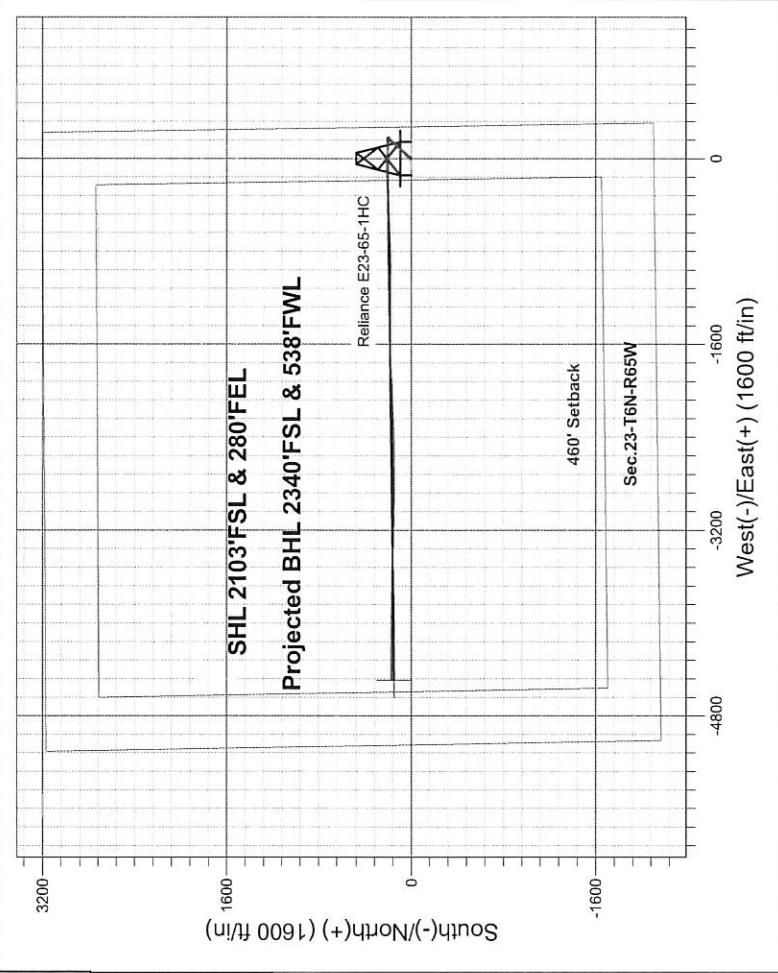


Noble Energy Inc.- Weld County, CO (Grid North)

Well Name: Reliance E23-65-1HC			
Surface Location: Reliance E23-66-1HN Pad Sec.23-T6N-R65W			
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone			
Ground Elevation: 4695.0			
+N/-S	+E/-W	Northing	Eastings
0.0	0.0	1415263.82	3244317.41
H&P 326 RKB - 30'		WELL @ 4725.0ft (H&P 326 RKB - 30')	
		Latitude	Longitude
		40.469980	-104.621850
		Slot	

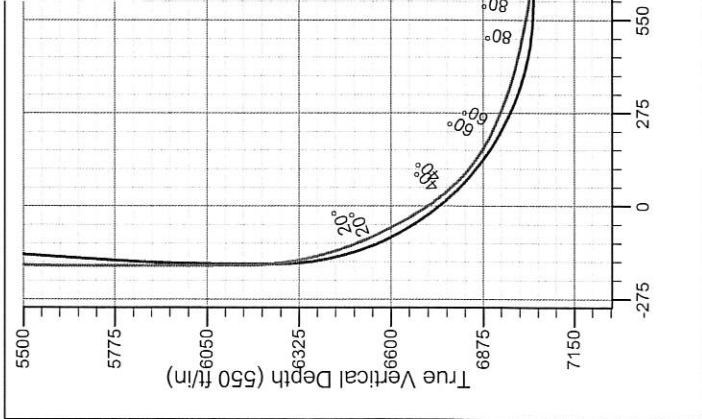
FINAL SURVEY

Projected Bottom Hole Location
11352'MD 7012'TVD 174'N & 4490'W of SHL
91.6 degree Incl @ 270.4 degree AZM
API # 123-37603



ENSIGN

Directional



Vertical Section at 271.90° (550 ft/in)

Reliance E23-66-1HN Pad Sec.23-T6N-R65W Reliance E23-65-1HC Wellbore #1	ANNOTATIONS
No annotation data is available.	
LEGEND	
○ Reliance E23-65-1HC, Wellbore #1, Plan D - Rev 0 V0	
□ Wellbore #1	

ENSIGN

Directional

Noble Energy Inc.- Weld County, CO (Grid North)

Sec.23-T6N-R65W

Reliance E23-66-1HN Pad Sec.23-T6N-R65W

Reliance E23-65-1HC

Wellbore #1

Design: Wellbore #1

Final Survey

10 March, 2015

ENSIGN

Directional

Ensign Energy Services Inc.

Final Survey

Company:	Noble Energy Inc.- Weld County, CO (Grid North)	Local Co-ordinate Reference:	Well Reliance E23-65-1HC
Project:	Sec.23-T6N-R65W	TVD Reference:	WELL @ 4725.0ft (H&P 326 RKB - 30')
Site:	Reliance E23-66-1HN Pad Sec.23-T6N-R65W	MD Reference:	WELL @ 4725.0ft (H&P 326 RKB - 30')
Well:	Reliance E23-65-1HC	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	landmark

Project	Sec.23-T6N-R65W		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Reliance E23-66-1HN Pad Sec.23-T6N-R65W				
Site Position:		Northing:	1,415,220.13ft	Latitude:	40.469860
From:	Lat/Long	Easting:	3,244,317.84ft	Longitude:	-104.621850
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.57 °

Well	Reliance E23-65-1HC					
Well Position	+N/-S	0.0 ft	Northing:	1,415,263.82 ft	Latitude:	40.469980
	+E/-W	0.0 ft	Easting:	3,244,317.41 ft	Longitude:	-104.621850
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,695.0 ft

Wellbore	Wellbore #1				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/27/2015	8.29	67.00	52,793

Design	Wellbore #1				
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Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	271.90	

Survey Program		Date 3/10/2015			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
275.0	645.0	Surface (Wellbore #1)	Flexi-Shot	VES Flexi-Shot Tool	
920.0	7,421.0	Intermediate/Curve (Wellbore #1)	MWD	MWD - Standard	
7,575.0	11,352.0	Lateral (Wellbore #1)	MWD	MWD - Standard	

Survey							
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00
275.0	0.20	159.93	275.0	-0.5	0.2	-0.2	0.07
645.0	0.30	90.83	645.0	-1.1	1.4	-1.4	0.08
920.0	0.70	306.10	920.0	-0.1	0.7	-0.7	0.35
1,012.0	0.50	298.60	1,012.0	0.4	-0.1	0.1	0.23
1,105.0	0.50	281.00	1,105.0	0.7	-0.8	0.9	0.16
1,197.0	0.20	290.30	1,197.0	0.8	-1.4	1.4	0.33
1,290.0	0.20	265.40	1,290.0	0.9	-1.7	1.7	0.09
1,384.0	0.10	287.50	1,384.0	0.9	-1.9	2.0	0.12
1,477.0	0.00	219.20	1,477.0	0.9	-2.0	2.1	0.11

Company:	Noble Energy Inc.- Weld County, CO (Grid North)	Local Co-ordinate Reference:	Well Reliance E23-65-1HC
Project:	Sec.23-T6N-R65W	TVD Reference:	WELL @ 4725.0ft (H&P 326 RKB - 30')
Site:	Reliance E23-66-1HN Pad Sec.23-T6N-R65W	MD Reference:	WELL @ 4725.0ft (H&P 326 RKB - 30')
Well:	Reliance E23-65-1HC	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	landmark

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
1,569.0	0.00	272.60	1,569.0	0.9	-2.0	2.1	0.00
1,661.0	0.30	326.00	1,661.0	1.1	-2.2	2.2	0.33
1,753.0	0.40	329.40	1,753.0	1.6	-2.5	2.5	0.11
1,845.0	0.70	344.90	1,845.0	2.4	-2.8	2.8	0.36
1,938.0	0.80	357.20	1,938.0	3.6	-2.9	3.1	0.20
2,031.0	0.80	350.90	2,031.0	4.9	-3.1	3.2	0.09
2,124.0	0.70	345.10	2,123.9	6.1	-3.3	3.5	0.13
2,310.0	0.50	339.30	2,309.9	7.9	-3.9	4.2	0.11
2,404.0	0.40	327.00	2,403.9	8.6	-4.2	4.5	0.15
2,593.0	0.40	341.20	2,592.9	9.8	-4.8	5.1	0.05
2,687.0	0.40	322.60	2,686.9	10.4	-5.1	5.4	0.14
2,782.0	0.40	348.10	2,781.9	10.9	-5.4	5.7	0.19
2,876.0	0.30	333.50	2,875.9	11.5	-5.6	5.9	0.14
2,970.0	1.20	49.00	2,969.9	12.3	-4.9	5.3	1.24
3,065.0	3.40	51.20	3,064.8	14.8	-2.0	2.5	2.32
3,159.0	4.60	47.40	3,158.6	19.1	3.0	-2.3	1.31
3,254.0	5.70	42.40	3,253.2	25.1	9.0	-8.1	1.25
3,348.0	6.00	41.30	3,346.7	32.3	15.3	-14.3	0.34
3,443.0	7.30	38.90	3,441.1	40.7	22.4	-21.1	1.40
3,538.0	6.60	57.80	3,535.4	48.3	30.8	-29.2	2.50
3,632.0	7.50	48.00	3,628.7	55.3	40.0	-38.1	1.59
3,726.0	8.20	48.90	3,721.8	63.8	49.6	-47.4	0.76
3,821.0	8.30	48.40	3,815.8	72.8	59.8	-57.4	0.13
3,915.0	8.80	48.60	3,908.8	82.1	70.3	-67.5	0.53
4,010.0	8.70	48.30	4,002.7	91.6	81.1	-78.0	0.12
4,105.0	7.50	47.10	4,096.7	100.6	91.0	-87.6	1.28
4,199.0	7.30	44.00	4,189.9	109.1	99.6	-96.0	0.47
4,294.0	6.10	45.30	4,284.3	117.0	107.4	-103.5	1.27
4,388.0	5.30	43.30	4,377.8	123.7	113.9	-109.8	0.88
4,483.0	6.30	41.40	4,472.3	130.8	120.4	-116.0	1.07
4,578.0	7.40	38.70	4,566.7	139.5	127.7	-123.0	1.21
4,672.0	6.00	39.40	4,660.0	148.0	134.6	-129.6	1.49
4,767.0	5.70	36.60	4,754.5	155.6	140.5	-135.3	0.44
4,861.0	5.10	29.80	4,848.1	163.0	145.4	-139.9	0.93
4,956.0	5.60	43.10	4,942.7	170.0	150.7	-144.9	1.40
5,050.0	5.50	42.30	5,036.3	176.7	156.8	-150.9	0.13
5,145.0	4.50	46.50	5,130.9	182.7	162.6	-156.5	1.12
5,240.0	3.40	51.10	5,225.7	187.0	167.5	-161.2	1.20
5,334.0	4.30	56.80	5,319.5	190.7	172.6	-166.2	1.04
5,429.0	2.90	54.10	5,414.3	194.0	177.5	-171.0	1.48
5,523.0	2.20	59.00	5,508.2	196.3	181.0	-174.4	0.78
5,618.0	0.60	28.40	5,603.1	197.7	182.8	-176.2	1.80
5,713.0	0.60	201.80	5,698.1	197.7	182.9	-176.2	1.26
5,807.0	0.30	170.10	5,792.1	197.0	182.7	-176.1	0.40
5,902.0	0.50	160.10	5,887.1	196.4	182.9	-176.3	0.22

Company:	Noble Energy Inc.- Weld County, CO (Grid North)	Local Co-ordinate Reference:	Well Reliance E23-65-1HC
Project:	Sec.23-T6N-R65W	TVD Reference:	WELL @ 4725.0ft (H&P 326 RKB - 30')
Site:	Reliance E23-66-1HN Pad Sec.23-T6N-R65W	MD Reference:	WELL @ 4725.0ft (H&P 326 RKB - 30')
Well:	Reliance E23-65-1HC	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	landmark

Survey							
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
5,996.0	0.60	321.00	5,981.1	196.4	182.7	-176.1	1.15
6,090.0	0.70	337.90	6,075.1	197.3	182.2	-175.6	0.23
6,184.0	0.70	5.30	6,169.1	198.4	182.0	-175.4	0.35
6,278.0	7.40	289.00	6,262.9	200.9	176.4	-169.6	7.73
6,373.0	12.40	270.50	6,356.4	203.0	160.4	-153.6	6.17
6,467.0	18.50	265.30	6,447.0	201.9	135.4	-128.6	6.65
6,562.0	24.30	273.20	6,535.4	201.7	100.8	-94.1	6.80
6,656.0	27.80	275.50	6,619.9	204.9	59.7	-52.8	3.87
6,750.0	32.70	273.90	6,701.0	208.7	12.5	-5.6	5.28
6,845.0	42.60	272.00	6,776.2	211.6	-45.4	52.4	10.49
6,940.0	51.00	267.90	6,841.2	211.4	-114.6	121.5	9.38
7,034.0	63.20	265.30	6,892.1	206.6	-193.2	199.9	13.18
7,129.0	67.90	269.20	6,931.4	202.5	-279.5	286.1	6.20
7,224.0	73.60	268.60	6,962.8	200.8	-369.1	375.6	6.03
7,319.0	77.50	268.40	6,986.5	198.4	-461.1	467.4	4.11
7,421.0	80.40	267.50	7,006.0	194.8	-561.1	567.3	2.97
7,575.0	86.90	268.30	7,023.0	189.2	-714.0	719.9	4.25
7,669.0	89.90	268.90	7,025.7	186.9	-807.9	813.7	3.25
7,764.0	90.20	269.00	7,025.6	185.1	-902.9	908.5	0.33
7,858.0	89.10	269.20	7,026.1	183.7	-996.9	1,002.4	1.19
7,951.0	89.20	270.20	7,027.5	183.2	-1,089.9	1,095.3	1.08
8,046.0	89.70	270.50	7,028.4	183.8	-1,184.9	1,190.3	0.61
8,140.0	90.50	271.00	7,028.3	185.0	-1,278.9	1,284.3	1.00
8,235.0	90.70	271.00	7,027.3	186.6	-1,373.8	1,379.3	0.21
8,330.0	91.30	269.60	7,025.6	187.1	-1,468.8	1,474.2	1.60
8,424.0	90.70	268.40	7,024.0	185.5	-1,562.8	1,568.1	1.43
8,519.0	90.60	268.90	7,022.9	183.3	-1,657.8	1,662.9	0.54
8,614.0	91.40	269.30	7,021.2	181.8	-1,752.7	1,757.8	0.94
8,708.0	89.40	267.70	7,020.6	179.3	-1,846.7	1,851.6	2.72
8,803.0	90.20	268.00	7,020.9	175.8	-1,941.6	1,946.4	0.90
8,898.0	91.10	267.70	7,019.8	172.2	-2,036.5	2,041.1	1.00
8,992.0	90.60	265.80	7,018.4	166.9	-2,130.4	2,134.7	2.09
9,086.0	88.90	267.60	7,018.9	161.4	-2,224.2	2,228.3	2.63
9,180.0	89.40	267.40	7,020.2	157.3	-2,318.1	2,322.1	0.57
9,275.0	89.90	269.30	7,020.8	154.6	-2,413.1	2,416.9	2.07
9,370.0	91.30	269.80	7,019.8	153.9	-2,508.1	2,511.8	1.56
9,465.0	89.70	270.80	7,019.0	154.4	-2,603.0	2,606.7	1.99
9,559.0	90.00	270.10	7,019.3	155.1	-2,697.0	2,700.7	0.81
9,654.0	90.10	270.00	7,019.2	155.2	-2,792.0	2,795.6	0.15
9,748.0	90.60	270.00	7,018.6	155.2	-2,886.0	2,889.6	0.53
9,843.0	91.10	270.30	7,017.2	155.4	-2,981.0	2,984.5	0.61
9,937.0	89.50	271.00	7,016.7	156.5	-3,075.0	3,078.5	1.86
10,032.0	90.10	271.00	7,017.0	158.2	-3,170.0	3,173.5	0.63
10,126.0	89.60	270.90	7,017.3	159.7	-3,264.0	3,267.5	0.54

Company:	Noble Energy Inc.- Weld County, CO (Grid North)	Local Co-ordinate Reference:	Well Reliance E23-65-1HC
Project:	Sec.23-T6N-R65W	TVD Reference:	WELL @ 4725.0ft (H&P 326 RKB - 30')
Site:	Reliance E23-66-1HN Pad Sec.23-T6N-R65W	MD Reference:	WELL @ 4725.0ft (H&P 326 RKB - 30')
Well:	Reliance E23-65-1HC	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	landmark

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
10,221.0	88.90	270.30	7,018.5	160.7	-3,359.0	3,362.5	0.97
10,315.0	89.10	270.70	7,020.2	161.5	-3,453.0	3,456.4	0.48
10,410.0	88.90	270.70	7,021.8	162.7	-3,547.9	3,551.4	0.21
10,504.0	89.30	270.90	7,023.3	164.0	-3,641.9	3,645.3	0.48
10,598.0	89.70	271.10	7,024.1	165.6	-3,735.9	3,739.3	0.48
10,693.0	89.80	271.50	7,024.5	167.8	-3,830.9	3,834.3	0.43
10,787.0	89.50	270.80	7,025.1	169.7	-3,924.8	3,928.3	0.81
10,882.0	91.40	270.50	7,024.4	170.8	-4,019.8	4,023.3	2.02
10,977.0	91.40	270.50	7,022.0	171.6	-4,114.8	4,118.2	0.00
11,071.0	91.60	270.30	7,019.6	172.2	-4,208.8	4,212.2	0.30
11,165.0	91.60	270.40	7,016.9	172.8	-4,302.7	4,306.1	0.11
11,292.0	91.60	270.40	7,013.4	173.7	-4,429.7	4,433.0	0.00
11,352.0	91.60	270.40	7,011.7	174.1	-4,489.7	4,493.0	0.00

Reliance E23-65-1HC BHL 2310°FSL & 535°FWL

Checked By: _____ Approved By: _____ Date: _____