



COG Operating, LLC

Lea County, NM

Sec 25, T25S, R33E

Dominator 25 Federal #701H

Wellbore #1

Design: Wellbore #1

QES Survey Report

22 September, 2018



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Dominator 25 Federal #701H
Project:	Lea County, NM	TVD Reference:	RKB @ 3351.0usft (Noram #21)
Site:	Sec 25, T25S, R33E	MD Reference:	RKB @ 3351.0usft (Noram #21)
Well:	Dominator 25 Federal #701H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Project	Lea County, NM		
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		Sec 25, T25S, R33E			
Site Position:		Northing:	399,200.40 usft	Latitude:	32° 5' 41.926 N
From:	Map	Easting:	748,329.70 usft	Longitude:	103° 31' 53.183 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.43 °

Well	Dominator 25 Federal #701H					
Well Position	+N/-S	0.0 usft	Northing:	399,203.10 usft	Latitude:	32° 5' 41.667 N
	+E/-W	0.0 usft	Easting:	752,183.70 usft	Longitude:	103° 31' 8.384 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,322.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	User Defined	8/14/2018	6.78	59.78	47,858.00000000

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.0	0.0	0.0	2.80	

Survey Program	Date 9/22/2018				
From	To	Survey (Wellbore)	Tool Name	Description	
(usft)	(usft)				
100.0	11,748.0	Gyro Surveys (Wellbore #1)	GYRO-NS	OWSG Gyrocompass Gyro	
11,904.0	17,490.0	QES MWD Surveys (Gyro Tie-in) (Wellbor	MWD	OWSG MWD - Standard	

Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn	
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate	
(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	0.21	22.20	100.0	0.2	0.1	0.2	0.21	0.21	0.00	
125.0	0.25	26.68	125.0	0.3	0.1	0.3	0.18	0.16	17.92	
150.0	0.23	69.24	150.0	0.3	0.2	0.3	0.70	-0.08	170.24	
175.0	0.16	25.46	175.0	0.4	0.2	0.4	0.64	-0.28	-175.12	
200.0	0.24	59.19	200.0	0.4	0.3	0.4	0.56	0.32	134.92	
225.0	0.22	36.36	225.0	0.5	0.4	0.5	0.37	-0.08	-91.32	
250.0	0.21	53.64	250.0	0.6	0.4	0.6	0.26	-0.04	69.12	
275.0	0.21	46.74	275.0	0.6	0.5	0.6	0.10	0.00	-27.60	
300.0	0.29	43.63	300.0	0.7	0.6	0.7	0.32	0.32	-12.44	

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Well:	Dominator 25 Federal #701H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	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)
325.0	0.22	67.26	325.0	0.8	0.7	0.8	-0.50	-0.28	94.52
350.0	0.19	51.15	350.0	0.8	0.8	0.8	0.26	-0.12	-64.44
375.0	0.20	61.59	375.0	0.9	0.8	0.9	0.15	0.04	41.76
400.0	0.13	84.55	400.0	0.9	0.9	0.9	0.38	-0.28	91.84
425.0	0.23	66.37	425.0	0.9	1.0	1.0	0.46	0.40	-72.72
450.0	0.22	58.18	450.0	0.9	1.1	1.0	0.13	-0.04	-32.76
475.0	0.18	51.74	475.0	1.0	1.1	1.1	0.18	-0.16	-25.76
500.0	0.28	28.73	500.0	1.1	1.2	1.1	0.54	0.40	-92.04
525.0	0.25	42.00	525.0	1.2	1.3	1.2	0.27	-0.12	53.08
550.0	0.21	28.88	550.0	1.3	1.3	1.3	0.26	-0.16	-52.48
575.0	0.28	28.32	575.0	1.3	1.4	1.4	0.28	0.28	-2.24
600.0	0.37	43.60	600.0	1.5	1.4	1.5	0.50	0.36	61.12
625.0	0.35	55.29	625.0	1.6	1.6	1.6	0.30	-0.08	46.76
650.0	0.36	54.32	650.0	1.6	1.7	1.7	0.05	0.04	-3.88
675.0	0.35	29.66	675.0	1.8	1.8	1.8	0.61	-0.04	-98.64
700.0	0.34	44.69	700.0	1.9	1.9	2.0	0.36	-0.04	60.12
725.0	0.38	42.79	725.0	2.0	2.0	2.1	0.17	0.16	-7.60
750.0	0.37	40.88	750.0	2.1	2.1	2.2	0.06	-0.04	-7.64
775.0	0.44	37.70	775.0	2.3	2.2	2.4	0.29	0.28	-12.72
800.0	0.39	41.78	800.0	2.4	2.3	2.5	0.23	-0.20	16.32
825.0	0.38	42.07	825.0	2.5	2.4	2.6	0.04	-0.04	1.16
850.0	0.41	34.10	850.0	2.7	2.5	2.8	0.25	0.12	-31.88
875.0	0.44	35.74	875.0	2.8	2.7	2.9	0.13	0.12	6.56
900.0	0.48	45.07	900.0	3.0	2.8	3.1	0.34	0.16	37.32
925.0	0.50	38.77	925.0	3.1	2.9	3.3	0.23	0.08	-25.20
950.0	0.55	46.13	950.0	3.3	3.1	3.4	0.34	0.20	29.44
975.0	0.58	43.04	975.0	3.5	3.3	3.6	0.17	0.12	-12.36
1,000.0	0.58	43.82	1,000.0	3.6	3.4	3.8	0.03	0.00	3.12
1,025.0	0.58	44.04	1,025.0	3.8	3.6	4.0	0.01	0.00	0.88
1,050.0	0.68	28.25	1,050.0	4.0	3.8	4.2	0.80	0.40	-63.16
1,075.0	0.78	32.11	1,075.0	4.3	3.9	4.5	0.45	0.40	15.44
1,100.0	0.71	25.98	1,100.0	4.6	4.1	4.8	0.42	-0.28	-24.52
1,125.0	0.75	35.70	1,125.0	4.9	4.2	5.1	0.52	0.16	38.88
1,150.0	0.76	35.72	1,150.0	5.1	4.4	5.4	0.04	0.04	0.08
1,175.0	0.69	35.95	1,175.0	5.4	4.6	5.6	0.28	-0.28	0.92
1,200.0	0.74	32.06	1,200.0	5.7	4.8	5.9	0.28	0.20	-15.56
1,225.0	0.79	32.58	1,225.0	5.9	5.0	6.2	0.20	0.20	2.08
1,250.0	0.78	35.73	1,250.0	6.2	5.2	6.5	0.18	-0.04	12.60
1,275.0	0.77	39.69	1,275.0	6.5	5.4	6.7	0.22	-0.04	15.84
1,300.0	0.79	37.02	1,300.0	6.8	5.6	7.0	0.17	0.08	-10.68
1,325.0	0.80	37.11	1,325.0	7.0	5.8	7.3	0.04	0.04	0.36
1,350.0	0.76	52.13	1,350.0	7.3	6.0	7.6	0.83	-0.16	60.08
1,375.0	0.94	69.68	1,375.0	7.5	6.3	7.8	1.26	0.72	70.20

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1,400.0	1.10	84.61	1,399.9	7.5	6.8	7.9	1.24	0.64	59.72
1,425.0	1.41	91.24	1,424.9	7.6	7.3	7.9	1.37	1.24	26.52
1,450.0	1.55	95.32	1,449.9	7.5	8.0	7.9	0.70	0.56	16.32
1,475.0	1.54	95.31	1,474.9	7.5	8.6	7.9	0.04	-0.04	-0.04
1,500.0	1.49	91.10	1,499.9	7.4	9.3	7.9	0.49	-0.20	-16.84
1,525.0	1.45	93.58	1,524.9	7.4	9.9	7.9	0.30	-0.16	9.92
1,550.0	1.56	93.17	1,549.9	7.4	10.6	7.9	0.44	0.44	-1.64
1,575.0	1.77	106.91	1,574.9	7.2	11.3	7.8	1.80	0.84	54.96
1,600.0	2.06	117.39	1,599.9	6.9	12.1	7.5	1.81	1.16	41.92
1,625.0	2.28	122.96	1,624.9	6.4	12.9	7.1	1.22	0.88	22.28
1,650.0	2.36	122.81	1,649.8	5.9	13.7	6.5	0.32	0.32	-0.60
1,675.0	2.42	125.74	1,674.8	5.3	14.6	6.0	0.54	0.24	11.72
1,700.0	2.41	128.49	1,699.8	4.7	15.4	5.4	0.47	-0.04	11.00
1,725.0	2.35	127.67	1,724.8	4.0	16.3	4.8	0.28	-0.24	-3.28
1,750.0	2.43	126.39	1,749.7	3.4	17.1	4.2	0.38	0.32	-5.12
1,775.0	2.41	126.61	1,774.7	2.8	17.9	3.6	0.09	-0.08	0.88
1,800.0	2.34	127.82	1,799.7	2.1	18.8	3.0	0.34	-0.28	4.84
1,825.0	2.35	129.00	1,824.7	1.5	19.6	2.5	0.20	0.04	4.72
1,850.0	2.24	127.26	1,849.7	0.9	20.4	1.9	0.52	-0.44	-6.96
1,875.0	2.23	128.51	1,874.6	0.3	21.1	1.3	0.20	-0.04	5.00
1,900.0	2.29	128.48	1,899.6	-0.3	21.9	0.7	0.24	0.24	-0.12
1,925.0	2.16	126.90	1,924.6	-0.9	22.7	0.2	0.57	-0.52	-6.32
1,950.0	2.06	127.72	1,949.6	-1.5	23.4	-0.3	0.42	-0.40	3.28
1,975.0	2.11	126.92	1,974.6	-2.0	24.1	-0.9	0.23	0.20	-3.20
2,000.0	2.08	128.62	1,999.6	-2.6	24.8	-1.4	0.28	-0.12	6.80
2,025.0	2.10	128.30	2,024.5	-3.2	25.6	-1.9	0.09	0.08	-1.28
2,050.0	2.11	128.24	2,049.5	-3.7	26.3	-2.4	0.04	0.04	-0.24
2,075.0	2.12	127.03	2,074.5	-4.3	27.0	-3.0	0.18	0.04	-4.84
2,100.0	1.98	127.98	2,099.5	-4.8	27.7	-3.5	0.58	-0.56	3.80
2,125.0	1.99	126.62	2,124.5	-5.4	28.4	-4.0	0.19	0.04	-5.44
2,150.0	1.93	126.06	2,149.5	-5.9	29.1	-4.4	0.25	-0.24	-2.24
2,175.0	2.03	122.85	2,174.4	-6.4	29.8	-4.9	0.60	0.40	-12.84
2,200.0	2.03	123.04	2,199.4	-6.8	30.5	-5.3	0.03	0.00	0.76
2,225.0	1.95	123.34	2,224.4	-7.3	31.3	-5.8	0.32	-0.32	1.20
2,250.0	1.89	123.12	2,249.4	-7.8	32.0	-6.2	0.24	-0.24	-0.88
2,275.0	1.92	122.57	2,274.4	-8.2	32.7	-6.6	0.14	0.12	-2.20
2,300.0	1.85	121.98	2,299.4	-8.7	33.4	-7.0	0.29	-0.28	-2.36
2,325.0	1.85	123.95	2,324.4	-9.1	34.0	-7.4	0.25	0.00	7.88
2,350.0	1.81	123.49	2,349.3	-9.5	34.7	-7.8	0.17	-0.16	-1.84
2,375.0	1.77	123.91	2,374.3	-10.0	35.4	-8.2	0.17	-0.16	1.68
2,400.0	1.81	124.89	2,399.3	-10.4	36.0	-8.6	0.20	0.16	3.92
2,425.0	1.79	122.87	2,424.3	-10.9	36.7	-9.1	0.27	-0.08	-8.08
2,450.0	1.75	125.64	2,449.3	-11.3	37.3	-9.5	0.38	-0.16	11.08

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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)
2,475.0	1.78	123.04	2,474.3	-11.7	37.9	-9.9	0.34	0.12	-10.40
2,500.0	1.71	122.28	2,499.3	-12.1	38.6	-10.2	0.29	-0.28	-3.04
2,525.0	1.83	121.45	2,524.3	-12.5	39.2	-10.6	0.49	0.48	-3.32
2,550.0	1.72	119.24	2,549.3	-12.9	39.9	-11.0	0.52	-0.44	-8.84
2,575.0	1.70	116.43	2,574.2	-13.3	40.6	-11.3	0.34	-0.08	-11.24
2,600.0	1.73	114.28	2,599.2	-13.6	41.2	-11.6	0.28	0.12	-8.60
2,625.0	1.69	115.30	2,624.2	-13.9	41.9	-11.9	0.20	-0.16	4.08
2,650.0	1.74	115.42	2,649.2	-14.2	42.6	-12.1	0.20	0.20	0.48
2,675.0	1.62	110.61	2,674.2	-14.5	43.3	-12.4	0.74	-0.48	-19.24
2,700.0	1.62	107.07	2,699.2	-14.8	43.9	-12.6	0.40	0.00	-14.16
2,725.0	1.71	103.79	2,724.2	-14.9	44.6	-12.7	0.52	0.36	-13.12
2,750.0	1.80	99.86	2,749.2	-15.1	45.4	-12.9	0.60	0.36	-15.72
2,775.0	1.80	104.12	2,774.2	-15.3	46.1	-13.0	0.54	0.00	17.04
2,800.0	1.79	101.67	2,799.1	-15.4	46.9	-13.1	0.31	-0.04	-9.80
2,825.0	1.87	98.52	2,824.1	-15.6	47.7	-13.2	0.51	0.32	-12.60
2,850.0	1.91	99.33	2,849.1	-15.7	48.5	-13.3	0.19	0.16	3.24
2,875.0	1.89	99.44	2,874.1	-15.8	49.3	-13.4	0.08	-0.08	0.44
2,900.0	1.82	97.13	2,899.1	-16.0	50.1	-13.5	0.41	-0.28	-9.24
2,925.0	1.89	97.70	2,924.1	-16.1	50.9	-13.6	0.29	0.28	2.28
2,950.0	1.95	97.74	2,949.1	-16.2	51.8	-13.6	0.24	0.24	0.16
2,975.0	1.95	102.30	2,974.0	-16.3	52.6	-13.7	0.62	0.00	18.24
3,000.0	2.04	105.98	2,999.0	-16.5	53.4	-13.9	0.63	0.36	14.72
3,025.0	2.61	114.17	3,024.0	-16.9	54.4	-14.2	2.63	2.28	32.76
3,050.0	2.64	114.68	3,049.0	-17.4	55.4	-14.6	0.15	0.12	2.04
3,075.0	2.71	116.07	3,074.0	-17.9	56.5	-15.1	0.38	0.28	5.56
3,100.0	2.78	113.52	3,098.9	-18.4	57.6	-15.5	0.56	0.28	-10.20
3,125.0	2.80	113.19	3,123.9	-18.8	58.7	-16.0	0.10	0.08	-1.32
3,150.0	2.98	115.61	3,148.9	-19.4	59.8	-16.4	0.87	0.72	9.68
3,175.0	3.03	112.77	3,173.8	-19.9	61.0	-16.9	0.63	0.20	-11.36
3,200.0	3.10	110.93	3,198.8	-20.4	62.3	-17.3	0.48	0.28	-7.36
3,225.0	3.27	110.47	3,223.8	-20.9	63.6	-17.8	0.69	0.68	-1.84
3,250.0	3.48	109.64	3,248.7	-21.4	64.9	-18.2	0.86	0.84	-3.32
3,275.0	3.31	112.10	3,273.7	-21.9	66.3	-18.7	0.90	-0.68	9.84
3,300.0	3.30	115.21	3,298.6	-22.5	67.7	-19.2	0.72	-0.04	12.44
3,325.0	3.39	118.75	3,323.6	-23.2	69.0	-19.8	0.90	0.36	14.16
3,350.0	3.27	119.43	3,348.5	-23.9	70.2	-20.4	0.51	-0.48	2.72
3,375.0	3.02	120.70	3,373.5	-24.6	71.4	-21.0	1.04	-1.00	5.08
3,400.0	2.33	126.44	3,398.5	-25.2	72.4	-21.6	2.96	-2.76	22.96
3,425.0	2.42	128.32	3,423.5	-25.8	73.2	-22.2	0.48	0.36	7.52
3,450.0	2.38	127.52	3,448.4	-26.5	74.0	-22.8	0.21	-0.16	-3.20
3,475.0	2.39	127.42	3,473.4	-27.1	74.9	-23.4	0.04	0.04	-0.40
3,500.0	2.53	126.79	3,498.4	-27.7	75.7	-24.0	0.57	0.56	-2.52
3,525.0	2.45	124.76	3,523.4	-28.4	76.6	-24.6	0.48	-0.32	-8.12
3,550.0	2.50	122.95	3,548.3	-29.0	77.5	-25.2	0.37	0.20	-7.24

Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Dominator 25 Federal #701H
Project:	Lea County, NM	TVD Reference:	RKB @ 3351.0usft (Noram #21)
Site:	Sec 25, T25S, R33E	MD Reference:	RKB @ 3351.0usft (Noram #21)
Well:	Dominator 25 Federal #701H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	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)
3,575.0	2.50	120.21	3,573.3	-29.6	78.4	-25.7	0.48	0.00	-10.96
3,600.0	2.34	116.93	3,598.3	-30.1	79.3	-26.1	0.85	-0.64	-13.12
3,625.0	2.36	115.86	3,623.3	-30.5	80.3	-26.6	0.19	0.08	-4.28
3,650.0	2.32	115.70	3,648.3	-31.0	81.2	-27.0	0.16	-0.16	-0.64
3,675.0	2.38	113.30	3,673.2	-31.4	82.1	-27.3	0.46	0.24	-9.60
3,700.0	2.35	114.81	3,698.2	-31.8	83.1	-27.7	0.28	-0.12	6.04
3,725.0	2.26	113.77	3,723.2	-32.2	84.0	-28.1	0.40	-0.36	-4.16
3,750.0	2.20	112.73	3,748.2	-32.6	84.9	-28.4	0.29	-0.24	-4.16
3,775.0	2.27	112.47	3,773.2	-33.0	85.8	-28.7	0.28	0.28	-1.04
3,800.0	2.28	113.17	3,798.1	-33.4	86.7	-29.1	0.12	0.04	2.80
3,825.0	2.20	111.63	3,823.1	-33.7	87.6	-29.4	0.40	-0.32	-6.16
3,850.0	2.23	113.99	3,848.1	-34.1	88.5	-29.7	0.38	0.12	9.44
3,875.0	2.17	110.55	3,873.1	-34.5	89.4	-30.1	0.58	-0.24	-13.76
3,900.0	2.14	109.76	3,898.1	-34.8	90.2	-30.3	0.17	-0.12	-3.16
3,925.0	2.10	103.02	3,923.0	-35.1	91.1	-30.6	1.01	-0.16	-26.96
3,950.0	2.16	102.07	3,948.0	-35.3	92.0	-30.7	0.28	0.24	-3.80
3,975.0	2.40	100.55	3,973.0	-35.5	93.0	-30.9	0.99	0.96	-6.08
4,000.0	2.47	99.19	3,998.0	-35.6	94.1	-31.0	0.36	0.28	-5.44
4,025.0	2.44	98.44	4,023.0	-35.8	95.1	-31.1	0.18	-0.12	-3.00
4,050.0	2.27	110.06	4,047.9	-36.0	96.1	-31.3	2.02	-0.68	46.48
4,075.0	2.14	114.71	4,072.9	-36.4	97.0	-31.6	0.88	-0.52	18.60
4,100.0	2.30	116.86	4,097.9	-36.8	97.9	-32.0	0.72	0.64	8.60
4,125.0	2.14	118.61	4,122.9	-37.3	98.7	-32.4	0.69	-0.64	7.00
4,150.0	2.13	117.31	4,147.9	-37.7	99.6	-32.8	0.20	-0.04	-5.20
4,175.0	2.19	119.08	4,172.8	-38.2	100.4	-33.2	0.36	0.24	7.08
4,200.0	2.05	118.72	4,197.8	-38.6	101.2	-33.6	0.56	-0.56	-1.44
4,225.0	1.92	119.44	4,222.8	-39.0	101.9	-34.0	0.53	-0.52	2.88
4,250.0	1.93	118.42	4,247.8	-39.4	102.7	-34.4	0.14	0.04	-4.08
4,275.0	1.97	119.87	4,272.8	-39.9	103.4	-34.8	0.25	0.16	5.80
4,300.0	1.98	120.86	4,297.8	-40.3	104.2	-35.2	0.14	0.04	3.96
4,325.0	1.96	120.04	4,322.8	-40.7	104.9	-35.6	0.14	-0.08	-3.28
4,350.0	2.02	119.95	4,347.7	-41.2	105.7	-36.0	0.24	0.24	-0.36
4,375.0	1.96	120.68	4,372.7	-41.6	106.4	-36.4	0.26	-0.24	2.92
4,400.0	2.07	119.91	4,397.7	-42.0	107.2	-36.8	0.45	0.44	-3.08
4,425.0	2.20	117.07	4,422.7	-42.5	108.0	-37.2	0.67	0.52	-11.36
4,450.0	2.04	114.27	4,447.7	-42.9	108.8	-37.5	0.76	-0.64	-11.20
4,475.0	2.41	116.44	4,472.7	-43.3	109.7	-37.9	1.52	1.48	8.68
4,500.0	2.62	114.54	4,497.6	-43.8	110.7	-38.3	0.90	0.84	-7.60
4,525.0	2.73	116.96	4,522.6	-44.3	111.7	-38.8	0.63	0.44	9.68
4,550.0	2.68	116.68	4,547.6	-44.8	112.8	-39.3	0.21	-0.20	-1.12
4,575.0	2.72	115.30	4,572.6	-45.3	113.9	-39.7	0.31	0.16	-5.52
4,600.0	2.74	117.24	4,597.5	-45.9	114.9	-40.2	0.38	0.08	7.76
4,625.0	2.14	117.92	4,622.5	-46.4	115.9	-40.6	2.40	-2.40	2.72

Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Dominator 25 Federal #701H
Project:	Lea County, NM	TVD Reference:	RKB @ 3351.0usft (Noram #21)
Site:	Sec 25, T25S, R33E	MD Reference:	RKB @ 3351.0usft (Noram #21)
Well:	Dominator 25 Federal #701H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

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)
4,650.0	2.02	115.16	4,647.5	-46.8	116.7	-41.0	0.63	-0.48	-11.04
4,675.0	2.01	116.08	4,672.5	-47.1	117.5	-41.3	0.14	-0.04	3.68
4,700.0	2.08	117.06	4,697.5	-47.5	118.3	-41.7	0.31	0.28	3.92
4,725.0	2.20	116.96	4,722.4	-48.0	119.1	-42.1	0.48	0.48	-0.40
4,750.0	2.24	119.65	4,747.4	-48.4	119.9	-42.5	0.45	0.16	10.76
4,775.0	2.26	119.34	4,772.4	-48.9	120.8	-42.9	0.09	0.08	-1.24
4,800.0	2.28	121.00	4,797.4	-49.4	121.7	-43.4	0.27	0.08	6.64
4,825.0	2.14	121.77	4,822.4	-49.9	122.5	-43.9	0.57	-0.56	3.08
4,850.0	2.11	119.83	4,847.3	-50.4	123.3	-44.3	0.31	-0.12	-7.76
4,875.0	2.16	119.93	4,872.3	-50.8	124.1	-44.7	0.20	0.20	0.40
4,900.0	2.26	124.29	4,897.3	-51.4	124.9	-45.2	0.78	0.40	17.44
4,925.0	2.26	121.51	4,922.3	-51.9	125.7	-45.7	0.44	0.00	-11.12
4,950.0	2.29	124.50	4,947.3	-52.4	126.6	-46.2	0.49	0.12	11.96
4,975.0	2.22	123.87	4,972.2	-53.0	127.4	-46.7	0.30	-0.28	-2.52
5,000.0	1.42	116.06	4,997.2	-53.4	128.1	-47.1	3.34	-3.20	-31.24
5,025.0	0.99	109.79	5,022.2	-53.6	128.5	-47.3	1.80	-1.72	-25.08
5,050.0	0.71	112.75	5,047.2	-53.7	128.9	-47.4	1.13	-1.12	11.84
5,075.0	0.71	105.40	5,072.2	-53.8	129.2	-47.5	0.36	0.00	-29.40
5,100.0	0.73	114.98	5,097.2	-53.9	129.5	-47.6	0.49	0.08	38.32
5,125.0	0.68	114.68	5,122.2	-54.1	129.7	-47.7	0.20	-0.20	-1.20
5,150.0	0.67	121.41	5,147.2	-54.2	130.0	-47.8	0.32	-0.04	26.92
5,175.0	0.76	144.95	5,172.2	-54.4	130.2	-48.0	1.22	0.36	94.16
5,200.0	0.65	141.97	5,197.2	-54.7	130.4	-48.2	0.46	-0.44	-11.92
5,225.0	0.61	141.51	5,222.2	-54.9	130.6	-48.4	0.16	-0.16	-1.84
5,250.0	0.61	150.43	5,247.2	-55.1	130.7	-48.7	0.38	0.00	35.68
5,275.0	0.70	145.49	5,272.2	-55.3	130.9	-48.9	0.42	0.36	-19.76
5,300.0	0.78	159.30	5,297.2	-55.6	131.0	-49.2	0.78	0.32	55.24
5,325.0	0.59	148.77	5,322.2	-55.9	131.2	-49.4	0.91	-0.76	-42.12
5,350.0	0.63	144.45	5,347.2	-56.1	131.3	-49.6	0.24	0.16	-17.28
5,375.0	0.61	141.41	5,372.2	-56.3	131.5	-49.8	0.15	-0.08	-12.16
5,400.0	0.69	152.19	5,397.2	-56.6	131.6	-50.1	0.58	0.32	43.12
5,425.0	0.51	149.82	5,422.2	-56.8	131.7	-50.3	0.73	-0.72	-9.48
5,450.0	0.50	144.73	5,447.2	-57.0	131.9	-50.5	0.18	-0.04	-20.36
5,475.0	0.46	130.31	5,472.2	-57.1	132.0	-50.6	0.51	-0.16	-57.68
5,500.0	0.52	141.27	5,497.2	-57.3	132.1	-50.8	0.44	0.24	43.84
5,525.0	0.47	138.69	5,522.2	-57.5	132.3	-50.9	0.22	-0.20	-10.32
5,550.0	0.49	131.03	5,547.2	-57.6	132.4	-51.1	0.27	0.08	-30.64
5,575.0	0.51	130.43	5,572.2	-57.7	132.6	-51.2	0.08	0.08	-2.40
5,600.0	0.51	136.85	5,597.2	-57.9	132.8	-51.3	0.23	0.00	25.68
5,625.0	0.53	135.12	5,622.2	-58.1	132.9	-51.5	0.10	0.08	-6.92
5,650.0	0.43	131.29	5,647.2	-58.2	133.1	-51.6	0.42	-0.40	-15.32
5,675.0	0.45	135.14	5,672.2	-58.3	133.2	-51.8	0.14	0.08	15.40
5,700.0	0.48	122.42	5,697.2	-58.5	133.4	-51.9	0.43	0.12	-50.88

Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Dominator 25 Federal #701H
Project:	Lea County, NM	TVD Reference:	RKB @ 3351.0usft (Noram #21)
Site:	Sec 25, T25S, R33E	MD Reference:	RKB @ 3351.0usft (Noram #21)
Well:	Dominator 25 Federal #701H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

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)
5,725.0	0.50	124.03	5,722.2	-58.6	133.5	-52.0	0.10	0.08	6.44
5,750.0	0.72	125.91	5,747.2	-58.7	133.8	-52.1	0.88	0.88	7.52
5,775.0	0.84	118.71	5,772.2	-58.9	134.1	-52.3	0.62	0.48	-28.80
5,800.0	0.94	112.95	5,797.2	-59.1	134.4	-52.4	0.54	0.40	-23.04
5,825.0	0.96	115.85	5,822.2	-59.3	134.8	-52.6	0.21	0.08	11.60
5,850.0	0.97	113.94	5,847.2	-59.4	135.2	-52.8	0.13	0.04	-7.64
5,875.0	1.01	117.99	5,872.2	-59.6	135.5	-52.9	0.32	0.16	16.20
5,900.0	0.95	117.51	5,897.2	-59.8	135.9	-53.1	0.24	-0.24	-1.92
5,925.0	0.98	113.82	5,922.2	-60.0	136.3	-53.3	0.28	0.12	-14.76
5,950.0	1.03	118.40	5,947.2	-60.2	136.7	-53.4	0.38	0.20	18.32
5,975.0	0.99	121.18	5,972.2	-60.4	137.1	-53.6	0.25	-0.16	11.12
6,000.0	1.17	129.15	5,997.2	-60.7	137.5	-53.9	0.94	0.72	31.88
6,025.0	0.86	111.27	6,022.2	-60.9	137.8	-54.1	1.76	-1.24	-71.52
6,050.0	0.77	103.67	6,047.1	-61.0	138.2	-54.2	0.56	-0.36	-30.40
6,075.0	0.79	102.07	6,072.1	-61.1	138.5	-54.3	0.12	0.08	-6.40
6,100.0	0.72	101.76	6,097.1	-61.2	138.8	-54.3	0.28	-0.28	-1.24
6,125.0	0.73	95.32	6,122.1	-61.2	139.1	-54.3	0.33	0.04	-25.76
6,150.0	0.68	100.55	6,147.1	-61.3	139.4	-54.4	0.33	-0.20	20.92
6,175.0	0.71	90.96	6,172.1	-61.3	139.7	-54.4	0.48	0.12	-38.36
6,200.0	0.70	101.25	6,197.1	-61.3	140.1	-54.4	0.51	-0.04	41.16
6,225.0	0.65	91.83	6,222.1	-61.4	140.3	-54.4	0.49	-0.20	-37.68
6,250.0	0.74	101.56	6,247.1	-61.4	140.6	-54.4	0.59	0.36	38.92
6,275.0	0.61	89.20	6,272.1	-61.4	140.9	-54.5	0.78	-0.52	-49.44
6,300.0	0.68	84.25	6,297.1	-61.4	141.2	-54.4	0.36	0.28	-19.80
6,325.0	0.69	93.13	6,322.1	-61.4	141.5	-54.4	0.43	0.04	35.52
6,350.0	0.61	89.36	6,347.1	-61.4	141.8	-54.4	0.36	-0.32	-15.08
6,375.0	0.77	90.63	6,372.1	-61.4	142.1	-54.4	0.64	0.64	5.08
6,400.0	0.70	89.57	6,397.1	-61.4	142.4	-54.4	0.29	-0.28	-4.24
6,425.0	0.83	88.39	6,422.1	-61.4	142.8	-54.4	0.52	0.52	-4.72
6,450.0	1.34	92.01	6,447.1	-61.4	143.2	-54.3	2.06	2.04	14.48
6,475.0	2.05	93.05	6,472.1	-61.4	144.0	-54.3	2.84	2.84	4.16
6,500.0	1.91	92.38	6,497.1	-61.5	144.8	-54.3	0.57	-0.56	-2.68
6,525.0	2.20	94.36	6,522.1	-61.5	145.7	-54.3	1.19	1.16	7.92
6,550.0	2.07	94.05	6,547.1	-61.6	146.6	-54.4	0.52	-0.52	-1.24
6,575.0	2.20	94.61	6,572.0	-61.7	147.6	-54.4	0.53	0.52	2.24
6,600.0	2.16	94.27	6,597.0	-61.7	148.5	-54.4	0.17	-0.16	-1.36
6,625.0	2.45	97.48	6,622.0	-61.9	149.5	-54.5	1.27	1.16	12.84
6,650.0	2.56	100.51	6,647.0	-62.0	150.6	-54.6	0.69	0.44	12.12
6,675.0	2.58	98.78	6,672.0	-62.2	151.7	-54.7	0.32	0.08	-6.92
6,700.0	2.65	100.14	6,696.9	-62.4	152.8	-54.9	0.37	0.28	5.44
6,725.0	2.59	99.34	6,721.9	-62.6	154.0	-55.0	0.28	-0.24	-3.20
6,750.0	2.70	100.47	6,746.9	-62.8	155.1	-55.1	0.49	0.44	4.52
6,775.0	2.65	101.39	6,771.8	-63.0	156.2	-55.3	0.26	-0.20	3.68
6,800.0	2.67	99.64	6,796.8	-63.2	157.4	-55.5	0.33	0.08	-7.00

Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Dominator 25 Federal #701H
Project:	Lea County, NM	TVD Reference:	RKB @ 3351.0usft (Noram #21)
Site:	Sec 25, T25S, R33E	MD Reference:	RKB @ 3351.0usft (Noram #21)
Well:	Dominator 25 Federal #701H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

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)
6,825.0	2.73	99.04	6,821.8	-63.4	158.5	-55.6	0.27	0.24	-2.40
6,850.0	2.55	99.60	6,846.8	-63.6	159.7	-55.7	0.73	-0.72	2.24
6,875.0	2.61	97.89	6,871.7	-63.8	160.8	-55.8	0.39	0.24	-6.84
6,900.0	2.62	97.04	6,896.7	-63.9	161.9	-55.9	0.16	0.04	-3.40
6,925.0	2.70	98.30	6,921.7	-64.1	163.1	-56.0	0.40	0.32	5.04
6,950.0	2.69	100.50	6,946.7	-64.3	164.2	-56.2	0.42	-0.04	8.80
6,975.0	2.59	98.45	6,971.6	-64.5	165.4	-56.3	0.55	-0.40	-8.20
7,000.0	2.51	100.49	6,996.6	-64.6	166.5	-56.4	0.48	-0.32	8.16
7,025.0	2.52	100.80	7,021.6	-64.8	167.5	-56.6	0.07	0.04	1.24
7,050.0	2.56	101.37	7,046.6	-65.1	168.6	-56.7	0.19	0.16	2.28
7,075.0	2.55	101.40	7,071.5	-65.3	169.7	-56.9	0.04	-0.04	0.12
7,100.0	2.53	102.90	7,096.5	-65.5	170.8	-57.1	0.28	-0.08	6.00
7,125.0	2.39	103.23	7,121.5	-65.8	171.9	-57.3	0.56	-0.56	1.32
7,150.0	2.35	102.59	7,146.5	-66.0	172.9	-57.5	0.19	-0.16	-2.56
7,175.0	2.24	101.94	7,171.4	-66.2	173.8	-57.6	0.45	-0.44	-2.60
7,200.0	2.12	99.66	7,196.4	-66.4	174.8	-57.8	0.59	-0.48	-9.12
7,225.0	2.05	102.07	7,221.4	-66.5	175.7	-57.9	0.45	-0.28	9.64
7,250.0	2.02	99.97	7,246.4	-66.7	176.5	-58.0	0.32	-0.12	-8.40
7,275.0	2.12	101.95	7,271.4	-66.9	177.4	-58.1	0.49	0.40	7.92
7,300.0	2.00	101.69	7,296.4	-67.1	178.3	-58.3	0.48	-0.48	-1.04
7,325.0	2.01	101.88	7,321.3	-67.2	179.2	-58.4	0.05	0.04	0.76
7,350.0	2.09	103.59	7,346.3	-67.4	180.0	-58.6	0.40	0.32	6.84
7,375.0	1.96	115.45	7,371.3	-67.7	180.9	-58.8	1.75	-0.52	47.44
7,400.0	1.93	121.75	7,396.3	-68.1	181.6	-59.2	0.86	-0.12	25.20
7,425.0	1.86	125.51	7,421.3	-68.6	182.3	-59.6	0.57	-0.28	15.04
7,450.0	1.89	127.26	7,446.3	-69.1	183.0	-60.1	0.26	0.12	7.00
7,475.0	1.81	127.04	7,471.3	-69.6	183.6	-60.5	0.32	-0.32	-0.88
7,500.0	1.86	126.33	7,496.2	-70.1	184.2	-61.0	0.22	0.20	-2.84
7,525.0	1.74	129.39	7,521.2	-70.5	184.9	-61.4	0.61	-0.48	12.24
7,550.0	1.78	126.34	7,546.2	-71.0	185.5	-61.9	0.41	0.16	-12.20
7,575.0	1.75	129.91	7,571.2	-71.5	186.1	-62.3	0.46	-0.12	14.28
7,600.0	1.73	125.43	7,596.2	-71.9	186.7	-62.7	0.55	-0.08	-17.92
7,625.0	1.72	125.15	7,621.2	-72.4	187.3	-63.1	0.05	-0.04	-1.12
7,650.0	1.64	127.39	7,646.2	-72.8	187.9	-63.5	0.41	-0.32	8.96
7,675.0	1.74	126.62	7,671.2	-73.3	188.5	-64.0	0.41	0.40	-3.08
7,700.0	1.78	128.70	7,696.2	-73.7	189.1	-64.4	0.30	0.16	8.32
7,725.0	1.76	126.59	7,721.1	-74.2	189.7	-64.8	0.27	-0.08	-8.44
7,750.0	1.80	129.41	7,746.1	-74.7	190.3	-65.3	0.39	0.16	11.28
7,775.0	1.79	129.75	7,771.1	-75.2	190.9	-65.8	0.06	-0.04	1.36
7,800.0	1.68	130.12	7,796.1	-75.7	191.5	-66.2	0.44	-0.44	1.48
7,825.0	1.56	129.92	7,821.1	-76.1	192.0	-66.6	0.48	-0.48	-0.80
7,850.0	1.52	128.56	7,846.1	-76.5	192.5	-67.0	0.22	-0.16	-5.44
7,875.0	1.53	130.19	7,871.1	-77.0	193.1	-67.4	0.18	0.04	6.52

Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Dominator 25 Federal #701H
Project:	Lea County, NM	TVD Reference:	RKB @ 3351.0usft (Noram #21)
Site:	Sec 25, T25S, R33E	MD Reference:	RKB @ 3351.0usft (Noram #21)
Well:	Dominator 25 Federal #701H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	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)
7,900.0	1.57	129.53	7,896.1	-77.4	193.6	-67.8	0.18	0.16	-2.64
7,925.0	1.42	131.22	7,921.1	-77.8	194.1	-68.2	0.63	-0.60	6.76
7,950.0	1.52	127.18	7,946.1	-78.2	194.6	-68.6	0.58	0.40	-16.16
7,975.0	1.76	119.88	7,971.0	-78.6	195.2	-69.0	1.27	0.96	-29.20
8,000.0	2.04	116.15	7,996.0	-79.0	195.9	-69.3	1.22	1.12	-14.92
8,025.0	2.07	117.36	8,021.0	-79.4	196.7	-69.7	0.21	0.12	4.84
8,050.0	2.15	118.05	8,046.0	-79.8	197.5	-70.1	0.34	0.32	2.76
8,075.0	2.03	118.08	8,071.0	-80.3	198.3	-70.5	0.48	-0.48	0.12
8,100.0	2.12	117.54	8,096.0	-80.7	199.1	-70.9	0.37	0.36	-2.16
8,125.0	1.96	118.47	8,120.9	-81.1	199.9	-71.2	0.65	-0.64	3.72
8,150.0	2.12	118.77	8,145.9	-81.5	200.7	-71.6	0.64	0.64	1.20
8,175.0	1.92	118.64	8,170.9	-81.9	201.5	-72.0	0.80	-0.80	-0.52
8,200.0	1.95	120.42	8,195.9	-82.4	202.2	-72.4	0.27	0.12	7.12
8,225.0	1.83	120.04	8,220.9	-82.8	202.9	-72.8	0.48	-0.48	-1.52
8,250.0	1.78	123.79	8,245.9	-83.2	203.6	-73.2	0.51	-0.20	15.00
8,275.0	1.79	120.83	8,270.9	-83.6	204.2	-73.5	0.37	0.04	-11.84
8,300.0	1.73	121.83	8,295.9	-84.0	204.9	-73.9	0.27	-0.24	4.00
8,325.0	1.72	118.78	8,320.8	-84.4	205.5	-74.2	0.37	-0.04	-12.20
8,350.0	1.73	123.20	8,345.8	-84.8	206.2	-74.6	0.53	0.04	17.68
8,375.0	1.71	119.30	8,370.8	-85.2	206.8	-75.0	0.47	-0.08	-15.60
8,400.0	1.71	123.43	8,395.8	-85.6	207.5	-75.3	0.49	0.00	16.52
8,425.0	1.70	120.89	8,420.8	-85.9	208.1	-75.7	0.30	-0.04	-10.16
8,450.0	1.68	123.02	8,445.8	-86.3	208.7	-76.0	0.26	-0.08	8.52
8,475.0	1.67	119.92	8,470.8	-86.7	209.3	-76.4	0.36	-0.04	-12.40
8,500.0	1.63	124.46	8,495.8	-87.1	209.9	-76.7	0.55	-0.16	18.16
8,525.0	1.60	124.21	8,520.8	-87.5	210.5	-77.1	0.12	-0.12	-1.00
8,550.0	1.47	126.78	8,545.7	-87.9	211.1	-77.5	0.59	-0.52	10.28
8,575.0	1.38	125.94	8,570.7	-88.3	211.6	-77.8	0.37	-0.36	-3.36
8,600.0	1.55	125.42	8,595.7	-88.6	212.1	-78.2	0.68	0.68	-2.08
8,625.0	1.43	124.75	8,620.7	-89.0	212.6	-78.5	0.49	-0.48	-2.68
8,650.0	1.40	112.93	8,645.7	-89.3	213.2	-78.8	1.17	-0.12	-47.28
8,675.0	1.51	105.10	8,670.7	-89.5	213.8	-79.0	0.91	0.44	-31.32
8,700.0	1.55	102.99	8,695.7	-89.7	214.4	-79.1	0.28	0.16	-8.44
8,725.0	1.43	101.03	8,720.7	-89.8	215.0	-79.2	0.52	-0.48	-7.84
8,750.0	1.38	99.57	8,745.7	-89.9	215.6	-79.3	0.25	-0.20	-5.84
8,775.0	1.37	101.77	8,770.7	-90.0	216.2	-79.4	0.21	-0.04	8.80
8,800.0	1.43	99.85	8,795.7	-90.1	216.8	-79.4	0.30	0.24	-7.68
8,825.0	1.41	101.58	8,820.7	-90.3	217.4	-79.5	0.19	-0.08	6.92
8,850.0	1.40	100.85	8,845.7	-90.4	218.0	-79.6	0.08	-0.04	-2.92
8,875.0	1.31	102.88	8,870.6	-90.5	218.6	-79.7	0.41	-0.36	8.12
8,900.0	1.33	98.45	8,895.6	-90.6	219.2	-79.8	0.42	0.08	-17.72
8,925.0	1.59	91.00	8,920.6	-90.6	219.8	-79.8	1.29	1.04	-29.80
8,950.0	1.54	82.57	8,945.6	-90.6	220.5	-79.7	0.94	-0.20	-33.72

Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Dominator 25 Federal #701H
Project:	Lea County, NM	TVD Reference:	RKB @ 3351.0usft (Noram #21)
Site:	Sec 25, T25S, R33E	MD Reference:	RKB @ 3351.0usft (Noram #21)
Well:	Dominator 25 Federal #701H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	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)
8,975.0	1.72	84.51	8,970.6	-90.5	221.2	-79.6	0.75	0.72	7.76
9,000.0	1.57	82.21	8,995.6	-90.5	221.9	-79.5	0.66	-0.60	-9.20
9,025.0	1.71	84.13	9,020.6	-90.4	222.6	-79.4	0.60	0.56	7.68
9,050.0	1.69	86.13	9,045.6	-90.3	223.4	-79.3	0.25	-0.08	8.00
9,075.0	1.65	82.60	9,070.6	-90.2	224.1	-79.2	0.44	-0.16	-14.12
9,100.0	1.83	84.76	9,095.6	-90.1	224.9	-79.1	0.77	0.72	8.64
9,125.0	1.66	100.48	9,120.5	-90.2	225.6	-79.1	2.02	-0.68	62.88
9,150.0	1.70	102.80	9,145.5	-90.3	226.3	-79.2	0.32	0.16	9.28
9,175.0	1.77	104.43	9,170.5	-90.5	227.1	-79.3	0.34	0.28	6.52
9,200.0	1.78	105.71	9,195.5	-90.7	227.8	-79.5	0.16	0.04	5.12
9,225.0	1.63	106.08	9,220.5	-90.9	228.5	-79.6	0.60	-0.60	1.48
9,250.0	1.57	107.07	9,245.5	-91.1	229.2	-79.8	0.26	-0.24	3.96
9,275.0	1.51	107.10	9,270.5	-91.3	229.8	-80.0	0.24	-0.24	0.12
9,300.0	1.55	108.69	9,295.5	-91.5	230.5	-80.1	0.23	0.16	6.36
9,325.0	1.43	109.31	9,320.5	-91.7	231.1	-80.3	0.48	-0.48	2.48
9,350.0	1.38	110.93	9,345.5	-91.9	231.7	-80.5	0.26	-0.20	6.48
9,375.0	1.52	109.30	9,370.4	-92.2	232.3	-80.7	0.58	0.56	-6.52
9,400.0	1.56	112.46	9,395.4	-92.4	232.9	-80.9	0.38	0.16	12.64
9,425.0	1.83	119.61	9,420.4	-92.7	233.5	-81.2	1.37	1.08	28.60
9,450.0	1.90	118.94	9,445.4	-93.1	234.2	-81.6	0.29	0.28	-2.68
9,475.0	1.85	120.22	9,470.4	-93.5	235.0	-81.9	0.26	-0.20	5.12
9,500.0	1.90	124.47	9,495.4	-94.0	235.7	-82.3	0.59	0.20	17.00
9,525.0	1.73	121.99	9,520.4	-94.4	236.3	-82.7	0.75	-0.68	-9.92
9,550.0	1.58	133.76	9,545.4	-94.8	236.9	-83.1	1.48	-0.60	47.08
9,575.0	1.27	132.12	9,570.4	-95.3	237.3	-83.5	1.25	-1.24	-6.56
9,600.0	1.20	143.09	9,595.4	-95.6	237.7	-83.9	0.98	-0.28	43.88
9,625.0	1.01	153.90	9,620.3	-96.1	238.0	-84.3	1.13	-0.76	43.24
9,650.0	1.03	162.90	9,645.3	-96.5	238.1	-84.7	0.65	0.08	36.00
9,675.0	1.15	161.04	9,670.3	-96.9	238.3	-85.2	0.50	0.48	-7.44
9,700.0	1.47	152.73	9,695.3	-97.4	238.5	-85.7	1.49	1.28	-33.24
9,725.0	1.71	140.38	9,720.3	-98.0	238.9	-86.2	1.67	0.96	-49.40
9,750.0	1.81	138.65	9,745.3	-98.6	239.4	-86.8	0.45	0.40	-6.92
9,775.0	1.82	139.51	9,770.3	-99.2	239.9	-87.4	0.12	0.04	3.44
9,800.0	1.76	141.63	9,795.3	-99.8	240.4	-87.9	0.36	-0.24	8.48
9,825.0	1.68	143.68	9,820.3	-100.4	240.8	-88.5	0.40	-0.32	8.20
9,850.0	1.57	146.28	9,845.3	-101.0	241.3	-89.1	0.53	-0.44	10.40
9,875.0	1.44	147.03	9,870.3	-101.5	241.6	-89.6	0.53	-0.52	3.00
9,900.0	1.41	146.85	9,895.2	-102.0	242.0	-90.1	0.12	-0.12	-0.72
9,925.0	1.31	153.20	9,920.2	-102.6	242.3	-90.6	0.72	-0.40	25.40
9,950.0	1.08	153.52	9,945.2	-103.0	242.5	-91.1	0.92	-0.92	1.28
9,975.0	0.99	154.75	9,970.2	-103.4	242.7	-91.5	0.37	-0.36	4.92
10,000.0	0.75	160.28	9,995.2	-103.8	242.8	-91.8	1.02	-0.96	22.12
10,025.0	0.51	165.16	10,020.2	-104.0	242.9	-92.1	0.98	-0.96	19.52
10,050.0	0.49	191.37	10,045.2	-104.3	242.9	-92.3	0.91	-0.08	104.84

Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Dominator 25 Federal #701H
Project:	Lea County, NM	TVD Reference:	RKB @ 3351.0usft (Noram #21)
Site:	Sec 25, T25S, R33E	MD Reference:	RKB @ 3351.0usft (Noram #21)
Well:	Dominator 25 Federal #701H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

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)
10,075.0	0.52	212.80	10,070.2	-104.5	242.8	-92.5	0.76	0.12	85.72
10,100.0	0.67	220.50	10,095.2	-104.7	242.7	-92.7	0.68	0.60	30.80
10,125.0	0.63	223.87	10,120.2	-104.9	242.5	-92.9	0.22	-0.16	13.48
10,150.0	0.60	233.85	10,145.2	-105.0	242.3	-93.1	0.44	-0.12	39.92
10,175.0	0.73	231.05	10,170.2	-105.2	242.1	-93.3	0.54	0.52	-11.20
10,200.0	0.77	231.08	10,195.2	-105.4	241.8	-93.5	0.16	0.16	0.12
10,225.0	0.66	221.46	10,220.2	-105.6	241.6	-93.7	0.65	-0.44	-38.48
10,250.0	0.53	199.03	10,245.2	-105.9	241.4	-93.9	1.06	-0.52	-89.72
10,275.0	0.66	179.61	10,270.2	-106.1	241.4	-94.2	0.95	0.52	-77.68
10,300.0	0.69	167.72	10,295.2	-106.4	241.4	-94.5	0.57	0.12	-47.56
10,325.0	0.72	166.51	10,320.2	-106.7	241.5	-94.8	0.13	0.12	-4.84
10,350.0	0.72	170.59	10,345.2	-107.0	241.6	-95.1	0.21	0.00	16.32
10,375.0	0.77	171.35	10,370.2	-107.3	241.6	-95.4	0.20	0.20	3.04
10,400.0	0.74	169.93	10,395.2	-107.7	241.7	-95.7	0.14	-0.12	-5.68
10,425.0	0.72	170.23	10,420.2	-108.0	241.7	-96.0	0.08	-0.08	1.20
10,450.0	0.53	169.33	10,445.2	-108.2	241.8	-96.3	0.76	-0.76	-3.60
10,475.0	0.45	161.64	10,470.2	-108.4	241.8	-96.5	0.41	-0.32	-30.76
10,500.0	0.48	161.94	10,495.2	-108.6	241.9	-96.7	0.12	0.12	1.20
10,525.0	0.47	179.09	10,520.2	-108.8	241.9	-96.9	0.57	-0.04	68.60
10,550.0	0.47	190.07	10,545.2	-109.0	241.9	-97.1	0.36	0.00	43.92
10,575.0	0.51	196.57	10,570.2	-109.3	241.9	-97.3	0.27	0.16	26.00
10,600.0	0.50	198.58	10,595.2	-109.5	241.8	-97.5	0.08	-0.04	8.04
10,625.0	0.55	199.18	10,620.2	-109.7	241.7	-97.7	0.20	0.20	2.40
10,650.0	0.44	203.23	10,645.2	-109.9	241.6	-97.9	0.46	-0.44	16.20
10,675.0	0.53	200.32	10,670.2	-110.1	241.6	-98.1	0.37	0.36	-11.64
10,700.0	0.58	201.93	10,695.2	-110.3	241.5	-98.4	0.21	0.20	6.44
10,725.0	0.62	217.41	10,720.2	-110.5	241.4	-98.6	0.67	0.16	61.92
10,750.0	0.69	227.48	10,745.2	-110.7	241.2	-98.8	0.54	0.28	40.28
10,775.0	0.59	214.33	10,770.2	-110.9	241.0	-99.0	0.71	-0.40	-52.60
10,800.0	0.73	225.69	10,795.2	-111.2	240.8	-99.3	0.76	0.56	45.44
10,825.0	0.78	220.72	10,820.2	-111.4	240.6	-99.5	0.33	0.20	-19.88
10,850.0	0.77	206.57	10,845.2	-111.7	240.4	-99.8	0.76	-0.04	-56.60
10,875.0	0.82	208.88	10,870.2	-112.0	240.2	-100.1	0.24	0.20	9.24
10,900.0	0.84	202.46	10,895.2	-112.3	240.1	-100.5	0.38	0.08	-25.68
10,925.0	0.80	202.03	10,920.2	-112.6	239.9	-100.8	0.16	-0.16	-1.72
10,950.0	0.73	206.67	10,945.2	-113.0	239.8	-101.1	0.37	-0.28	18.56
10,975.0	0.84	205.03	10,970.2	-113.3	239.6	-101.4	0.45	0.44	-6.56
11,000.0	0.81	209.09	10,995.2	-113.6	239.5	-101.7	0.26	-0.12	16.24
11,025.0	0.91	212.88	11,020.2	-113.9	239.3	-102.1	0.46	0.40	15.16
11,050.0	0.86	203.91	11,045.2	-114.2	239.1	-102.4	0.59	-0.20	-35.88
11,075.0	0.93	206.10	11,070.2	-114.6	238.9	-102.8	0.31	0.28	8.76
11,100.0	0.97	210.84	11,095.2	-115.0	238.7	-103.2	0.35	0.16	18.96
11,125.0	0.93	207.53	11,120.1	-115.3	238.5	-103.5	0.27	-0.16	-13.24

Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Dominator 25 Federal #701H
Project:	Lea County, NM	TVD Reference:	RKB @ 3351.0usft (Noram #21)
Site:	Sec 25, T25S, R33E	MD Reference:	RKB @ 3351.0usft (Noram #21)
Well:	Dominator 25 Federal #701H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	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)
11,150.0	0.91	208.54	11,145.1	-115.7	238.3	-103.9	0.10	-0.08	4.04
11,175.0	0.86	208.06	11,170.1	-116.0	238.2	-104.2	0.20	-0.20	-1.92
11,200.0	0.78	211.82	11,195.1	-116.3	238.0	-104.6	0.39	-0.32	15.04
11,225.0	0.75	214.16	11,220.1	-116.6	237.8	-104.8	0.17	-0.12	9.36
11,250.0	0.77	216.58	11,245.1	-116.9	237.6	-105.1	0.15	0.08	9.68
11,275.0	0.77	216.65	11,270.1	-117.1	237.4	-105.4	0.00	0.00	0.28
11,300.0	0.69	207.92	11,295.1	-117.4	237.2	-105.7	0.55	-0.32	-34.92
11,325.0	0.69	210.56	11,320.1	-117.7	237.1	-106.0	0.13	0.00	10.56
11,350.0	0.64	202.83	11,345.1	-117.9	237.0	-106.2	0.41	-0.20	-30.92
11,375.0	0.60	190.48	11,370.1	-118.2	236.9	-106.5	0.56	-0.16	-49.40
11,400.0	0.54	171.80	11,395.1	-118.4	236.9	-106.7	0.78	-0.24	-74.72
11,425.0	0.51	170.76	11,420.1	-118.7	236.9	-106.9	0.13	-0.12	-4.16
11,450.0	0.58	178.01	11,445.1	-118.9	236.9	-107.2	0.39	0.28	29.00
11,475.0	0.69	177.90	11,470.1	-119.2	236.9	-107.5	0.44	0.44	-0.44
11,500.0	0.67	178.05	11,495.1	-119.5	237.0	-107.8	0.08	-0.08	0.60
11,525.0	0.62	166.21	11,520.1	-119.7	237.0	-108.0	0.57	-0.20	-47.36
11,550.0	0.47	173.82	11,545.1	-120.0	237.0	-108.3	0.66	-0.60	30.44
11,575.0	0.39	149.09	11,570.1	-120.2	237.1	-108.4	0.80	-0.32	-98.92
11,600.0	0.38	155.50	11,595.1	-120.3	237.2	-108.6	0.18	-0.04	25.64
11,625.0	0.36	135.03	11,620.1	-120.4	237.3	-108.7	0.53	-0.08	-81.88
11,650.0	0.30	119.22	11,645.1	-120.5	237.4	-108.8	0.43	-0.24	-63.24
11,675.0	0.44	127.71	11,670.1	-120.6	237.5	-108.9	0.60	0.56	33.96
11,700.0	0.39	120.22	11,695.1	-120.7	237.7	-109.0	0.29	-0.20	-29.96
11,725.0	0.46	108.10	11,720.1	-120.8	237.8	-109.0	0.45	0.28	-48.48
Gyro Tie-In @ 11748.0' MD / 11743.1' TVD									
11,748.0	0.32	107.78	11,743.1	-120.8	238.0	-109.1	0.61	-0.61	-1.39
11,904.0	0.30	176.40	11,899.1	-121.4	238.4	-109.6	0.22	-0.01	43.99
11,936.0	0.80	209.90	11,931.1	-121.7	238.3	-109.9	1.79	1.56	104.69
12,030.0	2.40	229.40	12,025.1	-123.5	236.5	-111.8	1.77	1.70	20.74
12,125.0	3.70	231.70	12,119.9	-126.7	232.6	-115.2	1.37	1.37	2.42
12,220.0	3.45	217.09	12,214.7	-130.9	228.4	-119.6	0.99	-0.26	-15.38
12,251.0	3.17	220.25	12,245.7	-132.3	227.3	-121.0	1.08	-0.90	10.19
12,283.0	2.51	267.21	12,277.7	-133.0	226.0	-121.8	7.32	-2.06	146.75
12,315.0	3.40	296.95	12,309.6	-132.6	224.5	-121.5	5.45	2.78	92.94
12,346.0	6.41	315.72	12,340.5	-130.9	222.5	-119.9	10.88	9.71	60.55
12,377.0	9.20	329.12	12,371.2	-127.6	220.0	-116.7	10.69	9.00	43.23
12,408.0	10.88	330.31	12,401.7	-122.9	217.3	-112.1	5.46	5.42	3.84
12,439.0	12.54	332.72	12,432.1	-117.4	214.3	-106.8	5.58	5.35	7.77
12,470.0	16.56	337.01	12,462.1	-110.3	211.0	-99.9	13.42	12.97	13.84
12,502.0	20.91	339.16	12,492.4	-100.8	207.2	-90.5	13.76	13.59	6.72
12,533.0	25.08	344.69	12,520.9	-89.3	203.5	-79.2	15.14	13.45	17.84
12,565.0	29.10	349.16	12,549.4	-75.1	200.2	-65.2	14.07	12.56	13.97
12,596.0	32.31	353.67	12,576.1	-59.4	197.9	-49.7	12.74	10.35	14.55

Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Dominator 25 Federal #701H
Project:	Lea County, NM	TVD Reference:	RKB @ 3351.0usft (Noram #21)
Site:	Sec 25, T25S, R33E	MD Reference:	RKB @ 3351.0usft (Noram #21)
Well:	Dominator 25 Federal #701H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	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)	
12,628.0	36.50	356.67	12,602.5	-41.4	196.4	-31.8	14.12	13.09	9.38	
12,660.0	40.79	357.76	12,627.5	-21.5	195.4	-11.9	13.57	13.41	3.41	
12,691.0	44.74	359.18	12,650.2	-0.4	194.9	9.1	13.12	12.74	4.58	
12,722.0	49.01	0.24	12,671.4	22.2	194.8	31.7	14.00	13.77	3.42	
12,755.0	53.22	1.49	12,692.1	47.9	195.2	57.4	13.09	12.76	3.79	
FTP @ 12759.9' MD / 12695.0' TVD										
12,759.9	53.79	1.75	12,695.0	51.8	195.3	61.3	12.38	11.65	5.22	
12,786.0	56.84	3.05	12,709.9	73.3	196.2	82.8	12.38	11.68	5.00	
12,818.0	60.40	4.68	12,726.5	100.5	198.0	110.1	11.94	11.13	5.09	
12,850.0	63.77	6.09	12,741.5	128.7	200.7	138.3	11.23	10.53	4.41	
12,881.0	67.94	6.60	12,754.2	156.8	203.8	166.5	13.54	13.45	1.65	
12,913.0	73.14	5.87	12,764.8	186.7	207.1	196.6	16.39	16.25	-2.28	
12,944.0	78.76	5.34	12,772.4	216.7	210.0	226.7	18.20	18.13	-1.71	
12,976.0	84.53	5.83	12,777.0	248.2	213.1	258.3	18.09	18.03	1.53	
13,007.0	86.72	6.67	12,779.4	278.9	216.5	289.1	7.56	7.06	2.71	
13,038.0	87.43	6.52	12,781.0	309.6	220.0	320.0	2.34	2.29	-0.48	
13,070.0	90.64	6.85	12,781.5	341.4	223.8	351.9	10.08	10.03	1.03	
13,163.0	90.70	5.79	12,780.4	433.8	234.0	444.8	1.14	0.06	-1.14	
13,258.0	88.43	358.27	12,781.1	528.7	237.4	539.7	8.27	-2.39	-7.92	
13,352.0	92.91	1.63	12,780.0	622.7	237.3	633.5	5.96	4.77	3.57	
13,447.0	92.35	4.33	12,775.7	717.4	242.2	728.4	2.90	-0.59	2.84	
13,541.0	88.12	4.80	12,775.3	811.1	249.7	822.3	4.53	-4.50	0.50	
13,635.0	88.82	3.89	12,777.8	904.8	256.8	916.3	1.22	0.74	-0.97	
13,730.0	89.30	2.58	12,779.4	999.6	262.2	1,011.2	1.47	0.51	-1.38	
13,823.0	90.56	0.11	12,779.5	1,092.6	264.4	1,104.2	2.98	1.35	-2.66	
13,918.0	91.57	358.64	12,777.7	1,187.6	263.3	1,199.0	1.88	1.06	-1.55	
14,012.0	91.90	1.56	12,774.9	1,281.5	263.5	1,292.9	3.12	0.35	3.11	
14,106.0	89.91	2.10	12,773.4	1,375.5	266.5	1,386.8	2.19	-2.12	0.57	
14,199.0	89.24	1.17	12,774.1	1,468.4	269.1	1,479.8	1.23	-0.72	-1.00	
14,292.0	88.46	359.74	12,775.9	1,561.4	269.9	1,572.7	1.75	-0.84	-1.54	
14,386.0	90.17	358.19	12,777.1	1,655.4	268.2	1,666.5	2.46	1.82	-1.65	
14,480.0	91.26	358.03	12,775.9	1,749.3	265.1	1,760.2	1.17	1.16	-0.17	
14,575.0	93.30	0.12	12,772.1	1,844.2	263.5	1,854.9	3.07	2.15	2.20	
14,670.0	91.29	358.42	12,768.3	1,939.1	262.3	1,949.6	2.77	-2.12	-1.79	
14,764.0	90.34	357.86	12,767.0	2,033.0	259.3	2,043.3	1.17	-1.01	-0.60	
14,858.0	89.72	357.60	12,766.9	2,127.0	255.6	2,136.9	0.72	-0.66	-0.28	
14,952.0	90.61	358.30	12,766.6	2,220.9	252.2	2,230.6	1.20	0.95	0.74	
15,046.0	89.72	357.68	12,766.4	2,314.8	248.9	2,324.2	1.15	-0.95	-0.66	
15,140.0	89.89	358.02	12,766.7	2,408.8	245.4	2,417.9	0.40	0.18	0.36	
15,235.0	91.74	1.18	12,765.3	2,503.8	244.7	2,512.7	3.85	1.95	3.33	
15,328.0	89.91	0.23	12,764.0	2,596.7	245.9	2,605.6	2.22	-1.97	-1.02	
15,422.0	92.44	3.80	12,762.1	2,690.6	249.2	2,699.6	4.65	2.69	3.80	
15,516.0	88.88	1.75	12,761.0	2,784.5	253.7	2,793.6	4.37	-3.79	-2.18	
15,610.0	90.59	4.08	12,761.4	2,878.4	258.5	2,887.6	3.07	1.82	2.48	

Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Dominator 25 Federal #701H
Project:	Lea County, NM	TVD Reference:	RKB @ 3351.0usft (Noram #21)
Site:	Sec 25, T25S, R33E	MD Reference:	RKB @ 3351.0usft (Noram #21)
Well:	Dominator 25 Federal #701H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

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)
15,705.0	88.46	3.69	12,762.2	2,973.1	264.9	2,982.5	2.28	-2.24	-0.41
15,796.0	90.95	4.00	12,762.7	3,063.9	271.0	3,073.5	2.76	2.74	0.34
15,891.0	88.74	359.87	12,762.9	3,158.8	274.2	3,168.5	4.93	-2.33	-4.35
15,984.0	90.64	359.69	12,763.4	3,251.8	273.9	3,261.3	2.05	2.04	-0.19
16,079.0	91.29	358.35	12,761.8	3,346.8	272.2	3,356.1	1.57	0.68	-1.41
16,173.0	90.64	357.86	12,760.3	3,440.7	269.1	3,449.8	0.87	-0.69	-0.52
16,268.0	87.65	356.82	12,761.7	3,535.6	264.7	3,544.3	3.33	-3.15	-1.09
16,362.0	89.75	357.55	12,763.8	3,629.5	260.1	3,637.8	2.37	2.23	0.78
16,456.0	91.82	358.21	12,762.5	3,723.4	256.6	3,731.5	2.31	2.20	0.70
16,483.0	92.35	357.98	12,761.5	3,750.4	255.7	3,758.4	2.14	1.96	-0.85
16,577.0	86.92	356.94	12,762.1	3,844.2	251.6	3,851.9	5.88	-5.78	-1.11
16,672.0	86.98	356.43	12,767.2	3,938.9	246.1	3,946.3	0.54	0.06	-0.54
16,766.0	87.98	356.94	12,771.3	4,032.7	240.7	4,039.6	1.19	1.06	0.54
16,860.0	88.85	357.45	12,773.9	4,126.5	236.1	4,133.1	1.07	0.93	0.54
16,954.0	90.70	358.75	12,774.3	4,220.5	233.0	4,226.8	2.41	1.97	1.38
17,048.0	91.18	359.14	12,772.8	4,314.4	231.2	4,320.6	0.66	0.51	0.41
17,143.0	92.02	359.66	12,770.1	4,409.4	230.2	4,415.4	1.04	0.88	0.55
17,237.0	93.08	0.39	12,765.9	4,503.3	230.3	4,509.2	1.37	1.13	0.78
17,332.0	93.70	1.54	12,760.3	4,598.1	231.9	4,604.0	1.37	0.65	1.21
LTP @ 17400.6' MD / 12756.6' TVD									
17,400.6	92.53	1.92	12,756.6	4,666.6	233.9	4,672.4	1.79	-1.70	0.55
17,426.0	92.10	2.06	12,755.5	4,692.0	234.8	4,697.8	1.79	-1.70	0.55
17,435.0	92.04	2.20	12,755.2	4,700.9	235.1	4,706.8	1.69	-0.67	1.56
TD @ 17481.0' MD / 12753.5' TVD									
17,490.0	92.04	2.20	12,753.3	4,755.9	237.3	4,761.8	0.00	0.00	0.00

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
11,748.0	11,743.1	-120.8	238.0	Gyro Tie-in @ 11748.0' MD / 11743.1' TVD
12,759.9	12,695.0	51.8	195.3	FTP @ 12759.9' MD / 12695.0' TVD
17,400.6	12,756.6	4,666.6	233.9	LTP @ 17400.6' MD / 12756.6' TVD
17,490.0	12,753.3	4,755.9	237.3	TD @ 17481.0' MD / 12753.5' TVD