

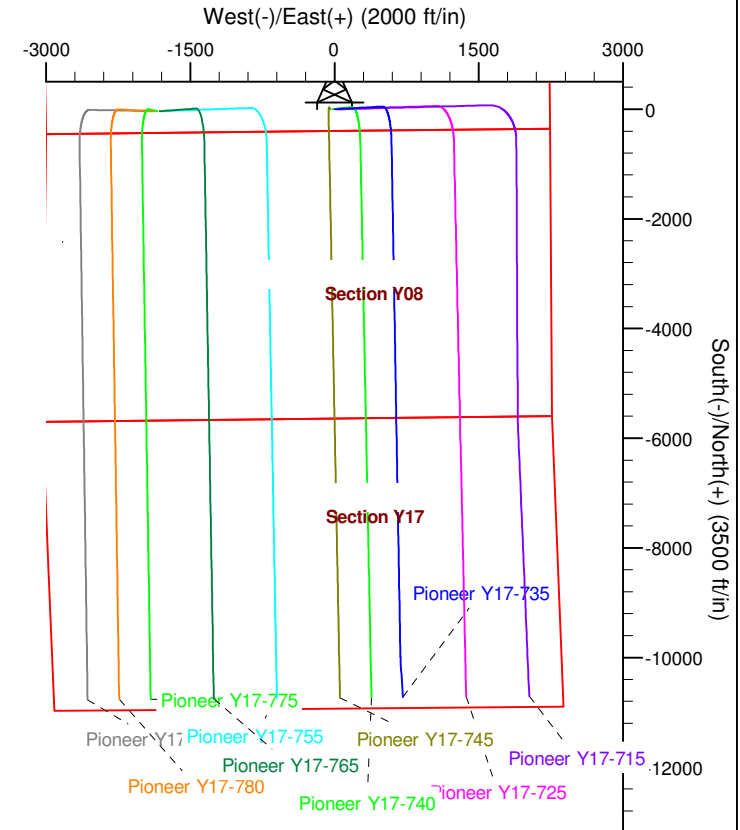
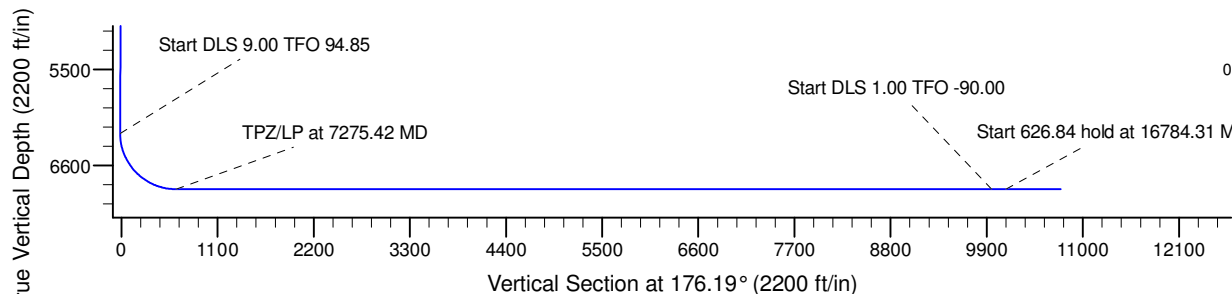
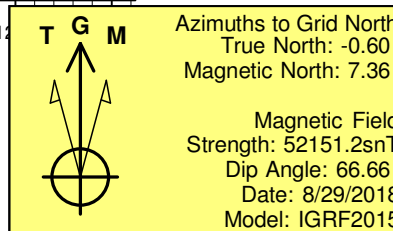
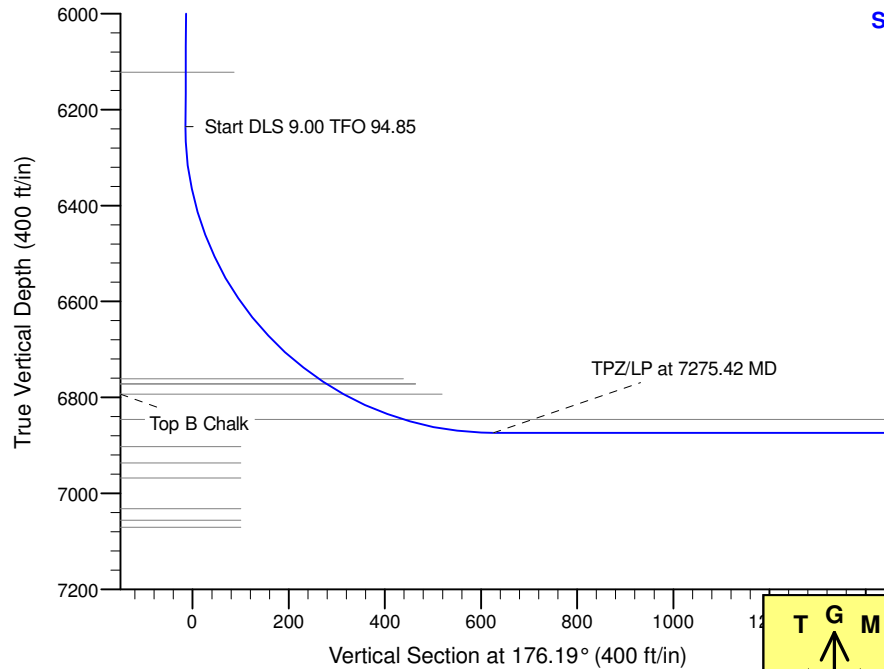
Project: Mustang  
Site: Y Section 05  
Well: Pioneer Y17-735  
Wellbore: Pioneer Y17-735  
Design: Plan #1

# Northern Region - DJ Basin

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone  
System Datum: Mean Sea Level

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	0.00	
3	2574.52	7.49	84.55	2573.45	2.32	24.34	2.00	84.55	-0.70	
4	6268.34	7.49	84.55	6235.76	48.08	503.68	0.00	0.00	-14.54	
5	7275.42	90.00	179.44	6874.00	-587.65	593.53	9.00	94.85	625.75	Pioneer Y17-735-TPZ
6	16620.33	90.00	179.44	6874.00	-9932.11	685.23	0.00	0.00	9955.69	Pioneer Y17-735 Nudge
7	16784.31	90.00	177.80	6874.00	-10096.04	689.18	1.00	-90.00	10119.52	Pioneer Y17-735-BHL
8	17411.15	90.00	177.80	6874.00	-10722.42	713.26	0.00	0.00	10746.11	Pioneer Y17-735-BHL



## WELL DETAILS: Pioneer Y17-735

0.00	0.00	1302932.28	3258830.18	4867.00 Latitude 40.1612340	Longitude -104.5739070
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## Plan: Plan #1 (Pioneer Y17-735/Pioneer Y17-735)

Created By: Colby Baxter Date: 10:54, September 26 2018

Checked: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed: \_\_\_\_\_ Date: \_\_\_\_\_

Approved: \_\_\_\_\_ Date: \_\_\_\_\_

# **Northern Region - DJ Basin**

**Mustang**

**Y Section 05**

**Pioneer Y17-735**

**Pioneer Y17-735**

**Plan: Plan #1**

## **Standard Survey Report**

**26 September, 2018**

# Noble Energy, Inc.

## Survey Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Pioneer Y17-735
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4897.00ft
<b>Site:</b>	Y Section 05	<b>MD Reference:</b>	Well @ 4897.00ft
<b>Well:</b>	Pioneer Y17-735	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Pioneer Y17-735	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	EDMP

<b>Project</b>	Mustang, Weld County Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site		Y Section 05				
Site Position:		Northing:	1,305,805.36	usft	Latitude:	40.1691900
From:	Map	Easting:	3,256,395.86	usft	Longitude:	-104.5825100
Position Uncertainty:		0.00	ft	Slot Radius:	13.200	in
					Grid Convergence:	0.59 °

Well	Pioneer Y17-735					
Well Position	+N/-S	0.00 ft	Northing:	1,302,932.28 usft	Latitude:	40.1612340
	+E/-W	0.00 ft	Easting:	3,258,830.18 usft	Longitude:	-104.5739070
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,867.00 ft

<b>Wellbore</b>	Pioneer Y17-735				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	8/29/2018	7.96	66.66	52,151.19601882

<b>Design</b>	Plan #1				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00	
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	176.19	

<b>Survey Tool Program</b>	<b>Date</b>	9/26/2018			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
0.00	17,410.77	Plan #1 (Pioneer Y17-735)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis	

<b>Planned Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	
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	

# Noble Energy, Inc.

## Survey Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Pioneer Y17-735
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4897.00ft
<b>Site:</b>	Y Section 05	<b>MD Reference:</b>	Well @ 4897.00ft
<b>Well:</b>	Pioneer Y17-735	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Pioneer Y17-735	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	EDMP

### 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)
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	2.00	84.55	2,299.98	0.17	1.74	-0.05	2.00	2.00	0.00
2,400.00	4.00	84.55	2,399.84	0.66	6.95	-0.20	2.00	2.00	0.00
2,500.00	6.00	84.55	2,499.45	1.49	15.62	-0.45	2.00	2.00	0.00
2,574.52	7.49	84.55	2,573.45	2.32	24.34	-0.70	2.00	2.00	0.00
2,600.00	7.49	84.55	2,598.72	2.64	27.64	-0.80	0.00	0.00	0.00
2,700.00	7.49	84.55	2,697.86	3.88	40.62	-1.17	0.00	0.00	0.00
2,800.00	7.49	84.55	2,797.01	5.12	53.60	-1.55	0.00	0.00	0.00
2,900.00	7.49	84.55	2,896.16	6.35	66.57	-1.92	0.00	0.00	0.00
3,000.00	7.49	84.55	2,995.30	7.59	79.55	-2.30	0.00	0.00	0.00
3,100.00	7.49	84.55	3,094.45	8.83	92.53	-2.67	0.00	0.00	0.00
3,200.00	7.49	84.55	3,193.60	10.07	105.50	-3.05	0.00	0.00	0.00
3,300.00	7.49	84.55	3,292.74	11.31	118.48	-3.42	0.00	0.00	0.00
3,400.00	7.49	84.55	3,391.89	12.55	131.46	-3.79	0.00	0.00	0.00
3,500.00	7.49	84.55	3,491.04	13.79	144.43	-4.17	0.00	0.00	0.00
3,600.00	7.49	84.55	3,590.18	15.03	157.41	-4.54	0.00	0.00	0.00
3,700.00	7.49	84.55	3,689.33	16.26	170.39	-4.92	0.00	0.00	0.00
3,800.00	7.49	84.55	3,788.48	17.50	183.37	-5.29	0.00	0.00	0.00
3,900.00	7.49	84.55	3,887.62	18.74	196.34	-5.67	0.00	0.00	0.00
4,000.00	7.49	84.55	3,986.77	19.98	209.32	-6.04	0.00	0.00	0.00
4,100.00	7.49	84.55	4,085.92	21.22	222.30	-6.42	0.00	0.00	0.00
4,200.00	7.49	84.55	4,185.06	22.46	235.27	-6.79	0.00	0.00	0.00
4,300.00	7.49	84.55	4,284.21	23.70	248.25	-7.17	0.00	0.00	0.00
4,400.00	7.49	84.55	4,383.36	24.93	261.23	-7.54	0.00	0.00	0.00
4,500.00	7.49	84.55	4,482.50	26.17	274.20	-7.92	0.00	0.00	0.00
4,600.00	7.49	84.55	4,581.65	27.41	287.18	-8.29	0.00	0.00	0.00
4,700.00	7.49	84.55	4,680.80	28.65	300.16	-8.66	0.00	0.00	0.00
4,800.00	7.49	84.55	4,779.94	29.89	313.13	-9.04	0.00	0.00	0.00
4,900.00	7.49	84.55	4,879.09	31.13	326.11	-9.41	0.00	0.00	0.00
5,000.00	7.49	84.55	4,978.24	32.37	339.09	-9.79	0.00	0.00	0.00
5,100.00	7.49	84.55	5,077.38	33.61	352.07	-10.16	0.00	0.00	0.00
5,200.00	7.49	84.55	5,176.53	34.84	365.04	-10.54	0.00	0.00	0.00

# Noble Energy, Inc.

## Survey Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Pioneer Y17-735
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4897.00ft
<b>Site:</b>	Y Section 05	<b>MD Reference:</b>	Well @ 4897.00ft
<b>Well:</b>	Pioneer Y17-735	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Pioneer Y17-735	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	EDMP

### 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)
5,300.00	7.49	84.55	5,275.68	36.08	378.02	-10.91	0.00	0.00	0.00
5,400.00	7.49	84.55	5,374.82	37.32	391.00	-11.29	0.00	0.00	0.00
5,500.00	7.49	84.55	5,473.97	38.56	403.97	-11.66	0.00	0.00	0.00
5,600.00	7.49	84.55	5,573.12	39.80	416.95	-12.04	0.00	0.00	0.00
5,700.00	7.49	84.55	5,672.26	41.04	429.93	-12.41	0.00	0.00	0.00
5,800.00	7.49	84.55	5,771.41	42.28	442.90	-12.79	0.00	0.00	0.00
5,900.00	7.49	84.55	5,870.56	43.51	455.88	-13.16	0.00	0.00	0.00
6,000.00	7.49	84.55	5,969.70	44.75	468.86	-13.53	0.00	0.00	0.00
6,100.00	7.49	84.55	6,068.85	45.99	481.84	-13.91	0.00	0.00	0.00
6,200.00	7.49	84.55	6,168.00	47.23	494.81	-14.28	0.00	0.00	0.00
6,268.35	7.49	84.55	6,235.76	48.08	503.68	-14.54	0.00	0.00	0.00
6,300.00	7.78	106.00	6,267.14	47.68	507.80	-13.87	9.00	0.92	67.77
6,400.00	13.44	146.20	6,365.51	36.13	520.80	-1.49	9.00	5.66	40.20
6,500.00	21.49	160.00	6,460.86	9.20	533.55	26.23	9.00	8.05	13.80
6,600.00	30.07	166.36	6,550.84	-32.44	545.75	68.59	9.00	8.58	6.36
6,700.00	38.82	170.07	6,633.24	-87.78	557.09	124.56	9.00	8.76	3.71
6,800.00	47.66	172.58	6,706.01	-155.44	567.29	192.75	9.00	8.84	2.51
6,900.00	56.54	174.47	6,767.39	-233.77	576.09	271.49	9.00	8.88	1.89
7,000.00	65.44	176.01	6,815.84	-320.83	583.30	358.84	9.00	8.90	1.53
7,100.00	74.35	177.33	6,850.19	-414.48	588.72	452.64	9.00	8.91	1.33
7,200.00	83.27	178.55	6,869.58	-512.42	592.22	550.60	9.00	8.92	1.22
7,275.42	90.00	179.44	6,874.00	-587.65	593.53	625.75	9.00	8.92	1.17
7,300.00	90.00	179.44	6,874.00	-612.23	593.78	650.29	0.00	0.00	0.00
7,400.00	90.00	179.44	6,874.00	-712.23	594.76	750.13	0.00	0.00	0.00
7,500.00	90.00	179.44	6,874.00	-812.22	595.74	849.97	0.00	0.00	0.00
7,600.00	90.00	179.44	6,874.00	-912.22	596.72	949.81	0.00	0.00	0.00
7,700.00	90.00	179.44	6,874.00	-1,012.21	597.70	1,049.65	0.00	0.00	0.00
7,800.00	90.00	179.44	6,874.00	-1,112.21	598.68	1,149.49	0.00	0.00	0.00
7,900.00	90.00	179.44	6,874.00	-1,212.20	599.66	1,249.33	0.00	0.00	0.00
8,000.00	90.00	179.44	6,874.00	-1,312.20	600.64	1,349.17	0.00	0.00	0.00
8,100.00	90.00	179.44	6,874.00	-1,412.19	601.63	1,449.01	0.00	0.00	0.00
8,200.00	90.00	179.44	6,874.00	-1,512.19	602.61	1,548.85	0.00	0.00	0.00
8,300.00	90.00	179.44	6,874.00	-1,612.18	603.59	1,648.69	0.00	0.00	0.00
8,400.00	90.00	179.44	6,874.00	-1,712.18	604.57	1,748.53	0.00	0.00	0.00
8,500.00	90.00	179.44	6,874.00	-1,812.17	605.55	1,848.37	0.00	0.00	0.00
8,600.00	90.00	179.44	6,874.00	-1,912.17	606.53	1,948.21	0.00	0.00	0.00
8,700.00	90.00	179.44	6,874.00	-2,012.16	607.51	2,048.05	0.00	0.00	0.00
8,800.00	90.00	179.44	6,874.00	-2,112.16	608.49	2,147.89	0.00	0.00	0.00
8,900.00	90.00	179.44	6,874.00	-2,212.15	609.47	2,247.73	0.00	0.00	0.00
9,000.00	90.00	179.44	6,874.00	-2,312.15	610.46	2,347.57	0.00	0.00	0.00
9,100.00	90.00	179.44	6,874.00	-2,412.14	611.44	2,447.41	0.00	0.00	0.00
9,200.00	90.00	179.44	6,874.00	-2,512.14	612.42	2,547.25	0.00	0.00	0.00
9,300.00	90.00	179.44	6,874.00	-2,612.13	613.40	2,647.09	0.00	0.00	0.00

# Noble Energy, Inc.

## Survey Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Pioneer Y17-735
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4897.00ft
<b>Site:</b>	Y Section 05	<b>MD Reference:</b>	Well @ 4897.00ft
<b>Well:</b>	Pioneer Y17-735	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Pioneer Y17-735	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	EDMP

### 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)
9,400.00	90.00	179.44	6,874.00	-2,712.13	614.38	2,746.93	0.00	0.00	0.00
9,500.00	90.00	179.44	6,874.00	-2,812.13	615.36	2,846.77	0.00	0.00	0.00
9,600.00	90.00	179.44	6,874.00	-2,912.12	616.34	2,946.61	0.00	0.00	0.00
9,700.00	90.00	179.44	6,874.00	-3,012.12	617.32	3,046.45	0.00	0.00	0.00
9,800.00	90.00	179.44	6,874.00	-3,112.11	618.31	3,146.29	0.00	0.00	0.00
9,900.00	90.00	179.44	6,874.00	-3,212.11	619.29	3,246.13	0.00	0.00	0.00
10,000.00	90.00	179.44	6,874.00	-3,312.10	620.27	3,345.97	0.00	0.00	0.00
10,100.00	90.00	179.44	6,874.00	-3,412.10	621.25	3,445.81	0.00	0.00	0.00
10,200.00	90.00	179.44	6,874.00	-3,512.09	622.23	3,545.65	0.00	0.00	0.00
10,300.00	90.00	179.44	6,874.00	-3,612.09	623.21	3,645.49	0.00	0.00	0.00
10,400.00	90.00	179.44	6,874.00	-3,712.08	624.19	3,745.33	0.00	0.00	0.00
10,500.00	90.00	179.44	6,874.00	-3,812.08	625.17	3,845.17	0.00	0.00	0.00
10,600.00	90.00	179.44	6,874.00	-3,912.07	626.15	3,945.01	0.00	0.00	0.00
10,700.00	90.00	179.44	6,874.00	-4,012.07	627.14	4,044.85	0.00	0.00	0.00
10,800.00	90.00	179.44	6,874.00	-4,112.06	628.12	4,144.69	0.00	0.00	0.00
10,900.00	90.00	179.44	6,874.00	-4,212.06	629.10	4,244.53	0.00	0.00	0.00
11,000.00	90.00	179.44	6,874.00	-4,312.05	630.08	4,344.37	0.00	0.00	0.00
11,100.00	90.00	179.44	6,874.00	-4,412.05	631.06	4,444.20	0.00	0.00	0.00
11,200.00	90.00	179.44	6,874.00	-4,512.04	632.04	4,544.04	0.00	0.00	0.00
11,300.00	90.00	179.44	6,874.00	-4,612.04	633.02	4,643.88	0.00	0.00	0.00
11,400.00	90.00	179.44	6,874.00	-4,712.03	634.00	4,743.72	0.00	0.00	0.00
11,500.00	90.00	179.44	6,874.00	-4,812.03	634.99	4,843.56	0.00	0.00	0.00
11,600.00	90.00	179.44	6,874.00	-4,912.02	635.97	4,943.40	0.00	0.00	0.00
11,700.00	90.00	179.44	6,874.00	-5,012.02	636.95	5,043.24	0.00	0.00	0.00
11,800.00	90.00	179.44	6,874.00	-5,112.01	637.93	5,143.08	0.00	0.00	0.00
11,900.00	90.00	179.44	6,874.00	-5,212.01	638.91	5,242.92	0.00	0.00	0.00
12,000.00	90.00	179.44	6,874.00	-5,312.00	639.89	5,342.76	0.00	0.00	0.00
12,100.00	90.00	179.44	6,874.00	-5,412.00	640.87	5,442.60	0.00	0.00	0.00
12,200.00	90.00	179.44	6,874.00	-5,512.00	641.85	5,542.44	0.00	0.00	0.00
12,300.00	90.00	179.44	6,874.00	-5,611.99	642.83	5,642.28	0.00	0.00	0.00
12,400.00	90.00	179.44	6,874.00	-5,711.99	643.82	5,742.12	0.00	0.00	0.00
12,500.00	90.00	179.44	6,874.00	-5,811.98	644.80	5,841.96	0.00	0.00	0.00
12,600.00	90.00	179.44	6,874.00	-5,911.98	645.78	5,941.80	0.00	0.00	0.00
12,700.00	90.00	179.44	6,874.00	-6,011.97	646.76	6,041.64	0.00	0.00	0.00
12,800.00	90.00	179.44	6,874.00	-6,111.97	647.74	6,141.48	0.00	0.00	0.00
12,900.00	90.00	179.44	6,874.00	-6,211.96	648.72	6,241.32	0.00	0.00	0.00
13,000.00	90.00	179.44	6,874.00	-6,311.96	649.70	6,341.16	0.00	0.00	0.00
13,100.00	90.00	179.44	6,874.00	-6,411.95	650.68	6,441.00	0.00	0.00	0.00
13,200.00	90.00	179.44	6,874.00	-6,511.95	651.67	6,540.84	0.00	0.00	0.00
13,300.00	90.00	179.44	6,874.00	-6,611.94	652.65	6,640.68	0.00	0.00	0.00
13,400.00	90.00	179.44	6,874.00	-6,711.94	653.63	6,740.52	0.00	0.00	0.00
13,500.00	90.00	179.44	6,874.00	-6,811.93	654.61	6,840.36	0.00	0.00	0.00
13,600.00	90.00	179.44	6,874.00	-6,911.93	655.59	6,940.20	0.00	0.00	0.00

# Noble Energy, Inc.

## Survey Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Pioneer Y17-735
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4897.00ft
<b>Site:</b>	Y Section 05	<b>MD Reference:</b>	Well @ 4897.00ft
<b>Well:</b>	Pioneer Y17-735	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Pioneer Y17-735	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	EDMP

### 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)
13,700.00	90.00	179.44	6,874.00	-7,011.92	656.57	7,040.04	0.00	0.00	0.00
13,800.00	90.00	179.44	6,874.00	-7,111.92	657.55	7,139.88	0.00	0.00	0.00
13,900.00	90.00	179.44	6,874.00	-7,211.91	658.53	7,239.72	0.00	0.00	0.00
14,000.00	90.00	179.44	6,874.00	-7,311.91	659.52	7,339.56	0.00	0.00	0.00
14,100.00	90.00	179.44	6,874.00	-7,411.90	660.50	7,439.40	0.00	0.00	0.00
14,200.00	90.00	179.44	6,874.00	-7,511.90	661.48	7,539.24	0.00	0.00	0.00
14,300.00	90.00	179.44	6,874.00	-7,611.89	662.46	7,639.08	0.00	0.00	0.00
14,400.00	90.00	179.44	6,874.00	-7,711.89	663.44	7,738.92	0.00	0.00	0.00
14,500.00	90.00	179.44	6,874.00	-7,811.88	664.42	7,838.76	0.00	0.00	0.00
14,600.00	90.00	179.44	6,874.00	-7,911.88	665.40	7,938.60	0.00	0.00	0.00
14,700.00	90.00	179.44	6,874.00	-8,011.87	666.38	8,038.44	0.00	0.00	0.00
14,800.00	90.00	179.44	6,874.00	-8,111.87	667.36	8,138.28	0.00	0.00	0.00
14,900.00	90.00	179.44	6,874.00	-8,211.87	668.35	8,238.12	0.00	0.00	0.00
15,000.00	90.00	179.44	6,874.00	-8,311.86	669.33	8,337.96	0.00	0.00	0.00
15,100.00	90.00	179.44	6,874.00	-8,411.86	670.31	8,437.80	0.00	0.00	0.00
15,200.00	90.00	179.44	6,874.00	-8,511.85	671.29	8,537.64	0.00	0.00	0.00
15,300.00	90.00	179.44	6,874.00	-8,611.85	672.27	8,637.48	0.00	0.00	0.00
15,400.00	90.00	179.44	6,874.00	-8,711.84	673.25	8,737.32	0.00	0.00	0.00
15,500.00	90.00	179.44	6,874.00	-8,811.84	674.23	8,837.16	0.00	0.00	0.00
15,600.00	90.00	179.44	6,874.00	-8,911.83	675.21	8,937.00	0.00	0.00	0.00
15,700.00	90.00	179.44	6,874.00	-9,011.83	676.20	9,036.84	0.00	0.00	0.00
15,800.00	90.00	179.44	6,874.00	-9,111.82	677.18	9,136.68	0.00	0.00	0.00
15,900.00	90.00	179.44	6,874.00	-9,211.82	678.16	9,236.52	0.00	0.00	0.00
16,000.00	90.00	179.44	6,874.00	-9,311.81	679.14	9,336.36	0.00	0.00	0.00
16,100.00	90.00	179.44	6,874.00	-9,411.81	680.12	9,436.20	0.00	0.00	0.00
16,200.00	90.00	179.44	6,874.00	-9,511.80	681.10	9,536.03	0.00	0.00	0.00
16,300.00	90.00	179.44	6,874.00	-9,611.80	682.08	9,635.87	0.00	0.00	0.00
16,400.00	90.00	179.44	6,874.00	-9,711.79	683.06	9,735.71	0.00	0.00	0.00
16,500.00	90.00	179.44	6,874.00	-9,811.79	684.04	9,835.55	0.00	0.00	0.00
16,600.00	90.00	179.44	6,874.00	-9,911.78	685.03	9,935.39	0.00	0.00	0.00
16,620.33	90.00	179.44	6,874.00	-9,932.11	685.23	9,955.69	0.00	0.00	0.00
16,700.00	90.00	178.64	6,874.00	-10,011.77	686.56	10,035.26	1.00	0.00	-1.00
16,784.31	90.00	177.80	6,874.00	-10,096.04	689.18	10,119.52	1.00	0.00	-1.00
16,800.00	90.00	177.80	6,874.00	-10,111.72	689.78	10,135.20	0.00	0.00	0.00
16,900.00	90.00	177.80	6,874.00	-10,211.64	693.63	10,235.16	0.00	0.00	0.00
17,000.00	90.00	177.80	6,874.00	-10,311.57	697.47	10,335.12	0.00	0.00	0.00
17,100.00	90.00	177.80	6,874.00	-10,411.50	701.31	10,435.09	0.00	0.00	0.00
17,200.00	90.00	177.80	6,874.00	-10,511.42	705.15	10,535.05	0.00	0.00	0.00
17,300.00	90.00	177.80	6,874.00	-10,611.35	708.99	10,635.01	0.00	0.00	0.00
17,400.00	90.00	177.80	6,874.00	-10,711.27	712.84	10,734.97	0.00	0.00	0.00
17,411.15	90.00	177.80	6,874.00	-10,722.42	713.26	10,746.11	0.00	0.00	0.00

# Noble Energy, Inc.

## Survey Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Pioneer Y17-735
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4897.00ft
<b>Site:</b>	Y Section 05	<b>MD Reference:</b>	Well @ 4897.00ft
<b>Well:</b>	Pioneer Y17-735	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Pioneer Y17-735	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	EDMP

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Pioneer Y17-735-SHL - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,302,932.28	3,258,830.18	40.1612340	-104.5739070
Pioneer Y17-735-KOP - plan hits target center - Point	0.00	0.00	6,235.75	48.08	503.68	1,302,980.36	3,259,333.86	40.1613515	-104.5721031
Pioneer Y17-735-BHL - plan hits target center - Point	0.00	0.00	6,874.00	-10,722.42	713.26	1,292,209.89	3,259,543.44	40.1317807	-104.5717567
Pioneer Y17-735 Nudge - plan hits target center - Point	0.00	0.00	6,874.00	-9,932.11	685.23	1,293,000.19	3,259,515.40	40.1339509	-104.5718274
Pioneer Y17-735-TPZ - plan hits target center - Point	0.00	0.00	6,874.00	-587.65	593.53	1,302,344.63	3,259,423.71	40.1596039	-104.5718055

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
610.00	610.00	Pierre				
958.00	958.00	Upper Pierre Aquifer Top				
1,767.00	1,767.00	Upper Pierre Aquifer Base				
3,858.02	3,846.00	Parkman				
4,429.90	4,413.00	Sussex				
5,217.62	5,194.00	Shannon				
6,153.61	6,122.00	Teepee Buttes				
6,888.57	6,761.00	Sharon Springs				
6,908.45	6,772.00	Top A Chalk				
6,908.45	6,772.00	Top A Marl				
6,949.36	6,793.00	Top B Chalk				
7,085.09	6,846.00	Top B Marl				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2200	2200	0	0	Start Build 2.00	
6268	6236	2	24	Start DLS 9.00 TFO 94.85	
7275	6874	48	504	TPZ/LP at 7275.42 MD	
16,620	6874	-588	594	Start DLS 1.00 TFO -90.00	
16,784	6874	-9932	685	Start 626.84 hold at 16784.31 MD	
17,411	6874	-10,096	689	TD at 17411.15 MD	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

# **Northern Region - DJ Basin**

**Mustang**

**Y Section 05**

**Pioneer Y17-735**

**Pioneer Y17-735**

**Plan #1**

## **Anticollision Summary Report**

**26 September, 2018**

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Pioneer Y17-735
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4897.00ft
<b>Reference Site:</b>	Y Section 05	<b>MD Reference:</b>	Well @ 4897.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Pioneer Y17-735	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Pioneer Y17-735	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #1		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	Stations	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 10,000.00 ft	<b>Error Surface:</b>	Pedal Curve
<b>Warning Levels Evaluated at:</b>	2.00 Sigma	<b>Casing Method:</b>	Not applied

<b>Survey Tool Program</b>	<b>Date</b>	9/26/2018		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	17,410.77	Plan #1 (Pioneer Y17-735)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Y Section 05						
Olsen Red Y05-02D - Olsen Red Y05-02D - Olsen Red Y	100.00	43.57	4,087.19	4,086.99	10,000.000	CC
Olsen Red Y05-02D - Olsen Red Y05-02D - Olsen Red Y	2,200.00	2,135.54	4,093.92	4,078.98	273.901	ES
Olsen Red Y05-02D - Olsen Red Y05-02D - Olsen Red Y	6,650.00	6,579.88	4,391.11	4,344.82	94.865	SF
Olsen Y5-05JI - Olsen Y5-05JI - Olsen Y5-05JI - As Drille	2,200.00	2,133.00	3,765.70	3,754.31	330.729	CC, ES
Olsen Y5-05JI - Olsen Y5-05JI - Olsen Y5-05JI - As Drille	6,650.00	6,526.12	4,184.42	4,149.62	120.219	SF
Perkins 32-05 - Perkins 32-05 - Perkins 32-05 - As Drille	6,269.23	6,221.64	2,859.60	2,783.00	37.333	CC, ES
Perkins 32-05 - Perkins 32-05 - Perkins 32-05 - As Drille	6,550.00	6,491.66	2,920.51	2,840.61	36.550	SF
Perkins 42-05 - Perkins 42-05 - Perkins 42-05 - As Drille	6,306.93	6,276.00	3,049.78	2,972.54	39.483	CC, ES
Perkins 42-05 - Perkins 42-05 - Perkins 42-05 - As Drille	6,600.00	6,552.84	3,112.41	3,031.77	38.599	SF
Perkins 43-05 - Perkins 43-05 - Perkins 43-05 - As Drille	6,333.04	6,306.83	1,883.17	1,805.58	24.271	CC
Perkins 43-05 - Perkins 43-05 - Perkins 43-05 - As Drille	6,350.00	6,323.55	1,883.36	1,805.56	24.209	ES
Perkins 43-05 - Perkins 43-05 - Perkins 43-05 - As Drille	6,550.00	6,513.66	1,914.07	1,833.94	23.886	SF
Perkins USX Y05-16 - Perkins USX Y05-16 - Perkins US	6,340.30	6,296.53	819.22	774.83	18.454	CC
Perkins USX Y05-16 - Perkins USX Y05-16 - Perkins US	6,350.00	6,306.29	819.28	774.82	18.427	ES
Perkins USX Y05-16 - Perkins USX Y05-16 - Perkins US	6,450.00	6,405.86	826.56	781.40	18.304	SF
Pioneer Y17-715 - Pioneer Y17-715 - Plan #1	2,200.00	2,203.00	45.00	29.68	2.938	CC
Pioneer Y17-715 - Pioneer Y17-715 - Plan #1	2,600.00	2,596.76	45.21	27.29	2.523	ES, SF
Pioneer Y17-725 - Pioneer Y17-725 - Plan #1	2,200.00	2,202.00	22.64	7.33	1.478	Level 3, CC
Pioneer Y17-725 - Pioneer Y17-725 - Plan #1	2,600.00	2,598.84	22.92	5.00	1.279	Level 3, ES, SF
Pioneer Y17-740 - Pioneer Y17-740 - Plan #1	2,200.00	2,201.00	22.36	7.05	1.460	Level 3, CC, ES, SF
Pioneer Y17-745 - Pioneer Y17-745 - Plan #1	2,200.00	2,202.00	45.00	29.69	2.939	CC, ES
Pioneer Y17-745 - Pioneer Y17-745 - Plan #1	2,300.00	2,302.02	46.74	30.72	2.917	SF
Pioneer Y17-755 - Pioneer Y17-755 - Plan #1	16,623.69	16,678.63	1,292.78	1,122.26	7.581	CC
Pioneer Y17-755 - Pioneer Y17-755 - Plan #1	16,700.00	16,754.93	1,293.29	1,121.56	7.531	ES
Pioneer Y17-755 - Pioneer Y17-755 - Plan #1	17,411.15	17,465.82	1,312.60	1,129.61	7.173	SF
Pioneer Y17-765 - Pioneer Y17-765 - Plan #1	2,200.00	2,189.00	1,818.45	1,803.19	119.108	CC
Pioneer Y17-765 - Pioneer Y17-765 - Plan #1	16,700.00	16,786.26	1,952.92	1,780.85	11.350	ES
Pioneer Y17-765 - Pioneer Y17-765 - Plan #1	17,411.15	17,497.13	1,972.69	1,789.37	10.761	SF
Pioneer Y17-775 - Pioneer Y17-775 - Plan #1	2,200.00	2,189.00	1,840.81	1,825.54	120.572	CC, ES
Pioneer Y17-775 - Pioneer Y17-775 - Plan #1	17,411.15	17,342.72	2,624.96	2,442.79	14.409	SF
Pioneer Y17-780 - Pioneer Y17-780 - Plan #1	2,200.00	2,189.00	1,863.45	1,848.18	122.055	CC, ES
Pioneer Y17-780 - Pioneer Y17-780 - Plan #1	17,411.15	17,598.88	2,962.65	2,779.84	16.206	SF
Pioneer Y17-785 - Pioneer Y17-785 - Plan #1	2,200.00	2,188.00	1,885.80	1,870.54	123.548	CC, ES
Pioneer Y17-785 - Pioneer Y17-785 - Plan #1	17,411.15	17,543.66	3,284.75	3,101.91	17.966	SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Pioneer Y17-735
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4897.00ft
<b>Reference Site:</b>	Y Section 05	<b>MD Reference:</b>	Well @ 4897.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Pioneer Y17-735	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Pioneer Y17-735	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

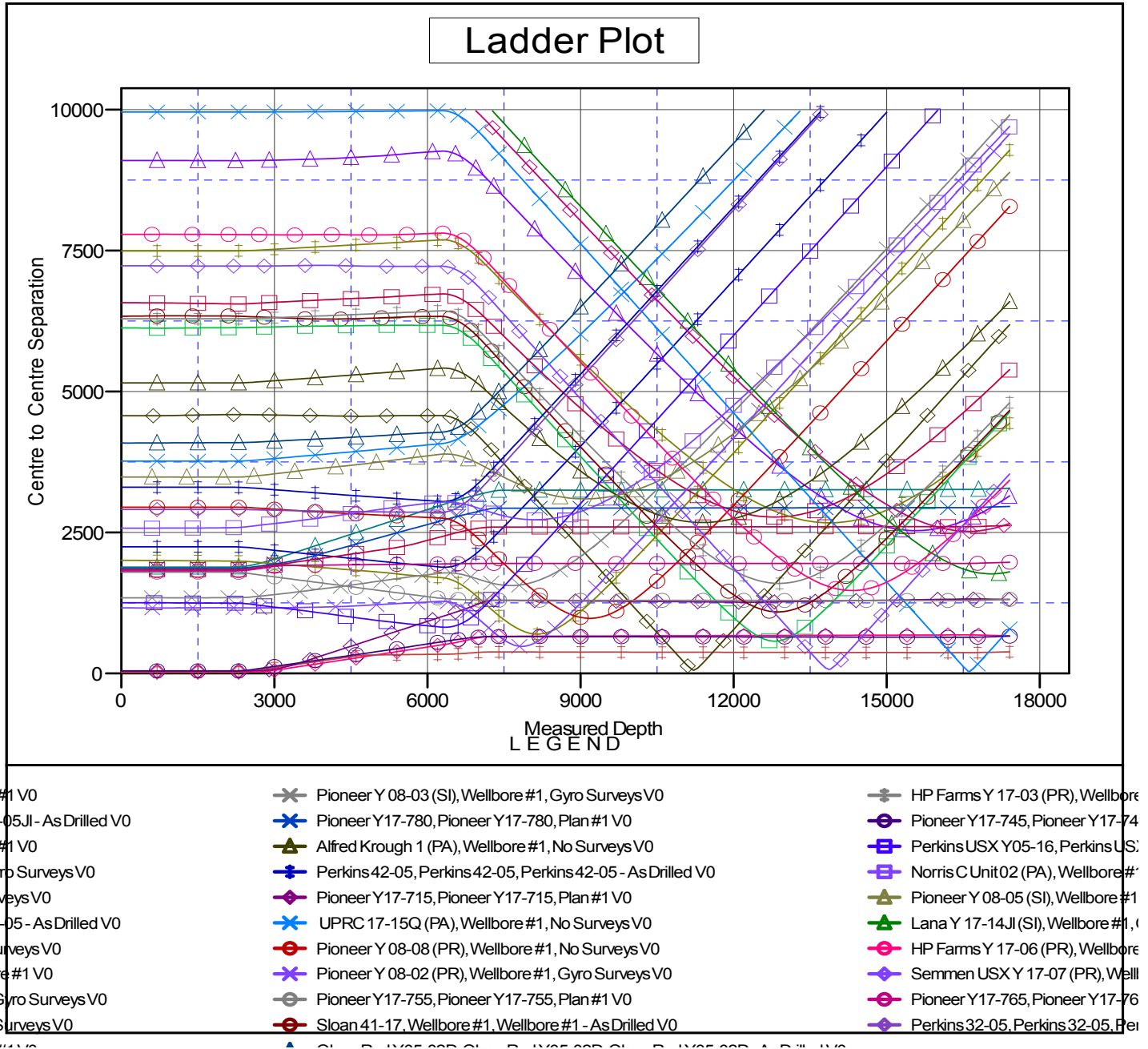
Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Y Section 08						
Alfred Krough 1 (PA) - Wellbore #1 - No Surveys	11,391.91	6,848.00	2,677.72	2,495.01	14.655	CC
Alfred Krough 1 (PA) - Wellbore #1 - No Surveys	11,400.00	6,848.00	2,677.73	2,494.97	14.652	ES
Alfred Krough 1 (PA) - Wellbore #1 - No Surveys	11,600.00	6,848.00	2,685.79	2,501.98	14.612	SF
Lazy 15-8 (PR) - Wellbore #1 - Gyro Surveys	11,221.77	6,856.48	56.95	-11.24	0.835	Level 1, CC, ES, SF
Norris C Unit 01 (SI) - Wellbore #1 - Gyro Surveys	8,151.19	6,862.38	697.36	646.31	13.662	CC, ES
Norris C Unit 01 (SI) - Wellbore #1 - Gyro Surveys	8,200.00	6,862.71	699.06	647.74	13.621	SF
Norris C Unit 02 (PA) - Wellbore #1 - Gyro Surveys	417.48	380.49	2,576.68	2,574.26	1,064.014	CC
Norris C Unit 02 (PA) - Wellbore #1 - Gyro Surveys	1,600.00	1,545.42	2,579.66	2,568.93	240.473	ES
Norris C Unit 02 (PA) - Wellbore #1 - Gyro Surveys	8,600.00	6,871.06	2,771.71	2,719.32	52.899	SF
Pioneer Y 08-02 (PR) - Wellbore #1 - Gyro Surveys	7,852.09	6,848.48	477.94	427.98	9.567	CC, ES, SF
Pioneer Y 08-03 (SI) - Wellbore #1 - Gyro Surveys	217.28	175.28	1,340.96	1,339.97	1,363.311	CC
Pioneer Y 08-03 (SI) - Wellbore #1 - Gyro Surveys	2,240.24	2,214.50	1,343.22	1,327.87	87.507	ES
Pioneer Y 08-03 (SI) - Wellbore #1 - Gyro Surveys	7,700.00	6,847.11	1,559.66	1,510.19	31.525	SF
Pioneer Y 08-05 (SI) - Wellbore #1 - Gyro Surveys	9,086.10	6,884.23	3,096.76	3,041.48	56.020	CC
Pioneer Y 08-05 (SI) - Wellbore #1 - Gyro Surveys	9,100.00	6,884.24	3,096.79	3,041.45	55.959	ES
Pioneer Y 08-05 (SI) - Wellbore #1 - Gyro Surveys	9,700.00	6,884.87	3,157.03	3,099.19	54.585	SF
Pioneer Y 08-08 (PR) - Wellbore #1 - No Surveys	9,182.83	6,889.00	976.64	806.98	5.756	CC, ES
Pioneer Y 08-08 (PR) - Wellbore #1 - No Surveys	9,200.00	6,889.00	976.79	807.00	5.753	SF
Y Section 17						
UPRC 17-15Q (PA) - Wellbore #1 - No Surveys	16,620.63	6,852.00	30.03	-192.29	0.135	Level 1, CC, ES, SF
UPRC 17-5Q (PR) - Wellbore #1 - No Surveys	13,881.41	6,852.00	2,671.60	2,470.55	13.288	CC
UPRC 17-5Q (PR) - Wellbore #1 - No Surveys	13,900.00	6,852.00	2,671.67	2,470.50	13.281	ES
UPRC 17-5Q (PR) - Wellbore #1 - No Surveys	14,100.00	6,852.00	2,680.53	2,478.28	13.254	SF
HP Farms Y 17-03 (PR) - Wellbore #1 - No Surveys	12,890.68	6,847.00	1,596.67	1,403.17	8.251	CC
HP Farms Y 17-03 (PR) - Wellbore #1 - No Surveys	12,900.00	6,847.00	1,596.70	1,403.14	8.249	ES, SF
HP Farms Y 17-04 (PR) - Wellbore #1 - Gyro Surveys	12,796.98	6,805.77	2,773.65	2,694.26	34.935	CC, ES
HP Farms Y 17-04 (PR) - Wellbore #1 - Gyro Surveys	13,200.00	6,796.62	2,802.41	2,721.06	34.449	SF
HP Farms Y 17-06 (PR) - Wellbore #1 - Gyro Surveys	14,323.32	6,901.06	1,470.43	1,378.94	16.072	CC, ES
HP Farms Y 17-06 (PR) - Wellbore #1 - Gyro Surveys	14,400.00	6,900.20	1,472.43	1,380.62	16.038	SF
Lana Y 17-14JI (SI) - Wellbore #1 - Gyro Surveys	17,047.61	6,901.52	1,766.41	1,653.64	15.664	CC, ES
Lana Y 17-14JI (SI) - Wellbore #1 - Gyro Surveys	17,200.00	6,900.35	1,772.97	1,659.43	15.615	SF
Semmen USX Y 17-07 (PR) - Wellbore #1 - Gyro Survey	13,870.88	6,853.63	70.19	-17.52	0.800	Level 1, CC, ES, SF
Sloan 41-17 - Wellbore #1 - Wellbore #1 - As Drilled	12,867.29	6,854.17	1,091.04	1,010.84	13.604	CC, ES
Sloan 41-17 - Wellbore #1 - Wellbore #1 - As Drilled	13,000.00	6,853.45	1,099.08	1,017.81	13.524	SF
UPRC 17-12Q (SI) - Wellbore #1 - Gyro Surveys	15,565.04	6,902.43	2,533.91	2,432.84	25.072	CC, ES
UPRC 17-12Q (SI) - Wellbore #1 - Gyro Surveys	15,800.00	6,902.23	2,544.78	2,442.51	24.883	SF
UPRC 17-13Q (SI) - Wellbore #1 - Wellbore #1	16,621.61	6,864.00	2,519.96	2,297.39	11.322	CC, ES
UPRC 17-13Q (SI) - Wellbore #1 - Wellbore #1	16,700.00	6,864.00	2,521.71	2,298.68	11.306	SF
UPRR USX Y 17-02 (PR) - Wellbore #1 - Gyro Surveys	12,808.68	6,847.47	571.79	492.09	7.175	CC, ES, SF

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Pioneer Y17-735
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4897.00ft
<b>Reference Site:</b>	Y Section 05	<b>MD Reference:</b>	Well @ 4897.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Pioneer Y17-735	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Pioneer Y17-735	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to Well @ 4897.00ft  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.5000000

Coordinates are relative to: Pioneer Y17-735  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.60°



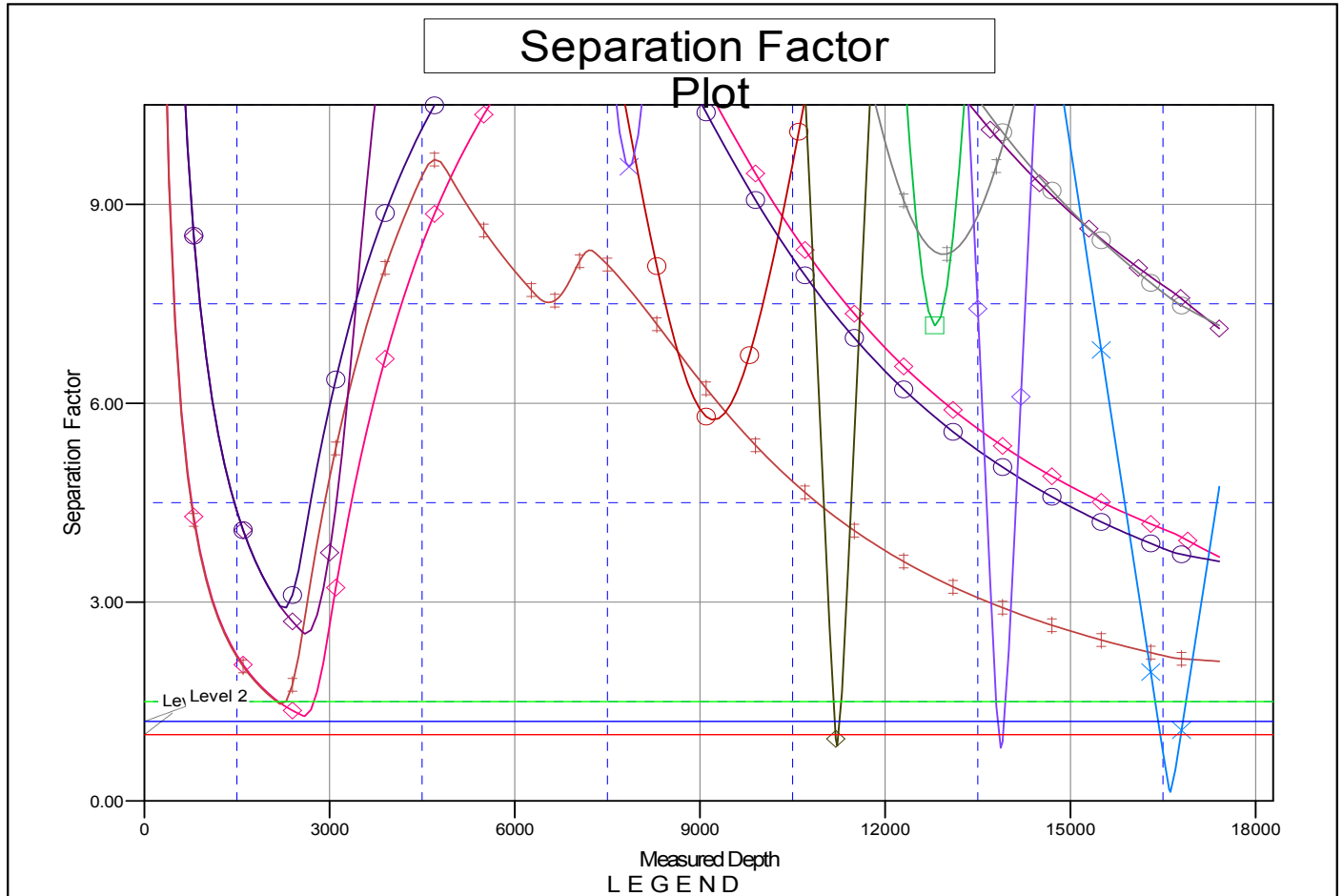
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Pioneer Y17-735
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4897.00ft
<b>Reference Site:</b>	Y Section 05	<b>MD Reference:</b>	Well @ 4897.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Pioneer Y17-735	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Pioneer Y17-735	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to Well @ 4897.00ft  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.5000000

Coordinates are relative to: Pioneer Y17-735  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.60°



1#1 V0	—x— Pioneer Y 08-03 (SI), Wellbore #1, Gyro Surveys V0	—x— HP Farms Y 17-03 (PR), Wellbore #1
5-05JL - As Drilled V0	—x— Pioneer Y17-780, Pioneer Y17-780, Plan #1 V0	—o— Pioneer Y17-745, Pioneer Y17-74
1#1 V0	—x— Alfred Krough 1 (PA), Wellbore #1, No Surveys V0	—x— Perkins USX Y05-16, Perkins US
gyro Surveys V0	—x— Perkins 42-05, Perkins 42-05, Perkins 42-05 - As Drilled V0	—x— Norris C Unit 02 (PA), Wellbore #
irveys V0	—x— Pioneer Y17-715, Pioneer Y17-715, Plan #1 V0	—x— Pioneer Y 08-05 (SI), Wellbore #1
3-05 - As Drilled V0	—x— UPRC 17-15Q (PA), Wellbore #1, No Surveys V0	—x— Lana Y 17-14JL (SI), Wellbore #1, (
surveys V0	—o— Pioneer Y 08-08 (PR), Wellbore #1, No Surveys V0	—o— HP Farms Y 17-06 (PR), Wellbore
re #1 V0	—x— Pioneer Y 08-02 (PR), Wellbore #1, Gyro Surveys V0	—x— Semmen USX Y 17-07 (PR), Well
Gyro Surveys V0	—x— Pioneer Y17-755, Pioneer Y17-755, Plan #1 V0	—o— Pioneer Y17-765, Pioneer Y17-76
Surveys V0	—o— Sloan 41-17, Wellbore #1, Wellbore #1 - As Drilled V0	—x— Perkins 32-05, Perkins 32-05, Per