



# **Noble Energy, Inc**

**Weld County, CO (NAD 83)**

**Sec 29, T6N-R62W (Wells Ranch AE30 Pad)**

**Wells Ranch AE30-64-1BHNA**

**Wellbore #1**

**Design: OH**

## **Standard Survey Report**

**18 June, 2014**





# IDS Survey Report



<b>Company:</b>	Noble Energy, Inc	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch AE30-64-1BHNA
<b>Project:</b>	Weld County, CO (NAD 83)	<b>TVD Reference:</b>	Well @ 4777.0usft (H&P277)
<b>Site:</b>	Sec 29, T6N-R62W (Wells Ranch AE30 Pad)	<b>MD Reference:</b>	Well @ 4777.0usft (H&P277)
<b>Well:</b>	Wells Ranch AE30-64-1BHNA	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.1 Single User Db

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

Site		Sec 29, T6N-R62W (Wells Ranch AE30 Pad)			
Site Position:		Northing:	1,410,139.62 usft	Latitude:	40° 27' 12.960 N
From:	Lat/Long	Easting:	3,318,293.89 usft	Longitude:	104° 21' 22.392 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.74 °

Well	Wells Ranch AE30-64-1BHNA					
Well Position	+N-S	0.0 usft	Northing:	1,410,063.12 usft	Latitude:	40° 27' 12.204 N
	+E-W	0.0 usft	Easting:	3,318,294.88 usft	Longitude:	104° 21' 22.392 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	4,753.0 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	4/9/2014	8.27	67.06	52,905

<b>Design</b>	OH				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N-S (usft)</b>	<b>+E-W (usft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	272.21	

<b>Survey Program</b>	<b>Date</b>	6/18/2014			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
280.0	629.0	Surface (Wellbore #1)	Flexi-Shot	VES Flexi-Shot Tool	
733.0	6,758.0	Intermediate (Wellbore #1)	MWD	MWD - Standard	
6,830.0	11,901.0	Lateral (Wellbore #1)	Sperry - MWD+IFR1+MS_	Fixed:v2:Rockies, crustal dec + 3-axis correction	

<b>Survey</b>									
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N-S (usft)</b>	<b>+E-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.80	311.33	280.0	1.3	-1.5	1.5	0.29	0.29	0.00
629.0	0.40	342.92	629.0	4.1	-3.7	3.8	0.14	-0.11	9.05
733.0	0.62	264.43	733.0	4.4	-4.3	4.5	0.64	0.21	-75.47
<b>First MWD</b>									
827.0	0.70	261.09	827.0	4.2	-5.4	5.6	0.09	0.09	-3.55
921.0	0.35	250.81	921.0	4.0	-6.2	6.4	0.38	-0.37	-10.94
1,014.0	0.79	266.90	1,014.0	3.9	-7.1	7.3	0.50	0.47	17.30
1,109.0	0.70	275.95	1,108.9	3.9	-8.4	8.5	0.16	-0.09	9.53



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<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.1 Single User Db

## 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)
1,204.0	0.62	255.47	1,203.9	3.9	-9.4	9.6	0.26	-0.08	-21.56
1,297.0	0.79	267.25	1,296.9	3.7	-10.6	10.7	0.24	0.18	12.67
1,392.0	0.70	273.93	1,391.9	3.7	-11.8	11.9	0.13	-0.09	7.03
1,486.0	1.93	332.55	1,485.9	5.2	-13.1	13.3	1.78	1.31	62.36
1,581.0	3.34	359.09	1,580.8	9.3	-13.9	14.2	1.93	1.48	27.94
1,676.0	5.28	352.94	1,675.5	16.5	-14.5	15.1	2.10	2.04	-6.47
1,770.0	7.56	353.47	1,768.9	26.9	-15.7	16.7	2.43	2.43	0.56
1,865.0	9.32	351.01	1,862.9	40.7	-17.6	19.2	1.89	1.85	-2.59
1,960.0	10.90	350.30	1,956.4	57.1	-20.3	22.5	1.67	1.66	-0.75
2,055.0	12.66	348.11	2,049.4	76.2	-24.0	26.9	1.91	1.85	-2.31
2,149.0	14.33	346.44	2,140.8	97.6	-28.8	32.6	1.82	1.78	-1.78
2,244.0	14.07	345.65	2,232.9	120.2	-34.5	39.1	0.34	-0.27	-0.83
2,338.0	13.37	346.52	2,324.2	141.8	-39.8	45.3	0.78	-0.74	0.93
2,433.0	14.95	344.77	2,416.3	164.3	-45.6	51.9	1.72	1.66	-1.84
2,528.0	14.25	343.71	2,508.3	187.4	-52.1	59.3	0.79	-0.74	-1.12
2,622.0	13.72	345.03	2,599.5	209.3	-58.2	66.3	0.66	-0.56	1.40
2,716.0	13.45	345.03	2,690.9	230.6	-63.9	72.8	0.29	-0.29	0.00
2,811.0	12.84	343.80	2,783.4	251.4	-69.7	79.4	0.71	-0.64	-1.29
2,906.0	14.16	346.08	2,875.7	272.8	-75.5	86.0	1.50	1.39	2.40
3,000.0	14.07	346.17	2,966.9	295.1	-81.0	92.3	0.10	-0.10	0.10
3,095.0	13.28	345.65	3,059.2	316.9	-86.4	98.6	0.84	-0.83	-0.55
3,189.0	12.57	344.41	3,150.8	337.2	-91.9	104.8	0.81	-0.76	-1.32
3,284.0	11.17	341.34	3,243.8	355.8	-97.6	111.3	1.62	-1.47	-3.23
3,378.0	9.50	344.94	3,336.3	372.0	-102.5	116.8	1.90	-1.78	3.83
3,473.0	6.60	348.37	3,430.3	384.9	-105.7	120.4	3.09	-3.05	3.61
3,567.0	4.75	338.88	3,523.9	393.8	-108.1	123.3	2.20	-1.97	-10.10
3,662.0	3.08	342.66	3,618.6	399.9	-110.3	125.7	1.78	-1.76	3.98
3,756.0	1.85	340.20	3,712.6	403.8	-111.6	127.1	1.31	-1.31	-2.62
3,851.0	0.53	271.29	3,807.5	405.2	-112.5	128.1	1.82	-1.39	-72.54
3,945.0	0.62	263.12	3,901.5	405.2	-113.5	129.1	0.13	0.10	-8.69
4,040.0	0.62	218.12	3,996.5	404.7	-114.3	129.9	0.50	0.00	-47.37
4,134.0	0.53	221.81	4,090.5	404.0	-114.9	130.4	0.10	-0.10	3.93
4,229.0	0.35	49.10	4,185.5	403.8	-115.0	130.5	0.92	-0.19	-181.80
4,323.0	1.23	66.94	4,279.5	404.4	-113.8	129.4	0.96	0.94	18.98
4,417.0	1.41	58.42	4,373.5	405.4	-111.9	127.5	0.28	0.19	-9.06
4,512.0	1.32	70.90	4,468.5	406.4	-109.9	125.5	0.33	-0.09	13.14
4,606.0	1.23	80.74	4,562.4	406.9	-107.9	123.5	0.25	-0.10	10.47
4,701.0	1.23	71.43	4,657.4	407.4	-105.9	121.6	0.21	0.00	-9.80
4,795.0	0.26	64.22	4,751.4	407.8	-104.8	120.4	1.03	-1.03	-7.67
4,890.0	0.35	149.03	4,846.4	407.6	-104.4	120.1	0.44	0.09	89.27
4,985.0	0.44	107.55	4,941.4	407.3	-103.9	119.6	0.31	0.09	-43.66
5,079.0	0.26	199.92	5,035.4	407.0	-103.7	119.3	0.55	-0.19	98.27
5,174.0	0.35	150.62	5,130.4	406.5	-103.6	119.2	0.28	0.09	-51.89

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**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)
5,269.0	0.70	148.07	5,225.4	405.8	-103.1	118.7	0.37	0.37	-2.68
5,364.0	0.62	132.51	5,320.4	404.9	-102.4	118.0	0.21	-0.08	-16.38
5,458.0	0.88	159.84	5,414.4	403.9	-101.8	117.4	0.46	0.28	29.07
5,553.0	0.53	81.71	5,509.4	403.3	-101.1	116.6	0.98	-0.37	-82.24
5,648.0	0.62	133.13	5,604.4	403.0	-100.3	115.8	0.53	0.09	54.13
5,743.0	0.35	172.68	5,699.4	402.4	-99.9	115.4	0.44	-0.28	41.63
5,837.0	3.52	257.14	5,793.3	401.4	-102.7	118.1	3.73	3.37	89.85
5,884.0	8.27	267.16	5,840.0	401.0	-107.5	122.9	10.30	10.11	21.32
5,932.0	12.66	270.24	5,887.2	400.8	-116.2	131.6	9.22	9.15	6.42
5,979.0	16.09	271.38	5,932.8	401.0	-127.9	143.2	7.32	7.30	2.43
6,026.0	18.38	269.53	5,977.6	401.1	-141.8	157.2	5.01	4.87	-3.94
6,073.0	21.46	265.58	6,021.8	400.4	-157.8	173.1	7.15	6.55	-8.40
6,121.0	25.41	265.58	6,065.9	398.9	-176.8	192.1	8.23	8.23	0.00
6,168.0	28.49	266.54	6,107.7	397.4	-198.0	213.2	6.62	6.55	2.04
6,216.0	31.92	268.04	6,149.2	396.3	-222.2	237.3	7.32	7.15	3.13
6,263.0	36.23	268.04	6,188.1	395.4	-248.5	263.6	9.17	9.17	0.00
6,311.0	41.42	268.30	6,225.5	394.4	-278.5	293.6	10.82	10.81	0.54
6,358.0	46.96	268.21	6,259.2	393.4	-311.3	326.2	11.79	11.79	-0.19
6,406.0	52.50	268.74	6,290.2	392.5	-347.9	362.8	11.57	11.54	1.10
6,453.0	56.01	269.27	6,317.7	391.8	-386.0	400.9	7.52	7.47	1.13
6,500.0	59.09	269.27	6,342.9	391.3	-425.7	440.5	6.55	6.55	0.00
6,547.0	62.96	268.30	6,365.7	390.4	-466.8	481.5	8.43	8.23	-2.06
6,595.0	66.39	267.60	6,386.2	388.9	-510.1	524.7	7.27	7.15	-1.46
6,642.0	69.73	267.69	6,403.8	387.1	-553.7	568.2	7.11	7.11	0.19
6,690.0	74.22	268.74	6,418.6	385.7	-599.3	613.7	9.58	9.35	2.19
6,758.0	83.27	268.74	6,431.9	384.2	-665.9	680.2	13.31	13.31	0.00
<b>Last MWD</b>									
6,808.0	84.26	267.54	6,437.3	382.6	-715.6	729.8	3.10	1.97	-2.40
<b>Actual 7" Casing @ 6808' MD / 1490' FSL &amp; 653' FEL Sec 30 - 7"</b>									
6,830.0	84.69	267.01	6,439.4	381.6	-737.4	751.6	3.10	1.97	-2.40
6,924.0	83.92	266.79	6,448.7	376.5	-830.8	844.7	0.85	-0.82	-0.23
7,019.0	84.03	266.98	6,458.7	371.4	-925.2	938.8	0.23	0.12	0.20
7,113.0	88.75	268.75	6,464.6	367.9	-1,018.9	1,032.3	5.36	5.02	1.88
7,208.0	93.81	270.41	6,462.5	367.2	-1,113.8	1,127.2	5.61	5.33	1.75
7,303.0	91.43	269.90	6,458.2	367.4	-1,208.7	1,222.0	2.56	-2.51	-0.54
7,397.0	90.12	269.77	6,456.9	367.2	-1,302.7	1,315.9	1.40	-1.39	-0.14
7,492.0	90.25	269.53	6,456.6	366.6	-1,397.7	1,410.8	0.29	0.14	-0.25
7,586.0	90.45	268.68	6,456.0	365.1	-1,491.7	1,504.7	0.93	0.21	-0.90
7,681.0	90.82	268.44	6,455.0	362.7	-1,586.6	1,599.5	0.46	0.39	-0.25
7,775.0	91.39	268.30	6,453.1	360.1	-1,680.6	1,693.2	0.62	0.61	-0.15
7,870.0	89.02	267.80	6,452.8	356.8	-1,775.5	1,788.0	2.55	-2.49	-0.53
7,964.0	88.51	268.40	6,454.8	353.7	-1,869.5	1,881.7	0.84	-0.54	0.64
8,059.0	88.34	268.54	6,457.4	351.2	-1,964.4	1,976.5	0.23	-0.18	0.15
8,154.0	87.84	267.94	6,460.6	348.3	-2,059.3	2,071.2	0.82	-0.53	-0.63



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8,248.0	89.15	267.18	6,463.1	344.3	-2,153.2	2,164.9	1.61	1.39	-0.81
8,343.0	89.31	266.56	6,464.4	339.1	-2,248.0	2,259.4	0.67	0.17	-0.65
8,437.0	89.90	267.20	6,465.0	333.9	-2,341.9	2,353.0	0.93	0.63	0.68
8,532.0	89.04	265.67	6,465.9	328.0	-2,436.7	2,447.5	1.85	-0.91	-1.61
8,627.0	88.86	265.77	6,467.6	321.0	-2,531.4	2,541.9	0.22	-0.19	0.11
8,722.0	89.14	265.76	6,469.3	313.9	-2,626.1	2,636.3	0.29	0.29	-0.01
8,816.0	91.00	268.99	6,469.2	309.6	-2,720.0	2,729.9	3.97	1.98	3.44
8,911.0	91.47	269.56	6,467.1	308.4	-2,815.0	2,824.8	0.78	0.49	0.60
9,005.0	91.22	269.24	6,464.9	307.4	-2,909.0	2,918.7	0.43	-0.27	-0.34
9,100.0	90.32	267.75	6,463.6	305.0	-3,003.9	3,013.4	1.83	-0.95	-1.57
9,195.0	90.52	267.83	6,462.9	301.3	-3,098.8	3,108.2	0.23	0.21	0.08
9,290.0	90.03	268.45	6,462.5	298.2	-3,193.8	3,202.9	0.83	-0.52	0.65
9,384.0	90.64	269.90	6,461.9	296.9	-3,287.8	3,296.8	1.67	0.65	1.54
9,479.0	89.84	267.57	6,461.5	294.8	-3,382.7	3,391.6	2.59	-0.84	-2.45
9,574.0	90.47	270.06	6,461.3	292.8	-3,477.7	3,486.4	2.70	0.66	2.62
9,668.0	89.31	266.32	6,461.5	289.8	-3,571.6	3,580.2	4.17	-1.23	-3.98
9,762.0	90.22	269.81	6,461.8	286.6	-3,665.6	3,673.9	3.84	0.97	3.71
9,857.0	89.87	268.17	6,461.8	285.0	-3,760.6	3,768.8	1.77	-0.37	-1.73
9,952.0	90.71	270.75	6,461.3	284.1	-3,855.5	3,863.6	2.86	0.88	2.72
10,046.0	90.87	270.44	6,460.0	285.1	-3,949.5	3,957.6	0.37	0.17	-0.33
10,141.0	89.72	269.79	6,459.5	285.2	-4,044.5	4,052.5	1.39	-1.21	-0.68
10,236.0	89.23	269.36	6,460.4	284.5	-4,139.5	4,147.4	0.69	-0.52	-0.45
10,330.0	89.09	268.82	6,461.8	283.0	-4,233.5	4,241.3	0.59	-0.15	-0.57
10,425.0	88.13	268.47	6,464.1	280.8	-4,328.4	4,336.1	1.08	-1.01	-0.37
10,519.0	88.13	267.52	6,467.1	277.5	-4,422.3	4,429.7	1.01	0.00	-1.01
10,614.0	90.88	269.39	6,467.9	275.0	-4,517.3	4,524.5	3.50	2.89	1.97
10,709.0	90.15	268.59	6,467.1	273.3	-4,612.3	4,619.4	1.14	-0.77	-0.84
10,804.0	88.98	267.98	6,467.8	270.4	-4,707.2	4,714.1	1.39	-1.23	-0.64
10,898.0	88.50	267.91	6,469.9	267.1	-4,801.1	4,807.9	0.52	-0.51	-0.07
10,993.0	87.11	266.92	6,473.5	262.8	-4,896.0	4,902.5	1.80	-1.46	-1.04
11,087.0	89.27	267.59	6,476.5	258.3	-4,989.8	4,996.0	2.41	2.30	0.71
11,182.0	88.95	266.60	6,478.0	253.5	-5,084.7	5,090.7	1.10	-0.34	-1.04
11,277.0	88.62	266.61	6,480.0	247.9	-5,179.5	5,185.2	0.35	-0.35	0.01
11,371.0	89.22	266.32	6,481.7	242.1	-5,273.3	5,278.7	0.71	0.64	-0.31
11,466.0	89.88	268.76	6,482.5	238.0	-5,368.2	5,373.4	2.66	0.69	2.57
11,561.0	89.16	268.07	6,483.3	235.4	-5,463.1	5,468.1	1.05	-0.76	-0.73
11,656.0	90.94	269.23	6,483.2	233.1	-5,558.1	5,563.0	2.24	1.87	1.22
11,751.0	91.70	268.04	6,481.0	230.9	-5,653.0	5,657.7	1.49	0.80	-1.25
11,830.0	91.33	267.31	6,478.9	227.6	-5,732.0	5,736.5	1.04	-0.47	-0.92
<b>Last MWD @ 11830' MD</b>									
11,901.0	91.33	267.31	6,477.3	224.3	-5,802.9	5,807.2	0.00	0.00	0.00
<b>PTB @ 11901' MD / 6477' TVD / 1481' FSL &amp; 323' FEL Sec 25</b>									



# IDS Survey Report



<b>Company:</b>	Noble Energy, Inc	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch AE30-64-1BHNA
<b>Project:</b>	Weld County, CO (NAD 83)	<b>TVD Reference:</b>	Well @ 4777.0usft (H&P277)
<b>Site:</b>	Sec 29, T6N-R62W (Wells Ranch AE30 Pad)	<b>MD Reference:</b>	Well @ 4777.0usft (H&P277)
<b>Well:</b>	Wells Ranch AE30-64-1BHNA	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.1 Single User Db

## Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
6,808.0	6,437.3	7"	7	8-3/4

## Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
733.0	733.0	4.4	-4.3	First MWD
6,758.0	6,431.9	384.2	-665.9	Last MWD
6,808.0	6,437.3	382.6	-715.6	Actual 7" Casing @ 6808' MD / 1490' FSL & 653' FEL Sec 30
11,830.0	6,478.9	227.6	-5,732.0	Last MWD @ 11830' MD
11,901.0	6,477.3	224.3	-5,802.9	PTB @ 11901' MD / 6477' TVD / 1481' FSL & 323' FEL Sec 25

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_



# Weld County, CO (NAD 83)

## Wells Ranch AE30-64-1BHNA

### H&P277

### Plan #1



Azimuths to Grid North  
 True North: -0.74°  
 Magnetic North: 7.53°  
 Magnetic Field  
 Strength: 52905.2snT  
 Dip Angle: 67.06°  
 Date: 4/9/2014  
 Model: IGRF2010

#### CASING DETAILS

MD	TVD	Name	Size
6808.0	6437.3	7"	7

#### SITE DETAILS: Sec 29, T6N-R62W (Wells Ranch AE30 Pad)

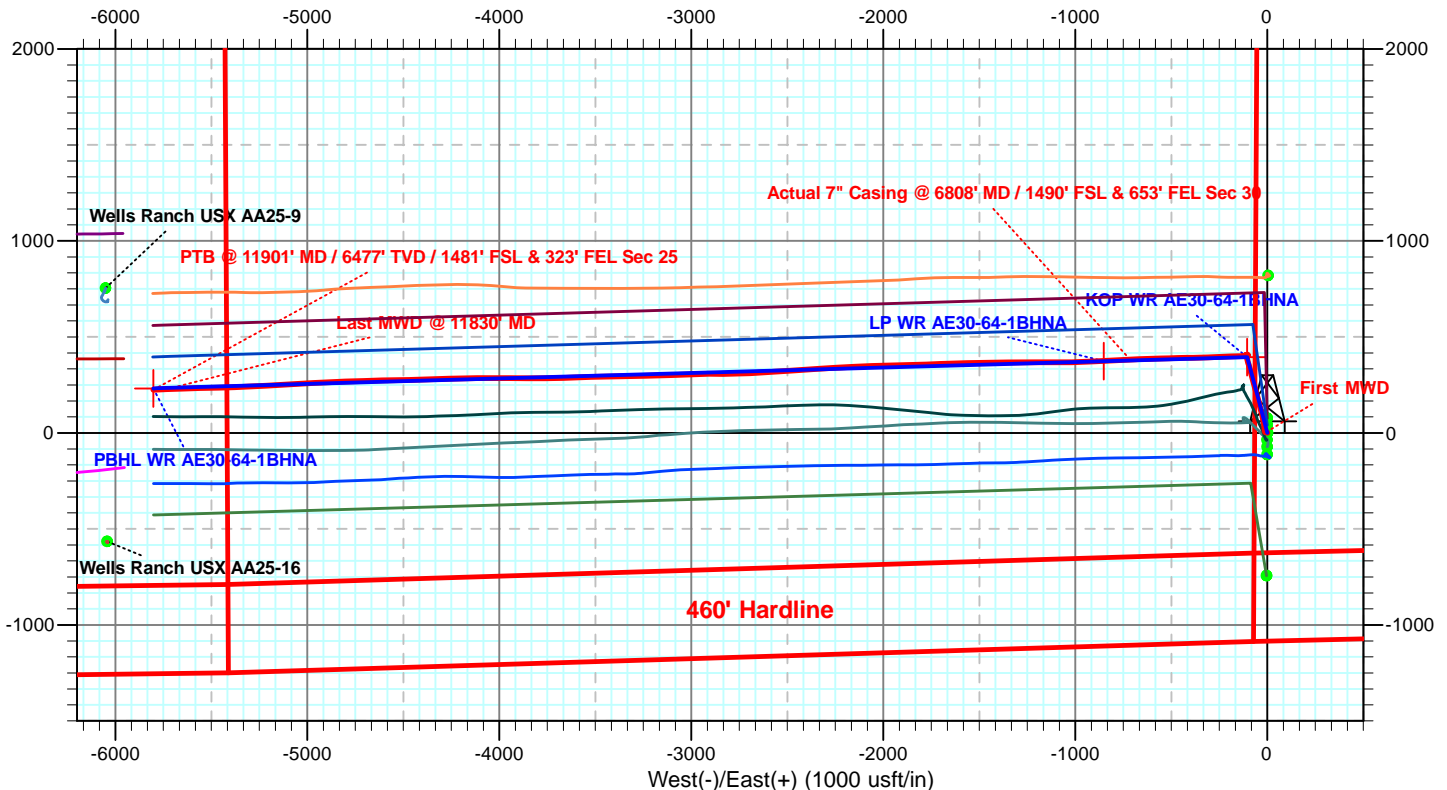
Site Centre Northing: 1410139.62  
 Easting: 3318293.89  
 Positional Uncertainty: 0.0  
 Convergence: 0.74  
 Local North: Grid

#### SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
1500.0	0.00	0.00	1500.0	0.0	0.0	0.00	0.00	0.0	
2250.2	15.00	345.11	2241.6	94.4	-25.1	2.00	345.11	28.8	
3074.5	15.00	345.11	3037.9	300.6	-79.9	0.00	0.00	91.9	
3824.7	0.00	0.00	3779.5	395.0	-105.0	2.00	180.00	120.7	
5852.7	0.00	0.00	5807.5	395.0	-105.0	0.00	0.00	120.7	KOP WR AE30-64-1BHNA
6797.1	85.00	268.36	6441.7	378.4	-685.9	9.00	268.36	700.5	
6847.1	85.00	268.36	6446.1	376.9	-735.7	0.00	0.00	750.1	
6964.6	89.70	268.36	6451.5	373.6	-853.0	4.00	0.00	867.2	
11916.7	89.70	268.36	6477.4	231.9	-5803.0	0.00	0.00	5807.6	PBHL WR AE30-64-1BHNA

#### WELL DETAILS: Wells Ranch AE30-64-1BHNA

+N/-S	+E/-W	Ground Level:	4753.0
0.0	0.0	Northing	Easting
1410063.12	3318294.87	Latitude	Longitude
40° 27' 12.204 N	104° 21' 22.392 W		



SHL @ 1086' FSL & 65' FWL Sec 29  
 7" Csg @ 1485' FSL & 624' FEL Sec 30  
 PBHL @ 1485' FSL & 385' FEL Sec 25





# Weld County, CO (NAD 83)

## Wells Ranch AE30-64-1BHNA

### H&P277

### Plan #1



Azimuths to Grid North  
True North:  $-0.74^\circ$   
Magnetic North:  $7.53^\circ$

Magnetic Field  
Strength: 52905.2snT  
Dip Angle:  $67.06^\circ$   
Date: 4/9/2014  
Model: IGRF2010

#### ACTUAL CASING DETAILS

MD	TVD	Name	Size
6808.0	6437.3	7"	7

#### SECTION DETAILS

MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	Vsect	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
1500.0	0.00	0.00	1500.0	0.0	0.0	0.00	0.00	0.0	
2250.2	15.00	345.11	2241.6	94.4	-25.1	2.00	345.11	28.8	
3074.5	15.00	345.11	3037.9	300.6	-79.9	0.00	0.00	91.9	
3824.7	0.00	0.00	3779.5	395.0	-105.0	2.00	180.00	120.7	
5852.7	0.00	0.00	5807.5	395.0	-105.0	0.00	0.00	120.7	KOP WR AE30-64-1BHNA
6797.1	85.00	268.36	6441.7	378.4	-685.9	9.00	268.36	700.5	
6847.1	85.00	268.36	6446.1	376.9	-735.7	0.00	0.00	750.1	
6964.6	89.70	268.36	6451.5	373.6	-853.0	4.00	0.00	867.2	
11916.7	89.70	268.36	6477.4	231.9	-5803.0	0.00	0.00	5807.6	PBHL WR AE30-64-1BHNA

#### WELL DETAILS: Wells Ranch AE30-64-1BHNA

+N-S	+E-W	North	Ground Level:	Easting	Latitude	Longitude
0.0	0.0	1410063.12	4753.0	3318294.87	40° 27' 12.204 N	104° 21' 22.392 W

#### SITE DETAILS: Sec 29, T6N-R62W (Wells Ranch AE30 Pad)

Site Centre Northing: 1410139.62  
Easting: 3318293.89  
Positional Uncertainty: 0.0  
Convergence: 0.74  
Local North: Grid

SHL @ 1086 FSL & 65' FWL Sec 29  
7' Csg @ 1490 FSL & 653' FEL Sec 30  
PBHL @ 1485' FSL & 385' FEL Sec 25

