



COG Operating LLC

Eddy County, NM (NAD27 NME)

Daisy 24 State Com

506H

OH \ 66037

Design: Surveys (Pioneer 84)

Standard Survey Report

09 March, 2020



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 506H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 3113.00usft (Pioneer 84)
Site:	Daisy 24 State Com	MD Reference:	RKB @ 3113.00usft (Pioneer 84)
Well:	506H	North Reference:	Grid
Wellbore:	OH \ 66037	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	Database:	USA Compass

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	Daisy 24 State Com		
Site Position:		Northing:	408,073.20 usft
From:	Map	Easting:	556,552.70 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 7' 18.400350 N
		Longitude:	104° 9' 2.377557 W
		Grid Convergence:	0.10 °

Well	506H		
Well Position	+N/-S	0.00 usft	Northing: 408,158.06 usft
	+E/-W	0.00 usft	Easting: 560,749.92 usft
Position Uncertainty	1.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 7' 19.167132 N
		Longitude:	104° 8' 13.568748 W
		Ground Level:	3,088.00 usft

Wellbore	OH \ 66037		
Magnetics	Model Name	Sample Date	Declination (°)
	MVHD	3/2/2020	6.99
			Dip Angle (°) 59.78
			Field Strength (nT) 47,785.79945144

Design	Surveys (Pioneer 84)		
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 (°) 97.91

Survey Program	Date	3/9/2020		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.00	7,223.00	Scientific Gyro Surveys (OH \ 66037)	Scientific Keeper	Scientific Drilling Intl. Standard Wireline Keeper
7,288.00	18,263.00	Phoenix MWD Surveys - SQC (OH \ 66037)	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	0.52	190.04	100.00	-0.45	-0.08	-0.02	0.52	0.52	0.00
125.00	0.55	194.84	125.00	-0.67	-0.13	-0.04	0.22	0.12	19.20
150.00	0.49	168.29	150.00	-0.90	-0.14	-0.01	0.98	-0.24	-106.20
175.00	0.34	155.01	175.00	-1.07	-0.09	0.06	0.71	-0.60	-53.12
200.00	0.17	200.51	200.00	-1.17	-0.07	0.09	1.01	-0.68	182.00
225.00	0.21	125.77	225.00	-1.23	-0.04	0.13	0.93	0.16	-298.96
250.00	0.22	110.50	250.00	-1.27	0.04	0.21	0.23	0.04	-61.08
275.00	0.16	107.65	275.00	-1.30	0.12	0.30	0.24	-0.24	-11.40
300.00	0.24	157.22	300.00	-1.36	0.17	0.36	0.73	0.32	198.28

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 506H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 3113.00usft (Pioneer 84)
Site:	Daisy 24 State Com	MD Reference:	RKB @ 3113.00usft (Pioneer 84)
Well:	506H	North Reference:	Grid
Wellbore:	OH \ 66037	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	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	0.27	162.90	324.99	-1.47	0.21	0.41	0.16	0.12	22.72
350.00	0.25	175.84	349.99	-1.58	0.23	0.44	0.25	-0.08	51.76
375.00	0.23	177.87	374.99	-1.68	0.24	0.46	0.09	-0.08	8.12
400.00	0.33	207.46	399.99	-1.79	0.20	0.45	0.69	0.40	118.36
425.00	0.58	219.46	424.99	-1.96	0.09	0.36	1.06	1.00	48.00
450.00	0.71	206.72	449.99	-2.19	-0.06	0.24	0.77	0.52	-50.96
475.00	0.53	210.18	474.99	-2.43	-0.19	0.15	0.74	-0.72	13.84
500.00	0.61	202.55	499.99	-2.65	-0.30	0.07	0.44	0.32	-30.52
525.00	0.58	194.90	524.99	-2.90	-0.38	0.02	0.34	-0.12	-30.60
550.00	0.48	202.70	549.99	-3.12	-0.45	-0.02	0.49	-0.40	31.20
575.00	0.51	214.48	574.99	-3.31	-0.56	-0.10	0.42	0.12	47.12
600.00	0.49	200.20	599.98	-3.50	-0.66	-0.17	0.50	-0.08	-57.12
625.00	0.57	217.17	624.98	-3.70	-0.77	-0.25	0.70	0.32	67.88
650.00	0.69	203.40	649.98	-3.93	-0.90	-0.35	0.77	0.48	-55.08
675.00	0.52	201.40	674.98	-4.18	-1.00	-0.42	0.69	-0.68	-8.00
700.00	0.53	193.80	699.98	-4.40	-1.07	-0.46	0.28	0.04	-30.40
725.00	0.51	183.43	724.98	-4.62	-1.11	-0.46	0.38	-0.08	-41.48
750.00	0.56	184.28	749.98	-4.85	-1.12	-0.44	0.20	0.20	3.40
775.00	0.41	221.08	774.98	-5.04	-1.19	-0.49	1.35	-0.60	147.20
800.00	0.33	147.89	799.98	-5.17	-1.21	-0.49	1.78	-0.32	-292.76
825.00	0.23	160.28	824.98	-5.28	-1.16	-0.42	0.47	-0.40	49.56
850.00	0.29	171.11	849.98	-5.39	-1.13	-0.38	0.31	0.24	43.32
875.00	0.37	141.81	874.98	-5.51	-1.07	-0.30	0.74	0.32	-117.20
900.00	0.37	136.97	899.97	-5.64	-0.97	-0.18	0.12	0.00	-19.36
925.00	0.52	125.43	924.97	-5.76	-0.82	-0.02	0.70	0.60	-46.16
950.00	0.50	121.41	949.97	-5.88	-0.63	0.18	0.16	-0.08	-16.08
975.00	0.53	123.81	974.97	-6.00	-0.44	0.39	0.15	0.12	9.60
1,000.00	0.59	113.05	999.97	-6.12	-0.23	0.62	0.48	0.24	-43.04
1,025.00	0.44	125.53	1,024.97	-6.23	-0.03	0.83	0.75	-0.60	49.92
1,050.00	0.70	124.03	1,049.97	-6.37	0.17	1.05	1.04	1.04	-6.00
1,075.00	0.65	126.28	1,074.97	-6.54	0.41	1.31	0.23	-0.20	9.00
1,100.00	0.73	116.70	1,099.97	-6.69	0.67	1.59	0.56	0.32	-38.32
1,125.00	0.82	118.13	1,124.96	-6.85	0.97	1.90	0.37	0.36	5.72
1,150.00	0.77	125.11	1,149.96	-7.03	1.27	2.22	0.44	-0.20	27.92
1,175.00	0.71	116.25	1,174.96	-7.19	1.54	2.52	0.52	-0.24	-35.44
1,200.00	0.68	121.35	1,199.96	-7.34	1.81	2.80	0.27	-0.12	20.40
1,225.00	0.65	118.35	1,224.95	-7.48	2.06	3.07	0.18	-0.12	-12.00
1,250.00	0.83	110.33	1,249.95	-7.61	2.35	3.38	0.83	0.72	-32.08
1,275.00	0.79	108.02	1,274.95	-7.73	2.69	3.73	0.21	-0.16	-9.24
1,300.00	0.67	106.40	1,299.95	-7.82	2.99	4.04	0.49	-0.48	-6.48
1,325.00	0.70	115.06	1,324.95	-7.93	3.27	4.33	0.43	0.12	34.64
1,350.00	0.65	119.67	1,349.94	-8.07	3.53	4.61	0.30	-0.20	18.44
1,375.00	0.65	118.98	1,374.94	-8.20	3.78	4.87	0.03	0.00	-2.76

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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	0.74	112.28	1,399.94	-8.33	4.05	5.16	0.48	0.36	-26.80
1,425.00	0.74	94.34	1,424.94	-8.41	4.36	5.48	0.92	0.00	-71.76
1,450.00	0.86	84.73	1,449.94	-8.40	4.71	5.82	0.72	0.48	-38.44
1,475.00	0.92	86.54	1,474.93	-8.37	5.10	6.20	0.27	0.24	7.24
1,500.00	0.93	81.92	1,499.93	-8.33	5.50	6.59	0.30	0.04	-18.48
1,525.00	1.12	77.24	1,524.93	-8.25	5.94	7.02	0.83	0.76	-18.72
1,550.00	1.15	85.44	1,549.92	-8.18	6.43	7.49	0.66	0.12	32.80
1,575.00	1.17	84.11	1,574.92	-8.13	6.93	7.98	0.13	0.08	-5.32
1,600.00	1.45	87.38	1,599.91	-8.09	7.50	8.54	1.16	1.12	13.08
1,625.00	1.69	89.04	1,624.90	-8.07	8.18	9.22	0.98	0.96	6.64
1,650.00	2.09	88.35	1,649.89	-8.05	9.01	10.03	1.60	1.60	-2.76
1,675.00	2.70	86.99	1,674.86	-8.01	10.05	11.06	2.45	2.44	-5.44
1,700.00	3.08	86.23	1,699.83	-7.93	11.31	12.30	1.53	1.52	-3.04
1,725.00	3.35	86.90	1,724.79	-7.85	12.71	13.67	1.09	1.08	2.68
1,750.00	3.65	85.70	1,749.75	-7.75	14.23	15.16	1.24	1.20	-4.80
1,775.00	3.38	85.11	1,774.70	-7.63	15.76	16.66	1.09	-1.08	-2.36
1,800.00	2.95	83.96	1,799.66	-7.49	17.14	18.00	1.74	-1.72	-4.60
1,825.00	1.97	77.83	1,824.64	-7.34	18.19	19.03	4.05	-3.92	-24.52
1,850.00	1.34	70.37	1,849.63	-7.15	18.89	19.69	2.66	-2.52	-29.84
1,875.00	0.99	52.02	1,874.62	-6.92	19.34	20.10	2.03	-1.40	-73.40
1,900.00	0.90	65.14	1,899.62	-6.70	19.68	20.42	0.93	-0.36	52.48
1,925.00	0.92	68.26	1,924.62	-6.54	20.05	20.76	0.21	0.08	12.48
1,950.00	1.17	70.70	1,949.61	-6.39	20.48	21.16	1.02	1.00	9.76
1,975.00	1.45	70.00	1,974.61	-6.19	21.01	21.67	1.12	1.12	-2.80
2,000.00	1.51	76.38	1,999.60	-6.01	21.63	22.25	0.70	0.24	25.52
2,025.00	1.73	82.98	2,024.59	-5.88	22.33	22.92	1.15	0.88	26.40
2,050.00	1.98	87.22	2,049.57	-5.82	23.13	23.71	1.14	1.00	16.96
2,075.00	2.48	87.22	2,074.56	-5.77	24.10	24.67	2.00	2.00	0.00
2,100.00	2.93	83.96	2,099.53	-5.68	25.28	25.82	1.90	1.80	-13.04
2,125.00	3.24	87.79	2,124.49	-5.58	26.62	27.14	1.49	1.24	15.32
2,150.00	3.17	88.48	2,149.45	-5.54	28.02	28.51	0.32	-0.28	2.76
2,175.00	2.94	88.29	2,174.42	-5.50	29.35	29.83	0.92	-0.92	-0.76
2,200.00	2.20	87.01	2,199.39	-5.45	30.47	30.93	2.97	-2.96	-5.12
2,225.00	1.67	83.57	2,224.38	-5.39	31.31	31.75	2.17	-2.12	-13.76
2,250.00	1.12	78.21	2,249.37	-5.30	31.91	32.34	2.26	-2.20	-21.44
2,275.00	0.88	80.57	2,274.37	-5.22	32.34	32.75	0.97	-0.96	9.44
2,300.00	0.70	79.18	2,299.36	-5.16	32.68	33.08	0.72	-0.72	-5.56
2,325.00	0.44	93.42	2,324.36	-5.13	32.93	33.32	1.18	-1.04	56.96
2,350.00	0.44	97.89	2,349.36	-5.15	33.12	33.51	0.14	0.00	17.88
2,375.00	0.43	100.09	2,374.36	-5.18	33.30	33.70	0.08	-0.04	8.80
2,400.00	0.43	103.24	2,399.36	-5.22	33.49	33.89	0.09	0.00	12.60
2,425.00	0.36	87.72	2,424.36	-5.24	33.66	34.06	0.51	-0.28	-62.08
2,450.00	0.42	96.40	2,449.36	-5.25	33.83	34.23	0.34	0.24	34.72

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Wellbore:	OH \ 66037	Survey Calculation Method:	Minimum Curvature
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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	0.53	93.08	2,474.36	-5.26	34.03	34.43	0.45	0.44	-13.28
2,500.00	0.29	93.95	2,499.36	-5.27	34.21	34.61	0.96	-0.96	3.48
2,525.00	0.36	104.12	2,524.36	-5.30	34.35	34.75	0.36	0.28	40.68
2,550.00	0.39	103.26	2,549.36	-5.33	34.51	34.92	0.12	0.12	-3.44
2,575.00	0.49	108.04	2,574.36	-5.39	34.69	35.11	0.43	0.40	19.12
2,600.00	0.50	76.67	2,599.35	-5.39	34.90	35.31	1.07	0.04	-125.48
2,625.00	0.47	95.57	2,624.35	-5.38	35.11	35.52	0.65	-0.12	75.60
2,650.00	0.33	105.84	2,649.35	-5.41	35.28	35.69	0.63	-0.56	41.08
2,675.00	0.37	93.51	2,674.35	-5.43	35.43	35.84	0.34	0.16	-49.32
2,700.00	0.43	88.43	2,699.35	-5.44	35.61	36.02	0.28	0.24	-20.32
2,725.00	0.45	77.90	2,724.35	-5.41	35.80	36.20	0.33	0.08	-42.12
2,750.00	0.39	100.15	2,749.35	-5.41	35.98	36.38	0.69	-0.24	89.00
2,775.00	0.44	81.62	2,774.35	-5.41	36.15	36.55	0.57	0.20	-74.12
2,800.00	0.39	83.45	2,799.35	-5.38	36.33	36.73	0.21	-0.20	7.32
2,825.00	0.49	97.99	2,824.35	-5.39	36.52	36.92	0.60	0.40	58.16
2,850.00	0.38	79.52	2,849.35	-5.39	36.71	37.10	0.71	-0.44	-73.88
2,875.00	0.38	59.38	2,874.35	-5.33	36.86	37.25	0.53	0.00	-80.56
2,900.00	0.49	61.97	2,899.35	-5.24	37.03	37.40	0.45	0.44	10.36
2,925.00	0.42	72.55	2,924.35	-5.16	37.21	37.57	0.44	-0.28	42.32
2,950.00	0.74	43.14	2,949.34	-5.02	37.41	37.74	1.71	1.28	-117.64
2,975.00	0.59	41.00	2,974.34	-4.80	37.60	37.91	0.61	-0.60	-8.56
3,000.00	0.55	41.07	2,999.34	-4.61	37.77	38.04	0.16	-0.16	0.28
3,025.00	0.52	43.77	3,024.34	-4.44	37.93	38.18	0.16	-0.12	10.80
3,050.00	0.43	24.64	3,049.34	-4.28	38.04	38.27	0.72	-0.36	-76.52
3,075.00	0.41	28.46	3,074.34	-4.11	38.12	38.33	0.14	-0.08	15.28
3,100.00	0.53	36.96	3,099.34	-3.94	38.24	38.42	0.55	0.48	34.00
3,125.00	0.55	32.86	3,124.34	-3.75	38.37	38.52	0.17	0.08	-16.40
3,150.00	0.47	17.40	3,149.34	-3.55	38.47	38.59	0.63	-0.32	-61.84
3,175.00	0.47	33.35	3,174.34	-3.36	38.55	38.65	0.52	0.00	63.80
3,200.00	0.51	352.34	3,199.33	-3.17	38.60	38.66	1.38	0.16	-164.04
3,225.00	0.45	356.98	3,224.33	-2.96	38.58	38.62	0.29	-0.24	18.56
3,250.00	0.44	356.29	3,249.33	-2.77	38.56	38.58	0.05	-0.04	-2.76
3,275.00	0.49	344.43	3,274.33	-2.57	38.53	38.52	0.43	0.20	-47.44
3,300.00	0.53	345.56	3,299.33	-2.35	38.47	38.43	0.16	0.16	4.52
3,325.00	0.50	354.44	3,324.33	-2.13	38.43	38.36	0.34	-0.12	35.52
3,350.00	0.58	349.33	3,349.33	-1.90	38.40	38.29	0.37	0.32	-20.44
3,375.00	0.59	336.56	3,374.33	-1.66	38.32	38.19	0.52	0.04	-51.08
3,400.00	0.66	329.57	3,399.33	-1.41	38.20	38.03	0.41	0.28	-27.96
3,425.00	0.60	339.86	3,424.32	-1.17	38.08	37.88	0.51	-0.24	41.16
3,450.00	0.67	332.80	3,449.32	-0.91	37.97	37.73	0.42	0.28	-28.24
3,475.00	0.71	328.85	3,474.32	-0.65	37.82	37.55	0.25	0.16	-15.80
3,500.00	0.72	321.35	3,499.32	-0.40	37.64	37.34	0.38	0.04	-30.00
3,525.00	0.78	322.80	3,524.32	-0.14	37.44	37.11	0.25	0.24	5.80
3,550.00	0.76	319.02	3,549.31	0.12	37.23	36.86	0.22	-0.08	-15.12

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 506H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 3113.00usft (Pioneer 84)
Site:	Daisy 24 State Com	MD Reference:	RKB @ 3113.00usft (Pioneer 84)
Well:	506H	North Reference:	Grid
Wellbore:	OH \ 66037	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	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	1.02	309.75	3,574.31	0.39	36.95	36.55	1.19	1.04	-37.08
3,600.00	0.95	310.27	3,599.31	0.67	36.62	36.18	0.28	-0.28	2.08
3,625.00	0.99	310.49	3,624.30	0.94	36.30	35.83	0.16	0.16	0.88
3,650.00	0.96	310.49	3,649.30	1.22	35.98	35.47	0.12	-0.12	0.00
3,675.00	1.02	308.95	3,674.30	1.49	35.65	35.10	0.26	0.24	-6.16
3,700.00	1.08	310.35	3,699.29	1.78	35.29	34.71	0.26	0.24	5.60
3,725.00	1.04	319.08	3,724.29	2.11	34.96	34.34	0.66	-0.16	34.92
3,750.00	1.36	13.10	3,749.28	2.57	34.88	34.20	4.51	1.28	216.08
3,775.00	2.03	26.64	3,774.27	3.25	35.15	34.37	3.10	2.68	54.16
3,800.00	2.04	26.30	3,799.26	4.05	35.54	34.65	0.06	0.04	-1.36
3,825.00	2.22	28.11	3,824.24	4.87	35.97	34.96	0.77	0.72	7.24
3,850.00	3.28	31.17	3,849.21	5.91	36.57	35.41	4.28	4.24	12.24
3,875.00	4.08	32.46	3,874.16	7.28	37.42	36.06	3.22	3.20	5.16
3,900.00	4.20	33.76	3,899.09	8.79	38.40	36.83	0.61	0.48	5.20
3,925.00	4.64	34.20	3,924.02	10.38	39.48	37.67	1.77	1.76	1.76
3,950.00	5.75	39.12	3,948.92	12.19	40.84	38.77	4.78	4.44	19.68
3,975.00	6.45	42.31	3,973.77	14.20	42.57	40.21	3.11	2.80	12.76
4,000.00	6.56	41.39	3,998.61	16.31	44.46	41.79	0.61	0.44	-3.68
4,025.00	6.57	42.05	4,023.45	18.45	46.36	43.38	0.30	0.04	2.64
4,050.00	6.49	42.18	4,048.29	20.55	48.27	44.98	0.33	-0.32	0.52
4,075.00	6.39	41.77	4,073.13	22.64	50.15	46.55	0.44	-0.40	-1.64
4,100.00	6.46	41.92	4,097.97	24.72	52.01	48.11	0.29	0.28	0.60
4,125.00	6.61	40.31	4,122.81	26.87	53.88	49.67	0.95	0.60	-6.44
4,150.00	6.59	39.27	4,147.64	29.07	55.72	51.19	0.48	-0.08	-4.16
4,175.00	6.37	38.92	4,172.49	31.26	57.50	52.65	0.89	-0.88	-1.40
4,200.00	6.33	39.53	4,197.33	33.41	59.25	54.09	0.31	-0.16	2.44
4,225.00	6.41	38.23	4,222.18	35.57	60.99	55.51	0.66	0.32	-5.20
4,250.00	6.22	36.68	4,247.03	37.75	62.66	56.87	1.02	-0.76	-6.20
4,275.00	5.98	34.96	4,271.88	39.90	64.22	58.11	1.21	-0.96	-6.88
4,300.00	5.64	35.22	4,296.76	41.97	65.67	59.27	1.36	-1.36	1.04
4,325.00	5.47	35.08	4,321.64	43.95	67.07	60.38	0.68	-0.68	-0.56
4,350.00	5.35	34.67	4,346.53	45.88	68.41	61.44	0.50	-0.48	-1.64
4,375.00	5.35	32.79	4,371.42	47.82	69.71	62.46	0.70	0.00	-7.52
4,400.00	5.30	41.58	4,396.31	49.67	71.11	63.59	3.27	-0.20	35.16
4,425.00	6.05	56.23	4,421.19	51.26	72.97	65.21	6.50	3.00	58.60
4,450.00	6.58	59.38	4,446.04	52.72	75.30	67.32	2.53	2.12	12.60
4,475.00	6.61	59.49	4,470.87	54.18	77.77	69.57	0.13	0.12	0.44
4,500.00	6.51	59.44	4,495.71	55.64	80.23	71.80	0.40	-0.40	-0.20
4,525.00	5.98	60.73	4,520.56	56.99	82.58	73.95	2.19	-2.12	5.16
4,550.00	5.41	58.04	4,545.44	58.25	84.72	75.89	2.52	-2.28	-10.76
4,575.00	5.28	57.87	4,570.33	59.49	86.69	77.68	0.52	-0.52	-0.68
4,600.00	5.09	58.71	4,595.23	60.68	88.62	79.42	0.82	-0.76	3.36
4,625.00	5.01	56.33	4,620.13	61.86	90.47	81.09	0.90	-0.32	-9.52

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 506H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 3113.00usft (Pioneer 84)
Site:	Daisy 24 State Com	MD Reference:	RKB @ 3113.00usft (Pioneer 84)
Well:	506H	North Reference:	Grid
Wellbore:	OH \ 66037	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	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	5.08	56.61	4,645.03	63.07	92.30	82.74	0.30	0.28	1.12
4,675.00	4.84	57.60	4,669.94	64.25	94.12	84.38	1.02	-0.96	3.96
4,700.00	4.43	56.54	4,694.86	65.34	95.82	85.90	1.68	-1.64	-4.24
4,725.00	4.23	57.18	4,719.78	66.38	97.40	87.33	0.82	-0.80	2.56
4,750.00	4.07	55.09	4,744.72	67.38	98.90	88.68	0.88	-0.64	-8.36
4,775.00	4.37	54.45	4,769.65	68.45	100.40	90.02	1.21	1.20	-2.56
4,800.00	5.22	57.77	4,794.56	69.61	102.14	91.58	3.58	3.40	13.28
4,825.00	6.01	59.20	4,819.44	70.88	104.22	93.47	3.21	3.16	5.72
4,850.00	6.13	58.18	4,844.30	72.26	106.48	95.52	0.65	0.48	-4.08
4,875.00	6.07	59.12	4,869.16	73.64	108.75	97.57	0.47	-0.24	3.76
4,900.00	5.82	59.12	4,894.03	74.97	110.97	99.59	1.00	-1.00	0.00
4,925.00	5.74	58.20	4,918.90	76.28	113.12	101.54	0.49	-0.32	-3.68
4,950.00	6.15	57.14	4,943.77	77.66	115.31	103.52	1.70	1.64	-4.24
4,975.00	6.46	57.56	4,968.61	79.14	117.62	105.60	1.25	1.24	1.68
5,000.00	7.58	58.37	4,993.43	80.76	120.21	107.95	4.50	4.48	3.24
5,025.00	7.89	58.55	5,018.20	82.52	123.08	110.54	1.24	1.24	0.72
5,050.00	7.67	56.81	5,042.97	84.33	125.94	113.13	1.29	-0.88	-6.96
5,075.00	7.49	56.19	5,067.75	86.15	128.69	115.60	0.79	-0.72	-2.48
5,100.00	7.25	57.86	5,092.54	87.90	131.38	118.03	1.29	-0.96	6.68
5,125.00	7.22	56.59	5,117.35	89.60	134.03	120.41	0.65	-0.12	-5.08
5,150.00	6.98	56.92	5,142.15	91.29	136.61	122.74	0.97	-0.96	1.32
5,175.00	6.74	56.67	5,166.97	92.93	139.11	124.99	0.97	-0.96	-1.00
5,200.00	6.70	54.90	5,191.80	94.57	141.53	127.16	0.84	-0.16	-7.08
5,225.00	6.57	53.42	5,216.64	96.27	143.87	129.24	0.86	-0.52	-5.92
5,250.00	6.46	54.31	5,241.47	97.94	146.16	131.28	0.60	-0.44	3.56
5,275.00	6.29	55.05	5,266.32	99.54	148.43	133.31	0.76	-0.68	2.96
5,300.00	6.27	53.39	5,291.17	101.14	150.65	135.28	0.73	-0.08	-6.64
5,325.00	6.19	51.93	5,316.02	102.79	152.80	137.19	0.71	-0.32	-5.84
5,350.00	5.94	50.88	5,340.88	104.43	154.87	139.01	1.09	-1.00	-4.20
5,375.00	5.89	52.13	5,365.75	106.04	156.88	140.79	0.55	-0.20	5.00
5,400.00	6.00	53.13	5,390.61	107.61	158.94	142.61	0.60	0.44	4.00
5,425.00	6.05	53.99	5,415.48	109.17	161.05	144.48	0.41	0.20	3.44
5,450.00	6.47	57.76	5,440.33	110.69	163.31	146.51	2.35	1.68	15.08
5,475.00	7.42	64.55	5,465.14	112.14	165.96	148.93	5.02	3.80	27.16
5,500.00	7.81	67.52	5,489.92	113.48	168.99	151.75	2.22	1.56	11.88
5,525.00	7.75	69.37	5,514.69	114.73	172.13	154.69	1.03	-0.24	7.40
5,550.00	7.44	68.08	5,539.47	115.92	175.21	157.58	1.42	-1.24	-5.16
5,575.00	7.35	67.94	5,564.27	117.13	178.19	160.37	0.37	-0.36	-0.56
5,600.00	7.10	67.88	5,589.07	118.31	181.11	163.09	1.00	-1.00	-0.24
5,625.00	7.09	67.86	5,613.88	119.47	183.97	165.76	0.04	-0.04	-0.08
5,650.00	7.01	68.75	5,638.69	120.61	186.82	168.43	0.54	-0.32	3.56
5,675.00	7.06	67.05	5,663.50	121.76	189.66	171.08	0.86	0.20	-6.80
5,700.00	6.88	67.11	5,688.31	122.94	192.45	173.69	0.72	-0.72	0.24

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 506H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 3113.00usft (Pioneer 84)
Site:	Daisy 24 State Com	MD Reference:	RKB @ 3113.00usft (Pioneer 84)
Well:	506H	North Reference:	Grid
Wellbore:	OH \ 66037	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	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	6.62	67.17	5,713.14	124.08	195.16	176.21	1.04	-1.04	0.24
5,750.00	6.47	68.45	5,737.98	125.16	197.80	178.68	0.84	-0.60	5.12
5,775.00	6.33	67.81	5,762.82	126.20	200.38	181.10	0.63	-0.56	-2.56
5,800.00	6.20	67.86	5,787.67	127.23	202.91	183.46	0.52	-0.52	0.20
5,825.00	6.07	68.71	5,812.53	128.22	205.39	185.78	0.63	-0.52	3.40
5,850.00	5.88	69.64	5,837.39	129.14	207.82	188.06	0.85	-0.76	3.72
5,875.00	5.84	70.11	5,862.26	130.02	210.22	190.31	0.25	-0.16	1.88
5,900.00	5.82	68.76	5,887.13	130.91	212.60	192.54	0.55	-0.08	-5.40
5,925.00	5.70	66.68	5,912.01	131.86	214.92	194.71	0.96	-0.48	-8.32
5,950.00	5.72	67.46	5,936.88	132.83	217.21	196.85	0.32	0.08	3.12
5,975.00	5.45	66.77	5,961.76	133.78	219.45	198.94	1.11	-1.08	-2.76
6,000.00	4.95	66.81	5,986.66	134.67	221.53	200.88	2.00	-2.00	0.16
6,025.00	4.49	62.90	6,011.58	135.54	223.40	202.60	2.24	-1.84	-15.64
6,050.00	4.37	65.44	6,036.50	136.38	225.13	204.21	0.92	-0.48	10.16
6,075.00	4.10	68.96	6,061.43	137.10	226.83	205.79	1.50	-1.08	14.08
6,100.00	3.91	68.51	6,086.37	137.73	228.46	207.32	0.77	-0.76	-1.80
6,125.00	3.88	71.92	6,111.32	138.31	230.06	208.82	0.93	-0.12	13.64
6,150.00	1.63	23.42	6,136.29	138.90	231.00	209.68	12.22	-9.00	-194.00
6,175.00	2.76	76.92	6,161.27	139.36	231.73	210.33	8.87	4.52	214.00
6,200.00	2.93	84.29	6,186.24	139.56	232.95	211.52	1.61	0.68	29.48
6,225.00	3.21	71.91	6,211.20	139.84	234.25	212.77	2.87	1.12	-49.52
6,250.00	3.58	61.08	6,236.16	140.43	235.60	214.02	2.96	1.48	-43.32
6,275.00	3.71	55.84	6,261.11	141.27	236.96	215.25	1.43	0.52	-20.96
6,300.00	3.41	48.25	6,286.06	142.22	238.18	216.33	2.23	-1.20	-30.36
6,325.00	3.17	45.64	6,311.02	143.19	239.23	217.23	1.13	-0.96	-10.44
6,350.00	2.75	41.99	6,335.99	144.12	240.12	217.99	1.84	-1.68	-14.60
6,375.00	2.31	35.60	6,360.96	144.98	240.82	218.56	2.09	-1.76	-25.56
6,400.00	2.28	33.56	6,385.94	145.80	241.39	219.01	0.35	-0.12	-8.16
6,425.00	2.10	29.94	6,410.93	146.61	241.89	219.40	0.91	-0.72	-14.48
6,450.00	2.29	20.10	6,435.91	147.48	242.29	219.67	1.69	0.76	-39.36
6,475.00	2.45	17.48	6,460.89	148.46	242.62	219.87	0.77	0.64	-10.48
6,500.00	2.74	20.56	6,485.86	149.53	242.99	220.09	1.29	1.16	12.32
6,525.00	3.48	24.12	6,510.82	150.78	243.51	220.43	3.06	2.96	14.24
6,550.00	3.84	30.45	6,535.77	152.19	244.25	220.96	2.16	1.44	25.32
6,575.00	3.66	36.15	6,560.72	153.56	245.14	221.66	1.65	-0.72	22.80
6,600.00	3.63	40.66	6,585.67	154.80	246.13	222.47	1.15	-0.12	18.04
6,625.00	3.44	50.77	6,610.62	155.88	247.23	223.41	2.60	-0.76	40.44
6,650.00	3.32	53.57	6,635.58	156.78	248.39	224.43	0.82	-0.48	11.20
6,675.00	3.03	52.97	6,660.54	157.61	249.50	225.42	1.17	-1.16	-2.40
6,700.00	3.32	52.21	6,685.50	158.45	250.60	226.39	1.17	1.16	-3.04
6,725.00	4.35	47.77	6,710.44	159.53	251.87	227.50	4.28	4.12	-17.76
6,750.00	5.10	46.09	6,735.36	160.94	253.38	228.80	3.05	3.00	-6.72
6,775.00	5.25	43.25	6,760.26	162.54	254.96	230.15	1.19	0.60	-11.36
6,800.00	4.79	40.62	6,785.16	164.17	256.42	231.37	2.06	-1.84	-10.52

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 506H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 3113.00usft (Pioneer 84)
Site:	Daisy 24 State Com	MD Reference:	RKB @ 3113.00usft (Pioneer 84)
Well:	506H	North Reference:	Grid
Wellbore:	OH \ 66037	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	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	4.76	39.07	6,810.07	165.77	257.76	232.47	0.53	-0.12	-6.20
6,850.00	4.84	37.87	6,834.99	167.41	259.06	233.54	0.51	0.32	-4.80
6,875.00	5.25	37.78	6,859.89	169.14	260.41	234.63	1.64	1.64	-0.36
6,900.00	5.91	42.84	6,884.77	170.99	261.98	235.94	3.29	2.64	20.24
6,925.00	6.30	47.39	6,909.63	172.86	263.87	237.55	2.48	1.56	18.20
6,950.00	6.54	50.77	6,934.47	174.69	265.98	239.39	1.79	0.96	13.52
6,975.00	6.34	51.74	6,959.32	176.45	268.16	241.31	0.91	-0.80	3.88
7,000.00	6.27	51.22	6,984.16	178.16	270.31	243.21	0.36	-0.28	-2.08
7,025.00	5.80	52.25	7,009.03	179.78	272.38	245.02	1.93	-1.88	4.12
7,050.00	5.28	50.28	7,033.91	181.29	274.26	246.68	2.21	-2.08	-7.88
7,075.00	5.10	50.34	7,058.81	182.74	276.00	248.21	0.72	-0.72	0.24
7,100.00	4.79	52.75	7,083.71	184.08	277.69	249.69	1.49	-1.24	9.64
7,125.00	4.55	51.40	7,108.63	185.33	279.29	251.11	1.06	-0.96	-5.40
7,150.00	4.01	54.10	7,133.56	186.46	280.78	252.42	2.30	-2.16	10.80
7,175.00	3.43	58.00	7,158.51	187.37	282.12	253.63	2.53	-2.32	15.60
7,200.00	3.25	69.24	7,183.47	188.02	283.41	254.82	2.71	-0.72	44.96
7,223.00	3.42	84.97	7,206.43	188.31	284.71	256.06	4.03	0.74	68.39
Tie In									
7,288.00	5.44	108.95	7,271.23	187.48	289.55	260.98	4.15	3.11	36.89
First Phoenix MWD Survey									
7,335.00	6.55	119.50	7,317.98	185.43	293.99	265.66	3.32	2.36	22.45
7,383.00	8.67	122.30	7,365.55	182.15	299.44	271.50	4.48	4.42	5.83
7,430.00	12.13	128.85	7,411.78	177.16	306.28	278.96	7.77	7.36	13.94
7,478.00	13.23	133.64	7,458.61	170.21	314.18	287.75	3.17	2.29	9.98
7,510.00	13.82	138.44	7,489.72	164.82	319.37	293.63	3.96	1.84	15.00
7,541.00	14.56	144.96	7,519.77	158.86	324.06	299.10	5.68	2.39	21.03
7,583.00	13.71	150.57	7,560.50	150.20	329.54	305.72	3.84	-2.02	13.36
7,631.00	16.29	157.78	7,606.87	139.01	334.88	312.55	6.62	5.38	15.02
7,678.00	22.48	160.32	7,651.18	124.43	340.40	320.03	13.29	13.17	5.40
7,679.11	22.62	160.41	7,652.21	124.03	340.55	320.22	12.61	12.19	8.48
FTP: 7679' MD									
7,726.00	28.37	163.61	7,694.52	104.83	346.72	328.98	12.61	12.27	6.82
7,773.00	35.20	165.54	7,734.45	80.97	353.26	338.74	14.69	14.53	4.11
7,821.00	41.82	166.86	7,771.99	51.96	360.36	349.77	13.90	13.79	2.75
7,868.00	49.54	169.18	7,804.80	19.09	367.29	361.16	16.80	16.43	4.94
7,915.00	55.32	172.99	7,833.45	-17.69	373.01	371.89	13.87	12.30	8.11
7,962.00	62.56	177.33	7,857.69	-57.78	376.35	380.72	17.31	15.40	9.23
8,010.00	69.22	181.49	7,877.30	-101.55	376.76	387.15	15.97	13.88	8.67
8,057.00	76.45	185.11	7,891.16	-146.34	374.15	390.73	17.05	15.38	7.70
8,105.00	84.21	185.40	7,899.22	-193.42	369.81	392.93	16.18	16.17	0.60
8,140.00	89.95	185.44	7,901.00	-228.21	366.51	394.45	16.40	16.40	0.11
8,235.00	93.00	185.83	7,898.56	-322.71	357.19	398.22	3.24	3.21	0.41
8,329.00	92.27	185.12	7,894.24	-416.18	348.23	402.22	1.08	-0.78	-0.76

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 506H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 3113.00usft (Pioneer 84)
Site:	Daisy 24 State Com	MD Reference:	RKB @ 3113.00usft (Pioneer 84)
Well:	506H	North Reference:	Grid
Wellbore:	OH \ 66037	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	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)
8,424.00	91.02	183.89	7,891.51	-510.84	340.77	407.87	1.85	-1.32	-1.29
8,519.00	90.69	183.54	7,890.09	-605.63	334.62	414.83	0.51	-0.35	-0.37
8,614.00	89.76	182.23	7,889.72	-700.51	329.84	423.16	1.69	-0.98	-1.38
8,708.00	88.44	181.42	7,891.19	-794.44	326.84	433.13	1.65	-1.40	-0.86
8,803.00	89.48	180.05	7,892.92	-889.42	325.63	445.00	1.81	1.09	-1.44
8,898.00	91.12	180.29	7,892.42	-984.41	325.34	457.80	1.74	1.73	0.25
8,993.00	91.35	179.10	7,890.37	-1,079.39	325.85	471.38	1.28	0.24	-1.25
9,088.00	91.55	178.05	7,887.97	-1,174.33	328.21	486.79	1.12	0.21	-1.11
9,183.00	93.26	178.12	7,883.98	-1,269.19	331.38	503.00	1.80	1.80	0.07
9,278.00	92.09	178.76	7,879.55	-1,364.04	333.97	518.62	1.40	-1.23	0.67
9,372.00	88.88	177.53	7,878.75	-1,457.98	337.01	534.57	3.66	-3.41	-1.31
9,467.00	87.25	176.79	7,881.96	-1,552.80	341.71	552.28	1.88	-1.72	-0.78
9,562.00	87.96	177.31	7,885.93	-1,647.59	346.60	570.17	0.93	0.75	0.55
9,657.00	89.35	177.64	7,888.16	-1,742.47	350.78	587.38	1.50	1.46	0.35
9,752.00	90.66	178.12	7,888.15	-1,837.41	354.29	603.94	1.47	1.38	0.51
9,847.00	91.69	178.23	7,886.21	-1,932.34	357.32	620.00	1.09	1.08	0.12
9,941.00	93.12	178.36	7,882.26	-2,026.21	360.11	635.70	1.53	1.52	0.14
10,036.00	92.72	178.36	7,877.42	-2,121.05	362.83	651.45	0.42	-0.42	0.00
10,131.00	93.21	178.13	7,872.51	-2,215.87	365.73	667.38	0.57	0.52	-0.24
10,226.00	90.47	178.52	7,869.46	-2,310.78	368.51	683.20	2.91	-2.88	0.41
10,321.00	89.20	178.06	7,869.73	-2,405.73	371.34	699.08	1.42	-1.34	-0.48
10,416.00	90.06	178.32	7,870.34	-2,500.68	374.34	715.13	0.95	0.91	0.27
10,511.00	91.35	178.64	7,869.18	-2,595.64	376.86	730.70	1.40	1.36	0.34
10,606.00	90.62	179.93	7,867.54	-2,690.61	378.05	744.95	1.56	-0.77	1.36
10,701.00	90.56	180.20	7,866.56	-2,785.61	377.94	757.93	0.29	-0.06	0.28
10,796.00	89.83	181.15	7,866.24	-2,880.60	376.82	769.90	1.26	-0.77	1.00
10,890.00	90.54	181.69	7,865.94	-2,974.57	374.49	780.53	0.95	0.76	0.57
10,985.00	91.93	181.91	7,863.89	-3,069.50	371.51	790.65	1.48	1.46	0.23
11,080.00	88.96	182.58	7,863.15	-3,164.41	367.79	800.04	3.20	-3.13	0.71
11,175.00	92.12	182.42	7,862.26	-3,259.30	363.65	809.00	3.33	3.33	-0.17
11,270.00	91.51	182.56	7,859.25	-3,354.17	359.52	817.98	0.66	-0.64	0.15
11,365.00	91.24	182.75	7,856.97	-3,449.04	355.12	826.68	0.35	-0.28	0.20
11,460.00	88.52	183.86	7,857.17	-3,543.87	349.64	834.32	3.09	-2.86	1.17
11,554.00	86.30	183.70	7,861.42	-3,637.56	343.45	841.09	2.37	-2.36	-0.17
11,649.00	86.82	183.46	7,867.12	-3,732.21	337.53	848.26	0.60	0.55	-0.25
11,744.00	85.51	182.96	7,873.47	-3,826.84	332.23	856.03	1.48	-1.38	-0.53
11,839.00	84.71	180.11	7,881.57	-3,921.45	329.69	866.55	3.11	-0.84	-3.00
11,934.00	85.18	177.04	7,889.94	-4,016.04	332.04	881.90	3.26	0.49	-3.23
12,028.00	86.75	176.62	7,896.56	-4,109.66	337.23	899.93	1.73	1.67	-0.45
12,123.00	88.33	177.51	7,900.63	-4,204.45	342.09	917.79	1.91	1.66	0.94
12,218.00	89.50	177.65	7,902.43	-4,299.34	346.10	934.83	1.24	1.23	0.15
12,313.00	90.60	177.84	7,902.35	-4,394.27	349.84	951.61	1.18	1.16	0.20
12,408.00	91.99	177.95	7,900.20	-4,489.18	353.32	968.13	1.47	1.46	0.12
12,503.00	92.98	178.10	7,896.08	-4,584.03	356.60	984.43	1.05	1.04	0.16

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 506H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 3113.00usft (Pioneer 84)
Site:	Daisy 24 State Com	MD Reference:	RKB @ 3113.00usft (Pioneer 84)
Well:	506H	North Reference:	Grid
Wellbore:	OH \ 66037	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	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)
12,598.00	92.35	178.49	7,891.67	-4,678.88	359.42	1,000.29	0.78	-0.66	0.41
12,693.00	91.57	178.55	7,888.42	-4,773.80	361.87	1,015.79	0.82	-0.82	0.06
12,788.00	93.03	178.63	7,884.60	-4,868.69	364.21	1,031.17	1.54	1.54	0.08
12,883.00	90.34	178.47	7,881.81	-4,963.61	366.61	1,046.62	2.84	-2.83	-0.17
12,977.00	91.58	179.67	7,880.24	-5,057.58	368.13	1,061.07	1.84	1.32	1.28
13,072.00	90.38	179.57	7,878.61	-5,152.56	368.76	1,074.78	1.27	-1.26	-0.11
13,167.00	89.45	179.27	7,878.75	-5,247.55	369.73	1,088.81	1.03	-0.98	-0.32
13,262.00	90.75	179.41	7,878.59	-5,342.55	370.82	1,102.98	1.38	1.37	0.15
13,357.00	89.00	179.70	7,878.79	-5,437.54	371.56	1,116.79	1.87	-1.84	0.31
13,451.00	89.25	179.40	7,880.23	-5,531.53	372.30	1,130.46	0.42	0.27	-0.32
13,546.00	90.26	179.13	7,880.64	-5,626.52	373.52	1,144.75	1.10	1.06	-0.28
13,640.00	88.29	178.62	7,881.83	-5,720.48	375.36	1,159.52	2.16	-2.10	-0.54
13,735.00	88.47	178.78	7,884.51	-5,815.42	377.51	1,174.72	0.25	0.19	0.17
13,830.00	89.36	178.72	7,886.31	-5,910.38	379.59	1,189.85	0.94	0.94	-0.06
13,925.00	90.53	179.20	7,886.40	-6,005.36	381.31	1,204.64	1.33	1.23	0.51
14,020.00	91.66	179.21	7,884.59	-6,100.34	382.63	1,219.02	1.19	1.19	0.01
14,115.00	89.60	179.80	7,883.54	-6,195.32	383.45	1,232.91	2.26	-2.17	0.62
14,209.00	89.12	179.61	7,884.59	-6,289.31	383.93	1,246.34	0.55	-0.51	-0.20
14,304.00	89.53	179.14	7,885.71	-6,384.30	384.97	1,260.44	0.66	0.43	-0.49
14,399.00	90.65	179.33	7,885.56	-6,479.29	386.24	1,274.78	1.20	1.18	0.20
14,494.00	91.64	179.50	7,883.66	-6,574.27	387.21	1,288.82	1.06	1.04	0.18
14,589.00	89.65	179.97	7,882.59	-6,669.25	387.65	1,302.33	2.15	-2.09	0.49
14,684.00	89.69	180.13	7,883.14	-6,764.25	387.56	1,315.33	0.17	0.04	0.17
14,778.00	90.61	180.19	7,882.89	-6,858.25	387.30	1,328.02	0.98	0.98	0.06
14,873.00	91.70	180.22	7,880.98	-6,953.23	386.96	1,340.76	1.15	1.15	0.03
14,968.00	90.23	180.49	7,879.38	-7,048.21	386.37	1,353.26	1.57	-1.55	0.28
15,063.00	90.00	180.00	7,879.19	-7,143.21	385.97	1,365.93	0.57	-0.24	-0.52
15,158.00	90.88	179.88	7,878.46	-7,238.21	386.07	1,379.11	0.93	0.93	-0.13
15,253.00	89.94	180.27	7,877.78	-7,333.20	385.94	1,392.07	1.07	-0.99	0.41
15,347.00	89.34	179.96	7,878.37	-7,427.20	385.75	1,404.83	0.72	-0.64	-0.33
15,442.00	90.02	179.71	7,878.90	-7,522.20	386.03	1,418.18	0.76	0.72	-0.26
15,537.00	91.09	179.48	7,877.98	-7,617.19	386.70	1,431.93	1.15	1.13	-0.24
15,631.00	89.52	179.76	7,877.48	-7,711.18	387.32	1,445.49	1.70	-1.67	0.30
15,726.00	88.91	179.96	7,878.78	-7,806.17	387.55	1,458.80	0.68	-0.64	0.21
15,821.00	89.78	179.36	7,879.87	-7,901.16	388.12	1,472.44	1.11	0.92	-0.63
15,916.00	90.80	179.37	7,879.39	-7,996.16	389.17	1,486.56	1.07	1.07	0.01
16,010.00	92.14	180.00	7,876.98	-8,090.12	389.69	1,500.01	1.58	1.43	0.67
16,105.00	90.62	180.76	7,874.69	-8,185.09	389.06	1,512.47	1.79	-1.60	0.80
16,200.00	90.32	180.78	7,873.91	-8,280.08	387.78	1,524.28	0.32	-0.32	0.02
16,295.00	91.70	181.10	7,872.23	-8,375.05	386.22	1,535.82	1.49	1.45	0.34
16,389.00	90.16	181.48	7,870.71	-8,469.01	384.11	1,546.66	1.69	-1.64	0.40
16,484.00	89.59	181.27	7,870.92	-8,563.98	381.83	1,557.48	0.64	-0.60	-0.22
16,579.00	90.61	181.23	7,870.75	-8,658.95	379.75	1,568.50	1.07	1.07	-0.04

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 506H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 3113.00usft (Pioneer 84)
Site:	Daisy 24 State Com	MD Reference:	RKB @ 3113.00usft (Pioneer 84)
Well:	506H	North Reference:	Grid
Wellbore:	OH \ 66037	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	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)
16,674.00	89.48	180.95	7,870.67	-8,753.94	377.95	1,579.79	1.23	-1.19	-0.29
16,768.00	88.99	180.84	7,871.93	-8,847.92	376.48	1,591.28	0.53	-0.52	-0.12
16,863.00	90.12	181.06	7,872.67	-8,942.90	374.90	1,602.80	1.21	1.19	0.23
16,958.00	91.22	180.96	7,871.56	-9,037.87	373.23	1,614.22	1.16	1.16	-0.11
17,053.00	88.82	179.46	7,871.52	-9,132.86	372.88	1,626.96	2.98	-2.53	-1.58
17,148.00	89.64	179.75	7,872.80	-9,227.85	373.54	1,640.69	0.92	0.86	0.31
17,242.00	90.61	179.84	7,872.60	-9,321.85	373.87	1,653.96	1.04	1.03	0.10
17,337.00	91.54	180.25	7,870.81	-9,416.83	373.80	1,666.97	1.07	0.98	0.43
17,431.00	92.49	179.99	7,867.51	-9,510.77	373.60	1,679.71	1.05	1.01	-0.28
17,526.00	90.15	179.96	7,865.32	-9,605.74	373.64	1,692.83	2.46	-2.46	-0.03
17,621.00	90.32	179.78	7,864.93	-9,700.74	373.86	1,706.12	0.26	0.18	-0.19
17,716.00	90.74	179.88	7,864.05	-9,795.74	374.14	1,719.48	0.45	0.44	0.11
17,811.00	91.15	179.70	7,862.48	-9,890.72	374.49	1,732.91	0.47	0.43	-0.19
17,905.00	91.80	179.81	7,860.06	-9,984.69	374.89	1,746.25	0.70	0.69	0.12
18,000.00	92.98	180.07	7,856.10	-10,079.60	374.99	1,759.41	1.27	1.24	0.27
18,095.00	93.93	180.21	7,850.38	-10,174.43	374.76	1,772.24	1.01	1.00	0.15
18,190.00	94.78	180.35	7,843.16	-10,269.15	374.30	1,784.83	0.91	0.89	0.15
18,197.00	94.97	180.46	7,842.57	-10,276.13	374.25	1,785.74	3.13	2.71	1.57
Final Phoenix MWD Survey									
18,215.11	94.97	180.46	7,841.00	-10,294.17	374.10	1,788.08	0.00	0.00	0.00
LTP: 18215' MD									
18,263.00	94.97	180.46	7,836.85	-10,341.88	373.72	1,794.27	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)	
7,223.00	7,206.43	188.31	284.71	Tie In
7,288.00	7,271.23	187.48	289.55	First Phoenix MWD Survey
7,679.11	7,652.21	124.03	340.55	FTP: 7679' MD
18,197.00	7,842.57	-10,276.13	374.25	Final Phoenix MWD Survey
18,215.11	7,841.00	-10,294.17	374.10	LTP: 18215' MD
18,263.00	7,836.85	-10,341.88	373.72	Projection to TD