



CONCHO

NM OIL CONSERVATION
ARTESIA DISTRICT

FEB 13 2019

RECEIVED

COG Operating L L C

Eddy County, NM (NAD 27 NME)

Sec. 24, T 25S. , R 27 E

Daisy State Com #502H

30-015-45746

Wellbore #1

Plan: Plan #1

Standard Survey Report

06 February, 2019



INTEGRITY
DIRECTIONAL

Company: COG Operating L L C
Project: Eddy County, NM (NAD 27 NME)
Site: Sec. 24, T 25S. , R 27 E
Well: Daisy State Com #502H
Wellbore: Wellbore #1
Design: Plan #1

Local Co-ordinate Reference: Well Daisy State Com #502H
TVD Reference: KB=30' @ 3081.00usft (Nabors 894)
MD Reference: KB=30' @ 3081.00usft (Nabors 894)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1

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. 24, T 25S. , R 27 E				
Site Position:		Northing:	408,345.40 usft	Latitude:	32.12253	
From:	Map	Easting:	556,167.10 usft	Longitude:	-104.15191	
Position Uncertainty:		0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.10 °

Well	Daisy State Com #502H					
Well Position	+N/-S	0.00 usft	Northing:	408,073.50 usft	Latitude:	32.12178
	+E/-W	0.00 usft	Easting:	556,582.70 usft	Longitude:	-104.15057
Position Uncertainty	0.00 usft		Wellhead Elevation:	0.00 usft	Ground Level:	3,051.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	12/31/2018	7.23	59.83	47,878

Design	Plan #1				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	177.38	

Survey Tool Program	Date 2/6/2019				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	18,012.48	Plan #1 (Wellbore #1)	MWD	MWD - Standard	

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00

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Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00

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5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
5,700.00	2.00	33.69	5,699.98	1.45	0.97	-1.41	2.00	2.00	0.00
5,800.00	4.00	33.69	5,799.84	5.81	3.87	-5.62	2.00	2.00	0.00
5,900.00	6.00	33.69	5,899.45	13.06	8.71	-12.65	2.00	2.00	0.00
5,975.14	7.50	33.69	5,974.06	20.41	13.60	-19.77	2.00	2.00	0.00
Start 1192.83 hold at 5975.14 MD									
6,000.00	7.50	33.69	5,998.72	23.11	15.41	-22.38	0.00	0.00	0.00
6,100.00	7.50	33.69	6,097.86	33.97	22.65	-32.90	0.00	0.00	0.00
6,200.00	7.50	33.69	6,197.00	44.84	29.89	-43.43	0.00	0.00	0.00
6,300.00	7.50	33.69	6,296.15	55.70	37.13	-53.95	0.00	0.00	0.00
6,400.00	7.50	33.69	6,395.29	66.57	44.38	-64.47	0.00	0.00	0.00
6,500.00	7.50	33.69	6,494.44	77.43	51.62	-74.99	0.00	0.00	0.00
6,600.00	7.50	33.69	6,593.58	88.29	58.86	-85.52	0.00	0.00	0.00
6,700.00	7.50	33.69	6,692.72	99.16	66.11	-96.04	0.00	0.00	0.00
6,800.00	7.50	33.69	6,791.87	110.02	73.35	-106.56	0.00	0.00	0.00
6,900.00	7.50	33.69	6,891.01	120.89	80.59	-117.08	0.00	0.00	0.00
7,000.00	7.50	33.69	6,990.15	131.75	87.83	-127.61	0.00	0.00	0.00
7,100.00	7.50	33.69	7,089.30	142.62	95.08	-138.13	0.00	0.00	0.00
7,167.96	7.50	33.69	7,156.68	150.00	100.00	-145.28	0.00	0.00	0.00
Start DLS 10.00 TFO 131.07									
7,200.00	5.91	57.84	7,188.50	152.62	102.56	-147.78	10.00	-4.97	75.38
7,300.00	10.00	130.85	7,287.73	149.68	113.51	-144.34	10.00	4.08	73.01
7,400.00	19.08	148.39	7,384.47	130.03	128.68	-124.02	10.00	9.09	17.53
7,500.00	28.77	154.62	7,475.78	94.27	147.61	-87.44	10.00	9.69	6.24
7,600.00	38.61	157.88	7,558.89	43.49	169.73	-35.70	10.00	9.84	3.26
7,700.00	48.51	159.98	7,631.27	-20.77	194.36	29.61	10.00	9.90	2.10
7,800.00	58.43	161.52	7,690.72	-96.55	220.76	106.52	10.00	9.92	1.53
7,900.00	68.37	162.75	7,735.44	-181.56	248.12	192.69	10.00	9.94	1.24
8,000.00	78.32	163.83	7,764.07	-273.20	275.60	285.50	10.00	9.95	1.08
8,100.00	88.27	164.83	7,775.74	-368.71	302.39	382.12	10.00	9.95	1.00
8,117.41	90.00	165.00	7,776.00	-385.52	306.92	399.12	10.00	9.95	0.98
Start DLS 4.00 TFO 89.52									
8,200.00	90.03	168.30	7,775.98	-465.86	325.98	480.25	4.00	0.03	4.00
8,300.00	90.06	172.30	7,775.90	-564.42	342.82	579.47	4.00	0.03	4.00
8,400.00	90.09	176.30	7,775.77	-663.90	352.75	679.31	4.00	0.03	4.00
8,475.34	90.12	179.32	7,775.63	-739.17	355.63	754.63	4.00	0.03	4.00
Start 9537.33 hold at 8475.34 MD									
8,500.00	90.12	179.32	7,775.58	-763.84	355.92	779.28	0.00	0.00	0.00
8,600.00	90.12	179.32	7,775.37	-863.83	357.11	879.22	0.00	0.00	0.00
8,700.00	90.12	179.32	7,775.17	-963.82	358.31	979.17	0.00	0.00	0.00
8,800.00	90.12	179.32	7,774.96	-1,063.81	359.50	1,079.11	0.00	0.00	0.00



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8,900.00	90.12	179.32	7,774.76	-1,163.81	360.69	1,179.05	0.00	0.00	0.00
9,000.00	90.12	179.32	7,774.55	-1,263.80	361.89	1,279.00	0.00	0.00	0.00
9,100.00	90.12	179.32	7,774.35	-1,363.79	363.08	1,378.94	0.00	0.00	0.00
9,200.00	90.12	179.32	7,774.14	-1,463.78	364.27	1,478.88	0.00	0.00	0.00
9,300.00	90.12	179.32	7,773.93	-1,563.78	365.47	1,578.83	0.00	0.00	0.00
9,400.00	90.12	179.32	7,773.73	-1,663.77	366.66	1,678.77	0.00	0.00	0.00
9,500.00	90.12	179.32	7,773.52	-1,763.76	367.85	1,778.71	0.00	0.00	0.00
9,600.00	90.12	179.32	7,773.32	-1,863.76	369.04	1,878.65	0.00	0.00	0.00
9,700.00	90.12	179.32	7,773.11	-1,963.75	370.24	1,978.60	0.00	0.00	0.00
9,800.00	90.12	179.32	7,772.90	-2,063.74	371.43	2,078.54	0.00	0.00	0.00
9,900.00	90.12	179.32	7,772.70	-2,163.73	372.62	2,178.48	0.00	0.00	0.00
10,000.00	90.12	179.32	7,772.49	-2,263.73	373.82	2,278.43	0.00	0.00	0.00
10,100.00	90.12	179.32	7,772.29	-2,363.72	375.01	2,378.37	0.00	0.00	0.00
10,200.00	90.12	179.32	7,772.08	-2,463.71	376.20	2,478.31	0.00	0.00	0.00
10,300.00	90.12	179.32	7,771.88	-2,563.70	377.39	2,578.25	0.00	0.00	0.00
10,400.00	90.12	179.32	7,771.67	-2,663.70	378.59	2,678.20	0.00	0.00	0.00
10,500.00	90.12	179.32	7,771.46	-2,763.69	379.78	2,778.14	0.00	0.00	0.00
10,600.00	90.12	179.32	7,771.26	-2,863.68	380.97	2,878.08	0.00	0.00	0.00
10,700.00	90.12	179.32	7,771.05	-2,963.67	382.17	2,978.03	0.00	0.00	0.00
10,800.00	90.12	179.32	7,770.85	-3,063.67	383.36	3,077.97	0.00	0.00	0.00
10,900.00	90.12	179.32	7,770.64	-3,163.66	384.55	3,177.91	0.00	0.00	0.00
11,000.00	90.12	179.32	7,770.43	-3,263.65	385.74	3,277.86	0.00	0.00	0.00
11,100.00	90.12	179.32	7,770.23	-3,363.65	386.94	3,377.80	0.00	0.00	0.00
11,200.00	90.12	179.32	7,770.02	-3,463.64	388.13	3,477.74	0.00	0.00	0.00
11,300.00	90.12	179.32	7,769.82	-3,563.63	389.32	3,577.68	0.00	0.00	0.00
11,400.00	90.12	179.32	7,769.61	-3,663.62	390.52	3,677.63	0.00	0.00	0.00
11,500.00	90.12	179.32	7,769.41	-3,763.62	391.71	3,777.57	0.00	0.00	0.00
11,600.00	90.12	179.32	7,769.20	-3,863.61	392.90	3,877.51	0.00	0.00	0.00
11,700.00	90.12	179.32	7,768.99	-3,963.60	394.10	3,977.46	0.00	0.00	0.00
11,800.00	90.12	179.32	7,768.79	-4,063.59	395.29	4,077.40	0.00	0.00	0.00
11,900.00	90.12	179.32	7,768.58	-4,163.59	396.48	4,177.34	0.00	0.00	0.00
12,000.00	90.12	179.32	7,768.38	-4,263.58	397.67	4,277.29	0.00	0.00	0.00
12,100.00	90.12	179.32	7,768.17	-4,363.57	398.87	4,377.23	0.00	0.00	0.00
12,200.00	90.12	179.32	7,767.96	-4,463.56	400.06	4,477.17	0.00	0.00	0.00
12,300.00	90.12	179.32	7,767.76	-4,563.56	401.25	4,577.11	0.00	0.00	0.00
12,400.00	90.12	179.32	7,767.55	-4,663.55	402.45	4,677.06	0.00	0.00	0.00
12,500.00	90.12	179.32	7,767.35	-4,763.54	403.64	4,777.00	0.00	0.00	0.00
12,600.00	90.12	179.32	7,767.14	-4,863.54	404.83	4,876.94	0.00	0.00	0.00
12,700.00	90.12	179.32	7,766.94	-4,963.53	406.02	4,976.89	0.00	0.00	0.00
12,800.00	90.12	179.32	7,766.73	-5,063.52	407.22	5,076.83	0.00	0.00	0.00
12,900.00	90.12	179.32	7,766.52	-5,163.51	408.41	5,176.77	0.00	0.00	0.00
13,000.00	90.12	179.32	7,766.32	-5,263.51	409.60	5,276.71	0.00	0.00	0.00
13,100.00	90.12	179.32	7,766.11	-5,363.50	410.80	5,376.66	0.00	0.00	0.00

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Design: Plan #1

Local Co-ordinate Reference: Well Daisy State Com #502H
TVD Reference: KB=30' @ 3081.00usft (Nabors 894)
MD Reference: KB=30' @ 3081.00usft (Nabors 894)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1

Planned 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)
13,200.00	90.12	179.32	7,765.91	-5,463.49	411.99	5,476.60	0.00	0.00	0.00
13,300.00	90.12	179.32	7,765.70	-5,563.48	413.18	5,576.54	0.00	0.00	0.00
13,400.00	90.12	179.32	7,765.49	-5,663.48	414.37	5,676.49	0.00	0.00	0.00
13,500.00	90.12	179.32	7,765.29	-5,763.47	415.57	5,776.43	0.00	0.00	0.00
13,600.00	90.12	179.32	7,765.08	-5,863.46	416.76	5,876.37	0.00	0.00	0.00
13,700.00	90.12	179.32	7,764.88	-5,963.46	417.95	5,976.32	0.00	0.00	0.00
13,800.00	90.12	179.32	7,764.67	-6,063.45	419.15	6,076.26	0.00	0.00	0.00
13,900.00	90.12	179.32	7,764.47	-6,163.44	420.34	6,176.20	0.00	0.00	0.00
14,000.00	90.12	179.32	7,764.26	-6,263.43	421.53	6,276.14	0.00	0.00	0.00
14,100.00	90.12	179.32	7,764.05	-6,363.43	422.73	6,376.09	0.00	0.00	0.00
14,200.00	90.12	179.32	7,763.85	-6,463.42	423.92	6,476.03	0.00	0.00	0.00
14,300.00	90.12	179.32	7,763.64	-6,563.41	425.11	6,575.97	0.00	0.00	0.00
14,400.00	90.12	179.32	7,763.44	-6,663.40	426.30	6,675.92	0.00	0.00	0.00
14,500.00	90.12	179.32	7,763.23	-6,763.40	427.50	6,775.86	0.00	0.00	0.00
14,600.00	90.12	179.32	7,763.02	-6,863.39	428.69	6,875.80	0.00	0.00	0.00
14,700.00	90.12	179.32	7,762.82	-6,963.38	429.88	6,975.74	0.00	0.00	0.00
14,800.00	90.12	179.32	7,762.61	-7,063.37	431.08	7,075.69	0.00	0.00	0.00
14,900.00	90.12	179.32	7,762.41	-7,163.37	432.27	7,175.63	0.00	0.00	0.00
15,000.00	90.12	179.32	7,762.20	-7,263.36	433.46	7,275.57	0.00	0.00	0.00
15,100.00	90.12	179.32	7,762.00	-7,363.35	434.65	7,375.52	0.00	0.00	0.00
15,200.00	90.12	179.32	7,761.79	-7,463.35	435.85	7,475.46	0.00	0.00	0.00
15,300.00	90.12	179.32	7,761.58	-7,563.34	437.04	7,575.40	0.00	0.00	0.00
15,400.00	90.12	179.32	7,761.38	-7,663.33	438.23	7,675.35	0.00	0.00	0.00
15,500.00	90.12	179.32	7,761.17	-7,763.32	439.43	7,775.29	0.00	0.00	0.00
15,600.00	90.12	179.32	7,760.97	-7,863.32	440.62	7,875.23	0.00	0.00	0.00
15,700.00	90.12	179.32	7,760.76	-7,963.31	441.81	7,975.17	0.00	0.00	0.00
15,800.00	90.12	179.32	7,760.55	-8,063.30	443.00	8,075.12	0.00	0.00	0.00
15,900.00	90.12	179.32	7,760.35	-8,163.29	444.20	8,175.06	0.00	0.00	0.00
16,000.00	90.12	179.32	7,760.14	-8,263.29	445.39	8,275.00	0.00	0.00	0.00
16,100.00	90.12	179.32	7,759.94	-8,363.28	446.58	8,374.95	0.00	0.00	0.00
16,200.00	90.12	179.32	7,759.73	-8,463.27	447.78	8,474.89	0.00	0.00	0.00
16,300.00	90.12	179.32	7,759.53	-8,563.26	448.97	8,574.83	0.00	0.00	0.00
16,400.00	90.12	179.32	7,759.32	-8,663.26	450.16	8,674.77	0.00	0.00	0.00
16,500.00	90.12	179.32	7,759.11	-8,763.25	451.36	8,774.72	0.00	0.00	0.00
16,600.00	90.12	179.32	7,758.91	-8,863.24	452.55	8,874.66	0.00	0.00	0.00
16,700.00	90.12	179.32	7,758.70	-8,963.24	453.74	8,974.60	0.00	0.00	0.00
16,800.00	90.12	179.32	7,758.50	-9,063.23	454.93	9,074.55	0.00	0.00	0.00
16,900.00	90.12	179.32	7,758.29	-9,163.22	456.13	9,174.49	0.00	0.00	0.00
17,000.00	90.12	179.32	7,758.08	-9,263.21	457.32	9,274.43	0.00	0.00	0.00
17,100.00	90.12	179.32	7,757.88	-9,363.21	458.51	9,374.38	0.00	0.00	0.00
17,200.00	90.12	179.32	7,757.67	-9,463.20	459.71	9,474.32	0.00	0.00	0.00
17,300.00	90.12	179.32	7,757.47	-9,563.19	460.90	9,574.26	0.00	0.00	0.00
17,400.00	90.12	179.32	7,757.26	-9,663.18	462.09	9,674.20	0.00	0.00	0.00
17,500.00	90.12	179.32	7,757.06	-9,763.18	463.28	9,774.15	0.00	0.00	0.00

Company: COG Operating L L C
Project: Eddy County, NM (NAD 27 NME)
Site: Sec. 24, T 25S, R 27 E
Well: Daisy State Com #502H
Wellbore: Wellbore #1
Design: Plan #1

Local Co-ordinate Reference: Well Daisy State Com #502H
TVD Reference: KB=30' @ 3081.00usft (Nabors 894)
MD Reference: KB=30' @ 3081.00usft (Nabors 894)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1

Planned 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)
17,600.00	90.12	179.32	7,756.85	-9,863.17	464.48	9,874.09	0.00	0.00	0.00
17,700.00	90.12	179.32	7,756.64	-9,963.16	465.67	9,974.03	0.00	0.00	0.00
17,800.00	90.12	179.32	7,756.44	-10,063.15	466.86	10,073.98	0.00	0.00	0.00
17,900.00	90.12	179.32	7,756.23	-10,163.15	468.06	10,173.92	0.00	0.00	0.00
18,000.00	90.12	179.32	7,756.03	-10,263.14	469.25	10,273.86	0.00	0.00	0.00
18,012.66	90.12	179.32	7,756.00	-10,275.80	469.40	10,286.52	0.00	0.00	0.00
TD at 18012.66									

Design Targets
Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Daisy State Com #50: - plan misses target center by 387.63usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Point	0.00	0.00	0.00	177.50	344.60	408,251.00	556,927.30	32.12227	-104.14945
Daisy State Com #50: - plan hits target center - Point	0.00	0.00	7,756.00	-10,275.80	469.40	397,797.70	557,052.10	32.09353	-104.14911
Daisy State Com #50: - plan hits target center - Point	0.00	0.00	7,756.10	-10,225.80	468.80	397,847.70	557,051.50	32.09367	-104.14911

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
578.00	578.00	TOS		0.00	
2,020.00	2,020.00	BOS (Fletcher)		0.00	
2,214.00	2,214.00	LMAR (Top Delaware)		0.00	
2,250.00	2,250.00	BLCN		0.00	
3,067.00	3,067.00	CYCN		0.00	
4,263.00	4,263.00	BYCN			
5,881.45	5,881.00	Bone Sprg (BSGL)			
6,179.82	6,177.00	U Avalon Sh			
6,417.86	6,413.00	L Avalon Sh			
6,752.73	6,745.00	B Avalon Sh			
6,807.19	6,799.00	FBSG_sand			
7,379.52	7,365.00	SBSG_sand			

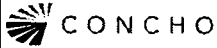
Company: COG Operating L L C
Project: Eddy County, NM (NAD 27 NME)
Site: Sec. 24, T 25S. , R 27 E
Well: Daisy State Com #502H
Wellbore: Wellbore #1
Design: Plan #1

Local Co-ordinate Reference: Well Daisy State Com #502H
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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5600	5600	0	0	Start Build 2.00
5975	5974	20	14	Start 1192.83 hold at 5975.14 MD
7168	7157	150	100	Start DLS 10.00 TFO 131.07
8117	7776	-386	307	Start DLS 4.00 TFO 89.52
8475	7776	-739	356	Start 9537.33 hold at 8475.34 MD
18,013	7756	-10,276	469	TD at 18012.66

Checked By: _____ Approved By: _____ Date: _____



COG Operating L.L.C.
Project: Eddy County, NM (NAD 27 NME)
Site: Sec. 24, T 25S., R 27 E
Well: Daisy State Com #502H
Wellbore: Wellbore #1
Plan: Plan #1 (Daisy State Com #502H/Wellbore #1)
Nabors 894

WELL DETAILS: Daisy State Com #502H

Ground Elevation:: 3051.00
RKB Elevation: KB=30' @ 3081.00usft (Nabors 894)
Rig Name: Nabors 894

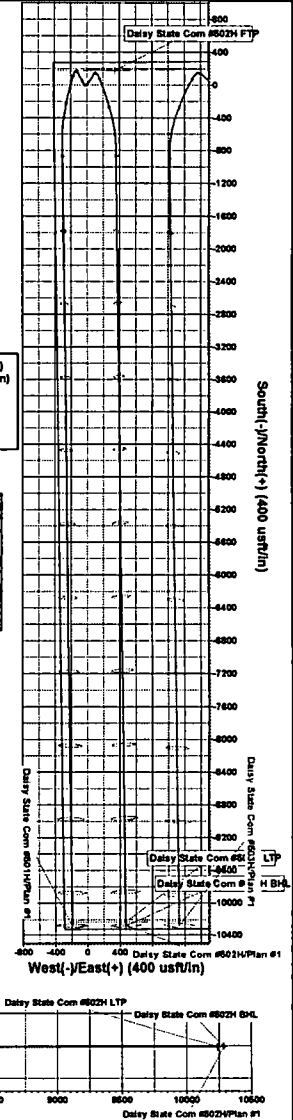
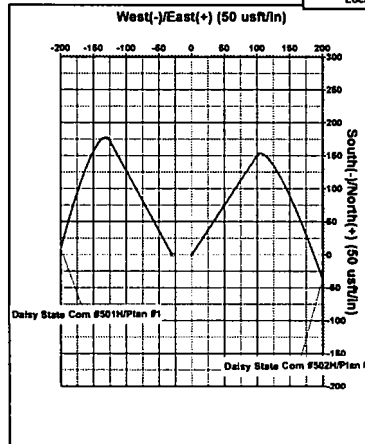
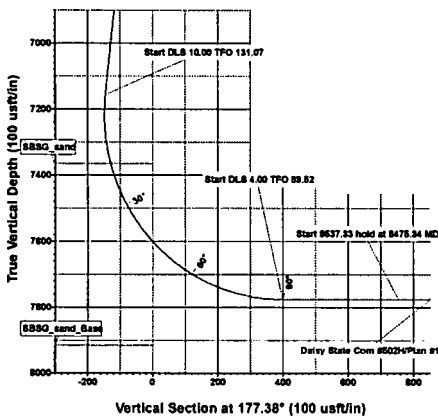
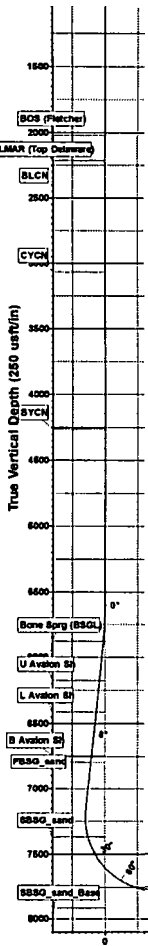
Northing 408073.50 Easting 556582.70 Latitude 32.12178 Longitude -104.15056

Planned Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
2	5600.00	0.00	0.00	5600.00	0.00	0.00	0.00	0.00	0.00	Start DLS 10.00 TFO 131.07
3	5975.14	7.50	33.69	5974.06	20.41	13.60	2.00	33.69	-19.77	Start DLS 4.00 TFO 89.52
4	7187.96	7.50	33.69	7186.68	150.00	100.00	0.00	0.00	-145.28	Start 9537.33 hold at 8475.34 MD
5	8117.41	90.00	185.00	7776.00	-385.52	308.92	10.00	131.07	399.12	TD at 18012.68
6	8475.34	90.12	179.32	7775.63	-739.17	355.63	4.00	89.52	754.63	
7	18012.68	90.12	179.32	7756.00	-10275.80	489.40	0.00	0.00	10288.52	

PROJECT DETAILS: Eddy County, NM (NAD 27 NME)
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level
Local North: Grid

Magnitudes to Grid North
True North: -0.10°
Magnetic North: 7.14°
Magnetic Field
Strength: 47877.7anT
Dip Angle: 59.63°
Date: 12/31/2018
Model: HDGM



Vertical Section at 177.38° (250 usft/in)