

HOBBS OCD
MAR 14 2019
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COG Operating L L C

Lea County, NM (NAD27 NME)

Sec. 27, T 25 S. , R 33 E

Dominator 25 Fed #711H

Wellbore #1

Design: Wellbore #1

Standard Survey Report

13 September, 2018

Survey Report

Company:	COG Operating L L C	Local Co-ordinate Reference:	Well Dominator 25 Fed #711H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB=30' @ 3368.59usft (Nabors 894)
Site:	Sec. 27, T 25 S., R 33 E	MD Reference:	KB=30' @ 3368.59usft (Nabors 894)
Well:	Dominator 25 Fed #711H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1

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		Sec. 27, T 25 S., R 33 E			
Site Position:		Northing:	403,912.50 usft	Latitude:	32.10814
From:	Map	Easting:	737,924.20 usft	Longitude:	-103.56493
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.41 °

Well	Dominator 25 Fed #711H, ACTIVE					
Well Position	+N/-S	0.00 usft	Northing:	399,176.10 usft	Latitude:	32.09490
	+E/-W	0.00 usft	Easting:	749,019.80 usft	Longitude:	-103.52921
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,338.59 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	HDGM	8/8/2018	6.73	59.75	47,838

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.00	0.00	0.00	359.30	

Survey Program	Date 9/13/2018			
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
100.00	11,720.00	Gyro Surveys (Wellbore #1)	Keeper	Standard Wireline Keeper ver 1.0.2
11,899.00	17,410.00	MWD Surveys (Wellbore #1)	MWD	MWD - Standard

Survey										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Vertical Section	Dogleg Rate	Build Rate	Turn Rate	
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.26	253.38	100.00	-0.06	-0.22	-0.06	0.26	0.26	0.00	
125.00	0.11	306.46	125.00	-0.07	-0.29	-0.06	0.85	-0.60	212.32	
150.00	0.27	228.12	150.00	-0.09	-0.35	-0.09	1.08	0.64	-313.36	
175.00	0.21	249.27	175.00	-0.15	-0.44	-0.14	0.42	-0.24	84.60	
200.00	0.19	253.21	200.00	-0.18	-0.52	-0.17	0.10	-0.08	15.76	
225.00	0.32	245.14	225.00	-0.22	-0.63	-0.21	0.54	0.52	-32.28	
250.00	0.30	239.13	250.00	-0.28	-0.75	-0.27	0.15	-0.08	-24.04	
275.00	0.29	247.47	275.00	-0.34	-0.86	-0.33	0.18	-0.04	33.36	
300.00	0.32	240.83	300.00	-0.40	-0.98	-0.38	0.19	0.12	-26.56	

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Well:	Dominator 25 Fed #711H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1

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	0.34	246.77	325.00	-0.46	-1.11	-0.45	0.16	0.08	23.76
350.00	0.27	261.45	350.00	-0.50	-1.24	-0.48	0.42	-0.28	58.72
375.00	0.37	240.43	375.00	-0.55	-1.36	-0.53	0.61	0.40	-84.08
400.00	0.28	238.70	400.00	-0.62	-1.49	-0.60	0.36	-0.36	-6.92
425.00	0.24	244.56	425.00	-0.67	-1.59	-0.65	0.19	-0.16	23.44
450.00	0.29	234.83	450.00	-0.73	-1.68	-0.71	0.27	0.20	-38.92
475.00	0.26	255.26	475.00	-0.78	-1.79	-0.76	0.41	-0.12	81.72
500.00	0.18	263.31	500.00	-0.80	-1.89	-0.78	0.34	-0.32	32.20
525.00	0.13	259.58	525.00	-0.81	-1.95	-0.79	0.20	-0.20	-14.92
550.00	0.06	345.01	550.00	-0.80	-1.98	-0.78	0.56	-0.28	341.72
575.00	0.11	47.61	575.00	-0.77	-1.97	-0.75	0.39	0.20	250.40
600.00	0.05	53.87	600.00	-0.75	-1.94	-0.73	0.24	-0.24	25.04
625.00	0.08	2.72	625.00	-0.73	-1.93	-0.70	0.25	0.12	-204.60
650.00	0.16	89.17	649.99	-0.71	-1.90	-0.69	0.70	0.32	345.80
675.00	0.17	59.67	674.99	-0.69	-1.83	-0.67	0.34	0.04	-118.00
700.00	0.15	56.18	699.99	-0.65	-1.77	-0.63	0.09	-0.08	-13.96
725.00	0.27	106.18	724.99	-0.65	-1.69	-0.63	0.83	0.48	200.00
750.00	0.11	53.90	749.99	-0.65	-1.61	-0.63	0.88	-0.64	-209.12
775.00	0.12	56.87	774.99	-0.63	-1.57	-0.61	0.05	0.04	11.88
800.00	0.13	55.53	799.99	-0.59	-1.52	-0.58	0.04	0.04	-5.36
825.00	0.17	31.12	824.99	-0.55	-1.48	-0.53	0.30	0.16	-97.64
850.00	0.12	52.30	849.99	-0.50	-1.44	-0.48	0.29	-0.20	84.72
875.00	0.11	74.45	874.99	-0.48	-1.40	-0.46	0.18	-0.04	88.60
900.00	0.01	97.66	899.99	-0.47	-1.37	-0.45	0.40	-0.40	92.84
925.00	0.12	137.03	924.99	-0.49	-1.35	-0.47	0.45	0.44	157.48
950.00	0.03	221.53	949.99	-0.51	-1.34	-0.50	0.48	-0.36	338.00
975.00	0.05	32.78	974.99	-0.51	-1.34	-0.49	0.32	0.08	685.00
1,000.00	0.09	289.47	999.99	-0.49	-1.35	-0.48	0.45	0.16	-413.24
1,025.00	0.03	254.76	1,024.99	-0.49	-1.38	-0.47	0.27	-0.24	-138.84
1,050.00	0.21	228.90	1,049.99	-0.52	-1.42	-0.50	0.73	0.72	-103.44
1,075.00	0.10	229.86	1,074.99	-0.57	-1.47	-0.55	0.44	-0.44	3.84
1,100.00	0.06	309.54	1,099.99	-0.57	-1.49	-0.55	0.43	-0.16	318.72
1,125.00	0.10	253.06	1,124.99	-0.57	-1.53	-0.55	0.33	0.16	-225.92
1,150.00	0.10	272.74	1,149.99	-0.57	-1.57	-0.56	0.14	0.00	78.72
1,175.00	0.09	232.01	1,174.99	-0.59	-1.61	-0.57	0.27	-0.04	-162.92
1,200.00	0.05	275.71	1,199.99	-0.60	-1.63	-0.58	0.26	-0.16	174.80
1,225.00	0.08	243.78	1,224.99	-0.60	-1.66	-0.58	0.18	0.12	-127.72
1,250.00	0.05	311.65	1,249.99	-0.60	-1.68	-0.58	0.31	-0.12	271.48
1,275.00	0.10	174.52	1,274.99	-0.62	-1.69	-0.60	0.56	0.20	-548.52
1,300.00	0.10	108.04	1,299.99	-0.65	-1.67	-0.63	0.44	0.00	-265.92
1,325.00	0.07	215.15	1,324.99	-0.67	-1.65	-0.65	0.55	-0.12	428.44
1,350.00	0.10	144.27	1,349.99	-0.70	-1.65	-0.68	0.41	0.12	-283.52
1,375.00	0.10	94.72	1,374.99	-0.72	-1.61	-0.70	0.34	0.00	-198.20

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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	0.13	97.18	1,399.99	-0.72	-1.56	-0.70	0.12	0.12	9.84	
1,425.00	0.21	113.79	1,424.99	-0.74	-1.49	-0.72	0.37	0.32	66.44	
1,450.00	0.28	89.30	1,449.99	-0.76	-1.39	-0.74	0.50	0.28	-97.96	
1,475.00	0.32	113.94	1,474.99	-0.79	-1.27	-0.77	0.54	0.16	98.56	
1,500.00	0.34	102.21	1,499.99	-0.83	-1.13	-0.82	0.28	0.08	-46.92	
1,525.00	0.34	112.28	1,524.99	-0.88	-0.99	-0.86	0.24	0.00	40.28	
1,550.00	0.46	122.00	1,549.99	-0.96	-0.84	-0.95	0.55	0.48	38.88	
1,575.00	0.44	125.31	1,574.99	-1.07	-0.67	-1.06	0.13	-0.08	13.24	
1,600.00	0.47	113.23	1,599.99	-1.16	-0.50	-1.16	0.40	0.12	-48.32	
1,625.00	0.51	128.52	1,624.99	-1.27	-0.32	-1.27	0.55	0.16	61.16	
1,650.00	0.56	124.51	1,649.99	-1.41	-0.13	-1.41	0.25	0.20	-16.04	
1,675.00	0.82	144.83	1,674.99	-1.63	0.07	-1.63	1.41	1.04	81.28	
1,700.00	1.49	156.44	1,699.98	-2.07	0.31	-2.07	2.83	2.68	46.44	
1,725.00	1.72	163.31	1,724.97	-2.73	0.54	-2.73	1.20	0.92	27.48	
1,750.00	1.75	159.68	1,749.96	-3.44	0.78	-3.45	0.46	0.12	-14.52	
1,775.00	1.74	160.69	1,774.95	-4.16	1.04	-4.17	0.13	-0.04	4.04	
1,800.00	1.82	157.43	1,799.94	-4.89	1.32	-4.90	0.52	0.32	-13.04	
1,825.00	1.80	162.05	1,824.92	-5.63	1.59	-5.64	0.59	-0.08	18.48	
1,850.00	1.71	160.00	1,849.91	-6.35	1.84	-6.37	0.44	-0.36	-8.20	
1,875.00	1.75	159.45	1,874.90	-7.06	2.10	-7.08	0.17	0.16	-2.20	
1,900.00	1.78	163.75	1,899.89	-7.79	2.35	-7.82	0.54	0.12	17.20	
1,925.00	1.75	161.70	1,924.88	-8.52	2.57	-8.55	0.28	-0.12	-8.20	
1,950.00	1.71	172.69	1,949.87	-9.26	2.74	-9.29	1.33	-0.16	43.96	
1,975.00	1.84	194.44	1,974.85	-10.01	2.69	-10.05	2.73	0.52	87.00	
2,000.00	1.99	199.94	1,999.84	-10.81	2.44	-10.84	0.95	0.60	22.00	
2,025.00	2.02	201.74	2,024.82	-11.63	2.13	-11.65	0.28	0.12	7.20	
2,050.00	1.95	202.37	2,049.81	-12.43	1.80	-12.45	0.29	-0.28	2.52	
2,075.00	1.94	201.12	2,074.80	-13.22	1.49	-13.24	0.17	-0.04	-5.00	
2,100.00	1.86	201.19	2,099.78	-13.99	1.19	-14.01	0.32	-0.32	0.28	
2,125.00	1.99	203.59	2,124.77	-14.77	0.87	-14.78	0.61	0.52	9.60	
2,150.00	1.80	204.32	2,149.75	-15.52	0.54	-15.53	0.77	-0.76	2.92	
2,175.00	1.81	200.60	2,174.74	-16.25	0.23	-16.25	0.47	0.04	-14.88	
2,200.00	1.65	201.64	2,199.73	-16.95	-0.04	-16.95	0.65	-0.64	4.16	
2,225.00	1.64	199.75	2,224.72	-17.63	-0.29	-17.62	0.22	-0.04	-7.56	
2,250.00	1.71	202.11	2,249.71	-18.31	-0.55	-18.30	0.39	0.28	9.44	
2,275.00	1.65	200.19	2,274.70	-18.99	-0.82	-18.98	0.33	-0.24	-7.68	
2,300.00	1.65	198.49	2,299.69	-19.67	-1.05	-19.66	0.20	0.00	-6.80	
2,325.00	1.56	198.67	2,324.68	-20.33	-1.28	-20.32	0.36	-0.36	0.72	
2,350.00	1.58	198.60	2,349.67	-20.98	-1.50	-20.96	0.08	0.08	-0.28	
2,375.00	1.46	194.42	2,374.66	-21.62	-1.69	-21.60	0.65	-0.48	-16.72	
2,400.00	1.54	193.16	2,399.65	-22.25	-1.84	-22.23	0.35	0.32	-5.04	
2,425.00	1.30	190.42	2,424.64	-22.86	-1.97	-22.83	1.00	-0.96	-10.96	
2,450.00	1.23	184.49	2,449.64	-23.41	-2.04	-23.38	0.59	-0.28	-23.72	

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2,475.00	1.06	176.54	2,474.63	-23.91	-2.05	-23.88	0.93	-0.68	-31.80
2,500.00	1.05	178.66	2,499.63	-24.37	-2.03	-24.34	0.16	-0.04	8.48
2,525.00	0.92	169.29	2,524.62	-24.79	-1.99	-24.77	0.83	-0.52	-37.48
2,550.00	0.97	167.80	2,549.62	-25.20	-1.90	-25.17	0.22	0.20	-5.96
2,575.00	0.98	164.10	2,574.62	-25.61	-1.80	-25.58	0.25	0.04	-14.80
2,600.00	0.85	159.52	2,599.61	-25.99	-1.68	-25.96	0.60	-0.52	-18.32
2,625.00	0.90	148.47	2,624.61	-26.33	-1.51	-26.31	0.70	0.20	-44.20
2,650.00	0.87	146.40	2,649.61	-26.65	-1.30	-26.64	0.18	-0.12	-8.28
2,675.00	0.99	137.56	2,674.61	-26.97	-1.05	-26.96	0.75	0.48	-35.36
2,700.00	1.08	141.33	2,699.60	-27.31	-0.76	-27.30	0.45	0.36	15.08
2,725.00	1.19	145.12	2,724.60	-27.71	-0.46	-27.70	0.53	0.44	15.16
2,750.00	1.16	151.50	2,749.59	-28.15	-0.19	-28.14	0.54	-0.12	25.52
2,775.00	1.14	155.37	2,774.59	-28.60	0.03	-28.59	0.32	-0.08	15.48
2,800.00	1.26	158.75	2,799.58	-29.08	0.23	-29.08	0.56	0.48	13.52
2,825.00	1.06	172.84	2,824.58	-29.56	0.36	-29.57	1.39	-0.80	56.36
2,850.00	1.04	175.92	2,849.57	-30.02	0.41	-30.02	0.24	-0.08	12.32
2,875.00	1.11	183.77	2,874.57	-30.49	0.41	-30.49	0.65	0.28	31.40
2,900.00	1.15	183.96	2,899.56	-30.98	0.37	-30.98	0.16	0.16	0.76
2,925.00	1.00	172.28	2,924.56	-31.45	0.39	-31.45	1.06	-0.60	-46.72
2,950.00	0.96	167.44	2,949.55	-31.87	0.46	-31.87	0.37	-0.16	-19.36
2,975.00	0.98	163.02	2,974.55	-32.27	0.57	-32.28	0.31	0.08	-17.68
3,000.00	0.97	148.96	2,999.55	-32.66	0.74	-32.67	0.96	-0.04	-56.24
3,025.00	1.03	150.95	3,024.54	-33.04	0.96	-33.05	0.28	0.24	7.96
3,050.00	1.03	141.56	3,049.54	-33.41	1.21	-33.42	0.67	0.00	-37.56
3,075.00	1.08	134.10	3,074.53	-33.75	1.52	-33.77	0.58	0.20	-29.84
3,100.00	1.14	132.81	3,099.53	-34.08	1.87	-34.10	0.26	0.24	-5.16
3,125.00	1.19	132.71	3,124.52	-34.43	2.24	-34.45	0.20	0.20	-0.40
3,150.00	1.08	131.63	3,149.52	-34.76	2.61	-34.79	0.45	-0.44	-4.32
3,175.00	1.15	132.57	3,174.52	-35.09	2.97	-35.12	0.29	0.28	3.76
3,200.00	1.45	149.09	3,199.51	-35.53	3.32	-35.57	1.91	1.20	66.08
3,225.00	1.54	156.77	3,224.50	-36.11	3.61	-36.15	0.88	0.36	30.72
3,250.00	1.51	152.08	3,249.49	-36.71	3.90	-36.75	0.51	-0.12	-18.76
3,275.00	1.55	156.02	3,274.48	-37.31	4.19	-37.36	0.45	0.16	15.76
3,300.00	1.57	151.88	3,299.47	-37.92	4.49	-37.97	0.46	0.08	-16.56
3,325.00	1.58	149.01	3,324.46	-38.52	4.83	-38.57	0.32	0.04	-11.48
3,350.00	1.58	149.57	3,349.45	-39.11	5.18	-39.17	0.06	0.00	2.24
3,375.00	1.38	158.46	3,374.45	-39.69	5.46	-39.75	1.22	-0.80	35.56
3,400.00	0.88	189.17	3,399.44	-40.16	5.54	-40.22	3.07	-2.00	122.84
3,425.00	0.82	197.69	3,424.44	-40.52	5.46	-40.58	0.56	-0.24	34.08
3,450.00	0.90	201.30	3,449.44	-40.87	5.33	-40.93	0.39	0.32	14.44
3,475.00	0.71	197.41	3,474.43	-41.20	5.22	-41.26	0.79	-0.76	-15.56
3,500.00	0.49	203.79	3,499.43	-41.45	5.13	-41.51	0.92	-0.88	25.52
3,525.00	0.37	221.32	3,524.43	-41.60	5.03	-41.66	0.71	-0.48	70.12
3,550.00	0.40	217.21	3,549.43	-41.73	4.92	-41.79	0.16	0.12	-16.44

Survey Report

Company:	COG Operating L L C	Local Co-ordinate Reference:	Well Dominator 25 Fed #711H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB=30' @ 3368.59usft (Nabors 894)
Site:	Sec. 27, T 25 S. , R 33 E	MD Reference:	KB=30' @ 3368.59usft (Nabors 894)
Well:	Dominator 25 Fed #711H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1

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	0.37	216.03	3,574.43	-41.87	4.82	-41.92	0.12	-0.12	-4.72
3,600.00	0.39	215.00	3,599.43	-42.00	4.73	-42.06	0.08	0.08	-4.12
3,625.00	0.33	225.30	3,624.43	-42.12	4.63	-42.18	0.35	-0.24	41.20
3,650.00	0.39	219.35	3,649.43	-42.24	4.52	-42.29	0.28	0.24	-23.80
3,675.00	0.32	220.04	3,674.43	-42.36	4.42	-42.41	0.28	-0.28	2.76
3,700.00	0.33	236.73	3,699.43	-42.45	4.32	-42.50	0.38	0.04	66.76
3,725.00	0.43	234.65	3,724.43	-42.55	4.18	-42.59	0.40	0.40	-8.32
3,750.00	0.48	241.35	3,749.43	-42.65	4.01	-42.70	0.29	0.20	26.80
3,775.00	0.62	240.69	3,774.43	-42.77	3.80	-42.81	0.56	0.56	-2.64
3,800.00	0.62	246.41	3,799.42	-42.89	3.56	-42.93	0.25	0.00	22.88
3,825.00	0.56	261.98	3,824.42	-42.96	3.32	-43.00	0.68	-0.24	62.28
3,850.00	0.59	275.28	3,849.42	-42.96	3.07	-43.00	0.55	0.12	53.20
3,875.00	0.63	295.40	3,874.42	-42.89	2.81	-42.92	0.87	0.16	80.48
3,900.00	0.59	331.14	3,899.42	-42.72	2.63	-42.75	1.51	-0.16	142.96
3,925.00	0.79	0.04	3,924.42	-42.44	2.57	-42.47	1.58	0.80	115.60
3,950.00	0.86	14.15	3,949.41	-42.08	2.61	-42.11	0.86	0.28	56.44
3,975.00	1.05	18.54	3,974.41	-41.68	2.73	-41.71	0.81	0.76	17.56
4,000.00	1.09	19.32	3,999.41	-41.24	2.88	-41.27	0.17	0.16	3.12
4,025.00	1.05	19.89	4,024.40	-40.80	3.04	-40.84	0.17	-0.16	2.28
4,050.00	1.05	19.95	4,049.40	-40.37	3.20	-40.41	0.00	0.00	0.24
4,075.00	0.98	14.02	4,074.39	-39.95	3.33	-39.99	0.50	-0.28	-23.72
4,100.00	1.23	17.42	4,099.39	-39.49	3.46	-39.52	1.03	1.00	13.60
4,125.00	0.98	18.09	4,124.38	-39.03	3.60	-39.07	1.00	-1.00	2.68
4,150.00	0.32	332.86	4,149.38	-38.76	3.64	-38.80	3.15	-2.64	-180.92
4,175.00	0.41	262.32	4,174.38	-38.71	3.52	-38.75	1.71	0.36	-282.16
4,200.00	0.46	247.28	4,199.38	-38.76	3.34	-38.80	0.50	0.20	-60.16
4,225.00	0.46	266.42	4,224.38	-38.81	3.14	-38.84	0.61	0.00	76.56
4,250.00	0.37	242.78	4,249.38	-38.85	2.97	-38.88	0.77	-0.36	-94.56
4,275.00	0.35	248.81	4,274.38	-38.91	2.83	-38.95	0.17	-0.08	24.12
4,300.00	0.24	241.79	4,299.38	-38.97	2.71	-39.00	0.46	-0.44	-28.08
4,325.00	0.54	191.56	4,324.38	-39.11	2.64	-39.14	1.71	1.20	-200.92
4,350.00	1.77	177.14	4,349.37	-39.61	2.64	-39.64	5.02	4.92	-57.68
4,375.00	2.10	170.33	4,374.36	-40.44	2.73	-40.48	1.61	1.32	-27.24
4,400.00	2.29	166.74	4,399.34	-41.38	2.93	-41.42	0.94	0.76	-14.36
4,425.00	2.45	162.89	4,424.32	-42.38	3.20	-42.42	0.90	0.64	-15.40
4,450.00	2.61	157.85	4,449.29	-43.42	3.57	-43.46	1.10	0.64	-20.16
4,475.00	2.81	151.90	4,474.27	-44.48	4.07	-44.53	1.38	0.80	-23.80
4,500.00	2.85	147.82	4,499.24	-45.55	4.69	-45.61	0.82	0.16	-16.32
4,525.00	2.90	148.77	4,524.21	-46.62	5.35	-46.68	0.28	0.20	3.80
4,550.00	2.90	144.94	4,549.17	-47.68	6.04	-47.75	0.77	0.00	-15.32
4,575.00	2.92	149.45	4,574.14	-48.74	6.73	-48.82	0.92	0.08	18.04
4,600.00	2.86	148.99	4,599.11	-49.83	7.37	-49.91	0.26	-0.24	-1.84
4,625.00	2.86	158.38	4,624.08	-50.94	7.93	-51.03	1.87	0.00	37.56

Survey Report

Company:	COG Operating L L C	Local Co-ordinate Reference:	Well Dominator 25 Fed #711H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB=30' @ 3368.59usft (Nabors 894)
Site:	Sec. 27, T 25 S , R 33 E	MD Reference:	KB=30' @ 3368.59usft (Nabors 894)
Well:	Dominator 25 Fed #711H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1

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	2.82	160.65	4,649.05	-52.10	8.36	-52.20	0.48	-0.16	9.08
4,675.00	2.91	162.98	4,674.02	-53.29	8.75	-53.39	0.59	0.36	9.32
4,700.00	2.75	159.84	4,698.99	-54.46	9.14	-54.56	0.89	-0.64	-12.56
4,725.00	2.44	159.42	4,723.96	-55.52	9.53	-55.63	1.24	-1.24	-1.68
4,750.00	2.40	158.46	4,748.94	-56.50	9.91	-56.62	0.23	-0.16	-3.84
4,775.00	2.41	157.52	4,773.92	-57.48	10.31	-57.60	0.16	0.04	-3.76
4,800.00	2.37	155.64	4,798.89	-58.43	10.72	-58.56	0.35	-0.16	-7.52
4,825.00	2.49	160.18	4,823.87	-59.41	11.12	-59.55	0.91	0.48	18.16
4,850.00	2.73	157.14	4,848.85	-60.47	11.53	-60.61	1.11	0.96	-12.16
4,875.00	2.78	158.70	4,873.82	-61.59	11.99	-61.73	0.36	0.20	6.24
4,900.00	2.80	166.00	4,898.79	-62.74	12.35	-62.89	1.42	0.08	29.20
4,925.00	2.93	172.32	4,923.76	-63.97	12.59	-64.12	1.37	0.52	25.28
4,950.00	2.91	174.42	4,948.72	-65.23	12.73	-65.39	0.44	-0.08	8.40
4,975.00	2.74	177.76	4,973.69	-66.46	12.82	-66.62	0.95	-0.68	13.36
5,000.00	1.96	192.92	4,998.67	-67.48	12.75	-67.63	3.96	-3.12	60.64
5,025.00	1.67	209.27	5,023.66	-68.21	12.47	-68.36	2.36	-1.16	65.40
5,050.00	1.34	221.34	5,048.65	-68.75	12.10	-68.89	1.82	-1.32	48.28
5,075.00	1.26	228.24	5,073.64	-69.15	11.70	-69.29	0.70	-0.32	27.60
5,100.00	0.91	270.52	5,098.64	-69.33	11.30	-69.47	3.39	-1.40	169.12
5,125.00	0.94	287.85	5,123.64	-69.27	10.91	-69.40	1.12	0.12	69.32
5,150.00	0.97	294.63	5,148.63	-69.12	10.52	-69.24	0.47	0.12	27.12
5,175.00	0.92	296.02	5,173.63	-68.94	10.15	-69.06	0.22	-0.20	5.56
5,200.00	1.09	294.72	5,198.63	-68.75	9.75	-68.87	0.69	0.68	-5.20
5,225.00	0.81	299.59	5,223.62	-68.57	9.38	-68.68	1.16	-1.12	19.48
5,250.00	0.92	296.27	5,248.62	-68.39	9.05	-68.50	0.48	0.44	-13.28
5,275.00	0.93	303.22	5,273.62	-68.19	8.70	-68.29	0.45	0.04	27.80
5,300.00	0.96	292.19	5,298.61	-68.00	8.33	-68.10	0.74	0.12	-44.12
5,325.00	0.97	297.23	5,323.61	-67.82	7.95	-67.92	0.34	0.04	20.16
5,350.00	0.98	295.08	5,348.61	-67.64	7.57	-67.72	0.15	0.04	-8.60
5,375.00	0.98	299.76	5,373.60	-67.44	7.19	-67.52	0.32	0.00	18.72
5,400.00	0.95	298.96	5,398.60	-67.23	6.82	-67.31	0.13	-0.12	-3.20
5,425.00	0.96	299.79	5,423.60	-67.03	6.46	-67.10	0.07	0.04	3.32
5,450.00	0.56	284.44	5,448.59	-66.90	6.16	-66.97	1.78	-1.60	-61.40
5,475.00	0.49	273.19	5,473.59	-66.86	5.93	-66.93	0.50	-0.28	-45.00
5,500.00	0.52	235.58	5,498.59	-66.92	5.73	-66.98	1.31	0.12	-150.44
5,525.00	0.53	237.76	5,523.59	-67.04	5.54	-67.11	0.09	0.04	8.72
5,550.00	0.55	224.30	5,548.59	-67.19	5.36	-67.25	0.51	0.08	-53.84
5,575.00	0.51	224.32	5,573.59	-67.36	5.20	-67.41	0.16	-0.16	0.08
5,600.00	0.59	223.64	5,598.59	-67.53	5.03	-67.58	0.32	0.32	-2.72
5,625.00	0.63	232.76	5,623.59	-67.70	4.84	-67.76	0.42	0.16	36.48
5,650.00	0.52	225.87	5,648.58	-67.87	4.64	-67.92	0.52	-0.44	-27.56
5,675.00	0.46	224.38	5,673.58	-68.02	4.49	-68.07	0.25	-0.24	-5.96
5,700.00	0.42	229.71	5,698.58	-68.15	4.35	-68.20	0.23	-0.16	21.32

Survey Report

Company:	COG Operating L L C	Local Co-ordinate Reference:	Well Dominator 25 Fed #711H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB=30' @ 3368.59usft (Nabors 894)
Site:	Sec. 27, T 25 S., R 33 E	MD Reference:	KB=30' @ 3368.59usft (Nabors 894)
Well:	Dominator 25 Fed #711H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1

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	0.36	223.99	5,723.58	-68.26	4.23	-68.31	0.29	-0.24	-22.88
5,750.00	0.26	196.08	5,748.58	-68.38	4.16	-68.42	0.71	-0.40	-111.64
5,775.00	0.26	201.28	5,773.58	-68.48	4.12	-68.53	0.09	0.00	20.80
5,800.00	0.34	180.78	5,798.58	-68.61	4.10	-68.65	0.53	0.32	-82.00
5,825.00	0.45	169.01	5,823.58	-68.78	4.12	-68.83	0.54	0.44	-47.08
5,850.00	0.85	173.70	5,848.58	-69.06	4.16	-69.11	1.61	1.60	18.76
5,875.00	1.50	178.18	5,873.57	-69.57	4.19	-69.62	2.62	2.60	17.92
5,900.00	1.92	176.41	5,898.56	-70.32	4.22	-70.36	1.69	1.68	-7.08
5,925.00	2.02	176.48	5,923.55	-71.18	4.28	-71.22	0.40	0.40	0.28
5,950.00	2.01	177.29	5,948.53	-72.05	4.33	-72.10	0.12	-0.04	3.24
5,975.00	1.86	175.99	5,973.52	-72.90	4.37	-72.94	0.63	-0.60	-5.20
6,000.00	1.91	176.04	5,998.50	-73.72	4.43	-73.76	0.20	0.20	0.20
6,025.00	1.86	172.63	6,023.49	-74.53	4.51	-74.58	0.49	-0.20	-13.64
6,050.00	1.90	176.82	6,048.48	-75.35	4.59	-75.40	0.57	0.16	16.76
6,075.00	1.80	173.94	6,073.46	-76.15	4.65	-76.21	0.55	-0.40	-11.52
6,100.00	1.83	177.20	6,098.45	-76.94	4.71	-77.00	0.43	0.12	13.04
6,125.00	1.71	177.76	6,123.44	-77.71	4.75	-77.77	0.48	-0.48	2.24
6,150.00	1.70	177.63	6,148.43	-78.46	4.78	-78.51	0.04	-0.04	-0.52
6,175.00	1.74	182.53	6,173.42	-79.21	4.78	-79.26	0.61	0.16	19.60
6,200.00	1.63	181.64	6,198.41	-79.94	4.75	-79.99	0.45	-0.44	-3.56
6,225.00	1.64	180.05	6,223.40	-80.66	4.74	-80.71	0.19	0.04	-6.36
6,250.00	1.71	181.80	6,248.39	-81.39	4.73	-81.44	0.35	0.28	7.00
6,275.00	1.62	179.16	6,273.38	-82.11	4.72	-82.16	0.47	-0.36	-10.56
6,300.00	1.56	178.19	6,298.37	-82.81	4.74	-82.86	0.26	-0.24	-3.88
6,325.00	1.72	179.71	6,323.36	-83.52	4.75	-83.57	0.66	0.64	6.08
6,350.00	1.63	180.56	6,348.35	-84.25	4.75	-84.30	0.37	-0.36	3.40
6,375.00	1.71	184.42	6,373.33	-84.98	4.71	-85.03	0.55	0.32	15.44
6,400.00	1.69	184.42	6,398.32	-85.72	4.66	-85.77	0.08	-0.08	0.00
6,425.00	2.03	206.61	6,423.31	-86.48	4.43	-86.53	3.16	1.36	88.76
6,450.00	2.03	207.89	6,448.29	-87.27	4.02	-87.31	0.18	0.00	5.12
6,475.00	2.13	206.90	6,473.28	-88.08	3.61	-88.11	0.43	0.40	-3.96
6,500.00	1.98	206.86	6,498.26	-88.87	3.20	-88.91	0.60	-0.60	-0.16
6,525.00	2.18	206.88	6,523.25	-89.68	2.79	-89.71	0.80	0.80	0.08
6,550.00	2.12	208.46	6,548.23	-90.51	2.36	-90.54	0.34	-0.24	6.32
6,575.00	2.08	207.21	6,573.21	-91.32	1.93	-91.34	0.24	-0.16	-5.00
6,600.00	2.19	206.94	6,598.19	-92.15	1.50	-92.17	0.44	0.44	-1.08
6,625.00	2.02	205.04	6,623.18	-92.98	1.10	-92.99	0.73	-0.68	-7.60
6,650.00	2.06	207.78	6,648.16	-93.78	0.71	-93.78	0.42	0.16	10.96
6,675.00	2.08	206.41	6,673.15	-94.58	0.29	-94.58	0.21	0.08	-5.48
6,700.00	2.04	206.39	6,698.13	-95.38	-0.10	-95.38	0.16	-0.16	-0.08
6,725.00	2.05	205.52	6,723.11	-96.19	-0.50	-96.17	0.13	0.04	-3.48
6,750.00	2.15	206.17	6,748.10	-97.01	-0.89	-96.99	0.41	0.40	2.60
6,775.00	2.13	206.73	6,773.08	-97.85	-1.31	-97.82	0.12	-0.08	2.24
6,800.00	2.17	206.05	6,798.06	-98.69	-1.73	-98.66	0.19	0.16	-2.72

Survey Report

Company:	COG Operating L L C	Local Co-ordinate Reference:	Well Dominator 25 Fed #711H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB=30' @ 3368.59usft (Nabors 894)
Site:	Sec. 27, T 25 S., R 33 E	MD Reference:	KB=30' @ 3368.59usft (Nabors 894)
Well:	Dominator 25 Fed #711H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1

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	2.17	206.83	6,823.04	-99.53	-2.15	-99.50	0.12	0.00	3.12
6,850.00	2.09	206.32	6,848.03	-100.37	-2.56	-100.33	0.33	-0.32	-2.04
6,875.00	1.95	209.39	6,873.01	-101.14	-2.98	-101.10	0.71	-0.56	12.28
6,900.00	1.45	222.74	6,898.00	-101.75	-3.40	-101.70	2.54	-2.00	53.40
6,925.00	1.45	221.86	6,922.99	-102.22	-3.82	-102.16	0.09	0.00	-3.52
6,950.00	1.38	221.84	6,947.98	-102.68	-4.24	-102.62	0.28	-0.28	-0.08
6,975.00	1.37	223.59	6,972.98	-103.12	-4.64	-103.05	0.17	-0.04	7.00
7,000.00	1.49	224.96	6,997.97	-103.56	-5.08	-103.49	0.50	0.48	5.48
7,025.00	1.37	224.30	7,022.96	-104.01	-5.52	-103.93	0.48	-0.48	-2.64
7,050.00	1.30	229.41	7,047.95	-104.40	-5.94	-104.32	0.55	-0.28	20.44
7,075.00	1.26	229.69	7,072.95	-104.77	-6.37	-104.68	0.16	-0.16	1.12
7,100.00	1.27	228.17	7,097.94	-105.13	-6.78	-105.04	0.14	0.04	-6.08
7,125.00	1.17	237.01	7,122.94	-105.45	-7.20	-105.36	0.85	-0.40	35.36
7,150.00	1.24	228.59	7,147.93	-105.77	-7.62	-105.67	0.76	0.28	-33.68
7,175.00	1.25	234.01	7,172.92	-106.11	-8.04	-106.00	0.47	0.04	21.68
7,200.00	1.30	233.59	7,197.92	-106.44	-8.49	-106.33	0.20	0.20	-1.68
7,225.00	1.40	229.07	7,222.91	-106.81	-8.95	-106.69	0.58	0.40	-18.08
7,250.00	1.23	230.17	7,247.91	-107.18	-9.39	-107.06	0.69	-0.68	4.40
7,275.00	1.30	229.63	7,272.90	-107.54	-9.81	-107.41	0.28	0.28	-2.16
7,300.00	1.30	231.19	7,297.89	-107.90	-10.25	-107.76	0.14	0.00	6.24
7,325.00	1.28	230.91	7,322.89	-108.25	-10.68	-108.11	0.08	-0.08	-1.12
7,350.00	1.25	232.42	7,347.88	-108.59	-11.12	-108.45	0.18	-0.12	6.04
7,375.00	1.33	231.23	7,372.87	-108.94	-11.56	-108.79	0.34	0.32	-4.76
7,400.00	1.32	231.60	7,397.87	-109.30	-12.01	-109.15	0.05	-0.04	1.48
7,425.00	1.34	228.53	7,422.86	-109.67	-12.46	-109.51	0.30	0.08	-12.28
7,450.00	1.42	228.41	7,447.85	-110.07	-12.91	-109.91	0.32	0.32	-0.48
7,475.00	1.33	230.19	7,472.85	-110.46	-13.36	-110.29	0.40	-0.36	7.12
7,500.00	1.37	229.61	7,497.84	-110.84	-13.81	-110.67	0.17	0.16	-2.32
7,525.00	1.29	234.34	7,522.83	-111.20	-14.27	-111.02	0.54	-0.32	18.92
7,550.00	1.17	242.25	7,547.83	-111.48	-14.72	-111.30	0.83	-0.48	31.64
7,575.00	1.06	243.51	7,572.82	-111.71	-15.16	-111.51	0.45	-0.44	5.04
7,600.00	0.98	242.23	7,597.82	-111.91	-15.55	-111.71	0.33	-0.32	-5.12
7,625.00	1.11	245.72	7,622.81	-112.11	-15.96	-111.90	0.58	0.52	13.96
7,650.00	1.14	246.84	7,647.81	-112.31	-16.41	-112.10	0.15	0.12	4.48
7,675.00	1.16	245.33	7,672.80	-112.51	-16.87	-112.29	0.15	0.08	-6.04
7,700.00	1.28	240.25	7,697.80	-112.75	-17.34	-112.53	0.65	0.48	-20.32
7,725.00	1.21	240.73	7,722.79	-113.02	-17.82	-112.79	0.28	-0.28	1.92
7,750.00	1.32	240.24	7,747.79	-113.29	-18.30	-113.06	0.44	0.44	-1.96
7,775.00	1.29	236.78	7,772.78	-113.59	-18.78	-113.35	0.34	-0.12	-13.84
7,800.00	1.35	239.75	7,797.77	-113.89	-19.27	-113.65	0.36	0.24	11.88
7,825.00	1.28	240.61	7,822.77	-114.18	-19.77	-113.93	0.29	-0.28	3.44
7,850.00	1.36	241.84	7,847.76	-114.45	-20.27	-114.20	0.34	0.32	4.92
7,875.00	1.34	237.47	7,872.75	-114.75	-20.78	-114.49	0.42	-0.08	-17.48

Survey Report

Company:	COG Operating L L C	Local Co-ordinate Reference:	Well Dominator 25 Fed #711H
Project:	Lea County, NM (NAD27-NME)	TVD Reference:	KB=30' @ 3368.59usft (Nabors 894)
Site:	Sec. 27, T 25 S., R 33 E	MD Reference:	KB=30' @ 3368.59usft (Nabors 894)
Well:	Dominator 25 Fed #711H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1

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	1.30	236.73	7,897.75	-115.06	-21.26	-114.80	0.17	-0.16	-2.96
7,925.00	1.25	241.56	7,922.74	-115.35	-21.74	-115.08	0.47	-0.20	19.32
7,950.00	1.27	236.54	7,947.73	-115.63	-22.21	-115.35	0.45	0.08	-20.08
7,975.00	1.31	240.46	7,972.73	-115.93	-22.69	-115.64	0.39	0.16	15.68
8,000.00	1.31	236.72	7,997.72	-116.22	-23.18	-115.93	0.34	0.00	-14.96
8,025.00	1.34	236.84	8,022.71	-116.54	-23.66	-116.24	0.12	0.12	0.48
8,050.00	1.31	238.86	8,047.71	-116.85	-24.15	-116.54	0.22	-0.12	8.08
8,075.00	1.38	235.32	8,072.70	-117.17	-24.64	-116.86	0.43	0.28	-14.16
8,100.00	1.31	236.10	8,097.69	-117.50	-25.13	-117.18	0.29	-0.28	3.12
8,125.00	1.30	238.08	8,122.69	-117.81	-25.61	-117.49	0.18	-0.04	7.92
8,150.00	1.36	239.87	8,147.68	-118.11	-26.10	-117.78	0.29	0.24	7.16
8,175.00	1.36	238.99	8,172.67	-118.41	-26.62	-118.07	0.08	0.00	-3.52
8,200.00	0.95	228.36	8,197.67	-118.70	-27.02	-118.36	1.84	-1.64	-42.52
8,225.00	0.52	156.19	8,222.67	-118.94	-27.13	-118.60	3.73	-1.72	-288.68
8,250.00	0.67	129.03	8,247.67	-119.14	-26.97	-118.80	1.26	0.60	-108.64
8,275.00	0.73	127.08	8,272.66	-119.32	-26.73	-118.99	0.26	0.24	-7.80
8,300.00	0.67	129.49	8,297.66	-119.51	-26.49	-119.18	0.27	-0.24	9.64
8,325.00	0.71	126.62	8,322.66	-119.70	-26.26	-119.37	0.21	0.16	-11.48
8,350.00	0.72	123.39	8,347.66	-119.88	-26.00	-119.55	0.17	0.04	-12.92
8,375.00	0.78	121.78	8,372.66	-120.05	-25.73	-119.73	0.25	0.24	-6.44
8,400.00	0.71	125.00	8,397.65	-120.23	-25.45	-119.91	0.33	-0.28	12.88
8,425.00	0.68	127.51	8,422.65	-120.41	-25.21	-120.09	0.17	-0.12	10.04
8,450.00	0.79	120.85	8,447.65	-120.59	-24.94	-120.28	0.56	0.44	-26.64
8,475.00	0.71	117.63	8,472.65	-120.75	-24.66	-120.44	0.36	-0.32	-12.88
8,500.00	0.66	124.72	8,497.65	-120.90	-24.40	-120.60	0.39	-0.20	28.36
8,525.00	0.61	123.38	8,522.64	-121.06	-24.17	-120.75	0.21	-0.20	-5.36
8,550.00	0.46	133.86	8,547.64	-121.20	-23.99	-120.90	0.71	-0.60	41.92
8,575.00	0.58	138.10	8,572.64	-121.37	-23.83	-121.07	0.50	0.48	16.96
8,600.00	0.58	137.31	8,597.64	-121.55	-23.66	-121.25	0.03	0.00	-3.16
8,625.00	0.55	147.06	8,622.64	-121.75	-23.51	-121.45	0.40	-0.12	39.00
8,650.00	0.54	155.51	8,647.64	-121.95	-23.40	-121.66	0.32	-0.04	33.80
8,675.00	0.56	151.29	8,672.64	-122.17	-23.29	-121.87	0.18	0.08	-16.88
8,700.00	0.57	153.87	8,697.64	-122.39	-23.18	-122.09	0.11	0.04	10.32
8,725.00	0.47	140.24	8,722.64	-122.58	-23.06	-122.29	0.63	-0.40	-54.52
8,750.00	0.52	145.50	8,747.63	-122.75	-22.93	-122.46	0.27	0.20	21.04
8,775.00	0.59	133.23	8,772.63	-122.93	-22.77	-122.64	0.55	0.28	-49.08
8,800.00	0.66	106.92	8,797.63	-123.06	-22.54	-122.78	1.17	0.28	-105.24
8,825.00	0.67	111.60	8,822.63	-123.16	-22.26	-122.88	0.22	0.04	18.72
8,850.00	0.71	115.62	8,847.63	-123.28	-21.99	-123.00	0.25	0.16	16.08
8,875.00	0.67	115.65	8,872.63	-123.41	-21.72	-123.13	0.16	-0.16	0.12
8,900.00	0.76	121.39	8,897.62	-123.56	-21.44	-123.29	0.46	0.36	22.96
8,925.00	0.69	112.76	8,922.62	-123.70	-21.16	-123.43	0.52	-0.28	-34.52
8,950.00	0.66	114.85	8,947.62	-123.82	-20.89	-123.56	0.16	-0.12	8.36

Survey Report

Company:	COG Operating L L C	Local Co-ordinate Reference:	Well Dominator 25 Fed #711H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB=30' @ 3368.59usft (Nabors 894)
Site:	Sec. 27, T 25 S., R 33 E	MD Reference:	KB=30' @ 3368.59usft (Nabors 894)
Well:	Dominator 25 Fed #711H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1

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	0.51	120.20	8,972.62	-123.94	-20.67	-123.68	0.64	-0.60	21.40
9,000.00	0.51	116.07	8,997.62	-124.04	-20.47	-123.78	0.15	0.00	-16.52
9,025.00	0.42	119.12	9,022.62	-124.14	-20.29	-123.88	0.37	-0.36	12.20
9,050.00	0.37	139.16	9,047.62	-124.24	-20.16	-123.99	0.58	-0.20	80.16
9,075.00	0.40	126.15	9,072.62	-124.35	-20.03	-124.10	0.37	0.12	-52.04
9,100.00	0.36	147.35	9,097.62	-124.47	-19.92	-124.22	0.58	-0.16	84.80
9,125.00	0.37	147.07	9,122.62	-124.61	-19.84	-124.35	0.04	0.04	-1.12
9,150.00	0.44	144.36	9,147.62	-124.75	-19.74	-124.50	0.29	0.28	-10.84
9,175.00	0.41	154.58	9,172.61	-124.91	-19.64	-124.66	0.33	-0.12	40.88
9,200.00	0.40	157.76	9,197.61	-125.07	-19.57	-124.82	0.10	-0.04	12.72
9,225.00	0.52	155.73	9,222.61	-125.26	-19.49	-125.01	0.48	0.48	-8.12
9,250.00	1.21	153.77	9,247.61	-125.60	-19.33	-125.35	2.76	2.76	-7.84
9,275.00	1.42	156.22	9,272.60	-126.12	-19.09	-125.87	0.87	0.84	9.80
9,300.00	1.59	158.72	9,297.59	-126.72	-18.83	-126.48	0.73	0.68	10.00
9,325.00	1.42	156.44	9,322.59	-127.33	-18.58	-127.09	0.72	-0.68	-9.12
9,350.00	1.45	164.49	9,347.58	-127.92	-18.38	-127.69	0.81	0.12	32.20
9,375.00	1.28	172.31	9,372.57	-128.50	-18.25	-128.27	1.01	-0.68	31.28
9,400.00	1.38	182.55	9,397.56	-129.08	-18.23	-128.85	1.03	0.40	40.96
9,425.00	1.23	177.81	9,422.56	-129.65	-18.23	-129.41	0.74	-0.60	-18.96
9,450.00	1.30	185.69	9,447.55	-130.20	-18.25	-129.96	0.75	0.28	31.52
9,475.00	1.26	185.98	9,472.55	-130.75	-18.31	-130.52	0.16	-0.16	1.16
9,500.00	1.38	187.20	9,497.54	-131.33	-18.37	-131.09	0.49	0.48	4.88
9,525.00	1.28	186.83	9,522.53	-131.90	-18.45	-131.67	0.40	-0.40	-1.48
9,550.00	1.23	192.44	9,547.53	-132.44	-18.54	-132.20	0.53	-0.20	22.44
9,575.00	1.39	185.90	9,572.52	-133.00	-18.63	-132.77	0.87	0.64	-26.16
9,600.00	1.42	184.49	9,597.51	-133.61	-18.68	-133.38	0.18	0.12	-5.64
9,625.00	1.69	187.68	9,622.50	-134.29	-18.75	-134.05	1.13	1.08	12.76
9,650.00	1.64	186.60	9,647.49	-135.01	-18.84	-134.77	0.24	-0.20	-4.32
9,675.00	1.90	179.95	9,672.48	-135.78	-18.89	-135.54	1.32	1.04	-26.60
9,700.00	1.71	186.67	9,697.47	-136.56	-18.93	-136.32	1.14	-0.76	26.88
9,725.00	1.72	183.73	9,722.46	-137.31	-19.00	-137.07	0.35	0.04	-11.76
9,750.00	1.72	179.70	9,747.45	-138.06	-19.02	-137.82	0.48	0.00	-16.12
9,775.00	1.61	176.82	9,772.44	-138.78	-19.00	-138.54	0.55	-0.44	-11.52
9,800.00	1.52	179.02	9,797.43	-139.47	-18.97	-139.22	0.43	-0.36	8.80
9,825.00	1.38	171.59	9,822.42	-140.10	-18.92	-139.85	0.94	-0.56	-29.72
9,850.00	1.46	172.48	9,847.41	-140.71	-18.84	-140.47	0.33	0.32	3.56
9,875.00	1.48	176.38	9,872.40	-141.35	-18.77	-141.11	0.41	0.08	15.60
9,900.00	1.42	177.84	9,897.39	-141.98	-18.74	-141.74	0.28	-0.24	5.84
9,925.00	1.49	178.72	9,922.39	-142.61	-18.72	-142.37	0.29	0.28	3.52
9,950.00	1.56	195.72	9,947.38	-143.27	-18.81	-143.03	1.82	0.28	68.00
9,975.00	1.67	202.75	9,972.37	-143.93	-19.04	-143.69	0.91	0.44	28.12
10,000.00	1.72	204.28	9,997.36	-144.61	-19.34	-144.36	0.27	0.20	6.12
10,025.00	1.75	204.61	10,022.34	-145.30	-19.65	-145.05	0.13	0.12	1.32
10,050.00	1.71	204.68	10,047.33	-145.98	-19.96	-145.73	0.16	-0.16	0.28

Survey Report

Company:	COG Operating L L C	Local Co-ordinate Reference:	Well Dominator 25 Fed #711H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB=30' @ 3368.59usft (Nabors 894)
Site:	Sec. 27, T 25 S., R 33 E	MD Reference:	KB=30' @ 3368.59usft (Nabors 894)
Well:	Dominator 25 Fed #711H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1

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	1.95	207.96	10,072.32	-146.70	-20.32	-146.44	1.05	0.96	13.12
10,100.00	2.25	207.97	10,097.30	-147.51	-20.75	-147.24	1.20	1.20	0.04
10,125.00	2.42	210.98	10,122.28	-148.39	-21.25	-148.12	0.84	0.68	12.04
10,150.00	2.66	214.12	10,147.26	-149.33	-21.85	-149.05	1.11	0.96	12.56
10,175.00	2.85	214.93	10,172.23	-150.32	-22.53	-150.03	0.78	0.76	3.24
10,200.00	3.08	215.95	10,197.20	-151.37	-23.28	-151.07	0.94	0.92	4.08
10,225.00	3.12	215.85	10,222.16	-152.46	-24.07	-152.16	0.16	0.16	-0.40
10,250.00	3.18	215.44	10,247.12	-153.58	-24.87	-153.26	0.26	0.24	-1.64
10,275.00	2.88	216.54	10,272.09	-154.65	-25.65	-154.32	1.22	-1.20	4.40
10,300.00	2.08	210.51	10,297.06	-155.54	-26.25	-155.21	3.36	-3.20	-24.12
10,325.00	1.92	211.18	10,322.05	-156.29	-26.70	-155.96	0.65	-0.64	2.68
10,350.00	1.84	215.76	10,347.03	-156.98	-27.15	-156.63	0.68	-0.32	18.32
10,375.00	1.73	217.71	10,372.02	-157.60	-27.62	-157.25	0.50	-0.44	7.80
10,400.00	1.62	216.96	10,397.01	-158.18	-28.06	-157.83	0.45	-0.44	-3.00
10,425.00	1.61	215.53	10,422.00	-158.75	-28.48	-158.39	0.17	-0.04	-5.72
10,450.00	1.75	215.14	10,446.99	-159.35	-28.90	-158.98	0.56	0.56	-1.56
10,475.00	1.83	214.29	10,471.98	-159.99	-29.35	-159.62	0.34	0.32	-3.40
10,500.00	1.87	214.43	10,496.97	-160.66	-29.80	-160.28	0.16	0.16	0.56
10,525.00	1.87	215.35	10,521.95	-161.33	-30.27	-160.94	0.12	0.00	3.68
10,550.00	1.98	213.60	10,546.94	-162.02	-30.74	-161.63	0.50	0.44	-7.00
10,575.00	2.15	200.48	10,571.92	-162.82	-31.15	-162.43	2.00	0.68	-52.48
10,600.00	2.28	197.16	10,596.90	-163.73	-31.46	-163.34	0.73	0.52	-13.28
10,625.00	2.35	195.06	10,621.88	-164.70	-31.74	-164.30	0.44	0.28	-8.40
10,650.00	2.37	194.35	10,646.86	-165.70	-32.00	-165.29	0.14	0.08	-2.84
10,675.00	2.44	196.27	10,671.84	-166.71	-32.28	-166.30	0.43	0.28	7.68
10,700.00	2.42	195.01	10,696.82	-167.73	-32.56	-167.32	0.23	-0.08	-5.04
10,725.00	2.29	196.39	10,721.80	-168.72	-32.84	-168.31	0.57	-0.52	5.52
10,750.00	1.50	194.02	10,746.78	-169.52	-33.06	-169.10	3.17	-3.16	-9.48
10,775.00	0.40	211.62	10,771.78	-169.91	-33.18	-169.49	4.50	-4.40	70.40
10,800.00	0.23	246.00	10,796.78	-170.00	-33.28	-169.58	0.99	-0.68	137.52
10,825.00	0.33	275.96	10,821.78	-170.02	-33.39	-169.59	0.70	0.40	119.84
10,850.00	0.42	270.29	10,846.78	-170.01	-33.56	-169.58	0.39	0.36	-22.68
10,875.00	0.38	276.43	10,871.78	-170.00	-33.73	-169.57	0.23	-0.16	24.56
10,900.00	0.45	281.42	10,896.78	-169.97	-33.91	-169.54	0.31	0.28	19.96
10,925.00	0.42	285.91	10,921.78	-169.92	-34.09	-169.50	0.18	-0.12	17.96
10,950.00	0.22	304.14	10,946.78	-169.87	-34.22	-169.44	0.89	-0.80	72.92
10,975.00	0.16	303.93	10,971.78	-169.83	-34.29	-169.39	0.24	-0.24	-0.84
11,000.00	0.17	315.38	10,996.78	-169.78	-34.34	-169.35	0.14	0.04	45.80
11,025.00	0.18	357.15	11,021.77	-169.71	-34.37	-169.28	0.50	0.04	167.08
11,050.00	0.42	13.26	11,046.77	-169.59	-34.35	-169.15	1.01	0.96	64.44
11,075.00	0.51	15.13	11,071.77	-169.39	-34.30	-168.96	0.37	0.36	7.48
11,100.00	0.63	12.76	11,096.77	-169.15	-34.24	-168.72	0.49	0.48	-9.48
11,125.00	0.73	9.01	11,121.77	-168.86	-34.19	-168.43	0.44	0.40	-15.00

Survey Report

Company:	COG Operating L L C	Local Co-ordinate Reference:	Well Dominator 25 Fed #711H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB=30' @ 3368.59usft (Nabors 894)
Site:	Sec. 27, T 25 S. , R 33 E	MD Reference:	KB=30' @ 3368.59usft (Nabors 894)
Well:	Dominator 25 Fed #711H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1

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	0.84	11.67	11,146.77	-168.52	-34.13	-168.09	0.46	0.44	10.64
11,175.00	1.03	11.22	11,171.77	-168.12	-34.05	-167.69	0.76	0.76	-1.80
11,200.00	1.23	15.38	11,196.76	-167.64	-33.93	-167.21	0.86	0.80	16.64
11,225.00	1.34	13.26	11,221.75	-167.10	-33.79	-166.67	0.48	0.44	-8.48
11,250.00	1.33	15.50	11,246.75	-166.53	-33.65	-166.11	0.21	-0.04	8.96
11,275.00	1.43	19.06	11,271.74	-165.96	-33.47	-165.54	0.53	0.40	14.24
11,300.00	1.42	23.72	11,296.73	-165.38	-33.24	-164.96	0.47	-0.04	18.64
11,325.00	1.51	22.90	11,321.72	-164.79	-32.99	-164.38	0.37	0.36	-3.28
11,350.00	1.54	21.10	11,346.72	-164.18	-32.74	-163.76	0.23	0.12	-7.20
11,375.00	1.53	22.14	11,371.71	-163.55	-32.49	-163.15	0.12	-0.04	4.16
11,400.00	1.60	19.51	11,396.70	-162.92	-32.25	-162.51	0.40	0.28	-10.52
11,425.00	1.71	17.04	11,421.69	-162.23	-32.03	-161.83	0.52	0.44	-9.88
11,450.00	1.69	17.23	11,446.68	-161.52	-31.81	-161.12	0.08	-0.08	0.76
11,475.00	1.85	18.48	11,471.66	-160.79	-31.57	-160.39	0.66	0.64	5.00
11,500.00	1.91	24.79	11,496.65	-160.03	-31.27	-159.63	0.86	0.24	25.24
11,525.00	1.96	34.25	11,521.64	-159.29	-30.85	-158.91	1.29	0.20	37.84
11,550.00	2.27	43.47	11,546.62	-158.58	-30.27	-158.20	1.84	1.24	36.88
11,575.00	2.37	52.22	11,571.60	-157.91	-29.52	-157.53	1.47	0.40	35.00
11,600.00	2.40	54.04	11,596.58	-157.28	-28.69	-156.92	0.33	0.12	7.28
11,625.00	2.29	54.17	11,621.56	-156.68	-27.86	-156.33	0.44	-0.44	0.52
11,650.00	2.12	54.56	11,646.54	-156.12	-27.08	-155.78	0.68	-0.68	1.56
11,675.00	2.13	53.24	11,671.52	-155.58	-26.33	-155.24	0.20	0.04	-5.28
11,700.00	2.09	55.21	11,696.50	-155.04	-25.58	-154.71	0.33	-0.16	7.88
11,720.00	2.12	49.52	11,716.49	-154.59	-25.00	-154.27	1.06	0.15	-28.45
Tie In to Gyro Surveys @ 11720'MD									
11,899.00	1.03	351.41	11,895.43	-150.85	-22.72	-150.56	1.01	-0.61	-32.46
First MWD Survey @ 11899'MD									
11,993.00	1.24	345.07	11,989.41	-149.03	-23.11	-148.74	0.26	0.22	-6.74
12,088.00	1.11	339.40	12,084.39	-147.18	-23.70	-146.88	0.18	-0.14	-5.97
12,182.00	0.97	331.88	12,178.37	-145.62	-24.40	-145.31	0.21	-0.15	-8.00
12,213.00	1.04	334.42	12,209.37	-145.14	-24.64	-144.82	0.27	0.23	8.19
12,245.00	4.78	355.03	12,241.32	-143.55	-24.88	-143.23	11.95	11.69	64.41
12,276.00	10.01	2.20	12,272.06	-139.56	-24.89	-139.25	17.10	16.87	23.13
12,307.00	15.76	7.32	12,302.26	-132.69	-24.25	-132.38	18.89	18.55	16.52
12,338.00	20.09	8.10	12,331.75	-123.24	-22.96	-122.95	13.99	13.97	2.52
12,370.00	24.06	4.77	12,361.40	-111.29	-21.65	-111.02	13.00	12.41	-10.41
12,401.00	26.62	3.39	12,389.42	-98.06	-20.71	-97.80	8.47	8.26	-4.45
12,433.00	29.49	2.43	12,417.65	-83.03	-19.95	-82.78	9.08	8.97	-3.00
12,464.00	32.69	2.82	12,444.20	-67.04	-19.22	-66.80	10.34	10.32	1.26
12,496.00	36.97	4.03	12,470.46	-48.80	-18.11	-48.58	13.55	13.38	3.78
12,527.00	43.14	1.93	12,494.18	-28.89	-17.10	-28.68	20.37	19.90	-6.77
12,559.00	47.75	359.43	12,516.62	-6.10	-16.85	-5.89	15.44	14.41	-7.81
12,590.00	50.72	357.78	12,536.86	17.37	-17.43	17.58	10.39	9.58	-5.32
12,622.00	53.11	357.20	12,556.60	42.53	-18.53	42.75	7.60	7.47	-1.81

Survey Report

Company:	COG Operating L L C	Local Co-ordinate Reference:	Well Dominator 25 Fed #711H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB=30' @ 3368.59usft (Nabors 894)
Site:	Sec. 27, T.25 S., R.33 E	MD Reference:	KB=30' @ 3368.59usft (Nabors 894)
Well:	Dominator 25 Fed #711H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1

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)
12,631.00	53.81	357.19	12,561.96	49.75	-18.89	49.98	7.75	7.75	-0.06
FTP @ 12631'MD (330'FSL)									
12,654.00	55.59	357.18	12,575.25	68.50	-19.81	68.73	7.75	7.75	-0.06
12,686.00	58.83	357.09	12,592.58	95.36	-21.15	95.61	10.13	10.13	-0.28
12,717.00	62.11	356.67	12,607.85	122.29	-22.62	122.56	10.65	10.58	-1.35
12,748.00	65.19	357.19	12,621.61	150.03	-24.11	150.31	10.05	9.94	1.68
12,779.00	67.18	358.63	12,634.13	178.37	-25.14	178.66	7.70	6.42	4.65
12,811.00	67.90	358.97	12,646.35	207.93	-25.76	208.23	2.45	2.25	1.06
12,842.00	69.38	359.25	12,657.65	236.80	-26.21	237.10	4.85	4.77	0.90
12,873.00	74.01	359.69	12,667.38	266.22	-26.48	266.52	15.00	14.94	1.42
12,905.00	77.55	359.59	12,675.24	297.23	-26.67	297.54	11.07	11.06	-0.31
12,937.00	80.37	359.75	12,681.37	328.64	-26.85	328.94	8.83	8.81	0.50
12,969.00	83.88	1.05	12,685.75	360.33	-26.63	360.63	11.68	10.97	4.06
13,001.00	87.50	3.26	12,688.15	392.21	-25.43	392.49	13.24	11.31	6.91
13,031.00	90.08	4.63	12,688.79	422.13	-23.37	422.38	9.74	8.60	4.57
13,123.00	89.52	1.14	12,689.11	514.00	-18.74	514.19	3.84	-0.61	-3.79
13,218.00	89.44	0.72	12,689.97	608.98	-17.20	609.14	0.45	-0.08	-0.44
13,312.00	90.78	1.42	12,689.79	702.96	-15.44	703.10	1.61	1.43	0.74
13,405.00	90.50	2.23	12,688.75	795.91	-12.48	796.00	0.92	-0.30	0.87
13,497.00	90.95	1.24	12,687.59	887.86	-9.69	887.91	1.18	0.49	-1.08
13,592.00	89.52	358.82	12,687.20	982.85	-9.64	982.89	2.96	-1.51	-2.55
13,686.00	90.25	0.55	12,687.39	1,076.84	-10.16	1,076.88	2.00	0.78	1.84
13,781.00	90.39	358.91	12,686.86	1,171.83	-10.61	1,171.88	1.73	0.15	-1.73
13,874.00	90.17	358.09	12,686.40	1,264.80	-13.04	1,264.87	0.91	-0.24	-0.88
13,967.00	89.41	357.14	12,686.74	1,357.72	-16.91	1,357.82	1.31	-0.82	-1.02
14,061.00	91.20	359.03	12,686.24	1,451.66	-20.05	1,451.79	2.77	1.90	2.01
14,155.00	88.85	355.41	12,686.20	1,545.52	-24.61	1,545.71	4.59	-2.50	-3.85
14,249.00	88.88	357.16	12,688.06	1,639.30	-30.70	1,639.56	1.86	0.03	1.86
14,343.00	89.55	357.88	12,689.35	1,733.21	-34.77	1,733.50	1.05	0.71	0.77
14,437.00	89.33	359.99	12,690.27	1,827.18	-36.51	1,827.49	2.26	-0.23	2.24
14,531.00	90.64	2.21	12,690.29	1,921.15	-34.71	1,921.43	2.74	1.39	2.36
14,625.00	88.63	1.35	12,690.89	2,015.10	-31.79	2,015.34	2.33	-2.14	-0.91
14,718.00	88.35	4.99	12,693.35	2,107.91	-26.65	2,108.08	3.92	-0.30	3.91
14,812.00	88.96	4.09	12,695.55	2,201.59	-19.21	2,201.66	1.16	0.65	-0.96
14,906.00	90.11	2.74	12,696.31	2,295.41	-13.61	2,295.41	1.89	1.22	-1.44
15,000.00	92.32	0.11	12,694.32	2,389.35	-11.28	2,389.31	3.65	2.35	-2.80
15,095.00	92.44	357.84	12,690.38	2,484.25	-12.97	2,484.22	2.39	0.13	-2.39
15,188.00	92.18	358.56	12,686.63	2,577.12	-15.89	2,577.13	0.82	-0.28	0.77
15,283.00	91.23	359.01	12,683.80	2,672.06	-17.91	2,672.08	1.11	-1.00	0.47
15,377.00	87.70	358.86	12,684.68	2,766.02	-19.65	2,766.06	3.76	-3.76	-0.16
15,472.00	88.24	0.07	12,688.04	2,860.96	-20.54	2,861.00	1.39	0.57	1.27
15,566.00	88.15	0.64	12,691.00	2,954.91	-19.96	2,954.93	0.61	-0.10	0.61
15,660.00	88.10	0.08	12,694.08	3,048.86	-19.37	3,048.87	0.60	-0.05	-0.60

Survey Report

Company:	COG Operating L L C	Local Co-ordinate Reference:	Well Dominator 25 Fed #711H
Project:	Lea County, NM (NAD27.NME)	TVD Reference:	KB=30' @ 3368.59usft (Nabors 894)
Site:	Sec. 27, T 25 S , R 33 E	MD Reference:	KB=30' @ 3368.59usft (Nabors 894)
Well:	Dominator 25 Fed #711H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1

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)
15,755.00	90.90	0.17	12,694.91	3,143.84	-19.16	3,143.84	2.95	2.95	0.09
15,849.00	89.94	357.98	12,694.22	3,237.82	-20.68	3,237.83	2.54	-1.02	-2.33
15,942.00	91.48	358.32	12,693.07	3,330.76	-23.68	3,330.80	1.70	1.66	0.37
16,037.00	91.57	356.79	12,690.54	3,425.64	-27.73	3,425.72	1.61	0.09	-1.61
16,131.00	89.33	357.81	12,689.80	3,519.53	-32.16	3,519.66	2.62	-2.38	1.09
16,224.00	89.36	358.48	12,690.86	3,612.47	-35.17	3,612.63	0.72	0.03	0.72
16,319.00	90.84	359.19	12,690.70	3,707.45	-37.10	3,707.62	1.73	1.56	0.75
16,413.00	89.36	0.29	12,690.53	3,801.44	-37.53	3,801.62	1.96	-1.57	1.17
16,507.00	90.67	1.34	12,690.51	3,895.43	-36.19	3,895.58	1.79	1.39	1.12
16,601.00	89.02	1.09	12,690.76	3,989.41	-34.20	3,989.53	1.78	-1.76	-0.27
16,695.00	88.54	359.70	12,692.77	4,083.38	-33.55	4,083.48	1.56	-0.51	-1.48
16,790.00	87.62	359.16	12,695.95	4,178.32	-34.49	4,178.43	1.12	-0.97	-0.57
16,885.00	87.67	359.03	12,699.85	4,273.23	-35.99	4,273.35	0.15	0.05	-0.14
16,979.00	87.82	358.71	12,703.55	4,367.14	-37.84	4,367.27	0.38	0.16	-0.34
17,073.00	93.03	2.04	12,702.85	4,461.09	-37.23	4,461.21	6.58	5.54	3.54
17,168.00	91.04	2.21	12,699.48	4,555.96	-33.71	4,556.03	2.10	-2.09	0.18
17,263.00	91.57	2.79	12,697.32	4,650.84	-29.57	4,650.85	0.83	0.56	0.61
17,281.14	91.86	3.02	12,696.77	4,668.95	-28.65	4,668.95	2.03	1.60	1.26
LTP @ 17281'MD (330'FNL)									
17,347.00	92.91	3.85	12,694.03	4,734.63	-24.71	4,734.58	2.03	1.60	1.26
Last MWD Survey @ 17347'MD									
17,410.00	92.91	3.85	12,690.83	4,797.41	-20.48	4,797.30	0.00	0.00	0.00
PTB @ TD @ 17410'MD									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
11,720.00	11,716.49	-154.59	-25.00	Tie in to Gyro Surveys @ 11720'MD
11,899.00	11,895.43	-150.85	-22.72	First MWD Survey @ 11899'MD
12,631.00	12,561.96	49.75	-18.89	FTP @ 12631'MD (330'FSL)
17,281.14	12,696.77	4,668.95	-28.65	LTP @ 17281'MD (330'FNL)
17,347.00	12,694.03	4,734.63	-24.71	Last MWD Survey @ 17347'MD
17,410.00	12,690.83	4,797.41	-20.48	PTB @ TD @ 17410'MD

Checked By: _____ Approved By: _____ Date: _____