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COG Operating LLC

Lea County, NM

Sec 31, T20-S, R35-E

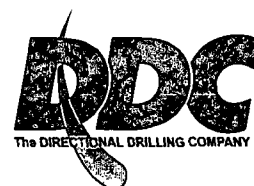
Stratojet 31 State Com #6H

Wellbore #1

Design: Wellbore #1

Survey Report - Geographic

04 May, 2015



AUG 31 2015

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HP
Survey Report - Geographic



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well Stratojet 31 State Com #6H
Project:	Lea County, NM	TVD Reference:	Well @ 3742.0usft (Ensign #772)
Site:	Sec 31, T20-S, R35-E	MD Reference:	Well @ 3742.0usft (Ensign #772)
Well:	Stratojet 31 State Com #6H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Compass

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 31, T20-S, R35-E		
Site Position:		Northing:	555,102.30 usft
From:	Map	Easting:	758,615.60 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 31' 23.832 N
		Longitude:	103° 29' 39.436 W
		Grid Convergence:	0.45 °

Well	Stratojet 31 State Com #6H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
		Latitude:	32° 31' 23.832 N
		Longitude:	103° 29' 39.436 W
		Ground Level:	3,711.0 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	4/7/2015	7.10
			Dip Angle
			(°)
			60.38
			Field Strength
			(nT)
			48,420

Design	Wellbore #1		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			0.76

Survey Program	Date 5/4/2015		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		Description
165.0	15,250.0	MWD (Wellbore #1)	MWD default
			MWD - Standard

Survey									
Measured	Inclination	Azimuth	Vertical			Map	Map		
Depth	(°)	(°)	Depth	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
(usft)			(usft)	(usft)	(usft)	(usft)	(usft)		
0.0	0.00	0.00	0.0	0.0	0.0	555,102.30	758,615.60	32° 31' 23.832 N	103° 29' 39.436 W
165.0	0.80	81.50	165.0	0.2	1.1	555,102.47	758,616.74	32° 31' 23.834 N	103° 29' 39.423 W
First MWD Survey @ 165' MD / 165' TVD									
256.0	0.90	75.00	256.0	0.4	2.5	555,102.75	758,618.05	32° 31' 23.837 N	103° 29' 39.407 W
319.0	1.30	61.80	319.0	0.9	3.6	555,103.22	758,619.16	32° 31' 23.841 N	103° 29' 39.394 W
408.0	1.00	48.80	408.0	1.9	5.0	555,104.21	758,620.64	32° 31' 23.851 N	103° 29' 39.377 W
469.0	1.00	35.80	468.9	2.7	5.8	555,104.99	758,621.35	32° 31' 23.859 N	103° 29' 39.369 W
561.0	1.10	28.60	560.9	4.1	6.6	555,106.41	758,622.24	32° 31' 23.873 N	103° 29' 39.358 W
652.0	0.70	58.70	651.9	5.2	7.5	555,107.47	758,623.13	32° 31' 23.883 N	103° 29' 39.348 W
742.0	0.80	64.70	741.9	5.7	8.6	555,108.02	758,624.17	32° 31' 23.888 N	103° 29' 39.335 W
831.0	1.10	73.80	830.9	6.2	10.0	555,108.53	758,625.55	32° 31' 23.893 N	103° 29' 39.319 W
926.0	0.30	23.00	925.9	6.7	10.9	555,109.01	758,626.53	32° 31' 23.898 N	103° 29' 39.308 W



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Survey Report - Geographic



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Site:	Sec 31, T20-S, R35-E	MD Reference:	Well @ 3742.0usft (Ensign #772)
Well:	Stratojet 31 State Com #6H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Compass

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,020.0	0.30	277.70	1,019.9	7.0	10.8	555,109.27	758,626.38	32° 31' 23.901 N	103° 29' 39.310 W
1,115.0	0.10	49.70	1,114.9	7.1	10.6	555,109.36	758,626.20	32° 31' 23.901 N	103° 29' 39.312 W
1,209.0	0.40	254.70	1,208.9	7.0	10.3	555,109.32	758,625.94	32° 31' 23.901 N	103° 29' 39.315 W
1,304.0	0.30	294.60	1,303.9	7.0	9.8	555,109.34	758,625.40	32° 31' 23.901 N	103° 29' 39.321 W
1,398.0	0.80	299.70	1,397.9	7.5	9.0	555,109.77	758,624.60	32° 31' 23.906 N	103° 29' 39.330 W
1,493.0	1.10	292.80	1,492.9	8.1	7.6	555,110.45	758,623.19	32° 31' 23.913 N	103° 29' 39.347 W
1,587.0	1.30	279.80	1,586.9	8.7	5.7	555,110.98	758,621.30	32° 31' 23.918 N	103° 29' 39.369 W
1,682.0	2.40	286.70	1,681.8	9.4	2.7	555,111.74	758,618.34	32° 31' 23.926 N	103° 29' 39.403 W
1,776.0	2.70	282.50	1,775.7	10.5	-1.3	555,112.78	758,614.29	32° 31' 23.936 N	103° 29' 39.450 W
1,844.0	3.00	284.00	1,843.6	11.3	-4.6	555,113.56	758,611.00	32° 31' 23.944 N	103° 29' 39.489 W
1,928.0	3.00	282.10	1,927.5	12.2	-8.9	555,114.55	758,606.72	32° 31' 23.954 N	103° 29' 39.539 W
2,022.0	1.50	269.10	2,021.4	12.7	-12.5	555,115.05	758,603.08	32° 31' 23.960 N	103° 29' 39.581 W
2,116.0	1.70	201.40	2,115.4	11.4	-14.3	555,113.73	758,601.34	32° 31' 23.947 N	103° 29' 39.602 W
2,210.0	3.00	190.50	2,209.3	7.7	-15.2	555,110.01	758,600.39	32° 31' 23.910 N	103° 29' 39.613 W
2,305.0	2.90	191.90	2,304.2	2.9	-16.2	555,105.22	758,599.44	32° 31' 23.863 N	103° 29' 39.625 W
2,401.0	1.50	191.80	2,400.1	-0.7	-16.9	555,101.61	758,598.68	32° 31' 23.827 N	103° 29' 39.634 W
2,495.0	0.20	63.10	2,494.1	-1.8	-17.0	555,100.48	758,598.57	32° 31' 23.816 N	103° 29' 39.635 W
2,590.0	1.60	36.50	2,589.1	-0.7	-16.1	555,101.62	758,599.51	32° 31' 23.827 N	103° 29' 39.624 W
2,684.0	1.40	59.40	2,683.1	1.0	-14.3	555,103.26	758,601.28	32° 31' 23.843 N	103° 29' 39.603 W
2,778.0	0.90	174.20	2,777.1	0.8	-13.3	555,103.11	758,602.34	32° 31' 23.842 N	103° 29' 39.591 W
2,873.0	2.30	203.20	2,872.0	-1.7	-13.9	555,100.62	758,601.67	32° 31' 23.817 N	103° 29' 39.599 W
2,967.0	1.30	197.00	2,966.0	-4.4	-15.0	555,097.86	758,600.61	32° 31' 23.790 N	103° 29' 39.611 W
3,062.0	1.70	51.50	3,061.0	-4.6	-14.2	555,097.71	758,601.40	32° 31' 23.788 N	103° 29' 39.602 W
3,156.0	3.00	36.50	3,154.9	-1.7	-11.6	555,100.56	758,603.95	32° 31' 23.816 N	103° 29' 39.572 W
3,250.0	2.90	52.30	3,248.8	1.7	-8.3	555,103.99	758,607.30	32° 31' 23.850 N	103° 29' 39.533 W
3,345.0	1.60	120.40	3,343.7	2.5	-5.3	555,104.79	758,610.34	32° 31' 23.857 N	103° 29' 39.497 W
3,439.0	3.20	153.60	3,437.6	-0.5	-3.0	555,101.77	758,612.64	32° 31' 23.827 N	103° 29' 39.471 W
3,534.0	3.20	159.40	3,532.5	-5.4	-0.8	555,096.91	758,614.76	32° 31' 23.779 N	103° 29' 39.446 W
3,629.0	1.10	170.80	3,627.4	-8.8	0.2	555,093.53	758,615.83	32° 31' 23.746 N	103° 29' 39.434 W
3,724.0	1.30	181.20	3,722.4	-10.7	0.4	555,091.55	758,615.96	32° 31' 23.726 N	103° 29' 39.433 W
3,818.0	1.20	182.10	3,816.3	-12.8	0.3	555,089.50	758,615.90	32° 31' 23.706 N	103° 29' 39.434 W
3,913.0	1.10	192.30	3,911.3	-14.7	0.1	555,087.62	758,615.67	32° 31' 23.687 N	103° 29' 39.437 W
4,007.0	1.00	176.60	4,005.3	-16.4	-0.1	555,085.92	758,615.52	32° 31' 23.670 N	103° 29' 39.438 W
4,102.0	1.10	196.50	4,100.3	-18.1	-0.3	555,084.22	758,615.31	32° 31' 23.654 N	103° 29' 39.441 W
4,197.0	1.00	212.00	4,195.3	-19.7	-1.0	555,082.64	758,614.62	32° 31' 23.638 N	103° 29' 39.449 W
4,291.0	0.70	201.10	4,289.3	-20.9	-1.6	555,081.41	758,613.98	32° 31' 23.626 N	103° 29' 39.457 W
4,384.0	0.70	182.10	4,382.3	-22.0	-1.8	555,080.31	758,613.75	32° 31' 23.615 N	103° 29' 39.460 W
4,479.0	0.80	197.70	4,477.3	-23.2	-2.1	555,079.10	758,613.53	32° 31' 23.603 N	103° 29' 39.462 W
4,574.0	1.00	203.00	4,572.2	-24.6	-2.6	555,077.70	758,613.00	32° 31' 23.589 N	103° 29' 39.469 W
4,668.0	1.10	208.60	4,666.2	-26.1	-3.3	555,076.16	758,612.25	32° 31' 23.574 N	103° 29' 39.478 W
4,763.0	1.30	188.20	4,761.2	-28.0	-3.9	555,074.29	758,611.66	32° 31' 23.556 N	103° 29' 39.485 W
4,857.0	1.10	177.50	4,855.2	-30.0	-4.1	555,072.33	758,611.55	32° 31' 23.536 N	103° 29' 39.486 W
4,953.0	1.00	179.30	4,951.2	-31.7	-4.0	555,070.57	758,611.60	32° 31' 23.519 N	103° 29' 39.486 W
5,047.0	1.00	204.80	5,045.2	-33.3	-4.3	555,069.01	758,611.26	32° 31' 23.503 N	103° 29' 39.490 W
5,141.0	0.80	189.50	5,139.1	-34.7	-4.8	555,067.62	758,610.81	32° 31' 23.490 N	103° 29' 39.495 W
5,236.0	0.90	213.90	5,234.1	-36.0	-5.3	555,066.34	758,610.28	32° 31' 23.477 N	103° 29' 39.501 W
5,331.0	1.10	216.50	5,329.1	-37.3	-6.3	555,064.99	758,609.33	32° 31' 23.464 N	103° 29' 39.513 W
5,425.0	1.40	212.70	5,423.1	-39.0	-7.4	555,063.30	758,608.17	32° 31' 23.447 N	103° 29' 39.526 W
5,520.0	1.20	205.10	5,518.1	-40.9	-8.5	555,061.42	758,607.12	32° 31' 23.429 N	103° 29' 39.539 W
5,613.0	1.60	218.30	5,611.0	-42.8	-9.7	555,059.52	758,605.90	32° 31' 23.410 N	103° 29' 39.553 W
5,708.0	1.40	216.90	5,706.0	-44.7	-11.2	555,057.55	758,604.38	32° 31' 23.391 N	103° 29' 39.571 W
5,802.0	1.50	211.40	5,800.0	-46.7	-12.5	555,055.58	758,603.05	32° 31' 23.371 N	103° 29' 39.587 W
5,897.0	2.10	205.60	5,894.9	-49.3	-13.9	555,052.95	758,601.65	32° 31' 23.345 N	103° 29' 39.603 W
5,940.0	2.40	208.10	5,937.9	-50.9	-14.7	555,051.45	758,600.89	32° 31' 23.330 N	103° 29' 39.613 W
6,054.0	2.60	207.60	6,051.8	-55.3	-17.0	555,047.05	758,598.57	32° 31' 23.287 N	103° 29' 39.640 W



HP
Survey Report - Geographic



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well Stratojet 31 State Com #6H
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Site:	Sec 31, T20-S, R35-E	MD Reference:	Well @ 3742.0usft (Ensign #772)
Well:	Stratojet 31 State Com #6H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Compass

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,148.0	2.10	190.30	6,145.7	-58.8	-18.3	555,043.47	758,597.27	32° 31' 23.252 N	103° 29' 39.656 W
6,188.9	1.40	191.86	6,186.6	-60.1	-18.6	555,042.24	758,597.03	32° 31' 23.240 N	103° 29' 39.658 W
Crossed 330' Hard Line @ 6189' MD / 6187' TVD									
6,242.0	0.50	200.40	6,239.7	-60.9	-18.8	555,041.39	758,596.82	32° 31' 23.231 N	103° 29' 39.661 W
6,337.0	0.30	235.90	6,334.7	-61.4	-19.1	555,040.86	758,596.47	32° 31' 23.226 N	103° 29' 39.665 W
6,432.0	0.40	243.10	6,429.7	-61.7	-19.6	555,040.57	758,595.97	32° 31' 23.223 N	103° 29' 39.671 W
6,526.0	0.30	241.10	6,523.7	-62.0	-20.1	555,040.30	758,595.46	32° 31' 23.221 N	103° 29' 39.677 W
6,619.0	0.30	261.70	6,616.7	-62.2	-20.6	555,040.15	758,595.01	32° 31' 23.219 N	103° 29' 39.682 W
6,713.0	0.40	238.50	6,710.7	-62.4	-21.1	555,039.94	758,594.48	32° 31' 23.217 N	103° 29' 39.688 W
6,807.0	0.50	247.30	6,804.7	-62.7	-21.8	555,039.61	758,593.82	32° 31' 23.214 N	103° 29' 39.696 W
6,901.0	0.30	248.70	6,898.7	-62.9	-22.4	555,039.37	758,593.22	32° 31' 23.212 N	103° 29' 39.703 W
6,995.0	0.60	279.30	6,992.7	-62.9	-23.1	555,039.36	758,592.50	32° 31' 23.211 N	103° 29' 39.712 W
7,089.0	0.60	258.00	7,086.7	-63.0	-24.1	555,039.33	758,591.53	32° 31' 23.211 N	103° 29' 39.723 W
7,184.0	0.70	266.60	7,181.7	-63.1	-25.1	555,039.20	758,590.47	32° 31' 23.210 N	103° 29' 39.735 W
7,279.0	0.90	242.40	7,276.7	-63.5	-26.4	555,038.82	758,589.23	32° 31' 23.206 N	103° 29' 39.750 W
7,373.0	0.90	238.90	7,370.6	-64.2	-27.7	555,038.09	758,587.94	32° 31' 23.199 N	103° 29' 39.765 W
7,468.0	0.80	220.80	7,465.6	-65.1	-28.7	555,037.21	758,586.87	32° 31' 23.191 N	103° 29' 39.778 W
7,563.0	1.10	232.70	7,560.6	-66.2	-29.9	555,036.15	758,585.71	32° 31' 23.180 N	103° 29' 39.791 W
7,657.0	1.10	232.00	7,654.6	-67.3	-31.3	555,035.05	758,584.28	32° 31' 23.169 N	103° 29' 39.808 W
7,751.0	1.10	217.80	7,748.6	-68.5	-32.6	555,033.78	758,583.02	32° 31' 23.157 N	103° 29' 39.823 W
7,846.0	1.20	223.60	7,843.6	-70.0	-33.8	555,032.34	758,581.77	32° 31' 23.143 N	103° 29' 39.838 W
7,940.0	1.10	228.00	7,937.5	-71.3	-35.2	555,031.02	758,580.42	32° 31' 23.130 N	103° 29' 39.853 W
8,034.0	1.10	219.00	8,031.5	-72.6	-36.4	555,029.72	758,579.19	32° 31' 23.117 N	103° 29' 39.868 W
8,129.0	0.10	247.80	8,126.5	-73.3	-37.1	555,028.98	758,578.53	32° 31' 23.110 N	103° 29' 39.876 W
8,223.0	0.10	178.20	8,220.5	-73.4	-37.1	555,028.86	758,578.46	32° 31' 23.109 N	103° 29' 39.877 W
8,317.0	0.30	136.20	8,314.5	-73.7	-37.0	555,028.61	758,578.63	32° 31' 23.106 N	103° 29' 39.875 W
8,412.0	0.30	191.80	8,409.5	-74.1	-36.8	555,028.18	758,578.76	32° 31' 23.102 N	103° 29' 39.873 W
8,506.0	0.40	196.70	8,503.5	-74.7	-37.0	555,027.63	758,578.61	32° 31' 23.096 N	103° 29' 39.875 W
8,600.0	0.50	199.10	8,597.5	-75.4	-37.2	555,026.93	758,578.38	32° 31' 23.090 N	103° 29' 39.878 W
8,695.0	0.70	214.90	8,692.5	-76.2	-37.7	555,026.06	758,577.91	32° 31' 23.081 N	103° 29' 39.883 W
8,789.0	0.50	202.50	8,786.5	-77.1	-38.2	555,025.21	758,577.43	32° 31' 23.073 N	103° 29' 39.889 W
8,884.0	0.50	196.00	8,881.5	-77.9	-38.4	555,024.43	758,577.16	32° 31' 23.065 N	103° 29' 39.892 W
8,978.0	0.70	159.20	8,975.5	-78.8	-38.3	555,023.50	758,577.25	32° 31' 23.056 N	103° 29' 39.891 W
9,072.0	0.90	178.60	9,069.5	-80.1	-38.1	555,022.22	758,577.47	32° 31' 23.043 N	103° 29' 39.889 W
9,166.0	1.10	177.90	9,163.5	-81.7	-38.1	555,020.58	758,577.52	32° 31' 23.027 N	103° 29' 39.888 W
9,261.0	1.10	165.90	9,258.5	-83.5	-37.8	555,018.79	758,577.78	32° 31' 23.009 N	103° 29' 39.885 W
9,356.0	1.70	162.20	9,353.4	-85.7	-37.2	555,016.56	758,578.43	32° 31' 22.987 N	103° 29' 39.878 W
9,450.0	0.50	159.80	9,447.4	-87.5	-36.6	555,014.85	758,579.00	32° 31' 22.970 N	103° 29' 39.872 W
9,544.0	0.80	167.80	9,541.4	-88.5	-36.3	555,013.82	758,579.28	32° 31' 22.960 N	103° 29' 39.868 W
9,639.0	1.00	175.40	9,636.4	-90.0	-36.1	555,012.35	758,579.48	32° 31' 22.945 N	103° 29' 39.866 W
9,734.0	0.90	187.20	9,731.4	-91.5	-36.1	555,010.78	758,579.46	32° 31' 22.930 N	103° 29' 39.867 W
9,829.0	0.60	168.50	9,826.4	-92.8	-36.1	555,009.55	758,579.46	32° 31' 22.918 N	103° 29' 39.867 W
9,922.0	0.20	181.00	9,919.4	-93.4	-36.0	555,008.91	758,579.56	32° 31' 22.911 N	103° 29' 39.866 W
10,015.0	0.30	256.40	10,012.4	-93.6	-36.3	555,008.69	758,579.32	32° 31' 22.909 N	103° 29' 39.868 W
10,110.0	0.60	265.60	10,107.4	-93.7	-37.0	555,008.60	758,578.58	32° 31' 22.908 N	103° 29' 39.877 W
10,204.0	0.70	273.70	10,201.4	-93.7	-38.1	555,008.59	758,577.52	32° 31' 22.908 N	103° 29' 39.889 W
10,236.0	0.80	266.80	10,233.4	-93.7	-38.5	555,008.60	758,577.10	32° 31' 22.908 N	103° 29' 39.894 W
10,267.0	2.30	335.20	10,264.3	-93.2	-39.0	555,009.15	758,576.62	32° 31' 22.914 N	103° 29' 39.900 W
10,299.0	3.30	355.80	10,296.3	-91.7	-39.3	555,010.65	758,576.28	32° 31' 22.929 N	103° 29' 39.904 W
10,330.0	3.20	20.70	10,327.3	-90.0	-39.1	555,012.35	758,576.52	32° 31' 22.945 N	103° 29' 39.901 W
10,361.0	5.80	28.30	10,358.2	-87.8	-38.0	555,014.54	758,577.57	32° 31' 22.967 N	103° 29' 39.888 W
10,394.0	5.90	24.90	10,391.0	-84.8	-36.5	555,017.54	758,579.08	32° 31' 22.997 N	103° 29' 39.870 W
10,426.0	8.80	19.00	10,422.7	-81.0	-35.0	555,021.35	758,580.57	32° 31' 23.034 N	103° 29' 39.853 W
10,458.0	12.10	20.40	10,454.2	-75.5	-33.1	555,026.81	758,582.53	32° 31' 23.088 N	103° 29' 39.829 W
10,489.0	15.10	16.10	10,484.3	-68.6	-30.8	555,033.74	758,584.79	32° 31' 23.156 N	103° 29' 39.802 W



HP
Survey Report - Geographic



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well Stratojet 31 State Com #6H
Project:	Lea County, NM	TVD Reference:	Well @ 3742.0usft (Ensign #772)
Site:	Sec 31, T20-S, R35-E	MD Reference:	Well @ 3742.0usft (Ensign #772)
Well:	Stratojet 31 State Com #6H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Compass

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,518.2	19.05	8.09	10,512.2	-60.2	-29.1	555,042.11	758,586.51	32° 31' 23.239 N	103° 29' 39.781 W
Crossed 330' Hard Line @ 10518' MD / 10512' TVD									
10,520.0	19.30	7.70	10,513.9	-59.6	-29.0	555,042.70	758,586.59	32° 31' 23.245 N	103° 29' 39.780 W
10,552.0	23.10	3.30	10,543.8	-48.1	-27.9	555,054.21	758,587.66	32° 31' 23.359 N	103° 29' 39.767 W
10,583.0	27.30	1.70	10,571.8	-34.9	-27.4	555,067.39	758,588.23	32° 31' 23.489 N	103° 29' 39.759 W
10,615.0	32.50	359.40	10,599.5	-19.0	-27.2	555,083.34	758,588.35	32° 31' 23.647 N	103° 29' 39.756 W
10,646.0	37.10	357.50	10,625.0	-1.3	-27.7	555,101.02	758,587.86	32° 31' 23.822 N	103° 29' 39.760 W
10,678.0	39.90	355.90	10,650.0	18.6	-28.9	555,120.90	758,586.70	32° 31' 24.019 N	103° 29' 39.772 W
10,709.0	41.90	354.50	10,673.5	38.8	-30.6	555,141.12	758,585.00	32° 31' 24.219 N	103° 29' 39.790 W
10,741.0	45.50	354.40	10,696.6	60.8	-32.7	555,163.12	758,582.86	32° 31' 24.437 N	103° 29' 39.813 W
10,773.0	48.70	354.90	10,718.4	84.2	-34.9	555,186.46	758,580.68	32° 31' 24.668 N	103° 29' 39.836 W
10,804.0	53.80	356.50	10,737.8	108.3	-36.7	555,210.56	758,578.88	32° 31' 24.907 N	103° 29' 39.855 W
10,835.0	58.90	357.50	10,754.9	134.0	-38.1	555,236.32	758,577.53	32° 31' 25.162 N	103° 29' 39.868 W
10,867.0	62.30	358.40	10,770.6	161.9	-39.1	555,264.18	758,576.54	32° 31' 25.437 N	103° 29' 39.877 W
10,898.0	65.80	358.20	10,784.2	189.7	-39.9	555,292.04	758,575.71	32° 31' 25.713 N	103° 29' 39.884 W
10,929.0	69.90	358.60	10,795.9	218.4	-40.7	555,320.73	758,574.91	32° 31' 25.997 N	103° 29' 39.891 W
10,961.0	72.60	0.00	10,806.2	248.7	-41.1	555,351.03	758,574.55	32° 31' 26.297 N	103° 29' 39.893 W
10,992.0	78.50	0.30	10,813.9	278.7	-41.0	555,381.03	758,574.63	32° 31' 26.594 N	103° 29' 39.889 W
11,023.0	82.70	359.30	10,819.0	309.3	-41.1	555,411.61	758,574.52	32° 31' 26.896 N	103° 29' 39.887 W
11,057.0	88.20	358.70	10,821.7	343.2	-41.7	555,445.48	758,573.93	32° 31' 27.231 N	103° 29' 39.891 W
11,089.0	90.10	358.70	10,822.1	375.2	-42.4	555,477.47	758,573.20	32° 31' 27.548 N	103° 29' 39.897 W
11,120.0	90.70	358.60	10,821.9	406.2	-43.1	555,508.46	758,572.47	32° 31' 27.855 N	103° 29' 39.902 W
11,152.0	91.30	358.60	10,821.4	438.1	-43.9	555,540.45	758,571.69	32° 31' 28.171 N	103° 29' 39.909 W
11,184.0	91.50	358.40	10,820.6	470.1	-44.7	555,572.43	758,570.85	32° 31' 28.488 N	103° 29' 39.915 W
11,278.0	91.00	358.90	10,818.5	564.1	-47.0	555,666.38	758,568.64	32° 31' 29.418 N	103° 29' 39.933 W
11,372.0	89.90	0.00	10,817.8	658.1	-47.9	555,760.37	758,567.73	32° 31' 30.348 N	103° 29' 39.935 W
11,467.0	91.40	0.00	10,816.7	753.1	-47.9	555,855.36	758,567.73	32° 31' 31.288 N	103° 29' 39.926 W
11,562.0	90.70	0.00	10,815.0	848.0	-47.9	555,950.34	758,567.73	32° 31' 32.227 N	103° 29' 39.917 W
11,657.0	89.20	0.70	10,815.1	943.0	-47.3	556,045.34	758,568.31	32° 31' 33.167 N	103° 29' 39.902 W
11,752.0	89.80	0.20	10,815.9	1,038.0	-46.5	556,140.33	758,569.06	32° 31' 34.107 N	103° 29' 39.884 W
11,846.0	90.80	359.60	10,815.4	1,132.0	-46.7	556,234.33	758,568.90	32° 31' 35.037 N	103° 29' 39.877 W
11,941.0	90.40	0.50	10,814.4	1,227.0	-46.6	556,329.32	758,568.98	32° 31' 35.977 N	103° 29' 39.868 W
12,035.0	88.90	0.50	10,815.0	1,321.0	-45.8	556,423.31	758,569.80	32° 31' 36.907 N	103° 29' 39.849 W
12,129.0	89.60	0.20	10,816.2	1,415.0	-45.2	556,517.30	758,570.37	32° 31' 37.837 N	103° 29' 39.834 W
12,223.0	90.50	0.00	10,816.1	1,509.0	-45.1	556,611.30	758,570.54	32° 31' 38.767 N	103° 29' 39.824 W
12,318.0	90.30	1.50	10,815.5	1,604.0	-43.8	556,706.29	758,571.78	32° 31' 39.707 N	103° 29' 39.800 W
12,413.0	91.60	1.90	10,813.9	1,698.9	-41.0	556,801.23	758,574.60	32° 31' 40.646 N	103° 29' 39.759 W
12,507.0	90.70	2.30	10,812.0	1,792.8	-37.6	556,895.15	758,578.04	32° 31' 41.575 N	103° 29' 39.710 W
12,602.0	89.40	2.10	10,811.9	1,887.8	-33.9	556,990.07	758,581.69	32° 31' 42.514 N	103° 29' 39.658 W
12,696.0	90.60	1.90	10,811.9	1,981.7	-30.6	557,084.01	758,584.97	32° 31' 43.444 N	103° 29' 39.612 W
12,790.0	90.80	1.40	10,810.8	2,075.7	-27.9	557,177.97	758,587.68	32° 31' 44.373 N	103° 29' 39.571 W
12,884.0	90.10	0.30	10,810.0	2,169.7	-26.5	557,271.95	758,589.07	32° 31' 45.303 N	103° 29' 39.546 W
12,981.0	89.20	1.50	10,810.6	2,266.6	-25.0	557,368.94	758,590.59	32° 31' 46.262 N	103° 29' 39.520 W
13,076.0	89.90	1.50	10,811.4	2,361.6	-22.5	557,463.90	758,593.08	32° 31' 47.202 N	103° 29' 39.482 W
13,171.0	90.70	1.40	10,810.9	2,456.6	-20.1	557,558.87	758,595.49	32° 31' 48.141 N	103° 29' 39.445 W
13,266.0	89.80	2.10	10,810.5	2,551.5	-17.2	557,653.82	758,598.39	32° 31' 49.081 N	103° 29' 39.402 W
13,359.0	91.00	1.70	10,809.8	2,644.5	-14.1	557,746.77	758,601.47	32° 31' 50.000 N	103° 29' 39.358 W
13,453.0	90.00	1.00	10,809.0	2,738.4	-11.9	557,840.73	758,603.68	32° 31' 50.930 N	103° 29' 39.323 W
13,548.0	90.80	1.20	10,808.3	2,833.4	-10.1	557,935.71	758,605.51	32° 31' 51.869 N	103° 29' 39.293 W
13,642.0	89.80	2.10	10,807.8	2,927.4	-7.4	558,029.67	758,608.21	32° 31' 52.799 N	103° 29' 39.253 W
13,736.0	88.50	2.30	10,809.2	3,021.3	-3.8	558,123.59	758,611.82	32° 31' 53.728 N	103° 29' 39.202 W
13,832.0	88.80	1.90	10,811.5	3,117.2	-0.3	558,219.50	758,615.34	32° 31' 54.677 N	103° 29' 39.152 W
13,927.0	89.60	2.10	10,812.8	3,212.1	3.1	558,314.43	758,618.65	32° 31' 55.616 N	103° 29' 39.105 W
14,022.0	90.60	2.10	10,812.7	3,307.1	6.5	558,409.37	758,622.14	32° 31' 56.555 N	103° 29' 39.056 W
14,116.0	92.00	2.30	10,810.5	3,401.0	10.1	558,503.27	758,625.74	32° 31' 57.484 N	103° 29' 39.005 W



HP
Survey Report - Geographic



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well Stratojet 31 State Com #6H
Project:	Lea County, NM	TVD Reference:	Well @ 3742.0usft (Ensign #772)
Site:	Sec 31, T20-S, R35-E	MD Reference:	Well @ 3742.0usft (Ensign #772)
Well:	Stratojet 31 State Com #6H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Compass

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
14,212.0	91.70	2.30	10,807.4	3,496.8	14.0	558,599.14	758,629.59	32° 31' 58.432 N	103° 29' 38.951 W
14,306.0	89.90	2.60	10,806.1	3,590.7	18.0	558,693.04	758,633.61	32° 31' 59.361 N	103° 29' 38.895 W
14,401.0	90.90	2.60	10,805.4	3,685.6	22.3	558,787.94	758,637.92	32° 32' 0.300 N	103° 29' 38.836 W
14,496.0	89.80	2.30	10,804.9	3,780.5	26.4	558,882.85	758,641.98	32° 32' 1.238 N	103° 29' 38.780 W
14,591.0	90.90	2.60	10,804.3	3,875.5	30.4	558,977.76	758,646.04	32° 32' 2.177 N	103° 29' 38.724 W
14,686.0	90.70	2.30	10,803.0	3,970.4	34.5	559,072.66	758,650.10	32° 32' 3.116 N	103° 29' 38.668 W
14,781.0	89.20	1.20	10,803.0	4,065.3	37.4	559,167.62	758,653.00	32° 32' 4.055 N	103° 29' 38.625 W
14,876.0	89.90	0.50	10,803.8	4,160.3	38.8	559,262.60	758,654.41	32° 32' 4.995 N	103° 29' 38.600 W
14,970.0	88.50	359.80	10,805.1	4,254.3	39.1	559,356.59	758,654.66	32° 32' 5.925 N	103° 29' 38.589 W
15,063.0	89.10	359.40	10,807.0	4,347.3	38.4	559,449.57	758,654.01	32° 32' 6.845 N	103° 29' 38.588 W
15,158.0	90.00	359.30	10,807.8	4,442.3	37.3	559,544.56	758,652.93	32° 32' 7.785 N	103° 29' 38.591 W
15,250.0	90.00	359.30	10,807.8	4,534.2	36.2	559,636.55	758,651.81	32° 32' 8.695 N	103° 29' 38.596 W
TD @ 15250' MD / 10808' TVD									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates				Comment
		+N/-S (usft)	+E/-W (usft)			
165.0	165.0	0.2	1.1			First MWD Survey @ 165' MD / 165' TVD
6,188.9	6,186.6	-60.1	-18.6			Crossed 330' Hard Line @ 6189' MD / 6187' TVD
10,518.2	10,512.2	-60.2	-29.1			Crossed 330' Hard Line @ 10518' MD / 10512' TVD
15,250.0	10,807.8	4,534.2	36.2			TD @ 15250' MD / 10808' TVD

Checked By: _____ Approved By: _____ Date: _____