.12	-0.24
1,120.00	0.91	89.93	1,119.95	-2.08	6.79	6.91	0.74	-0.73	-8.58
Tie-In to VES Gyro									
1,215.00	1.10	109.30	1,214.94	-2.38	8.41	8.54	0.41	0.20	20.39
First TDS MWD Survey									
1,309.00	1.40	170.20	1,308.92	-3.81	9.46	9.67	1.38	0.32	64.79
1,404.00	3.00	202.00	1,403.85	-7.26	8.73	9.14	2.06	1.68	33.47
1,498.00	4.80	214.70	1,497.63	-12.78	5.57	6.32	2.11	1.91	13.51
1,593.00	6.80	220.40	1,592.14	-20.33	-0.34	0.87	2.19	2.11	6.00
1,687.00	7.60	220.90	1,685.40	-29.26	-8.02	-6.26	0.85	0.85	0.53
1,782.00	7.80	219.60	1,779.54	-38.98	-16.24	-13.89	0.28	0.21	-1.37
1,876.00	8.70	221.30	1,872.57	-49.24	-25.00	-22.02	0.99	0.96	1.81
1,971.00	9.50	225.80	1,966.37	-60.10	-35.36	-31.71	1.13	0.84	4.74
2,065.00	10.00	225.90	2,059.01	-71.19	-46.79	-42.46	0.53	0.53	0.11
2,160.00	9.60	227.50	2,152.63	-82.28	-58.55	-53.54	0.51	-0.42	1.68
2,254.00	8.80	233.60	2,245.42	-91.84	-70.12	-64.51	1.34	-0.85	6.49
2,349.00	9.00	235.20	2,339.28	-100.40	-82.07	-75.93	0.33	0.21	1.68
2,443.00	9.00	234.60	2,432.12	-108.85	-94.10	-87.44	0.10	0.00	-0.64
2,538.00	9.50	232.50	2,525.88	-117.93	-106.37	-99.15	0.63	0.53	-2.21
2,632.00	9.20	235.60	2,618.64	-126.90	-118.73	-110.95	0.62	-0.32	3.30
2,726.00	9.70	234.80	2,711.36	-135.71	-131.40	-123.07	0.55	0.53	-0.85
2,821.00	9.10	234.30	2,805.08	-144.70	-144.04	-135.15	0.64	-0.63	-0.53
2,915.00	8.40	229.70	2,897.99	-153.48	-155.31	-145.88	1.05	-0.74	-4.89
3,010.00	8.70	227.00	2,991.93	-162.87	-165.86	-155.85	0.53	0.32	-2.84
3,104.00	9.30	225.60	3,084.78	-173.03	-176.49	-165.85	0.68	0.64	-1.49
3,199.00	8.80	228.50	3,178.59	-183.22	-187.41	-176.15	0.71	-0.53	3.05
3,293.00	9.30	228.60	3,271.42	-193.01	-198.50	-186.63	0.53	0.53	0.11
3,388.00	8.60	226.50	3,365.27	-202.97	-209.41	-196.93	0.81	-0.74	-2.21
3,482.00	8.90	224.50	3,458.17	-213.00	-219.60	-206.50	0.45	0.32	-2.13
3,576.00	9.60	223.10	3,550.95	-223.91	-230.05	-216.29	0.78	0.74	-1.49
3,671.00	9.10	221.00	3,644.69	-235.36	-240.40	-225.93	0.64	-0.53	-2.21
3,765.00	8.20	220.40	3,737.62	-246.07	-249.62	-234.49	0.96	-0.96	-0.64
3,860.00	7.70	223.10	3,831.71	-255.88	-258.36	-242.63	0.66	-0.53	2.84
3,954.00	7.90	228.20	3,924.84	-264.79	-267.48	-251.20	0.77	0.21	5.43
4,049.00	7.30	228.90	4,019.00	-273.10	-276.89	-260.11	0.64	-0.63	0.74
4,143.00	6.00	226.10	4,112.37	-280.44	-284.93	-267.69	1.42	-1.38	-2.98
4,237.00	4.60	228.80	4,205.96	-286.33	-291.31	-273.71	1.51	-1.49	2.87

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well SHL: 1963' FSL, 327' FWL, Sec 6, T17S, R30E, Lot 6
Project:	Eddy County, NM (NAD-27 2015)	TVD Reference:	KB @ 3701.00usft (Silver Oak 3)
Site:	Chimay 6 Federal Com #26H	MD Reference:	KB @ 3701.00usft (Silver Oak 3)
Well:	SHL: 1963' FSL, 327' FWL, Sec 6, T17S, R30E, Lot 6	North Reference:	Grid
Wellbore:	BHL: 1666' FSL, 350' FEL, Sec 6, T17S, R30E, Unit I	Survey Calculation Method:	Minimum Curvature
Design:	BHL: 1666' FSL, 350' FEL, Sec 6, T17S, R30E, Unit I	Database:	EDM 5000.1 Single User Db

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)
4,332.00	2.90	231.30	4,300.76	-290.34	-296.05	-278.20	1.80	-1.79	2.63
4,426.00	1.10	204.60	4,394.70	-292.65	-298.28	-280.29	2.11	-1.91	-28.40
4,458.00	0.90	195.30	4,426.69	-293.17	-298.48	-280.45	0.80	-0.63	-29.06
4,489.00	1.10	133.40	4,457.69	-293.61	-298.32	-280.28	3.36	0.65	-199.68
4,520.00	2.70	108.40	4,488.67	-294.04	-297.41	-279.34	5.69	5.16	-80.65
4,552.00	5.40	101.90	4,520.59	-294.59	-295.23	-277.13	8.55	8.44	-20.31
4,583.00	8.30	98.60	4,551.36	-295.23	-291.58	-273.45	9.44	9.35	-10.65
4,615.00	11.40	95.80	4,582.89	-295.89	-286.15	-267.99	9.80	9.69	-8.75
4,646.00	14.20	93.20	4,613.12	-296.41	-279.31	-261.13	9.22	9.03	-8.39
4,678.00	17.30	91.10	4,643.91	-296.72	-270.63	-252.45	9.85	9.69	-6.56
4,709.00	20.40	89.20	4,673.24	-296.74	-260.62	-242.45	10.19	10.00	-6.13
4,741.00	23.40	88.10	4,702.93	-296.45	-248.69	-230.56	9.46	9.38	-3.44
4,772.00	26.00	88.20	4,731.09	-296.03	-235.74	-217.66	8.39	8.39	0.32
4,804.00	28.90	89.40	4,759.49	-295.73	-220.99	-202.96	9.23	9.06	3.75
4,835.00	31.70	90.80	4,786.25	-295.76	-205.36	-187.35	9.31	9.03	4.52
4,867.00	34.00	92.10	4,813.13	-296.21	-188.01	-170.00	7.52	7.19	4.06
4,898.00	36.40	93.10	4,838.46	-297.03	-170.16	-152.13	7.96	7.74	3.23
4,929.00	39.10	93.30	4,862.97	-298.09	-151.21	-133.16	8.72	8.71	0.65
4,961.00	42.10	92.80	4,887.26	-299.19	-130.42	-112.34	9.43	9.38	-1.56
4,993.00	45.20	92.30	4,910.42	-300.17	-108.35	-90.25	9.75	9.69	-1.56
5,024.00	48.30	92.10	4,931.65	-301.04	-85.79	-67.68	10.01	10.00	-0.65
5,056.00	51.60	91.60	4,952.24	-301.82	-61.31	-43.20	10.38	10.31	-1.56
5,087.00	54.60	90.70	4,970.85	-302.32	-36.53	-18.43	9.95	9.68	-2.90
5,119.00	57.60	90.00	4,988.70	-302.48	-9.98	8.09	9.55	9.38	-2.19
5,150.00	60.20	89.60	5,004.71	-302.38	16.57	34.58	8.46	8.39	-1.29
5,181.00	63.40	90.10	5,019.36	-302.31	43.68	61.84	10.42	10.32	1.61
5,213.00	66.50	90.60	5,032.91	-302.49	72.87	90.78	9.79	9.69	1.56
5,244.00	70.00	90.30	5,044.39	-302.72	101.66	119.53	11.33	11.29	-0.97
5,276.00	72.70	89.70	5,054.62	-302.72	131.97	149.80	8.62	8.44	-1.88
5,307.00	76.00	89.10	5,062.98	-302.40	161.82	179.57	10.81	10.65	-1.94
5,338.00	78.70	88.60	5,069.77	-301.79	192.06	209.72	8.85	8.71	-1.61
5,370.00	81.00	88.60	5,075.41	-301.03	223.54	241.10	7.19	7.19	0.00
5,401.00	83.10	88.90	5,079.70	-300.36	254.24	271.70	6.84	6.77	0.97
5,433.00	86.00	89.00	5,082.74	-299.77	286.08	303.46	9.07	9.06	0.31
5,464.00	87.10	89.30	5,084.60	-299.31	317.02	334.31	3.68	3.55	0.97
5,496.00	87.90	88.60	5,086.00	-298.73	348.99	366.19	3.32	2.50	-2.19
5,558.00	89.10	88.60	5,087.62	-297.21	410.95	427.95	1.94	1.94	0.00
5,653.00	91.20	87.70	5,087.37	-294.15	505.89	522.54	2.40	2.21	-0.95
5,747.00	90.90	88.00	5,085.65	-290.62	599.81	616.08	0.45	-0.32	0.32
5,842.00	90.50	89.30	5,084.49	-288.38	694.77	710.74	1.43	-0.42	1.37
5,936.00	90.30	90.20	5,083.83	-287.97	788.77	804.54	0.98	-0.21	0.96



TDS
Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well SHL: 1963' FSL, 327' FWL, Sec 6, T17S, R30E, Lot 6
Project:	Eddy County, NM (NAD-27 2015)	TVD Reference:	KB @ 3701.00usft (Silver Oak 3)
Site:	Chimay 6 Federal Com #26H	MD Reference:	KB @ 3701.00usft (Silver Oak 3)
Well:	SHL: 1963' FSL, 327' FWL, Sec 6, T17S, R30E, Lot 6	North Reference:	Grid
Wellbore:	BHL: 1666' FSL, 350' FEL, Sec 6, T17S, R30E, Unit I	Survey Calculation Method:	Minimum Curvature
Design:	BHL: 1666' FSL, 350' FEL, Sec 6, T17S, R30E, Unit I	Database:	EDM 5000.1 Single User Db

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)
6,000.00	91.50	90.10	5,082.83	-288.14	852.76	868.43	1.88	1.88	-0.16
6,072.00	91.90	90.30	5,080.69	-288.39	924.73	940.28	0.62	0.56	0.28
6,166.00	89.90	90.40	5,079.22	-288.97	1,018.71	1,034.13	2.13	-2.13	0.11
6,261.00	90.50	89.70	5,078.88	-289.05	1,113.71	1,128.97	0.97	0.63	-0.74
6,356.00	90.90	89.70	5,077.72	-288.55	1,208.70	1,223.76	0.42	0.42	0.00
6,450.00	91.30	89.20	5,075.92	-287.65	1,302.68	1,317.52	0.68	0.43	-0.53
6,545.00	90.10	89.60	5,074.76	-286.65	1,397.66	1,412.27	1.33	-1.26	0.42
6,640.00	90.40	89.00	5,074.34	-285.49	1,492.65	1,507.03	0.71	0.32	-0.63
6,734.00	90.30	89.20	5,073.77	-284.02	1,586.64	1,600.76	0.24	-0.11	0.21
6,829.00	90.60	88.90	5,073.02	-282.44	1,681.62	1,695.48	0.45	0.32	-0.32
6,923.00	90.80	88.30	5,071.88	-280.15	1,775.59	1,789.14	0.67	0.21	-0.64
7,018.00	90.20	89.40	5,071.05	-278.24	1,870.56	1,883.83	1.32	-0.63	1.16
7,112.00	90.30	90.40	5,070.64	-278.07	1,964.56	1,977.65	1.07	0.11	1.06
7,207.00	90.40	90.50	5,070.06	-278.82	2,059.56	2,072.52	0.15	0.11	0.11
7,301.00	90.30	90.50	5,069.48	-279.64	2,153.55	2,166.40	0.11	-0.11	0.00
7,396.00	90.20	90.20	5,069.07	-280.22	2,248.55	2,261.26	0.33	-0.11	-0.32
7,490.00	90.60	90.10	5,068.41	-280.47	2,342.55	2,355.11	0.44	0.43	-0.11
7,584.00	90.90	90.10	5,067.18	-280.63	2,436.54	2,448.94	0.32	0.32	0.00
7,679.00	91.00	90.20	5,065.61	-280.88	2,531.52	2,543.77	0.15	0.11	0.11
7,773.00	91.10	90.10	5,063.88	-281.13	2,625.51	2,637.60	0.15	0.11	-0.11
7,868.00	91.60	90.40	5,061.65	-281.54	2,720.48	2,732.43	0.61	0.53	0.32
7,962.00	92.10	90.40	5,058.61	-282.20	2,814.43	2,826.25	0.53	0.53	0.00
8,057.00	90.70	90.30	5,056.29	-282.78	2,909.40	2,921.08	1.48	-1.47	-0.11
8,152.00	90.90	90.00	5,054.96	-283.03	3,004.39	3,015.92	0.38	0.21	-0.32
8,246.00	91.10	89.70	5,053.32	-282.78	3,098.37	3,109.72	0.38	0.21	-0.32
8,341.00	91.00	89.70	5,051.58	-282.28	3,193.35	3,204.51	0.11	-0.11	0.00
8,435.00	90.80	89.80	5,050.11	-281.87	3,287.34	3,298.30	0.24	-0.21	0.11
8,529.00	90.70	90.10	5,048.87	-281.79	3,381.33	3,392.12	0.34	-0.11	0.32
8,624.00	90.50	90.30	5,047.88	-282.12	3,476.33	3,486.97	0.30	-0.21	0.21
8,718.00	90.90	89.30	5,046.73	-281.79	3,570.32	3,580.77	1.15	0.43	-1.06
8,813.00	90.70	89.30	5,045.41	-280.63	3,665.30	3,675.52	0.21	-0.21	0.00
8,907.00	90.70	90.00	5,044.26	-280.06	3,759.29	3,769.31	0.74	0.00	0.74
9,002.00	90.60	90.30	5,043.18	-280.31	3,854.29	3,864.14	0.33	-0.11	0.32
9,096.00	91.20	89.60	5,041.70	-280.23	3,948.27	3,957.96	0.98	0.64	-0.74
9,191.00	91.10	90.10	5,039.80	-279.98	4,043.25	4,052.76	0.54	-0.11	0.53
9,286.00	91.30	89.20	5,037.81	-279.40	4,138.23	4,147.53	0.97	0.21	-0.95
9,380.00	91.60	89.30	5,035.43	-278.17	4,232.19	4,241.25	0.34	0.32	0.11
9,475.00	91.70	89.40	5,032.69	-277.09	4,327.15	4,335.97	0.15	0.11	0.11
9,568.00	91.60	89.30	5,030.01	-276.04	4,420.10	4,428.70	0.15	-0.11	-0.11
Final MWD Survey									
9,638.00	91.60	89.30	5,028.06	-275.18	4,490.07	4,498.49	0.00	0.00	0.00



TDS
Survey Report



Company: COG Operating LLC
Project: Eddy County, NM (NAD-27 2015)
Site: Chimay 6 Federal Com #26H
Well: SHL: 1963' FSL, 327' FWL, Sec 6, T17S, R30E, Lot 6
Wellbore: BHL: 1666' FSL, 350' FEL, Sec 6, T17S, R30E, Unit 1
Design: BHL: 1666' FSL, 350' FEL, Sec 6, T17S, R30E, Unit 1
Local Co-ordinate Reference: Well SHL: 1963' FSL, 327' FWL, Sec 6, T17S, R30E, Lot 6
TVD Reference: KB @ 3701.00usft (Silver Oak 3)
MD Reference: KB @ 3701.00usft (Silver Oak 3)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

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)
Projection to Bit/TD									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
1,120.00	1,119.95	-2.08	6.79	Tie-In to VES GYRO
1,215.00	1,214.94	-2.38	8.41	First TDS MWD Survey
9,568.00	5,030.01	-276.04	4,420.10	Final MWD Survey
9,638.00	5,028.06	-275.18	4,490.07	Projection to Bit/TD

Checked By:

Deborah L. Mason

Approved By:

David L. L...

Date:

2/12/16

