

Noble Energy

Weld County, CO (NAD 83)

Sec. 7-T7N-R63W

Walcker AC07-65HN

Design: MWD Survey

Sperry Drilling Services

Final Survey Report

17 December, 2012

Well Coordinates: 1,458,656.85 N, 3,281,350.80 E (40° 35' 16.80" N, 104° 29' 13.09" W)

Ground Level: 4,824.00 ft

Local Coordinate Origin:

Centered on Well Walcker AC07-65HN

Viewing Datum:

KB @ 4848.00ft (H&P 322)

TVDs to System:

N

North Reference:

Grid

Unit System:

API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 2003.16 Build: 431

HALLIBURTON

Design Report for Walcker AC07-65HN - MWD Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
905.00	0.71	264.15	904.98	-0.57	-5.58	-5.60	0.08
First MWD Survey							
1,093.00	0.53	269.35	1,092.97	-0.70	-7.61	-7.63	0.10
1,374.00	0.77	252.29	1,373.95	-1.29	-10.70	-10.76	0.11
1,650.00	0.51	279.42	1,649.93	-1.65	-13.68	-13.76	0.14
1,927.00	0.59	304.23	1,926.92	-0.65	-16.08	-16.09	0.09
2,203.00	1.15	332.74	2,202.89	2.61	-18.52	-18.33	0.25
2,480.00	0.84	317.87	2,479.85	6.59	-21.16	-20.72	0.14
2,762.00	1.08	297.28	2,761.81	9.34	-24.91	-24.29	0.15
3,045.00	1.17	337.39	3,044.76	13.23	-28.39	-27.53	0.27
3,330.00	0.85	338.11	3,329.71	17.88	-30.29	-29.15	0.11
3,424.00	1.62	157.56	3,423.70	17.30	-30.05	-28.94	2.63
3,709.00	0.94	161.12	3,708.63	11.36	-27.75	-27.01	0.24
3,995.00	1.30	171.20	3,994.57	5.94	-26.50	-26.09	0.14
4,281.00	1.32	163.60	4,280.50	-0.43	-25.07	-25.05	0.06
4,564.00	1.12	174.15	4,563.44	-6.31	-23.87	-24.21	0.11
4,851.00	0.42	216.46	4,850.41	-9.95	-24.21	-24.77	0.30
5,135.00	1.27	237.25	5,134.38	-12.49	-27.47	-28.18	0.31
5,230.00	0.55	116.27	5,229.37	-13.26	-27.95	-28.70	1.71
5,325.00	1.31	34.78	5,324.36	-12.57	-26.92	-27.64	1.41
5,610.00	1.09	28.81	5,609.30	-7.52	-23.76	-24.17	0.09
5,800.00	0.72	53.72	5,799.27	-5.23	-21.92	-22.20	0.28
5,980.00	0.80	349.08	5,979.26	-3.32	-21.25	-21.41	0.45
6,089.00	1.30	50.17	6,088.24	-1.78	-20.44	-20.51	1.06
6,184.00	11.74	71.65	6,182.50	1.96	-10.41	-10.28	11.10
6,231.00	15.77	72.36	6,228.15	5.40	0.21	0.54	8.58
6,279.00	20.01	71.16	6,273.82	10.03	14.21	14.79	8.87
6,326.00	23.50	73.45	6,317.46	15.30	30.81	31.68	7.64
6,374.00	26.50	83.71	6,360.98	19.20	50.64	51.71	10.96
6,421.00	31.34	85.87	6,402.11	21.23	73.27	74.42	10.53
6,469.00	34.57	87.34	6,442.38	22.76	99.33	100.53	6.93
6,516.00	34.61	90.29	6,481.08	23.32	126.00	127.18	3.56
6,563.00	38.90	91.40	6,518.72	22.89	154.11	155.22	9.24
6,610.00	42.21	89.60	6,554.43	22.64	184.66	185.70	7.47
6,658.00	47.70	86.54	6,588.39	23.82	218.53	219.58	12.29
6,705.00	52.24	84.19	6,618.61	26.75	254.39	255.54	10.39
6,753.00	54.65	85.69	6,647.20	30.15	292.79	294.08	5.61
6,800.00	57.52	86.85	6,673.42	32.68	331.71	333.08	6.44
6,848.00	59.45	87.85	6,698.51	34.56	372.58	373.99	4.40
6,895.00	61.14	89.52	6,721.80	35.50	413.39	414.79	4.74
6,944.00	64.01	91.12	6,744.37	35.25	456.88	458.18	6.53
6,991.00	68.50	90.95	6,763.29	34.47	499.88	501.05	9.56
7,039.00	74.01	88.72	6,778.71	34.62	545.31	546.41	12.29
7,086.00	78.92	87.73	6,789.71	36.03	590.97	592.07	10.65
7,127.00	83.01	86.79	6,796.15	37.97	631.41	632.55	10.23
7,191.00	84.66	85.96	6,803.02	41.99	694.91	696.17	2.88
7,286.00	87.32	85.99	6,809.66	48.65	789.43	790.93	2.80
7,381.00	89.26	85.90	6,812.50	55.36	884.15	885.88	2.04
7,476.00	88.03	85.83	6,814.74	62.21	978.87	980.84	1.30

Design Report for Walcker AC07-65HN - MWD Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
7,571.00	89.29	86.09	6,816.96	68.90	1,073.61	1,075.81	1.35
7,666.00	88.95	86.84	6,818.42	74.76	1,168.42	1,170.80	0.87
7,761.00	90.99	88.28	6,818.47	78.80	1,263.32	1,265.78	2.63
7,856.00	89.23	87.72	6,818.29	82.12	1,358.26	1,360.74	1.94
7,951.00	91.42	88.54	6,817.75	85.22	1,453.20	1,455.69	2.46
8,046.00	90.18	86.88	6,816.43	89.01	1,548.11	1,550.66	2.18
8,141.00	88.24	85.19	6,817.74	95.58	1,642.87	1,645.64	2.71
8,237.00	89.91	85.74	6,819.29	103.17	1,738.55	1,741.61	1.83
8,332.00	92.22	86.28	6,817.52	109.78	1,833.30	1,836.58	2.50
8,427.00	90.68	86.19	6,815.12	116.01	1,928.06	1,931.54	1.62
8,522.00	92.99	86.06	6,812.07	122.43	2,022.79	2,026.49	2.44
8,617.00	92.19	84.93	6,807.78	129.88	2,117.39	2,121.37	1.46
8,712.00	89.63	83.81	6,806.27	139.20	2,211.91	2,216.28	2.94
8,807.00	89.38	84.92	6,807.09	148.53	2,306.45	2,311.21	1.20
8,902.00	88.43	85.63	6,808.91	156.35	2,401.11	2,406.17	1.25
8,996.00	88.92	85.50	6,811.08	163.62	2,494.80	2,500.13	0.54
9,092.00	88.65	86.02	6,813.12	170.72	2,590.52	2,596.10	0.61
9,186.00	87.69	86.73	6,816.12	176.66	2,684.28	2,690.05	1.27
9,282.00	88.52	86.84	6,819.29	182.04	2,780.07	2,786.00	0.87
9,376.00	88.92	86.36	6,821.39	187.61	2,873.88	2,879.97	0.66
9,471.00	90.62	89.18	6,821.78	191.31	2,968.80	2,974.94	3.47
9,565.00	90.46	88.34	6,820.89	193.34	3,062.77	3,068.86	0.91
9,660.00	91.45	88.52	6,819.31	195.94	3,157.72	3,163.79	1.06
9,756.00	92.71	88.22	6,815.82	198.67	3,253.62	3,259.68	1.35
9,851.00	90.65	87.42	6,813.04	202.28	3,348.50	3,354.61	2.33
9,946.00	91.32	87.41	6,811.40	206.57	3,443.39	3,449.58	0.71
10,041.00	88.95	85.61	6,811.18	212.35	3,538.20	3,544.57	3.13
10,136.00	89.91	84.98	6,812.13	220.14	3,632.88	3,639.54	1.21
10,231.00	91.08	85.46	6,811.30	228.06	3,727.54	3,734.51	1.33
10,326.00	89.66	85.13	6,810.69	235.85	3,822.22	3,829.49	1.53
10,421.00	90.74	85.10	6,810.36	243.94	3,916.87	3,924.46	1.14
10,502.00	91.32	85.04	6,808.90	250.90	3,997.56	4,005.42	0.72
Final MWD Survey							
10,558.00	91.32	85.04	6,807.61	255.74	4,053.33	4,061.38	0.00
Survey Projection to TD - Estimated BHL: 2579' FNL, 537' FEL							

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
905.00	904.98	-0.57	-5.58	First MWD Survey
10,502.00	6,808.90	250.90	3,997.56	Final MWD Survey
10,558.00	6,807.61	255.74	4,053.33	Survey Projection to TD
10,558.00	6,807.61	255.74	4,053.33	Estimated BHL: 2579' FNL, 537' FEL

Design Report for Walcker AC07-65HN - MWD Survey

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft)	Origin +E/-W (ft)	Start TVD (ft)
Target	Walcker AC07-65HN_PlanA - Rev1_BH	86.51	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
905.00	10,558.00	Sperry MWD Surveys	MWD

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Walcker	0.00	0.00	6,805.82	247.05	4,055.27	1,458,903.89	3,285,405.96	40° 35' 18.780 N	104° 28' 20.496 W
- actual wellpath misses target center by 9.08ft at 10558.00ft MD (6807.61 TVD, 255.74 N, 4053.33 E)									
- Point									
Walcker	0.00	0.00	0.00	0.00	0.00	1,458,656.85	3,281,350.80	40° 35' 16.800 N	104° 29' 13.092 W
- actual wellpath hits target center									
- Polygon									
Point 1				-238.00	-39.00	1,458,617.85	3,281,112.80		
Point 2				-232.00	2,602.00	1,461,258.78	3,281,118.80		
Point 3				4,561.00	2,858.00	1,461,514.77	3,285,911.68		
Point 4				4,594.00	-2,341.00	1,456,315.91	3,285,944.68		
Point 5				-244.00	-2,677.00	1,455,979.91	3,281,106.80		
Point 6				-238.00	-39.00	1,458,617.85	3,281,112.80		
Walcker	0.00	0.00	0.00	0.00	0.00	1,458,656.85	3,281,350.80	40° 35' 16.800 N	104° 29' 13.092 W
- actual wellpath hits target center									
- Polygon									
Point 1				222.00	-39.00	1,458,617.85	3,281,572.79		
Point 2				228.00	2,142.00	1,460,798.79	3,281,578.79		
Point 3				4,101.00	2,398.00	1,461,054.78	3,285,451.69		
Point 4				4,134.00	-1,881.00	1,456,775.89	3,285,484.69		
Point 5				216.00	-2,217.00	1,456,439.90	3,281,566.79		
Point 6				222.00	-39.00	1,458,617.85	3,281,572.79		

North Reference Sheet for Sec. 7-T7N-R63W - Walcker AC07-65HN

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

Vertical Depths are relative to KB @ 4848.00ft (H&P 322). Northing and Easting are relative to Walcker AC07-65HN

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: 3,000,000.00ft, False Northing: 1,000,000.00ft, Scale Reduction: 0.99997413

Grid Coordinates of Well: 1,458,656.85 ft N, 3,281,350.80 ft E

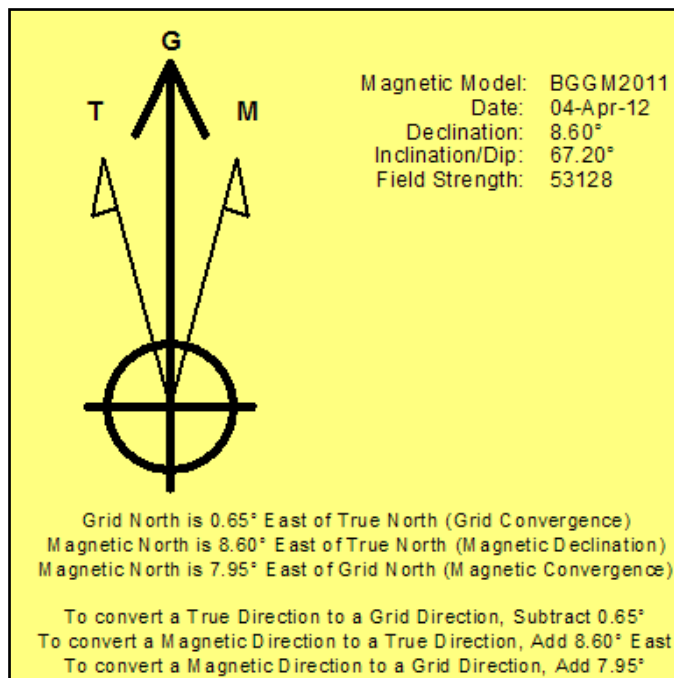
Geographical Coordinates of Well: 40° 35' 16.80" N, 104° 29' 13.09" W

Grid Convergence at Surface is: 0.65°

Based upon Minimum Curvature type calculations, at a Measured Depth of 10,558.00ft

the Bottom Hole Displacement is 4,061.39ft in the Direction of 86.39° (Grid).

Magnetic Convergence at surface is: -7.95° (4 April 2012, , BGGM2011)



Project: Weld County, CO (NAD 83)
Site: Sec. 7-T7N-R63W
Well: Walcker AC07-65HN

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Sperry Drilling



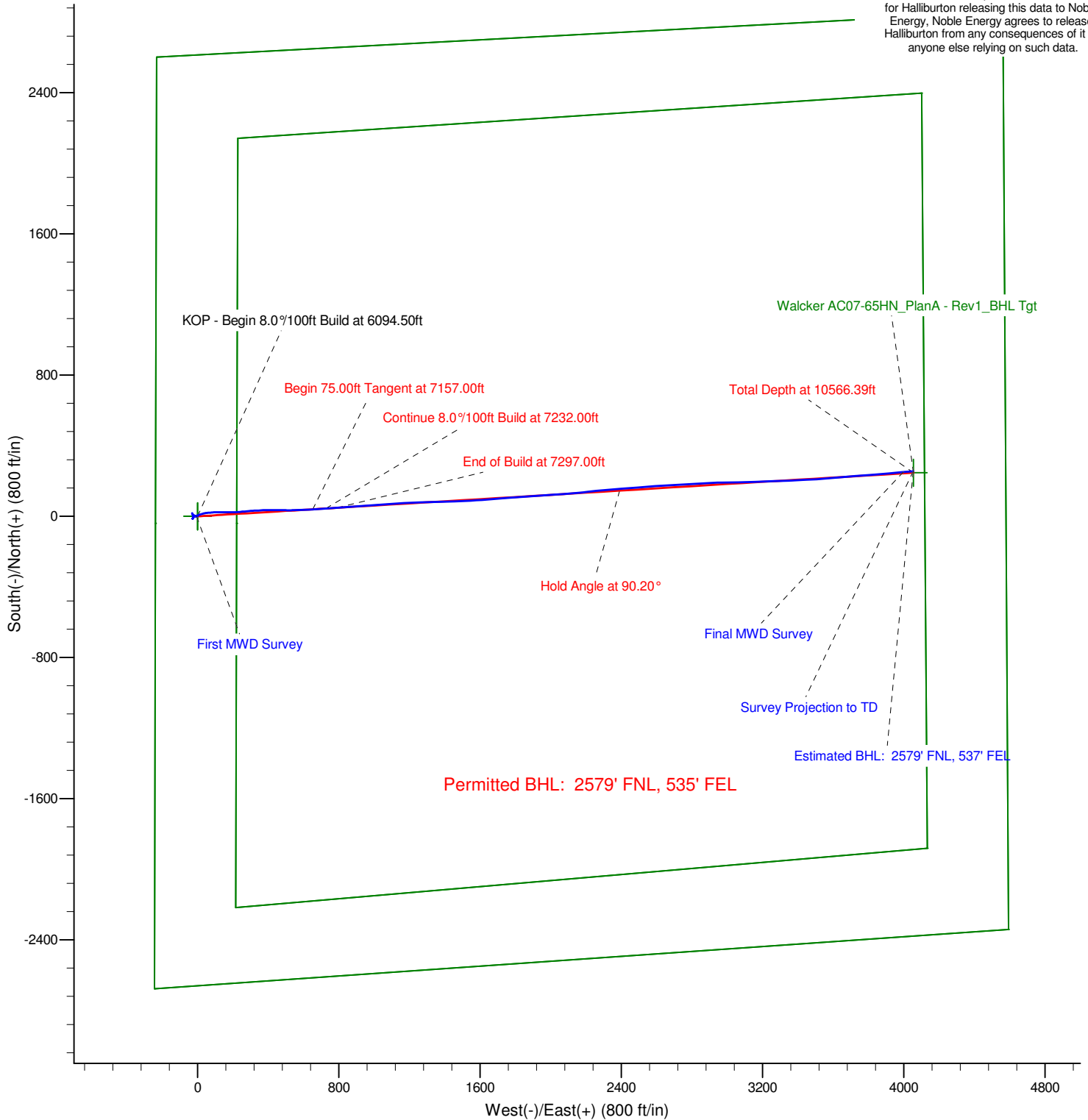
Azimuths to Grid North
True North: -0.65°
Magnetic North: 7.95°

Magnetic Field
Strength: 53127.5nT
Dip Angle: 67.20°
Date: 4/4/2012
Model: BGGM2011

LEGEND

- Walcker AC07-65HN, Plan A, Plan A - Rev 1 Proposal V0
- MWD Survey

Halliburton Energy Services, Inc. ("Halliburton") recently completed directional drilling and MWD operations at the Walcker AC07-65HN 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.

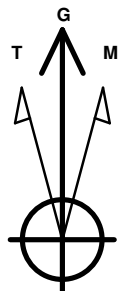


Project: Weld County, CO (NAD 83)
Site: Sec. 7-T7N-R63W
Well: Walcker AC07-65HN

Noble Energy

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Sperry Drilling



Azimuths to Grid North
True North: -0.65°
Magnetic North: 7.95°

Magnetic Field
Strength: 53127.5snT
Dip Angle: 67.20°
Date: 4/4/2012
Model: BGGM2011

LEGEND

- Walcker AC07-65HN, Plan A, Plan A - Rev 1 Proposal V0
- MWD Survey

Halliburton Energy Services, Inc. ("Halliburton") recently completed directional drilling and MWD operations at the Walcker AC07-65HN 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.

