



COG Operating LLC

Lea County, NM (NAD27 NME)

Valor Federal Com

803H

OH / 66417

Design: Surveys (McVay 8)

Standard Survey Report

24 April, 2020



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 803H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3353.10usft (McVay 8)
Site:	Valor Federal Com	MD Reference:	RKB @ 3353.10usft (McVay 8)
Well:	803H	North Reference:	Grid
Wellbore:	OH / 66417	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	Database:	USA Compass

Project	Lea 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	Valor Federal Com		
Site Position:		Northing:	398,661.28 usft
From:	Lat/Long	Easting:	745,606.66 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 5' 36.790800 N
		Longitude:	103° 32' 24.882000 W
		Grid Convergence:	0.42 °

Well	803H		
Well Position	+N/-S	0.00 usft	Northing: 398,661.50 usft
	+E/-W	0.00 usft	Easting: 745,636.70 usft
Position Uncertainty	1.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 5' 36.790800 N
		Longitude:	103° 32' 24.532800 W
		Ground Level:	3,327.10 usft

Wellbore	OH / 66417				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	User Defined	4/5/2020	6.55	59.68	47,636.10000000

Design	Surveys (McVay 8)				
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	177.89	

Survey Program	Date	4/24/2020			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.00	11,509.00	Scientific Keeper Gyro Surveys (OH / 6641	Scientific Keeper	Scientific Drilling Intl. Standard Wireline Keeper	
11,631.00	20,093.00	Gordon Corrected MWD Surveys (OH / 66	MWD+IFR1+FDIR	OWSG MWD + IFR1 + FDIR Correction	

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	1.01	115.08	99.99	-0.37	0.80	0.40	1.01	1.01	0.00	
125.00	1.02	111.11	124.99	-0.55	1.21	0.59	0.28	0.04	-15.88	
150.00	1.00	108.93	149.99	-0.70	1.62	0.76	0.17	-0.08	-8.72	
175.00	0.93	104.83	174.98	-0.82	2.02	0.89	0.39	-0.28	-16.40	
200.00	1.04	113.26	199.98	-0.96	2.43	1.05	0.73	0.44	33.72	
225.00	1.07	120.10	224.98	-1.17	2.84	1.27	0.52	0.12	27.36	
250.00	1.03	121.12	249.97	-1.40	3.23	1.52	0.18	-0.16	4.08	
275.00	1.04	114.51	274.97	-1.61	3.63	1.74	0.48	0.04	-26.44	
300.00	1.02	115.99	299.96	-1.80	4.04	1.95	0.13	-0.08	5.92	

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 803H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3353.10usft (McVay 8)
Site:	Valor Federal Com	MD Reference:	RKB @ 3353.10usft (McVay 8)
Well:	803H	North Reference:	Grid
Wellbore:	OH / 66417	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	Database:	USA Compass

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)
325.00	0.99	113.60	324.96	-1.99	4.43	2.15	0.21	-0.12	-9.56
350.00	0.91	120.51	349.96	-2.18	4.80	2.35	0.56	-0.32	27.64
375.00	0.88	119.72	374.95	-2.37	5.14	2.56	0.13	-0.12	-3.16
400.00	0.81	117.98	399.95	-2.55	5.46	2.75	0.30	-0.28	-6.96
425.00	0.77	116.19	424.95	-2.71	5.77	2.92	0.19	-0.16	-7.16
450.00	0.65	102.79	449.95	-2.81	6.06	3.03	0.82	-0.48	-53.60
475.00	0.49	109.14	474.94	-2.88	6.30	3.11	0.69	-0.64	25.40
500.00	0.44	118.18	499.94	-2.96	6.48	3.20	0.35	-0.20	36.16
525.00	0.40	109.56	524.94	-3.03	6.65	3.28	0.30	-0.16	-34.48
550.00	0.44	112.96	549.94	-3.10	6.82	3.35	0.19	0.16	13.60
575.00	0.45	112.78	574.94	-3.18	7.00	3.43	0.04	0.04	-0.72
600.00	0.41	108.70	599.94	-3.24	7.18	3.50	0.20	-0.16	-16.32
625.00	0.47	109.72	624.94	-3.31	7.36	3.57	0.24	0.24	4.08
650.00	0.45	113.42	649.94	-3.38	7.54	3.65	0.14	-0.08	14.80
675.00	0.45	109.66	674.94	-3.45	7.73	3.73	0.12	0.00	-15.04
700.00	0.48	107.66	699.94	-3.52	7.92	3.80	0.14	0.12	-8.00
725.00	0.42	118.75	724.94	-3.59	8.10	3.89	0.42	-0.24	44.36
750.00	0.48	145.18	749.94	-3.72	8.24	4.02	0.86	0.24	105.72
775.00	0.49	153.17	774.94	-3.90	8.35	4.21	0.27	0.04	31.96
800.00	0.60	158.05	799.93	-4.12	8.44	4.43	0.48	0.44	19.52
825.00	0.56	161.32	824.93	-4.36	8.53	4.67	0.21	-0.16	13.08
850.00	0.61	162.56	849.93	-4.60	8.61	4.91	0.21	0.20	4.96
875.00	0.61	161.98	874.93	-4.85	8.69	5.17	0.02	0.00	-2.32
900.00	0.58	154.75	899.93	-5.09	8.79	5.41	0.32	-0.12	-28.92
925.00	0.67	149.37	924.93	-5.33	8.92	5.66	0.43	0.36	-21.52
950.00	0.62	140.90	949.93	-5.57	9.08	5.90	0.43	-0.20	-33.88
975.00	0.66	143.72	974.92	-5.79	9.25	6.12	0.20	0.16	11.28
1,000.00	0.57	145.22	999.92	-6.00	9.40	6.35	0.37	-0.36	6.00
1,025.00	0.64	141.79	1,024.92	-6.22	9.56	6.56	0.32	0.28	-13.72
1,050.00	0.69	139.96	1,049.92	-6.44	9.74	6.80	0.22	0.20	-7.32
1,075.00	0.80	126.17	1,074.92	-6.66	9.98	7.02	0.84	0.44	-55.16
1,100.00	0.93	127.81	1,099.91	-6.89	10.28	7.26	0.53	0.52	6.56
1,125.00	0.95	127.33	1,124.91	-7.14	10.61	7.52	0.09	0.08	-1.92
1,150.00	0.95	120.35	1,149.91	-7.37	10.95	7.77	0.46	0.00	-27.92
1,175.00	1.05	115.10	1,174.90	-7.57	11.34	7.98	0.54	0.40	-21.00
1,200.00	1.01	108.69	1,199.90	-7.74	11.75	8.16	0.49	-0.16	-25.64
1,225.00	1.07	111.68	1,224.90	-7.89	12.18	8.34	0.32	0.24	11.96
1,250.00	1.03	108.81	1,249.89	-8.05	12.61	8.51	0.26	-0.16	-11.48
1,275.00	1.04	111.76	1,274.89	-8.21	13.03	8.68	0.22	0.04	11.80
1,300.00	1.03	113.17	1,299.88	-8.38	13.45	8.87	0.11	-0.04	5.64
1,325.00	0.87	103.63	1,324.88	-8.51	13.84	9.02	0.90	-0.64	-38.16
1,350.00	0.88	101.36	1,349.88	-8.60	14.21	9.11	0.14	0.04	-9.08
1,375.00	0.82	104.67	1,374.87	-8.68	14.57	9.21	0.31	-0.24	13.24

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 803H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3353.10usft (McVay 8)
Site:	Valor Federal Com	MD Reference:	RKB @ 3353.10usft (McVay 8)
Well:	803H	North Reference:	Grid
Wellbore:	OH / 66417	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	Database:	USA Compass

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)
1,400.00	0.80	101.57	1,399.87	-8.76	14.92	9.30	0.19	-0.08	-12.40
1,425.00	0.71	99.20	1,424.87	-8.82	15.24	9.38	0.38	-0.36	-9.48
1,450.00	0.72	97.87	1,449.87	-8.87	15.55	9.43	0.08	0.04	-5.32
1,475.00	0.87	93.63	1,474.87	-8.90	15.90	9.48	0.64	0.60	-16.96
1,500.00	0.78	90.08	1,499.86	-8.91	16.25	9.50	0.41	-0.36	-14.20
1,525.00	0.77	90.87	1,524.86	-8.92	16.59	9.52	0.06	-0.04	3.16
1,550.00	0.78	90.41	1,549.86	-8.92	16.93	9.54	0.05	0.04	-1.84
1,575.00	0.80	90.44	1,574.86	-8.92	17.28	9.55	0.08	0.08	0.12
1,600.00	0.81	87.80	1,599.85	-8.92	17.63	9.56	0.15	0.04	-10.56
1,625.00	0.84	87.75	1,624.85	-8.90	17.99	9.56	0.12	0.12	-0.20
1,650.00	0.85	85.84	1,649.85	-8.88	18.35	9.55	0.12	0.04	-7.64
1,675.00	0.86	86.55	1,674.85	-8.86	18.73	9.54	0.06	0.04	2.84
1,700.00	0.80	83.76	1,699.84	-8.83	19.09	9.52	0.29	-0.24	-11.16
1,725.00	0.81	81.97	1,724.84	-8.78	19.44	9.49	0.11	0.04	-7.16
1,750.00	0.83	78.28	1,749.84	-8.72	19.79	9.44	0.23	0.08	-14.76
1,775.00	0.78	77.76	1,774.84	-8.65	20.13	9.38	0.20	-0.20	-2.08
1,800.00	0.82	73.78	1,799.83	-8.56	20.47	9.31	0.27	0.16	-15.92
1,825.00	0.83	73.14	1,824.83	-8.46	20.82	9.22	0.05	0.04	-2.56
1,850.00	0.88	72.98	1,849.83	-8.35	21.17	9.13	0.20	0.20	-0.64
1,875.00	0.85	78.14	1,874.82	-8.26	21.54	9.04	0.33	-0.12	20.64
1,900.00	0.88	83.12	1,899.82	-8.20	21.91	9.00	0.32	0.12	19.92
1,925.00	0.94	79.62	1,924.82	-8.14	22.30	8.95	0.33	0.24	-14.00
1,950.00	1.01	77.38	1,949.82	-8.05	22.72	8.88	0.32	0.28	-8.96
1,975.00	1.08	77.66	1,974.81	-7.95	23.16	8.80	0.28	0.28	1.12
2,000.00	1.08	81.42	1,999.81	-7.87	23.63	8.73	0.28	0.00	15.04
2,025.00	0.98	85.34	2,024.80	-7.81	24.07	8.70	0.49	-0.40	15.68
2,050.00	0.91	84.00	2,049.80	-7.78	24.48	8.67	0.29	-0.28	-5.36
2,075.00	0.96	79.46	2,074.80	-7.72	24.89	8.63	0.36	0.20	-18.16
2,100.00	0.92	79.13	2,099.79	-7.64	25.29	8.57	0.16	-0.16	-1.32
2,125.00	0.99	76.43	2,124.79	-7.55	25.70	8.49	0.33	0.28	-10.80
2,150.00	1.03	70.82	2,149.79	-7.43	26.12	8.38	0.43	0.16	-22.44
2,175.00	1.50	49.81	2,174.78	-7.14	26.58	8.12	2.61	1.88	-84.04
2,200.00	2.49	33.49	2,199.76	-6.48	27.13	7.47	4.53	3.96	-65.28
2,225.00	3.02	31.66	2,224.73	-5.47	27.78	6.48	2.15	2.12	-7.32
2,250.00	3.00	31.87	2,249.70	-4.35	28.47	5.39	0.09	-0.08	0.84
2,275.00	2.96	31.97	2,274.67	-3.25	29.15	4.32	0.16	-0.16	0.40
2,300.00	3.04	31.27	2,299.63	-2.13	29.84	3.23	0.35	0.32	-2.80
2,325.00	3.03	31.31	2,324.60	-1.00	30.53	2.12	0.04	-0.04	0.16
2,350.00	3.05	32.11	2,349.56	0.13	31.22	1.02	0.19	0.08	3.20
2,375.00	3.08	31.67	2,374.53	1.26	31.93	-0.09	0.15	0.12	-1.76
2,400.00	3.19	31.35	2,399.49	2.43	32.64	-1.22	0.45	0.44	-1.28
2,425.00	3.09	32.92	2,424.45	3.59	33.37	-2.36	0.53	-0.40	6.28
2,450.00	3.16	32.80	2,449.41	4.73	34.11	-3.47	0.28	0.28	-0.48

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 803H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3353.10usft (McVay 8)
Site:	Valor Federal Com	MD Reference:	RKB @ 3353.10usft (McVay 8)
Well:	803H	North Reference:	Grid
Wellbore:	OH / 66417	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	Database:	USA Compass

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)	
2,475.00	3.15	34.84	2,474.38	5.88	34.88	-4.59	0.45	-0.04	8.16	
2,500.00	3.02	36.84	2,499.34	6.97	35.67	-5.65	0.68	-0.52	8.00	
2,525.00	3.16	35.13	2,524.30	8.06	36.46	-6.71	0.67	0.56	-6.84	
2,550.00	3.21	34.50	2,549.27	9.20	37.25	-7.82	0.24	0.20	-2.52	
2,575.00	3.29	33.37	2,574.22	10.37	38.04	-8.97	0.41	0.32	-4.52	
2,600.00	3.29	33.57	2,599.18	11.57	38.83	-10.13	0.05	0.00	0.80	
2,625.00	3.34	34.08	2,624.14	12.77	39.64	-11.30	0.23	0.20	2.04	
2,650.00	3.35	35.68	2,649.10	13.97	40.47	-12.47	0.38	0.04	6.40	
2,675.00	3.46	35.10	2,674.06	15.18	41.33	-13.65	0.46	0.44	-2.32	
2,700.00	3.44	35.48	2,699.01	16.41	42.20	-14.84	0.12	-0.08	1.52	
2,725.00	3.41	36.35	2,723.97	17.62	43.08	-16.02	0.24	-0.12	3.48	
2,750.00	3.35	37.78	2,748.92	18.79	43.96	-17.16	0.41	-0.24	5.72	
2,775.00	3.39	37.27	2,773.88	19.96	44.86	-18.29	0.20	0.16	-2.04	
2,800.00	3.55	35.19	2,798.83	21.18	45.75	-19.48	0.81	0.64	-8.32	
2,825.00	3.59	34.73	2,823.78	22.45	46.64	-20.72	0.20	0.16	-1.84	
2,850.00	3.55	35.72	2,848.74	23.73	47.54	-21.96	0.29	-0.16	3.96	
2,875.00	3.51	35.81	2,873.69	24.97	48.44	-23.17	0.16	-0.16	0.36	
2,900.00	3.58	35.50	2,898.64	26.23	49.34	-24.40	0.29	0.28	-1.24	
2,925.00	3.56	35.82	2,923.59	27.49	50.25	-25.63	0.11	-0.08	1.28	
2,950.00	3.56	37.43	2,948.54	28.74	51.18	-26.84	0.40	0.00	6.44	
2,975.00	3.58	38.19	2,973.50	29.97	52.13	-28.03	0.21	0.08	3.04	
3,000.00	3.55	38.94	2,998.45	31.19	53.10	-29.21	0.22	-0.12	3.00	
3,025.00	3.50	40.59	3,023.40	32.37	54.08	-30.35	0.45	-0.20	6.60	
3,050.00	3.64	42.91	3,048.35	33.53	55.12	-31.48	0.80	0.56	9.28	
3,075.00	3.69	44.16	3,073.30	34.69	56.22	-32.59	0.38	0.20	5.00	
3,100.00	3.82	44.42	3,098.25	35.86	57.36	-33.72	0.52	0.52	1.04	
3,125.00	3.70	46.86	3,123.19	37.00	58.54	-34.82	0.80	-0.48	9.76	
3,150.00	3.59	48.82	3,148.14	38.07	59.71	-35.85	0.66	-0.44	7.84	
3,175.00	3.54	49.92	3,173.09	39.08	60.89	-36.82	0.34	-0.20	4.40	
3,200.00	3.60	51.32	3,198.04	40.07	62.10	-37.76	0.42	0.24	5.60	
3,225.00	3.73	54.28	3,222.99	41.04	63.37	-38.68	0.92	0.52	11.84	
3,250.00	3.81	55.68	3,247.94	41.98	64.72	-39.57	0.49	0.32	5.60	
3,275.00	3.86	55.49	3,272.88	42.92	66.09	-40.46	0.21	0.20	-0.76	
3,300.00	3.88	56.22	3,297.83	43.87	67.49	-41.36	0.21	0.08	2.92	
3,325.00	3.79	56.64	3,322.77	44.80	68.88	-42.23	0.38	-0.36	1.68	
3,350.00	3.83	55.72	3,347.72	45.72	70.26	-43.10	0.29	0.16	-3.68	
3,375.00	3.85	55.83	3,372.66	46.66	71.65	-43.99	0.09	0.08	0.44	
3,400.00	3.89	55.55	3,397.60	47.61	73.04	-44.89	0.18	0.16	-1.12	
3,425.00	3.91	56.14	3,422.54	48.57	74.45	-45.79	0.18	0.08	2.36	
3,450.00	3.92	56.12	3,447.49	49.52	75.87	-46.69	0.04	0.04	-0.08	
3,475.00	3.72	60.98	3,472.43	50.39	77.29	-47.51	1.52	-0.80	19.44	
3,500.00	3.81	58.25	3,497.38	51.22	78.70	-48.29	0.80	0.36	-10.92	
3,525.00	3.84	56.82	3,522.32	52.12	80.11	-49.13	0.40	0.12	-5.72	
3,550.00	3.82	57.37	3,547.27	53.02	81.51	-49.99	0.17	-0.08	2.20	

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 803H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3353.10usft (McVay 8)
Site:	Valor Federal Com	MD Reference:	RKB @ 3353.10usft (McVay 8)
Well:	803H	North Reference:	Grid
Wellbore:	OH / 66417	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	Database:	USA Compass

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)
3,575.00	3.84	56.20	3,572.21	53.94	82.91	-50.85	0.32	0.08	-4.68
3,600.00	3.34	53.54	3,597.16	54.84	84.19	-51.70	2.11	-2.00	-10.64
3,625.00	2.36	44.03	3,622.13	55.64	85.13	-52.47	4.34	-3.92	-38.04
3,650.00	1.65	30.62	3,647.11	56.32	85.67	-53.13	3.39	-2.84	-53.64
3,675.00	1.43	25.01	3,672.10	56.91	85.99	-53.71	1.07	-0.88	-22.44
3,700.00	1.38	21.84	3,697.10	57.47	86.23	-54.26	0.37	-0.20	-12.68
3,725.00	1.37	21.30	3,722.09	58.03	86.45	-54.81	0.07	-0.04	-2.16
3,750.00	1.37	20.96	3,747.08	58.59	86.67	-55.36	0.03	0.00	-1.36
3,775.00	1.38	19.41	3,772.08	59.15	86.87	-55.91	0.15	0.04	-6.20
3,800.00	1.44	19.81	3,797.07	59.73	87.08	-56.48	0.24	0.24	1.60
3,825.00	1.32	23.37	3,822.06	60.29	87.30	-57.04	0.59	-0.48	14.24
3,850.00	1.39	22.97	3,847.05	60.83	87.53	-57.57	0.28	0.28	-1.60
3,875.00	1.46	27.90	3,872.05	61.40	87.80	-58.12	0.56	0.28	19.72
3,900.00	1.66	35.61	3,897.04	61.97	88.16	-58.68	1.16	0.80	30.84
3,925.00	1.79	40.05	3,922.03	62.56	88.62	-59.26	0.75	0.52	17.76
3,950.00	1.78	42.82	3,947.01	63.15	89.14	-59.82	0.35	-0.04	11.08
3,975.00	1.77	44.12	3,972.00	63.71	89.67	-60.37	0.17	-0.04	5.20
4,000.00	1.75	44.76	3,996.99	64.26	90.21	-60.89	0.11	-0.08	2.56
4,025.00	1.80	42.63	4,021.98	64.82	90.74	-61.43	0.33	0.20	-8.52
4,050.00	1.70	41.29	4,046.97	65.39	91.25	-61.98	0.43	-0.40	-5.36
4,075.00	1.61	39.46	4,071.96	65.94	91.72	-62.51	0.42	-0.36	-7.32
4,100.00	1.60	34.15	4,096.95	66.50	92.14	-63.06	0.60	-0.04	-21.24
4,125.00	1.64	31.86	4,121.94	67.09	92.53	-63.64	0.30	0.16	-9.16
4,150.00	1.68	28.29	4,146.93	67.71	92.89	-64.25	0.44	0.16	-14.28
4,175.00	1.66	28.75	4,171.91	68.35	93.24	-64.88	0.10	-0.08	1.84
4,200.00	1.55	26.44	4,196.90	68.97	93.56	-65.48	0.51	-0.44	-9.24
4,225.00	1.57	19.79	4,221.90	69.60	93.83	-66.10	0.73	0.08	-26.60
4,250.00	1.36	16.16	4,246.89	70.21	94.03	-66.70	0.92	-0.84	-14.52
4,275.00	1.35	8.10	4,271.88	70.78	94.15	-67.27	0.76	-0.04	-32.24
4,300.00	1.43	10.89	4,296.87	71.38	94.25	-67.86	0.42	0.32	11.16
4,325.00	1.46	7.46	4,321.87	72.00	94.35	-68.48	0.37	0.12	-13.72
4,350.00	1.45	8.73	4,346.86	72.63	94.44	-69.11	0.14	-0.04	5.08
4,375.00	1.49	12.16	4,371.85	73.26	94.56	-69.73	0.39	0.16	13.72
4,400.00	1.39	26.24	4,396.84	73.85	94.76	-70.31	1.47	-0.40	56.32
4,425.00	1.42	40.61	4,421.83	74.36	95.10	-70.81	1.41	0.12	57.48
4,450.00	1.57	52.45	4,446.83	74.80	95.57	-71.23	1.37	0.60	47.36
4,475.00	1.80	56.87	4,471.81	75.23	96.17	-71.63	1.06	0.92	17.68
4,500.00	1.80	61.31	4,496.80	75.63	96.84	-72.01	0.56	0.00	17.76
4,525.00	1.86	61.50	4,521.79	76.01	97.54	-72.37	0.24	0.24	0.76
4,550.00	1.86	62.65	4,546.78	76.39	98.26	-72.72	0.15	0.00	4.60
4,575.00	1.85	63.08	4,571.76	76.76	98.98	-73.06	0.07	-0.04	1.72
4,600.00	1.85	64.34	4,596.75	77.12	99.70	-73.39	0.16	0.00	5.04
4,625.00	1.86	71.79	4,621.74	77.42	100.45	-73.67	0.96	0.04	29.80

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 803H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3353.10usft (McVay 8)
Site:	Valor Federal Com	MD Reference:	RKB @ 3353.10usft (McVay 8)
Well:	803H	North Reference:	Grid
Wellbore:	OH / 66417	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	Database:	USA Compass

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)	
4,650.00	2.04	83.70	4,646.72	77.60	101.28	-73.81	1.77	0.72	47.64	
4,675.00	2.28	98.17	4,671.71	77.57	102.21	-73.76	2.38	0.96	57.88	
4,700.00	2.59	106.09	4,696.68	77.35	103.25	-73.49	1.83	1.24	31.68	
4,725.00	2.89	111.86	4,721.65	76.96	104.38	-73.06	1.63	1.20	23.08	
4,750.00	3.04	115.49	4,746.62	76.44	105.56	-72.50	0.96	0.60	14.52	
4,775.00	3.31	118.92	4,771.58	75.80	106.79	-71.82	1.32	1.08	13.72	
4,800.00	3.46	120.38	4,796.54	75.07	108.07	-71.04	0.69	0.60	5.84	
4,825.00	3.49	121.01	4,821.49	74.30	109.38	-70.22	0.19	0.12	2.52	
4,850.00	3.18	117.50	4,846.45	73.58	110.64	-69.46	1.48	-1.24	-14.04	
4,875.00	2.38	105.67	4,871.42	73.12	111.76	-68.96	3.92	-3.20	-47.32	
4,900.00	1.94	93.99	4,896.40	72.95	112.68	-68.76	2.48	-1.76	-46.72	
4,925.00	1.73	89.19	4,921.39	72.93	113.48	-68.70	1.04	-0.84	-19.20	
4,950.00	1.60	89.56	4,946.38	72.94	114.21	-68.68	0.52	-0.52	1.48	
4,975.00	1.51	90.93	4,971.37	72.94	114.88	-68.66	0.39	-0.36	5.48	
5,000.00	1.50	97.00	4,996.36	72.89	115.54	-68.59	0.64	-0.04	24.28	
5,025.00	1.46	92.74	5,021.35	72.84	116.18	-68.51	0.47	-0.16	-17.04	
5,050.00	1.33	87.72	5,046.35	72.83	116.79	-68.48	0.71	-0.52	-20.08	
5,075.00	1.23	87.11	5,071.34	72.86	117.35	-68.49	0.40	-0.40	-2.44	
5,100.00	1.22	77.30	5,096.33	72.93	117.88	-68.54	0.84	-0.04	-39.24	
5,125.00	1.17	77.80	5,121.33	73.04	118.38	-68.63	0.20	-0.20	2.00	
5,150.00	1.25	76.43	5,146.32	73.16	118.90	-68.73	0.34	0.32	-5.48	
5,175.00	1.21	76.96	5,171.32	73.28	119.42	-68.84	0.17	-0.16	2.12	
5,200.00	1.35	67.88	5,196.31	73.45	119.95	-68.99	0.98	0.56	-36.32	
5,225.00	1.35	69.29	5,221.30	73.67	120.50	-69.18	0.13	0.00	5.64	
5,250.00	1.39	66.74	5,246.30	73.89	121.05	-69.39	0.29	0.16	-10.20	
5,275.00	1.42	65.13	5,271.29	74.14	121.61	-69.61	0.20	0.12	-6.44	
5,300.00	1.41	59.55	5,296.28	74.43	122.16	-69.88	0.55	-0.04	-22.32	
5,325.00	1.47	58.56	5,321.27	74.75	122.70	-70.18	0.26	0.24	-3.96	
5,350.00	1.55	49.70	5,346.27	75.14	123.23	-70.55	0.99	0.32	-35.44	
5,375.00	1.48	48.57	5,371.26	75.57	123.73	-70.96	0.30	-0.28	-4.52	
5,400.00	1.51	47.18	5,396.25	76.01	124.21	-71.38	0.19	0.12	-5.56	
5,425.00	1.49	51.56	5,421.24	76.43	124.71	-71.79	0.47	-0.08	17.52	
5,450.00	1.43	51.10	5,446.23	76.83	125.21	-72.17	0.24	-0.24	-1.84	
5,475.00	1.43	46.53	5,471.22	77.24	125.68	-72.56	0.46	0.00	-18.28	
5,500.00	1.39	44.78	5,496.22	77.67	126.12	-72.98	0.24	-0.16	-7.00	
5,525.00	1.36	46.42	5,521.21	78.09	126.54	-73.38	0.20	-0.12	6.56	
5,550.00	1.42	46.00	5,546.20	78.51	126.98	-73.78	0.24	0.24	-1.68	
5,575.00	1.32	44.22	5,571.19	78.93	127.41	-74.19	0.43	-0.40	-7.12	
5,600.00	1.39	45.72	5,596.19	79.35	127.82	-74.59	0.31	0.28	6.00	
5,625.00	1.37	43.91	5,621.18	79.78	128.25	-75.00	0.19	-0.08	-7.24	
5,650.00	1.41	45.33	5,646.17	80.21	128.67	-75.42	0.21	0.16	5.68	
5,675.00	1.43	45.48	5,671.17	80.64	129.11	-75.84	0.08	0.08	0.60	
5,700.00	1.41	46.20	5,696.16	81.08	129.56	-76.25	0.11	-0.08	2.88	

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 803H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3353.10usft (McVay 8)
Site:	Valor Federal Com	MD Reference:	RKB @ 3353.10usft (McVay 8)
Well:	803H	North Reference:	Grid
Wellbore:	OH / 66417	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	Database:	USA Compass

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)
5,725.00	1.38	47.53	5,721.15	81.49	130.00	-76.65	0.18	-0.12	5.32
5,750.00	1.38	47.20	5,746.14	81.90	130.45	-77.04	0.03	0.00	-1.32
5,775.00	1.33	52.83	5,771.14	82.28	130.90	-77.40	0.57	-0.20	22.52
5,800.00	1.41	47.80	5,796.13	82.66	131.36	-77.77	0.58	0.32	-20.12
5,825.00	1.47	47.61	5,821.12	83.08	131.82	-78.17	0.24	0.24	-0.76
5,850.00	1.59	35.06	5,846.11	83.58	132.26	-78.66	1.42	0.48	-50.20
5,875.00	1.58	44.01	5,871.10	84.12	132.70	-79.17	0.99	-0.04	35.80
5,900.00	1.52	43.18	5,896.09	84.61	133.16	-79.65	0.26	-0.24	-3.32
5,925.00	1.42	39.53	5,921.09	85.09	133.59	-80.11	0.55	-0.40	-14.60
5,950.00	1.41	37.76	5,946.08	85.57	133.97	-80.58	0.18	-0.04	-7.08
5,975.00	1.29	33.93	5,971.07	86.05	134.32	-81.04	0.60	-0.48	-15.32
6,000.00	1.29	32.62	5,996.06	86.52	134.63	-81.50	0.12	0.00	-5.24
6,025.00	1.28	30.05	6,021.06	86.99	134.92	-81.97	0.23	-0.04	-10.28
6,050.00	1.28	24.47	6,046.05	87.49	135.17	-82.45	0.50	0.00	-22.32
6,075.00	1.28	22.19	6,071.05	88.00	135.40	-82.96	0.20	0.00	-9.12
6,100.00	1.27	18.20	6,096.04	88.52	135.59	-83.47	0.36	-0.04	-15.96
6,125.00	1.25	13.34	6,121.03	89.05	135.74	-84.00	0.43	-0.08	-19.44
6,150.00	1.31	12.86	6,146.03	89.60	135.86	-84.53	0.24	0.24	-1.92
6,175.00	1.28	13.57	6,171.02	90.15	135.99	-85.08	0.14	-0.12	2.84
6,200.00	1.29	16.26	6,196.01	90.69	136.14	-85.61	0.24	0.04	10.76
6,225.00	1.31	13.95	6,221.01	91.24	136.28	-86.16	0.22	0.08	-9.24
6,250.00	1.29	12.94	6,246.00	91.79	136.42	-86.70	0.12	-0.08	-4.04
6,275.00	1.28	12.81	6,271.00	92.33	136.54	-87.24	0.04	-0.04	-0.52
6,300.00	1.16	6.99	6,295.99	92.86	136.63	-87.76	0.69	-0.48	-23.28
6,325.00	1.15	7.50	6,320.98	93.36	136.70	-88.26	0.06	-0.04	2.04
6,350.00	1.15	6.29	6,345.98	93.86	136.76	-88.76	0.10	0.00	-4.84
6,375.00	1.11	3.79	6,370.97	94.35	136.80	-89.25	0.25	-0.16	-10.00
6,400.00	1.12	359.14	6,395.97	94.83	136.81	-89.73	0.36	0.04	-18.60
6,425.00	1.13	359.22	6,420.96	95.32	136.81	-90.22	0.04	0.04	0.32
6,450.00	1.16	0.54	6,445.96	95.82	136.81	-90.72	0.16	0.12	5.28
6,475.00	1.16	355.77	6,470.95	96.33	136.79	-91.23	0.39	0.00	-19.08
6,500.00	1.12	355.06	6,495.95	96.82	136.75	-91.72	0.17	-0.16	-2.84
6,525.00	1.12	354.56	6,520.95	97.31	136.71	-92.21	0.04	0.00	-2.00
6,550.00	1.08	355.55	6,545.94	97.79	136.66	-92.69	0.18	-0.16	3.96
6,575.00	1.05	354.13	6,570.94	98.25	136.62	-93.16	0.16	-0.12	-5.68
6,600.00	1.06	355.10	6,595.93	98.71	136.58	-93.61	0.08	0.04	3.88
6,625.00	1.02	357.04	6,620.93	99.16	136.55	-94.07	0.21	-0.16	7.76
6,650.00	1.03	357.87	6,645.92	99.61	136.53	-94.52	0.07	0.04	3.32
6,675.00	1.02	358.97	6,670.92	100.06	136.52	-94.96	0.09	-0.04	4.40
6,700.00	1.03	358.42	6,695.92	100.50	136.51	-95.41	0.06	0.04	-2.20
6,725.00	1.02	354.53	6,720.91	100.95	136.48	-95.86	0.28	-0.04	-15.56
6,750.00	1.00	351.52	6,745.91	101.39	136.42	-96.30	0.23	-0.08	-12.04
6,775.00	1.01	345.19	6,770.90	101.82	136.34	-96.73	0.45	0.04	-25.32
6,800.00	1.08	347.99	6,795.90	102.26	136.23	-97.17	0.35	0.28	11.20

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 803H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3353.10usft (McVay 8)
Site:	Valor Federal Com	MD Reference:	RKB @ 3353.10usft (McVay 8)
Well:	803H	North Reference:	Grid
Wellbore:	OH / 66417	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	Database:	USA Compass

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)
6,825.00	1.07	346.65	6,820.90	102.72	136.13	-97.64	0.11	-0.04	-5.36
6,850.00	1.08	344.08	6,845.89	103.17	136.01	-98.09	0.20	0.04	-10.28
6,875.00	1.04	345.70	6,870.89	103.62	135.89	-98.54	0.20	-0.16	6.48
6,900.00	1.10	342.93	6,895.88	104.07	135.76	-99.00	0.32	0.24	-11.08
6,925.00	1.13	344.69	6,920.88	104.53	135.63	-99.47	0.18	0.12	7.04
6,950.00	1.12	343.13	6,945.87	105.00	135.49	-99.95	0.13	-0.04	-6.24
6,975.00	1.20	340.04	6,970.87	105.48	135.33	-100.43	0.41	0.32	-12.36
7,000.00	1.16	338.67	6,995.86	105.97	135.15	-100.92	0.20	-0.16	-5.48
7,025.00	1.15	342.68	7,020.86	106.44	134.98	-101.40	0.33	-0.04	16.04
7,050.00	1.13	344.16	7,045.85	106.92	134.84	-101.88	0.14	-0.08	5.92
7,075.00	1.05	343.92	7,070.85	107.38	134.71	-102.34	0.32	-0.32	-0.96
7,100.00	1.05	339.89	7,095.84	107.81	134.57	-102.78	0.30	0.00	-16.12
7,125.00	1.03	337.61	7,120.84	108.23	134.40	-103.21	0.18	-0.08	-9.12
7,150.00	1.05	336.14	7,145.84	108.65	134.22	-103.64	0.13	0.08	-5.88
7,175.00	1.04	334.93	7,170.83	109.07	134.04	-104.06	0.10	-0.04	-4.84
7,200.00	1.04	331.62	7,195.83	109.47	133.83	-104.47	0.24	0.00	-13.24
7,225.00	1.04	329.65	7,220.82	109.87	133.61	-104.87	0.14	0.00	-7.88
7,250.00	1.10	322.85	7,245.82	110.25	133.35	-105.27	0.56	0.24	-27.20
7,275.00	1.11	321.75	7,270.81	110.63	133.05	-105.66	0.09	0.04	-4.40
7,300.00	1.17	313.04	7,295.81	111.00	132.72	-106.04	0.73	0.24	-34.84
7,325.00	1.20	309.74	7,320.80	111.34	132.33	-106.39	0.30	0.12	-13.20
7,350.00	1.26	307.84	7,345.80	111.68	131.91	-106.74	0.29	0.24	-7.60
7,375.00	1.26	305.61	7,370.79	112.01	131.47	-107.09	0.20	0.00	-8.92
7,400.00	1.27	307.56	7,395.79	112.33	131.03	-107.43	0.18	0.04	7.80
7,425.00	1.27	307.63	7,420.78	112.67	130.59	-107.79	0.01	0.00	0.28
7,450.00	1.28	308.41	7,445.77	113.02	130.15	-108.15	0.08	0.04	3.12
7,475.00	1.27	308.29	7,470.77	113.36	129.72	-108.51	0.04	-0.04	-0.48
7,500.00	1.19	306.96	7,495.76	113.69	129.29	-108.85	0.34	-0.32	-5.32
7,525.00	1.25	304.03	7,520.76	114.00	128.86	-109.18	0.35	0.24	-11.72
7,550.00	1.27	300.32	7,545.75	114.29	128.39	-109.48	0.34	0.08	-14.84
7,575.00	1.32	297.64	7,570.74	114.56	127.90	-109.78	0.31	0.20	-10.72
7,600.00	1.42	296.79	7,595.74	114.84	127.37	-110.07	0.41	0.40	-3.40
7,625.00	1.42	296.34	7,620.73	115.11	126.81	-110.37	0.04	0.00	-1.80
7,650.00	1.38	293.34	7,645.72	115.37	126.26	-110.64	0.33	-0.16	-12.00
7,675.00	1.25	289.07	7,670.71	115.58	125.72	-110.87	0.65	-0.52	-17.08
7,700.00	1.31	288.03	7,695.71	115.76	125.19	-111.07	0.26	0.24	-4.16
7,725.00	1.17	284.24	7,720.70	115.91	124.68	-111.24	0.65	-0.56	-15.16
7,750.00	1.10	278.99	7,745.70	116.01	124.19	-111.36	0.50	-0.28	-21.00
7,775.00	1.06	277.43	7,770.69	116.07	123.72	-111.44	0.20	-0.16	-6.24
7,800.00	0.95	272.48	7,795.69	116.11	123.29	-111.50	0.56	-0.44	-19.80
7,825.00	0.95	266.95	7,820.69	116.11	122.87	-111.51	0.37	0.00	-22.12
7,850.00	0.80	252.44	7,845.68	116.05	122.50	-111.46	1.07	-0.60	-58.04
7,875.00	0.75	222.54	7,870.68	115.87	122.22	-111.30	1.61	-0.20	-119.60

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 803H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3353.10usft (McVay 8)
Site:	Valor Federal Com	MD Reference:	RKB @ 3353.10usft (McVay 8)
Well:	803H	North Reference:	Grid
Wellbore:	OH / 66417	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	Database:	USA Compass

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)
7,900.00	0.75	211.41	7,895.68	115.61	122.03	-111.04	0.58	0.00	-44.52
7,925.00	0.73	209.58	7,920.68	115.34	121.86	-110.77	0.12	-0.08	-7.32
7,950.00	0.71	213.96	7,945.67	115.07	121.70	-110.51	0.23	-0.08	17.52
7,975.00	0.69	208.82	7,970.67	114.81	121.54	-110.26	0.26	-0.08	-20.56
8,000.00	0.63	200.37	7,995.67	114.55	121.42	-110.00	0.46	-0.24	-33.80
8,025.00	0.65	203.92	8,020.67	114.29	121.31	-109.75	0.18	0.08	14.20
8,050.00	0.63	206.27	8,045.67	114.04	121.20	-109.50	0.13	-0.08	9.40
8,075.00	0.64	202.44	8,070.67	113.78	121.08	-109.25	0.17	0.04	-15.32
8,100.00	0.59	209.13	8,095.67	113.54	120.97	-109.01	0.35	-0.20	26.76
8,125.00	0.74	208.52	8,120.66	113.29	120.83	-108.76	0.60	0.60	-2.44
8,150.00	0.75	209.61	8,145.66	113.00	120.67	-108.49	0.07	0.04	4.36
8,175.00	0.83	202.83	8,170.66	112.70	120.52	-108.18	0.49	0.32	-27.12
8,200.00	0.80	199.36	8,195.66	112.36	120.39	-107.86	0.23	-0.12	-13.88
8,225.00	0.83	197.33	8,220.65	112.03	120.28	-107.52	0.17	0.12	-8.12
8,250.00	0.81	196.00	8,245.65	111.68	120.17	-107.18	0.11	-0.08	-5.32
8,275.00	0.78	194.54	8,270.65	111.35	120.08	-106.85	0.14	-0.12	-5.84
8,300.00	0.70	191.75	8,295.65	111.03	120.01	-106.54	0.35	-0.32	-11.16
8,325.00	0.65	192.95	8,320.65	110.75	119.95	-106.26	0.21	-0.20	4.80
8,350.00	0.68	197.13	8,345.64	110.47	119.87	-105.98	0.23	0.12	16.72
8,375.00	0.76	197.97	8,370.64	110.17	119.78	-105.68	0.32	0.32	3.36
8,400.00	0.66	189.01	8,395.64	109.87	119.70	-105.39	0.60	-0.40	-35.84
8,425.00	0.78	199.13	8,420.64	109.56	119.62	-105.09	0.70	0.48	40.48
8,450.00	0.80	191.81	8,445.64	109.23	119.53	-104.76	0.41	0.08	-29.28
8,475.00	0.82	190.97	8,470.63	108.89	119.46	-104.41	0.09	0.08	-3.36
8,500.00	0.94	191.18	8,495.63	108.51	119.39	-104.04	0.48	0.48	0.84
8,525.00	0.99	187.63	8,520.63	108.09	119.32	-103.63	0.31	0.20	-14.20
8,550.00	0.95	188.82	8,545.62	107.68	119.26	-103.21	0.18	-0.16	4.76
8,575.00	0.94	185.77	8,570.62	107.27	119.21	-102.81	0.21	-0.04	-12.20
8,600.00	0.90	188.19	8,595.62	106.87	119.16	-102.41	0.22	-0.16	9.68
8,625.00	0.92	186.25	8,620.61	106.47	119.11	-102.02	0.15	0.08	-7.76
8,650.00	0.82	185.33	8,645.61	106.10	119.07	-101.64	0.40	-0.40	-3.68
8,675.00	0.72	190.34	8,670.61	105.76	119.03	-101.31	0.48	-0.40	20.04
8,700.00	0.77	171.87	8,695.61	105.44	119.02	-100.99	0.98	0.20	-73.88
8,725.00	1.09	84.30	8,720.60	105.30	119.28	-100.84	5.23	1.28	-350.28
8,750.00	1.68	73.93	8,745.60	105.43	119.87	-100.94	2.55	2.36	-41.48
8,775.00	1.74	74.54	8,770.58	105.63	120.59	-101.12	0.25	0.24	2.44
8,800.00	1.74	72.65	8,795.57	105.84	121.32	-101.30	0.23	0.00	-7.56
8,825.00	1.77	76.74	8,820.56	106.04	122.05	-101.48	0.52	0.12	16.36
8,850.00	1.82	75.94	8,845.55	106.23	122.82	-101.64	0.22	0.20	-3.20
8,875.00	1.75	76.02	8,870.54	106.42	123.57	-101.80	0.28	-0.28	0.32
8,900.00	1.79	76.27	8,895.53	106.60	124.32	-101.95	0.16	0.16	1.00
8,925.00	1.71	77.21	8,920.51	106.78	125.06	-102.10	0.34	-0.32	3.76
8,950.00	1.77	77.45	8,945.50	106.94	125.80	-102.24	0.24	0.24	0.96

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 803H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3353.10usft (McVay 8)
Site:	Valor Federal Com	MD Reference:	RKB @ 3353.10usft (McVay 8)
Well:	803H	North Reference:	Grid
Wellbore:	OH / 66417	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	Database:	USA Compass

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)	
8,975.00	1.76	76.48	8,970.49	107.12	126.55	-102.39	0.13	-0.04	-3.88	
9,000.00	1.71	78.69	8,995.48	107.28	127.29	-102.52	0.33	-0.20	8.84	
9,025.00	1.62	77.39	9,020.47	107.43	128.00	-102.65	0.39	-0.36	-5.20	
9,050.00	1.56	77.27	9,045.46	107.58	128.68	-102.77	0.24	-0.24	-0.48	
9,075.00	1.41	77.61	9,070.45	107.72	129.31	-102.89	0.60	-0.60	1.36	
9,100.00	1.42	80.88	9,095.44	107.84	129.92	-102.98	0.33	0.04	13.08	
9,125.00	1.44	80.17	9,120.43	107.94	130.53	-103.06	0.11	0.08	-2.84	
9,150.00	1.42	75.54	9,145.43	108.07	131.14	-103.17	0.47	-0.08	-18.52	
9,175.00	1.28	71.16	9,170.42	108.24	131.71	-103.32	0.70	-0.56	-17.52	
9,200.00	1.22	72.57	9,195.41	108.41	132.23	-103.47	0.27	-0.24	5.64	
9,225.00	1.03	75.77	9,220.41	108.55	132.70	-103.59	0.80	-0.76	12.80	
9,250.00	0.99	82.38	9,245.41	108.63	133.13	-103.65	0.49	-0.16	26.44	
9,275.00	0.81	73.32	9,270.40	108.71	133.51	-103.72	0.92	-0.72	-36.24	
9,300.00	0.77	73.48	9,295.40	108.81	133.84	-103.81	0.16	-0.16	0.64	
9,325.00	0.53	68.69	9,320.40	108.90	134.11	-103.89	0.98	-0.96	-19.16	
9,350.00	0.35	78.18	9,345.40	108.96	134.30	-103.94	0.77	-0.72	37.96	
9,375.00	0.29	76.72	9,370.40	108.99	134.43	-103.96	0.24	-0.24	-5.84	
9,400.00	0.30	38.82	9,395.40	109.05	134.53	-104.02	0.77	0.04	-151.60	
9,425.00	0.26	14.87	9,420.40	109.16	134.59	-104.13	0.49	-0.16	-95.80	
9,450.00	0.28	347.00	9,445.40	109.27	134.59	-104.24	0.53	0.08	-111.48	
9,475.00	0.32	10.09	9,470.40	109.40	134.59	-104.37	0.51	0.16	92.36	
9,500.00	1.26	35.81	9,495.39	109.69	134.76	-104.65	3.93	3.76	102.88	
9,525.00	2.20	38.88	9,520.38	110.29	135.22	-105.23	3.78	3.76	12.28	
9,550.00	2.31	36.97	9,545.36	111.06	135.83	-105.99	0.53	0.44	-7.64	
9,575.00	2.41	32.40	9,570.34	111.91	136.41	-106.81	0.85	0.40	-18.28	
9,600.00	2.39	30.60	9,595.32	112.80	136.96	-107.68	0.31	-0.08	-7.20	
9,625.00	2.51	25.58	9,620.30	113.74	137.46	-108.61	0.98	0.48	-20.08	
9,650.00	2.49	21.37	9,645.27	114.74	137.90	-109.59	0.74	-0.08	-16.84	
9,675.00	2.59	23.15	9,670.25	115.77	138.32	-110.60	0.51	0.40	7.12	
9,700.00	2.55	21.95	9,695.22	116.80	138.75	-111.62	0.27	-0.16	-4.80	
9,725.00	2.48	20.82	9,720.20	117.83	139.15	-112.62	0.34	-0.28	-4.52	
9,750.00	2.41	19.25	9,745.18	118.83	139.51	-113.61	0.39	-0.28	-6.28	
9,775.00	2.28	17.69	9,770.16	119.80	139.84	-114.57	0.58	-0.52	-6.24	
9,800.00	2.04	20.58	9,795.14	120.69	140.14	-115.45	1.05	-0.96	11.56	
9,825.00	1.96	22.93	9,820.12	121.50	140.47	-116.24	0.46	-0.32	9.40	
9,850.00	1.70	25.47	9,845.11	122.23	140.79	-116.96	1.09	-1.04	10.16	
9,875.00	1.40	23.69	9,870.10	122.84	141.07	-117.56	1.22	-1.20	-7.12	
9,900.00	1.18	25.22	9,895.09	123.35	141.31	-118.07	0.89	-0.88	6.12	
9,925.00	1.05	22.78	9,920.09	123.80	141.51	-118.50	0.55	-0.52	-9.76	
9,950.00	0.88	23.16	9,945.09	124.19	141.67	-118.89	0.68	-0.68	1.52	
9,975.00	0.79	28.91	9,970.08	124.51	141.83	-119.21	0.49	-0.36	23.00	
10,000.00	0.78	23.03	9,995.08	124.82	141.98	-119.51	0.32	-0.04	-23.52	
10,025.00	0.72	36.97	10,020.08	125.10	142.14	-119.78	0.77	-0.24	55.76	
10,050.00	0.57	42.41	10,045.08	125.32	142.32	-120.00	0.65	-0.60	21.76	

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 803H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3353.10usft (McVay 8)
Site:	Valor Federal Com	MD Reference:	RKB @ 3353.10usft (McVay 8)
Well:	803H	North Reference:	Grid
Wellbore:	OH / 66417	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	Database:	USA Compass

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)
10,075.00	0.50	53.54	10,070.08	125.48	142.49	-120.15	0.50	-0.28	44.52
10,100.00	0.39	42.71	10,095.08	125.60	142.63	-120.27	0.55	-0.44	-43.32
10,125.00	0.29	9.93	10,120.07	125.73	142.70	-120.39	0.86	-0.40	-131.12
10,150.00	0.38	315.66	10,145.07	125.85	142.66	-120.51	1.26	0.36	-217.08
10,175.00	0.52	295.12	10,170.07	125.96	142.50	-120.63	0.85	0.56	-82.16
10,200.00	0.61	293.19	10,195.07	126.06	142.27	-120.73	0.37	0.36	-7.72
10,225.00	0.53	319.26	10,220.07	126.20	142.07	-120.88	1.07	-0.32	104.28
10,250.00	0.60	346.93	10,245.07	126.41	141.97	-121.10	1.11	0.28	110.68
10,275.00	0.64	343.11	10,270.07	126.67	141.90	-121.36	0.23	0.16	-15.28
10,300.00	0.69	337.77	10,295.07	126.95	141.80	-121.64	0.32	0.20	-21.36
10,325.00	0.90	325.55	10,320.06	127.25	141.63	-121.95	1.08	0.84	-48.88
10,350.00	1.16	322.07	10,345.06	127.61	141.37	-122.32	1.07	1.04	-13.92
10,375.00	1.33	317.28	10,370.05	128.02	141.01	-122.74	0.80	0.68	-19.16
10,400.00	1.48	318.82	10,395.05	128.48	140.60	-123.22	0.62	0.60	6.16
10,425.00	1.52	318.47	10,420.04	128.97	140.17	-123.72	0.16	0.16	-1.40
10,450.00	1.54	315.13	10,445.03	129.46	139.71	-124.22	0.37	0.08	-13.36
10,475.00	1.38	312.60	10,470.02	129.90	139.26	-124.68	0.69	-0.64	-10.12
10,500.00	1.39	322.73	10,495.01	130.34	138.85	-125.14	0.98	0.04	40.52
10,525.00	1.53	357.32	10,520.01	130.92	138.65	-125.72	3.51	0.56	138.36
10,550.00	1.81	6.16	10,545.00	131.64	138.68	-126.45	1.52	1.12	35.36
10,575.00	1.83	9.11	10,569.98	132.43	138.78	-127.23	0.38	0.08	11.80
10,600.00	1.83	5.86	10,594.97	133.22	138.89	-128.02	0.42	0.00	-13.00
10,625.00	1.91	0.14	10,619.96	134.04	138.93	-128.83	0.81	0.32	-22.88
10,650.00	1.87	355.93	10,644.94	134.86	138.90	-129.65	0.58	-0.16	-16.84
10,675.00	1.74	354.26	10,669.93	135.64	138.83	-130.44	0.56	-0.52	-6.68
10,700.00	1.68	355.26	10,694.92	136.39	138.77	-131.19	0.27	-0.24	4.00
10,725.00	1.59	353.97	10,719.91	137.10	138.70	-131.90	0.39	-0.36	-5.16
10,750.00	1.54	352.81	10,744.90	137.78	138.62	-132.58	0.24	-0.20	-4.64
10,775.00	1.39	349.22	10,769.89	138.41	138.52	-133.21	0.70	-0.60	-14.36
10,800.00	1.24	347.44	10,794.89	138.97	138.41	-133.78	0.62	-0.60	-7.12
10,825.00	1.18	348.59	10,819.88	139.48	138.30	-134.30	0.26	-0.24	4.60
10,850.00	1.16	349.01	10,844.88	139.99	138.20	-134.80	0.09	-0.08	1.68
10,875.00	1.18	348.39	10,869.87	140.49	138.10	-135.31	0.09	0.08	-2.48
10,900.00	0.99	348.44	10,894.87	140.95	138.00	-135.77	0.76	-0.76	0.20
10,925.00	0.80	351.14	10,919.86	141.33	137.93	-136.16	0.78	-0.76	10.80
10,950.00	0.67	351.68	10,944.86	141.65	137.88	-136.48	0.52	-0.52	2.16
10,975.00	0.49	351.33	10,969.86	141.90	137.85	-136.73	0.72	-0.72	-1.40
11,000.00	0.36	339.45	10,994.86	142.08	137.80	-136.91	0.63	-0.52	-47.52
11,025.00	0.35	347.03	11,019.86	142.23	137.76	-137.06	0.19	-0.04	30.32
11,050.00	0.37	346.65	11,044.86	142.38	137.72	-137.21	0.08	0.08	-1.52
11,075.00	0.45	341.32	11,069.86	142.55	137.67	-137.39	0.35	0.32	-21.32
11,100.00	0.39	345.30	11,094.86	142.73	137.62	-137.56	0.27	-0.24	15.92
11,125.00	0.57	353.84	11,119.86	142.93	137.59	-137.77	0.77	0.72	34.16

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 803H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3353.10usft (McVay 8)
Site:	Valor Federal Com	MD Reference:	RKB @ 3353.10usft (McVay 8)
Well:	803H	North Reference:	Grid
Wellbore:	OH / 66417	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	Database:	USA Compass

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)
11,150.00	0.70	348.06	11,144.85	143.21	137.54	-138.05	0.58	0.52	-23.12
11,175.00	0.74	1.61	11,169.85	143.52	137.51	-138.36	0.70	0.16	54.20
11,200.00	0.81	0.90	11,194.85	143.86	137.52	-138.70	0.28	0.28	-2.84
11,225.00	0.79	356.79	11,219.85	144.20	137.51	-139.04	0.24	-0.08	-16.44
11,250.00	0.86	357.10	11,244.84	144.56	137.49	-139.40	0.28	0.28	1.24
11,275.00	0.84	359.89	11,269.84	144.93	137.48	-139.77	0.18	-0.08	11.16
11,300.00	0.77	2.27	11,294.84	145.29	137.49	-140.13	0.31	-0.28	9.52
11,325.00	0.62	350.05	11,319.84	145.59	137.47	-140.43	0.84	-0.60	-48.88
11,350.00	0.58	330.92	11,344.84	145.83	137.39	-140.67	0.81	-0.16	-76.52
11,375.00	0.61	309.60	11,369.83	146.03	137.23	-140.87	0.89	0.12	-85.28
11,400.00	0.53	299.02	11,394.83	146.17	137.02	-141.02	0.53	-0.32	-42.32
11,425.00	0.52	283.99	11,419.83	146.25	136.81	-141.11	0.55	-0.04	-60.12
11,450.00	0.47	277.17	11,444.83	146.29	136.60	-141.16	0.31	-0.20	-27.28
11,475.00	0.43	265.87	11,469.83	146.30	136.40	-141.18	0.39	-0.16	-45.20
11,500.00	0.46	229.78	11,494.83	146.23	136.23	-141.11	1.11	0.12	-144.36
11,509.00	0.51	227.28	11,503.83	146.17	136.18	-141.06	0.60	0.56	-27.78
Tie In									
11,631.00	0.35	238.39	11,625.83	145.61	135.46	-140.52	0.15	-0.13	9.11
First Gordon MWD Survey									
11,726.00	0.12	306.70	11,720.83	145.52	135.13	-140.44	0.34	-0.24	71.91
11,821.00	0.30	297.00	11,815.82	145.69	134.83	-140.63	0.19	0.19	-10.21
11,916.00	0.15	197.74	11,910.82	145.69	134.57	-140.63	0.38	-0.16	-104.48
11,979.00	2.14	154.43	11,973.81	144.55	135.05	-139.48	3.23	3.16	-68.75
12,011.00	6.55	150.24	12,005.71	142.42	136.22	-137.31	13.81	13.78	-13.09
12,058.00	12.92	151.18	12,052.01	135.48	140.09	-130.23	13.56	13.55	2.00
12,105.00	17.19	154.60	12,097.39	124.60	145.60	-119.16	9.28	9.09	7.28
12,150.00	21.15	153.75	12,139.88	111.31	152.05	-105.63	8.83	8.81	-1.89
FTP: 12150' MD									
12,152.00	21.33	153.72	12,141.75	110.66	152.37	-104.97	8.83	8.81	-1.53
12,200.00	25.93	156.39	12,185.71	93.20	160.44	-87.23	9.84	9.58	5.56
12,247.00	32.39	159.55	12,226.73	71.97	168.96	-65.70	14.13	13.74	6.72
12,295.00	38.02	160.13	12,265.94	46.00	178.49	-39.40	11.75	11.73	1.21
12,342.00	41.01	163.65	12,302.20	17.58	187.75	-10.65	7.95	6.36	7.49
12,389.00	46.61	166.24	12,336.10	-13.83	196.16	21.05	12.51	11.91	5.51
12,436.00	51.03	165.27	12,367.04	-48.11	204.87	55.62	9.53	9.40	-2.06
12,484.00	56.09	165.97	12,395.55	-85.50	214.45	93.34	10.61	10.54	1.46
12,531.00	62.53	166.73	12,419.52	-124.76	223.98	132.92	13.77	13.70	1.62
12,578.00	67.42	169.85	12,439.40	-166.45	232.59	174.90	12.02	10.40	6.64
12,625.00	70.34	172.02	12,456.34	-209.73	239.49	218.41	7.56	6.21	4.62
12,673.00	76.64	175.49	12,469.97	-255.45	244.47	264.28	14.84	13.13	7.23
12,720.00	83.92	179.25	12,477.91	-301.69	246.58	310.56	17.38	15.49	8.00
12,767.00	84.46	180.44	12,482.66	-348.45	246.71	357.29	2.77	1.15	2.53
12,861.00	83.55	181.02	12,492.48	-441.92	245.52	450.66	1.15	-0.97	0.62
12,956.00	83.83	182.36	12,502.92	-536.31	242.73	544.88	1.43	0.29	1.41

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 803H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3353.10usft (McVay 8)
Site:	Valor Federal Com	MD Reference:	RKB @ 3353.10usft (McVay 8)
Well:	803H	North Reference:	Grid
Wellbore:	OH / 66417	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	Database:	USA Compass

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)
13,052.00	86.26	181.73	12,511.21	-631.88	239.32	640.26	2.61	2.53	-0.66
13,146.00	89.32	182.16	12,514.84	-725.74	236.13	733.94	3.29	3.26	0.46
13,241.00	90.61	182.91	12,514.90	-820.65	231.93	828.63	1.57	1.36	0.79
13,336.00	87.87	182.77	12,516.16	-915.51	227.22	923.26	2.89	-2.88	-0.15
13,431.00	89.60	182.79	12,518.25	-1,010.37	222.62	1,017.89	1.82	1.82	0.02
13,525.00	90.03	182.70	12,518.56	-1,104.27	218.12	1,111.55	0.47	0.46	-0.10
13,619.00	90.02	181.42	12,518.52	-1,198.20	214.74	1,205.30	1.36	-0.01	-1.36
13,714.00	89.57	180.39	12,518.86	-1,293.19	213.24	1,300.16	1.18	-0.47	-1.08
13,809.00	89.71	179.74	12,519.45	-1,388.19	213.13	1,395.09	0.70	0.15	-0.68
13,903.00	89.86	178.78	12,519.81	-1,482.18	214.34	1,489.06	1.03	0.16	-1.02
13,998.00	88.98	178.86	12,520.77	-1,577.15	216.30	1,584.05	0.93	-0.93	0.08
14,093.00	89.09	181.94	12,522.37	-1,672.12	215.64	1,678.93	3.24	0.12	3.24
14,188.00	88.74	182.32	12,524.17	-1,767.04	212.11	1,773.65	0.54	-0.37	0.40
14,283.00	88.31	179.73	12,526.61	-1,861.99	210.41	1,868.47	2.76	-0.45	-2.73
14,378.00	90.88	177.94	12,527.28	-1,956.95	212.34	1,963.44	3.30	2.71	-1.88
14,472.00	88.35	173.93	12,527.92	-2,050.69	219.00	2,057.36	5.04	-2.69	-4.27
14,567.00	89.95	174.82	12,529.33	-2,145.22	228.31	2,152.17	1.93	1.68	0.94
14,662.00	92.91	175.97	12,526.96	-2,239.87	235.93	2,247.03	3.34	3.12	1.21
14,756.00	93.78	176.44	12,521.47	-2,333.50	242.14	2,340.83	1.05	0.93	0.50
14,851.00	92.76	175.45	12,516.05	-2,428.11	248.85	2,435.62	1.50	-1.07	-1.04
14,945.00	92.97	177.32	12,511.35	-2,521.80	254.77	2,529.47	2.00	0.22	1.99
15,041.00	94.11	180.11	12,505.42	-2,617.58	256.92	2,625.26	3.13	1.19	2.91
15,137.00	93.76	180.99	12,498.84	-2,713.35	256.00	2,720.93	0.98	-0.36	0.92
15,233.00	91.67	180.20	12,494.29	-2,809.23	255.01	2,816.71	2.33	-2.18	-0.82
15,327.00	90.32	180.43	12,492.66	-2,903.21	254.49	2,910.61	1.46	-1.44	0.24
15,422.00	91.29	180.80	12,491.32	-2,998.19	253.47	3,005.49	1.09	1.02	0.39
15,456.00	89.17	181.49	12,491.19	-3,032.18	252.79	3,039.44	6.56	-6.24	2.03
15,516.00	87.82	182.53	12,492.76	-3,092.12	250.69	3,099.26	2.84	-2.25	1.73
15,610.00	89.32	183.56	12,495.11	-3,185.96	245.70	3,192.84	1.94	1.60	1.10
15,704.00	87.77	183.10	12,497.49	-3,279.77	240.24	3,286.39	1.72	-1.65	-0.49
15,799.00	87.94	183.06	12,501.05	-3,374.56	235.14	3,380.93	0.18	0.18	-0.04
15,894.00	88.56	184.50	12,503.95	-3,469.31	228.88	3,475.38	1.65	0.65	1.52
15,989.00	88.45	181.49	12,506.43	-3,564.14	223.91	3,569.96	3.17	-0.12	-3.17
16,084.00	89.06	181.76	12,508.49	-3,659.07	221.22	3,664.74	0.70	0.64	0.28
16,179.00	90.68	177.94	12,508.71	-3,754.05	221.47	3,759.66	4.37	1.71	-4.02
16,274.00	92.59	177.82	12,506.00	-3,848.95	224.98	3,854.62	2.01	2.01	-0.13
16,368.00	92.10	176.80	12,502.15	-3,942.76	229.39	3,948.53	1.20	-0.52	-1.09
16,462.00	89.53	176.36	12,500.82	-4,036.58	235.00	4,042.49	2.77	-2.73	-0.47
16,557.00	89.76	171.51	12,501.41	-4,131.01	245.03	4,137.24	5.11	0.24	-5.11
16,652.00	89.47	175.85	12,502.04	-4,225.41	255.49	4,231.95	4.58	-0.31	4.57
16,747.00	90.11	177.84	12,502.39	-4,320.26	260.71	4,326.93	2.20	0.67	2.09
16,841.00	91.33	180.68	12,501.21	-4,414.24	261.93	4,420.89	3.29	1.30	3.02
16,936.00	91.75	180.49	12,498.66	-4,509.20	260.96	4,515.75	0.49	0.44	-0.20

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 803H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3353.10usft (McVay 8)
Site:	Valor Federal Com	MD Reference:	RKB @ 3353.10usft (McVay 8)
Well:	803H	North Reference:	Grid
Wellbore:	OH / 66417	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	Database:	USA Compass

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)
17,030.00	90.22	179.76	12,497.04	-4,603.18	260.75	4,609.66	1.80	-1.63	-0.78
17,125.00	90.25	179.76	12,496.65	-4,698.18	261.15	4,704.61	0.03	0.03	0.00
17,218.00	90.83	178.04	12,495.78	-4,791.15	262.94	4,797.58	1.95	0.62	-1.85
17,313.00	90.52	170.74	12,494.65	-4,885.63	272.22	4,892.34	7.69	-0.33	-7.68
17,360.00	88.79	165.33	12,494.94	-4,931.59	281.96	4,938.62	12.08	-3.68	-11.51
17,408.00	88.36	167.81	12,496.13	-4,978.25	293.10	4,985.67	5.24	-0.90	5.17
17,439.00	88.55	169.59	12,496.97	-5,008.64	299.17	5,016.26	5.77	0.61	5.74
17,471.00	89.40	172.31	12,497.54	-5,040.24	304.21	5,048.02	8.90	2.66	8.50
17,503.00	89.70	175.72	12,497.79	-5,072.05	307.54	5,079.94	10.70	0.94	10.66
17,597.00	88.42	181.87	12,499.34	-5,165.97	309.52	5,173.87	6.68	-1.36	6.54
17,691.00	89.15	182.43	12,501.33	-5,259.89	305.99	5,267.59	0.98	0.78	0.60
17,786.00	90.34	182.02	12,501.75	-5,354.81	302.30	5,362.31	1.32	1.25	-0.43
17,881.00	91.49	182.37	12,500.23	-5,449.73	298.67	5,457.03	1.27	1.21	0.37
17,976.00	89.88	181.20	12,499.10	-5,544.67	295.71	5,551.80	2.09	-1.69	-1.23
18,071.00	89.54	180.79	12,499.58	-5,639.65	294.06	5,646.66	0.56	-0.36	-0.43
18,167.00	90.49	181.31	12,499.55	-5,735.64	292.30	5,742.51	1.13	0.99	0.54
18,262.00	93.16	182.44	12,496.53	-5,830.53	289.19	5,837.22	3.05	2.81	1.19
18,356.00	91.29	181.73	12,492.88	-5,924.39	285.78	5,930.89	2.13	-1.99	-0.76
18,451.00	88.68	182.23	12,492.90	-6,019.32	282.49	6,025.64	2.80	-2.75	0.53
18,546.00	90.27	184.12	12,493.77	-6,114.17	277.23	6,120.23	2.60	1.67	1.99
18,641.00	89.23	183.53	12,494.19	-6,208.95	270.90	6,214.72	1.26	-1.09	-0.62
18,735.00	90.14	184.02	12,494.71	-6,302.75	264.71	6,308.22	1.10	0.97	0.52
18,829.00	88.18	181.45	12,496.08	-6,396.62	260.22	6,401.86	3.44	-2.09	-2.73
18,924.00	88.68	181.14	12,498.69	-6,491.56	258.08	6,496.66	0.62	0.53	-0.33
19,018.00	90.32	182.38	12,499.51	-6,585.50	255.19	6,590.43	2.19	1.74	1.32
19,113.00	89.53	179.64	12,499.63	-6,680.48	253.51	6,685.28	3.00	-0.83	-2.88
19,208.00	88.35	178.85	12,501.39	-6,775.45	254.77	6,780.24	1.49	-1.24	-0.83
19,304.00	89.20	178.72	12,503.44	-6,871.41	256.80	6,876.20	0.90	0.89	-0.14
19,399.00	87.86	177.86	12,505.88	-6,966.33	259.63	6,971.17	1.68	-1.41	-0.91
19,494.00	88.37	178.77	12,509.00	-7,061.24	262.43	7,066.11	1.10	0.54	0.96
19,588.00	89.29	178.20	12,510.92	-7,155.18	264.91	7,160.09	1.15	0.98	-0.61
19,683.00	90.46	174.95	12,511.13	-7,250.00	270.59	7,255.05	3.64	1.23	-3.42
19,777.00	87.72	176.68	12,512.62	-7,343.72	277.44	7,348.96	3.45	-2.91	1.84
19,871.00	87.45	175.93	12,516.58	-7,437.44	283.50	7,442.84	0.85	-0.29	-0.80
19,966.00	87.92	176.06	12,520.42	-7,532.14	290.13	7,537.71	0.51	0.49	0.14
20,035.00	89.66	176.17	12,521.88	-7,600.96	294.80	7,606.66	2.53	2.52	0.16
Final Gordon MWD Survey									
20,045.00	89.66	176.17	12,521.94	-7,610.94	295.47	7,616.65	0.00	0.00	0.00
LTP: 20045' MD									
20,093.00	89.66	176.17	12,522.22	-7,658.83	298.67	7,664.63	0.00	0.00	0.00
Projection to TD									

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 803H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3353.10usft (McVay 8)
Site:	Valor Federal Com	MD Reference:	RKB @ 3353.10usft (McVay 8)
Well:	803H	North Reference:	Grid
Wellbore:	OH / 66417	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	Database:	USA Compass

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
11,509.00	11,503.83	146.17	136.18	Tie In
11,631.00	11,625.83	145.61	135.46	First Gordon MWD Survey
12,150.00	12,139.88	111.31	152.05	FTP: 12150' MD
20,035.00	12,521.88	-7,600.96	294.80	Final Gordon MWD Survey
20,045.00	12,521.94	-7,610.94	295.47	LTP: 20045' MD
20,093.00	12,522.22	-7,658.83	298.67	Projection to TD

Checked By: _____ Approved By: _____ Date: _____