

30-015-43390

COG Production L L C

Eddy County, NM (NAD 27 NME)

Sec. 26, T 18S. , R 28 E

Lajitas BWQ State C #1H

NM OIL CONSERVATION
ARTESIA DISTRICT

Wellbore #1

SEP 28 2016

b
RECEIVED

Design: Wellbore #1

Survey Report - Geographic

31 May, 2016

Integrity Directional Services, LLC

Survey Report - Geographic

Company:	COG Production L L C	Local Co-ordinate Reference:	Site Sec. 26, T 18S. , R 28 E
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	KB=20' @ 3512.01ft
Site:	Sec. 26, T 18S. , R 28 E	MD Reference:	KB=20' @ 3512.01ft
Well:	Lajitas BWQ State C #1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Multi User Db

Project	Eddy County, NM (NAD 27 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. 26, T 18S. , R 28 E		
Site Position:		Northing:	623,311.40 usft
From:	Map	Easting:	557,622.00 usft
Position Uncertainty:	5.00 ft	Slot Radius:	13-3/16 "
		Latitude:	32° 42' 48.384 N
		Longitude:	104° 8' 45.556 W
		Grid Convergence:	0.10 °

Well	Lajitas BWQ State C #1H		
Well Position	+N/-S	0.01 ft	Northing: 623,311.40 usft
	+E/-W	0.00 ft	Easting: 557,622.00 usft
Position Uncertainty	5.00 ft	Wellhead Elevation:	0.00 ft
		Ground Level:	3,492.01 ft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
	IGRF2015	4/7/2016	7.38
			Dip Angle
			60.43
			Field Strength
			48,289

Design	Wellbore #1		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(ft)	(ft)	(ft)
	0.00	0.01	0.00
			Direction
			(°)
			89.21

Survey Program	Date 5/31/2016		
From	To	Survey (Wellbore)	Tool Name
(ft)	(ft)		
100.00	6,700.00	Gyros (Wellbore #1)	NS-GYRO-MS
6,860.00	14,669.00	MWD (Wellbore #1)	MWD
			Description
			North sensing gyrocompassing m/s
			MWD - Standard

Survey									
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Map	Map	Latitude	Longitude
Depth	(°)	(°)	Depth	(ft)	(ft)	Northing	Easting		
(ft)			(ft)			(usft)	(usft)		
0.00	0.00	0.00	0.00	0.01	0.00	623,311.40	557,622.00	32° 42' 48.384 N	104° 8' 45.556 W
100.00	0.66	212.91	100.00	-0.48	-0.31	623,310.92	557,621.69	32° 42' 48.380 N	104° 8' 45.560 W
200.00	0.62	144.35	199.99	-1.40	-0.31	623,310.00	557,621.69	32° 42' 48.370 N	104° 8' 45.560 W
300.00	1.73	114.37	299.97	-2.46	1.38	623,308.93	557,623.38	32° 42' 48.360 N	104° 8' 45.540 W
400.00	2.20	126.80	399.91	-4.24	4.29	623,307.16	557,626.29	32° 42' 48.342 N	104° 8' 45.506 W
500.00	1.68	114.53	499.86	-5.99	7.16	623,305.40	557,629.16	32° 42' 48.325 N	104° 8' 45.472 W
600.00	1.96	123.68	599.81	-7.55	9.92	623,303.85	557,631.92	32° 42' 48.309 N	104° 8' 45.440 W
700.00	1.89	115.31	699.75	-9.20	12.83	623,302.19	557,634.84	32° 42' 48.293 N	104° 8' 45.406 W
800.00	1.52	104.73	799.71	-10.25	15.61	623,301.15	557,637.61	32° 42' 48.283 N	104° 8' 45.374 W
900.00	1.16	120.36	899.68	-11.09	17.76	623,300.30	557,639.76	32° 42' 48.274 N	104° 8' 45.348 W
1,000.00	0.45	139.94	999.67	-11.91	18.89	623,299.49	557,640.89	32° 42' 48.266 N	104° 8' 45.335 W

Integrity Directional Services, LLC

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Well:	Lajitas BWQ State C #1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Multi User.Db

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,100.00	0.36	128.91	1,099.67	-12.40	19.39	623,298.99	557,641.39	32° 42' 48.261 N	104° 8' 45.329 W
1,200.00	0.53	137.35	1,199.66	-12.94	19.94	623,298.45	557,641.95	32° 42' 48.256 N	104° 8' 45.323 W
1,300.00	0.48	153.72	1,299.66	-13.66	20.44	623,297.74	557,642.44	32° 42' 48.249 N	104° 8' 45.317 W
1,400.00	0.48	135.81	1,399.66	-14.33	20.92	623,297.06	557,642.92	32° 42' 48.242 N	104° 8' 45.311 W
1,500.00	0.33	134.88	1,499.65	-14.84	21.42	623,296.56	557,643.42	32° 42' 48.237 N	104° 8' 45.306 W
1,600.00	0.39	130.76	1,599.65	-15.26	21.88	623,296.13	557,643.88	32° 42' 48.233 N	104° 8' 45.300 W
1,700.00	0.46	110.92	1,699.65	-15.63	22.51	623,295.77	557,644.51	32° 42' 48.229 N	104° 8' 45.293 W
1,800.00	0.46	107.82	1,799.65	-15.89	23.27	623,295.50	557,645.27	32° 42' 48.227 N	104° 8' 45.284 W
1,900.00	0.59	128.51	1,899.64	-16.34	24.05	623,295.06	557,646.05	32° 42' 48.222 N	104° 8' 45.275 W
2,000.00	0.65	139.92	1,999.64	-17.09	24.82	623,294.30	557,646.82	32° 42' 48.215 N	104° 8' 45.266 W
2,100.00	0.77	115.36	2,099.63	-17.81	25.79	623,293.58	557,647.80	32° 42' 48.208 N	104° 8' 45.254 W
2,200.00	0.81	133.24	2,199.62	-18.59	26.92	623,292.81	557,648.92	32° 42' 48.200 N	104° 8' 45.241 W
2,300.00	0.50	95.75	2,299.62	-19.11	27.86	623,292.28	557,649.87	32° 42' 48.195 N	104° 8' 45.230 W
2,400.00	0.39	104.07	2,399.61	-19.24	28.63	623,292.16	557,650.63	32° 42' 48.193 N	104° 8' 45.221 W
2,500.00	1.05	103.42	2,499.60	-19.54	29.85	623,291.86	557,651.85	32° 42' 48.190 N	104° 8' 45.207 W
2,600.00	0.70	127.49	2,599.59	-20.12	31.23	623,291.28	557,653.23	32° 42' 48.185 N	104° 8' 45.191 W
2,700.00	0.89	90.41	2,699.58	-20.50	32.49	623,290.90	557,654.49	32° 42' 48.181 N	104° 8' 45.176 W
2,800.00	1.10	101.55	2,799.56	-20.70	34.20	623,290.70	557,656.21	32° 42' 48.179 N	104° 8' 45.156 W
2,900.00	1.17	112.96	2,899.54	-21.29	36.08	623,290.11	557,658.09	32° 42' 48.173 N	104° 8' 45.134 W
3,000.00	0.89	97.62	2,999.53	-21.79	37.79	623,289.61	557,659.80	32° 42' 48.168 N	104° 8' 45.114 W
3,100.00	0.86	100.86	3,099.52	-22.03	39.30	623,289.37	557,661.30	32° 42' 48.166 N	104° 8' 45.096 W
3,200.00	0.83	115.34	3,199.51	-22.48	40.69	623,288.91	557,662.70	32° 42' 48.161 N	104° 8' 45.080 W
3,300.00	0.71	142.18	3,299.50	-23.28	41.73	623,288.11	557,663.73	32° 42' 48.153 N	104° 8' 45.068 W
3,400.00	0.61	153.35	3,399.49	-24.25	42.35	623,287.15	557,664.35	32° 42' 48.144 N	104° 8' 45.061 W
3,500.00	0.42	168.67	3,499.49	-25.08	42.66	623,286.31	557,664.66	32° 42' 48.135 N	104° 8' 45.057 W
3,600.00	0.33	190.52	3,599.48	-25.73	42.68	623,285.67	557,664.68	32° 42' 48.129 N	104° 8' 45.057 W
3,700.00	0.27	157.43	3,699.48	-26.23	42.71	623,285.17	557,664.72	32° 42' 48.124 N	104° 8' 45.057 W
3,800.00	0.26	171.52	3,799.48	-26.67	42.84	623,284.73	557,664.84	32° 42' 48.120 N	104° 8' 45.055 W
3,900.00	0.48	182.73	3,899.48	-27.31	42.85	623,284.09	557,664.85	32° 42' 48.113 N	104° 8' 45.055 W
4,000.00	0.59	190.43	3,999.48	-28.24	42.74	623,283.16	557,664.74	32° 42' 48.104 N	104° 8' 45.056 W
4,100.00	0.69	207.47	4,099.47	-29.28	42.37	623,282.12	557,664.37	32° 42' 48.094 N	104° 8' 45.061 W
4,200.00	0.77	256.50	4,199.46	-29.97	41.44	623,281.43	557,663.44	32° 42' 48.087 N	104° 8' 45.072 W
4,300.00	0.66	265.72	4,299.45	-30.17	40.21	623,281.23	557,662.21	32° 42' 48.085 N	104° 8' 45.086 W
4,400.00	0.89	238.33	4,399.45	-30.62	38.97	623,280.78	557,660.98	32° 42' 48.081 N	104° 8' 45.100 W
4,500.00	0.59	213.07	4,499.44	-31.46	38.03	623,279.94	557,660.03	32° 42' 48.072 N	104° 8' 45.111 W
4,600.00	0.61	228.74	4,599.43	-32.24	37.35	623,279.16	557,659.35	32° 42' 48.065 N	104° 8' 45.119 W
4,700.00	0.48	231.47	4,699.43	-32.85	36.62	623,278.55	557,658.62	32° 42' 48.059 N	104° 8' 45.128 W
4,800.00	0.61	267.97	4,799.42	-33.13	35.76	623,278.27	557,657.77	32° 42' 48.056 N	104° 8' 45.138 W
4,900.00	0.90	248.44	4,899.41	-33.44	34.50	623,277.96	557,656.50	32° 42' 48.053 N	104° 8' 45.153 W
5,000.00	0.54	268.24	4,999.41	-33.74	33.30	623,277.66	557,655.30	32° 42' 48.050 N	104° 8' 45.167 W
5,100.00	0.35	219.36	5,099.40	-33.99	32.63	623,277.40	557,654.64	32° 42' 48.047 N	104° 8' 45.175 W
5,200.00	0.19	252.43	5,199.40	-34.28	32.28	623,277.12	557,654.28	32° 42' 48.045 N	104° 8' 45.179 W
5,300.00	0.25	335.38	5,299.40	-34.13	32.03	623,277.27	557,654.04	32° 42' 48.046 N	104° 8' 45.182 W
5,400.00	0.63	332.84	5,399.40	-33.44	31.69	623,277.95	557,653.69	32° 42' 48.053 N	104° 8' 45.186 W
5,500.00	0.54	3.37	5,499.39	-32.48	31.47	623,278.91	557,653.47	32° 42' 48.062 N	104° 8' 45.188 W
5,600.00	0.12	316.33	5,599.39	-31.94	31.42	623,279.46	557,653.43	32° 42' 48.068 N	104° 8' 45.189 W
5,700.00	0.13	230.56	5,699.39	-31.93	31.26	623,279.46	557,653.27	32° 42' 48.068 N	104° 8' 45.191 W
5,800.00	0.44	224.11	5,799.39	-32.28	30.91	623,279.12	557,652.91	32° 42' 48.064 N	104° 8' 45.195 W
5,900.00	0.79	207.77	5,899.38	-33.17	30.32	623,278.23	557,652.32	32° 42' 48.056 N	104° 8' 45.202 W
6,000.00	2.07	202.36	5,999.35	-35.45	29.31	623,275.95	557,651.31	32° 42' 48.033 N	104° 8' 45.214 W
6,100.00	2.96	192.97	6,099.25	-39.63	28.05	623,271.76	557,650.05	32° 42' 47.992 N	104° 8' 45.229 W
6,200.00	3.09	187.70	6,199.12	-44.82	27.10	623,266.58	557,649.11	32° 42' 47.940 N	104° 8' 45.240 W
6,300.00	2.09	209.39	6,299.01	-49.08	25.85	623,262.32	557,647.85	32° 42' 47.898 N	104° 8' 45.254 W
6,400.00	1.02	185.48	6,398.98	-51.56	24.87	623,259.84	557,646.87	32° 42' 47.874 N	104° 8' 45.266 W
6,500.00	0.58	165.69	6,498.97	-52.93	24.91	623,258.47	557,646.91	32° 42' 47.860 N	104° 8' 45.266 W

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Survey Report - Geographic

Company:	COG Production L L C	Local Co-ordinate Reference:	Site Sec. 26, T 18S., R 28 E
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	KB=20' @ 3512.01ft
Site:	Sec. 26, T 18S., R 28 E	MD Reference:	KB=20' @ 3512.01ft
Well:	Lajitas BWQ State C #1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Multi User Db

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,600.00	0.59	145.33	6,598.96	-53.85	25.33	623,257.55	557,647.33	32° 42' 47.851 N	104° 8' 45.261 W
6,700.00	0.73	152.45	6,698.96	-54.83	25.91	623,256.56	557,647.92	32° 42' 47.841 N	104° 8' 45.254 W
6,860.00	1.00	95.50	6,858.94	-55.87	27.78	623,255.53	557,649.78	32° 42' 47.831 N	104° 8' 45.232 W
6,860.01	1.00	95.50	6,858.95	-55.87	27.78	623,255.53	557,649.78	32° 42' 47.831 N	104° 8' 45.232 W
First MWD Survey									
6,891.00	1.10	88.70	6,889.93	-55.89	28.34	623,255.51	557,650.35	32° 42' 47.831 N	104° 8' 45.225 W
6,923.00	3.20	91.70	6,921.91	-55.91	29.54	623,255.49	557,651.54	32° 42' 47.831 N	104° 8' 45.211 W
6,955.00	7.60	95.10	6,953.76	-56.13	32.54	623,255.27	557,654.55	32° 42' 47.828 N	104° 8' 45.176 W
6,986.00	11.70	94.30	6,984.32	-56.54	37.72	623,254.85	557,659.73	32° 42' 47.824 N	104° 8' 45.116 W
7,017.00	14.70	93.80	7,014.49	-57.04	44.78	623,254.36	557,666.79	32° 42' 47.819 N	104° 8' 45.033 W
7,049.00	17.80	90.20	7,045.21	-57.33	53.73	623,254.07	557,675.73	32° 42' 47.816 N	104° 8' 44.928 W
7,081.00	21.40	89.60	7,075.35	-57.30	64.46	623,254.09	557,686.46	32° 42' 47.816 N	104° 8' 44.803 W
7,112.00	25.70	91.00	7,103.76	-57.38	76.84	623,254.02	557,698.85	32° 42' 47.815 N	104° 8' 44.658 W
7,143.00	30.00	91.90	7,131.17	-57.75	91.32	623,253.64	557,713.32	32° 42' 47.811 N	104° 8' 44.488 W
7,175.00	33.70	92.50	7,158.34	-58.41	108.19	623,252.99	557,730.19	32° 42' 47.804 N	104° 8' 44.291 W
7,207.00	36.10	93.10	7,184.59	-59.30	126.47	623,252.09	557,748.47	32° 42' 47.795 N	104° 8' 44.077 W
7,239.00	38.60	93.50	7,210.02	-60.42	145.85	623,250.97	557,767.85	32° 42' 47.784 N	104° 8' 43.850 W
7,270.00	41.80	93.80	7,233.70	-61.70	165.82	623,249.70	557,787.82	32° 42' 47.771 N	104° 8' 43.616 W
7,302.00	45.30	93.10	7,256.89	-63.02	187.82	623,248.38	557,809.82	32° 42' 47.757 N	104° 8' 43.359 W
7,333.00	48.70	92.60	7,278.03	-64.15	210.46	623,247.25	557,832.46	32° 42' 47.746 N	104° 8' 43.094 W
7,364.00	51.90	92.60	7,297.83	-65.23	234.29	623,246.17	557,856.29	32° 42' 47.735 N	104° 8' 42.815 W
7,395.00	56.00	92.50	7,316.06	-66.34	259.32	623,245.06	557,881.32	32° 42' 47.723 N	104° 8' 42.522 W
7,427.00	59.80	91.70	7,333.07	-67.33	286.40	623,244.07	557,908.41	32° 42' 47.713 N	104° 8' 42.205 W
7,458.00	64.00	91.00	7,347.67	-67.97	313.74	623,243.43	557,935.74	32° 42' 47.706 N	104° 8' 41.885 W
7,489.00	68.30	89.90	7,360.20	-68.19	342.08	623,243.21	557,964.08	32° 42' 47.704 N	104° 8' 41.554 W
7,521.00	72.30	89.50	7,370.98	-68.03	372.20	623,243.37	557,994.20	32° 42' 47.705 N	104° 8' 41.201 W
7,553.00	75.80	89.50	7,379.77	-67.76	402.96	623,243.63	558,024.97	32° 42' 47.707 N	104° 8' 40.841 W
7,584.00	79.30	89.20	7,386.46	-67.42	433.23	623,243.98	558,055.23	32° 42' 47.710 N	104° 8' 40.487 W
7,612.00	83.20	89.30	7,390.72	-67.06	460.89	623,244.34	558,082.90	32° 42' 47.713 N	104° 8' 40.163 W
7,644.00	85.60	89.70	7,393.84	-66.78	492.74	623,244.62	558,114.74	32° 42' 47.715 N	104° 8' 39.790 W
7,706.00	86.20	90.00	7,398.27	-66.62	554.58	623,244.78	558,176.58	32° 42' 47.715 N	104° 8' 39.066 W
7,800.00	87.20	90.30	7,403.68	-66.86	648.42	623,244.53	558,270.42	32° 42' 47.711 N	104° 8' 37.968 W
7,894.00	88.00	90.50	7,407.62	-67.52	742.34	623,243.88	558,364.34	32° 42' 47.703 N	104° 8' 36.869 W
7,989.00	87.30	89.70	7,411.51	-67.68	837.25	623,243.71	558,459.25	32° 42' 47.700 N	104° 8' 35.758 W
8,084.00	86.50	88.80	7,416.65	-66.44	932.11	623,244.95	558,554.11	32° 42' 47.710 N	104° 8' 34.648 W
8,179.00	85.80	87.50	7,423.03	-63.38	1,026.84	623,248.01	558,648.84	32° 42' 47.739 N	104° 8' 33.539 W
8,274.00	86.60	88.00	7,429.33	-59.66	1,121.56	623,251.73	558,743.56	32° 42' 47.774 N	104° 8' 32.430 W
8,369.00	87.70	87.80	7,434.05	-56.19	1,216.37	623,255.21	558,838.37	32° 42' 47.807 N	104° 8' 31.320 W
8,464.00	86.80	86.50	7,438.61	-51.47	1,311.14	623,259.93	558,933.14	32° 42' 47.852 N	104° 8' 30.211 W
8,559.00	87.70	86.00	7,443.16	-45.26	1,405.83	623,266.14	559,027.83	32° 42' 47.912 N	104° 8' 29.102 W
8,653.00	87.00	86.20	7,447.51	-38.88	1,499.51	623,272.52	559,121.51	32° 42' 47.973 N	104° 8' 28.006 W
8,748.00	86.00	87.00	7,453.31	-33.25	1,594.16	623,278.15	559,216.16	32° 42' 48.027 N	104° 8' 26.898 W
8,842.00	84.70	88.50	7,460.93	-29.57	1,687.78	623,281.83	559,309.78	32° 42' 48.062 N	104° 8' 25.802 W
8,937.00	85.50	88.80	7,469.05	-27.34	1,782.40	623,284.05	559,404.40	32° 42' 48.082 N	104° 8' 24.694 W
9,031.00	86.40	89.00	7,475.68	-25.54	1,876.15	623,285.85	559,498.15	32° 42' 48.098 N	104° 8' 23.597 W
9,126.00	87.40	89.00	7,480.82	-23.89	1,971.00	623,287.51	559,592.99	32° 42' 48.113 N	104° 8' 22.487 W
9,220.00	88.10	88.60	7,484.51	-21.92	2,064.90	623,289.48	559,686.90	32° 42' 48.131 N	104° 8' 21.388 W
9,314.00	89.00	88.30	7,486.89	-19.38	2,158.84	623,292.02	559,780.84	32° 42' 48.154 N	104° 8' 20.288 W
9,408.00	90.20	88.20	7,487.55	-16.51	2,252.79	623,294.89	559,874.79	32° 42' 48.181 N	104° 8' 19.188 W
9,502.00	89.10	88.80	7,488.12	-14.05	2,346.75	623,297.35	559,968.75	32° 42' 48.203 N	104° 8' 18.089 W
9,595.50	88.51	89.49	7,490.07	-12.65	2,440.22	623,298.75	560,062.22	32° 42' 48.216 N	104° 8' 16.995 W
9595.5' MD / 7490.07' TVD Sec Line Crossing									
9,597.00	88.50	89.50	7,490.11	-12.64	2,441.72	623,298.76	560,063.72	32° 42' 48.216 N	104° 8' 16.977 W
9,691.00	89.60	89.40	7,491.67	-11.74	2,535.70	623,299.66	560,157.70	32° 42' 48.223 N	104° 8' 15.877 W
9,785.00	88.00	88.50	7,493.64	-10.01	2,629.66	623,301.38	560,251.66	32° 42' 48.238 N	104° 8' 14.777 W

Integrity Directional Services, LLC

Survey Report - Geographic

Company:	COG Production L L C	Local Co-ordinate Reference:	Site Sec. 26, T 18S., R 28 E
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	KB=20' @ 3512.01ft
Site:	Sec. 26, T 18S., R 28 E	MD Reference:	KB=20' @ 3512.01ft
Well:	Lajitas BWQ State C #1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM-5000.1 Multi User Db

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,879.00	87.60	87.30	7,497.25	-6.57	2,723.53	623,304.83	560,345.52	32° 42' 48.271 N	104° 8' 13.678 W
9,974.00	88.50	87.40	7,500.48	-2.18	2,818.37	623,309.21	560,440.37	32° 42' 48.312 N	104° 8' 12.568 W
10,068.00	89.70	87.30	7,501.96	2.16	2,912.26	623,313.56	560,534.25	32° 42' 48.354 N	104° 8' 11.469 W
10,163.00	88.80	88.40	7,503.20	5.73	3,007.18	623,317.12	560,629.18	32° 42' 48.387 N	104° 8' 10.358 W
10,258.00	87.60	89.30	7,506.18	7.63	3,102.11	623,319.03	560,724.11	32° 42' 48.404 N	104° 8' 9.247 W
10,353.00	88.30	89.50	7,509.58	8.63	3,197.04	623,320.02	560,819.04	32° 42' 48.412 N	104° 8' 8.136 W
10,448.00	90.20	90.00	7,510.83	9.04	3,292.03	623,320.44	560,914.03	32° 42' 48.415 N	104° 8' 7.024 W
10,542.00	90.40	90.20	7,510.33	8.88	3,386.03	623,320.27	561,008.02	32° 42' 48.411 N	104° 8' 5.924 W
10,636.00	89.20	90.20	7,510.66	8.55	3,480.03	623,319.95	561,102.02	32° 42' 48.406 N	104° 8' 4.824 W
10,729.00	87.60	90.50	7,513.26	7.98	3,572.98	623,319.38	561,194.98	32° 42' 48.399 N	104° 8' 3.736 W
10,824.00	88.50	90.60	7,516.49	7.07	3,667.92	623,318.47	561,289.92	32° 42' 48.388 N	104° 8' 2.624 W
10,919.00	87.00	89.80	7,520.22	6.74	3,762.85	623,318.14	561,384.84	32° 42' 48.383 N	104° 8' 1.513 W
11,014.00	88.50	90.00	7,523.95	6.90	3,857.77	623,318.30	561,479.77	32° 42' 48.383 N	104° 8' 0.402 W
11,108.00	88.00	89.60	7,526.82	7.23	3,951.73	623,318.63	561,573.72	32° 42' 48.384 N	104° 7' 59.303 W
11,202.00	88.90	89.70	7,529.36	7.81	4,045.69	623,319.20	561,667.68	32° 42' 48.388 N	104° 7' 58.203 W
11,297.00	88.20	89.00	7,531.77	8.88	4,140.65	623,320.28	561,762.64	32° 42' 48.397 N	104° 7' 57.091 W
11,420.00	89.60	89.10	7,534.13	10.92	4,263.61	623,322.32	561,885.60	32° 42' 48.415 N	104° 7' 55.652 W
11,514.00	88.50	88.70	7,535.69	12.73	4,357.58	623,324.12	561,979.57	32° 42' 48.431 N	104° 7' 54.552 W
11,609.00	87.20	87.30	7,539.25	16.04	4,452.45	623,327.44	562,074.44	32° 42' 48.462 N	104° 7' 53.442 W
11,704.00	87.80	87.20	7,543.39	20.59	4,547.25	623,331.99	562,169.24	32° 42' 48.505 N	104° 7' 52.332 W
11,799.00	88.50	87.40	7,546.46	25.06	4,642.09	623,336.46	562,264.08	32° 42' 48.548 N	104° 7' 51.222 W
11,893.00	89.20	87.50	7,548.35	29.25	4,735.98	623,340.64	562,357.97	32° 42' 48.588 N	104° 7' 50.123 W
11,988.00	88.60	87.50	7,550.17	33.39	4,830.87	623,344.79	562,452.86	32° 42' 48.627 N	104° 7' 49.012 W
12,083.00	89.20	87.40	7,552.00	37.62	4,925.76	623,349.01	562,547.75	32° 42' 48.667 N	104° 7' 47.901 W
12,177.00	89.90	87.40	7,552.73	41.88	5,019.66	623,353.28	562,641.65	32° 42' 48.707 N	104° 7' 46.802 W
12,272.00	88.90	86.60	7,553.73	46.85	5,114.52	623,358.25	562,736.51	32° 42' 48.755 N	104° 7' 45.692 W
12,366.00	89.60	86.20	7,554.96	52.75	5,208.33	623,364.15	562,830.32	32° 42' 48.811 N	104° 7' 44.594 W
12,461.00	91.20	86.10	7,554.30	59.13	5,303.11	623,370.53	562,925.10	32° 42' 48.872 N	104° 7' 43.484 W
12,555.00	90.20	86.80	7,553.15	64.95	5,396.92	623,376.35	563,018.91	32° 42' 48.928 N	104° 7' 42.386 W
12,650.00	89.30	87.20	7,553.56	69.92	5,491.79	623,381.32	563,113.78	32° 42' 48.976 N	104° 7' 41.276 W
12,744.00	89.00	87.80	7,554.96	74.02	5,585.68	623,385.42	563,207.68	32° 42' 49.014 N	104° 7' 40.176 W
12,839.00	88.30	89.00	7,557.19	76.67	5,680.62	623,388.07	563,302.61	32° 42' 49.039 N	104° 7' 39.065 W
12,934.00	89.70	89.00	7,558.85	78.33	5,775.59	623,389.73	563,397.58	32° 42' 49.053 N	104° 7' 37.954 W
13,028.00	88.90	88.60	7,560.00	80.30	5,869.56	623,391.70	563,491.55	32° 42' 49.071 N	104° 7' 36.854 W
13,122.00	89.30	90.40	7,561.48	81.12	5,963.54	623,392.52	563,585.53	32° 42' 49.077 N	104° 7' 35.754 W
13,217.00	89.80	90.50	7,562.22	80.37	6,058.53	623,391.77	563,680.52	32° 42' 49.068 N	104° 7' 34.642 W
13,311.00	88.70	89.30	7,563.45	80.54	6,152.52	623,391.93	563,774.51	32° 42' 49.068 N	104° 7' 33.542 W
13,405.00	88.40	88.90	7,565.83	82.01	6,246.48	623,393.41	563,868.47	32° 42' 49.081 N	104° 7' 32.442 W
13,499.00	89.00	88.10	7,567.97	84.47	6,340.42	623,395.87	563,962.41	32° 42' 49.103 N	104° 7' 31.342 W
13,595.00	88.30	87.20	7,570.23	88.41	6,436.31	623,399.81	564,058.30	32° 42' 49.140 N	104° 7' 30.220 W
13,689.00	88.90	86.60	7,572.52	93.49	6,530.15	623,404.89	564,152.14	32° 42' 49.189 N	104° 7' 29.121 W
13,784.00	88.90	85.90	7,574.35	99.70	6,624.93	623,411.10	564,246.92	32° 42' 49.248 N	104° 7' 28.012 W
13,879.00	88.40	85.90	7,576.59	106.49	6,719.66	623,417.89	564,341.65	32° 42' 49.314 N	104° 7' 26.903 W
13,974.00	87.80	86.20	7,579.74	113.03	6,814.38	623,424.43	564,436.37	32° 42' 49.377 N	104° 7' 25.794 W
14,067.00	88.80	86.40	7,582.49	119.03	6,907.14	623,430.43	564,529.13	32° 42' 49.434 N	104° 7' 24.708 W
14,160.00	89.10	86.60	7,584.20	124.71	6,999.95	623,436.11	564,621.94	32° 42' 49.489 N	104° 7' 23.622 W
14,255.00	88.50	87.10	7,586.19	129.93	7,094.79	623,441.33	564,716.78	32° 42' 49.538 N	104° 7' 22.512 W
14,350.00	88.30	87.50	7,588.84	134.40	7,189.65	623,445.80	564,811.63	32° 42' 49.581 N	104° 7' 21.401 W
14,414.88	88.85	87.36	7,590.46	137.31	7,254.44	623,448.71	564,876.43	32° 42' 49.608 N	104° 7' 20.643 W
14414'MD / 7590.46'TVD Hardline Crossing									
14,445.00	89.10	87.30	7,591.00	138.71	7,284.52	623,450.11	564,906.51	32° 42' 49.621 N	104° 7' 20.291 W
14,507.00	89.70	87.30	7,591.65	141.63	7,346.45	623,453.03	564,968.44	32° 42' 49.649 N	104° 7' 19.566 W
14,598.00	91.30	87.20	7,590.85	146.00	7,437.34	623,457.39	565,059.33	32° 42' 49.691 N	104° 7' 18.502 W
14,598.03	91.30	87.20	7,590.85	146.00	7,437.37	623,457.39	565,059.36	32° 42' 49.691 N	104° 7' 18.502 W

Final MWD Survey

Integrity Directional Services, LLC

Survey Report - Geographic

Company:	COG Production L L C	Local Co-ordinate Reference:	Site Sec. 26, T 18S. , R 28 E
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	KB=20' @ 3512.01ft
Site:	Sec. 26, T 18S. , R 28 E	MD Reference:	KB=20' @ 3512.01ft
Well:	Lajitas BWQ State C #1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM.5000.1 Multi User Db

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
14,669.00	91.30	87.20	7,589.24	149.46	7,508.24	623,460.86	565,130.22	32° 42' 49.723 N	104° 7' 17.672 W
Projection to TD									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
6,860.01	6,858.95	-55.87	27.78	First MWD Survey
9,595.50	7,490.07	-12.65	2,440.22	9595.5'MD / 7490.07'TVD Sec Line Crossing
14,414.88	7,590.46	137.31	7,254.44	14414'MD / 7590.46'TVD Hardline Crossing
14,598.03	7,590.85	146.00	7,437.37	Final MWD Survey
14,669.00	7,589.24	149.46	7,508.24	Projection to TD

Checked By: _____ Approved By: _____ Date: _____