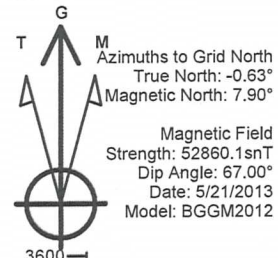
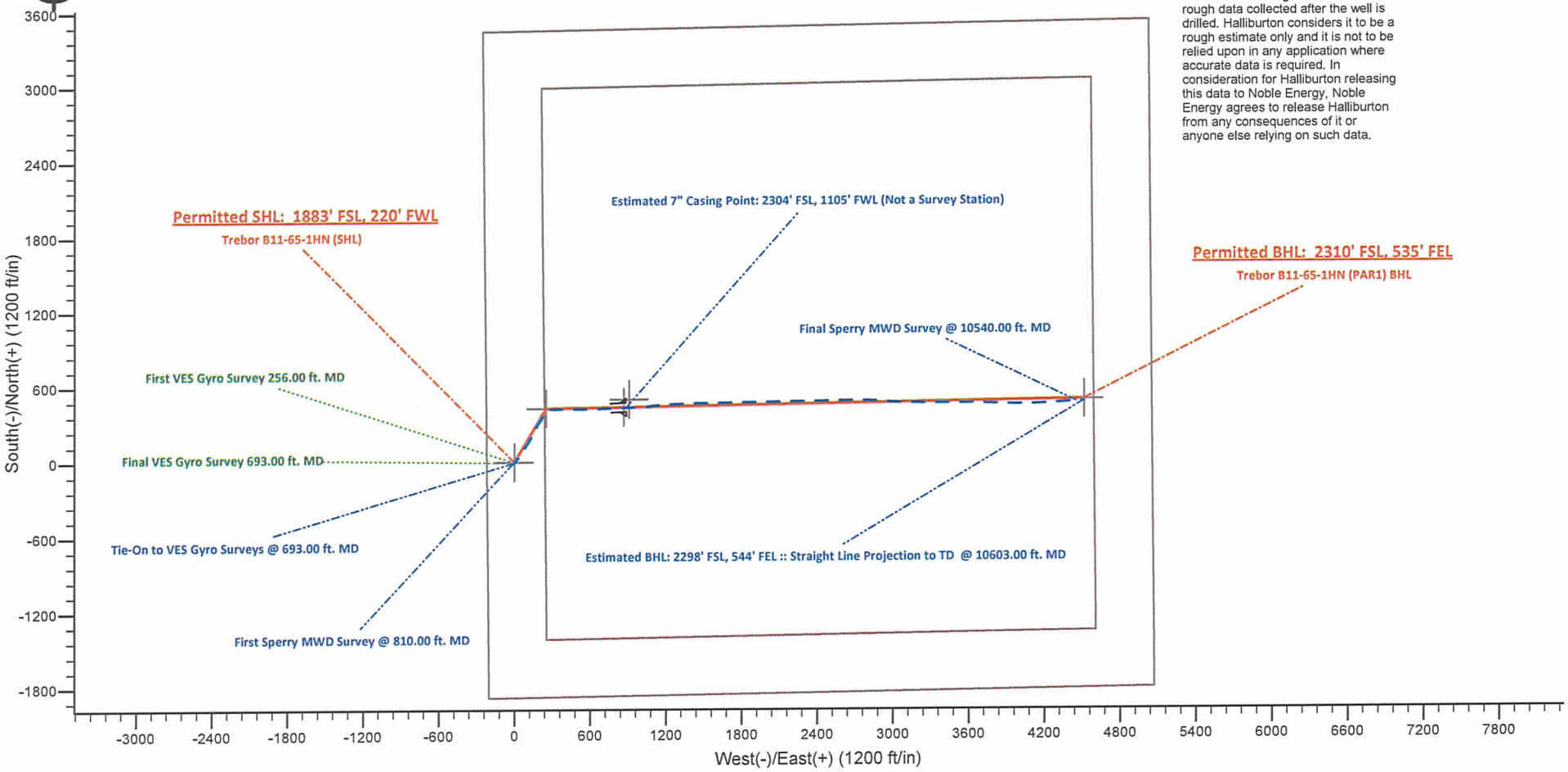
Project: Weld County, CO (NAD 83)
Site: Sec. 11-T5N-R64W
Well: Trebor B11-65-1HN (B11 PAD)

Noble Energy

HALLIBURTON
Sperry Drilling





Halliburton Energy Services, Inc. ("Halliburton") recently completed directional drilling and MWD operations at the "Trebor B11-65-1HN" 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.

Project: Weld County, CO (NAD 83)
Site: Sec. 11-T5N-R64W
Well: Trebor B11-65-1HN (B11 PAD)

Noble Energy

HALLIBURTON
Sperry Drilling

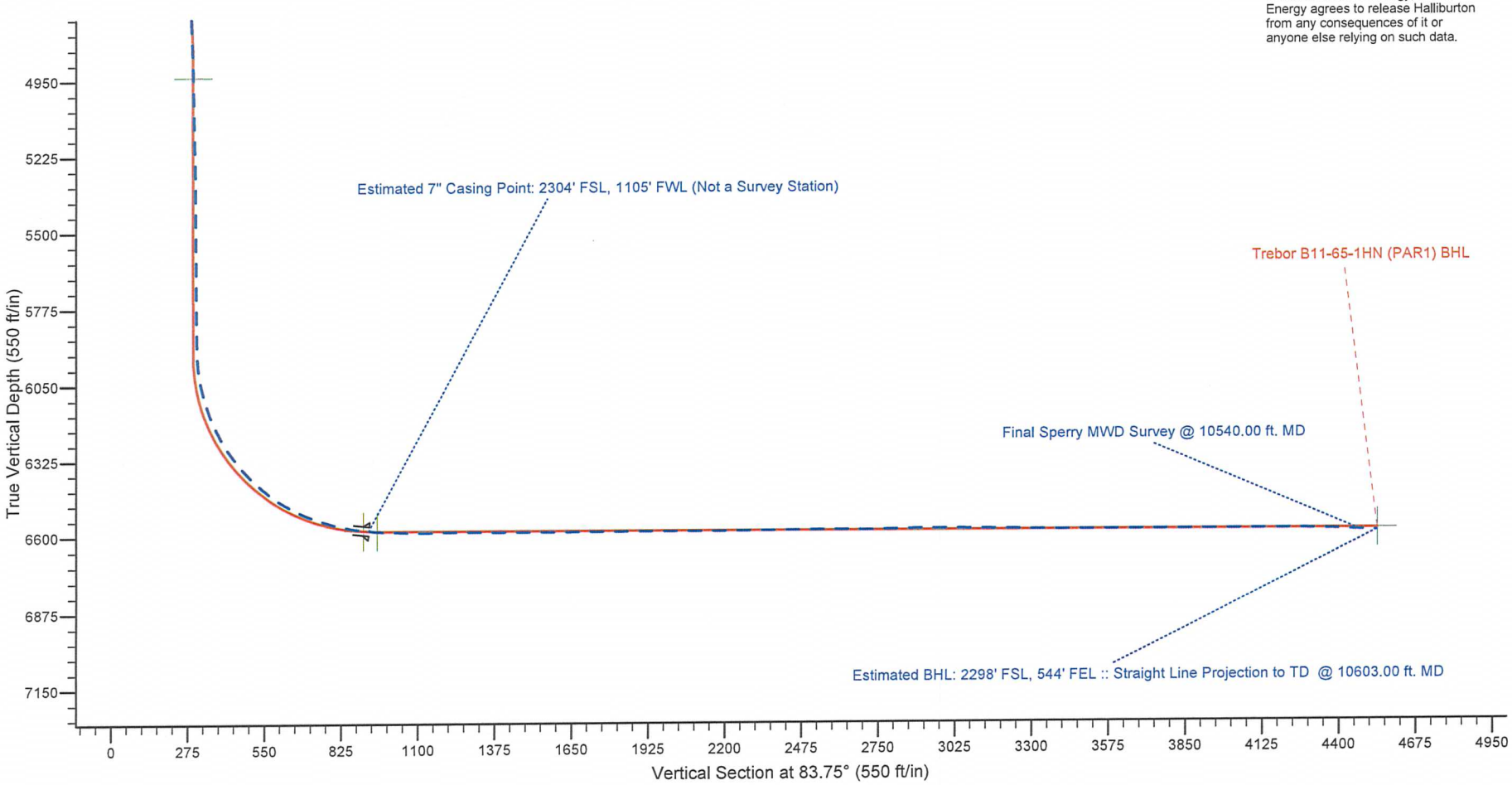
Azimuths to Grid North
True North: -0.63°
Magnetic North: 7.90°

Magnetic Field
Strength: 52860.1snT
Dip Angle: 67.00°
Date: 5/21/2013
Model: BGGM2012

LEGEND

Trebor B11-65-1HN (B11 PAD), PAR1
Vaughn ESS and Sperry MWD Survey

Halliburton Energy Services, Inc. ("Halliburton") recently completed directional drilling and MWD operations at the "Trebor B11-65-1HN" 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.



Noble Energy

Weld County, CO (NAD 83)
Sec. 11-T5N-R64W
Trebor B11-65-1HN

Design: Vaughn ESS and Sperry MWD Survey

Sperry Drilling Services

Final Survey Report

17 June, 2013

Well Coordinates: 1,394,285.91 N, 3,271,144.70 E (40° 24' 41.87" N, 104° 31' 34.54" W)
Ground Level: 4,603.00 ft

Local Coordinate Origin:	Centered on Well Trebor B11-65-1HN (B11 PAD) - S
Viewing Datum:	RKB 24 ft. @ 4627.00ft (H&P 315)
TVDs to System:	N
North Reference:	Grid
Unit System:	API - US Survey Feet - Custom

Geodetic Scale Factor Applied
Version: 2003.16 Build: 43I

HALLIBURTON

Design Report for Trebor B11-65-1HN (B11 PAD) - Vaughn ESS and Sperry 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
256.00	1.00	235.50	255.99	-1.27	-1.84	-1.97	0.39
First VES Gyro Survey 256.00 ft. MD							
498.00	0.70	251.40	497.96	-2.93	-4.98	-5.27	0.16
693.00	0.70	228.30	692.95	-4.11	-7.00	-7.41	0.14
Final VES Gyro Survey 693.00 ft. MD - Tie-On to VES Gyro Surveys @ 693.00 ft. MD							
810.00	0.30	304.47	809.94	-4.41	-7.79	-8.22	0.59
First Sperry MWD Survey @ 810.00 ft. MD							
903.00	0.31	246.48	902.94	-4.37	-8.22	-8.65	0.32
994.00	0.43	296.05	993.94	-4.32	-8.75	-9.17	0.36
1,086.00	0.18	298.96	1,085.94	-4.10	-9.19	-9.58	0.27
1,179.00	0.39	287.58	1,178.94	-3.93	-9.62	-9.99	0.23
1,271.00	0.48	265.14	1,270.93	-3.87	-10.30	-10.66	0.21
1,363.00	1.03	176.24	1,362.93	-4.73	-10.63	-11.08	1.23
1,458.00	1.20	191.23	1,457.91	-6.55	-10.77	-11.42	0.35
1,553.00	0.71	193.66	1,552.90	-8.10	-11.10	-11.92	0.52
1,647.00	0.69	152.83	1,646.89	-9.17	-10.98	-11.91	0.52
1,742.00	0.19	228.08	1,741.89	-9.79	-10.83	-11.84	0.70
1,837.00	0.62	239.92	1,836.89	-10.15	-11.40	-12.43	0.46
1,932.00	0.45	196.42	1,931.88	-10.76	-11.95	-13.05	0.45
2,027.00	0.79	232.19	2,026.88	-11.52	-12.57	-13.75	0.53
2,122.00	0.57	291.84	2,121.87	-11.75	-13.53	-14.73	0.74
2,217.00	1.52	18.97	2,216.86	-10.38	-13.55	-14.61	1.68
2,312.00	3.91	53.41	2,311.75	-7.26	-10.54	-11.27	2.94
2,407.00	3.90	51.55	2,406.53	-3.32	-5.41	-5.74	0.13
2,502.00	5.37	46.26	2,501.22	1.76	0.33	0.52	1.61
2,597.00	7.24	37.44	2,595.64	9.59	7.18	8.18	2.21
2,692.00	9.09	41.65	2,689.67	19.95	15.81	17.89	2.05
2,787.00	11.61	39.50	2,783.12	32.94	26.88	30.31	2.68
2,882.00	11.75	32.59	2,876.16	48.47	38.17	43.22	1.48
2,977.00	13.58	30.07	2,968.84	66.27	48.97	55.90	2.01
3,072.00	15.17	30.26	3,060.87	86.66	60.82	69.90	1.67
3,166.00	11.62	33.72	3,152.30	105.16	72.28	83.30	3.87
3,261.00	12.29	34.44	3,245.23	121.46	83.31	96.04	0.72
3,356.00	14.04	35.02	3,337.73	139.24	95.64	110.24	1.85
3,451.00	14.41	31.62	3,429.82	158.74	108.45	125.10	0.96
3,546.00	15.08	29.78	3,521.69	179.53	120.79	139.63	0.86
3,641.00	17.59	27.33	3,612.85	203.01	133.52	154.84	2.74
3,736.00	19.87	27.22	3,702.82	230.13	147.49	171.69	2.40
3,831.00	18.81	26.73	3,792.45	258.16	161.77	188.93	1.13
3,926.00	15.75	28.83	3,883.16	283.14	174.88	204.68	3.29
4,021.00	14.24	31.13	3,974.92	304.44	187.13	219.19	1.71
4,116.00	12.40	32.72	4,067.36	323.03	198.69	232.70	1.97
4,211.00	10.76	33.36	4,160.42	339.02	209.08	244.77	1.73
4,306.00	10.05	29.36	4,253.86	353.65	218.02	255.25	1.07
4,401.00	9.66	30.80	4,347.46	367.72	226.17	264.88	0.49
4,496.00	7.18	32.21	4,441.43	379.59	233.41	273.38	2.62
4,591.00	4.86	34.38	4,535.90	387.94	238.85	279.69	2.45
4,686.00	4.99	28.66	4,630.55	394.88	243.11	284.68	0.53
4,781.00	3.86	33.28	4,725.26	401.18	246.84	289.08	1.25

Design Report for Trebor B11-65-1HN (B11 PAD) - Vaughn ESS and Sperry MWD Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
4,876.00	3.17	32.77	4,820.08	406.06	250.02	292.77	0.73
4,970.00	2.77	39.30	4,913.96	410.01	252.86	296.03	0.56
5,065.00	1.96	24.82	5,008.88	413.26	255.00	298.50	1.05
5,350.00	1.15	49.73	5,293.77	419.53	259.23	303.39	0.36
5,635.00	0.68	17.65	5,578.74	422.99	261.92	306.44	0.24
5,824.00	0.74	9.28	5,767.72	425.26	262.46	307.23	0.06
6,010.00	1.90	81.44	5,953.68	426.91	265.70	310.63	0.98
6,058.00	7.99	91.97	6,001.48	426.91	269.83	314.73	12.77
6,105.00	12.14	93.99	6,047.75	426.46	278.03	322.83	8.86
6,153.00	16.00	96.56	6,094.30	425.35	289.64	334.25	8.14
6,200.00	19.32	93.46	6,139.08	424.14	303.84	348.23	7.34
6,248.00	22.70	88.91	6,183.88	423.84	321.03	365.29	7.81
6,295.00	26.81	86.20	6,226.56	424.71	340.68	384.92	9.07
6,343.00	31.28	87.17	6,268.51	426.04	363.94	408.19	9.36
6,390.00	35.88	89.23	6,307.66	426.83	389.91	434.09	10.08
6,438.00	39.34	91.53	6,345.68	426.61	419.20	463.18	7.78
6,484.00	43.79	91.40	6,380.09	425.84	449.70	493.41	9.68
6,532.00	48.05	91.09	6,413.47	425.09	484.17	527.59	8.89
6,579.00	51.58	89.28	6,443.79	424.99	520.06	563.27	8.07
6,627.00	56.20	88.79	6,472.07	425.65	558.83	601.87	9.66
6,674.00	60.78	89.68	6,496.63	426.17	598.88	641.74	9.88
6,722.00	65.98	88.71	6,518.13	426.79	641.77	684.45	10.98
6,769.00	69.58	88.46	6,535.90	427.86	685.26	727.79	7.68
6,817.00	72.89	88.20	6,551.34	429.19	730.68	773.09	6.91
6,864.00	77.18	87.97	6,563.48	430.70	776.05	818.36	9.14
6,931.00	82.06	88.34	6,575.55	432.82	841.90	884.05	7.30
6,973.00	84.35	87.55	6,580.52	434.32	883.58	925.64	5.75
Estimated 7" Casing Point: 2304' FSL, 1105' FWL (Not a Survey Station)							
7,035.00	87.72	86.39	6,584.81	437.59	945.33	987.38	5.75
7,130.00	89.35	86.85	6,587.23	443.19	1,040.13	1,082.22	1.78
7,224.00	91.45	85.11	6,586.58	449.78	1,133.89	1,176.14	2.90
7,319.00	89.04	86.05	6,586.17	457.10	1,228.60	1,271.08	2.72
7,414.00	90.12	88.50	6,586.87	461.62	1,323.48	1,365.89	2.82
7,509.00	89.97	88.26	6,586.79	464.30	1,418.44	1,460.58	0.30
7,604.00	90.00	89.18	6,586.82	466.42	1,513.42	1,555.22	0.97
7,699.00	90.15	88.98	6,586.69	467.95	1,608.41	1,649.81	0.26
7,794.00	90.28	89.01	6,586.34	469.61	1,703.39	1,744.41	0.14
7,888.00	90.28	89.18	6,585.88	471.10	1,797.38	1,838.00	0.18
7,983.00	90.25	89.19	6,585.44	472.45	1,892.37	1,932.57	0.03
8,078.00	90.22	88.89	6,585.05	474.04	1,987.35	2,027.17	0.32
8,173.00	90.06	89.02	6,584.82	475.77	2,082.34	2,121.77	0.22
8,268.00	90.19	89.25	6,584.61	477.21	2,177.33	2,216.35	0.28
8,363.00	90.62	89.31	6,583.94	478.40	2,272.32	2,310.91	0.46
8,458.00	90.71	89.32	6,582.84	479.54	2,367.30	2,405.45	0.10
8,552.00	90.49	89.06	6,581.85	480.87	2,461.29	2,499.03	0.36
8,647.00	90.22	88.44	6,581.26	482.94	2,556.26	2,593.66	0.71
8,742.00	89.14	88.64	6,581.79	485.36	2,651.23	2,688.33	1.16
8,837.00	91.32	90.39	6,581.41	486.16	2,746.22	2,782.83	2.94
8,932.00	91.33	93.45	6,579.21	482.98	2,841.13	2,876.83	3.22
9,027.00	89.69	93.70	6,578.37	477.06	2,935.93	2,970.43	1.75
9,122.00	89.17	92.18	6,579.31	472.19	3,030.80	3,064.20	1.69

Design Report for Trebor B11-65-1HN (B11 PAD) - Vaughn ESS and Sperry MWD Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
9,216.00	89.60	91.09	6,580.32	469.51	3,124.76	3,157.31	1.25
9,311.00	89.01	90.77	6,581.48	467.96	3,219.74	3,251.55	0.71
9,406.00	89.63	90.83	6,582.60	466.64	3,314.72	3,345.83	0.66
9,501.00	89.66	88.65	6,583.19	467.07	3,409.71	3,440.30	2.29
9,596.00	89.94	90.18	6,583.52	468.04	3,504.70	3,534.83	1.64
9,691.00	89.82	91.29	6,583.72	466.82	3,599.69	3,629.12	1.18
9,786.00	90.06	92.11	6,583.82	464.00	3,694.65	3,723.21	0.90
9,881.00	90.15	91.36	6,583.65	461.12	3,789.61	3,817.29	0.80
9,976.00	89.97	91.52	6,583.55	458.74	3,884.58	3,911.43	0.25
10,071.00	90.00	90.50	6,583.57	457.06	3,979.56	4,005.67	1.07
10,166.00	90.15	89.74	6,583.45	456.86	4,074.56	4,100.08	0.82
10,261.00	89.97	88.53	6,583.35	458.30	4,169.55	4,194.66	1.29
10,356.00	88.92	86.03	6,584.27	462.81	4,264.43	4,289.46	2.85
10,451.00	88.40	85.95	6,586.49	469.45	4,359.17	4,384.36	0.55
10,540.00	87.41	85.64	6,589.74	475.97	4,447.87	4,473.25	1.17
Final Sperry MWD Survey @ 10540.00 ft. MD							
10,603.00	87.41	85.64	6,592.59	480.75	4,510.62	4,536.15	0.00

Estimated BHL: 2298' FSL, 544' FEL :: Straight Line Projection to TD @ 10603.00 ft. MD

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
256.00	255.99	-1.27	-1.84	First VES Gyro Survey 256.00 ft. MD
693.00	692.95	-4.11	-7.00	Final VES Gyro Survey 693.00 ft. MD
693.00	692.95	-4.11	-7.00	Tie-On to VES Gyro Surveys @ 693.00 ft. MD
810.00	809.94	-4.41	-7.79	First Sperry MWD Survey @ 810.00 ft. MD
6,973.00	6,580.52	434.32	883.58	Estimated 7" Casing Point: 2304' FSL, 1105' FWL (Not a Survey Station)
10,540.00	6,589.74	475.97	4,447.87	Final Sperry MWD Survey @ 10540.00 ft. MD
10,603.00	6,592.59	480.75	4,510.62	Estimated BHL: 2298' FSL, 544' FEL :: Straight Line Projection to TD @ 10603.00 ft. MD

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (ft)	Origin +E/-W (ft)	Start TVD (ft)
Target	Trebor B11-65-1HN (PAR1) BHL	83.75	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
256.00	693.00	Vaughn ESS Survey	Flexi-Shot
810.00	6,973.00	Sperry MWD Surveys	MWD
6,973.00	10,603.00	Sperry MWD Surveys	MWD

Design Report for Trebor B11-65-1HN (B11 PAD) - Vaughn ESS and Sperry MWD Survey

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
6,973.00	6,580.52	7" Casing PT	7	8-3/4

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
Trebor B11-65-1HN		0.00	6,580.39	436.71	864.32	1,394,722.60	3,272,008.99	40.412803	-104.523139
- actual wellpath misses target center by 3.69ft at 6953.96ft MD (6578.47 TVD, 433.57 N, 864.66 E)									
- Point									
Trebor B11-65-1HN		0.00	4,938.04	427.00	250.00	1,394,712.89	3,271,394.69	40.412794	-104.525345
- actual wellpath misses target center by 16.49ft at 4994.58ft MD (4938.51 TVD, 410.91 N, 253.56 E)									
- Point									
(B11 PAD) Sec.	0.00	0.00	-2.00	0.00	0.00	1,394,285.91	3,271,144.70	40.411630	-104.526260
- actual wellpath misses target center by 2.00ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1				-199.32	-1,885.79	1,392,400.19	3,270,945.39		
Point 2				5,069.28	-1,809.21	1,392,476.77	3,276,213.78		
Point 3				5,020.72	3,527.76	1,397,813.53	3,276,165.22		
Point 4				-252.19	3,440.19	1,397,725.96	3,270,892.52		
Trebor B11-65-1HN	0.00	0.00	0.00	0.00	0.00	1,394,285.91	3,271,144.70	40.411630	-104.526260
- actual wellpath hits target center									
- Point									
Trebor B11-65-1HN		0.00	4,938.04	427.01	250.00	1,394,712.90	3,271,394.69	40.412794	-104.525345
- actual wellpath misses target center by 16.50ft at 4994.58ft MD (4938.51 TVD, 410.91 N, 253.56 E)									
- Point									
(B11 PAD) Sec.	0.00	0.00	-2.00	0.00	0.00	1,394,285.91	3,271,144.70	40.411630	-104.526260
- actual wellpath misses target center by 2.00ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1				255.68	-1,419.79	1,392,866.17	3,271,400.37		
Point 2				4,606.28	-1,357.21	1,392,928.75	3,275,750.80		
Point 3				4,564.72	3,059.76	1,397,345.55	3,275,709.24		
Point 4				212.81	2,988.19	1,397,273.98	3,271,357.50		
Trebor B11-65-1HN		0.00	6,583.00	494.44	4,511.60	1,394,780.33	3,275,656.13	40.412850	-104.510040
- actual wellpath misses target center by 16.75ft at 10603.00ft MD (6592.59 TVD, 480.75 N, 4510.62 E)									
- Point									
Trebor B11-65-1HN		0.00	6,580.39	499.58	907.39	1,394,785.47	3,272,052.06	40.412974	-104.522982
- actual wellpath misses target center by 64.11ft at 7000.17ft MD (6582.84 TVD, 435.60 N, 910.61 E)									
- Point									
Trebor B11-65-1HN	0.00	0.00	6,583.00	494.44	4,511.60	1,394,780.33	3,275,656.13	40.412850	-104.510040
- actual wellpath misses target center by 16.75ft at 10603.00ft MD (6592.59 TVD, 480.75 N, 4510.62 E)									
- Point									

North Reference Sheet for Sec. 11-T5N-R64W - Trebor B11-65-1HN (B11 PAD)

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. @ 4627.00ft (H&P 315). Northing and Easting are relative to Trebor B11-65-1HN (B11 PAD) - Slot A1

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 -105.500000°, Longitude Origin:0.000000°, Latitude Origin:40.783333°

False Easting: 3,000,000.00ft, False Northing: 1,000,000.00ft, Scale Reduction: 0.99996078

Grid Coordinates of Well: 1,394,285.91 ft N, 3,271,144.70 ft E

Geographical Coordinates of Well: 40° 24' 41.87" N, 104° 31' 34.54" W

Grid Convergence at Surface is: 0.63°

Based upon Minimum Curvature type calculations, at a Measured Depth of 10,603.00ft

the Bottom Hole Displacement is 4,536.17ft in the Direction of 83.92° (Grid).

Magnetic Convergence at surface is: -7.90° (21 May 2013, , BGGM2012)