

Project: Weld County, CO (NAD 83)
 Site: Sec. 18-T6N-R62W (Wells Ranch USX AA13 PAD)
 Well: Wells Ranch USX AA13-65-1HN
 Wellbore: Plan D
 Design: Final Surveys

Noble Energy



Halliburton Energy Services, Inc. ("Halliburton") recently completed directional drilling and MWD operations at the Wells Ranch AE20-63-1HN well located at Weld County, CO. At the conclusion of the job Halliburton performed a final survey on the well. Noble Energy has requested that Halliburton provide them the distances from BHL to section lines from that final survey to allow Noble Energy to meet its requirements under Colorado law. These distances are generated by a mathematical algorithm based on rough data collected after the well is drilled. Halliburton considers it to be a rough estimate only and it is not to be relied upon in any application where accurate data is required. In consideration for Halliburton releasing this data to Noble Energy, Noble Energy agrees to release Halliburton from any consequences of it or anyone else relying on such data.

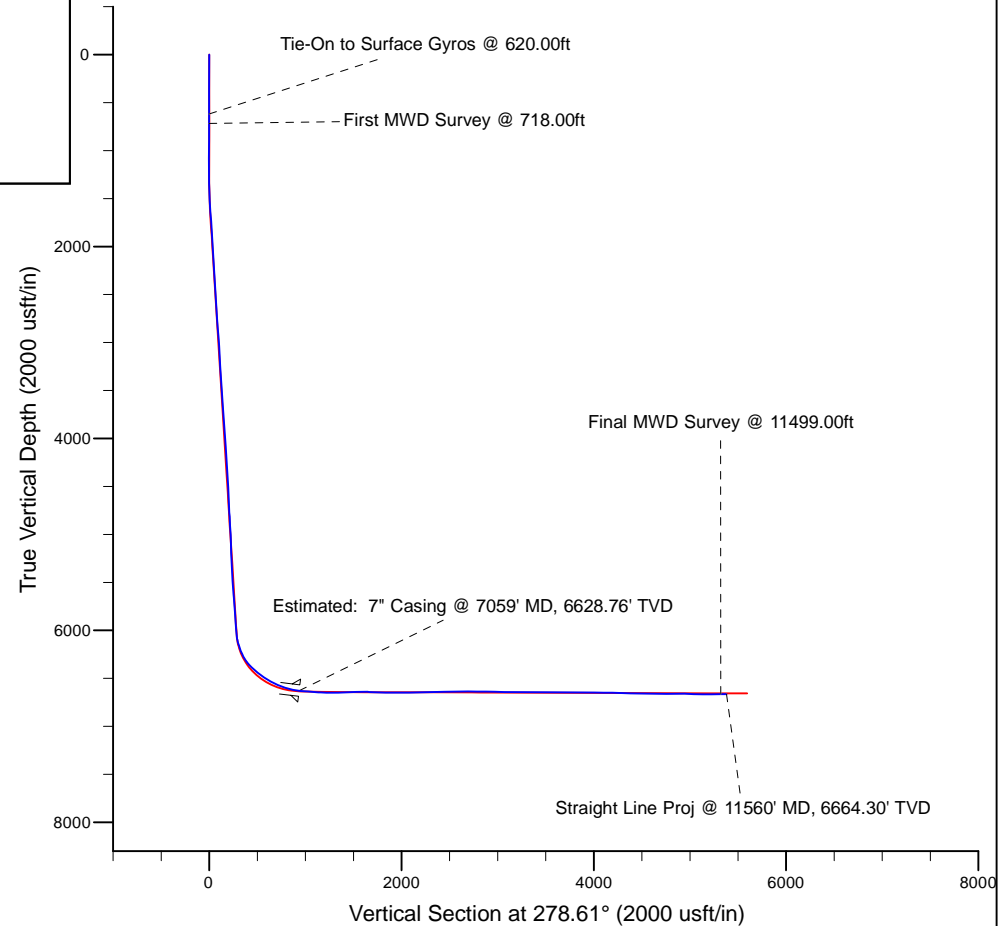
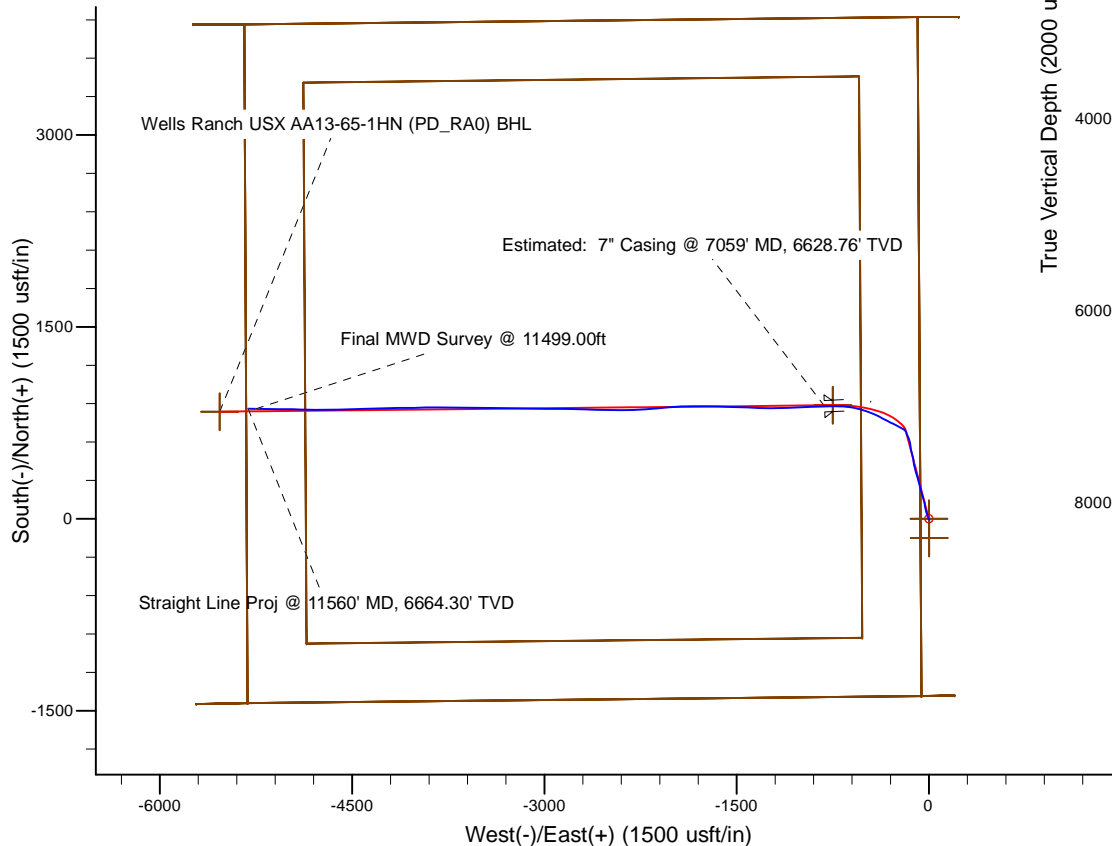
Platted SHL: 1384' FSL, 65' FWL
 Platted Lat/Long: 40.48306 N, 104.37517 W
 Location: Sec. 18-T6N-R62W

7" Casing: ~2272.17' FSL, ~743.87' FEL
 Lat/Long: 40° 29' 7.805 N, 104° 22' 41.010 W
 State Planes - CO Northern: 1,421,682.87' N, 3,312,069.96' E
 Location: Sec. 13-T6N-R63W

BHL: ~2300.92' FSL, ~15.21' FWL
 Lat/Long: 40° 29' 8.185 N, 104° 23' 39.207 W
 State Planes - CO Northern: 1,421,664.82' N, 3,307,573.12' E
 Location: Sec. 13-T6N-R63W

LEGEND

- Wells Ranch USX AA13-65-1HN, Plan D, Rev A0 Proposal V0
- Final Surveys



WELL DETAILS: Wells Ranch USX AA13-65-1HN	
Ground Level: 4831.00 RKB 24 ft. @ 4855.00usft (H&P 343)	
Design: Final Surveys (Wells Ranch USX AA13-65-1HN/Plan D)	
Created By: Fred Hartmann	Date: 10/11/2013

Noble Energy

Weld County, CO (NAD 83)

Sec. 18-T6N-R62W (Wells Ranch USX AA13 PAD)

Wells Ranch USX AA13-65-1HN - A5

Design: Final Surveys

Sperry Drilling Services

Final Survey Report

11 October, 2013

Well Coordinates: 1,420,803.66 N, 3,312,884.58 E (40° 28' 59.02" N, 104° 22' 30.61" W)

Ground Level: 4,831.00 usft

Local Coordinate Origin:

Centered on Well Wells Ranch USX AA13-65-1HN - Slot A5

Viewing Datum:

RKB 24 ft. @ 4855.00usft (H&P 343)

TVDs to System:

N

North Reference:

Grid

Unit System:

API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 5000.1 Build: 70

HALLIBURTON

Design Report for Wells Ranch USX AA13-65-1HN - Final Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
375.00	0.20	94.07	375.00	-0.05	0.65	-0.65	0.05
620.00	0.20	253.47	620.00	-0.20	0.67	-0.69	0.16
Tie-On to Surface Gyros @ 620.00ft							
718.00	0.13	146.85	718.00	-0.34	0.57	-0.61	0.27
First MWD Survey @ 718.00ft							
810.00	0.28	155.70	810.00	-0.63	0.72	-0.80	0.17
903.00	0.37	112.12	903.00	-0.95	1.09	-1.22	0.27
997.00	0.82	167.88	996.99	-1.72	1.51	-1.75	0.73
1,089.00	0.86	168.22	1,088.98	-3.04	1.79	-2.22	0.04
1,181.00	0.69	174.90	1,180.97	-4.27	1.98	-2.60	0.21
1,273.00	0.89	201.53	1,272.96	-5.49	1.77	-2.57	0.45
1,365.00	2.76	325.65	1,364.93	-4.32	0.25	-0.90	3.63
1,457.00	5.09	334.07	1,456.71	1.18	-2.78	2.93	2.60
1,550.00	6.78	338.90	1,549.21	10.01	-6.56	7.99	1.89
1,642.00	8.95	342.51	1,640.34	21.90	-10.67	13.83	2.42
1,735.00	8.97	342.65	1,732.20	35.72	-15.00	20.18	0.03
1,827.00	9.14	343.39	1,823.06	49.57	-19.23	26.44	0.22
1,918.00	9.29	341.59	1,912.88	63.47	-23.62	32.85	0.36
2,013.00	9.47	351.19	2,006.62	78.46	-27.24	38.67	1.66
2,108.00	8.87	351.11	2,100.40	93.42	-29.56	43.22	0.63
2,203.00	8.65	351.85	2,194.30	107.73	-31.71	47.48	0.26
2,298.00	9.15	347.59	2,288.15	122.18	-34.35	52.25	0.87
2,393.00	9.04	344.46	2,381.96	136.75	-37.97	58.01	0.53
2,487.00	8.88	344.21	2,474.81	150.84	-41.92	64.03	0.18
2,582.00	8.73	344.36	2,568.69	164.84	-45.86	70.02	0.16
2,677.00	9.69	342.34	2,662.47	179.40	-50.23	76.52	1.07
2,772.00	9.83	344.61	2,756.09	194.84	-54.81	83.36	0.43
2,867.00	9.53	344.38	2,849.74	210.23	-59.08	89.88	0.32
2,962.00	9.69	344.00	2,943.41	225.49	-63.40	96.44	0.18
3,057.00	9.97	344.79	3,037.01	241.11	-67.76	103.09	0.33
3,152.00	8.86	345.53	3,130.73	256.13	-71.74	109.28	1.18
3,247.00	8.83	347.31	3,224.60	270.33	-75.17	114.79	0.29
3,342.00	8.65	347.83	3,318.50	284.43	-78.28	119.98	0.21
3,437.00	7.62	341.39	3,412.54	297.38	-81.80	125.39	1.45
3,531.00	7.44	340.96	3,505.73	309.04	-85.77	131.07	0.20
3,626.00	8.09	346.19	3,599.86	321.35	-89.38	136.47	1.01
3,721.00	9.59	342.26	3,693.73	335.38	-93.38	142.53	1.70
3,816.00	10.71	344.47	3,787.24	351.42	-98.16	149.66	1.25
3,911.00	11.42	345.80	3,880.48	369.04	-102.83	156.91	0.79
4,006.00	11.93	346.17	3,973.51	387.69	-107.48	164.31	0.54
4,101.00	12.36	347.19	4,066.38	407.14	-112.08	171.77	0.51
4,196.00	11.57	349.95	4,159.32	426.44	-116.00	178.53	1.03
4,291.00	10.02	348.86	4,252.64	443.93	-119.26	184.37	1.65
4,386.00	8.50	350.74	4,346.40	458.97	-121.99	189.32	1.63
4,481.00	7.55	353.52	4,440.47	472.10	-123.82	193.10	1.08
4,576.00	7.04	349.39	4,534.70	484.02	-125.60	196.64	0.77
4,671.00	8.29	341.13	4,628.85	496.23	-128.88	201.71	1.75
4,765.00	6.91	345.55	4,722.02	508.12	-132.49	207.06	1.59
4,860.00	8.86	343.89	4,816.12	520.68	-135.94	212.35	2.07

Design Report for Wells Ranch USX AA13-65-1HN - Final Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)
4,955.00	9.34	350.24	4,909.93	535.31	-139.28	217.84	1.17
5,050.00	8.58	350.08	5,003.77	549.88	-141.81	222.52	0.80
5,145.00	7.32	354.21	5,097.85	562.89	-143.64	226.28	1.46
5,240.00	6.87	352.25	5,192.12	574.54	-145.02	229.39	0.54
5,335.00	8.20	349.37	5,286.30	586.83	-147.03	233.22	1.45
5,430.00	7.96	349.74	5,380.36	599.96	-149.45	237.58	0.26
5,524.00	9.18	343.12	5,473.31	613.54	-152.79	242.91	1.67
5,619.00	7.53	340.93	5,567.30	626.67	-157.03	249.06	1.77
5,714.00	9.61	336.36	5,661.23	639.82	-162.24	256.19	2.30
5,809.00	7.86	336.58	5,755.13	653.05	-168.00	263.87	1.84
5,904.00	7.90	336.06	5,849.23	664.98	-173.23	270.82	0.09
5,994.00	7.83	339.49	5,938.39	676.37	-177.89	277.13	0.53
6,090.00	6.98	330.57	6,033.59	687.58	-183.05	283.91	1.49
6,138.00	11.45	308.86	6,080.97	693.11	-188.19	289.83	11.64
6,185.00	16.11	302.01	6,126.61	699.50	-197.36	299.85	10.49
6,233.00	18.83	299.26	6,172.39	706.82	-209.77	313.21	5.92
6,280.00	22.81	297.36	6,216.31	714.71	-224.48	328.94	8.59
6,328.00	27.62	297.64	6,259.73	724.16	-242.62	348.28	10.02
6,375.00	32.96	296.92	6,300.29	735.01	-263.68	370.74	11.39
6,423.00	40.39	295.46	6,338.77	747.62	-289.40	398.06	15.58
6,470.00	47.51	297.92	6,372.58	762.30	-318.50	429.03	15.58
6,518.00	49.04	298.15	6,404.53	779.14	-350.12	462.81	3.21
6,565.00	49.92	297.29	6,435.07	795.76	-381.75	496.57	2.33
6,613.00	54.16	294.74	6,464.59	812.33	-415.76	532.67	9.77
6,660.00	58.22	291.80	6,490.74	827.73	-451.63	570.45	10.08
6,708.00	59.78	287.84	6,515.47	841.66	-490.33	610.79	7.78
6,755.00	60.78	286.98	6,538.77	853.87	-529.27	651.13	2.66
6,803.00	64.20	282.47	6,560.95	864.66	-570.43	693.44	10.96
6,850.00	67.44	277.92	6,580.20	872.23	-612.62	736.28	11.20
6,898.00	71.99	275.33	6,596.84	877.41	-657.32	781.26	10.74
6,945.00	76.44	273.28	6,609.63	880.79	-702.41	826.34	10.36
7,015.00	81.73	267.45	6,622.89	881.20	-771.09	894.31	11.13
7,059.00	82.94	267.39	6,628.76	879.24	-814.65	937.09	2.74
Estimated: 7" Casing @ 7059' MD, 6628.76' TVD							
7,150.00	85.43	267.28	6,637.98	875.03	-905.07	1,025.86	2.74
7,243.00	85.77	267.49	6,645.11	870.80	-997.70	1,116.82	0.43
7,335.00	88.33	269.07	6,649.85	868.04	-1,089.53	1,207.19	3.27
7,428.00	89.32	268.74	6,651.76	866.27	-1,182.49	1,298.84	1.12
7,520.00	93.02	271.43	6,649.88	866.40	-1,274.45	1,389.78	4.97
7,612.00	93.15	271.34	6,644.93	868.62	-1,366.29	1,480.92	0.17
7,703.00	91.60	272.52	6,641.15	871.69	-1,457.15	1,571.22	2.14
7,798.00	86.64	271.59	6,642.61	875.09	-1,552.05	1,665.56	5.31
7,893.00	88.28	271.15	6,646.82	877.36	-1,646.93	1,759.71	1.79
7,988.00	89.26	270.69	6,648.86	878.88	-1,741.89	1,853.83	1.14
8,083.00	90.89	269.54	6,648.74	879.08	-1,836.89	1,947.78	2.10
8,177.00	89.66	268.73	6,648.29	877.66	-1,930.87	2,040.50	1.57
8,272.00	89.85	264.37	6,648.69	871.94	-2,025.68	2,133.38	4.59
8,367.00	90.80	264.35	6,648.15	862.60	-2,120.21	2,225.45	1.00
8,462.00	92.31	266.45	6,645.58	854.99	-2,214.86	2,317.90	2.72
8,557.00	92.10	268.22	6,641.92	850.58	-2,309.69	2,410.99	1.87
8,652.00	91.20	270.37	6,639.19	849.41	-2,404.64	2,504.69	2.45



Design Report for Wells Ranch USX AA13-65-1HN - Final Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)
8,747.00	90.31	271.10	6,637.93	850.63	-2,499.62	2,598.79	1.21
8,842.00	89.81	271.43	6,637.83	852.72	-2,594.59	2,693.01	0.63
8,937.00	89.48	271.67	6,638.42	855.29	-2,689.56	2,787.28	0.43
9,032.00	89.57	271.12	6,639.21	857.61	-2,784.53	2,881.53	0.59
9,127.00	88.61	270.80	6,640.72	859.20	-2,879.50	2,975.67	1.07
9,222.00	89.57	270.58	6,642.23	860.34	-2,974.48	3,069.75	1.04
9,317.00	88.71	270.82	6,643.65	861.50	-3,069.46	3,163.84	0.94
9,411.00	89.23	269.94	6,645.34	862.12	-3,163.44	3,256.85	1.09
9,506.00	90.77	271.87	6,645.34	863.62	-3,258.42	3,350.99	2.60
9,601.00	89.72	270.97	6,644.94	865.98	-3,353.39	3,445.24	1.46
9,696.00	89.48	270.31	6,645.60	867.04	-3,448.38	3,539.32	0.74
9,791.00	89.35	270.18	6,646.57	867.45	-3,543.38	3,633.30	0.19
9,886.00	90.09	271.10	6,647.03	868.51	-3,638.37	3,727.38	1.24
9,981.00	88.86	270.17	6,647.90	869.56	-3,733.35	3,821.46	1.62
10,076.00	89.60	270.99	6,649.18	870.52	-3,828.34	3,915.51	1.16
10,171.00	89.44	268.27	6,649.98	869.91	-3,923.32	4,009.34	2.87
10,266.00	90.28	268.86	6,650.21	867.53	-4,018.29	4,102.88	1.08
10,360.00	89.48	268.86	6,650.41	865.66	-4,112.27	4,195.52	0.85
10,456.00	88.49	269.01	6,652.11	863.88	-4,208.24	4,290.14	1.04
10,550.00	87.19	269.43	6,655.65	862.60	-4,302.16	4,382.81	1.45
10,645.00	87.65	268.85	6,659.93	861.17	-4,397.06	4,476.42	0.78
10,740.00	89.01	267.60	6,662.69	858.23	-4,491.97	4,569.82	1.94
10,835.00	90.99	267.88	6,662.69	854.48	-4,586.89	4,663.11	2.10
10,930.00	91.14	269.29	6,660.93	852.14	-4,681.84	4,756.65	1.49
11,025.00	90.09	271.13	6,659.91	852.49	-4,776.83	4,850.62	2.23
11,120.00	87.84	271.18	6,661.63	854.40	-4,871.79	4,944.79	2.37
11,215.00	88.70	271.08	6,664.49	856.27	-4,966.72	5,038.94	0.91
11,310.00	89.32	270.36	6,666.13	857.47	-5,061.70	5,133.03	1.00
11,405.00	90.22	270.44	6,666.52	858.13	-5,156.70	5,227.05	0.95
11,499.00	91.08	271.43	6,665.45	859.66	-5,250.68	5,320.20	1.40
Final MWD Survey @ 11499.00ft							
11,560.00	91.08	271.43	6,664.30	861.19	-5,311.65	5,380.71	0.00
Straight Line Proj @ 11560' MD, 6664.30' TVD							

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
620.00	620.00	-0.20	0.67	Tie-On to Surface Gyros @ 620.00ft
718.00	718.00	-0.34	0.57	First MWD Survey @ 718.00ft
11,499.00	6,665.45	859.66	-5,250.68	Final MWD Survey @ 11499.00ft
11,560.00	6,664.30	861.19	-5,311.65	Straight Line Proj @ 11560' MD, 6664.30' TVD

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/_S (usft)	+E/-W (usft)	
Target	Wells Ranch USX AA13-65-1HN (PD_RA0) BHL	278.61	Slot	0.00	0.00	0.00

Design Report for Wells Ranch USX AA13-65-1HN - Final Surveys

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
375.00	620.00	Vaughn ESS Survey	Flexi-Shot
718.00	7,015.00	MWD Field Surveys - Vert/Build	MWD
7,150.00	11,499.00	MWD Field Surveys - Lateral	MWD

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
7,059.00	6,628.76	Estimated: 7" Casing @ 7059' MD, 6628.76' TVD	7	8-3/4

Wellbore Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Wells Ranch USX AA1	0.00	0.00	1.00	-149.36	1.90	1,420,654.30	3,312,886.48	40° 28' 57.540 N	104° 22' 30.612 W
- actual wellpath misses target center by 149.37usft at 1.02usft MD (1.02 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			1.00	-825.07	-4,857.04	1,419,829.69	3,308,029.54		
Point 2			1.00	-779.89	-522.44	1,419,874.49	3,312,363.99		
Point 3			1.00	3,607.24	-548.60	1,424,261.46	3,312,338.21		
Point 4			1.00	3,558.45	-4,882.49	1,424,213.05	3,308,004.47		
Point 5			1.00	-825.07	-4,857.04	1,419,829.69	3,308,029.54		
Wells Ranch USX AA1	0.00	0.00	1.00	0.00	0.00	1,420,803.66	3,312,884.58	40° 28' 59.016 N	104° 22' 30.612 W
- actual wellpath hits target center									
- Point									
Wells Ranch USX AA1	0.00	0.00	1.00	-149.36	1.90	1,420,654.30	3,312,886.48	40° 28' 57.540 N	104° 22' 30.612 W
- actual wellpath misses target center by 149.37usft at 1.02usft MD (1.02 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			1.00	-1,291.07	-5,317.04	1,419,363.74	3,307,569.51		
Point 2			1.00	-1,298.75	-5,717.04	1,419,356.10	3,307,169.53		
Point 3			1.00	-1,291.07	-5,317.04	1,419,363.74	3,307,569.51		
Point 4			1.00	-1,235.89	-59.44	1,419,418.46	3,312,826.93		
Point 5			1.00	-1,230.89	200.00	1,419,423.44	3,313,086.36		
Point 6			1.00	-1,235.89	-59.44	1,419,418.46	3,312,826.93		
Point 7			1.00	4,072.24	-90.60	1,424,726.41	3,312,796.24		
Point 8			1.00	4,072.24	230.00	1,424,726.38	3,313,116.83		
Point 9			1.00	4,072.24	-90.60	1,424,726.41	3,312,796.24		
Point 10			1.00	4,013.45	-5,344.24	1,424,668.08	3,307,542.78		
Point 11			1.00	4,013.45	-5,744.24	1,424,668.11	3,307,142.79		
Point 12			1.00	4,013.45	-5,344.24	1,424,668.08	3,307,542.78		
Point 13			1.00	-1,291.07	-5,317.04	1,419,363.74	3,307,569.51		
Wells Ranch USX AA1	0.00	0.00	6,612.00	888.93	-750.00	1,421,692.56	3,312,134.61	40° 29' 7.893 N	104° 22' 40.172 W
- actual wellpath misses target center by 10.25usft at 6992.26usft MD (6619.28 TVD, 881.83 N, -748.65 E)									
- Point									
Wells Ranch USX AA1	0.00	0.00	6,630.02	888.00	-750.00	1,421,691.63	3,312,134.61	40° 29' 7.884 N	104° 22' 40.172 W
- actual wellpath misses target center by 12.08usft at 6995.67usft MD (6619.86 TVD, 881.78 N, -752.01 E)									
- Point									
Wells Ranch USX AA1	0.00	0.00	6,640.00	837.65	-5,532.71	1,421,641.28	3,307,352.06	40° 29' 7.980 N	104° 23' 42.072 W
- actual wellpath misses target center by 223.64usft at 11560.00usft MD (6664.30 TVD, 861.19 N, -5311.65 E)									
- Point									
Wells Ranch USX AA1	0.00	0.00	6,657.87	837.65	-5,532.71	1,421,641.28	3,307,352.06	40° 29' 7.980 N	104° 23' 42.072 W
- actual wellpath misses target center by 222.41usft at 11560.00usft MD (6664.30 TVD, 861.19 N, -5311.65 E)									
- Point									

Design Report for Wells Ranch USX AA13-65-1HN - Final Surveys

Directional Difficulty Index

Average Dogleg over Survey:	1.87 °/100usft	Maximum Dogleg over Survey:	15.58 °/100usft at 6,423.00 usft
Net Tortosity applicable to Plans:	0.99 °/100usft	Directional Difficulty Index:	6.344

Audit Info

**North Reference Sheet for Sec. 18-T6N-R62W (Wells Ranch USX AA13 PAD) -
Wells Ranch USX AA13-65-1HN -**

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to RKB 24 ft. @ 4855.00usft (H&P 343). Northing and Easting are relative to Wells Ranch USX AA 13-65-1HN - Slot A5

Coordinate System is US State Plane 1983, Colorado Northern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is 105° 30' 0.000 W°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:40° 47' 0.000 N°

False Easting: 3,000,000.00usft, False Northing: 1,000,000.00usft, Scale Reduction: 0.99996505

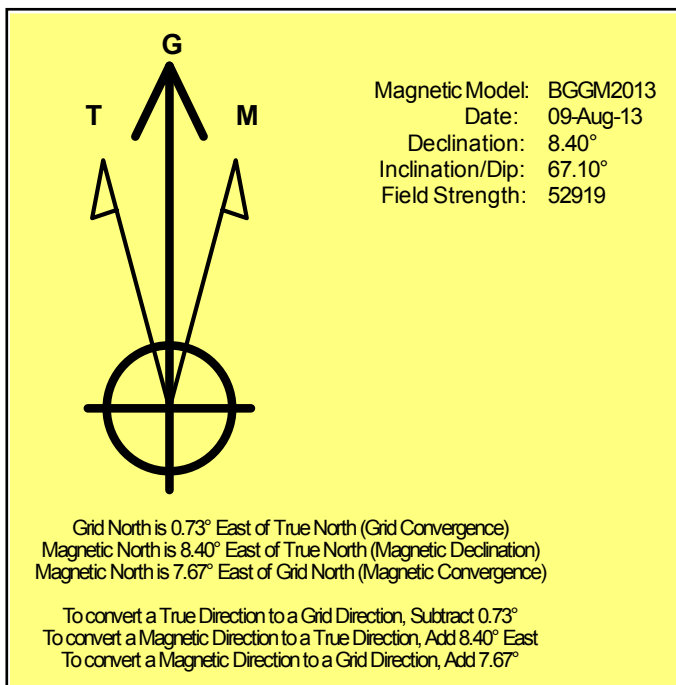
Grid Coordinates of Well: 1,420,803.66 usft N, 3,312,884.58 usft E

Geographical Coordinates of Well: 40° 28' 59.02" N, 104° 22' 30.61" W

Grid Convergence at Surface is: 0.73°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,560.00usft
the Bottom Hole Displacement is 5,381.01usft in the Direction of 279.21° (Grid).

Magnetic Convergence at surface is: -7.67° (9 August 2013, , BGGM2013)



Noble Energy

Weld County, CO (NAD 83)

Sec. 18-T6N-R62W (Wells Ranch USX AA13 PAD)

Wells Ranch USX AA13-65-1HN - A5

Plan D

Design: Final Surveys

Sperry Drilling Services

Geodetic Report

11 October, 2013

Well Coordinates: 1,420,803.66 N, 3,312,884.58 E (40° 28' 59.02" N, 104° 22' 30.61" W)

Ground Level: 4,831.00 usft

Local Coordinate Origin:

Centered on Well Wells Ranch USX AA13-65-1HN - Slot A5

Viewing Datum:

RKB 24 ft. @ 4855.00usft (H&P 343)

TVDs to System:

N

North Reference:

Grid

Unit System:

API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 5000.1 Build: 70

HALLIBURTON

Design Report for Wells Ranch USX AA13-65-1HN - Final Surveys

Measured			Vertical	Local Coordinates		Geographic Coordinates		UTM Coordinates	
Depth (usft)	Inclination (°)	Azimuth (°)	Depth (usft)	+N/-S (usft)	+E/-W (usft)	Latitude (usft)	Longitude (usft)	Northing (usft)	Easting (usft)
0.00	0.00	0.00	0.00	0.00	0.00	40° 28' 59.016 N	104° 22' 30.612 W	1,420,803.66	3,312,884.58
375.00	0.20	94.07	375.00	-0.05	0.65	40° 28' 59.015 N	104° 22' 30.604 W	1,420,803.61	3,312,885.23
620.00	0.20	253.47	620.00	-0.20	0.67	40° 28' 59.014 N	104° 22' 30.603 W	1,420,803.46	3,312,885.25
718.00	0.13	146.85	718.00	-0.34	0.57	40° 28' 59.013 N	104° 22' 30.605 W	1,420,803.32	3,312,885.15
810.00	0.28	155.70	810.00	-0.63	0.72	40° 28' 59.010 N	104° 22' 30.603 W	1,420,803.03	3,312,885.30
903.00	0.37	112.12	903.00	-0.95	1.09	40° 28' 59.006 N	104° 22' 30.598 W	1,420,802.71	3,312,885.67
997.00	0.82	167.88	996.99	-1.72	1.51	40° 28' 58.999 N	104° 22' 30.593 W	1,420,801.94	3,312,886.09
1,089.00	0.86	168.22	1,088.98	-3.04	1.79	40° 28' 58.986 N	104° 22' 30.589 W	1,420,800.62	3,312,886.37
1,181.00	0.69	174.90	1,180.97	-4.27	1.98	40° 28' 58.974 N	104° 22' 30.587 W	1,420,799.39	3,312,886.56
1,273.00	0.89	201.53	1,272.96	-5.49	1.77	40° 28' 58.962 N	104° 22' 30.590 W	1,420,798.17	3,312,886.35
1,365.00	2.76	325.65	1,364.93	-4.32	0.25	40° 28' 58.973 N	104° 22' 30.609 W	1,420,799.34	3,312,884.83
1,457.00	5.09	334.07	1,456.71	1.18	-2.78	40° 28' 59.028 N	104° 22' 30.648 W	1,420,804.84	3,312,881.80
1,550.00	6.78	338.90	1,549.21	10.01	-6.56	40° 28' 59.116 N	104° 22' 30.695 W	1,420,813.67	3,312,878.02
1,642.00	8.95	342.51	1,640.34	21.90	-10.67	40° 28' 59.234 N	104° 22' 30.746 W	1,420,825.56	3,312,873.91
1,735.00	8.97	342.65	1,732.20	35.72	-15.00	40° 28' 59.371 N	104° 22' 30.800 W	1,420,839.38	3,312,869.58
1,827.00	9.14	343.39	1,823.06	49.57	-19.23	40° 28' 59.508 N	104° 22' 30.853 W	1,420,853.23	3,312,865.35
1,918.00	9.29	341.59	1,912.88	63.47	-23.62	40° 28' 59.646 N	104° 22' 30.907 W	1,420,867.12	3,312,860.96
2,013.00	9.47	351.19	2,006.62	78.46	-27.24	40° 28' 59.795 N	104° 22' 30.952 W	1,420,882.12	3,312,857.34
2,108.00	8.87	351.11	2,100.40	93.42	-29.56	40° 28' 59.943 N	104° 22' 30.979 W	1,420,897.08	3,312,855.02
2,203.00	8.65	351.85	2,194.30	107.73	-31.71	40° 29' 0.084 N	104° 22' 31.005 W	1,420,911.39	3,312,852.87
2,298.00	9.15	347.59	2,288.15	122.18	-34.35	40° 29' 0.228 N	104° 22' 31.036 W	1,420,925.84	3,312,850.24
2,393.00	9.04	344.46	2,381.96	136.75	-37.97	40° 29' 0.372 N	104° 22' 31.081 W	1,420,940.40	3,312,846.61
2,487.00	8.88	344.21	2,474.81	150.84	-41.92	40° 29' 0.512 N	104° 22' 31.130 W	1,420,954.50	3,312,842.66
2,582.00	8.73	344.36	2,568.69	164.84	-45.86	40° 29' 0.651 N	104° 22' 31.178 W	1,420,968.50	3,312,838.72
2,677.00	9.69	342.34	2,662.47	179.40	-50.23	40° 29' 0.795 N	104° 22' 31.233 W	1,420,983.06	3,312,834.35
2,772.00	9.83	344.61	2,756.09	194.84	-54.81	40° 29' 0.948 N	104° 22' 31.289 W	1,420,998.49	3,312,829.78
2,867.00	9.53	344.38	2,849.74	210.23	-59.08	40° 29' 1.101 N	104° 22' 31.342 W	1,421,013.89	3,312,825.51
2,962.00	9.69	344.00	2,943.41	225.49	-63.40	40° 29' 1.252 N	104° 22' 31.395 W	1,421,029.15	3,312,821.18
3,057.00	9.97	344.79	3,037.01	241.11	-67.76	40° 29' 1.407 N	104° 22' 31.449 W	1,421,044.77	3,312,816.82
3,152.00	8.86	345.53	3,130.73	256.13	-71.74	40° 29' 1.556 N	104° 22' 31.498 W	1,421,059.79	3,312,812.84
3,247.00	8.83	347.31	3,224.60	270.33	-75.17	40° 29' 1.696 N	104° 22' 31.540 W	1,421,073.98	3,312,809.41
3,342.00	8.65	347.83	3,318.50	284.43	-78.28	40° 29' 1.836 N	104° 22' 31.578 W	1,421,088.08	3,312,806.30
3,437.00	7.62	341.39	3,412.54	297.38	-81.80	40° 29' 1.965 N	104° 22' 31.622 W	1,421,101.03	3,312,802.78
3,531.00	7.44	340.96	3,505.73	309.04	-85.77	40° 29' 2.080 N	104° 22' 31.671 W	1,421,112.69	3,312,798.81
3,626.00	8.09	346.19	3,599.86	321.35	-89.38	40° 29' 2.202 N	104° 22' 31.716 W	1,421,125.00	3,312,795.21
3,721.00	9.59	342.26	3,693.73	335.38	-93.38	40° 29' 2.341 N	104° 22' 31.765 W	1,421,139.02	3,312,791.20
3,816.00	10.71	344.47	3,787.24	351.42	-98.16	40° 29' 2.501 N	104° 22' 31.825 W	1,421,155.07	3,312,786.43
3,911.00	11.42	345.80	3,880.48	369.04	-102.83	40° 29' 2.675 N	104° 22' 31.882 W	1,421,172.69	3,312,781.76
4,006.00	11.93	346.17	3,973.51	387.69	-107.48	40° 29' 2.860 N	104° 22' 31.939 W	1,421,191.34	3,312,777.10
4,101.00	12.36	347.19	4,066.38	407.14	-112.08	40° 29' 3.053 N	104° 22' 31.996 W	1,421,210.79	3,312,772.50
4,196.00	11.57	349.95	4,159.32	426.44	-116.00	40° 29' 3.244 N	104° 22' 32.043 W	1,421,230.08	3,312,768.58
4,291.00	10.02	348.86	4,252.64	443.93	-119.26	40° 29' 3.417 N	104° 22' 32.082 W	1,421,247.57	3,312,765.32

Design Report for Wells Ranch USX AA13-65-1HN - Final Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Geographic Coordinates		UTM Coordinates	
				+N/-S (usft)	+E/-W (usft)	Latitude (usft)	Longitude (usft)	Northing (usft)	Easting (usft)
4,386.00	8.50	350.74	4,346.40	458.97	-121.99	40° 29' 3.566 N	104° 22' 32.115 W	1,421,262.61	3,312,762.60
4,481.00	7.55	353.52	4,440.47	472.10	-123.82	40° 29' 3.696 N	104° 22' 32.137 W	1,421,275.74	3,312,760.76
4,576.00	7.04	349.39	4,534.70	484.02	-125.60	40° 29' 3.814 N	104° 22' 32.158 W	1,421,287.67	3,312,758.99
4,671.00	8.29	341.13	4,628.85	496.23	-128.88	40° 29' 3.935 N	104° 22' 32.198 W	1,421,299.87	3,312,755.70
4,765.00	6.91	345.55	4,722.02	508.12	-132.49	40° 29' 4.053 N	104° 22' 32.243 W	1,421,311.76	3,312,752.10
4,860.00	8.86	343.89	4,816.12	520.68	-135.94	40° 29' 4.178 N	104° 22' 32.286 W	1,421,324.32	3,312,748.64
4,955.00	9.34	350.24	4,909.93	535.31	-139.28	40° 29' 4.323 N	104° 22' 32.327 W	1,421,338.95	3,312,745.30
5,050.00	8.58	350.08	5,003.77	549.88	-141.81	40° 29' 4.467 N	104° 22' 32.357 W	1,421,353.52	3,312,742.78
5,145.00	7.32	354.21	5,097.85	562.89	-143.64	40° 29' 4.596 N	104° 22' 32.378 W	1,421,366.53	3,312,740.95
5,240.00	6.87	352.25	5,192.12	574.54	-145.02	40° 29' 4.711 N	104° 22' 32.394 W	1,421,378.18	3,312,739.57
5,335.00	8.20	349.37	5,286.30	586.83	-147.03	40° 29' 4.833 N	104° 22' 32.418 W	1,421,390.47	3,312,737.55
5,430.00	7.96	349.74	5,380.36	599.96	-149.45	40° 29' 4.963 N	104° 22' 32.448 W	1,421,403.60	3,312,735.13
5,524.00	9.18	343.12	5,473.31	613.54	-152.79	40° 29' 5.097 N	104° 22' 32.489 W	1,421,417.18	3,312,731.79
5,619.00	7.53	340.93	5,567.30	626.67	-157.03	40° 29' 5.228 N	104° 22' 32.541 W	1,421,430.31	3,312,727.56
5,714.00	9.61	336.36	5,661.23	639.82	-162.24	40° 29' 5.358 N	104° 22' 32.606 W	1,421,443.46	3,312,722.35
5,809.00	7.86	336.58	5,755.13	653.05	-168.00	40° 29' 5.490 N	104° 22' 32.679 W	1,421,456.69	3,312,716.58
5,904.00	7.90	336.06	5,849.23	664.98	-173.23	40° 29' 5.608 N	104° 22' 32.745 W	1,421,468.61	3,312,711.35
5,994.00	7.83	339.49	5,938.39	676.37	-177.89	40° 29' 5.721 N	104° 22' 32.803 W	1,421,480.01	3,312,706.70
6,090.00	6.98	330.57	6,033.59	687.58	-183.05	40° 29' 5.833 N	104° 22' 32.868 W	1,421,491.21	3,312,701.54
6,138.00	11.45	308.86	6,080.97	693.11	-188.19	40° 29' 5.888 N	104° 22' 32.934 W	1,421,496.75	3,312,696.39
6,185.00	16.11	302.01	6,126.61	699.50	-197.36	40° 29' 5.952 N	104° 22' 33.051 W	1,421,503.13	3,312,687.22
6,233.00	18.83	299.26	6,172.39	706.82	-209.77	40° 29' 6.026 N	104° 22' 33.211 W	1,421,510.45	3,312,674.82
6,280.00	22.81	297.36	6,216.31	714.71	-224.48	40° 29' 6.106 N	104° 22' 33.400 W	1,421,518.35	3,312,660.10
6,328.00	27.62	297.64	6,259.73	724.16	-242.62	40° 29' 6.202 N	104° 22' 33.633 W	1,421,527.79	3,312,641.97
6,375.00	32.96	296.92	6,300.29	735.01	-263.68	40° 29' 6.311 N	104° 22' 33.904 W	1,421,538.64	3,312,620.91
6,423.00	40.39	295.46	6,338.77	747.62	-289.40	40° 29' 6.439 N	104° 22' 34.234 W	1,421,551.26	3,312,595.19
6,470.00	47.51	297.92	6,372.58	762.30	-318.50	40° 29' 6.588 N	104° 22' 34.609 W	1,421,565.94	3,312,566.09
6,518.00	49.04	298.15	6,404.53	779.14	-350.12	40° 29' 6.758 N	104° 22' 35.015 W	1,421,582.77	3,312,534.47
6,565.00	49.92	297.29	6,435.07	795.76	-381.75	40° 29' 6.926 N	104° 22' 35.422 W	1,421,599.39	3,312,502.84
6,613.00	54.16	294.74	6,464.59	812.33	-415.76	40° 29' 7.094 N	104° 22' 35.859 W	1,421,615.96	3,312,468.84
6,660.00	58.22	291.80	6,490.74	827.73	-451.63	40° 29' 7.251 N	104° 22' 36.321 W	1,421,631.36	3,312,432.97
6,708.00	59.78	287.84	6,515.47	841.66	-490.33	40° 29' 7.394 N	104° 22' 36.819 W	1,421,645.29	3,312,394.27
6,755.00	60.78	286.98	6,538.77	853.87	-529.27	40° 29' 7.519 N	104° 22' 37.321 W	1,421,657.50	3,312,355.32
6,803.00	64.20	282.47	6,560.95	864.66	-570.43	40° 29' 7.631 N	104° 22' 37.852 W	1,421,668.29	3,312,314.17
6,850.00	67.44	277.92	6,580.20	872.23	-612.62	40° 29' 7.711 N	104° 22' 38.397 W	1,421,675.86	3,312,271.99
6,898.00	71.99	275.33	6,596.84	877.41	-657.32	40° 29' 7.768 N	104° 22' 38.974 W	1,421,681.04	3,312,227.28
6,945.00	76.44	273.28	6,609.63	880.79	-702.41	40° 29' 7.807 N	104° 22' 39.557 W	1,421,684.42	3,312,182.19
7,015.00	81.73	267.45	6,622.89	881.20	-771.09	40° 29' 7.819 N	104° 22' 40.446 W	1,421,684.83	3,312,113.52
7,059.00	82.94	267.39	6,628.76	879.24	-814.65	40° 29' 7.805 N	104° 22' 41.010 W	1,421,682.87	3,312,069.96
7,150.00	85.43	267.28	6,637.98	875.03	-905.07	40° 29' 7.775 N	104° 22' 42.181 W	1,421,678.66	3,311,979.54
7,243.00	85.77	267.49	6,645.11	870.80	-997.70	40° 29' 7.745 N	104° 22' 43.380 W	1,421,674.43	3,311,886.91
7,335.00	88.33	269.07	6,649.85	868.04	-1,089.53	40° 29' 7.729 N	104° 22' 44.569 W	1,421,671.67	3,311,795.09

Design Report for Wells Ranch USX AA13-65-1HN - Final Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Geographic Coordinates		UTM Coordinates	
				+N/-S (usft)	+E/-W (usft)	Latitude (usft)	Longitude (usft)	Northing (usft)	Easting (usft)
7,428.00	89.32	268.74	6,651.76	866.27	-1,182.49	40° 29' 7.723 N	104° 22' 45.772 W	1,421,669.90	3,311,702.13
7,520.00	93.02	271.43	6,649.88	866.40	-1,274.45	40° 29' 7.736 N	104° 22' 46.962 W	1,421,670.03	3,311,610.18
7,612.00	93.15	271.34	6,644.93	868.62	-1,366.29	40° 29' 7.770 N	104° 22' 48.150 W	1,421,672.25	3,311,518.34
7,703.00	91.60	272.52	6,641.15	871.69	-1,457.15	40° 29' 7.811 N	104° 22' 49.326 W	1,421,675.32	3,311,427.48
7,798.00	86.64	271.59	6,642.61	875.09	-1,552.05	40° 29' 7.857 N	104° 22' 50.553 W	1,421,678.72	3,311,332.58
7,893.00	88.28	271.15	6,646.82	877.36	-1,646.93	40° 29' 7.891 N	104° 22' 51.780 W	1,421,680.99	3,311,237.71
7,988.00	89.26	270.69	6,648.86	878.88	-1,741.89	40° 29' 7.918 N	104° 22' 53.009 W	1,421,682.51	3,311,142.75
8,083.00	90.89	269.54	6,648.74	879.08	-1,836.89	40° 29' 7.931 N	104° 22' 54.238 W	1,421,682.70	3,311,047.76
8,177.00	89.66	268.73	6,648.29	877.66	-1,930.87	40° 29' 7.929 N	104° 22' 55.455 W	1,421,681.29	3,310,953.78
8,272.00	89.85	264.37	6,648.69	871.94	-2,025.68	40° 29' 7.884 N	104° 22' 56.683 W	1,421,675.57	3,310,858.97
8,367.00	90.80	264.35	6,648.15	862.60	-2,120.21	40° 29' 7.804 N	104° 22' 57.908 W	1,421,666.23	3,310,764.44
8,462.00	92.31	266.45	6,645.58	854.99	-2,214.86	40° 29' 7.741 N	104° 22' 59.134 W	1,421,658.62	3,310,669.79
8,557.00	92.10	268.22	6,641.92	850.58	-2,309.69	40° 29' 7.709 N	104° 23' 0.361 W	1,421,654.21	3,310,574.97
8,652.00	91.20	270.37	6,639.19	849.41	-2,404.64	40° 29' 7.709 N	104° 23' 1.590 W	1,421,653.04	3,310,480.03
8,747.00	90.31	271.10	6,637.93	850.63	-2,499.62	40° 29' 7.733 N	104° 23' 2.819 W	1,421,654.26	3,310,385.05
8,842.00	89.81	271.43	6,637.83	852.72	-2,594.59	40° 29' 7.765 N	104° 23' 4.048 W	1,421,656.35	3,310,290.08
8,937.00	89.48	271.67	6,638.42	855.29	-2,689.56	40° 29' 7.803 N	104° 23' 5.277 W	1,421,658.92	3,310,195.12
9,032.00	89.57	271.12	6,639.21	857.61	-2,784.53	40° 29' 7.837 N	104° 23' 6.505 W	1,421,661.24	3,310,100.15
9,127.00	88.61	270.80	6,640.72	859.20	-2,879.50	40° 29' 7.865 N	104° 23' 7.734 W	1,421,662.83	3,310,005.18
9,222.00	89.57	270.58	6,642.23	860.34	-2,974.48	40° 29' 7.888 N	104° 23' 8.963 W	1,421,663.97	3,309,910.21
9,317.00	88.71	270.82	6,643.65	861.50	-3,069.46	40° 29' 7.911 N	104° 23' 10.192 W	1,421,665.13	3,309,815.23
9,411.00	89.23	269.94	6,645.34	862.12	-3,163.44	40° 29' 7.929 N	104° 23' 11.408 W	1,421,665.75	3,309,721.25
9,506.00	90.77	271.87	6,645.34	863.62	-3,258.42	40° 29' 7.956 N	104° 23' 12.637 W	1,421,667.25	3,309,626.27
9,601.00	89.72	270.97	6,644.94	865.98	-3,353.39	40° 29' 7.991 N	104° 23' 13.865 W	1,421,669.61	3,309,531.31
9,696.00	89.48	270.31	6,645.60	867.04	-3,448.38	40° 29' 8.013 N	104° 23' 15.094 W	1,421,670.67	3,309,436.32
9,791.00	89.35	270.18	6,646.57	867.45	-3,543.38	40° 29' 8.029 N	104° 23' 16.324 W	1,421,671.08	3,309,341.33
9,886.00	90.09	271.10	6,647.03	868.51	-3,638.37	40° 29' 8.051 N	104° 23' 17.553 W	1,421,672.14	3,309,246.34
9,981.00	88.86	270.17	6,647.90	869.56	-3,733.35	40° 29' 8.073 N	104° 23' 18.782 W	1,421,673.19	3,309,151.36
10,076.00	89.60	270.99	6,649.18	870.52	-3,828.34	40° 29' 8.094 N	104° 23' 20.011 W	1,421,674.15	3,309,056.38
10,171.00	89.44	268.27	6,649.98	869.91	-3,923.32	40° 29' 8.100 N	104° 23' 21.240 W	1,421,673.54	3,308,961.39
10,266.00	90.28	268.86	6,650.21	867.53	-4,018.29	40° 29' 8.088 N	104° 23' 22.469 W	1,421,671.16	3,308,866.43
10,360.00	89.48	268.86	6,650.41	865.66	-4,112.27	40° 29' 8.081 N	104° 23' 23.686 W	1,421,669.29	3,308,772.45
10,456.00	88.49	269.01	6,652.11	863.88	-4,208.24	40° 29' 8.076 N	104° 23' 24.928 W	1,421,667.51	3,308,676.49
10,550.00	87.19	269.43	6,655.65	862.60	-4,302.16	40° 29' 8.075 N	104° 23' 26.144 W	1,421,666.23	3,308,582.57
10,645.00	87.65	268.85	6,659.93	861.17	-4,397.06	40° 29' 8.072 N	104° 23' 27.372 W	1,421,664.80	3,308,487.68
10,740.00	89.01	267.60	6,662.69	858.23	-4,491.97	40° 29' 8.055 N	104° 23' 28.601 W	1,421,661.86	3,308,392.77
10,835.00	90.99	267.88	6,662.69	854.48	-4,586.89	40° 29' 8.030 N	104° 23' 29.830 W	1,421,658.11	3,308,297.85
10,930.00	91.14	269.29	6,660.93	852.14	-4,681.84	40° 29' 8.018 N	104° 23' 31.059 W	1,421,655.77	3,308,202.90
11,025.00	90.09	271.13	6,659.91	852.49	-4,776.83	40° 29' 8.033 N	104° 23' 32.288 W	1,421,656.12	3,308,107.92
11,120.00	87.84	271.18	6,661.63	854.40	-4,871.79	40° 29' 8.064 N	104° 23' 33.516 W	1,421,658.03	3,308,012.96
11,215.00	88.70	271.08	6,664.49	856.27	-4,966.72	40° 29' 8.094 N	104° 23' 34.745 W	1,421,659.90	3,307,918.03
11,310.00	89.32	270.36	6,666.13	857.47	-5,061.70	40° 29' 8.118 N	104° 23' 35.974 W	1,421,661.10	3,307,823.06

Design Report for Wells Ranch USX AA13-65-1HN - Final Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Geographic Coordinates		UTM Coordinates	
				+N/-S (usft)	+E/-W (usft)	Latitude (usft)	Longitude (usft)	Northing (usft)	Easting (usft)
11,405.00	90.22	270.44	6,666.52	858.13	-5,156.70	40° 29' 8.136 N	104° 23' 37.203 W	1,421,661.76	3,307,728.06
11,499.00	91.08	271.43	6,665.45	859.66	-5,250.68	40° 29' 8.163 N	104° 23' 38.419 W	1,421,663.29	3,307,634.09
11,560.00	91.08	271.43	6,664.30	861.19	-5,311.65	40° 29' 8.185 N	104° 23' 39.207 W	1,421,664.82	3,307,573.12

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
620.00	620.00	-0.20	0.67	Tie-On to Surface Gyros @ 620.00ft
718.00	718.00	-0.34	0.57	First MWD Survey @ 718.00ft
11,499.00	6,665.45	859.66	-5,250.68	Final MWD Survey @ 11499.00ft
11,560.00	6,664.30	861.19	-5,311.65	Straight Line Proj @ 11560' MD, 6664.30' TVD

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (usft)	Origin +E/-W (usft)	Start TVD (usft)
Target	Wells Ranch USX AA13-65-1HN (PD_RA0) BHL	278.61	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
375.00	620.00	Vaughn ESS Survey	Flexi-Shot
718.00	7,015.00	MWD Field Surveys - Vert/Build	MWD
7,150.00	11,499.00	MWD Field Surveys - Lateral	MWD

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
7,059.00	6,628.76	Estimated: 7" Casing @ 7059' MD, 6628.76' TVD	7	8-3/4

Design Report for Wells Ranch USX AA13-65-1HN - Final Surveys

Design Targets

Shape	Target Name	TVD (usft)	Northing (usft)	Easting (usft)	+N/-S usft	+E/-W usft	Created	Updated
Point	Wells Ranch USX AA13-65-1HN	6,630.02	1,421,691.63	3,312,134.61	888.00	-750.00	8/7/2013	8/7/2013
Point	Wells Ranch USX AA13-65-1HN	6,657.87	1,421,641.28	3,307,352.06	837.65	-5,532.71	8/7/2013	8/7/2013

Directional Difficulty Index

Average Dogleg over Survey:	1.87 °/100usft	Maximum Dogleg over Survey:	15.58 °/100usft at 6,423.00 usft
Net Tortosity applicable to Plans:	0.99 °/100usft	Directional Difficulty Index:	6.344

Audit Info

**North Reference Sheet for Sec. 18-T6N-R62W (Wells Ranch USX AA13 PAD) - Wells Ranch USX AA13-65-1HN
- Plan D**

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to RKB 24 ft. @ 4855.00usft (H&P 343). Northing and Easting are relative to Wells Ranch USX AA 13-65-1HN - Slot A5

Coordinate System is US State Plane 1983, Colorado Northern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is 105° 30' 0.000 W°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:40° 47' 0.000 N°

False Easting: 3,000,000.00usft, False Northing: 1,000,000.00usft, Scale Reduction: 0.99996505

Grid Coordinates of Well: 1,420,803.66 usft N, 3,312,884.58 usft E

Geographical Coordinates of Well: 40° 28' 59.02" N, 104° 22' 30.61" W

Grid Convergence at Surface is: 0.73°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,560.00usft

the Bottom Hole Displacement is 5,381.01usft in the Direction of 279.21° (Grid).

Magnetic Convergence at surface is: -7.67° (9 August 2013, , BGGM2013)

