

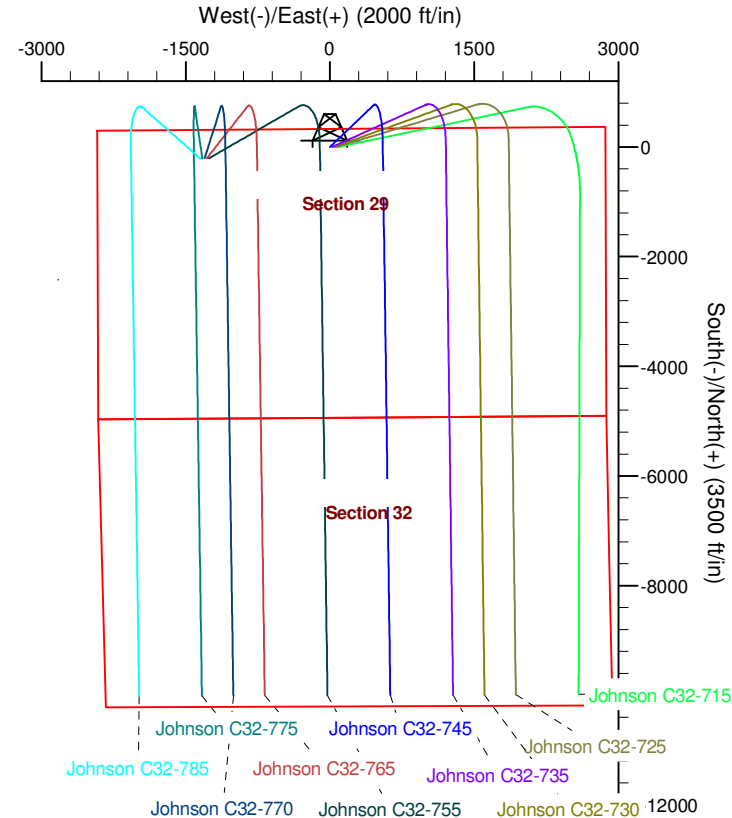
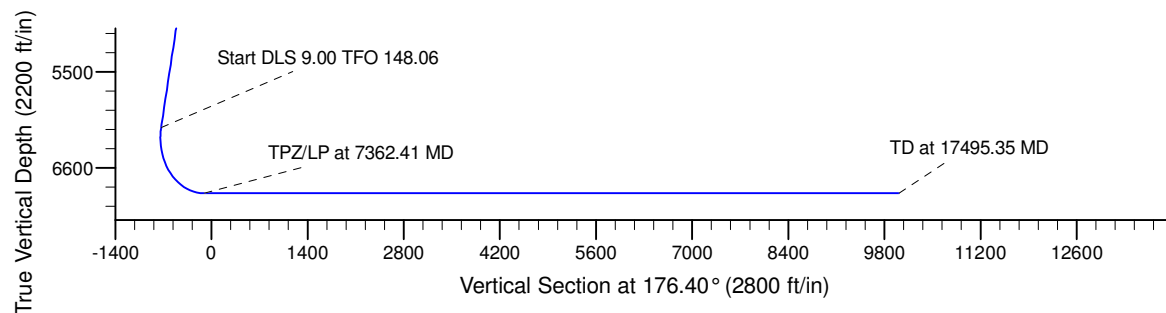
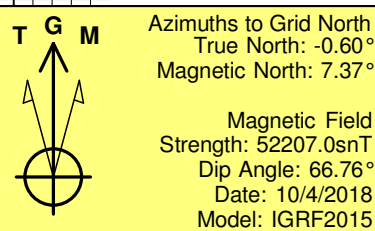
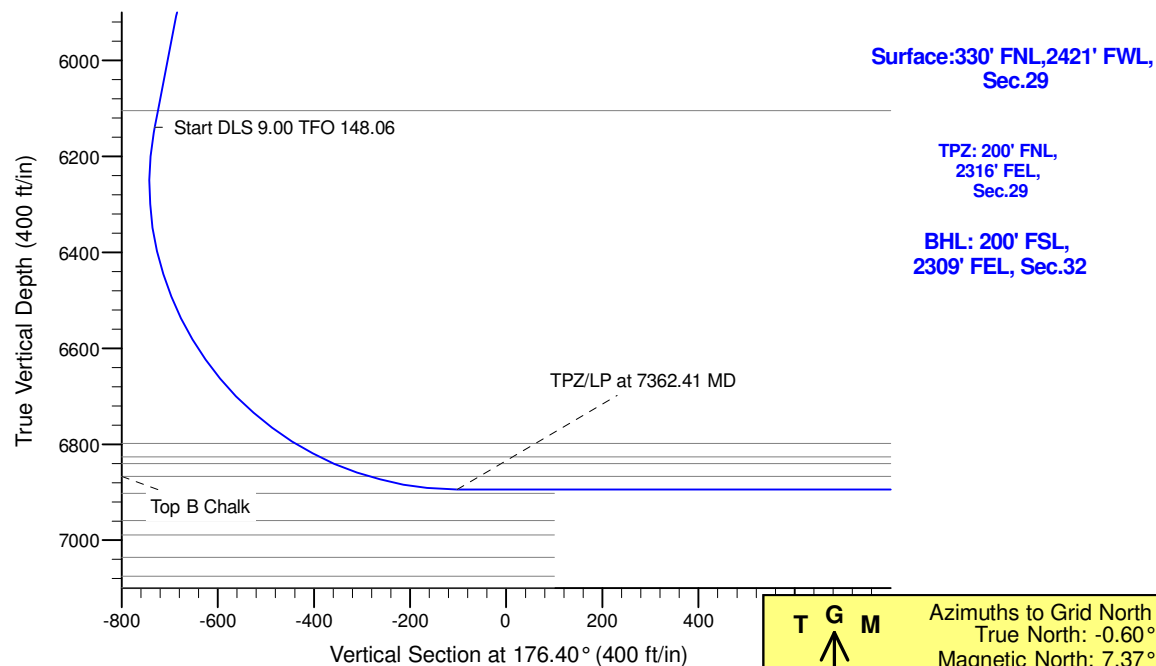
Project: Mustang
Site: C Section 29
Well: Johnson C32-745
Wellbore: Wellbore #1
Design: Plan #1

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	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00	
3	2654.40	13.09	30.83	2648.73	63.90	38.14	2.00	30.83	-61.38	
4	6238.41	13.09	30.83	6139.64	760.83	454.04	0.00	0.00	-730.84	
5	7362.41	90.00	179.56	6894.00	136.98	549.92	9.00	148.06	-102.20	TPZ Johnson C32-745
6	17495.35	90.00	179.56	6894.00	-9995.66	628.49	0.00	0.00	10015.40	BHL Johnson C32-745



WELL DETAILS: Johnson C32-745

	Northing	Easting	Latitude	Longitude
0.00	0.00	1349747.66	4774.00 40.2897670	-104.5755140

Plan: Plan #1 (Johnson C32-745/Wellbore #1)

Created By: Colby Baxter Date: 15:07, October 04 2018

Checked: _____ Date: _____

Reviewed: _____ Date: _____

Approved: _____ Date: _____

Northern Region - DJ Basin

Mustang

C Section 29

Johnson C32-745

Wellbore #1

Plan: Plan #1

Standard Survey Report

04 October, 2018

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Johnson C32-745
Project:	Mustang	TVD Reference:	KB @ 4804.00ft
Site:	C Section 29	MD Reference:	KB @ 4804.00ft
Well:	Johnson C32-745	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDMP

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

Site		C Section 29			
Site Position:		Northing:	1,346,017.00 usft	Latitude:	40.2794770
From:	Lat/Long	Easting:	3,259,619.89 usft	Longitude:	-104.5694640
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.60 °

Well	Johnson C32-745					
Well Position	+N/-S	0.00 ft	Northing:	1,349,747.66 usft	Latitude:	40.2897670
	+E/-W	0.00 ft	Easting:	3,257,892.92 usft	Longitude:	-104.5755140
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,774.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/4/2018	7.96	66.76	52,207.01757695

Design	Plan #1				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	176.40	

Survey Tool Program	Date	10/4/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	17,495.35	Plan #1 (Wellbore #1)	2_MWD+IFR1	A005Mb: IFR declination correction only	

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

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Johnson C32-745
Project:	Mustang	TVD Reference:	KB @ 4804.00ft
Site:	C Section 29	MD Reference:	KB @ 4804.00ft
Well:	Johnson C32-745	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	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	2.00	30.83	2,099.98	1.50	0.89	-1.44	2.00	2.00	0.00
2,200.00	4.00	30.83	2,199.84	5.99	3.58	-5.76	2.00	2.00	0.00
2,300.00	6.00	30.83	2,299.45	13.48	8.04	-12.95	2.00	2.00	0.00
2,400.00	8.00	30.83	2,398.70	23.94	14.29	-23.00	2.00	2.00	0.00
2,500.00	10.00	30.83	2,497.47	37.37	22.30	-35.90	2.00	2.00	0.00
2,600.00	12.00	30.83	2,595.62	53.76	32.08	-51.64	2.00	2.00	0.00
2,654.40	13.09	30.83	2,648.73	63.90	38.14	-61.38	2.00	2.00	0.00
2,700.00	13.09	30.83	2,693.14	72.77	43.43	-69.90	0.00	0.00	0.00
2,800.00	13.09	30.83	2,790.54	92.22	55.03	-88.58	0.00	0.00	0.00
2,900.00	13.09	30.83	2,887.94	111.66	66.64	-107.26	0.00	0.00	0.00
3,000.00	13.09	30.83	2,985.35	131.11	78.24	-125.94	0.00	0.00	0.00
3,100.00	13.09	30.83	3,082.75	150.55	89.84	-144.62	0.00	0.00	0.00
3,200.00	13.09	30.83	3,180.15	170.00	101.45	-163.30	0.00	0.00	0.00
3,300.00	13.09	30.83	3,277.55	189.44	113.05	-181.98	0.00	0.00	0.00
3,400.00	13.09	30.83	3,374.96	208.89	124.66	-200.65	0.00	0.00	0.00
3,500.00	13.09	30.83	3,472.36	228.33	136.26	-219.33	0.00	0.00	0.00
3,600.00	13.09	30.83	3,569.76	247.78	147.87	-238.01	0.00	0.00	0.00
3,700.00	13.09	30.83	3,667.16	267.23	159.47	-256.69	0.00	0.00	0.00
3,800.00	13.09	30.83	3,764.56	286.67	171.07	-275.37	0.00	0.00	0.00
3,900.00	13.09	30.83	3,861.97	306.12	182.68	-294.05	0.00	0.00	0.00
4,000.00	13.09	30.83	3,959.37	325.56	194.28	-312.73	0.00	0.00	0.00
4,100.00	13.09	30.83	4,056.77	345.01	205.89	-331.41	0.00	0.00	0.00
4,200.00	13.09	30.83	4,154.17	364.45	217.49	-350.09	0.00	0.00	0.00
4,300.00	13.09	30.83	4,251.58	383.90	229.10	-368.77	0.00	0.00	0.00
4,400.00	13.09	30.83	4,348.98	403.34	240.70	-387.44	0.00	0.00	0.00
4,500.00	13.09	30.83	4,446.38	422.79	252.30	-406.12	0.00	0.00	0.00
4,600.00	13.09	30.83	4,543.78	442.23	263.91	-424.80	0.00	0.00	0.00
4,700.00	13.09	30.83	4,641.19	461.68	275.51	-443.48	0.00	0.00	0.00
4,800.00	13.09	30.83	4,738.59	481.13	287.12	-462.16	0.00	0.00	0.00
4,900.00	13.09	30.83	4,835.99	500.57	298.72	-480.84	0.00	0.00	0.00
5,000.00	13.09	30.83	4,933.39	520.02	310.33	-499.52	0.00	0.00	0.00
5,100.00	13.09	30.83	5,030.80	539.46	321.93	-518.20	0.00	0.00	0.00
5,200.00	13.09	30.83	5,128.20	558.91	333.54	-536.88	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Johnson C32-745
Project:	Mustang	TVD Reference:	KB @ 4804.00ft
Site:	C Section 29	MD Reference:	KB @ 4804.00ft
Well:	Johnson C32-745	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	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	13.09	30.83	5,225.60	578.35	345.14	-555.56	0.00	0.00	0.00	
5,400.00	13.09	30.83	5,323.00	597.80	356.74	-574.23	0.00	0.00	0.00	
5,500.00	13.09	30.83	5,420.40	617.24	368.35	-592.91	0.00	0.00	0.00	
5,600.00	13.09	30.83	5,517.81	636.69	379.95	-611.59	0.00	0.00	0.00	
5,700.00	13.09	30.83	5,615.21	656.14	391.56	-630.27	0.00	0.00	0.00	
5,800.00	13.09	30.83	5,712.61	675.58	403.16	-648.95	0.00	0.00	0.00	
5,900.00	13.09	30.83	5,810.01	695.03	414.77	-667.63	0.00	0.00	0.00	
6,000.00	13.09	30.83	5,907.42	714.47	426.37	-686.31	0.00	0.00	0.00	
6,100.00	13.09	30.83	6,004.82	733.92	437.97	-704.99	0.00	0.00	0.00	
6,200.00	13.09	30.83	6,102.22	753.36	449.58	-723.67	0.00	0.00	0.00	
6,238.41	13.09	30.83	6,139.64	760.83	454.04	-730.84	0.00	0.00	0.00	
6,300.00	8.87	50.17	6,200.10	769.87	461.26	-739.41	9.00	-6.84	31.41	
6,400.00	7.66	115.81	6,299.26	771.91	473.21	-740.69	9.00	-1.21	65.64	
6,500.00	14.14	150.93	6,397.50	758.30	485.18	-726.36	9.00	6.48	35.12	
6,600.00	22.41	162.54	6,492.40	729.38	496.85	-696.76	9.00	8.27	11.61	
6,700.00	31.08	168.01	6,581.63	685.86	507.96	-652.63	9.00	8.67	5.46	
6,800.00	39.88	171.25	6,662.99	628.80	518.22	-595.04	9.00	8.80	3.25	
6,900.00	48.75	173.48	6,734.47	559.63	527.38	-525.43	9.00	8.87	2.23	
7,000.00	57.65	175.17	6,794.32	480.03	535.23	-445.49	9.00	8.90	1.69	
7,100.00	66.56	176.56	6,841.06	391.96	541.55	-357.21	9.00	8.92	1.39	
7,200.00	75.49	177.77	6,873.54	297.61	546.20	-262.75	9.00	8.93	1.21	
7,300.00	84.42	178.88	6,890.97	199.28	549.07	-164.44	9.00	8.93	1.11	
7,362.41	90.00	179.56	6,894.00	136.98	549.92	-102.20	9.00	8.93	1.08	
7,400.00	90.00	179.56	6,894.00	99.39	550.21	-64.67	0.00	0.00	0.00	
7,500.00	90.00	179.56	6,894.00	-0.61	550.98	35.18	0.00	0.00	0.00	
7,600.00	90.00	179.56	6,894.00	-100.60	551.76	135.03	0.00	0.00	0.00	
7,700.00	90.00	179.56	6,894.00	-200.60	552.53	234.88	0.00	0.00	0.00	
7,800.00	90.00	179.56	6,894.00	-300.60	553.31	334.73	0.00	0.00	0.00	
7,900.00	90.00	179.56	6,894.00	-400.59	554.08	434.57	0.00	0.00	0.00	
8,000.00	90.00	179.56	6,894.00	-500.59	554.86	534.42	0.00	0.00	0.00	
8,100.00	90.00	179.56	6,894.00	-600.59	555.63	634.27	0.00	0.00	0.00	
8,200.00	90.00	179.56	6,894.00	-700.59	556.41	734.12	0.00	0.00	0.00	
8,300.00	90.00	179.56	6,894.00	-800.58	557.19	833.97	0.00	0.00	0.00	
8,400.00	90.00	179.56	6,894.00	-900.58	557.96	933.82	0.00	0.00	0.00	
8,500.00	90.00	179.56	6,894.00	-1,000.58	558.74	1,033.67	0.00	0.00	0.00	
8,600.00	90.00	179.56	6,894.00	-1,100.57	559.51	1,133.51	0.00	0.00	0.00	
8,700.00	90.00	179.56	6,894.00	-1,200.57	560.29	1,233.36	0.00	0.00	0.00	
8,800.00	90.00	179.56	6,894.00	-1,300.57	561.06	1,333.21	0.00	0.00	0.00	
8,900.00	90.00	179.56	6,894.00	-1,400.56	561.84	1,433.06	0.00	0.00	0.00	
9,000.00	90.00	179.56	6,894.00	-1,500.56	562.61	1,532.91	0.00	0.00	0.00	
9,100.00	90.00	179.56	6,894.00	-1,600.56	563.39	1,632.76	0.00	0.00	0.00	
9,200.00	90.00	179.56	6,894.00	-1,700.56	564.16	1,732.61	0.00	0.00	0.00	
9,300.00	90.00	179.56	6,894.00	-1,800.55	564.94	1,832.45	0.00	0.00	0.00	

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Johnson C32-745
Project:	Mustang	TVD Reference:	KB @ 4804.00ft
Site:	C Section 29	MD Reference:	KB @ 4804.00ft
Well:	Johnson C32-745	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	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	179.56	6,894.00	-1,900.55	565.71	1,932.30	0.00	0.00	0.00
9,500.00	90.00	179.56	6,894.00	-2,000.55	566.49	2,032.15	0.00	0.00	0.00
9,600.00	90.00	179.56	6,894.00	-2,100.54	567.27	2,132.00	0.00	0.00	0.00
9,700.00	90.00	179.56	6,894.00	-2,200.54	568.04	2,231.85	0.00	0.00	0.00
9,800.00	90.00	179.56	6,894.00	-2,300.54	568.82	2,331.70	0.00	0.00	0.00
9,900.00	90.00	179.56	6,894.00	-2,400.53	569.59	2,431.55	0.00	0.00	0.00
10,000.00	90.00	179.56	6,894.00	-2,500.53	570.37	2,531.40	0.00	0.00	0.00
10,100.00	90.00	179.56	6,894.00	-2,600.53	571.14	2,631.24	0.00	0.00	0.00
10,200.00	90.00	179.56	6,894.00	-2,700.53	571.92	2,731.09	0.00	0.00	0.00
10,300.00	90.00	179.56	6,894.00	-2,800.52	572.69	2,830.94	0.00	0.00	0.00
10,400.00	90.00	179.56	6,894.00	-2,900.52	573.47	2,930.79	0.00	0.00	0.00
10,500.00	90.00	179.56	6,894.00	-3,000.52	574.24	3,030.64	0.00	0.00	0.00
10,600.00	90.00	179.56	6,894.00	-3,100.51	575.02	3,130.49	0.00	0.00	0.00
10,700.00	90.00	179.56	6,894.00	-3,200.51	575.80	3,230.34	0.00	0.00	0.00
10,800.00	90.00	179.56	6,894.00	-3,300.51	576.57	3,330.18	0.00	0.00	0.00
10,900.00	90.00	179.56	6,894.00	-3,400.50	577.35	3,430.03	0.00	0.00	0.00
11,000.00	90.00	179.56	6,894.00	-3,500.50	578.12	3,529.88	0.00	0.00	0.00
11,100.00	90.00	179.56	6,894.00	-3,600.50	578.90	3,629.73	0.00	0.00	0.00
11,200.00	90.00	179.56	6,894.00	-3,700.50	579.67	3,729.58	0.00	0.00	0.00
11,300.00	90.00	179.56	6,894.00	-3,800.49	580.45	3,829.43	0.00	0.00	0.00
11,400.00	90.00	179.56	6,894.00	-3,900.49	581.22	3,929.28	0.00	0.00	0.00
11,500.00	90.00	179.56	6,894.00	-4,000.49	582.00	4,029.12	0.00	0.00	0.00
11,600.00	90.00	179.56	6,894.00	-4,100.48	582.77	4,128.97	0.00	0.00	0.00
11,700.00	90.00	179.56	6,894.00	-4,200.48	583.55	4,228.82	0.00	0.00	0.00
11,800.00	90.00	179.56	6,894.00	-4,300.48	584.33	4,328.67	0.00	0.00	0.00
11,900.00	90.00	179.56	6,894.00	-4,400.47	585.10	4,428.52	0.00	0.00	0.00
12,000.00	90.00	179.56	6,894.00	-4,500.47	585.88	4,528.37	0.00	0.00	0.00
12,100.00	90.00	179.56	6,894.00	-4,600.47	586.65	4,628.22	0.00	0.00	0.00
12,200.00	90.00	179.56	6,894.00	-4,700.47	587.43	4,728.06	0.00	0.00	0.00
12,300.00	90.00	179.56	6,894.00	-4,800.46	588.20	4,827.91	0.00	0.00	0.00
12,400.00	90.00	179.56	6,894.00	-4,900.46	588.98	4,927.76	0.00	0.00	0.00
12,500.00	90.00	179.56	6,894.00	-5,000.46	589.75	5,027.61	0.00	0.00	0.00
12,600.00	90.00	179.56	6,894.00	-5,100.45	590.53	5,127.46	0.00	0.00	0.00
12,700.00	90.00	179.56	6,894.00	-5,200.45	591.30	5,227.31	0.00	0.00	0.00
12,800.00	90.00	179.56	6,894.00	-5,300.45	592.08	5,327.16	0.00	0.00	0.00
12,900.00	90.00	179.56	6,894.00	-5,400.44	592.85	5,427.00	0.00	0.00	0.00
13,000.00	90.00	179.56	6,894.00	-5,500.44	593.63	5,526.85	0.00	0.00	0.00
13,100.00	90.00	179.56	6,894.00	-5,600.44	594.41	5,626.70	0.00	0.00	0.00
13,200.00	90.00	179.56	6,894.00	-5,700.44	595.18	5,726.55	0.00	0.00	0.00
13,300.00	90.00	179.56	6,894.00	-5,800.43	595.96	5,826.40	0.00	0.00	0.00
13,400.00	90.00	179.56	6,894.00	-5,900.43	596.73	5,926.25	0.00	0.00	0.00
13,500.00	90.00	179.56	6,894.00	-6,000.43	597.51	6,026.10	0.00	0.00	0.00
13,600.00	90.00	179.56	6,894.00	-6,100.42	598.28	6,125.94	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Johnson C32-745
Project:	Mustang	TVD Reference:	KB @ 4804.00ft
Site:	C Section 29	MD Reference:	KB @ 4804.00ft
Well:	Johnson C32-745	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	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	179.56	6,894.00	-6,200.42	599.06	6,225.79	0.00	0.00	0.00
13,800.00	90.00	179.56	6,894.00	-6,300.42	599.83	6,325.64	0.00	0.00	0.00
13,900.00	90.00	179.56	6,894.00	-6,400.41	600.61	6,425.49	0.00	0.00	0.00
14,000.00	90.00	179.56	6,894.00	-6,500.41	601.38	6,525.34	0.00	0.00	0.00
14,100.00	90.00	179.56	6,894.00	-6,600.41	602.16	6,625.19	0.00	0.00	0.00
14,200.00	90.00	179.56	6,894.00	-6,700.41	602.94	6,725.04	0.00	0.00	0.00
14,300.00	90.00	179.56	6,894.00	-6,800.40	603.71	6,824.88	0.00	0.00	0.00
14,400.00	90.00	179.56	6,894.00	-6,900.40	604.49	6,924.73	0.00	0.00	0.00
14,500.00	90.00	179.56	6,894.00	-7,000.40	605.26	7,024.58	0.00	0.00	0.00
14,600.00	90.00	179.56	6,894.00	-7,100.39	606.04	7,124.43	0.00	0.00	0.00
14,700.00	90.00	179.56	6,894.00	-7,200.39	606.81	7,224.28	0.00	0.00	0.00
14,800.00	90.00	179.56	6,894.00	-7,300.39	607.59	7,324.13	0.00	0.00	0.00
14,900.00	90.00	179.56	6,894.00	-7,400.38	608.36	7,423.98	0.00	0.00	0.00
15,000.00	90.00	179.56	6,894.00	-7,500.38	609.14	7,523.82	0.00	0.00	0.00
15,100.00	90.00	179.56	6,894.00	-7,600.38	609.91	7,623.67	0.00	0.00	0.00
15,200.00	90.00	179.56	6,894.00	-7,700.38	610.69	7,723.52	0.00	0.00	0.00
15,300.00	90.00	179.56	6,894.00	-7,800.37	611.46	7,823.37	0.00	0.00	0.00
15,400.00	90.00	179.56	6,894.00	-7,900.37	612.24	7,923.22	0.00	0.00	0.00
15,500.00	90.00	179.56	6,894.00	-8,000.37	613.02	8,023.07	0.00	0.00	0.00
15,600.00	90.00	179.56	6,894.00	-8,100.36	613.79	8,122.92	0.00	0.00	0.00
15,700.00	90.00	179.56	6,894.00	-8,200.36	614.57	8,222.76	0.00	0.00	0.00
15,800.00	90.00	179.56	6,894.00	-8,300.36	615.34	8,322.61	0.00	0.00	0.00
15,900.00	90.00	179.56	6,894.00	-8,400.35	616.12	8,422.46	0.00	0.00	0.00
16,000.00	90.00	179.56	6,894.00	-8,500.35	616.89	8,522.31	0.00	0.00	0.00
16,100.00	90.00	179.56	6,894.00	-8,600.35	617.67	8,622.16	0.00	0.00	0.00
16,200.00	90.00	179.56	6,894.00	-8,700.35	618.44	8,722.01	0.00	0.00	0.00
16,300.00	90.00	179.56	6,894.00	-8,800.34	619.22	8,821.86	0.00	0.00	0.00
16,400.00	90.00	179.56	6,894.00	-8,900.34	619.99	8,921.70	0.00	0.00	0.00
16,500.00	90.00	179.56	6,894.00	-9,000.34	620.77	9,021.55	0.00	0.00	0.00
16,600.00	90.00	179.56	6,894.00	-9,100.33	621.55	9,121.40	0.00	0.00	0.00
16,700.00	90.00	179.56	6,894.00	-9,200.33	622.32	9,221.25	0.00	0.00	0.00
16,800.00	90.00	179.56	6,894.00	-9,300.33	623.10	9,321.10	0.00	0.00	0.00
16,900.00	90.00	179.56	6,894.00	-9,400.32	623.87	9,420.95	0.00	0.00	0.00
17,000.00	90.00	179.56	6,894.00	-9,500.32	624.65	9,520.80	0.00	0.00	0.00
17,100.00	90.00	179.56	6,894.00	-9,600.32	625.42	9,620.64	0.00	0.00	0.00
17,200.00	90.00	179.56	6,894.00	-9,700.32	626.20	9,720.49	0.00	0.00	0.00
17,300.00	90.00	179.56	6,894.00	-9,800.31	626.97	9,820.34	0.00	0.00	0.00
17,400.00	90.00	179.56	6,894.00	-9,900.31	627.75	9,920.19	0.00	0.00	0.00
17,495.35	90.00	179.56	6,894.00	-9,995.66	628.49	10,015.40	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Johnson C32-745
Project:	Mustang	TVD Reference:	KB @ 4804.00ft
Site:	C Section 29	MD Reference:	KB @ 4804.00ft
Well:	Johnson C32-745	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	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
SHL Johnson C32-745 - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,349,747.66	3,257,892.92	40.2897670	-104.5755140
KOP Johnson C32-745 - plan hits target center - Point	0.00	0.00	6,139.63	760.83	454.04	1,350,508.49	3,258,346.95	40.2918424	-104.5738580
TPZ Johnson C32-745 - plan hits target center - Point	0.00	0.00	6,894.00	136.98	549.92	1,349,884.63	3,258,442.83	40.2901272	-104.5735377
BHL Johnson C32-745 - plan hits target center - Point	0.00	0.00	6,894.00	-9,995.66	628.49	1,339,752.02	3,258,521.40	40.2623116	-104.5736355

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
678.00	678.00	Pierre				
758.00	758.00	Upper Pierre Aquifer Top				
1,654.00	1,654.00	Upper Pierre Aquifer Base				
3,775.81	3,741.00	Parkman				
4,250.13	4,203.00	Sussex				
5,111.50	5,042.00	Shannon				
6,202.85	6,105.00	Teepee Buttes				
7,006.93	6,798.00	Sharon Springs				
7,064.39	6,826.00	Top A Chalk				
7,097.34	6,840.00	Top A Marl				
7,175.66	6,867.00	Top B Chalk				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2000	2000	0	0	Start Build 2.00	
6238	6140	761	454	Start DLS 9.00 TFO 148.06	
7362	6894	137	550	TPZ/LP at 7362.41 MD	
17,495	6894	-9996	628	TD at 17495.35 MD	

Checked By: _____ Approved By: _____ Date: _____

Northern Region - DJ Basin

Mustang

C Section 29

Johnson C32-745

Wellbore #1

Plan #1

Anticollision Summary Report

04 October, 2018

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Johnson C32-745
Project:	Mustang	TVD Reference:	KB @ 4804.00ft
Reference Site:	C Section 29	MD Reference:	KB @ 4804.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Johnson C32-745	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

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

Survey Tool Program	Date	10/4/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	17,495.35	Plan #1 (Wellbore #1)	2_MWD+IFR1	A005Mb: IFR declination correction only

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						
C Section 20						
Agricultural Products Inc 20-414 - Wellbore #1 - Wellbore	6,316.14	6,178.09	4,672.06	4,627.23	104.213	CC, ES
Agricultural Products Inc 20-414 - Wellbore #1 - Wellbore	6,700.00	6,644.85	4,765.83	4,718.37	100.417	SF
BALBOA #20-1(SI) - Wellbore #1 - No Surveys	6,689.36	6,515.48	1,758.95	1,677.87	21.696	CC
BALBOA #20-1(SI) - Wellbore #1 - No Surveys	6,700.00	6,524.63	1,758.98	1,677.80	21.668	ES
BALBOA #20-1(SI) - Wellbore #1 - No Surveys	6,950.00	6,708.95	1,779.78	1,696.45	21.360	SF
Balboa C #20-24D(PR) - Wellbore #1 - MWD Survey	440.39	416.26	481.59	479.52	233.093	CC
Balboa C #20-24D(PR) - Wellbore #1 - MWD Survey	500.00	470.89	481.91	479.37	190.136	ES
Balboa C #20-24D(PR) - Wellbore #1 - MWD Survey	6,450.00	6,469.97	926.29	877.69	19.061	SF
BALBOS #C20-4(TA) - Wellbore #1 - No Surveys	6,461.94	6,311.37	354.05	275.65	4.516	CC, ES
BALBOS #C20-4(TA) - Wellbore #1 - No Surveys	6,500.00	6,348.50	354.84	276.01	4.501	SF
Chenoweth 2 - Wellbore #1 - Wellbore #1 - As Drilled	2,793.02	2,839.08	2,013.85	1,994.39	103.500	CC
Chenoweth 2 - Wellbore #1 - Wellbore #1 - As Drilled	2,900.00	2,927.32	2,014.33	1,994.18	99.926	ES
Chenoweth 2 - Wellbore #1 - Wellbore #1 - As Drilled	6,900.00	6,724.51	2,345.21	2,296.95	48.600	SF
Chenoweth C20-25D(SI) - Wellbore #1 - MWD Surveys	970.91	949.36	479.29	474.36	97.273	CC, ES
Chenoweth C20-25D(SI) - Wellbore #1 - MWD Surveys	6,450.00	6,499.50	1,769.84	1,721.46	36.585	SF
HANSCOME C #28-30D(SI) - Wellbore #1 - No Surveys	6,717.48	6,543.48	1,802.00	1,720.60	22.136	CC
HANSCOME C #28-30D(SI) - Wellbore #1 - No Surveys	6,750.00	6,570.43	1,802.28	1,720.56	22.055	ES
HANSCOME C #28-30D(SI) - Wellbore #1 - No Surveys	6,950.00	6,712.95	1,818.13	1,734.75	21.805	SF
HANSCOME C #29-27D(SI) - Wellbore #1 - No Surveys	6,706.17	6,533.90	1,787.31	1,706.02	21.988	CC, ES
HANSCOME C #29-27D(SI) - Wellbore #1 - No Surveys	6,950.00	6,712.95	1,805.22	1,721.85	21.652	SF
Highland 12-20 - Wellbore #1 - Wellbore #1 - As Drilled	6,252.77	6,143.09	2,700.19	2,655.58	60.519	CC, ES
Highland 12-20 - Wellbore #1 - Wellbore #1 - As Drilled	6,650.00	6,521.32	2,768.98	2,721.83	58.727	SF
JOHNSON C #29-28(PR) - Wellbore #1 - No Surveys	4,220.69	4,136.33	215.10	163.81	4.194	CC
JOHNSON C #29-28(PR) - Wellbore #1 - No Surveys	4,300.00	4,213.58	215.85	163.58	4.130	ES
JOHNSON C #29-28(PR) - Wellbore #1 - No Surveys	4,400.00	4,310.98	218.90	165.41	4.092	SF
Klingenberg C20-780 - Original Drilling - Original Drilling	1,321.97	1,324.08	1,968.87	1,961.15	255.083	CC
Klingenberg C20-780 - Original Drilling - Original Drilling	2,200.00	2,220.02	1,972.49	1,959.53	152.235	ES
Klingenberg C20-780 - Original Drilling - Original Drilling	7,250.00	6,899.81	2,470.17	2,423.46	52.891	SF
Klingenberg C20-780 - Original Drilling - ST01 - ST01 - A	1,321.97	1,324.08	1,968.87	1,961.15	255.083	CC
Klingenberg C20-780 - Original Drilling - ST01 - ST01 - A	2,200.00	2,220.02	1,972.49	1,959.53	152.235	ES
Klingenberg C20-780 - Original Drilling - ST01 - ST01 - A	7,000.00	6,731.00	2,446.13	2,401.73	55.089	SF
Klingenberg C20-780 - Original Drilling - ST02 - ST02 - A	1,321.97	1,324.08	1,968.87	1,961.15	255.083	CC
Klingenberg C20-780 - Original Drilling - ST02 - ST02 - A	2,200.00	2,220.02	1,972.49	1,959.53	152.235	ES
Klingenberg C20-780 - Original Drilling - ST02 - ST02 - A	7,000.00	6,731.00	2,446.13	2,401.73	55.089	SF
Prebish 2 - Wellbore #1 - Wellbore #1 - As Drilled	6,289.10	6,111.42	3,600.84	3,556.26	80.759	CC
Prebish 2 - Wellbore #1 - Wellbore #1 - As Drilled	6,300.00	6,127.78	3,600.91	3,556.23	80.582	ES
Prebish 2 - Wellbore #1 - Wellbore #1 - As Drilled	6,650.00	6,533.10	3,676.95	3,629.86	78.083	SF

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Johnson C32-745
Project:	Mustang	TVD Reference:	KB @ 4804.00ft
Reference Site:	C Section 29	MD Reference:	KB @ 4804.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Johnson C32-745	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	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						
C Section 20						
Prebish C20-19 - Wellbore #1 - Wellbore #1 - As Drilled	6,333.33	6,230.25	3,866.88	3,821.90	85.957	CC, ES
Prebish C20-19 - Wellbore #1 - Wellbore #1 - As Drilled	6,650.00	6,526.21	3,939.30	3,892.40	84.002	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Johnson C32-745
Project:	Mustang	TVD Reference:	KB @ 4804.00ft
Reference Site:	C Section 29	MD Reference:	KB @ 4804.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Johnson C32-745	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
C Section 29						
CPC-JOHNSON #29-1(SI) - Wellbore #1 - No Surveys	7,671.28	6,858.00	1,786.69	1,699.86	20.576	CC, ES
CPC-JOHNSON #29-1(SI) - Wellbore #1 - No Surveys	7,800.00	6,858.00	1,791.33	1,704.01	20.515	SF
JOHNSON #19-29(SI) - Wellbore #1 - No Surveys	11,116.95	6,896.00	1,671.26	1,557.74	14.722	CC, ES
JOHNSON #19-29(SI) - Wellbore #1 - No Surveys	11,300.00	6,896.00	1,681.25	1,566.31	14.627	SF
JOHNSON #20-29(SI) - Wellbore #1 - No Surveys	11,228.48	6,880.00	1,158.72	1,044.27	10.124	CC, ES
JOHNSON #20-29(SI) - Wellbore #1 - No Surveys	11,300.00	6,880.00	1,160.93	1,045.81	10.085	SF
JOHNSON #29-13(SI) - Wellbore #1 - No Surveys	9,145.17	6,881.00	330.85	234.94	3.449	CC, ES, SF
JOHNSON #29-15(SI) - Wellbore #1 - No Surveys	8,520.96	6,877.00	932.59	841.16	10.201	CC, ES
JOHNSON #29-15(SI) - Wellbore #1 - No Surveys	8,600.00	6,877.00	935.93	844.02	10.183	SF
JOHNSON C #29-18(SI) - Wellbore #1 - No Surveys	8,540.35	6,881.00	445.51	353.92	4.864	CC, ES, SF
JOHNSON C #29-19(SI) - Wellbore #1 - Gyro Surveys	2,082.78	2,124.63	1,681.60	1,667.11	116.059	CC
JOHNSON C #29-19(SI) - Wellbore #1 - Gyro Surveys	2,100.00	2,141.36	1,681.65	1,667.04	115.108	ES
JOHNSON C #29-19(SI) - Wellbore #1 - Gyro Surveys	8,800.00	6,869.94	1,908.07	1,851.28	33.601	SF
JOHNSON C #29-29(SI) - Wellbore #1 - No Surveys	2,000.00	1,981.00	1,153.55	1,129.32	47.620	CC
JOHNSON C #29-29(SI) - Wellbore #1 - No Surveys	2,100.00	2,080.98	1,154.26	1,128.81	45.349	ES
JOHNSON C #29-29(SI) - Wellbore #1 - No Surveys	7,500.00	6,875.00	1,702.06	1,615.64	19.696	SF
Johnson C32-715 - Wellbore #1 - Plan #1	2,000.00	2,000.00	90.11	76.23	6.495	CC, ES
Johnson C32-715 - Wellbore #1 - Plan #1	2,200.00	2,192.69	94.44	79.22	6.205	SF
Johnson C32-725 - Wellbore #1 - Plan #1	2,335.02	2,332.16	61.98	45.74	3.818	CC, ES
Johnson C32-725 - Wellbore #1 - Plan #1	2,400.00	2,395.91	62.54	45.86	3.750	SF
Johnson C32-730 - Wellbore #1 - Plan #1	2,366.54	2,366.54	38.33	21.84	2.325	CC, ES
Johnson C32-730 - Wellbore #1 - Plan #1	2,400.00	2,399.70	38.58	21.86	2.307	SF
Johnson C32-735 - Wellbore #1 - Plan #1	2,245.82	2,246.39	19.49	3.86	1.247	Level 3, CC, ES, SF
Johnson C32-755 - Wellbore #1 - Plan #1	17,495.35	17,698.27	653.70	415.10	2.740	CC, ES, SF
Johnson C32-765 - Wellbore #1 - Plan #1	4,275.89	4,480.61	1,286.99	1,255.50	40.872	CC
Johnson C32-765 - Wellbore #1 - Plan #1	17,495.35	17,465.60	1,308.27	1,069.97	5.490	ES, SF
Johnson C32-770 - Wellbore #1 - Plan #1	2,000.00	2,012.00	1,320.02	1,306.11	94.857	CC, ES
Johnson C32-770 - Wellbore #1 - Plan #1	17,495.35	17,634.42	1,636.33	1,396.97	6.836	SF
Johnson C32-775 - Wellbore #1 - Plan #1	2,000.00	2,012.00	1,342.38	1,328.46	96.464	CC, ES
Johnson C32-775 - Wellbore #1 - Plan #1	17,495.35	17,516.48	1,959.00	1,719.62	8.184	SF
Johnson C32-785 - Wellbore #1 - Plan #1	1,912.12	1,924.12	1,364.74	1,351.45	102.721	CC
Johnson C32-785 - Wellbore #1 - Plan #1	2,000.00	2,010.05	1,364.75	1,350.84	98.122	ES
Johnson C32-785 - Wellbore #1 - Plan #1	17,495.35	17,483.99	2,613.11	2,373.80	10.919	SF
JOHNSON PM C #29-8(SI) - Wellbore #1 - No Surveys	9,109.68	6,877.00	1,457.57	1,361.96	15.246	CC, ES
JOHNSON PM C #29-8(SI) - Wellbore #1 - No Surveys	9,300.00	6,877.00	1,469.94	1,372.96	15.158	SF
JOHNSON R C #29-2(SI) - Wellbore #1 - No Surveys	7,786.71	6,868.00	340.84	253.46	3.901	CC, ES, SF
UPRC #29-4H(SI) - Wellbore #1 - No Surveys	2,000.00	1,989.00	1,918.97	1,894.68	78.990	CC
UPRC #29-4H(SI) - Wellbore #1 - No Surveys	2,100.00	2,088.98	1,920.13	1,894.61	75.231	ES
UPRC #29-4H(SI) - Wellbore #1 - No Surveys	8,200.00	6,883.00	2,466.08	2,376.64	27.573	SF
UPRC #29-6H(SI) - Wellbore #1 - No Surveys	8,957.77	6,891.00	1,108.64	1,014.06	11.721	CC, ES
UPRC #29-6H(SI) - Wellbore #1 - No Surveys	9,000.00	6,891.00	1,109.45	1,014.58	11.694	SF
VICTOR #C29-16(SI) - Wellbore #1 - No Surveys	11,883.65	6,869.00	1,757.89	1,637.10	14.553	CC
VICTOR #C29-16(SI) - Wellbore #1 - No Surveys	11,900.00	6,869.00	1,757.96	1,637.00	14.534	ES
VICTOR #C29-16(SI) - Wellbore #1 - No Surveys	12,100.00	6,869.00	1,771.15	1,648.49	14.439	SF
VICTOR C #29-10(SI) - Wellbore #1 - No Surveys	10,512.41	6,907.00	309.72	201.82	2.870	CC, ES, SF
VICTOR C #29-11(SI) - Wellbore #1 - No Surveys	10,513.12	6,914.00	1,041.19	933.22	9.643	CC, ES
VICTOR C #29-11(SI) - Wellbore #1 - No Surveys	10,600.00	6,914.00	1,044.81	936.21	9.621	SF
VICTOR C #29-12(SI) - Wellbore #1 - No Surveys	10,470.94	6,919.00	2,319.95	2,212.33	21.556	CC
VICTOR C #29-12(SI) - Wellbore #1 - No Surveys	10,500.00	6,919.00	2,320.13	2,212.25	21.506	ES
VICTOR C #29-12(SI) - Wellbore #1 - No Surveys	10,800.00	6,919.00	2,343.17	2,232.95	21.259	SF
VICTOR C #29-13(SI) - Wellbore #1 - No Surveys	11,977.59	6,893.00	2,300.69	2,178.75	18.868	CC
VICTOR C #29-13(SI) - Wellbore #1 - No Surveys	12,000.00	6,893.00	2,300.80	2,178.65	18.836	ES
VICTOR C #29-13(SI) - Wellbore #1 - No Surveys	12,300.00	6,893.00	2,323.17	2,198.66	18.659	SF

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Johnson C32-745
Project:	Mustang	TVD Reference:	KB @ 4804.00ft
Reference Site:	C Section 29	MD Reference:	KB @ 4804.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Johnson C32-745	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
C Section 29						
VICTOR C #29-14(SI) - Wellbore #1 - No Surveys	11,949.78	6,880.00	1,006.41	884.87	8.280	CC, ES
VICTOR C #29-14(SI) - Wellbore #1 - No Surveys	12,000.00	6,880.00	1,007.66	885.73	8.264	SF
VICTOR C #29-15(SI) - Wellbore #1 - No Surveys	11,752.06	6,896.00	320.05	200.33	2.673	CC, ES, SF
VICTOR C #29-3(PA) - Wellbore #1 - Gyro Surveys	774.62	760.63	799.90	794.87	159.018	CC
VICTOR C #29-3(PA) - Wellbore #1 - Gyro Surveys	2,009.92	1,998.54	801.86	788.09	58.213	ES
VICTOR C #29-3(PA) - Wellbore #1 - Gyro Surveys	8,100.00	6,921.92	1,209.77	1,156.87	22.870	SF
VICTOR C #29-4(PA) - Wellbore #1 - No Surveys	2,000.00	1,990.00	1,790.73	1,766.43	73.685	CC
VICTOR C #29-4(PA) - Wellbore #1 - No Surveys	2,100.00	2,089.98	1,791.90	1,766.37	70.184	ES
VICTOR C #29-4(PA) - Wellbore #1 - No Surveys	5,000.00	4,923.39	2,243.11	2,182.22	36.836	SF
VICTOR C #29-5(PA) - Wellbore #1 - Gyro Surveys	9,137.84	6,945.84	2,327.65	2,267.71	38.829	CC, ES
VICTOR C #29-5(PA) - Wellbore #1 - Gyro Surveys	9,600.00	6,934.25	2,373.06	2,310.01	37.634	SF
VICTOR C #29-6(PA) - Wellbore #1 - No Surveys	2,000.00	1,998.00	1,728.84	1,704.46	70.934	CC, ES
VICTOR C #29-6(PA) - Wellbore #1 - No Surveys	5,000.00	4,931.39	2,317.44	2,256.51	38.032	SF
VICTOR C #29-9(SI) - Wellbore #1 - No Surveys	10,419.44	6,865.00	1,802.11	1,695.43	16.893	CC, ES
VICTOR C #29-9(SI) - Wellbore #1 - No Surveys	10,600.00	6,865.00	1,811.13	1,702.89	16.732	SF
C Section 32						
HENNINGTON C #32-10(PR) - Wellbore #1 - No Surveys	15,722.76	6,860.00	341.68	181.27	2.130	CC, ES, SF
HENNINGTON C #32-2(PR) - Wellbore #1 - No Surveys	12,954.26	6,861.00	305.44	173.91	2.322	CC, ES, SF
HENNINGTON C #32-7(PA) - Wellbore #1 - Gyro Survey	14,300.76	6,865.31	140.86	31.84	1.292	Level 3, CC, ES, SF
HOWELL #1(SI) - Wellbore #1 - No Surveys	16,677.36	6,890.00	1,769.96	1,599.16	10.363	CC
HOWELL #1(SI) - Wellbore #1 - No Surveys	16,700.00	6,890.00	1,770.11	1,599.08	10.350	ES
HOWELL #1(SI) - Wellbore #1 - No Surveys	16,800.00	6,890.00	1,774.20	1,602.42	10.328	SF
HOWELL #32-1(SI) - Wellbore #1 - No Surveys	14,662.18	6,874.00	1,008.70	859.35	6.754	CC, ES
HOWELL #32-1(SI) - Wellbore #1 - No Surveys	14,700.00	6,874.00	1,009.41	859.76	6.745	SF
HOWELL #32-2(SI) - Wellbore #1 - No Surveys	13,268.36	6,868.00	949.62	814.81	7.044	CC, ES
HOWELL #32-2(SI) - Wellbore #1 - No Surveys	13,300.00	6,868.00	950.15	815.08	7.034	SF
HOWELL #32-23(PR) - Wellbore #1 - No Surveys	14,368.85	6,901.00	2,184.53	2,038.01	14.909	CC
HOWELL #32-23(PR) - Wellbore #1 - No Surveys	14,400.00	6,901.00	2,184.75	2,037.93	14.880	ES
HOWELL #32-23(PR) - Wellbore #1 - No Surveys	14,600.00	6,901.00	2,196.72	2,048.34	14.804	SF
HOWELL #C 32-12(SI) - Wellbore #1 - No Surveys	15,888.34	6,915.00	2,338.52	2,175.88	14.378	CC
HOWELL #C 32-12(SI) - Wellbore #1 - No Surveys	15,900.00	6,915.00	2,338.55	2,175.79	14.368	ES
HOWELL #C 32-12(SI) - Wellbore #1 - No Surveys	16,100.00	6,915.00	2,348.08	2,183.69	14.283	SF
MCGUIRK-HOWELL C #32-11(SI) - Wellbore #1 - No Su	15,683.78	6,873.00	1,015.76	855.65	6.344	CC
MCGUIRK-HOWELL C #32-11(SI) - Wellbore #1 - No Su	15,700.00	6,873.00	1,015.89	855.64	6.339	ES, SF
MCGUIRK-HOWELL C #32-14(TA) - Wellbore #1 - No Su	17,057.07	6,879.00	1,124.59	949.83	6.435	CC, ES
MCGUIRK-HOWELL C #32-14(TA) - Wellbore #1 - No Su	17,100.00	6,879.00	1,125.41	950.32	6.428	SF
MCGUIRK-HOWELL C #32-4(SI) - Wellbore #1 - No Sur	12,982.11	6,916.00	2,225.81	2,093.51	16.825	CC
MCGUIRK-HOWELL C #32-4(SI) - Wellbore #1 - No Sur	13,000.00	6,916.00	2,225.88	2,093.41	16.803	ES
MCGUIRK-HOWELL C #32-4(SI) - Wellbore #1 - No Sur	13,200.00	6,916.00	2,236.45	2,102.32	16.674	SF
NELSON #32-25(PR) - Wellbore #1 - No Surveys	13,773.71	6,905.00	1,668.75	1,528.39	11.889	CC
NELSON #32-25(PR) - Wellbore #1 - No Surveys	13,800.00	6,905.00	1,668.95	1,528.35	11.870	ES
NELSON #32-25(PR) - Wellbore #1 - No Surveys	13,900.00	6,905.00	1,673.52	1,532.13	11.837	SF
PLUSS #32-43(PA) - Wellbore #1 - Gyro Surveys	17,196.48	6,871.48	20.29	-119.52	0.145	Level 1, CC, ES, SF
PTF #C 32-1(SI) - Wellbore #1 - No Surveys	13,240.26	6,853.00	1,625.19	1,490.80	12.093	CC, ES
PTF #C 32-1(SI) - Wellbore #1 - No Surveys	13,400.00	6,853.00	1,633.02	1,497.21	12.024	SF
PTF #C 32-16(SI) - Wellbore #1 - No Surveys	17,101.72	6,854.00	1,630.26	1,455.25	9.315	CC, ES
PTF #C 32-16(SI) - Wellbore #1 - No Surveys	17,200.00	6,854.00	1,633.22	1,457.29	9.283	SF
PTF #C 32-8(SI) - Wellbore #1 - No Surveys	14,613.61	6,843.00	1,634.56	1,485.98	11.001	CC, ES
PTF #C 32-8(SI) - Wellbore #1 - No Surveys	14,700.00	6,843.00	1,636.84	1,487.42	10.954	SF
PTF #C 32-9(SI) - Wellbore #1 - No Surveys	15,975.99	6,845.00	1,657.85	1,494.89	10.173	CC
PTF #C 32-9(SI) - Wellbore #1 - No Surveys	16,000.00	6,845.00	1,658.03	1,494.81	10.158	ES
PTF #C 32-9(SI) - Wellbore #1 - No Surveys	16,100.00	6,845.00	1,662.49	1,498.40	10.132	SF

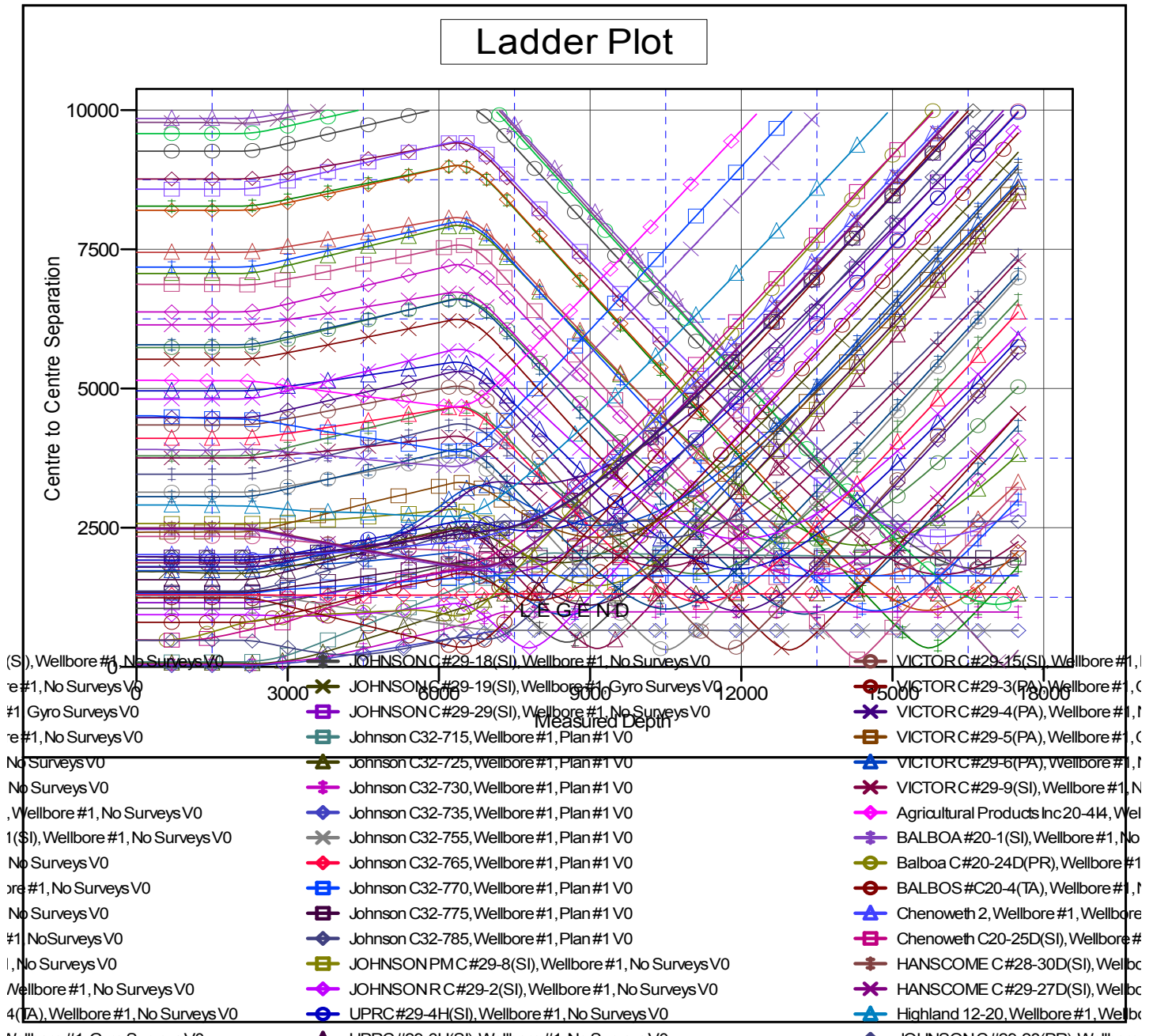
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Johnson C32-745
Project:	Mustang	TVD Reference:	KB @ 4804.00ft
Reference Site:	C Section 29	MD Reference:	KB @ 4804.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Johnson C32-745	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 4804.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Johnson C32-745
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.60°



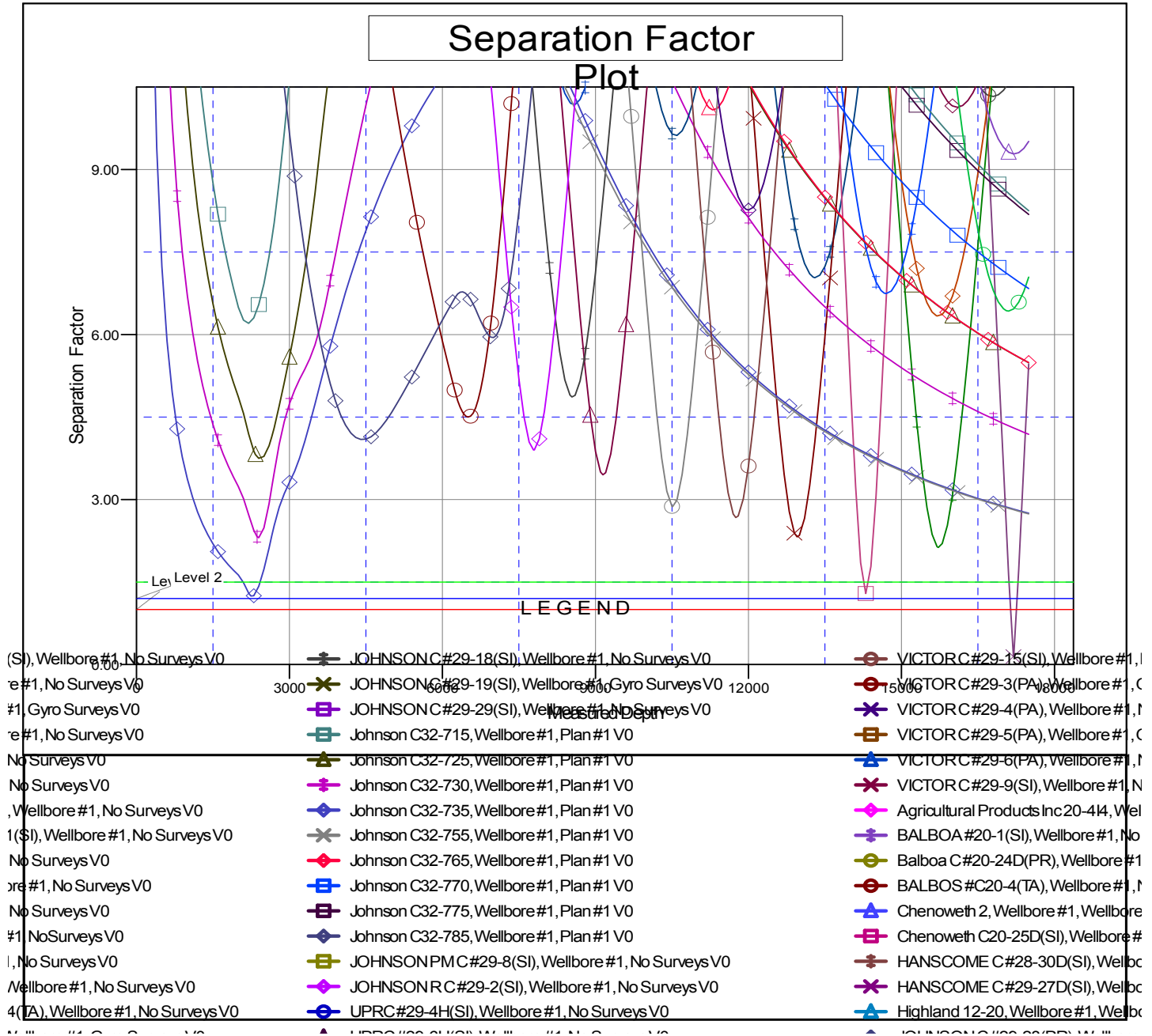
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Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Johnson C32-745
Project:	Mustang	TVD Reference:	KB @ 4804.00ft
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Reference Well:	Johnson C32-745	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 4804.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Johnson C32-745
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.60°



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