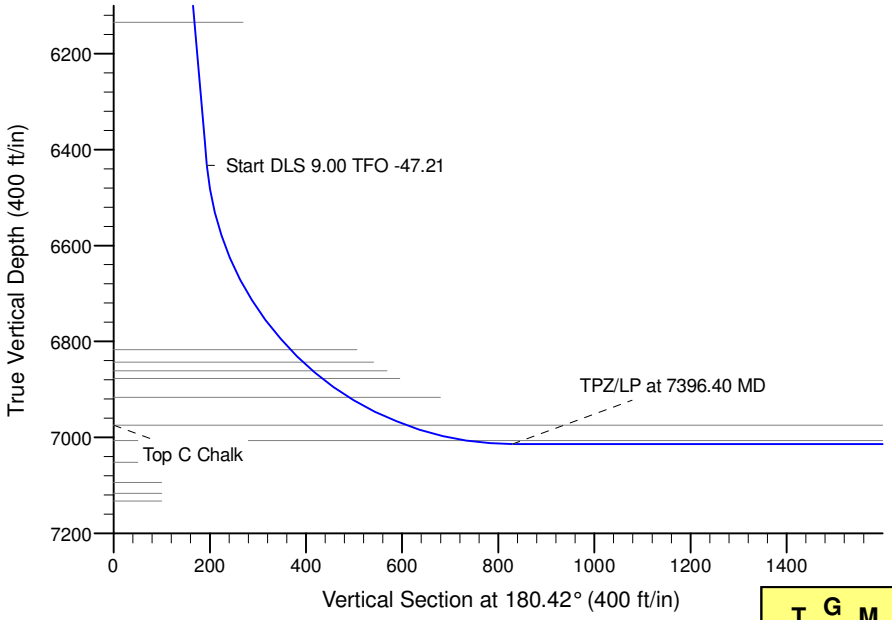
Project: Bronco
Site: C Section 30
Well: Johnson D06-761
Wellbore: Wellbore #1
Design: Plan #1

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

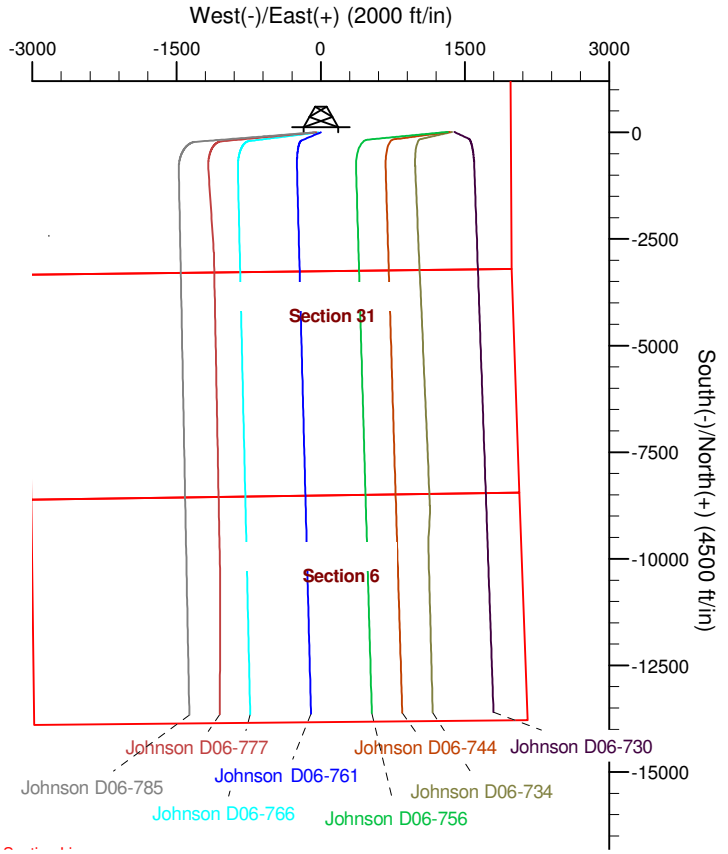
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	4000.00	0.00	0.00	4000.00	0.00	0.00	0.00	0.00	0.00	
3	4352.20	7.04	226.34	4351.31	-14.93	-15.64	2.00	226.34	15.04	
4	6449.71	7.04	226.34	6432.99	-192.50	-201.73	0.00	0.00	193.99	
5	7396.40	90.00	179.35	7014.00	-827.45	-246.98	9.00	-47.21	829.25	TPZ Johnson D06-761
6	20201.27	90.00	179.35	7014.00	-13631.48	-100.67	0.00	0.00	13631.85	BHL Johnson D06-761

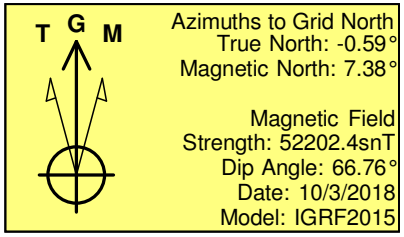


Surface:2013' FNL,1978' FEL, Sec.30

TPZ: 2434' FSL, 2227' FEL, Sec.30

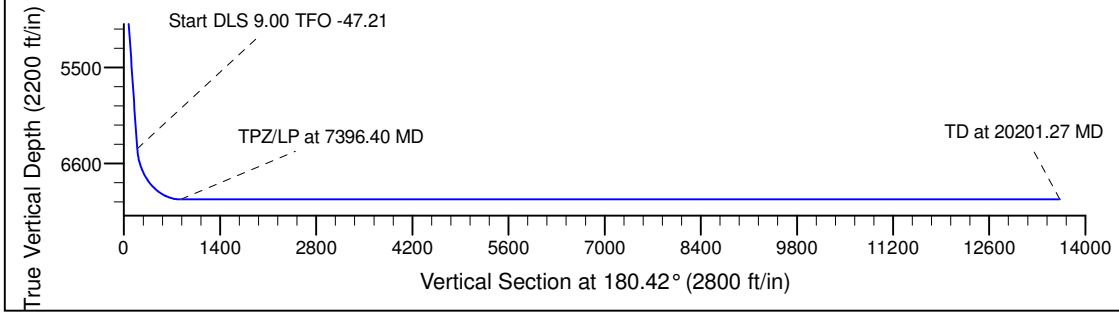
BHL: 200' FSL, 2249' FEL, Sec.6





Azimuths to Grid North
True North: -0.59°
Magnetic North: 7.38°

Magnetic Field
Strength: 52202.4snT
Dip Angle: 66.76°
Date: 10/3/2018
Model: IGRF2015



WELL DETAILS: Johnson D06-761

	Northing	Easting	Latittude	Longitude
0.00	0.00	1347981.60	3253498.42	40.2850439	-104.5913310

4881.00

Plan: Plan #1 (Johnson D06-761/Wellbore #1)

Created By: Colby Baxter Date: 16:01, October 03 2018

Checked: _____ Date: _____

Reviewed: _____ Date: _____

Approved: _____ Date: _____

Northern Region - DJ Basin

Bronco
C Section 30
Johnson D06-761

Wellbore #1

Plan: Plan #1

Standard Survey Report

03 October, 2018

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Johnson D06-761
Project:	Bronco	**TVD Reference:**	KB @ 4911.00ft
Site:	C Section 30	**MD Reference:**	KB @ 4911.00ft
Well:	Johnson D06-761	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDMP

Project	Bronco, 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 30				
Site Position:		**Northing:**	1,345,306.95 usft	**Latitude:**	40.2777815
From:	Map	**Easting:**	3,250,664.82 usft	**Longitude:**	-104.6015845
Position Uncertainty:	0.00 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.58 °

Well	Johnson D06-761					
Well Position	**+N/-S**	0.00 ft	**Northing:**	1,347,981.60 usft	**Latitude:**	40.2850440
	+E/-W	0.00 ft	**Easting:**	3,253,498.42 usft	**Longitude:**	-104.5913310
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,881.00 ft

Wellbore	Wellbore #1			
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2015	10/3/2018	7.97	66.76	52,202.38353035

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	180.42

Survey Tool Program **Date** 10/3/2018

From (ft)	**To (ft)**	**Survey (Wellbore)**	**Tool Name**	**Description**
0.00	20,201.27	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 D06-761
Project:	Bronco	**TVD Reference:**	KB @ 4911.00ft
Site:	C Section 30	**MD Reference:**	KB @ 4911.00ft
Well:	Johnson D06-761	**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	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	2.00	226.34	4,099.98	-1.20	-1.26	1.21	2.00	2.00	0.00
4,200.00	4.00	226.34	4,199.84	-4.82	-5.05	4.85	2.00	2.00	0.00
4,300.00	6.00	226.34	4,299.45	-10.83	-11.35	10.92	2.00	2.00	0.00
4,352.20	7.04	226.34	4,351.31	-14.93	-15.64	15.04	2.00	2.00	0.00
4,400.00	7.04	226.34	4,398.75	-18.97	-19.88	19.12	0.00	0.00	0.00
4,500.00	7.04	226.34	4,498.00	-27.44	-28.76	27.65	0.00	0.00	0.00
4,600.00	7.04	226.34	4,597.24	-35.91	-37.63	36.18	0.00	0.00	0.00
4,700.00	7.04	226.34	4,696.49	-44.37	-46.50	44.71	0.00	0.00	0.00
4,800.00	7.04	226.34	4,795.73	-52.84	-55.37	53.25	0.00	0.00	0.00
4,900.00	7.04	226.34	4,894.98	-61.30	-64.24	61.78	0.00	0.00	0.00
5,000.00	7.04	226.34	4,994.22	-69.77	-73.12	70.31	0.00	0.00	0.00
5,100.00	7.04	226.34	5,093.47	-78.24	-81.99	78.84	0.00	0.00	0.00
5,200.00	7.04	226.34	5,192.71	-86.70	-90.86	87.37	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Johnson D06-761
Project:	Bronco	**TVD Reference:**	KB @ 4911.00ft
Site:	C Section 30	**MD Reference:**	KB @ 4911.00ft
Well:	Johnson D06-761	**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	7.04	226.34	5,291.96	-95.17	-99.73	95.90	0.00	0.00	0.00
5,400.00	7.04	226.34	5,391.21	-103.63	-108.60	104.43	0.00	0.00	0.00
5,500.00	7.04	226.34	5,490.45	-112.10	-117.47	112.96	0.00	0.00	0.00
5,600.00	7.04	226.34	5,589.70	-120.57	-126.35	121.50	0.00	0.00	0.00
5,700.00	7.04	226.34	5,688.94	-129.03	-135.22	130.03	0.00	0.00	0.00
5,800.00	7.04	226.34	5,788.19	-137.50	-144.09	138.56	0.00	0.00	0.00
5,900.00	7.04	226.34	5,887.43	-145.96	-152.96	147.09	0.00	0.00	0.00
6,000.00	7.04	226.34	5,986.68	-154.43	-161.83	155.62	0.00	0.00	0.00
6,100.00	7.04	226.34	6,085.92	-162.90	-170.71	164.15	0.00	0.00	0.00
6,200.00	7.04	226.34	6,185.17	-171.36	-179.58	172.68	0.00	0.00	0.00
6,300.00	7.04	226.34	6,284.41	-179.83	-188.45	181.21	0.00	0.00	0.00
6,400.00	7.04	226.34	6,383.66	-188.29	-197.32	189.75	0.00	0.00	0.00
6,449.71	7.04	226.34	6,432.99	-192.50	-201.73	193.99	0.00	0.00	0.00
6,500.00	10.65	208.07	6,482.69	-198.73	-206.15	200.25	9.00	7.16	-36.32
6,600.00	19.01	194.55	6,579.30	-222.70	-214.61	224.28	9.00	8.37	-13.53
6,700.00	27.77	189.23	6,671.00	-261.54	-222.45	263.18	9.00	8.76	-5.32
6,800.00	36.64	186.32	6,755.53	-314.30	-229.49	315.99	9.00	8.87	-2.90
6,900.00	45.55	184.43	6,830.82	-379.68	-235.54	381.41	9.00	8.91	-1.89
7,000.00	54.49	183.04	6,895.01	-456.07	-240.47	457.83	9.00	8.94	-1.39
7,100.00	63.44	181.93	6,946.51	-541.59	-244.15	543.38	9.00	8.95	-1.11
7,200.00	72.40	180.99	6,984.07	-634.13	-246.48	635.93	9.00	8.96	-0.95
7,300.00	81.36	180.13	7,006.74	-731.41	-247.42	733.22	9.00	8.96	-0.86
7,396.40	90.00	179.35	7,014.00	-827.45	-246.98	829.25	9.00	8.96	-0.82
7,400.00	90.00	179.35	7,014.00	-831.05	-246.94	832.85	0.00	0.00	0.00
7,500.00	90.00	179.35	7,014.00	-931.04	-245.80	932.83	0.00	0.00	0.00
7,600.00	90.00	179.35	7,014.00	-1,031.03	-244.65	1,032.81	0.00	0.00	0.00
7,700.00	90.00	179.35	7,014.00	-1,131.03	-243.51	1,132.79	0.00	0.00	0.00
7,800.00	90.00	179.35	7,014.00	-1,231.02	-242.37	1,232.78	0.00	0.00	0.00
7,900.00	90.00	179.35	7,014.00	-1,331.01	-241.23	1,332.76	0.00	0.00	0.00
8,000.00	90.00	179.35	7,014.00	-1,431.01	-240.08	1,432.74	0.00	0.00	0.00
8,100.00	90.00	179.35	7,014.00	-1,531.00	-238.94	1,532.72	0.00	0.00	0.00
8,200.00	90.00	179.35	7,014.00	-1,630.99	-237.80	1,632.71	0.00	0.00	0.00
8,300.00	90.00	179.35	7,014.00	-1,730.99	-236.66	1,732.69	0.00	0.00	0.00
8,400.00	90.00	179.35	7,014.00	-1,830.98	-235.51	1,832.67	0.00	0.00	0.00
8,500.00	90.00	179.35	7,014.00	-1,930.97	-234.37	1,932.65	0.00	0.00	0.00
8,600.00	90.00	179.35	7,014.00	-2,030.97	-233.23	2,032.64	0.00	0.00	0.00
8,700.00	90.00	179.35	7,014.00	-2,130.96	-232.09	2,132.62	0.00	0.00	0.00
8,800.00	90.00	179.35	7,014.00	-2,230.96	-230.94	2,232.60	0.00	0.00	0.00
8,900.00	90.00	179.35	7,014.00	-2,330.95	-229.80	2,332.58	0.00	0.00	0.00
9,000.00	90.00	179.35	7,014.00	-2,430.94	-228.66	2,432.56	0.00	0.00	0.00
9,100.00	90.00	179.35	7,014.00	-2,530.94	-227.51	2,532.55	0.00	0.00	0.00
9,200.00	90.00	179.35	7,014.00	-2,630.93	-226.37	2,632.53	0.00	0.00	0.00
9,300.00	90.00	179.35	7,014.00	-2,730.92	-225.23	2,732.51	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Johnson D06-761
Project:	Bronco	**TVD Reference:**	KB @ 4911.00ft
Site:	C Section 30	**MD Reference:**	KB @ 4911.00ft
Well:	Johnson D06-761	**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	179.35	7,014.00	-2,830.92	-224.09	2,832.49	0.00	0.00	0.00
9,500.00	90.00	179.35	7,014.00	-2,930.91	-222.94	2,932.48	0.00	0.00	0.00
9,600.00	90.00	179.35	7,014.00	-3,030.90	-221.80	3,032.46	0.00	0.00	0.00
9,700.00	90.00	179.35	7,014.00	-3,130.90	-220.66	3,132.44	0.00	0.00	0.00
9,800.00	90.00	179.35	7,014.00	-3,230.89	-219.52	3,232.42	0.00	0.00	0.00
9,900.00	90.00	179.35	7,014.00	-3,330.88	-218.37	3,332.41	0.00	0.00	0.00
10,000.00	90.00	179.35	7,014.00	-3,430.88	-217.23	3,432.39	0.00	0.00	0.00
10,100.00	90.00	179.35	7,014.00	-3,530.87	-216.09	3,532.37	0.00	0.00	0.00
10,200.00	90.00	179.35	7,014.00	-3,630.86	-214.95	3,632.35	0.00	0.00	0.00
10,300.00	90.00	179.35	7,014.00	-3,730.86	-213.80	3,732.33	0.00	0.00	0.00
10,400.00	90.00	179.35	7,014.00	-3,830.85	-212.66	3,832.32	0.00	0.00	0.00
10,500.00	90.00	179.35	7,014.00	-3,930.84	-211.52	3,932.30	0.00	0.00	0.00
10,600.00	90.00	179.35	7,014.00	-4,030.84	-210.37	4,032.28	0.00	0.00	0.00
10,700.00	90.00	179.35	7,014.00	-4,130.83	-209.23	4,132.26	0.00	0.00	0.00
10,800.00	90.00	179.35	7,014.00	-4,230.82	-208.09	4,232.25	0.00	0.00	0.00
10,900.00	90.00	179.35	7,014.00	-4,330.82	-206.95	4,332.23	0.00	0.00	0.00
11,000.00	90.00	179.35	7,014.00	-4,430.81	-205.80	4,432.21	0.00	0.00	0.00
11,100.00	90.00	179.35	7,014.00	-4,530.81	-204.66	4,532.19	0.00	0.00	0.00
11,200.00	90.00	179.35	7,014.00	-4,630.80	-203.52	4,632.18	0.00	0.00	0.00
11,300.00	90.00	179.35	7,014.00	-4,730.79	-202.38	4,732.16	0.00	0.00	0.00
11,400.00	90.00	179.35	7,014.00	-4,830.79	-201.23	4,832.14	0.00	0.00	0.00
11,500.00	90.00	179.35	7,014.00	-4,930.78	-200.09	4,932.12	0.00	0.00	0.00
11,600.00	90.00	179.35	7,014.00	-5,030.77	-198.95	5,032.10	0.00	0.00	0.00
11,700.00	90.00	179.35	7,014.00	-5,130.77	-197.81	5,132.09	0.00	0.00	0.00
11,800.00	90.00	179.35	7,014.00	-5,230.76	-196.66	5,232.07	0.00	0.00	0.00
11,900.00	90.00	179.35	7,014.00	-5,330.75	-195.52	5,332.05	0.00	0.00	0.00
12,000.00	90.00	179.35	7,014.00	-5,430.75	-194.38	5,432.03	0.00	0.00	0.00
12,100.00	90.00	179.35	7,014.00	-5,530.74	-193.24	5,532.02	0.00	0.00	0.00
12,200.00	90.00	179.35	7,014.00	-5,630.73	-192.09	5,632.00	0.00	0.00	0.00
12,300.00	90.00	179.35	7,014.00	-5,730.73	-190.95	5,731.98	0.00	0.00	0.00
12,400.00	90.00	179.35	7,014.00	-5,830.72	-189.81	5,831.96	0.00	0.00	0.00
12,500.00	90.00	179.35	7,014.00	-5,930.71	-188.66	5,931.95	0.00	0.00	0.00
12,600.00	90.00	179.35	7,014.00	-6,030.71	-187.52	6,031.93	0.00	0.00	0.00
12,700.00	90.00	179.35	7,014.00	-6,130.70	-186.38	6,131.91	0.00	0.00	0.00
12,800.00	90.00	179.35	7,014.00	-6,230.69	-185.24	6,231.89	0.00	0.00	0.00
12,900.00	90.00	179.35	7,014.00	-6,330.69	-184.09	6,331.87	0.00	0.00	0.00
13,000.00	90.00	179.35	7,014.00	-6,430.68	-182.95	6,431.86	0.00	0.00	0.00
13,100.00	90.00	179.35	7,014.00	-6,530.67	-181.81	6,531.84	0.00	0.00	0.00
13,200.00	90.00	179.35	7,014.00	-6,630.67	-180.67	6,631.82	0.00	0.00	0.00
13,300.00	90.00	179.35	7,014.00	-6,730.66	-179.52	6,731.80	0.00	0.00	0.00
13,400.00	90.00	179.35	7,014.00	-6,830.65	-178.38	6,831.79	0.00	0.00	0.00
13,500.00	90.00	179.35	7,014.00	-6,930.65	-177.24	6,931.77	0.00	0.00	0.00
13,600.00	90.00	179.35	7,014.00	-7,030.64	-176.10	7,031.75	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Johnson D06-761
Project:	Bronco	**TVD Reference:**	KB @ 4911.00ft
Site:	C Section 30	**MD Reference:**	KB @ 4911.00ft
Well:	Johnson D06-761	**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	179.35	7,014.00	-7,130.64	-174.95	7,131.73	0.00	0.00	0.00
13,800.00	90.00	179.35	7,014.00	-7,230.63	-173.81	7,231.72	0.00	0.00	0.00
13,900.00	90.00	179.35	7,014.00	-7,330.62	-172.67	7,331.70	0.00	0.00	0.00
14,000.00	90.00	179.35	7,014.00	-7,430.62	-171.53	7,431.68	0.00	0.00	0.00
14,100.00	90.00	179.35	7,014.00	-7,530.61	-170.38	7,531.66	0.00	0.00	0.00
14,200.00	90.00	179.35	7,014.00	-7,630.60	-169.24	7,631.64	0.00	0.00	0.00
14,300.00	90.00	179.35	7,014.00	-7,730.60	-168.10	7,731.63	0.00	0.00	0.00
14,400.00	90.00	179.35	7,014.00	-7,830.59	-166.95	7,831.61	0.00	0.00	0.00
14,500.00	90.00	179.35	7,014.00	-7,930.58	-165.81	7,931.59	0.00	0.00	0.00
14,600.00	90.00	179.35	7,014.00	-8,030.58	-164.67	8,031.57	0.00	0.00	0.00
14,700.00	90.00	179.35	7,014.00	-8,130.57	-163.53	8,131.56	0.00	0.00	0.00
14,800.00	90.00	179.35	7,014.00	-8,230.56	-162.38	8,231.54	0.00	0.00	0.00
14,900.00	90.00	179.35	7,014.00	-8,330.56	-161.24	8,331.52	0.00	0.00	0.00
15,000.00	90.00	179.35	7,014.00	-8,430.55	-160.10	8,431.50	0.00	0.00	0.00
15,100.00	90.00	179.35	7,014.00	-8,530.54	-158.96	8,531.49	0.00	0.00	0.00
15,200.00	90.00	179.35	7,014.00	-8,630.54	-157.81	8,631.47	0.00	0.00	0.00
15,300.00	90.00	179.35	7,014.00	-8,730.53	-156.67	8,731.45	0.00	0.00	0.00
15,400.00	90.00	179.35	7,014.00	-8,830.52	-155.53	8,831.43	0.00	0.00	0.00
15,500.00	90.00	179.35	7,014.00	-8,930.52	-154.39	8,931.41	0.00	0.00	0.00
15,600.00	90.00	179.35	7,014.00	-9,030.51	-153.24	9,031.40	0.00	0.00	0.00
15,700.00	90.00	179.35	7,014.00	-9,130.50	-152.10	9,131.38	0.00	0.00	0.00
15,800.00	90.00	179.35	7,014.00	-9,230.50	-150.96	9,231.36	0.00	0.00	0.00
15,900.00	90.00	179.35	7,014.00	-9,330.49	-149.81	9,331.34	0.00	0.00	0.00
16,000.00	90.00	179.35	7,014.00	-9,430.49	-148.67	9,431.33	0.00	0.00	0.00
16,100.00	90.00	179.35	7,014.00	-9,530.48	-147.53	9,531.31	0.00	0.00	0.00
16,200.00	90.00	179.35	7,014.00	-9,630.47	-146.39	9,631.29	0.00	0.00	0.00
16,300.00	90.00	179.35	7,014.00	-9,730.47	-145.24	9,731.27	0.00	0.00	0.00
16,400.00	90.00	179.35	7,014.00	-9,830.46	-144.10	9,831.26	0.00	0.00	0.00
16,500.00	90.00	179.35	7,014.00	-9,930.45	-142.96	9,931.24	0.00	0.00	0.00
16,600.00	90.00	179.35	7,014.00	-10,030.45	-141.82	10,031.22	0.00	0.00	0.00
16,700.00	90.00	179.35	7,014.00	-10,130.44	-140.67	10,131.20	0.00	0.00	0.00
16,800.00	90.00	179.35	7,014.00	-10,230.43	-139.53	10,231.18	0.00	0.00	0.00
16,900.00	90.00	179.35	7,014.00	-10,330.43	-138.39	10,331.17	0.00	0.00	0.00
17,000.00	90.00	179.35	7,014.00	-10,430.42	-137.25	10,431.15	0.00	0.00	0.00
17,100.00	90.00	179.35	7,014.00	-10,530.41	-136.10	10,531.13	0.00	0.00	0.00
17,200.00	90.00	179.35	7,014.00	-10,630.41	-134.96	10,631.11	0.00	0.00	0.00
17,300.00	90.00	179.35	7,014.00	-10,730.40	-133.82	10,731.10	0.00	0.00	0.00
17,400.00	90.00	179.35	7,014.00	-10,830.39	-132.68	10,831.08	0.00	0.00	0.00
17,500.00	90.00	179.35	7,014.00	-10,930.39	-131.53	10,931.06	0.00	0.00	0.00
17,600.00	90.00	179.35	7,014.00	-11,030.38	-130.39	11,031.04	0.00	0.00	0.00
17,700.00	90.00	179.35	7,014.00	-11,130.37	-129.25	11,131.03	0.00	0.00	0.00
17,800.00	90.00	179.35	7,014.00	-11,230.37	-128.10	11,231.01	0.00	0.00	0.00
17,900.00	90.00	179.35	7,014.00	-11,330.36	-126.96	11,330.99	0.00	0.00	0.00
18,000.00	90.00	179.35	7,014.00	-11,430.35	-125.82	11,430.97	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Johnson D06-761
Project:	Bronco	**TVD Reference:**	KB @ 4911.00ft
Site:	C Section 30	**MD Reference:**	KB @ 4911.00ft
Well:	Johnson D06-761	**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)
18,100.00	90.00	179.35	7,014.00	-11,530.35	-124.68	11,530.95	0.00	0.00	0.00
18,200.00	90.00	179.35	7,014.00	-11,630.34	-123.53	11,630.94	0.00	0.00	0.00
18,300.00	90.00	179.35	7,014.00	-11,730.34	-122.39	11,730.92	0.00	0.00	0.00
18,400.00	90.00	179.35	7,014.00	-11,830.33	-121.25	11,830.90	0.00	0.00	0.00
18,500.00	90.00	179.35	7,014.00	-11,930.32	-120.11	11,930.88	0.00	0.00	0.00
18,600.00	90.00	179.35	7,014.00	-12,030.32	-118.96	12,030.87	0.00	0.00	0.00
18,700.00	90.00	179.35	7,014.00	-12,130.31	-117.82	12,130.85	0.00	0.00	0.00
18,800.00	90.00	179.35	7,014.00	-12,230.30	-116.68	12,230.83	0.00	0.00	0.00
18,900.00	90.00	179.35	7,014.00	-12,330.30	-115.54	12,330.81	0.00	0.00	0.00
19,000.00	90.00	179.35	7,014.00	-12,430.29	-114.39	12,430.80	0.00	0.00	0.00
19,100.00	90.00	179.35	7,014.00	-12,530.28	-113.25	12,530.78	0.00	0.00	0.00
19,200.00	90.00	179.35	7,014.00	-12,630.28	-112.11	12,630.76	0.00	0.00	0.00
19,300.00	90.00	179.35	7,014.00	-12,730.27	-110.96	12,730.74	0.00	0.00	0.00
19,400.00	90.00	179.35	7,014.00	-12,830.26	-109.82	12,830.72	0.00	0.00	0.00
19,500.00	90.00	179.35	7,014.00	-12,930.26	-108.68	12,930.71	0.00	0.00	0.00
19,600.00	90.00	179.35	7,014.00	-13,030.25	-107.54	13,030.69	0.00	0.00	0.00
19,700.00	90.00	179.35	7,014.00	-13,130.24	-106.39	13,130.67	0.00	0.00	0.00
19,800.00	90.00	179.35	7,014.00	-13,230.24	-105.25	13,230.65	0.00	0.00	0.00
19,900.00	90.00	179.35	7,014.00	-13,330.23	-104.11	13,330.64	0.00	0.00	0.00
20,000.00	90.00	179.35	7,014.00	-13,430.22	-102.97	13,430.62	0.00	0.00	0.00
20,100.00	90.00	179.35	7,014.00	-13,530.22	-101.82	13,530.60	0.00	0.00	0.00
20,200.00	90.00	179.35	7,014.00	-13,630.21	-100.68	13,630.58	0.00	0.00	0.00
20,201.27	90.00	179.35	7,014.00	-13,631.48	-100.67	13,631.85	0.00	0.00	0.00

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 D06-761 - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,347,981.60	3,253,498.42	40.2850440	-104.5913310
KOP Johnson D06-761 - plan hits target center - Point	0.00	0.00	6,432.99	-192.50	-201.73	1,347,789.10	3,253,296.69	40.2845212	-104.5920611
TPZ Johnson D06-761 - plan hits target center - Point	0.00	0.00	7,014.00	-827.45	-246.98	1,347,154.15	3,253,251.44	40.2827796	-104.5922466
BHL Johnson D06-761 - plan hits target center - Point	0.00	0.00	7,014.00	-13,631.48	-100.67	1,334,350.15	3,253,397.76	40.2476293	-104.5921920

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Johnson D06-761
Project:	Bronco	**TVD Reference:**	KB @ 4911.00ft
Site:	C Section 30	**MD Reference:**	KB @ 4911.00ft
Well:	Johnson D06-761	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDMP

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
600.00	600.00	Pierre			
742.00	742.00	Upper Pierre Aquifer Top			
1,384.00	1,384.00	Upper Pierre Aquifer Base			
3,852.00	3,852.00	Parkman			
4,412.34	4,411.00	Sussex			
4,994.74	4,989.00	Shannon			
6,149.45	6,135.00	Teepee Buttes			
6,880.56	6,817.00	Sharon Springs			
6,917.64	6,843.00	Top A Chalk			
6,944.72	6,861.00	Top A Marl			
6,969.97	6,877.00	Top B Chalk			
7,039.60	6,917.00	Top B Marl			
7,171.95	6,975.00	Top C Chalk			
7,301.72	7,007.00	Top C Marl			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
4000	4000	0	0	Start Build 2.00
6450	6433	-193	-202	Start DLS 9.00 TFO -47.21
7396	7014	-827	-247	TPZ/LP at 7396.40 MD
20,201	7014	-13,631	-101	TD at 20201.27 MD

Checked By: _____ Approved By: _____ Date: _____

Northern Region - DJ Basin

Bronco
C Section 30
Johnson D06-761

Wellbore #1
Plan #1

Anticollision Summary Report

03 October, 2018

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Johnson D06-761
Project:	Bronco	**TVD Reference:**	KB @ 4911.00ft
Reference Site:	C Section 30	**MD Reference:**	KB @ 4911.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Johnson D06-761	**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** 10/3/2018

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	20,201.27	Plan #1 (Wellbore #1)	2_MWD+IFR1	A005Mb: IFR declination correction only

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
C Section 30						
ANDERSON #1(PR) - Wellbore #1 - No Surveys	6,477.41	6,419.43	2,718.44	2,639.77	34.556	CC
ANDERSON #1(PR) - Wellbore #1 - No Surveys	6,500.00	6,441.69	2,718.68	2,639.73	34.438	ES
ANDERSON #1(PR) - Wellbore #1 - No Surveys	6,850.00	6,753.46	2,783.41	2,700.51	33.577	SF
ANDERSON #2(PA) - Wellbore #1 - Gyro Surveys	9,170.69	6,959.75	262.88	202.05	4.322	CC, ES, SF
BROSNAHAN #1(SI) - Wellbore #1 - No Surveys	7,811.10	6,967.00	682.75	594.48	7.735	CC, ES, SF
BROSNAHAN #14-30(SI) - Wellbore #1 - No Surveys	9,365.97	6,969.00	912.88	813.70	9.204	CC, ES
BROSNAHAN #14-30(SI) - Wellbore #1 - No Surveys	9,400.00	6,969.00	913.51	814.00	9.179	SF
Brosnahan 13-30 - Wellbore #1 - Wellbore #1 - As Drilled	7,841.27	7,280.01	2,153.69	2,081.53	29.846	CC
Brosnahan 13-30 - Wellbore #1 - Wellbore #1 - As Drilled	7,900.00	7,280.01	2,154.49	2,081.19	29.392	ES
Brosnahan 13-30 - Wellbore #1 - Wellbore #1 - As Drilled	8,600.00	7,280.01	2,283.43	2,198.30	26.825	SF
JOHNSON #30-15(PR) - Wellbore #1 - No Surveys	4,000.00	3,942.00	964.27	915.76	19.879	CC, ES
JOHNSON #30-15(PR) - Wellbore #1 - No Surveys	6,500.00	6,424.69	1,250.24	1,171.58	15.895	SF
Johnson A-30 - Wellbore #1 - Wellbore #1 - As Drilled	9,200.83	6,926.58	2,211.68	2,150.64	36.235	CC, ES
Johnson A-30 - Wellbore #1 - Wellbore #1 - As Drilled	9,700.00	6,926.56	2,267.31	2,202.26	34.856	SF
Johnson D06-730 - Wellbore #1 - Plan #1	4,000.00	3,959.00	1,389.90	1,361.84	49.525	CC, ES
Johnson D06-730 - Wellbore #1 - Plan #1	20,201.27	20,077.64	1,900.83	1,600.12	6.321	SF
Johnson D06-734 - Wellbore #1 - Plan #1	6,833.64	6,897.79	1,226.16	1,178.20	25.566	CC
Johnson D06-734 - Wellbore #1 - Plan #1	20,201.27	20,173.72	1,265.89	965.47	4.214	ES, SF
Johnson D06-744 - Wellbore #1 - Plan #1	7,362.69	7,466.69	927.21	875.18	17.823	CC
Johnson D06-744 - Wellbore #1 - Plan #1	20,201.27	20,304.01	954.33	654.16	3.179	ES, SF
Johnson D06-756 - Wellbore #1 - Plan #1	7,264.39	7,253.42	621.90	571.72	12.392	CC
Johnson D06-756 - Wellbore #1 - Plan #1	20,201.27	20,153.15	640.19	342.88	2.153	ES, SF
Johnson D06-766 - Wellbore #1 - Plan #1	2,400.00	2,398.00	22.60	5.86	1.350	Level 3, CC, ES, SF
Johnson D06-777 - Wellbore #1 - Plan #1	2,200.00	2,197.00	45.20	29.90	2.955	CC, ES
Johnson D06-777 - Wellbore #1 - Plan #1	2,300.00	2,295.49	46.78	30.79	2.926	SF
Johnson D06-785 - Wellbore #1 - Plan #1	2,000.00	1,996.00	67.51	53.66	4.872	CC, ES
Johnson D06-785 - Wellbore #1 - Plan #1	20,201.27	20,377.04	1,265.82	966.35	4.227	SF
Loustalet #30-03(SI) - Wellbore #1 - No Surveys	4,000.00	3,892.00	1,920.62	1,872.55	39.955	CC, ES
Loustalet #30-03(SI) - Wellbore #1 - No Surveys	6,650.00	6,517.90	2,245.40	2,165.42	28.074	SF
LOUSTALET #30-1(PR) - Wellbore #1 - Gyro Surveys	4,000.00	3,952.00	1,358.72	1,310.13	27.961	CC, ES
LOUSTALET #30-1(PR) - Wellbore #1 - Gyro Surveys	6,550.00	6,483.46	1,585.27	1,505.85	19.959	SF
LOUSTALET #30-14(PR) - Wellbore #1 - No Surveys	4,000.00	3,931.00	1,228.34	1,179.93	25.374	CC, ES
LOUSTALET #30-14(PR) - Wellbore #1 - No Surveys	6,750.00	6,645.30	1,493.17	1,411.71	18.330	SF
LOUSTALET #30-2(PR) - Wellbore #1 - No Surveys	4,000.00	3,956.00	51.50	2.87	1.059	Level 2, CC, ES, SF
LOUSTALET #30-4(SI) - Wellbore #1 - No Surveys	7,773.30	6,958.00	1,564.33	1,476.33	17.775	CC, ES
LOUSTALET #30-4(SI) - Wellbore #1 - No Surveys	7,900.00	6,958.00	1,569.46	1,480.91	17.725	SF
LOUSTALET #30-44(PR) - Wellbore #1 - No Surveys	9,135.74	6,941.00	1,562.24	1,465.21	16.100	CC, ES

CC - Min centre to center distance or covergent 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 D06-761
Project:	Bronco	**TVD Reference:**	KB @ 4911.00ft
Reference Site:	C Section 30	**MD Reference:**	KB @ 4911.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Johnson D06-761	**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)	Distance Between Ellipses (ft)	Separation Factor	Warning
C Section 30						
LOUSTALET #30-44(PR) - Wellbore #1 - No Surveys	9,300.00	6,941.00	1,570.85	1,472.76	16.014	SF
STEWART #30-1(PR) - Wellbore #1 - Gyro Surveys	6,485.44	6,446.20	2,758.04	2,713.00	61.238	CC
STEWART #30-1(PR) - Wellbore #1 - Gyro Surveys	6,500.00	6,461.48	2,758.14	2,712.99	61.098	ES
STEWART #30-1(PR) - Wellbore #1 - Gyro Surveys	6,850.00	6,799.77	2,818.75	2,771.20	59.282	SF
STEWART #30-2(PA) - Wellbore #1 - Gyro Surveys	975.23	931.23	1,843.32	1,836.98	290.681	CC
STEWART #30-2(PA) - Wellbore #1 - Gyro Surveys	2,900.00	2,843.15	1,847.39	1,827.48	92.752	ES
STEWART #30-2(PA) - Wellbore #1 - Gyro Surveys	6,650.00	6,584.36	1,950.00	1,903.88	42.284	SF
STEWART #30-23(PA) - Wellbore #1 - Gyro Surveys	6,979.15	6,957.80	2,149.89	2,101.54	44.467	CC, ES
STEWART #30-23(PA) - Wellbore #1 - Gyro Surveys	7,300.00	7,095.59	2,184.57	2,134.55	43.676	SF
STEWART #30-25(SI) - Wellbore #1 - No Surveys	6,503.18	6,435.81	1,857.10	1,778.21	23.541	CC, ES
STEWART #30-25(SI) - Wellbore #1 - No Surveys	6,800.00	6,705.53	1,892.81	1,810.51	22.999	SF
STEWART R C #30-6(SI) - Wellbore #1 - No Surveys	6,611.91	6,540.52	978.17	898.02	12.204	CC
STEWART R C #30-6(SI) - Wellbore #1 - No Surveys	6,650.00	6,575.90	978.57	897.97	12.141	ES
STEWART R C #30-6(SI) - Wellbore #1 - No Surveys	6,800.00	6,705.53	989.38	907.11	12.026	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Johnson D06-761
Project:	Bronco	**TVD Reference:**	KB @ 4911.00ft
Reference Site:	C Section 30	**MD Reference:**	KB @ 4911.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Johnson D06-761	**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)	Distance Between Ellipses (ft)	Separation Factor	Warning
C Section 31						
KILDOW C #31-01(SI) - Wellbore #1 - No Surveys	10,465.40	6,952.00	1,571.90	1,462.97	14.430	CC, ES
KILDOW C #31-01(SI) - Wellbore #1 - No Surveys	10,600.00	6,952.00	1,577.66	1,467.75	14.354	SF
KILDOW C #31-07(PA) - Wellbore #1 - No Surveys	11,807.03	6,979.00	263.92	141.62	2.158	CC, ES, SF
KILDOW C #31-7X(SI) - Wellbore #1 - No Surveys	11,972.22	6,973.00	409.38	285.48	3.304	CC, ES, SF
KILDOW PM C #31-2(PR) - Wellbore #1 - No Surveys	10,616.98	6,975.00	332.85	222.27	3.010	CC, ES, SF
KILDOW PM C #31-8(PR) - Wellbore #1 - No Surveys	11,773.37	6,932.00	1,723.91	1,602.36	14.183	CC
KILDOW PM C #31-8(PR) - Wellbore #1 - No Surveys	11,800.00	6,932.00	1,724.11	1,602.33	14.158	ES
KILDOW PM C #31-8(PR) - Wellbore #1 - No Surveys	11,900.00	6,932.00	1,728.55	1,606.02	14.107	SF
OCOMA - UPRR #C-31-11(PR) - Wellbore #1 - No Surve	13,140.00	6,972.00	911.93	776.07	6.712	CC, ES
OCOMA - UPRR #C-31-11(PR) - Wellbore #1 - No Surve	13,200.00	6,972.00	913.90	777.42	6.696	SF
OCOMA #31-19(PR) - Wellbore #1 - No Surveys	13,164.68	4,610.00	2,402.47	2,335.08	35.646	CC, ES
OCOMA #31-19(PR) - Wellbore #1 - No Surveys	14,000.00	4,610.00	2,543.55	2,468.58	33.930	SF
OCOMA #31-20(SI) - Wellbore #1 - No Surveys	13,166.23	4,671.00	2,467.05	2,392.37	33.038	CC
OCOMA #31-20(SI) - Wellbore #1 - No Surveys	13,200.00	4,671.00	2,467.28	2,392.37	32.939	ES
OCOMA #31-20(SI) - Wellbore #1 - No Surveys	13,800.00	4,671.00	2,547.15	2,467.78	32.094	SF
OCOMA #31-26(PR) - Wellbore #1 - No Surveys	11,949.39	4,591.00	2,594.09	2,527.72	39.088	CC, ES
OCOMA #31-26(PR) - Wellbore #1 - No Surveys	12,800.00	4,591.00	2,729.98	2,656.39	37.097	SF
OCOMA #31-27(PR) - Wellbore #1 - No Surveys	10,573.86	4,592.00	2,586.53	2,531.14	46.698	CC
OCOMA #31-27(PR) - Wellbore #1 - No Surveys	10,600.00	4,592.00	2,586.66	2,531.08	46.541	ES
OCOMA #31-27(PR) - Wellbore #1 - No Surveys	11,700.00	4,592.00	2,821.05	2,755.40	42.971	SF
Ocoma #C31-24D(PR) - Wellbore #1 - MWD Surveys	13,806.93	7,148.71	269.58	163.01	2.529	CC, ES, SF
Ocoma 31-17 - Wellbore #1 - Wellbore #1 - As Drilled	13,866.41	4,478.01	3,283.01	3,202.35	40.703	CC
Ocoma 31-17 - Wellbore #1 - Wellbore #1 - As Drilled	13,900.00	4,478.01	3,283.18	3,202.23	40.554	ES
Ocoma 31-17 - Wellbore #1 - Wellbore #1 - As Drilled	14,600.00	4,478.01	3,363.97	3,278.01	39.131	SF
Ocoma 31-18 - Wellbore #1 - Wellbore #1 - As Drilled	13,074.19	4,425.01	3,020.37	2,951.80	44.051	CC
Ocoma 31-18 - Wellbore #1 - Wellbore #1 - As Drilled	13,100.00	4,425.01	3,020.48	2,951.69	43.913	ES
Ocoma 31-18 - Wellbore #1 - Wellbore #1 - As Drilled	13,800.00	4,425.01	3,106.35	3,032.69	42.170	SF
OCOMA C #31-23(SI) - Wellbore #1 - No Surveys	13,666.91	6,949.00	1,052.03	910.89	7.454	CC, ES
OCOMA C #31-23(SI) - Wellbore #1 - No Surveys	13,700.00	6,949.00	1,052.55	911.17	7.445	SF
Ocoma C31-20D - Wellbore #1 - Wellbore #1 - As Drilled	12,401.23	7,179.39	1,553.38	1,451.83	15.297	CC, ES
Ocoma C31-20D - Wellbore #1 - Wellbore #1 - As Drilled	12,600.00	7,181.22	1,566.04	1,462.91	15.185	SF
OCOMA C31-20D(PR) - Wellbore #1 - Wellbore #1	12,383.61	7,195.84	1,546.79	1,445.71	15.303	CC
OCOMA C31-20D(PR) - Wellbore #1 - Wellbore #1	12,400.00	7,196.01	1,546.88	1,445.62	15.277	ES
OCOMA C31-20D(PR) - Wellbore #1 - Wellbore #1	12,500.00	7,197.02	1,551.17	1,449.01	15.184	SF
Ocoma C31-24D - Wellbore #1 - Wellbore #1 - As Drilled	13,801.37	7,134.33	276.25	168.92	2.574	CC, ES, SF
Ocoma C31-25 - Wellbore #1 - Wellbore #1 - As Drilled	13,980.92	6,955.57	1,684.08	1,576.17	15.606	CC
Ocoma C31-25 - Wellbore #1 - Wellbore #1 - As Drilled	14,000.00	6,955.71	1,684.19	1,576.06	15.576	ES
Ocoma C31-25 - Wellbore #1 - Wellbore #1 - As Drilled	14,200.00	6,957.20	1,698.27	1,588.43	15.461	SF
OCOMA II #C31-10(SI) - Wellbore #1 - No Surveys	13,123.17	6,974.00	235.02	99.32	1.732	CC, ES, SF
OCOMA II #C31-9(SI) - Wellbore #1 - No Surveys	13,106.47	6,937.00	1,546.61	1,411.40	11.439	CC, ES
OCOMA II #C31-9(SI) - Wellbore #1 - No Surveys	13,200.00	6,937.00	1,549.43	1,413.50	11.399	SF
OCOMA II C #31-15(SI) - Wellbore #1 - No Surveys	14,445.56	6,941.00	254.11	104.87	1.703	CC, ES, SF
Ocoma UPRR C31-12 - Wellbore #1 - Wellbore #1 - As D	13,069.03	6,963.95	2,215.09	2,116.62	22.494	CC
Ocoma UPRR C31-12 - Wellbore #1 - Wellbore #1 - As D	13,100.00	6,964.28	2,215.31	2,116.49	22.417	ES
Ocoma UPRR C31-12 - Wellbore #1 - Wellbore #1 - As D	13,400.00	6,967.44	2,239.68	2,138.20	22.070	SF
Ocoma UPRR C31-13 - Wellbore #1 - Wellbore #1 - As D	14,712.77	6,968.06	2,152.88	2,037.23	18.616	CC, ES
Ocoma UPRR C31-13 - Wellbore #1 - Wellbore #1 - As D	15,000.00	6,970.04	2,171.95	2,053.74	18.372	SF
OCOMO C #31-14(PR) - Wellbore #1 - No Surveys	14,593.59	6,947.00	849.52	698.68	5.632	CC
OCOMO C #31-14(PR) - Wellbore #1 - No Surveys	14,600.00	6,947.00	849.55	698.62	5.629	ES, SF
O'CONNEL C #31-21(SI) - Wellbore #1 - No Surveys	12,397.33	6,986.00	214.79	86.45	1.674	CC
O'CONNEL C #31-21(SI) - Wellbore #1 - No Surveys	12,400.00	6,986.00	214.81	86.42	1.673	ES, SF
O'CONNELL C #31-18(SI) - Wellbore #1 - No Surveys	11,262.93	6,984.00	221.24	104.32	1.892	CC, ES, SF
TIMKO C #31-17(PR) - Wellbore #1 - No Surveys	11,234.92	6,959.00	1,055.66	939.23	9.067	CC, ES

CC - Min centre to center distance or covergent 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 D06-761
Project:	Bronco	**TVD Reference:**	KB @ 4911.00ft
Reference Site:	C Section 30	**MD Reference:**	KB @ 4911.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Johnson D06-761	**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)	Distance Between Ellipses (ft)	Separation Factor	Warning
C Section 31						
TIMKO C #31-17(PR) - Wellbore #1 - No Surveys	11,300.00	6,959.00	1,057.66	940.80	9.051	SF
TIMKO C #31-22(PR) - Wellbore #1 - No Surveys	12,284.06	6,954.00	1,048.60	921.69	8.263	CC
TIMKO C #31-22(PR) - Wellbore #1 - No Surveys	12,300.00	6,954.00	1,048.72	921.69	8.256	ES, SF
UPRC #31-3H(PA) - Wellbore #1 - Gyro Surveys	10,472.50	6,973.74	991.99	919.47	13.679	CC, ES
UPRC #31-3H(PA) - Wellbore #1 - Gyro Surveys	10,600.00	6,971.16	1,000.15	926.48	13.577	SF
UPRC #31-6H(PA) - Wellbore #1 - Gyro Surveys	11,699.26	6,952.91	778.18	693.76	9.218	CC
UPRC #31-6H(PA) - Wellbore #1 - Gyro Surveys	11,700.00	6,952.89	778.18	693.75	9.217	ES
UPRC #31-6H(PA) - Wellbore #1 - Gyro Surveys	11,800.00	6,949.70	784.67	699.41	9.204	SF
UPRC 31-4H - Wellbore #1 - Wellbore #1 - As Drilled	10,833.15	6,990.69	2,132.68	2,056.63	28.040	CC, ES
UPRC 31-4H - Wellbore #1 - Wellbore #1 - As Drilled	11,200.00	6,991.33	2,164.01	2,084.66	27.272	SF
UPRC 31-5H - Wellbore #1 - Wellbore #1 - As Drilled	11,653.81	6,976.64	2,281.89	2,197.83	27.146	CC
UPRC 31-5H - Wellbore #1 - Wellbore #1 - As Drilled	11,700.00	6,976.64	2,282.36	2,197.80	26.994	ES
UPRC 31-5H - Wellbore #1 - Wellbore #1 - As Drilled	12,100.00	6,976.65	2,325.10	2,237.16	26.438	SF
UPRR OCOMA II #C31-16(SI) - Wellbore #1 - No Survey	14,432.85	6,948.00	1,556.27	1,407.11	10.433	CC, ES
UPRR OCOMA II #C31-16(SI) - Wellbore #1 - No Survey	14,500.00	6,948.00	1,557.72	1,408.02	10.405	SF
Walters C31-19 - Wellbore #1 - Wellbore #1	11,326.36	6,948.14	1,598.70	1,517.99	19.808	CC, ES
Walters C31-19 - Wellbore #1 - Wellbore #1	11,500.00	6,951.07	1,608.10	1,525.72	19.521	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Johnson D06-761
Project:	Bronco	**TVD Reference:**	KB @ 4911.00ft
Reference Site:	C Section 30	**MD Reference:**	KB @ 4911.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Johnson D06-761	**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)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 06						
AMEN PC D #06-18D(PR) - Wellbore #1 - MWD Surveys	16,413.14	7,178.36	247.92	104.35	1.727	CC, ES, SF
Amen PC D06-29 - Wellbore #1 - Wellbore #1 - As Drille	15,417.06	6,945.22	1,664.59	1,541.57	13.530	CC, ES
Amen PC D06-29 - Wellbore #1 - Wellbore #1 - As Drille	15,600.00	6,946.10	1,674.62	1,549.97	13.435	SF
FARAMIER FARMS #6-1(PA) - Wellbore #1 - Gyro Surve	19,805.65	6,920.88	2,194.64	2,024.62	12.908	CC, ES
FARAMIER FARMS #6-1(PA) - Wellbore #1 - Gyro Surve	20,000.00	6,921.12	2,203.23	2,031.46	12.827	SF
FARAMIR FARMS #6-2(PA) - Wellbore #1 - No Surveys	17,120.77	6,947.00	2,211.29	2,033.54	12.441	CC, ES
FARAMIR FARMS #6-2(PA) - Wellbore #1 - No Surveys	17,300.00	6,947.00	2,218.54	2,039.06	12.361	SF
FARAMIR FARMS #6-21(PR) - Wellbore #1 - No Surveys	15,889.98	6,932.00	935.39	770.93	5.688	CC
FARAMIR FARMS #6-21(PR) - Wellbore #1 - No Surveys	15,900.00	6,932.00	935.45	770.86	5.684	ES, SF
FARAMIR FARMS #6-22(PA) - Wellbore #1 - No Surveys	15,950.12	6,954.00	2,359.10	2,193.81	14.272	CC
FARAMIR FARMS #6-22(PA) - Wellbore #1 - No Surveys	16,000.00	6,954.00	2,359.63	2,193.78	14.228	ES
FARAMIR FARMS #6-22(PA) - Wellbore #1 - No Surveys	16,200.00	6,954.00	2,372.30	2,204.67	14.152	SF
FARAMIR FARMS #6-3(PA) - Wellbore #1 - Gyro Survey	17,182.10	6,937.28	935.25	793.43	6.595	CC
FARAMIR FARMS #6-3(PA) - Wellbore #1 - Gyro Survey	17,200.00	6,937.25	935.42	793.39	6.586	ES, SF
FARAMIR FARMS #6-32(PA) - Wellbore #1 - Gyro Surve	18,665.53	6,984.60	2,384.95	2,227.02	15.101	CC
FARAMIR FARMS #6-32(PA) - Wellbore #1 - Gyro Surve	18,700.00	6,984.73	2,385.20	2,226.88	15.065	ES
FARAMIR FARMS #6-32(PA) - Wellbore #1 - Gyro Surve	18,900.00	6,985.47	2,396.45	2,236.39	14.972	SF
FARAMIR FARMS #6-34(PR) - Wellbore #1 - No Surveys	19,741.41	6,922.00	1,088.34	882.61	5.290	CC, ES
FARAMIR FARMS #6-34(PR) - Wellbore #1 - No Surveys	19,800.00	6,922.00	1,089.92	883.64	5.284	SF
FARAMIR FARMS #6-4(SI) - Wellbore #1 - No Surveys	18,432.91	6,924.00	1,069.98	878.34	5.583	CC, ES
FARAMIR FARMS #6-4(SI) - Wellbore #1 - No Surveys	18,500.00	6,924.00	1,072.08	879.83	5.576	SF
HILL #6-35(PA) - Wellbore #1 - Gyro Surveys	19,108.03	6,976.14	1,926.23	1,763.58	11.843	CC, ES
HILL #6-35(PA) - Wellbore #1 - Gyro Surveys	19,300.00	6,974.84	1,935.77	1,771.49	11.783	SF
HOFF #6-15(PR) - Wellbore #1 - No Surveys	16,391.69	6,906.00	973.55	803.97	5.741	CC
HOFF #6-15(PR) - Wellbore #1 - No Surveys	16,400.00	6,906.00	973.59	803.94	5.739	ES, SF
HOFF PC D #06-21(PR) - Wellbore #1 - No Surveys	17,889.74	6,925.00	489.04	303.23	2.632	CC
HOFF PC D #06-21(PR) - Wellbore #1 - No Surveys	17,900.00	6,925.00	489.15	303.21	2.631	ES, SF
Hoff PC D #06-27(SI) - Wellbore #1 - No Surveys	15,335.59	6,935.00	1,262.22	1,103.63	7.959	CC, ES
Hoff PC D #06-27(SI) - Wellbore #1 - No Surveys	15,400.00	6,935.00	1,263.86	1,104.81	7.946	SF
Hoff PC D06-28D - Wellbore #1 - Wellbore #1 - As Drilled	15,285.19	7,116.01	463.84	340.95	3.774	CC
Hoff PC D06-28D - Wellbore #1 - Wellbore #1 - As Drilled	15,300.00	7,116.32	464.08	340.89	3.767	ES, SF
HORST #6-25(PA) - Wellbore #1 - No Surveys	16,352.30	6,944.00	1,493.59	1,324.09	8.812	CC, ES
HORST #6-25(PA) - Wellbore #1 - No Surveys	16,500.00	6,944.00	1,500.88	1,330.09	8.788	SF
MCKENNEY #5(SI) - Wellbore #1 - No Surveys	18,905.02	6,883.00	752.95	556.58	3.834	CC, ES, SF
MCKENNEY #6-1(PA) - Wellbore #1 - Gyro Surveys	19,463.36	6,902.97	1,204.08	1,037.79	7.241	CC, ES
MCKENNEY #6-1(PA) - Wellbore #1 - Gyro Surveys	19,500.00	6,902.79	1,204.63	1,038.08	7.233	SF
MCKENNEY #6-12(SI) - Wellbore #1 - No Surveys	15,757.98	6,914.00	474.44	311.54	2.912	CC, ES, SF
MCKENNEY #6-13(SI) - Wellbore #1 - No Surveys	17,050.23	6,899.00	269.46	92.89	1.526	CC, ES, SF
MCKENNEY #6-14(SI) - Wellbore #1 - No Surveys	17,087.44	6,896.00	1,582.31	1,405.37	8.943	CC
MCKENNEY #6-14(SI) - Wellbore #1 - No Surveys	17,100.00	6,896.00	1,582.36	1,405.31	8.937	ES
MCKENNEY #6-14(SI) - Wellbore #1 - No Surveys	17,200.00	6,896.00	1,586.31	1,408.59	8.926	SF
MCKENNEY #6-2(PA) - Wellbore #1 - Gyro Surveys	16,071.42	6,904.64	1,239.55	1,109.74	9.549	CC, ES
MCKENNEY #6-2(PA) - Wellbore #1 - Gyro Surveys	16,100.00	6,904.33	1,239.88	1,109.84	9.535	SF
MCKENNEY #6-42(PR) - Wellbore #1 - No Surveys	18,511.53	6,900.00	81.01	-111.27	0.421	Level 1, CC, ES, SF
MCKENNEY #6-43(PR) - Wellbore #1 - No Surveys	19,843.99	6,898.00	302.17	95.54	1.462	Level 3, CC, ES, SF
McKenney 06-01 - Wellbore #1 - Wellbore #1- As Drilled	19,464.20	6,904.09	1,303.16	1,136.86	7.836	CC, ES
McKenney 06-01 - Wellbore #1 - Wellbore #1- As Drilled	19,500.00	6,903.91	1,303.65	1,137.08	7.826	SF
McKENNEY 6-3(PA) - Wellbore #1 - Gyro Surveys	18,292.31	6,901.76	1,471.55	1,317.92	9.579	CC
McKENNEY 6-3(PA) - Wellbore #1 - Gyro Surveys	18,300.00	6,901.61	1,471.57	1,317.88	9.574	ES
McKENNEY 6-3(PA) - Wellbore #1 - Gyro Surveys	18,400.00	6,899.71	1,475.49	1,321.20	9.563	SF
Shelton PC D06-32D(PR) - Wellbore #1 - MWD Surveys	17,683.73	7,415.98	2,784.92	2,633.59	18.403	CC
Shelton PC D06-32D(PR) - Wellbore #1 - MWD Surveys	17,700.00	7,415.89	2,784.97	2,633.48	18.384	ES
Shelton PC D06-32D(PR) - Wellbore #1 - MWD Surveys	18,000.00	7,414.20	2,802.82	2,648.82	18.200	SF

CC - Min centre to center distance or covergent 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 D06-761
Project:	Bronco	**TVD Reference:**	KB @ 4911.00ft
Reference Site:	C Section 30	**MD Reference:**	KB @ 4911.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Johnson D06-761	**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)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 06						
SMITH PC D #06-20D(PR) - Wellbore #1 - No Surveys	17,890.40	6,926.00	539.00	353.18	2.901	CC
SMITH PC D #06-20D(PR) - Wellbore #1 - No Surveys	17,900.00	6,926.00	539.09	353.14	2.899	ES, SF

Noble Energy, Inc.

Anticollision Summary Report

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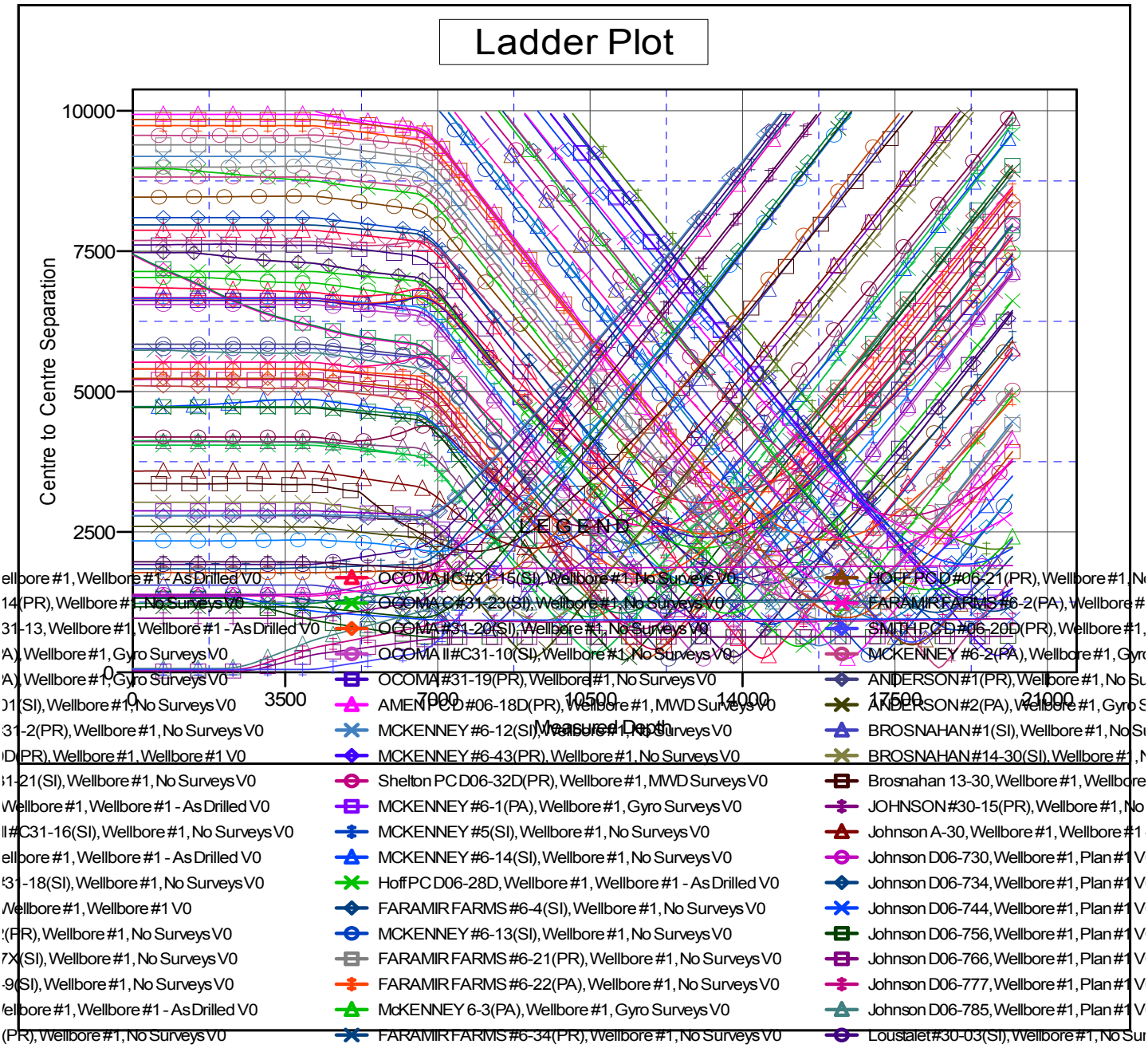
Reference Site:	C Section 30	**MD Reference:**	KB @ 4911.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Johnson D06-761	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMP
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to KB @ 4911.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Johnson D06-761
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.59°



CC - Min centre to center distance or covergent 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 D06-761
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Offset Depths are relative to Offset Datum
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Coordinates are relative to: Johnson D06-761
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.59°