



Weld County, CO (NAD 83) Sec 21 - T6N - R63W (Wells Ranch AA21) Wells Ranch AA21-68-1HC



ST1 Plan #1

HP 277

CASING DETAILS

TVD	MD	Name	Size
6785.0	7247.9	7"	7"

SITE DETAILS: Sec 21 - T6N - R63W (Wells Ranch AA21)

Site Centre Northing: 1417534.22
Easting: 3296552.45

Positional Uncertainty: 0.0
Convergence: 0.69
Local North: Grid

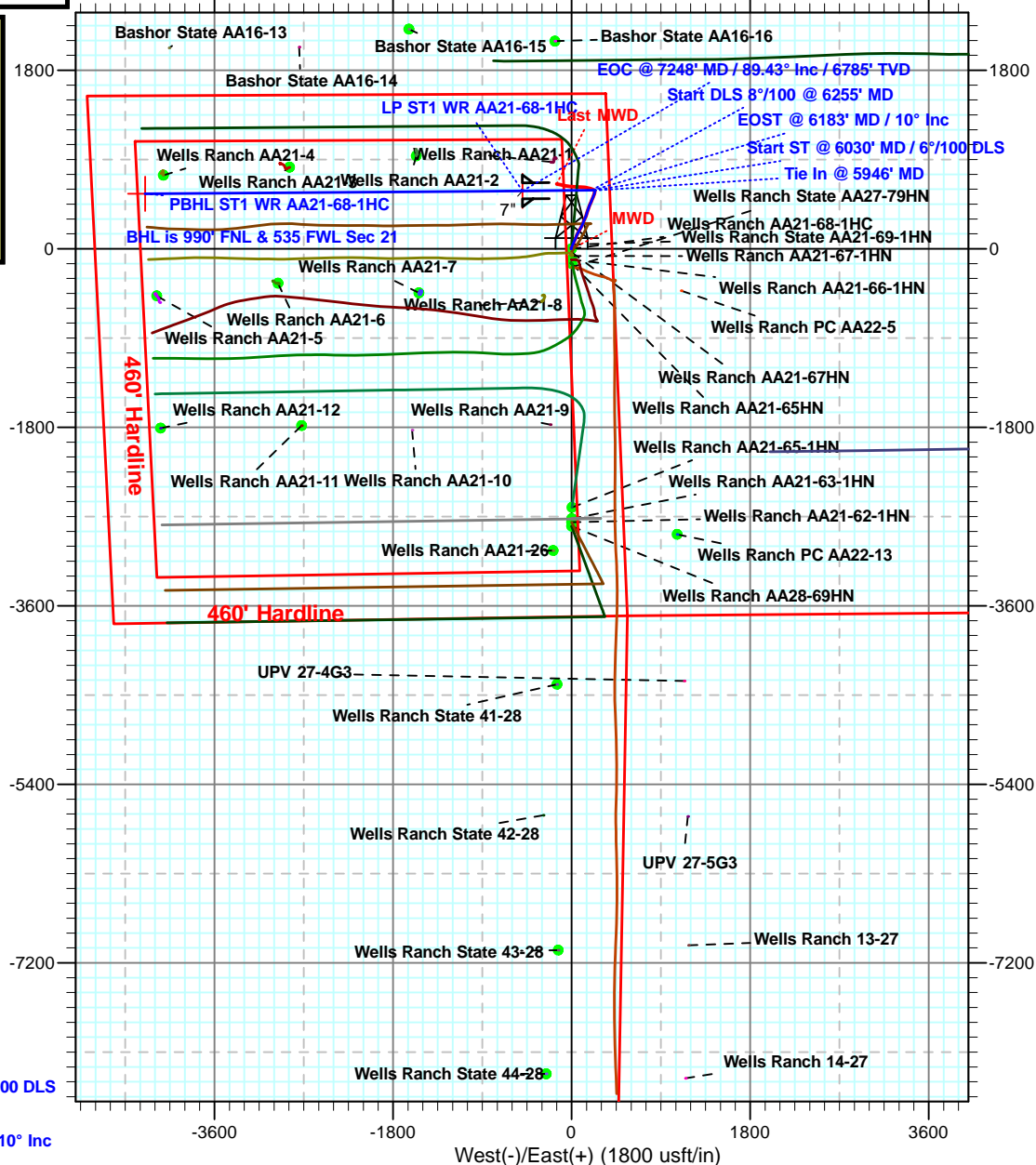
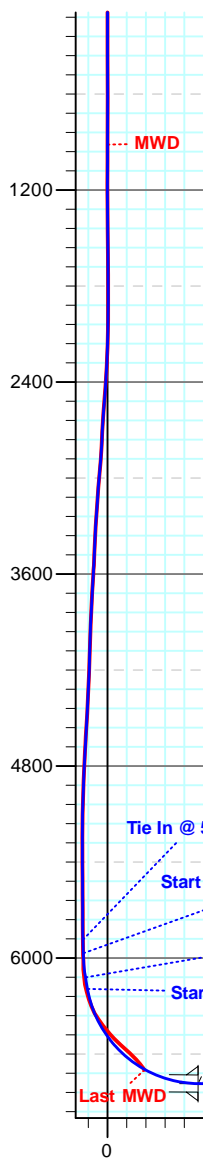
SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
5946.0	1.00	300.60	5886.2	588.4	230.3	0.00	0.00	-153.2	
6030.0	1.00	300.60	5970.2	589.1	229.0	0.00	0.00	-151.9	
6182.7	10.00	269.00	6122.0	589.6	214.6	6.00	-34.85	-137.5	
6255.0	10.00	269.00	6193.2	589.4	202.0	0.00	0.00	-125.1	
7247.9	89.43	269.56	6785.0	583.0	-496.1	8.00	0.57	566.5	
11051.5	89.43	269.56	6823.0	553.5	-4299.5	0.00	0.00	4335.0	PBHL ST1 WR AA21-68-1HC



Azimuths to Grid North
Convergence: 0.69°
Magnetic North: 7.64°

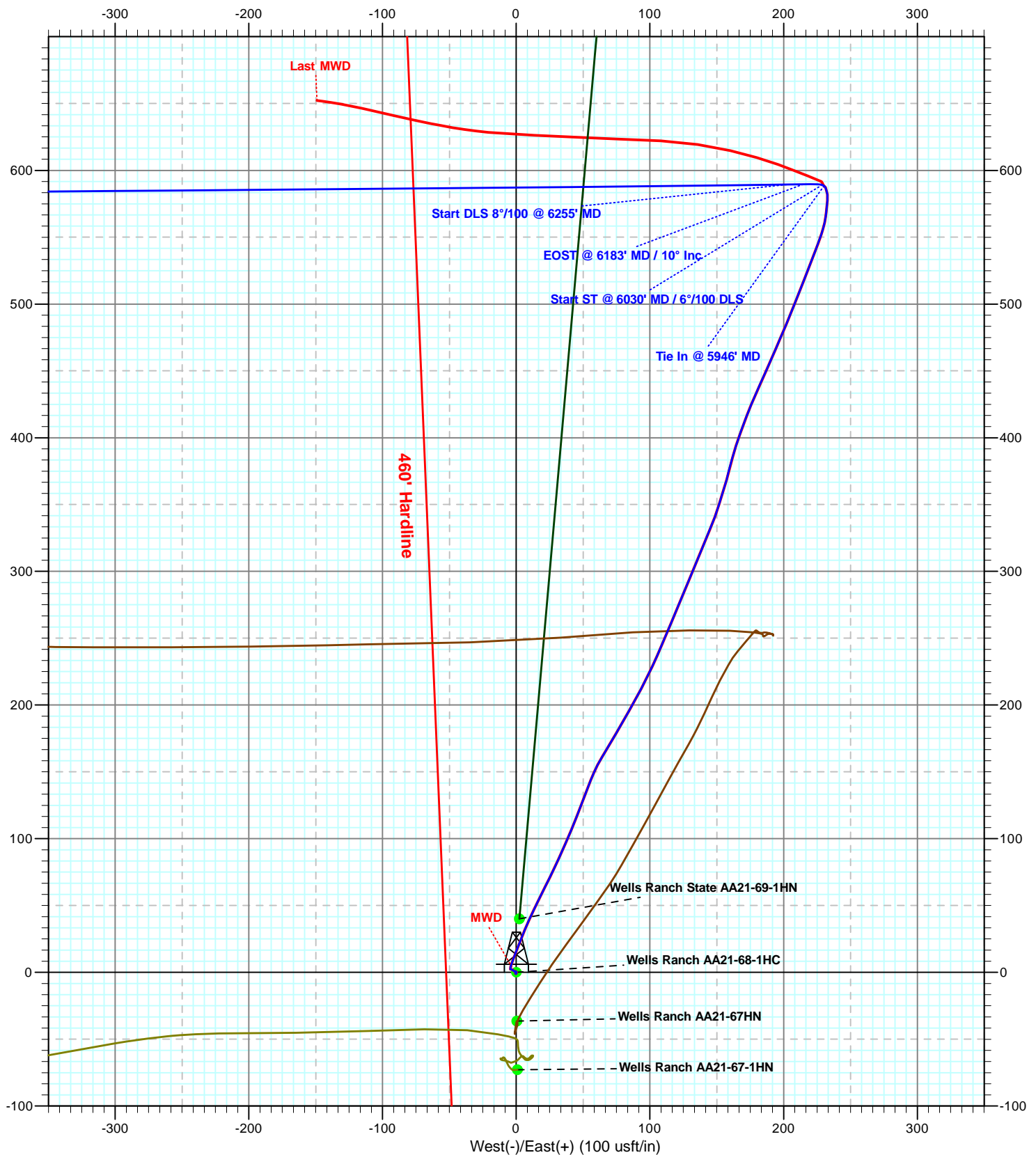
Magnetic Field
Strength: 52921.5snT
Dip Angle: 67.07°
Date: 2/24/2014
Model: IGRF2010



Vertical Section at 277.33° (1200 usft/in)



Weld County, CO (NAD 83)
Sec 21 - T6N - R63W (Wells Ranch AA21)
Wells Ranch AA21-68-1HC
ST1 Plan #1
HP 277





Noble Energy, Inc

Weld County, CO (NAD 83)

Sec 21 - T6N - R63W (Wells Ranch AA21)

Wells Ranch AA21-68-1HC

ST1

Plan: ST1 Plan #1

Standard Planning Report

24 February, 2014





IDS Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Wells Ranch AA21-68-1HC
Company:	Noble Energy, Inc	TVD Reference:	Well @ 4746.0usft (HP 277)
Project:	Weld County, CO (NAD 83)	MD Reference:	Well @ 4746.0usft (HP 277)
Site:	Sec 21 - T6N - R63W (Wells Ranch AA21)	North Reference:	Grid
Well:	Wells Ranch AA21-68-1HC	Survey Calculation Method:	Minimum Curvature
Wellbore:	ST1		
Design:	ST1 Plan #1		

Project	Weld County, CO (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site						Sec 21 - T6N - R63W (Wells Ranch AA21)											
Site Position:			Northing:			1,417,534.23 usft			Latitude:			40° 28' 28.704 N					
From:			Lat/Long			Easting:			3,296,552.46 usft			Longitude:			104° 26' 2.472 W		
Position Uncertainty:			0.0 usft			Slot Radius:			13-3/16 "			Grid Convergence:			0.69		

Well	Wells Ranch AA21-68-1HC					
Well Position	+N/-S	149.3 usft	Northing:	1,417,683.57 usft	Latitude:	40° 28' 30.180 N
	+E/-W	-1.8 usft	Easting:	3,296,550.66 usft	Longitude:	104° 26' 2.472 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	4,722.0 usft

Wellbore	ST1				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/24/2014	8.33	67.07	52,922

Design	ST1 Plan #1				
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Audit Notes:					
Version:	Phase:	PROTOTYPE		Tie On Depth:	5,946.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	277.33	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
5,946.0	1.00	300.60	5,886.2	588.4	230.3	0.00	0.00	0.00	0.00	
6,030.0	1.00	300.60	5,970.2	589.1	229.0	0.00	0.00	0.00	0.00	
6,182.7	10.00	269.00	6,122.0	589.6	214.6	6.00	5.89	-20.69	-34.85	
6,255.0	10.00	269.00	6,193.2	589.4	202.0	0.00	0.00	0.00	0.00	
7,247.9	89.43	269.56	6,785.0	583.0	-496.1	8.00	8.00	0.06	0.57	
11,051.5	89.43	269.56	6,823.0	553.5	-4,299.5	0.00	0.00	0.00	0.00	PBHL ST1 WR AA2



IDS Planning Report



Database: EDM 5000.1 Single User Db
Company: Noble Energy, Inc
Project: Weld County, CO (NAD 83)
Site: Sec 21 - T6N - R63W (Wells Ranch AA21)
Well: Wells Ranch AA21-68-1HC
Wellbore: ST1
Design: ST1 Plan #1

Local Co-ordinate Reference: Well Wells Ranch AA21-68-1HC
TVD Reference: Well @ 4746.0usft (HP 277)
MD Reference: Well @ 4746.0usft (HP 277)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,946.0	1.00	300.60	5,886.2	588.4	230.3	-153.2	0.00	0.00	0.00
Tie In @ 5946' MD									
5,950.0	1.00	300.60	5,890.2	588.4	230.2	-153.2	0.00	0.00	0.00
5,989.4	1.00	300.60	5,929.6	588.8	229.6	-152.6	0.00	0.00	0.00
Teepee Buttes									
6,000.0	1.00	300.60	5,940.2	588.9	229.4	-152.4	0.00	0.00	0.00
6,030.0	1.00	300.60	5,970.2	589.1	229.0	-151.9	0.00	0.00	0.00
Start ST @ 6030' MD / 6°/100 DLS									
6,050.0	2.10	281.54	5,990.1	589.3	228.5	-151.4	6.00	5.50	-95.30
6,100.0	5.05	272.23	6,040.0	589.6	225.4	-148.3	6.00	5.91	-18.61
6,150.0	8.04	269.81	6,089.7	589.7	219.7	-142.6	6.00	5.98	-4.86
6,182.7	10.00	269.00	6,122.0	589.6	214.6	-137.5	6.00	5.99	-2.46
EOST @ 6183' MD / 10° Inc									
6,200.0	10.00	269.00	6,139.0	589.5	211.6	-134.6	0.00	0.00	0.00
6,250.0	10.00	269.00	6,188.3	589.4	202.9	-126.0	0.00	0.00	0.00
6,255.0	10.00	269.00	6,193.2	589.4	202.0	-125.1	0.00	0.00	0.00
Start DLS 8°/100 @ 6255' MD									
6,300.0	13.60	269.15	6,237.2	589.2	192.8	-116.0	8.00	8.00	0.34
6,350.0	17.60	269.25	6,285.4	589.0	179.4	-102.7	8.00	8.00	0.19
6,400.0	21.60	269.31	6,332.5	588.8	162.6	-86.1	8.00	8.00	0.12
6,450.0	25.60	269.35	6,378.3	588.6	142.6	-66.3	8.00	8.00	0.09
6,500.0	29.60	269.38	6,422.6	588.3	119.4	-43.3	8.00	8.00	0.06
6,535.7	32.45	269.40	6,453.2	588.2	101.0	-25.1	8.00	8.00	0.05
Sharon Springs									
6,550.0	33.60	269.41	6,465.2	588.1	93.2	-17.4	8.00	8.00	0.05
6,585.4	36.43	269.42	6,494.2	587.9	72.9	2.7	8.00	8.00	0.04
Top A Chalk									
6,600.0	37.60	269.43	6,505.8	587.8	64.1	11.4	8.00	8.00	0.04
6,620.8	39.26	269.44	6,522.1	587.6	51.2	24.2	8.00	8.00	0.04
Top A Marl									
6,650.0	41.60	269.45	6,544.3	587.5	32.3	43.0	8.00	8.00	0.03
6,700.0	45.60	269.46	6,580.5	587.1	-2.2	77.1	8.00	8.00	0.03
6,708.0	46.24	269.46	6,586.1	587.1	-7.9	82.8	8.00	8.00	0.03
Top B Chalk									
6,750.0	49.60	269.47	6,614.3	586.8	-39.1	113.7	8.00	8.00	0.02
6,757.6	50.21	269.48	6,619.2	586.7	-44.9	119.5	8.00	8.00	0.02
Top B Marl									
6,800.0	53.60	269.48	6,645.3	586.4	-78.3	152.5	8.00	8.00	0.02
6,827.3	55.78	269.49	6,661.1	586.2	-100.6	174.6	8.00	8.00	0.02
Top C Chalk									
6,850.0	57.60	269.49	6,673.6	586.1	-119.5	193.4	8.00	8.00	0.02
6,900.0	61.60	269.50	6,698.9	585.7	-162.6	236.1	8.00	8.00	0.02
6,909.0	62.32	269.51	6,703.1	585.6	-170.6	243.9	8.00	8.00	0.02
Top C Marl									
6,950.0	65.60	269.51	6,721.1	585.3	-207.4	280.4	8.00	8.00	0.02
6,975.2	67.61	269.52	6,731.1	585.1	-230.5	303.4	8.00	8.00	0.02
Top D Chalk									
7,000.0	69.60	269.52	6,740.1	584.9	-253.6	326.2	8.00	8.00	0.02
7,050.0	73.60	269.53	6,755.9	584.5	-301.1	373.2	8.00	8.00	0.02
7,069.1	75.13	269.53	6,761.1	584.4	-319.4	391.4	8.00	8.00	0.01
Top Ft. Hayes									
7,100.0	77.60	269.54	6,768.3	584.1	-349.5	421.2	8.00	8.00	0.01
7,150.0	81.60	269.54	6,777.4	583.7	-398.6	469.9	8.00	8.00	0.01



IDS Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Wells Ranch AA21-68-1HC
Company:	Noble Energy, Inc	TVD Reference:	Well @ 4746.0usft (HP 277)
Project:	Weld County, CO (NAD 83)	MD Reference:	Well @ 4746.0usft (HP 277)
Site:	Sec 21 - T6N - R63W (Wells Ranch AA21)	North Reference:	Grid
Well:	Wells Ranch AA21-68-1HC	Survey Calculation Method:	Minimum Curvature
Wellbore:	ST1		
Design:	ST1 Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,200.0	85.60	269.55	6,782.9	583.3	-448.3	519.1	8.00	8.00	0.01
7,247.9	89.43	269.56	6,785.0	583.0	-496.2	566.5	8.00	8.00	0.01
EOC @ 7248' MD / 89.43° Inc / 6785' TVD - 7"									
7,250.0	89.43	269.56	6,785.0	582.9	-498.3	568.6	0.00	0.00	0.00
7,300.0	89.43	269.56	6,785.5	582.6	-548.3	618.1	0.00	0.00	0.00
7,347.3	89.43	269.56	6,786.0	582.2	-595.6	665.0	0.00	0.00	0.00
Codell									
7,350.0	89.43	269.56	6,786.0	582.2	-598.3	667.7	0.00	0.00	0.00
7,400.0	89.43	269.56	6,786.5	581.8	-648.3	717.2	0.00	0.00	0.00
7,450.0	89.43	269.56	6,787.0	581.4	-698.2	766.8	0.00	0.00	0.00
7,500.0	89.43	269.56	6,787.5	581.0	-748.2	816.3	0.00	0.00	0.00
7,550.0	89.43	269.56	6,788.0	580.6	-798.2	865.8	0.00	0.00	0.00
7,600.0	89.43	269.56	6,788.5	580.2	-848.2	915.4	0.00	0.00	0.00
7,650.0	89.43	269.56	6,789.0	579.9	-898.2	964.9	0.00	0.00	0.00
7,700.0	89.43	269.56	6,789.5	579.5	-948.2	1,014.4	0.00	0.00	0.00
7,750.0	89.43	269.56	6,790.0	579.1	-998.2	1,064.0	0.00	0.00	0.00
7,800.0	89.43	269.56	6,790.5	578.7	-1,048.2	1,113.5	0.00	0.00	0.00
7,850.0	89.43	269.56	6,791.0	578.3	-1,098.2	1,163.1	0.00	0.00	0.00
7,900.0	89.43	269.56	6,791.5	577.9	-1,148.2	1,212.6	0.00	0.00	0.00
7,950.0	89.43	269.56	6,792.0	577.5	-1,198.2	1,262.1	0.00	0.00	0.00
8,000.0	89.43	269.56	6,792.5	577.1	-1,248.2	1,311.7	0.00	0.00	0.00
8,050.0	89.43	269.56	6,793.0	576.8	-1,298.2	1,361.2	0.00	0.00	0.00
8,100.0	89.43	269.56	6,793.5	576.4	-1,348.2	1,410.7	0.00	0.00	0.00
8,150.0	89.43	269.56	6,794.0	576.0	-1,398.2	1,460.3	0.00	0.00	0.00
8,200.0	89.43	269.56	6,794.5	575.6	-1,448.2	1,509.8	0.00	0.00	0.00
8,250.0	89.43	269.56	6,795.0	575.2	-1,498.2	1,559.4	0.00	0.00	0.00
8,300.0	89.43	269.56	6,795.5	574.8	-1,548.2	1,608.9	0.00	0.00	0.00
8,350.0	89.43	269.56	6,796.0	574.4	-1,598.2	1,658.4	0.00	0.00	0.00
8,400.0	89.43	269.56	6,796.5	574.0	-1,648.2	1,708.0	0.00	0.00	0.00
8,450.0	89.43	269.56	6,797.0	573.7	-1,698.2	1,757.5	0.00	0.00	0.00
8,500.0	89.43	269.56	6,797.5	573.3	-1,748.2	1,807.0	0.00	0.00	0.00
8,550.0	89.43	269.56	6,798.0	572.9	-1,798.2	1,856.6	0.00	0.00	0.00
8,600.0	89.43	269.56	6,798.5	572.5	-1,848.2	1,906.1	0.00	0.00	0.00
8,649.2	89.43	269.56	6,799.0	572.1	-1,897.4	1,954.9	0.00	0.00	0.00
Carlile									
8,650.0	89.43	269.56	6,799.0	572.1	-1,898.2	1,955.7	0.00	0.00	0.00
8,700.0	89.43	269.56	6,799.5	571.7	-1,948.1	2,005.2	0.00	0.00	0.00
8,750.0	89.43	269.56	6,800.0	571.3	-1,998.1	2,054.7	0.00	0.00	0.00
8,800.0	89.43	269.56	6,800.5	570.9	-2,048.1	2,104.3	0.00	0.00	0.00
8,850.0	89.43	269.56	6,801.0	570.6	-2,098.1	2,153.8	0.00	0.00	0.00
8,900.0	89.43	269.56	6,801.5	570.2	-2,148.1	2,203.3	0.00	0.00	0.00
8,950.0	89.43	269.56	6,802.0	569.8	-2,198.1	2,252.9	0.00	0.00	0.00
9,000.0	89.43	269.56	6,802.5	569.4	-2,248.1	2,302.4	0.00	0.00	0.00
9,050.0	89.43	269.56	6,803.0	569.0	-2,298.1	2,352.0	0.00	0.00	0.00
9,100.0	89.43	269.56	6,803.5	568.6	-2,348.1	2,401.5	0.00	0.00	0.00
9,150.0	89.43	269.56	6,804.0	568.2	-2,398.1	2,451.0	0.00	0.00	0.00
9,200.0	89.43	269.56	6,804.5	567.8	-2,448.1	2,500.6	0.00	0.00	0.00
9,250.0	89.43	269.56	6,805.0	567.5	-2,498.1	2,550.1	0.00	0.00	0.00
9,300.0	89.43	269.56	6,805.5	567.1	-2,548.1	2,599.6	0.00	0.00	0.00
9,350.0	89.43	269.56	6,806.0	566.7	-2,598.1	2,649.2	0.00	0.00	0.00
9,400.0	89.43	269.56	6,806.5	566.3	-2,648.1	2,698.7	0.00	0.00	0.00
9,450.0	89.43	269.56	6,807.0	565.9	-2,698.1	2,748.3	0.00	0.00	0.00
9,500.0	89.43	269.56	6,807.5	565.5	-2,748.1	2,797.8	0.00	0.00	0.00



IDS Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Wells Ranch AA21-68-1HC
Company:	Noble Energy, Inc	TVD Reference:	Well @ 4746.0usft (HP 277)
Project:	Weld County, CO (NAD 83)	MD Reference:	Well @ 4746.0usft (HP 277)
Site:	Sec 21 - T6N - R63W (Wells Ranch AA21)	North Reference:	Grid
Well:	Wells Ranch AA21-68-1HC	Survey Calculation Method:	Minimum Curvature
Wellbore:	ST1		
Design:	ST1 Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
9,550.0	89.43	269.56	6,808.0	565.1	-2,798.1	2,847.3	0.00	0.00	0.00	
9,600.0	89.43	269.56	6,808.5	564.7	-2,848.1	2,896.9	0.00	0.00	0.00	
9,650.0	89.43	269.56	6,809.0	564.4	-2,898.1	2,946.4	0.00	0.00	0.00	
9,700.0	89.43	269.56	6,809.5	564.0	-2,948.1	2,995.9	0.00	0.00	0.00	
9,750.0	89.43	269.56	6,810.0	563.6	-2,998.1	3,045.5	0.00	0.00	0.00	
9,800.0	89.43	269.56	6,810.5	563.2	-3,048.1	3,095.0	0.00	0.00	0.00	
9,850.0	89.43	269.56	6,811.0	562.8	-3,098.1	3,144.6	0.00	0.00	0.00	
9,900.0	89.43	269.56	6,811.5	562.4	-3,148.1	3,194.1	0.00	0.00	0.00	
9,950.0	89.43	269.56	6,812.0	562.0	-3,198.0	3,243.6	0.00	0.00	0.00	
10,000.0	89.43	269.56	6,812.5	561.6	-3,248.0	3,293.2	0.00	0.00	0.00	
10,050.0	89.43	269.56	6,813.0	561.3	-3,298.0	3,342.7	0.00	0.00	0.00	
10,100.0	89.43	269.56	6,813.5	560.9	-3,348.0	3,392.2	0.00	0.00	0.00	
10,150.0	89.43	269.56	6,814.0	560.5	-3,398.0	3,441.8	0.00	0.00	0.00	
10,200.0	89.43	269.56	6,814.5	560.1	-3,448.0	3,491.3	0.00	0.00	0.00	
10,250.0	89.43	269.56	6,815.0	559.7	-3,498.0	3,540.9	0.00	0.00	0.00	
10,300.0	89.43	269.56	6,815.5	559.3	-3,548.0	3,590.4	0.00	0.00	0.00	
10,350.0	89.43	269.56	6,816.0	558.9	-3,598.0	3,639.9	0.00	0.00	0.00	
10,400.0	89.43	269.56	6,816.5	558.5	-3,648.0	3,689.5	0.00	0.00	0.00	
10,450.0	89.43	269.56	6,817.0	558.2	-3,698.0	3,739.0	0.00	0.00	0.00	
10,500.0	89.43	269.56	6,817.5	557.8	-3,748.0	3,788.5	0.00	0.00	0.00	
10,550.0	89.43	269.56	6,818.0	557.4	-3,798.0	3,838.1	0.00	0.00	0.00	
10,600.0	89.43	269.56	6,818.5	557.0	-3,848.0	3,887.6	0.00	0.00	0.00	
10,650.0	89.43	269.56	6,819.0	556.6	-3,898.0	3,937.2	0.00	0.00	0.00	
10,700.0	89.43	269.56	6,819.5	556.2	-3,948.0	3,986.7	0.00	0.00	0.00	
10,750.0	89.43	269.56	6,820.0	555.8	-3,998.0	4,036.2	0.00	0.00	0.00	
10,800.0	89.43	269.56	6,820.5	555.4	-4,048.0	4,085.8	0.00	0.00	0.00	
10,850.0	89.43	269.56	6,821.0	555.1	-4,098.0	4,135.3	0.00	0.00	0.00	
10,900.0	89.43	269.56	6,821.5	554.7	-4,148.0	4,184.8	0.00	0.00	0.00	
10,950.0	89.43	269.56	6,822.0	554.3	-4,198.0	4,234.4	0.00	0.00	0.00	
11,000.0	89.43	269.56	6,822.5	553.9	-4,248.0	4,283.9	0.00	0.00	0.00	
11,050.0	89.43	269.56	6,823.0	553.5	-4,298.0	4,333.5	0.00	0.00	0.00	
11,051.5	89.43	269.56	6,823.0	553.5	-4,299.5	4,335.0	0.00	0.00	0.00	
TD at 11052' MD / 6823' TVD										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
LP ST1 WR AA21-68-	0.00	0.00	6,785.0	583.0	-496.1	1,418,266.57	3,296,054.56	40° 28' 35.999 N	104° 26' 8.801 W	
- plan hits target center										
- Point										
PBHL ST1 WR AA21-	0.00	0.00	6,823.0	553.5	-4,299.5	1,418,237.07	3,292,251.16	40° 28' 36.156 N	104° 26' 58.020 W	
- plan hits target center										
- Point										



IDS Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Wells Ranch AA21-68-1HC
Company:	Noble Energy, Inc	TVD Reference:	Well @ 4746.0usft (HP 277)
Project:	Weld County, CO (NAD 83)	MD Reference:	Well @ 4746.0usft (HP 277)
Site:	Sec 21 - T6N - R63W (Wells Ranch AA21)	North Reference:	Grid
Well:	Wells Ranch AA21-68-1HC	Survey Calculation Method:	Minimum Curvature
Wellbore:	ST1		
Design:	ST1 Plan #1		

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
7,247.9	6,785.0	7"	7	8-3/4

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,021.0	1,021.0	Pierre		0.00	
3,558.2	3,528.3	Parkman		0.00	
4,099.0	4,057.6	Sussex		0.00	
4,888.3	4,832.7	Shannon		0.00	
5,989.4	5,929.6	Teepee Buttes		0.00	
6,535.7	6,453.2	Sharon Springs		0.00	
6,585.4	6,494.2	Top A Chalk		0.00	
6,620.8	6,522.1	Top A Marl		0.00	
6,708.0	6,586.1	Top B Chalk		0.00	
6,757.6	6,619.2	Top B Marl		0.00	
6,827.3	6,661.1	Top C Chalk		0.00	
6,909.0	6,703.1	Top C Marl		0.00	
6,975.2	6,731.1	Top D Chalk		0.00	
7,069.1	6,761.1	Top Ft. Hayes		0.00	
7,347.3	6,786.0	Codell		0.00	
8,649.2	6,799.0	Carlile		0.00	

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,946.0	5,886.2	588.4	230.3	Tie In @ 5946' MD
6,030.0	5,970.2	589.1	229.0	Start ST @ 6030' MD / 6°/100 DLS
6,182.7	6,122.0	589.6	214.6	EOST @ 6183' MD / 10° Inc
6,255.0	6,193.2	589.4	202.0	Start DLS 8°/100 @ 6255' MD
7,247.9	6,785.0	583.0	-496.1	EOC @ 7248' MD / 89.43° Inc / 6785' TVD
11,051.5	6,823.0	553.5	-4,299.5	TD at 11052' MD / 6823' TVD