



COG Operating LLC

Eddy Co., NM

Myox 28 State Com

702H

Wellbore #1

Plan: Design #1

Standard Planning Report

22 March, 2019





Nabors Drilling Solutions
Planning Report



Database: RyanUSA_32Bit
Company: COG Operating LLC
Project: Eddy Co., NM
Site: Myox 28 State Com
Well: 702H
Wellbore: Wellbore #1
Design: Design #1

Local/Co-ordinate/Reference: Well 702H
TVD Reference: RT=30 @ 2988.00ft (Nabors 894)
MD Reference: RT=30 @ 2988.00ft (Nabors 894)
North Reference: Grid
Survey/Calculation Method: Minimum Curvature

Project:	Eddy Co., 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:	Myox 28 State Com		
Site Position:		Northing:	402,893.686 usft
From:	Lat/Long	Easting:	576,570.363 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "
		Latitude:	32° 6' 26.746200 N
		Longitude:	104° 5' 9.742200 W
		Grid Convergence:	0.13 °

Well:	702H		
Well Position:	+N-S	0.00 ft	Northing:
	+E-W	0.00 ft	Easting:
Position Uncertainty:	2.00 ft	Wellhead Elevation:	
		Latitude:	32° 6' 26.746200 N
		Longitude:	104° 5' 9.742200 W
		Ground Level:	2,958.00 ft

Wellbore:	Wellbore #1		
Magnetics:	Model Name	Sample Date	Declination
	HDGM_FILE	3/21/2019	7.00
		Dip Angle	59.80
		Field Strength	47,877.20000000

Design:	Design #1		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
Vertical Section:	Depth From (TVD)	+N-S	+E-W
	(ft)	(ft)	(ft)
	0.00	0.00	0.00
			Direction:
			180.40

Plan Survey Tool Program	Date: 3/22/2019		
Depth From	Depth To	Survey (Wellbore)	Tool Name
(ft)	(ft)		
1	0.00	19,405.48 Design #1 (Wellbore #1)	MWD+HRGM
			OWSG MWD + HRGM

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N-S	+E-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(ft)	(ft)	Rate	Rate	Rate	(°)	
(ft)			(ft)			(°/100ft)	(°/100ft)	(°/100ft)		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8,905.00	0.00	0.00	8,905.00	0.00	0.00	0.00	0.00	0.00	0.00	
9,657.50	90.30	190.00	9,382.46	-472.67	-83.35	12.00	12.00	0.00	190.00	
10,174.70	90.30	179.66	9,379.73	-987.33	-126.81	2.00	0.00	-2.00	-89.96	
19,405.77	90.30	179.66	9,331.00	-10,218.11	-71.36	0.00	0.00	0.00	0.00	702H - BHL



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RT=30 @ 2988.00ft (Nabors 894)

RT=30 @ 2988.00ft (Nabors 894)

Grid

Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
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
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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Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
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
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	0.00	0.00
7,300.00	0.00	0.00	7,300.00	0.00	0.00	0.00	0.00	0.00	0.00
7,400.00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	0.00	0.00
7,500.00	0.00	0.00	7,500.00	0.00	0.00	0.00	0.00	0.00	0.00
7,600.00	0.00	0.00	7,600.00	0.00	0.00	0.00	0.00	0.00	0.00
7,700.00	0.00	0.00	7,700.00	0.00	0.00	0.00	0.00	0.00	0.00
7,800.00	0.00	0.00	7,800.00	0.00	0.00	0.00	0.00	0.00	0.00
7,900.00	0.00	0.00	7,900.00	0.00	0.00	0.00	0.00	0.00	0.00
8,000.00	0.00	0.00	8,000.00	0.00	0.00	0.00	0.00	0.00	0.00
8,100.00	0.00	0.00	8,100.00	0.00	0.00	0.00	0.00	0.00	0.00
8,200.00	0.00	0.00	8,200.00	0.00	0.00	0.00	0.00	0.00	0.00
8,300.00	0.00	0.00	8,300.00	0.00	0.00	0.00	0.00	0.00	0.00
8,400.00	0.00	0.00	8,400.00	0.00	0.00	0.00	0.00	0.00	0.00
8,500.00	0.00	0.00	8,500.00	0.00	0.00	0.00	0.00	0.00	0.00
8,600.00	0.00	0.00	8,600.00	0.00	0.00	0.00	0.00	0.00	0.00
8,700.00	0.00	0.00	8,700.00	0.00	0.00	0.00	0.00	0.00	0.00
8,800.00	0.00	0.00	8,800.00	0.00	0.00	0.00	0.00	0.00	0.00
8,905.00	0.00	0.00	8,905.00	0.00	0.00	0.00	0.00	0.00	0.00
8,925.00	2.40	190.00	8,924.99	-0.41	-0.07	0.41	12.00	12.00	0.00
8,950.00	5.40	190.00	8,949.93	-2.09	-0.37	2.09	12.00	12.00	0.00
8,975.00	8.40	190.00	8,974.75	-5.04	-0.89	5.05	12.00	12.00	0.00
9,000.00	11.40	190.00	8,999.37	-9.28	-1.64	9.29	12.00	12.00	0.00
9,025.00	14.40	190.00	9,023.74	-14.77	-2.60	14.79	12.00	12.00	0.00
9,050.00	17.40	190.00	9,047.78	-21.52	-3.79	21.54	12.00	12.00	0.00
9,075.00	20.40	190.00	9,071.43	-29.49	-5.20	29.53	12.00	12.00	0.00
9,100.00	23.40	190.00	9,094.62	-38.67	-6.82	38.72	12.00	12.00	0.00
9,125.00	26.40	190.00	9,117.30	-49.04	-8.65	49.10	12.00	12.00	0.00
9,150.00	29.40	190.00	9,139.39	-60.56	-10.68	60.63	12.00	12.00	0.00
9,175.00	32.40	190.00	9,160.84	-73.20	-12.91	73.29	12.00	12.00	0.00
9,200.00	35.40	190.00	9,181.59	-86.93	-15.33	87.03	12.00	12.00	0.00
9,225.00	38.40	190.00	9,201.58	-101.71	-17.93	101.83	12.00	12.00	0.00
9,250.00	41.40	190.00	9,220.75	-117.50	-20.72	117.64	12.00	12.00	0.00
9,275.00	44.40	190.00	9,239.06	-134.26	-23.67	134.42	12.00	12.00	0.00
9,300.00	47.40	190.00	9,256.46	-151.94	-26.79	152.12	12.00	12.00	0.00
9,325.00	50.40	190.00	9,272.89	-170.49	-30.06	170.69	12.00	12.00	0.00
9,348.71	53.25	190.00	9,287.55	-188.84	-33.30	189.07	12.00	12.00	0.00



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Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	N/S (ft)	E/W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
702H - FTP									
9,350.00	53.40	190.00	9,288.32	-189.86	-33.48	190.09	12.00	12.00	0.00
9,375.00	56.40	190.00	9,302.69	-210.00	-37.03	210.25	12.00	12.00	0.00
9,400.00	59.40	190.00	9,315.97	-230.85	-40.71	231.13	12.00	12.00	0.00
9,425.00	62.40	190.00	9,328.13	-252.36	-44.50	252.67	12.00	12.00	0.00
9,450.00	65.40	190.00	9,339.13	-274.47	-48.40	274.80	12.00	12.00	0.00
9,475.00	68.40	190.00	9,348.94	-297.11	-52.39	297.47	12.00	12.00	0.00
9,500.00	71.40	190.00	9,357.53	-320.23	-56.47	320.62	12.00	12.00	0.00
9,525.00	74.40	190.00	9,364.88	-343.76	-60.61	344.18	12.00	12.00	0.00
9,550.00	77.40	190.00	9,370.97	-367.64	-64.82	368.08	12.00	12.00	0.00
9,575.00	80.40	190.00	9,375.78	-391.79	-69.08	392.27	12.00	12.00	0.00
9,600.00	83.40	190.00	9,379.30	-416.17	-73.38	416.67	12.00	12.00	0.00
9,625.00	86.40	190.00	9,381.52	-440.69	-77.70	441.22	12.00	12.00	0.00
9,650.00	89.40	190.00	9,382.44	-465.29	-82.04	465.85	12.00	12.00	0.00
9,657.50	90.30	190.00	9,382.46	-472.67	-83.35	473.24	12.00	12.00	0.00
9,700.00	90.30	189.15	9,382.24	-514.58	-90.41	515.20	2.00	0.00	-2.00
9,800.00	90.30	187.15	9,381.71	-613.56	-104.59	614.28	2.00	0.00	-2.00
9,900.00	90.30	185.15	9,381.18	-712.98	-115.30	713.77	2.00	0.00	-2.00
10,000.00	90.30	183.15	9,380.65	-812.71	-122.54	813.55	2.00	0.00	-2.00
10,100.00	90.30	181.15	9,380.13	-912.64	-126.29	913.50	2.00	0.00	-2.00
10,174.70	90.30	179.66	9,379.73	-987.33	-126.81	988.19	2.00	0.00	-2.00
10,200.00	90.30	179.66	9,379.60	-1,012.63	-126.66	1,013.49	0.00	0.00	0.00
10,300.00	90.30	179.66	9,379.07	-1,112.63	-126.06	1,113.48	0.00	0.00	0.00
10,400.00	90.30	179.66	9,378.54	-1,212.62	-125.46	1,213.47	0.00	0.00	0.00
10,500.00	90.30	179.66	9,378.01	-1,312.62	-124.86	1,313.46	0.00	0.00	0.00
10,600.00	90.30	179.66	9,377.49	-1,412.62	-124.26	1,413.45	0.00	0.00	0.00
10,700.00	90.30	179.66	9,376.96	-1,512.61	-123.66	1,513.44	0.00	0.00	0.00
10,800.00	90.30	179.66	9,376.43	-1,612.61	-123.06	1,613.43	0.00	0.00	0.00
10,900.00	90.30	179.66	9,375.90	-1,712.61	-122.46	1,713.42	0.00	0.00	0.00
11,000.00	90.30	179.66	9,375.38	-1,812.60	-121.86	1,813.41	0.00	0.00	0.00
11,100.00	90.30	179.66	9,374.85	-1,912.60	-121.26	1,913.40	0.00	0.00	0.00
11,200.00	90.30	179.66	9,374.32	-2,012.60	-120.66	2,013.39	0.00	0.00	0.00
11,300.00	90.30	179.66	9,373.79	-2,112.60	-120.05	2,113.38	0.00	0.00	0.00
11,400.00	90.30	179.66	9,373.26	-2,212.59	-119.45	2,213.37	0.00	0.00	0.00
11,500.00	90.30	179.66	9,372.74	-2,312.59	-118.85	2,313.36	0.00	0.00	0.00
11,600.00	90.30	179.66	9,372.21	-2,412.59	-118.25	2,413.35	0.00	0.00	0.00
11,700.00	90.30	179.66	9,371.68	-2,512.58	-117.65	2,513.34	0.00	0.00	0.00
11,800.00	90.30	179.66	9,371.15	-2,612.58	-117.05	2,613.33	0.00	0.00	0.00
11,900.00	90.30	179.66	9,370.62	-2,712.58	-116.45	2,713.32	0.00	0.00	0.00
12,000.00	90.30	179.66	9,370.10	-2,812.57	-115.85	2,813.31	0.00	0.00	0.00
12,100.00	90.30	179.66	9,369.57	-2,912.57	-115.25	2,913.30	0.00	0.00	0.00
12,200.00	90.30	179.66	9,369.04	-3,012.57	-114.65	3,013.29	0.00	0.00	0.00
12,300.00	90.30	179.66	9,368.51	-3,112.56	-114.05	3,113.28	0.00	0.00	0.00
12,400.00	90.30	179.66	9,367.98	-3,212.56	-113.45	3,213.27	0.00	0.00	0.00
12,500.00	90.30	179.66	9,367.46	-3,312.56	-112.85	3,313.26	0.00	0.00	0.00
12,600.00	90.30	179.66	9,366.93	-3,412.55	-112.25	3,413.25	0.00	0.00	0.00
12,700.00	90.30	179.66	9,366.40	-3,512.55	-111.65	3,513.24	0.00	0.00	0.00
12,800.00	90.30	179.66	9,365.87	-3,612.55	-111.04	3,613.23	0.00	0.00	0.00
12,900.00	90.30	179.66	9,365.34	-3,712.54	-110.44	3,713.22	0.00	0.00	0.00
13,000.00	90.30	179.66	9,364.82	-3,812.54	-109.84	3,813.22	0.00	0.00	0.00
13,100.00	90.30	179.66	9,364.29	-3,912.54	-109.24	3,913.21	0.00	0.00	0.00
13,200.00	90.30	179.66	9,363.76	-4,012.53	-108.64	4,013.20	0.00	0.00	0.00
13,300.00	90.30	179.66	9,363.23	-4,112.53	-108.04	4,113.19	0.00	0.00	0.00



Nabors Drilling Solutions

Planning Report



Database: RyanUSA_32Bit
Company: COG Operating LLC
Project: Eddy Co., NM
Site: Myox 28 State Com
Well: 702H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey/Calculation Method:

Well 702H
RT=30 @ 2988.00ft (Nabors 894)
RT=30 @ 2988.00ft (Nabors 894)
Grid
Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	N/S (ft)	E/W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
13,400.00	90.30	179.66	9,362.71	-4,212.53	-107.44	4,213.18	0.00	0.00	0.00
13,500.00	90.30	179.66	9,362.18	-4,312.53	-106.84	4,313.17	0.00	0.00	0.00
13,600.00	90.30	179.66	9,361.65	-4,412.52	-106.24	4,413.16	0.00	0.00	0.00
13,700.00	90.30	179.66	9,361.12	-4,512.52	-105.64	4,513.15	0.00	0.00	0.00
13,800.00	90.30	179.66	9,360.59	-4,612.52	-105.04	4,613.14	0.00	0.00	0.00
13,900.00	90.30	179.66	9,360.07	-4,712.51	-104.44	4,713.13	0.00	0.00	0.00
14,000.00	90.30	179.66	9,359.54	-4,812.51	-103.84	4,813.12	0.00	0.00	0.00
14,100.00	90.30	179.66	9,359.01	-4,912.51	-103.24	4,913.11	0.00	0.00	0.00
14,200.00	90.30	179.66	9,358.48	-5,012.50	-102.63	5,013.10	0.00	0.00	0.00
14,300.00	90.30	179.66	9,357.95	-5,112.50	-102.03	5,113.09	0.00	0.00	0.00
14,400.00	90.30	179.66	9,357.43	-5,212.50	-101.43	5,213.08	0.00	0.00	0.00
14,500.00	90.30	179.66	9,356.90	-5,312.49	-100.83	5,313.07	0.00	0.00	0.00
14,600.00	90.30	179.66	9,356.37	-5,412.49	-100.23	5,413.06	0.00	0.00	0.00
14,700.00	90.30	179.66	9,355.84	-5,512.49	-99.63	5,513.05	0.00	0.00	0.00
14,800.00	90.30	179.66	9,355.31	-5,612.48	-99.03	5,613.04	0.00	0.00	0.00
14,900.00	90.30	179.66	9,354.79	-5,712.48	-98.43	5,713.03	0.00	0.00	0.00
15,000.00	90.30	179.66	9,354.26	-5,812.48	-97.83	5,813.02	0.00	0.00	0.00
15,100.00	90.30	179.66	9,353.73	-5,912.47	-97.23	5,913.01	0.00	0.00	0.00
15,200.00	90.30	179.66	9,353.20	-6,012.47	-96.63	6,013.00	0.00	0.00	0.00
15,300.00	90.30	179.66	9,352.67	-6,112.47	-96.03	6,112.99	0.00	0.00	0.00
15,400.00	90.30	179.66	9,352.15	-6,212.46	-95.43	6,212.98	0.00	0.00	0.00
15,500.00	90.30	179.66	9,351.62	-6,312.46	-94.83	6,312.97	0.00	0.00	0.00
15,600.00	90.30	179.66	9,351.09	-6,412.46	-94.22	6,412.96	0.00	0.00	0.00
15,700.00	90.30	179.66	9,350.56	-6,512.45	-93.62	6,512.95	0.00	0.00	0.00
15,800.00	90.30	179.66	9,350.04	-6,612.45	-93.02	6,612.94	0.00	0.00	0.00
15,900.00	90.30	179.66	9,349.51	-6,712.45	-92.42	6,712.93	0.00	0.00	0.00
16,000.00	90.30	179.66	9,348.98	-6,812.45	-91.82	6,812.92	0.00	0.00	0.00
16,100.00	90.30	179.66	9,348.45	-6,912.44	-91.22	6,912.91	0.00	0.00	0.00
16,200.00	90.30	179.66	9,347.92	-7,012.44	-90.62	7,012.90	0.00	0.00	0.00
16,300.00	90.30	179.66	9,347.40	-7,112.44	-90.02	7,112.89	0.00	0.00	0.00
16,400.00	90.30	179.66	9,346.87	-7,212.43	-89.42	7,212.88	0.00	0.00	0.00
16,500.00	90.30	179.66	9,346.34	-7,312.43	-88.82	7,312.87	0.00	0.00	0.00
16,600.00	90.30	179.66	9,345.81	-7,412.43	-88.22	7,412.86	0.00	0.00	0.00
16,700.00	90.30	179.66	9,345.28	-7,512.42	-87.62	7,512.85	0.00	0.00	0.00
16,800.00	90.30	179.66	9,344.76	-7,612.42	-87.02	7,612.84	0.00	0.00	0.00
16,900.00	90.30	179.66	9,344.23	-7,712.42	-86.42	7,712.83	0.00	0.00	0.00
17,000.00	90.30	179.66	9,343.70	-7,812.41	-85.81	7,812.82	0.00	0.00	0.00
17,100.00	90.30	179.66	9,343.17	-7,912.41	-85.21	7,912.81	0.00	0.00	0.00
17,200.00	90.30	179.66	9,342.64	-8,012.41	-84.61	8,012.80	0.00	0.00	0.00
17,300.00	90.30	179.66	9,342.12	-8,112.40	-84.01	8,112.79	0.00	0.00	0.00
17,400.00	90.30	179.66	9,341.59	-8,212.40	-83.41	8,212.78	0.00	0.00	0.00
17,500.00	90.30	179.66	9,341.06	-8,312.40	-82.81	8,312.77	0.00	0.00	0.00
17,600.00	90.30	179.66	9,340.53	-8,412.39	-82.21	8,412.76	0.00	0.00	0.00
17,700.00	90.30	179.66	9,340.01	-8,512.39	-81.61	8,512.75	0.00	0.00	0.00
17,800.00	90.30	179.66	9,339.48	-8,612.39	-81.01	8,612.74	0.00	0.00	0.00
17,900.00	90.30	179.66	9,338.95	-8,712.38	-80.41	8,712.73	0.00	0.00	0.00
18,000.00	90.30	179.66	9,338.42	-8,812.38	-79.81	8,812.72	0.00	0.00	0.00
18,100.00	90.30	179.66	9,337.89	-8,912.38	-79.21	8,912.71	0.00	0.00	0.00
18,200.00	90.30	179.66	9,337.37	-9,012.37	-78.61	9,012.70	0.00	0.00	0.00
18,300.00	90.30	179.66	9,336.84	-9,112.37	-78.01	9,112.69	0.00	0.00	0.00
18,400.00	90.30	179.66	9,336.31	-9,212.37	-77.40	9,212.68	0.00	0.00	0.00
18,500.00	90.30	179.66	9,335.78	-9,312.37	-76.80	9,312.67	0.00	0.00	0.00
18,600.00	90.30	179.66	9,335.25	-9,412.36	-76.20	9,412.66	0.00	0.00	0.00
18,700.00	90.30	179.66	9,334.73	-9,512.36	-75.60	9,512.65	0.00	0.00	0.00



Nabors Drilling Solutions Planning Report



Database: RyanUSA_32Bit
Company: COG Operating LLC
Project: Eddy Co., NM
Site: Myox 28 State Com
Well: 702H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well 702H
TVD Reference: RT=30 @ 2988.00ft (Nabors 894)
MD Reference: RT=30 @ 2988.00ft (Nabors 894)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
18,800.00	90.30	179.66	9,334.20	-9,612.36	-75.00	9,612.65	0.00	0.00	0.00
18,900.00	90.30	179.66	9,333.67	-9,712.35	-74.40	9,712.64	0.00	0.00	0.00
19,000.00	90.30	179.66	9,333.14	-9,812.35	-73.80	9,812.63	0.00	0.00	0.00
19,100.00	90.30	179.66	9,332.61	-9,912.35	-73.20	9,912.62	0.00	0.00	0.00
19,200.00	90.30	179.66	9,332.09	-10,012.34	-72.60	10,012.61	0.00	0.00	0.00
19,275.77	90.30	179.66	9,331.69	-10,088.11	-72.14	10,088.37	0.00	0.00	0.00
702H - LTP									
19,300.00	90.30	179.66	9,331.56	-10,112.34	-72.00	10,112.60	0.00	0.00	0.00
19,405.77	90.30	179.66	9,331.00	-10,218.11	-71.36	10,218.36	0.00	0.00	0.00
702H - BHL									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
hit/miss target									
- Shape									
702H - BHL	0.00	0.00	9,331.00	-10,218.11	-71.36	392,675.600	576,499.000	32° 4' 45.624552 N	104° 5' 10.843999 W
- plan hits target center									
- Point									
702H - LTP	0.00	0.00	9,332.00	-10,088.11	-70.46	392,805.600	576,499.900	32° 4' 46.911080 N	104° 5' 10.830079 W
- plan misses target center by 1.71ft at 19275.77ft MD (9331.69 TVD, -10088.11 N, -72.14 E)									
- Point									
702H - FTP	0.00	0.00	9,391.00	-87.09	-143.26	402,806.600	576,427.100	32° 6' 25.887605 N	104° 5' 11.410175 W
- plan misses target center by 182.07ft at 9348.71ft MD (9287.55 TVD, -188.84 N, -33.30 E)									
- Point									

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
714.00	714.00	TOS			
2,273.00	2,273.00	BOS (Fletcher)			
2,478.00	2,478.00	LMAR (Top Delaware)			
2,512.00	2,512.00	BLCN			
3,360.00	3,360.00	CYCN			
4,574.00	4,574.00	BYCN			
6,158.00	6,158.00	Bone Sprg (BSGL)			
6,495.00	6,495.00	U Avalon Sh			
6,711.00	6,711.00	L Avalon Sh			
7,096.00	7,096.00	FBSG_sand			
7,841.00	7,841.00	SBSG_sand			
8,270.00	8,270.00	SBSG_sand_Base			
8,957.10	8,957.00	TBSG_sand			
9,396.15	9,314.00	WFMP			

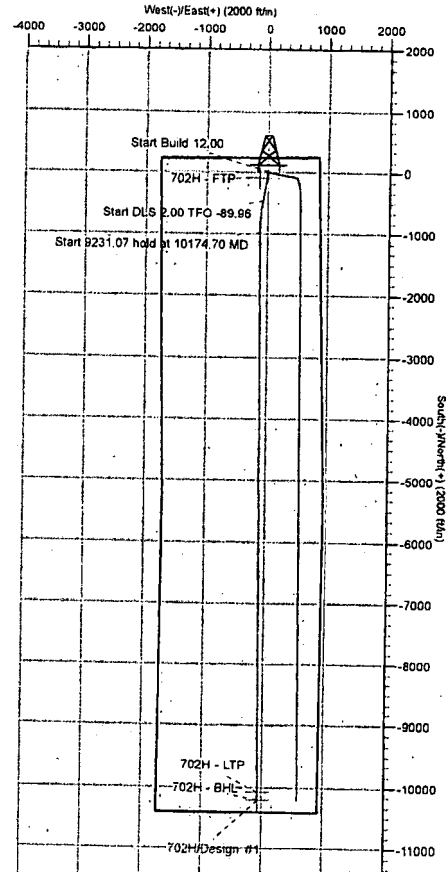
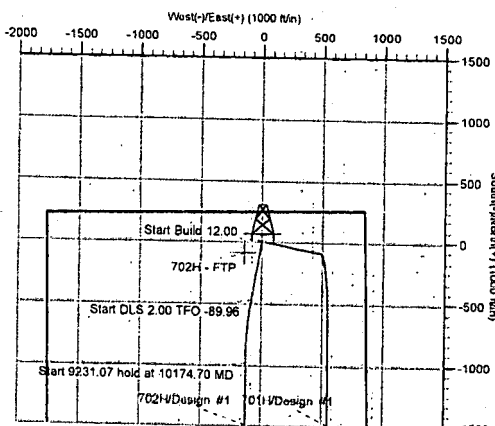
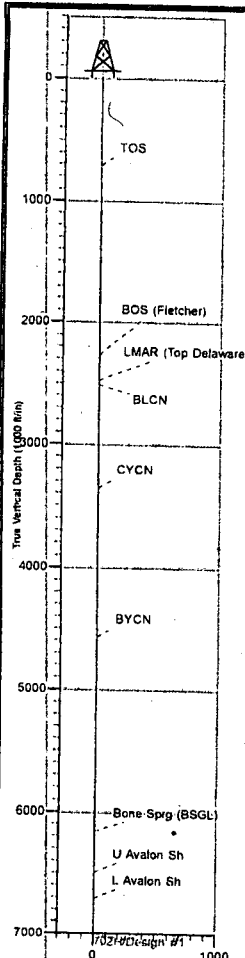
CONCHO

Project: Eddy Co., NM
 Site: Myox 28 State Com
 Well: 702H
 Wellbore: Wellbore #1
 Design: Design #1
 Northing: 402893.686
 Easting: 576570.363
 Rig: Nabors 894

NABORS



Azimuths to Grid North
 True North: -0.13°
 Magnetic North: 6.87°
 Magnetic Field
 Strength: 47877.2nT
 Dip Angle: 59.80°
 Date: 3/21/2019
 Model: HDGM_FILE



MD	Inc	Azi	TVD	+N/-S	+E/-W	Dieg	TFace	Vsect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8905.00	0.00	0.00	8905.00	0.00	0.00	0.00	0.00	0.00
9657.50	90.30	190.00	9382.46	-472.67	-83.35	12.00	190.00	473.24
10174.70	90.30	179.66	9379.73	-987.33	-126.81	2.00	-89.96	988.19
19405.77	90.30	179.66	9331.00	-10218.11	-71.36	0.00	0.00	10218.36

