

SPERRY-SUN DRILLING SERVICES

CERTIFIED SURVEY WORK SHEET

OPERATOR:	Noble Energy
WELL:	Lazy D ZN03-15H
FIELD:	Wattenburg
RIG:	H&P #315
LEGALS:	Sec-3-T11N-R66W
COUNTY:	Weld
STATE:	CO
CAL. METHOD:	Grid North
MAG. DECL. APPLIED:	8.94
VERTICAL SEC. DIR. :	134.970

SSDS Job Number :	7815650
Start Date of Job :	12/5/2010
End Date of Job :	12/23/2010
Lead Directional Driller:	Alex Akpoklere
	Johnny Alexander
Other SSDS DD's :	Robert Shope
SSDS MWD Engineers :	Kris Ross
	Macro Rolong

	Main Hole >>>>>>>	1st Side Track >>>>>>>	2nd Side Track >>>>>>>	3rd Side Track >>>>>>>	4th Side Track >>>>>>>
ESS Survey	Tie On	Tie On	Tie On	Tie On	Tie On
First Survey Depth	GYRO				
Last Survey Depth					
KOP Depth/Sidetrack MD	8287.00 KOP	KOP-ST1	KOP-ST2	KOP-ST3	KOP-ST4
First Survey Depth	242.00 MWD	MWD	MWD	MWD	MWD
Last Survey Depth	14289.00 MWD	MWD	MWD	MWD	MWD
Bit Extrapolation to TD	14343.00 T.D.	T.D.	T.D.	T.D.	T.D.
The following Sperry Sun Drilling Services personnel listed below, do certify the above survey information to be accurate :					
Print Name :	Alex Akpokiere	Print Nam	Kris Ross	Print Name	Marco Rolong
Sign Name :		Sign Name :		Sign Name :	
Print Name :		Print Name :		Print Name :	
Sign Name :		Sign Name :		Sign Name :	
Examples of Survey Types:	TieOn Tie On to Surface Casing (Assumed Vertical), Tie On to existing MWD Survey (prior drilled hole) MWD Sperry Sun Drilling Services (SSDS) Measurement While Drilling (MWD) Survey's ESS Sperry Sun Drilling Services (SSDS) Electronic Survey System (ESS) Survey's Gyro Gyro Survey's ; Provided by third party vendor, or by Sperry Sun Drilling Services (SSDS) SS Single Shot (SS) Survey's : Provided by Sperry Sun Drilling Services (SSDS) or third party vendor.				

Noble Energy

Weld County, CO (NAD 83)

Sec. 3-T11N-R66W

Lazy D ZN03-15H

Plan #1

Design: MWD Survey

Sperry Drilling Services

Final Survey Report

21 March, 2011

Well Coordinates: 1,591,812.45 N, 3,201,594.16 E (40° 57' 20.20" N, 104° 46' 12.65" W)

Ground Level: 6,048.00 ft

Local Coordinate Origin:

Centered on Well Lazy D ZN03-15H

Viewing Datum:

RKB 24' @ 6072.00ft (Original Well Elev)

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 Lazy D ZN03-15H - 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
242.00	0.52	323.95	242.00	0.89	-0.65	-1.08	0.21
First Sperry MWD Survey							
426.00	0.26	12.72	425.99	1.97	-1.05	-2.13	0.22
518.00	0.40	333.62	517.99	2.46	-1.14	-2.55	0.28
610.00	0.48	340.59	609.99	3.11	-1.41	-3.20	0.10
702.00	0.44	331.69	701.99	3.79	-1.71	-3.89	0.09
793.00	0.32	323.03	792.98	4.30	-2.03	-4.47	0.15
885.00	0.30	341.64	884.98	4.73	-2.26	-4.94	0.11
977.00	0.20	310.25	976.98	5.06	-2.46	-5.32	0.18
1,069.00	0.29	266.85	1,068.98	5.15	-2.81	-5.63	0.22
1,344.00	0.18	314.22	1,343.98	5.42	-3.82	-6.53	0.08
1,438.00	0.10	137.24	1,437.98	5.46	-3.87	-6.59	0.30
1,533.00	0.15	227.15	1,532.98	5.32	-3.90	-6.52	0.19
1,722.00	0.35	167.35	1,721.98	4.58	-3.96	-6.04	0.16
1,816.00	0.50	196.86	1,815.97	3.91	-4.01	-5.60	0.28
2,005.00	0.27	153.75	2,004.97	2.72	-4.05	-4.79	0.19
2,195.00	0.23	197.06	2,194.97	1.96	-3.97	-4.19	0.10
2,289.00	0.26	192.86	2,288.97	1.57	-4.07	-3.99	0.04
2,384.00	0.33	186.48	2,383.97	1.09	-4.15	-3.70	0.08
2,419.00	0.39	127.47	2,418.97	0.91	-4.07	-3.52	1.02
2,547.00	0.15	134.31	2,546.96	0.53	-3.60	-2.92	0.19
2,783.00	0.67	217.29	2,782.96	-0.78	-4.22	-2.43	0.28
2,877.00	0.72	218.43	2,876.95	-1.68	-4.92	-2.29	0.06
2,972.00	0.68	211.53	2,971.94	-2.63	-5.58	-2.09	0.10
3,066.00	0.84	198.32	3,065.94	-3.76	-6.09	-1.65	0.25
3,161.00	0.45	213.80	3,160.93	-4.73	-6.52	-1.27	0.45
3,255.00	0.47	179.62	3,254.93	-5.42	-6.72	-0.92	0.29
3,350.00	0.38	169.66	3,349.92	-6.12	-6.66	-0.38	0.12
3,539.00	0.44	215.41	3,538.92	-7.33	-6.97	0.25	0.17
3,633.00	0.26	247.58	3,632.92	-7.71	-7.37	0.23	0.28
3,728.00	0.29	265.67	3,727.92	-7.81	-7.81	-0.01	0.10
3,822.00	0.15	54.46	3,821.92	-7.75	-7.95	-0.14	0.45
3,917.00	0.32	22.42	3,916.92	-7.44	-7.75	-0.23	0.22
4,011.00	0.20	60.46	4,010.92	-7.11	-7.50	-0.28	0.22
4,106.00	0.70	313.69	4,105.91	-6.63	-7.78	-0.82	0.82
4,200.00	0.92	320.63	4,199.90	-5.65	-8.67	-2.14	0.26
4,295.00	0.94	323.50	4,294.89	-4.43	-9.62	-3.67	0.05
4,389.00	1.16	318.81	4,388.88	-3.10	-10.71	-5.39	0.25
4,484.00	1.24	315.97	4,483.85	-1.63	-12.05	-7.37	0.10
4,578.00	1.23	310.29	4,577.83	-0.25	-13.53	-9.40	0.13
4,862.00	1.17	308.59	4,861.77	3.53	-18.12	-15.31	0.02
4,956.00	1.09	310.23	4,955.75	4.70	-19.56	-17.16	0.09
5,145.00	0.58	358.14	5,144.73	6.82	-20.96	-19.65	0.44
5,240.00	0.65	262.80	5,239.73	7.23	-21.51	-20.33	0.96
5,334.00	0.61	118.06	5,333.73	6.93	-21.60	-20.18	1.28
5,523.00	0.84	106.61	5,522.71	6.06	-19.38	-18.00	0.14
5,806.00	0.67	125.58	5,805.69	4.51	-16.05	-14.54	0.11
5,901.00	0.60	98.57	5,900.68	4.11	-15.10	-13.59	0.32
5,995.00	0.59	145.33	5,994.68	3.64	-14.34	-12.72	0.50

Design Report for Lazy D ZN03-15H - MWD Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
6,089.00	0.50	113.33	6,088.67	3.08	-13.69	-11.86	0.33
6,278.00	0.57	192.62	6,277.67	1.83	-13.14	-10.59	0.36
6,373.00	0.47	179.99	6,372.66	0.98	-13.24	-10.06	0.16
6,656.00	0.43	264.82	6,655.66	-0.27	-14.30	-9.92	0.21
6,846.00	1.13	341.25	6,845.64	1.44	-15.61	-12.06	0.58
7,129.00	0.97	62.96	7,128.61	5.17	-14.37	-13.82	0.49
7,318.00	1.18	59.18	7,317.58	6.89	-11.28	-12.85	0.12
7,602.00	1.26	93.97	7,601.51	8.17	-5.65	-9.78	0.26
7,886.00	1.09	103.33	7,885.46	7.34	0.09	-5.12	0.09
8,075.00	1.24	111.60	8,074.42	6.17	3.74	-1.71	0.12
8,189.00	1.34	110.04	8,188.39	5.26	6.14	0.63	0.09
8,249.00	1.19	106.00	8,248.37	4.85	7.40	1.81	0.29
8,302.00	3.80	118.63	8,301.32	3.85	9.47	3.98	5.00
8,333.00	7.34	122.68	8,332.17	2.29	12.04	6.90	11.48
8,365.00	10.34	131.16	8,363.78	-0.70	15.92	11.76	10.20
8,396.00	11.73	135.77	8,394.21	-4.79	20.22	17.69	5.31
8,428.00	13.71	141.06	8,425.43	-10.07	24.87	24.71	7.17
8,459.00	14.82	142.31	8,455.47	-16.07	29.60	32.30	3.72
8,491.00	16.72	139.40	8,486.26	-22.80	35.10	40.95	6.43
8,522.00	18.97	138.54	8,515.77	-29.97	41.34	50.43	7.31
8,554.00	21.33	137.13	8,545.81	-38.13	48.74	61.43	7.53
8,586.00	24.36	136.29	8,575.30	-47.17	57.27	73.85	9.52
8,617.00	25.67	137.72	8,603.39	-56.76	66.20	86.95	4.65
8,649.00	28.41	138.99	8,631.89	-67.63	75.86	101.47	8.75
8,680.00	31.35	142.40	8,658.77	-79.59	85.62	116.83	10.95
8,712.00	33.84	143.39	8,685.72	-93.34	96.02	133.90	7.96
8,743.00	36.29	141.12	8,711.10	-107.41	106.93	151.56	8.95
8,775.00	39.24	140.19	8,736.39	-122.56	119.35	171.06	9.39
8,806.00	43.03	137.79	8,759.74	-137.94	132.74	191.40	13.24
8,838.00	45.95	138.29	8,782.56	-154.61	147.73	213.79	9.19
8,869.00	48.14	140.07	8,803.69	-171.78	162.56	236.41	8.22
8,901.00	51.29	138.42	8,824.37	-190.27	178.50	260.75	10.60
8,932.00	53.03	136.12	8,843.39	-208.24	195.11	285.21	8.11
8,964.00	55.11	134.76	8,862.17	-226.70	213.29	311.12	7.35
8,995.00	57.48	134.24	8,879.37	-244.77	231.69	336.90	7.77
9,027.00	59.22	133.87	8,896.16	-263.71	251.26	364.14	5.53
9,058.00	60.92	134.14	8,911.63	-282.38	270.58	391.00	5.54
9,090.00	63.07	134.80	8,926.65	-302.17	290.74	419.25	6.96
9,113.00	64.22	133.98	8,936.86	-316.59	305.47	439.86	5.93
9,145.00	66.70	134.41	8,950.15	-336.88	326.34	468.96	7.85
9,176.00	70.66	136.78	8,961.42	-357.51	346.54	497.83	14.62
9,208.00	74.25	135.99	8,971.07	-379.59	367.58	528.33	11.46
9,239.00	76.27	136.58	8,978.96	-401.26	388.30	558.30	6.77
9,271.00	79.58	133.94	8,985.65	-423.48	410.32	589.58	13.12
9,302.00	82.57	133.43	8,990.46	-444.63	432.46	620.19	9.78
9,325.00	84.39	136.13	8,993.07	-460.72	448.68	643.04	14.09
9,411.00	86.35	132.96	9,000.01	-520.84	509.77	728.74	4.32
9,492.00	88.70	134.86	9,003.51	-576.96	568.06	809.65	3.73
9,588.00	91.73	136.61	9,003.15	-645.69	635.05	905.62	3.64
9,684.00	91.55	137.35	9,000.40	-715.85	700.52	1,001.52	0.79
9,780.00	89.20	134.84	8,999.78	-785.01	767.08	1,097.49	3.58

Design Report for Lazy D ZN03-15H - MWD Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
9,876.00	91.36	133.94	8,999.31	-852.16	835.68	1,193.47	2.44
9,971.00	90.68	134.49	8,997.62	-918.39	903.76	1,288.45	0.92
10,067.00	90.49	135.96	8,996.64	-986.54	971.37	1,384.44	1.54
10,163.00	92.23	137.17	8,994.36	-1,056.22	1,037.35	1,480.37	2.21
10,259.00	92.97	137.13	8,990.00	-1,126.53	1,102.57	1,576.20	0.77
10,354.00	91.36	135.06	8,986.41	-1,194.92	1,168.39	1,671.11	2.76
10,450.00	90.93	136.31	8,984.49	-1,263.60	1,235.45	1,767.08	1.38
10,545.00	92.41	136.32	8,981.73	-1,332.26	1,301.03	1,862.01	1.56
10,641.00	90.93	134.59	8,978.93	-1,400.65	1,368.34	1,957.96	2.37
10,737.00	90.80	134.60	8,977.48	-1,468.04	1,436.69	2,053.95	0.14
10,832.00	91.98	134.30	8,975.17	-1,534.55	1,504.49	2,148.91	1.28
10,928.00	92.60	131.82	8,971.34	-1,600.04	1,574.57	2,244.78	2.66
11,023.00	89.94	130.44	8,969.23	-1,662.50	1,646.10	2,339.53	3.15
11,119.00	90.56	132.44	8,968.81	-1,726.03	1,718.06	2,435.34	2.18
11,214.00	90.56	127.11	8,967.88	-1,786.79	1,791.04	2,529.91	5.61
11,310.00	90.43	123.29	8,967.05	-1,842.11	1,869.47	2,624.50	3.98
11,406.00	90.74	123.53	8,966.07	-1,894.97	1,949.60	2,718.54	0.41
11,501.00	89.94	132.22	8,965.51	-1,953.24	2,024.52	2,812.72	9.19
11,597.00	91.79	139.47	8,964.06	-2,022.06	2,091.34	2,908.63	7.79
11,692.00	93.41	139.83	8,959.75	-2,094.38	2,152.78	3,003.22	1.75
11,788.00	91.24	135.99	8,955.85	-2,165.54	2,217.06	3,098.99	4.59
11,884.00	92.84	134.86	8,952.44	-2,233.88	2,284.39	3,194.92	2.04
11,978.00	90.12	135.32	8,950.01	-2,300.42	2,350.73	3,288.88	2.93
12,074.00	92.66	139.22	8,947.68	-2,370.90	2,415.83	3,384.75	4.85
12,169.00	91.17	138.69	8,944.50	-2,442.51	2,478.18	3,479.46	1.66
12,265.00	92.23	140.31	8,941.66	-2,515.47	2,540.49	3,575.11	2.02
12,360.00	93.16	138.76	8,937.19	-2,587.66	2,602.08	3,669.70	1.90
12,455.00	90.06	133.59	8,934.52	-2,656.14	2,667.81	3,764.60	6.34
12,550.00	89.44	133.51	8,934.93	-2,721.59	2,736.66	3,859.57	0.66
12,645.00	90.19	138.25	8,935.24	-2,789.77	2,802.77	3,954.53	5.05
12,740.00	92.66	142.23	8,932.88	-2,862.76	2,863.50	4,049.07	4.93
12,836.00	93.90	143.44	8,927.38	-2,939.13	2,921.40	4,144.01	1.80
12,931.00	92.91	142.88	8,921.74	-3,015.02	2,978.26	4,237.88	1.20
13,026.00	92.35	140.21	8,917.38	-3,089.33	3,037.27	4,332.14	2.87
13,122.00	90.31	138.99	8,915.15	-3,162.42	3,099.47	4,427.80	2.48
13,217.00	90.43	137.15	8,914.54	-3,233.09	3,162.95	4,522.65	1.94
13,313.00	89.69	135.29	8,914.44	-3,302.40	3,229.36	4,618.63	2.09
13,409.00	90.31	134.96	8,914.44	-3,370.43	3,297.10	4,714.62	0.73
13,504.00	90.06	135.89	8,914.13	-3,438.10	3,363.77	4,809.62	1.01
13,600.00	92.10	134.59	8,912.32	-3,506.25	3,431.35	4,905.59	2.52
13,696.00	92.66	132.31	8,908.34	-3,572.21	3,500.98	5,001.47	2.44
13,792.00	92.72	129.70	8,903.83	-3,635.12	3,573.34	5,097.13	2.72
13,888.00	89.94	127.80	8,901.60	-3,695.18	3,648.18	5,192.52	3.51
13,984.00	87.96	127.58	8,903.36	-3,753.86	3,724.13	5,287.73	2.08
14,079.00	89.51	132.58	8,905.46	-3,814.99	3,796.77	5,382.33	5.51
14,175.00	91.24	136.61	8,904.83	-3,882.38	3,865.12	5,478.30	4.57
14,270.00	90.68	137.32	8,903.24	-3,951.80	3,929.94	5,573.23	0.95
14,289.00	89.94	135.53	8,903.14	-3,965.57	3,943.04	5,592.22	10.19
Final Sperry MWD Survey							
14,343.00	89.94	135.53	8,903.19	-4,004.10	3,980.86	5,646.22	0.00
Survey Projection to TD - Estimated BHL: 704' FSL, 732' FEL							

Design Report for Lazy D ZN03-15H - MWD Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
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Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
242.00	242.00	0.89	-0.65	First Sperry MWD Survey
14,289.00	8,903.14	-3,965.57	3,943.04	Final Sperry MWD Survey
14,343.00	8,903.19	-4,004.10	3,980.86	Survey Projection to TD
14,343.00	8,903.19	-4,004.10	3,980.86	Estimated BHL: 704' FSL, 732' FEL

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/_S (ft)	+E/-W (ft)	
Target	Lazy D ZN03-15H_Plan1 - Rev2_BHL Tgt	134.97	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
242.00	14,343.00	MWD Surveys	MWD

Design Report for Lazy D ZN03-15H - MWD Survey

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
Lazy D	0.00	359.52	8,892.00	-4,043.51	4,047.54	1,587,768.81	3,205,641.83	40° 56' 39.912 N	104° 45' 20.340 W
- actual wellpath misses target center by 78.25ft at 14343.00ft MD (8903.19 TVD, -4004.10 N, 3980.86 E)									
- Point									
Lazy D ZN 3-15H S.	0.00	0.00	0.00	0.00	0.00	1,591,812.45	3,201,594.16	40° 57' 20.196 N	104° 46' 12.648 W
- actual wellpath hits target center									
- Polygon									
Point 1				45.00	-4,142.00	1,587,670.32	3,201,639.16		
Point 2				4,079.00	-4,142.00	1,587,670.32	3,205,673.29		
Lazy D ZN 3-15H E.	0.00	0.00	0.00	0.00	0.00	1,591,812.45	3,201,594.16	40° 57' 20.196 N	104° 46' 12.648 W
- actual wellpath hits target center									
- Polygon									
Point 1				4,679.00	550.00	1,592,362.47	3,206,273.31		
Point 2				4,679.00	-4,742.00	1,587,070.30	3,206,273.31		
Lazy D ZN 3-15H N.	0.00	0.00	0.00	0.00	0.00	1,591,812.45	3,201,594.16	40° 57' 20.196 N	104° 46' 12.648 W
- actual wellpath hits target center									
- Polygon									
Point 1				-555.00	550.00	1,592,362.47	3,201,039.14		
Point 2				4,679.00	550.00	1,592,362.47	3,206,273.31		
Lazy D ZN 3-15H S.	0.00	0.00	0.00	0.00	0.00	1,591,812.45	3,201,594.16	40° 57' 20.196 N	104° 46' 12.648 W
- actual wellpath hits target center									
- Polygon									
Point 1				-555.00	-4,742.00	1,587,070.30	3,201,039.14		
Point 2				4,679.00	-4,742.00	1,587,070.30	3,206,273.31		
Lazy D ZN 3-15H N.	0.00	0.00	0.00	0.00	0.00	1,591,812.45	3,201,594.16	40° 57' 20.196 N	104° 46' 12.648 W
- actual wellpath hits target center									
- Polygon									
Point 1				45.00	-50.00	1,591,762.45	3,201,639.16		
Point 2				4,079.00	-50.00	1,591,762.45	3,205,673.29		
Lazy D ZN 3-15H E.	0.00	0.00	0.00	0.00	0.00	1,591,812.45	3,201,594.16	40° 57' 20.196 N	104° 46' 12.648 W
- actual wellpath hits target center									
- Polygon									
Point 1				4,079.00	-50.00	1,591,762.45	3,205,673.29		
Point 2				4,079.00	-4,142.00	1,587,670.32	3,205,673.29		
Lazy D ZN 3-15H W.	0.00	0.00	0.00	0.00	0.00	1,591,812.45	3,201,594.16	40° 57' 20.196 N	104° 46' 12.648 W
- actual wellpath hits target center									
- Polygon									
Point 1				-555.00	550.00	1,592,362.47	3,201,039.14		
Point 2				-555.00	-4,742.00	1,587,070.30	3,201,039.14		
Lazy D ZN 3-15H W.	0.00	0.00	0.00	0.00	0.00	1,591,812.45	3,201,594.16	40° 57' 20.196 N	104° 46' 12.648 W
- actual wellpath hits target center									
- Polygon									
Point 1				45.00	-50.00	1,591,762.45	3,201,639.16		
Point 2				45.00	-4,142.00	1,587,670.32	3,201,639.16		

North Reference Sheet for Sec. 3-T11N-R66W - Lazy D ZN03-15H - Plan #1

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' @ 6072.00ft (Original Well Elev). Northing and Easting are relative to Lazy D ZN03-15H

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: 1.00003250

Grid Coordinates of Well: 1,591,812.45 ft N, 3,201,594.16 ft E

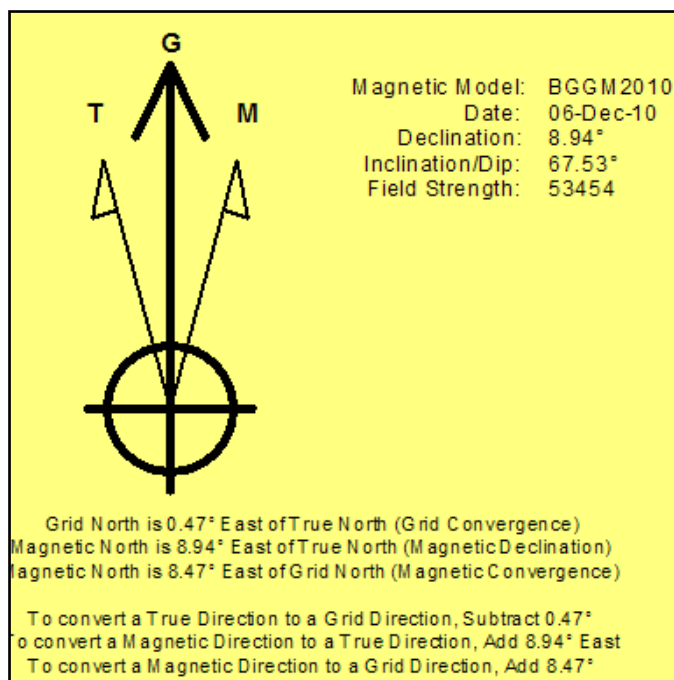
Geographical Coordinates of Well: 40° 57' 20.20" N, 104° 46' 12.65" W

Grid Convergence at Surface is: 0.47°

Based upon Minimum Curvature type calculations, at a Measured Depth of 14,343.00ft

the Bottom Hole Displacement is 5,646.25ft in the Direction of 135.17° (Grid).

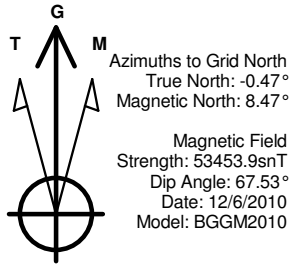
Magnetic Convergence at surface is: -8.47° (6 December 2010, , BGGM2010)



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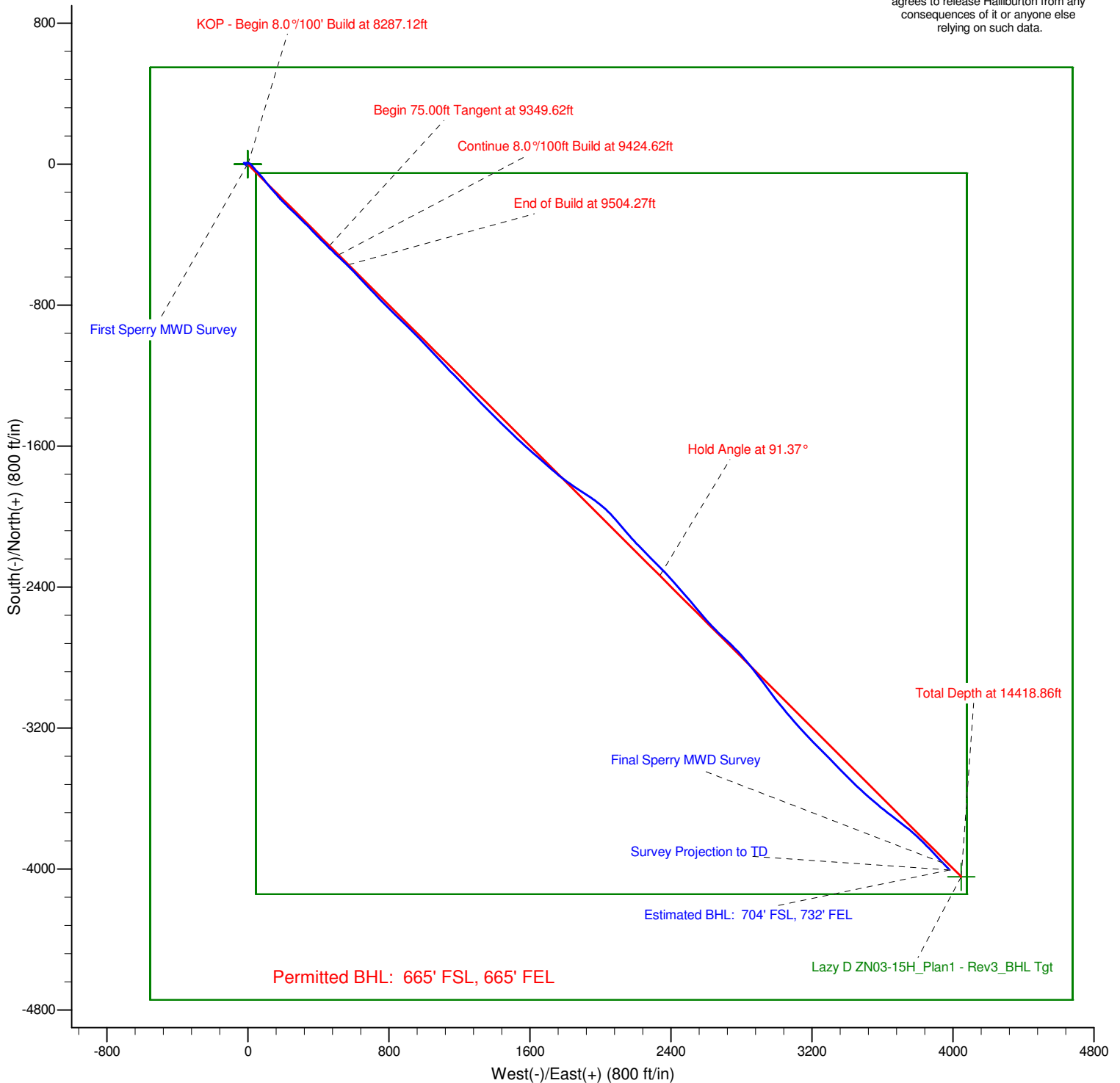
Sperry Drilling



LEGEND

- Lazy D ZN03-15H, Plan #1, Plan #1 - Rev 3 Proposal V0
- MWD Survey

Halliburton Energy Services, Inc. ("Halliburton") recently completed directional drilling and MWD operations at the Lazy D ZN03-15H 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. 3-T11N-R66W
Well: Lazy D ZN03-15H

Noble Energy

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Sperry Drilling



Azimuths to Grid North
True North: -0.47°
Magnetic North: 8.47°

Magnetic Field
Strength: 53453.9snT
Dip Angle: 67.53°
Date: 12/6/2010
Model: BGGM2010

LEGEND

- Lazy D ZN03-15H, Plan #1, Plan #1 - Rev 3 Proposal V0
- MWD Survey

Halliburton Energy Services, Inc. ("Halliburton") recently completed directional drilling and MWD operations at the Lazy D ZN03-15H 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.

