

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 26-T2N-R65W

Hudson 35N-35HZ

Plan C Rev 0

Design: Actual Field Surveys

Sperry Drilling Services Standard Report

22 March, 2013

Well Coordinates: 1,286,230.07 N, 3,241,142.03 E (40° 06' 57.15" N, 104° 38' 15.98" W)

Ground Level: 4,910.00 ft

Local Coordinate Origin:

Centered on Well Hudson 35N-35HZ

Viewing Datum:

RKB=16 @ 4926.00ft (Xtreme 22)

TVDs to System:

N

North Reference:

True

Unit System:

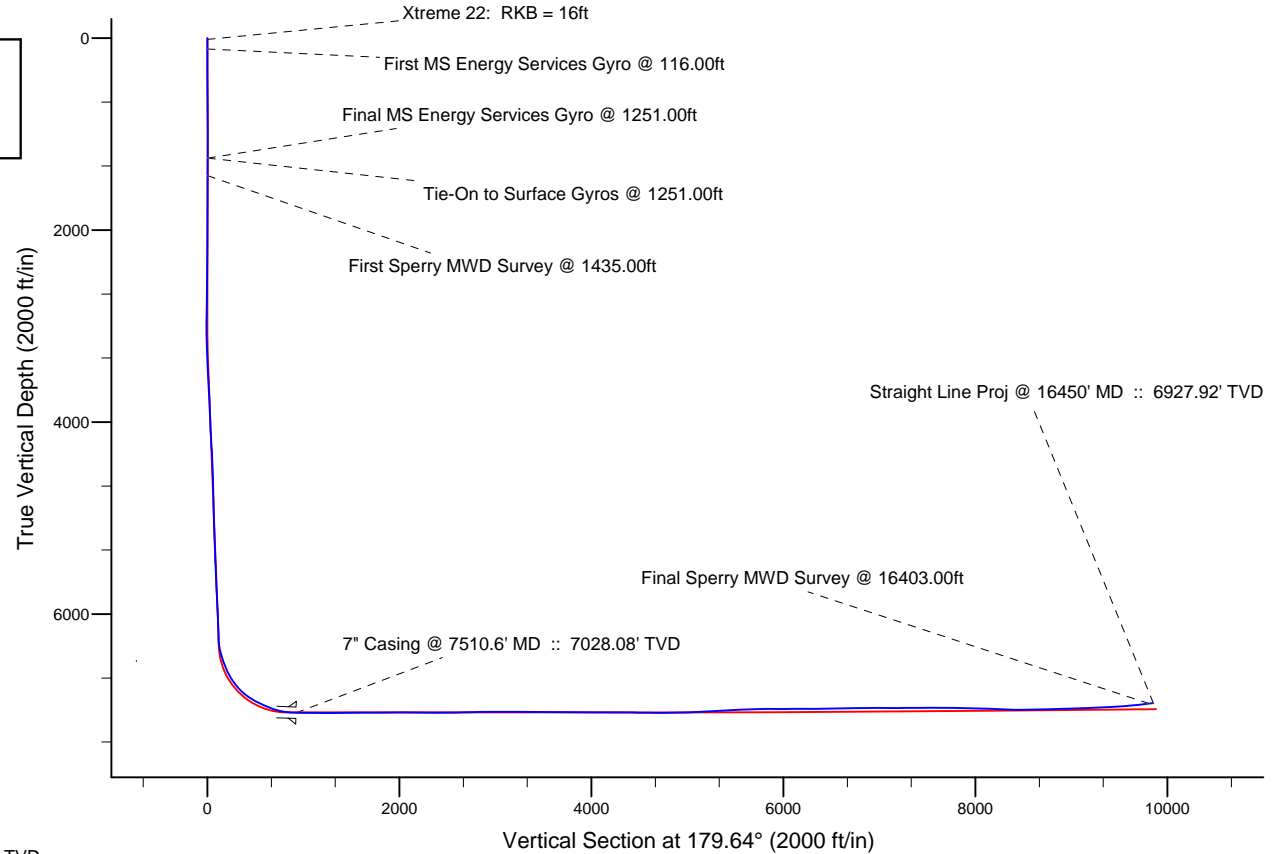
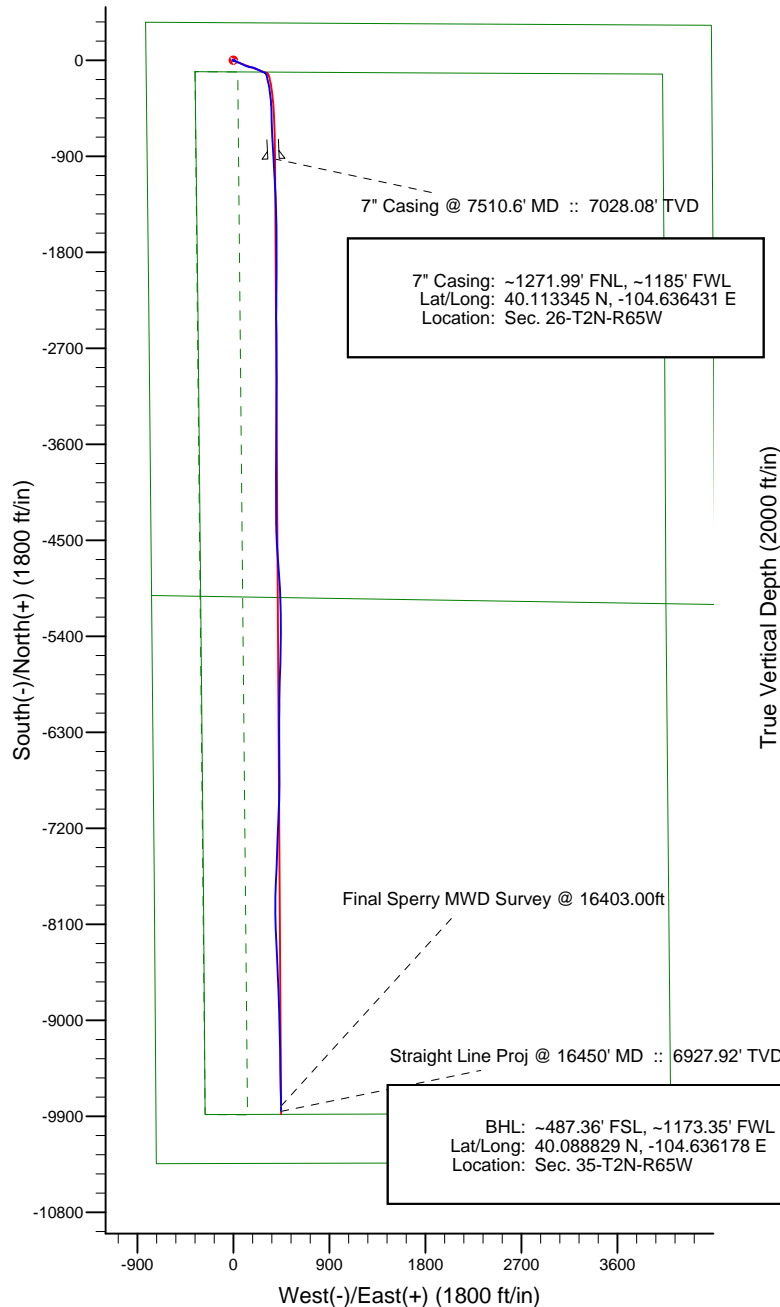
API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 2003.16 Build: 43I

HALLIBURTON

Project: Weld County, CO (NAD 83)
 Site: Sec. 26-T2N-R65W
 Well: Hudson 35N-35HZ
 Wellbore: Plan C Rev 0
 Design: Actual Field Surveys



LEGEND

✕ Hudson 35N-35HZ, Plan C Rev 0, Plan C Rev 0 Proposal V0

□ Actual Field Surveys

WELL DETAILS: Hudson 35N-35HZ	
Ground Level:	4910.00
RKB=16 @ 4926.00ft (Xtreme 22)	
Design: Actual Field Surveys (Hudson 35N-35HZ/Plan C Rev 0)	
Created By: Fred Hartmann	Date: 03/22/2013
Reviewed: _____	Date: _____

Design Report for Hudson 35N-35HZ - Actual Field Surveys

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
16.00	0.00	0.00	16.00	0.00	0.00	0.00	0.00
Xtreme 22: RKB = 16ft							
116.00	0.43	113.21	116.00	-0.15	0.34	0.15	0.43
First MS Energy Services Gyro @ 116.00ft							
216.00	0.46	130.77	216.00	-0.56	0.99	0.56	0.14
316.00	0.64	132.00	315.99	-1.19	1.71	1.20	0.18
416.00	0.49	156.30	415.99	-1.96	2.30	1.97	0.28
516.00	0.38	181.41	515.98	-2.68	2.46	2.70	0.22
616.00	0.36	206.52	615.98	-3.29	2.32	3.31	0.16
716.00	0.34	222.95	715.98	-3.79	1.97	3.81	0.10
816.00	0.26	240.17	815.98	-4.12	1.57	4.13	0.12
916.00	0.27	247.77	915.98	-4.32	1.16	4.33	0.04
1,016.00	0.18	275.30	1,015.98	-4.40	0.78	4.40	0.14
1,116.00	0.16	265.90	1,115.98	-4.40	0.49	4.40	0.03
1,216.00	0.35	269.04	1,215.98	-4.41	0.04	4.41	0.19
1,251.00	0.40	289.24	1,250.97	-4.37	-0.18	4.37	0.40
Tie-On to Surface Gyros @ 1251.00ft - Final MS Energy Services Gyro @ 1251.00ft							
1,435.00	0.19	273.37	1,434.97	-4.14	-1.09	4.14	0.12
First Sperry MWD Survey @ 1435.00ft							
1,710.00	0.39	294.16	1,709.97	-3.73	-2.40	3.72	0.08
1,984.00	0.44	347.38	1,983.96	-2.32	-3.48	2.30	0.14
2,257.00	0.79	312.70	2,256.95	-0.02	-5.09	-0.01	0.18
2,532.00	0.44	339.62	2,531.93	2.25	-6.85	-2.29	0.16
2,804.00	1.05	1.10	2,803.91	5.72	-7.17	-5.77	0.24
2,890.00	1.43	1.16	2,889.89	7.58	-7.13	-7.63	0.44
2,976.00	0.52	81.60	2,975.88	8.71	-6.72	-8.75	1.67
3,062.00	1.63	121.38	3,061.86	8.13	-5.29	-8.17	1.48
3,147.00	3.02	109.82	3,146.79	6.74	-2.15	-6.76	1.72
3,233.00	3.75	110.68	3,232.64	4.98	2.61	-4.97	0.85
3,319.00	4.75	127.08	3,318.40	1.84	8.08	-1.79	1.82
3,404.00	5.64	131.47	3,403.05	-3.05	14.02	3.13	1.15
3,577.00	5.80	111.53	3,575.21	-11.88	28.52	12.06	1.15
3,663.00	5.92	112.23	3,660.76	-15.16	36.67	15.39	0.16
3,748.00	6.32	113.13	3,745.28	-18.65	45.03	18.94	0.48
3,833.00	5.89	111.52	3,829.79	-22.09	53.39	22.43	0.54
3,919.00	6.59	119.63	3,915.29	-26.15	61.78	26.54	1.31
4,004.00	6.35	114.96	3,999.74	-30.54	70.28	30.99	0.68
4,089.00	6.14	112.57	4,084.24	-34.27	78.74	34.77	0.39
4,175.00	7.19	118.62	4,169.66	-38.62	87.71	39.17	1.47
4,260.00	6.70	116.36	4,254.04	-43.37	96.83	43.97	0.66
4,345.00	5.53	115.13	4,338.55	-47.31	104.98	47.97	1.38
4,431.00	6.25	111.76	4,424.10	-50.80	113.08	51.51	0.93
4,517.00	6.68	110.66	4,509.55	-54.30	122.11	55.07	0.52
4,603.00	6.50	110.75	4,594.98	-57.79	131.34	58.62	0.21
4,688.00	6.14	108.26	4,679.46	-60.92	140.15	61.80	0.53
4,774.00	6.37	104.64	4,764.95	-63.57	149.14	64.50	0.53
4,860.00	5.83	92.01	4,850.47	-64.93	158.12	65.92	1.68
4,946.00	6.86	92.80	4,935.94	-65.33	167.61	66.38	1.20
5,031.00	6.61	102.66	5,020.36	-66.65	177.46	67.76	1.39

Design Report for Hudson 35N-35HZ - Actual Field Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
5,117.00	5.94	104.61	5,105.84	-68.86	186.59	70.03	0.82
5,203.00	6.60	114.41	5,191.33	-72.02	195.40	73.25	1.46
5,289.00	6.27	115.94	5,276.79	-76.12	204.12	77.40	0.43
5,375.00	5.03	107.60	5,362.37	-79.31	211.94	80.64	1.73
5,460.00	5.22	116.49	5,447.03	-82.17	218.95	83.54	0.96
5,546.00	5.39	109.21	5,532.66	-85.24	226.27	86.66	0.81
5,632.00	5.43	123.52	5,618.28	-88.82	233.48	90.28	1.57
5,718.00	6.45	113.63	5,703.82	-93.00	241.29	94.51	1.68
5,803.00	5.72	116.80	5,788.34	-96.82	249.45	98.39	0.95
5,889.00	5.62	119.37	5,873.92	-100.82	256.95	102.43	0.32
5,975.00	6.36	116.22	5,959.45	-104.99	264.89	106.65	0.94
6,061.00	5.91	109.21	6,044.96	-108.55	273.34	110.27	1.02
6,146.00	5.89	113.70	6,129.51	-111.74	281.47	113.51	0.54
6,232.00	6.25	112.70	6,215.03	-115.33	289.83	117.14	0.44
6,250.00	5.91	113.36	6,232.93	-116.07	291.58	117.90	1.93
6,280.00	4.98	108.91	6,262.79	-117.10	294.23	118.95	3.40
6,323.00	6.51	127.34	6,305.58	-119.19	297.94	121.06	5.53
6,366.00	11.60	146.14	6,348.04	-124.26	302.29	126.16	13.54
6,409.00	15.18	157.11	6,389.87	-133.04	306.89	134.97	10.17
6,452.00	17.05	164.37	6,431.18	-144.30	310.78	146.25	6.39
6,494.00	18.47	165.63	6,471.18	-156.68	314.09	158.65	3.50
6,537.00	21.32	168.43	6,511.61	-170.94	317.35	172.93	6.99
6,580.00	22.61	168.17	6,551.49	-186.69	320.61	188.70	3.01
6,623.00	24.48	165.68	6,590.91	-203.41	324.51	205.44	4.92
6,666.00	28.45	166.99	6,629.39	-222.03	329.02	224.09	9.33
6,709.00	32.43	169.44	6,666.46	-243.35	333.44	245.44	9.69
6,752.00	35.72	172.57	6,702.08	-267.14	337.18	269.26	8.67
6,795.00	38.98	172.32	6,736.25	-293.00	340.61	295.13	7.59
6,838.00	41.47	172.71	6,769.08	-320.53	344.22	322.69	5.82
6,881.00	45.29	173.26	6,800.33	-349.84	347.82	352.02	8.93
6,923.00	49.20	176.21	6,828.84	-380.54	350.63	382.73	10.64
6,966.00	54.19	176.73	6,855.49	-414.20	352.70	416.41	11.64
7,009.00	58.07	177.92	6,879.45	-449.86	354.36	452.08	9.31
7,052.00	61.76	178.11	6,901.00	-487.04	355.64	489.26	8.59
7,095.00	63.57	177.69	6,920.74	-525.21	357.04	527.44	4.30
7,138.00	64.69	178.55	6,939.50	-563.88	358.31	566.12	3.17
7,180.00	66.38	179.06	6,956.90	-602.10	359.11	604.34	4.17
7,223.00	68.45	178.44	6,973.41	-641.79	359.98	644.04	4.99
7,266.00	69.92	177.83	6,988.69	-681.96	361.29	684.22	3.67
7,309.00	74.70	177.12	7,001.75	-722.88	363.09	725.14	11.23
7,352.00	78.56	176.11	7,011.69	-764.63	365.57	766.91	9.26
7,395.00	81.33	175.23	7,019.20	-806.84	368.76	809.14	6.75
7,437.00	84.94	176.87	7,024.22	-848.43	371.63	850.75	9.43
7,471.00	87.35	177.57	7,026.51	-882.31	373.28	884.64	7.38
7,510.60	88.11	177.23	7,028.08	-921.84	375.07	924.18	2.10
7" Casing @ 7510.6' MD :: 7028.08' TVD							
7,616.00	90.12	176.31	7,029.71	-1,027.06	381.02	1,029.43	2.10
7,659.00	90.19	176.73	7,029.59	-1,069.98	383.63	1,072.36	0.99
7,702.00	90.06	177.05	7,029.50	-1,112.91	385.96	1,115.32	0.80
7,745.00	89.81	176.91	7,029.55	-1,155.85	388.22	1,158.27	0.67
7,787.00	89.69	177.15	7,029.73	-1,197.80	390.40	1,200.22	0.64

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Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
7,831.00	89.38	177.02	7,030.09	-1,241.74	392.64	1,244.18	0.76
7,874.00	89.44	177.07	7,030.53	-1,284.68	394.86	1,287.13	0.18
7,959.00	91.11	178.36	7,030.12	-1,369.60	398.24	1,372.08	2.48
8,002.00	91.23	178.39	7,029.24	-1,412.58	399.46	1,415.06	0.29
8,045.00	90.74	178.76	7,028.50	-1,455.56	400.53	1,458.05	1.43
8,088.00	90.43	179.07	7,028.07	-1,498.55	401.35	1,501.04	1.02
8,131.00	90.43	179.33	7,027.74	-1,541.54	401.95	1,544.04	0.60
8,174.00	90.43	179.23	7,027.42	-1,584.54	402.49	1,587.04	0.23
8,217.00	89.94	179.24	7,027.28	-1,627.53	403.06	1,630.03	1.14
8,260.00	89.94	179.29	7,027.33	-1,670.53	403.61	1,673.03	0.12
8,302.00	89.69	179.05	7,027.46	-1,712.53	404.22	1,715.03	0.83
8,388.00	90.31	180.04	7,027.46	-1,798.52	404.90	1,801.03	1.36
8,474.00	90.43	180.24	7,026.91	-1,884.52	404.69	1,887.02	0.27
8,560.00	90.87	180.73	7,025.93	-1,970.51	403.97	1,973.01	0.77
8,646.00	90.06	181.61	7,025.23	-2,056.49	402.21	2,058.97	1.39
8,731.00	88.76	180.26	7,026.11	-2,141.47	400.82	2,143.94	2.20
8,817.00	88.95	179.99	7,027.83	-2,227.45	400.64	2,229.92	0.38
8,903.00	90.31	180.45	7,028.38	-2,313.45	400.31	2,315.92	1.67
8,989.00	91.11	179.96	7,027.32	-2,399.44	400.00	2,401.90	1.09
9,075.00	89.88	178.36	7,026.57	-2,485.42	401.26	2,487.89	2.35
9,167.00	90.43	178.48	7,026.32	-2,577.39	403.79	2,579.87	0.61
9,259.00	91.54	179.31	7,024.74	-2,669.35	405.57	2,671.85	1.51
9,350.00	91.91	180.88	7,022.00	-2,760.31	405.42	2,762.80	1.77
9,442.00	91.11	181.16	7,019.58	-2,852.26	403.78	2,854.74	0.92
9,534.00	90.19	180.65	7,018.54	-2,944.24	402.33	2,946.71	1.14
9,626.00	89.81	180.12	7,018.54	-3,036.24	401.71	3,038.70	0.71
9,718.00	89.88	179.85	7,018.78	-3,128.24	401.73	3,130.70	0.30
9,810.00	89.75	179.64	7,019.08	-3,220.24	402.14	3,222.70	0.27
9,901.00	89.81	180.20	7,019.43	-3,311.24	402.27	3,313.70	0.62
9,993.00	89.69	180.28	7,019.83	-3,403.23	401.89	3,405.69	0.16
10,085.00	89.63	180.23	7,020.38	-3,495.23	401.48	3,497.69	0.08
10,177.00	89.26	180.16	7,021.27	-3,587.23	401.16	3,589.68	0.41
10,268.00	89.20	180.92	7,022.49	-3,678.21	400.31	3,680.66	0.84
10,360.00	89.20	180.20	7,023.78	-3,770.20	399.41	3,772.64	0.78
10,452.00	89.81	179.97	7,024.57	-3,862.20	399.27	3,864.63	0.71
10,544.00	90.50	180.90	7,024.32	-3,954.19	398.57	3,956.62	1.26
10,636.00	90.12	180.23	7,023.83	-4,046.19	397.66	4,048.60	0.84
10,727.00	89.57	178.99	7,024.07	-4,137.18	398.28	4,139.60	1.49
10,817.00	90.06	179.68	7,024.36	-4,227.17	399.33	4,229.60	0.94
10,909.00	90.18	179.71	7,024.17	-4,319.17	399.82	4,321.60	0.13
11,001.00	89.20	177.94	7,024.67	-4,411.15	401.70	4,413.58	2.20
11,091.00	88.70	177.29	7,026.32	-4,501.05	405.45	4,503.51	0.91
11,182.00	89.57	176.65	7,027.69	-4,591.91	410.26	4,594.40	1.19
11,273.00	89.63	175.57	7,028.33	-4,682.70	416.43	4,685.22	1.19
11,366.00	90.12	175.99	7,028.53	-4,775.45	423.27	4,778.01	0.69
11,457.00	90.68	175.96	7,027.89	-4,866.22	429.66	4,868.82	0.62
11,549.00	91.24	177.15	7,026.35	-4,958.04	435.19	4,960.68	1.43
11,640.00	92.41	177.68	7,023.45	-5,048.90	439.29	5,051.56	1.41
11,730.00	92.91	178.99	7,019.28	-5,138.76	441.90	5,141.44	1.56
11,821.00	93.71	179.43	7,014.02	-5,229.60	443.16	5,232.28	1.00
11,907.00	93.71	179.51	7,008.46	-5,315.42	443.95	5,318.10	0.09

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Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
11,992.00	93.53	180.45	7,003.09	-5,400.25	443.98	5,402.93	1.12
12,078.00	92.66	181.41	6,998.45	-5,486.11	442.59	5,488.78	1.51
12,164.00	92.16	181.62	6,994.83	-5,572.00	440.31	5,574.66	0.63
12,249.00	90.56	181.24	6,992.81	-5,656.95	438.19	5,659.59	1.93
12,335.00	91.17	181.33	6,991.52	-5,742.92	436.27	5,745.54	0.72
12,421.00	90.31	181.17	6,990.40	-5,828.89	434.39	5,831.50	1.02
12,507.00	90.19	181.39	6,990.03	-5,914.86	432.47	5,917.46	0.29
12,593.00	91.36	181.12	6,988.87	-6,000.83	430.59	6,003.42	1.40
12,678.00	90.74	180.65	6,987.31	-6,085.81	429.27	6,088.39	0.92
12,764.00	90.31	180.40	6,986.52	-6,171.80	428.48	6,174.37	0.58
12,850.00	89.69	180.16	6,986.52	-6,257.80	428.06	6,260.37	0.77
12,935.00	89.81	179.61	6,986.89	-6,342.80	428.24	6,345.36	0.66
13,021.00	90.86	179.53	6,986.39	-6,428.79	428.88	6,431.36	1.22
13,107.00	92.04	179.17	6,984.21	-6,514.76	429.86	6,517.33	1.43
13,193.00	90.80	179.77	6,982.08	-6,600.73	430.65	6,603.30	1.60
13,279.00	91.54	179.71	6,980.33	-6,686.71	431.04	6,689.28	0.86
13,364.00	90.56	180.92	6,978.77	-6,771.69	430.57	6,774.26	1.83
13,450.00	89.51	180.89	6,978.72	-6,857.68	429.22	6,860.24	1.22
13,536.00	90.25	181.30	6,978.90	-6,943.66	427.57	6,946.21	0.98
13,622.00	89.44	182.27	6,979.13	-7,029.62	424.89	7,032.15	1.47
13,707.00	90.00	182.45	6,979.54	-7,114.54	421.39	7,117.05	0.69
13,793.00	90.93	182.55	6,978.85	-7,200.46	417.64	7,202.94	1.09
13,879.00	90.93	182.75	6,977.45	-7,286.35	413.67	7,288.81	0.23
13,965.00	89.07	181.73	6,977.45	-7,372.28	410.31	7,374.72	2.47
14,050.00	90.74	181.79	6,977.59	-7,457.24	407.69	7,459.66	1.97
14,136.00	90.19	182.28	6,976.89	-7,543.18	404.64	7,545.58	0.86
14,222.00	90.37	182.48	6,976.47	-7,629.11	401.07	7,631.48	0.31
14,308.00	89.20	182.59	6,976.79	-7,715.02	397.27	7,717.37	1.37
14,394.00	89.63	181.83	6,977.67	-7,800.95	393.95	7,803.27	1.02
14,479.00	89.14	180.69	6,978.59	-7,885.93	392.08	7,888.23	1.46
14,565.00	88.33	179.50	6,980.48	-7,971.90	391.94	7,974.21	1.67
14,651.00	87.10	178.75	6,983.91	-8,057.82	393.25	8,060.13	1.67
14,737.00	87.22	177.55	6,988.17	-8,143.67	396.02	8,146.00	1.40
14,822.00	88.33	177.38	6,991.47	-8,228.52	399.78	8,230.87	1.32
14,908.00	88.14	177.55	6,994.12	-8,314.40	403.58	8,316.77	0.30
14,994.00	88.89	176.90	6,996.35	-8,400.26	407.74	8,402.66	1.15
15,080.00	89.94	177.21	6,997.23	-8,486.15	412.16	8,488.57	1.27
15,165.00	91.48	177.57	6,996.18	-8,571.05	416.03	8,573.49	1.86
15,294.00	91.92	177.81	6,992.35	-8,699.89	421.23	8,702.36	0.39
15,380.00	91.42	178.08	6,989.84	-8,785.79	424.31	8,788.29	0.66
15,466.00	90.49	178.41	6,988.41	-8,871.74	426.95	8,874.25	1.15
15,552.00	91.24	178.53	6,987.11	-8,957.70	429.24	8,960.22	0.88
15,637.00	92.41	178.50	6,984.40	-9,042.63	431.44	9,045.16	1.38
15,723.00	92.35	178.80	6,980.83	-9,128.53	433.47	9,131.07	0.36
15,809.00	93.09	179.25	6,976.75	-9,214.42	434.93	9,216.97	1.01
15,894.00	92.78	178.73	6,972.40	-9,299.29	436.43	9,301.85	0.71
15,980.00	92.16	178.95	6,968.69	-9,385.19	438.16	9,387.76	0.76
16,065.00	93.21	179.06	6,964.71	-9,470.09	439.64	9,472.66	1.24
16,151.00	94.39	179.26	6,959.01	-9,555.89	440.90	9,558.47	1.39
16,237.00	95.19	179.18	6,951.83	-9,641.58	442.06	9,644.17	0.93
16,322.00	96.25	178.91	6,943.36	-9,726.14	443.47	9,728.74	1.29

Design Report for Hudson 35N-35HZ - Actual Field Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
16,403.00	97.24	178.91	6,933.85	-9,806.57	445.00	9,809.17	1.22
Final Sperry MWD Survey @ 16403.00ft							
16,450.00	97.24	178.91	6,927.92	-9,853.18	445.89	9,855.79	0.00
Straight Line Proj @ 16450' MD :: 6927.92' TVD							

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
16.00	16.00	0.00	0.00	Xtreme 22: RKB = 16ft
116.00	116.00	-0.15	0.34	First MS Energy Services Gyro @ 116.00ft
1,251.00	1,250.97	-4.37	-0.18	Tie-On to Surface Gyros @ 1251.00ft
1,251.00	1,250.97	-4.37	-0.18	Final MS Energy Services Gyro @ 1251.00ft
1,435.00	1,434.97	-4.14	-1.09	First Sperry MWD Survey @ 1435.00ft
16,403.00	6,933.85	-9,806.57	445.00	Final Sperry MWD Survey @ 16403.00ft
16,450.00	6,927.92	-9,853.18	445.89	Straight Line Proj @ 16450' MD :: 6927.92' TVD

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/-S (ft)	+E/-W (ft)	
User	No Target (Freehand)	179.64	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
16.00	1,251.00	MS Energy Services - Surface Gyros	NS-GYRO-MS
1,435.00	7,471.00	Sperry MWD Surveys - Vert/Build	MWD+SC
7,616.00	16,403.00	Sperry MWD Surveys - Lateral	MWD+SC

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,510.60	7,028.08	7" Casing @ 7510.6' MD :: 7028.08' TVD	7	8-3/4

Design Report for Hudson 35N-35HZ - Actual Field Surveys**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
Hudson 35N-35HZ_⌋	0.00	0.00	0.00	0.00	0.00	1,286,230.07	3,241,142.03	40.115876	-104.637772
- actual wellpath hits target center									
- Polygon									
Point 1				36.60	-108.96	1,286,121.47	3,241,179.69		
Point 2				146.51	-9,886.46	1,276,345.90	3,241,384.66		
Point 3				1,062.50	-9,895.37	1,276,345.90	3,242,300.65		
Point 4				952.59	-117.86	1,286,121.48	3,242,095.69		
Point 5				36.60	-108.96	1,286,121.47	3,241,179.69		
Hudson 35N-35HZ_⌋	0.00	0.00	7,026.00	-6,300.00	425.00	1,279,934.76	3,241,628.25	40.098582	-104.636253
- actual wellpath misses target center by 39.39ft at 12892.36ft MD (6986.73 TVD, -6300.16 N, 428.05 E)									
- Point									
Hudson 35N-35HZ_⌋	0.00	0.00	0.00	0.00	0.00	1,286,230.07	3,241,142.03	40.115876	-104.637772
- actual wellpath hits target center									
- Polygon									
Point 1				-359.46	-105.11	1,286,121.47	3,240,783.63		
Point 2				-333.59	-2,309.92	1,283,917.11	3,240,830.93		
Point 3				-282.74	-7,659.49	1,278,568.50	3,240,933.79		
Point 4				-267.21	-9,882.44	1,276,345.90	3,240,970.93		
Point 5				4,099.08	-9,870.20	1,276,400.59	3,245,336.72		
Point 6				4,078.10	-7,698.12	1,278,572.27	3,245,294.63		
Point 7				4,052.54	-5,088.98	1,281,180.94	3,245,243.70		
Point 8				4,040.17	-2,363.38	1,283,906.18	3,245,204.83		
Point 9				4,022.86	-129.79	1,286,139.40	3,245,165.80		
Point 10				1,831.39	-117.56	1,286,130.32	3,242,974.41		
Point 11				-359.46	-105.11	1,286,121.47	3,240,783.63		
Hudson 35N-35HZ_⌋	0.00	0.00	0.00	0.00	0.00	1,286,230.07	3,241,142.03	40.115876	-104.637772
- actual wellpath hits target center									
- Polygon									
Point 1				-824.94	357.57	1,286,579.58	3,240,313.69		
Point 2				-793.70	-2,304.30	1,283,918.25	3,240,370.81		
Point 3				-742.80	-7,655.42	1,278,568.10	3,240,473.73		
Point 4				-724.02	-10,343.74	1,275,880.19	3,240,518.65		
Point 5				4,563.55	-10,328.92	1,275,946.42	3,245,805.61		
Point 6				4,538.18	-7,702.20	1,278,572.67	3,245,754.70		
Point 7				4,512.62	-5,100.73	1,281,173.66	3,245,703.85		
Point 8				4,500.25	-2,369.00	1,283,905.03	3,245,664.92		
Point 9				4,479.35	327.69	1,286,601.28	3,245,617.81		
Point 10				1,827.31	342.49	1,286,590.29	3,242,965.85		
Point 11				-824.94	357.57	1,286,579.58	3,240,313.69		
Hudson 35N-35HZ_⌋	0.00	0.00	0.00	0.00	0.00	1,286,230.07	3,241,142.03	40.115876	-104.637772
- actual wellpath hits target center									
- Point									
Hudson 35N-35HZ_⌋	0.00	0.00	6,970.00	-9,879.97	430.17	1,276,355.15	3,241,668.23	40.088755	-104.636235
- actual wellpath misses target center by 52.30ft at 16450.00ft MD (6927.92 TVD, -9853.18 N, 445.89 E)									
- Point									
Hudson 35N-35HZ_⌋	0.00	0.00	6,973.00	-9,879.97	592.90	1,276,356.73	3,241,830.94	40.088755	-104.635653
- actual wellpath misses target center by 156.08ft at 16450.00ft MD (6927.92 TVD, -9853.18 N, 445.89 E)									
- Point									

North Reference Sheet for Sec. 26-T2N-R65W - Hudson 35N-35HZ - Plan C Rev 0

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

Vertical Depths are relative to RKB=16 @ 4926.00ft (Xtreme 22). Northing and Easting are relative to Hudson 35N-35HZ

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: 0.99995960

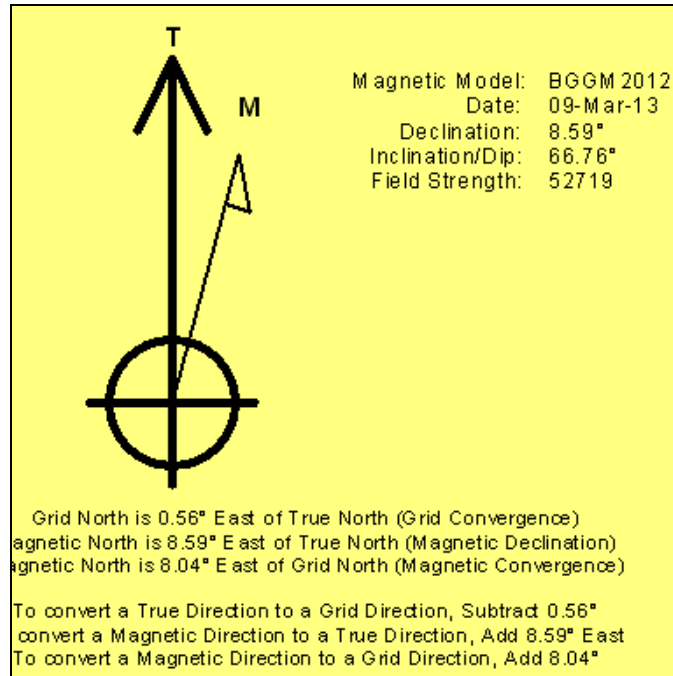
Grid Coordinates of Well: 1,286,230.07 ft N, 3,241,142.03 ft E

Geographical Coordinates of Well: 40° 06' 57.15" N, 104° 38' 15.98" W

Grid Convergence at Surface is: 0.56°

Based upon Minimum Curvature type calculations, at a Measured Depth of 16,450.00ft
the Bottom Hole Displacement is 9,863.27ft in the Direction of 177.41° (True).

Magnetic Convergence at surface is: -8.04° (9 March 2013, , BGGM2012)



Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 26-T2N-R65W

Hudson 35N-35HZ

Plan C Rev 0

Design: Actual Field Surveys

Sperry Drilling Services

Geodetic Report

22 March, 2013

Well Coordinates: 1,286,230.07 N, 3,241,142.03 E (40° 06' 57.15" N, 104° 38' 15.98" W)

Ground Level: 4,910.00 ft

Local Coordinate Origin:	Centered on Well Hudson 35N-35HZ
Viewing Datum:	RKB=16 @ 4926.00ft (Xtreme 22)
TVDs to System:	N
North Reference:	True
Unit System:	API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 2003.16 Build: 431

HALLIBURTON

Design Report for Hudson 35N-35HZ - Actual Field Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	Local Coordinates		Geographic Coordinates		Grid Coordinates	
				+N/-S (ft)	+E/-W (ft)	Latitude (ft)	Longitude (ft)	Northing (ft)	Easting (ft)
0.00	0.00	0.00	0.00	0.00	0.00	40.115876	-104.637772	1,286,230.07	3,241,142.03
16.00	0.00	0.00	16.00	0.00	0.00	40.115876	-104.637772	1,286,230.07	3,241,142.03
116.00	0.43	113.21	116.00	-0.15	0.34	40.115876	-104.637771	1,286,229.92	3,241,142.38
216.00	0.46	130.77	216.00	-0.56	0.99	40.115874	-104.637768	1,286,229.52	3,241,143.03
316.00	0.64	132.00	315.99	-1.19	1.71	40.115873	-104.637766	1,286,228.89	3,241,143.76
416.00	0.49	156.30	415.99	-1.96	2.30	40.115871	-104.637764	1,286,228.13	3,241,144.35
516.00	0.38	181.41	515.98	-2.68	2.46	40.115869	-104.637763	1,286,227.41	3,241,144.52
616.00	0.36	206.52	615.98	-3.29	2.32	40.115867	-104.637764	1,286,226.80	3,241,144.38
716.00	0.34	222.95	715.98	-3.79	1.97	40.115866	-104.637765	1,286,226.29	3,241,144.04
816.00	0.26	240.17	815.98	-4.12	1.57	40.115865	-104.637766	1,286,225.96	3,241,143.65
916.00	0.27	247.77	915.98	-4.32	1.16	40.115864	-104.637768	1,286,225.75	3,241,143.23
1,016.00	0.18	275.30	1,015.98	-4.40	0.78	40.115864	-104.637769	1,286,225.68	3,241,142.86
1,116.00	0.16	265.90	1,115.98	-4.40	0.49	40.115864	-104.637770	1,286,225.68	3,241,142.57
1,216.00	0.35	269.04	1,215.98	-4.41	0.04	40.115864	-104.637772	1,286,225.66	3,241,142.12
1,251.00	0.40	289.24	1,250.97	-4.37	-0.18	40.115864	-104.637773	1,286,225.69	3,241,141.90
1,435.00	0.19	273.37	1,434.97	-4.14	-1.09	40.115865	-104.637776	1,286,225.91	3,241,140.99
1,710.00	0.39	294.16	1,709.97	-3.73	-2.40	40.115866	-104.637781	1,286,226.31	3,241,139.67
1,984.00	0.44	347.38	1,983.96	-2.32	-3.48	40.115870	-104.637784	1,286,227.71	3,241,138.58
2,257.00	0.79	312.70	2,256.95	-0.02	-5.09	40.115876	-104.637790	1,286,229.99	3,241,136.94
2,532.00	0.44	339.62	2,531.93	2.25	-6.85	40.115882	-104.637796	1,286,232.25	3,241,135.16
2,804.00	1.05	1.10	2,803.91	5.72	-7.17	40.115892	-104.637798	1,286,235.72	3,241,134.81
2,890.00	1.43	1.16	2,889.89	7.58	-7.13	40.115897	-104.637797	1,286,237.58	3,241,134.83
2,976.00	0.52	81.60	2,975.88	8.71	-6.72	40.115900	-104.637796	1,286,238.71	3,241,135.23
3,062.00	1.63	121.38	3,061.86	8.13	-5.29	40.115898	-104.637791	1,286,238.15	3,241,136.66
3,147.00	3.02	109.82	3,146.79	6.74	-2.15	40.115894	-104.637780	1,286,236.79	3,241,139.81
3,233.00	3.75	110.68	3,232.64	4.98	2.61	40.115890	-104.637763	1,286,235.07	3,241,144.59
3,319.00	4.75	127.08	3,318.40	1.84	8.08	40.115881	-104.637743	1,286,231.99	3,241,150.10
3,404.00	5.64	131.47	3,403.05	-3.05	14.02	40.115868	-104.637722	1,286,227.16	3,241,156.08
3,577.00	5.80	111.53	3,575.21	-11.88	28.52	40.115843	-104.637670	1,286,218.46	3,241,170.67
3,663.00	5.92	112.23	3,660.76	-15.16	36.67	40.115834	-104.637641	1,286,215.27	3,241,178.85
3,748.00	6.32	113.13	3,745.28	-18.65	45.03	40.115825	-104.637611	1,286,211.85	3,241,187.24
3,833.00	5.89	111.52	3,829.79	-22.09	53.39	40.115815	-104.637581	1,286,208.50	3,241,195.63
3,919.00	6.59	119.63	3,915.29	-26.15	61.78	40.115804	-104.637551	1,286,204.52	3,241,204.07
4,004.00	6.35	114.96	3,999.74	-30.54	70.28	40.115792	-104.637521	1,286,200.21	3,241,212.61
4,089.00	6.14	112.57	4,084.24	-34.27	78.74	40.115782	-104.637490	1,286,196.56	3,241,221.10
4,175.00	7.19	118.62	4,169.66	-38.62	87.71	40.115770	-104.637458	1,286,192.31	3,241,230.12
4,260.00	6.70	116.36	4,254.04	-43.37	96.83	40.115757	-104.637426	1,286,187.65	3,241,239.27
4,345.00	5.53	115.13	4,338.55	-47.31	104.98	40.115746	-104.637397	1,286,183.79	3,241,247.46
4,431.00	6.25	111.76	4,424.10	-50.80	113.08	40.115737	-104.637368	1,286,180.37	3,241,255.60
4,517.00	6.68	110.66	4,509.55	-54.30	122.11	40.115727	-104.637335	1,286,176.96	3,241,264.66
4,603.00	6.50	110.75	4,594.98	-57.79	131.34	40.115717	-104.637302	1,286,173.56	3,241,273.92
4,688.00	6.14	108.26	4,679.46	-60.92	140.15	40.115709	-104.637271	1,286,170.51	3,241,282.77

Design Report for Hudson 35N-35HZ - Actual Field Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	Local Coordinates		Geographic Coordinates		UTM Coordinates	
				+N/-S (ft)	+E/-W (ft)	Latitude (ft)	Longitude (ft)	Northing (ft)	Easting (ft)
4,774.00	6.37	104.64	4,764.95	-63.57	149.14	40.115701	-104.637239	1,286,167.96	3,241,291.78
4,860.00	5.83	92.01	4,850.47	-64.93	158.12	40.115698	-104.637207	1,286,166.68	3,241,300.77
4,946.00	6.86	92.80	4,935.94	-65.33	167.61	40.115697	-104.637173	1,286,166.37	3,241,310.27
5,031.00	6.61	102.66	5,020.36	-66.65	177.46	40.115693	-104.637138	1,286,165.15	3,241,320.12
5,117.00	5.94	104.61	5,105.84	-68.86	186.59	40.115687	-104.637105	1,286,163.03	3,241,329.28
5,203.00	6.60	114.41	5,191.33	-72.02	195.40	40.115678	-104.637073	1,286,159.95	3,241,338.12
5,289.00	6.27	115.94	5,276.79	-76.12	204.12	40.115667	-104.637042	1,286,155.94	3,241,346.88
5,375.00	5.03	107.60	5,362.37	-79.31	211.94	40.115658	-104.637014	1,286,152.82	3,241,354.73
5,460.00	5.22	116.49	5,447.03	-82.17	218.95	40.115650	-104.636989	1,286,150.04	3,241,361.77
5,546.00	5.39	109.21	5,532.66	-85.24	226.27	40.115642	-104.636963	1,286,147.03	3,241,369.11
5,632.00	5.43	123.52	5,618.28	-88.82	233.48	40.115632	-104.636937	1,286,143.53	3,241,376.35
5,718.00	6.45	113.63	5,703.82	-93.00	241.29	40.115621	-104.636909	1,286,139.42	3,241,384.21
5,803.00	5.72	116.80	5,788.34	-96.82	249.45	40.115610	-104.636880	1,286,135.68	3,241,392.40
5,889.00	5.62	119.37	5,873.92	-100.82	256.95	40.115599	-104.636853	1,286,131.75	3,241,399.94
5,975.00	6.36	116.22	5,959.45	-104.99	264.89	40.115588	-104.636825	1,286,127.66	3,241,407.92
6,061.00	5.91	109.21	6,044.96	-108.55	273.34	40.115578	-104.636795	1,286,124.18	3,241,416.41
6,146.00	5.89	113.70	6,129.51	-111.74	281.47	40.115569	-104.636766	1,286,121.07	3,241,424.56
6,232.00	6.25	112.70	6,215.03	-115.33	289.83	40.115559	-104.636736	1,286,117.57	3,241,432.96
6,250.00	5.91	113.36	6,232.93	-116.07	291.58	40.115557	-104.636729	1,286,116.84	3,241,434.72
6,280.00	4.98	108.91	6,262.79	-117.10	294.23	40.115555	-104.636720	1,286,115.83	3,241,437.38
6,323.00	6.51	127.34	6,305.58	-119.19	297.94	40.115549	-104.636707	1,286,113.79	3,241,441.10
6,366.00	11.60	146.14	6,348.04	-124.26	302.29	40.115535	-104.636691	1,286,108.76	3,241,445.50
6,409.00	15.18	157.11	6,389.87	-133.04	306.89	40.115511	-104.636675	1,286,100.02	3,241,450.19
6,452.00	17.05	164.37	6,431.18	-144.30	310.78	40.115480	-104.636661	1,286,088.80	3,241,454.19
6,494.00	18.47	165.63	6,471.18	-156.68	314.09	40.115446	-104.636649	1,286,076.46	3,241,457.62
6,537.00	21.32	168.43	6,511.61	-170.94	317.35	40.115407	-104.636637	1,286,062.23	3,241,461.01
6,580.00	22.61	168.17	6,551.49	-186.69	320.61	40.115364	-104.636626	1,286,046.52	3,241,464.43
6,623.00	24.48	165.68	6,590.91	-203.41	324.51	40.115318	-104.636612	1,286,029.83	3,241,468.49
6,666.00	28.45	166.99	6,629.39	-222.03	329.02	40.115266	-104.636596	1,286,011.26	3,241,473.18
6,709.00	32.43	169.44	6,666.46	-243.35	333.44	40.115208	-104.636580	1,285,989.98	3,241,477.81
6,752.00	35.72	172.57	6,702.08	-267.14	337.18	40.115143	-104.636566	1,285,966.23	3,241,481.78
6,795.00	38.98	172.32	6,736.25	-293.00	340.61	40.115072	-104.636554	1,285,940.41	3,241,485.46
6,838.00	41.47	172.71	6,769.08	-320.53	344.22	40.114996	-104.636541	1,285,912.91	3,241,489.34
6,881.00	45.29	173.26	6,800.33	-349.84	347.82	40.114916	-104.636528	1,285,883.64	3,241,493.23
6,923.00	49.20	176.21	6,828.84	-380.54	350.63	40.114831	-104.636518	1,285,852.97	3,241,496.33
6,966.00	54.19	176.73	6,855.49	-414.20	352.70	40.114739	-104.636511	1,285,819.33	3,241,498.73
7,009.00	58.07	177.92	6,879.45	-449.86	354.36	40.114641	-104.636505	1,285,783.69	3,241,500.73
7,052.00	61.76	178.11	6,901.00	-487.04	355.64	40.114539	-104.636500	1,285,746.53	3,241,502.38
7,095.00	63.57	177.69	6,920.74	-525.21	357.04	40.114434	-104.636495	1,285,708.37	3,241,504.15
7,138.00	64.69	178.55	6,939.50	-563.88	358.31	40.114328	-104.636491	1,285,669.72	3,241,505.80
7,180.00	66.38	179.06	6,956.90	-602.10	359.11	40.114223	-104.636488	1,285,631.51	3,241,506.97
7,223.00	68.45	178.44	6,973.41	-641.79	359.98	40.114114	-104.636485	1,285,591.83	3,241,508.22

Design Report for Hudson 35N-35HZ - Actual Field Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	Local Coordinates		Geographic Coordinates		UTM Coordinates	
				+N/-S (ft)	+E/-W (ft)	Latitude (ft)	Longitude (ft)	Northing (ft)	Easting (ft)
7,266.00	69.92	177.83	6,988.69	-681.96	361.29	40.114004	-104.636480	1,285,551.68	3,241,509.92
7,309.00	74.70	177.12	7,001.75	-722.88	363.09	40.113892	-104.636474	1,285,510.79	3,241,512.12
7,352.00	78.56	176.11	7,011.69	-764.63	365.57	40.113777	-104.636465	1,285,469.06	3,241,515.00
7,395.00	81.33	175.23	7,019.20	-806.84	368.76	40.113661	-104.636454	1,285,426.88	3,241,518.61
7,437.00	84.94	176.87	7,024.22	-848.43	371.63	40.113547	-104.636443	1,285,385.32	3,241,521.88
7,471.00	87.35	177.57	7,026.51	-882.31	373.28	40.113454	-104.636437	1,285,351.46	3,241,523.86
7,510.60	88.11	177.23	7,028.08	-921.84	375.07	40.113345	-104.636431	1,285,311.95	3,241,526.04
7,616.00	90.12	176.31	7,029.71	-1,027.06	381.02	40.113057	-104.636410	1,285,206.81	3,241,533.00
7,659.00	90.19	176.73	7,029.59	-1,069.98	383.63	40.112939	-104.636400	1,285,163.92	3,241,536.03
7,702.00	90.06	177.05	7,029.50	-1,112.91	385.96	40.112821	-104.636392	1,285,121.01	3,241,538.78
7,745.00	89.81	176.91	7,029.55	-1,155.85	388.22	40.112703	-104.636384	1,285,078.09	3,241,541.46
7,787.00	89.69	177.15	7,029.73	-1,197.80	390.40	40.112588	-104.636376	1,285,036.17	3,241,544.05
7,831.00	89.38	177.02	7,030.09	-1,241.74	392.64	40.112467	-104.636368	1,284,992.26	3,241,546.71
7,874.00	89.44	177.07	7,030.53	-1,284.68	394.86	40.112349	-104.636360	1,284,949.34	3,241,549.35
7,959.00	91.11	178.36	7,030.12	-1,369.60	398.24	40.112116	-104.636348	1,284,864.46	3,241,553.56
8,002.00	91.23	178.39	7,029.24	-1,412.58	399.46	40.111998	-104.636344	1,284,821.50	3,241,555.20
8,045.00	90.74	178.76	7,028.50	-1,455.56	400.53	40.111880	-104.636340	1,284,778.53	3,241,556.68
8,088.00	90.43	179.07	7,028.07	-1,498.55	401.35	40.111762	-104.636337	1,284,735.55	3,241,557.92
8,131.00	90.43	179.33	7,027.74	-1,541.54	401.95	40.111644	-104.636335	1,284,692.57	3,241,558.93
8,174.00	90.43	179.23	7,027.42	-1,584.54	402.49	40.111526	-104.636333	1,284,649.58	3,241,559.89
8,217.00	89.94	179.24	7,027.28	-1,627.53	403.06	40.111408	-104.636331	1,284,606.60	3,241,560.88
8,260.00	89.94	179.29	7,027.33	-1,670.53	403.61	40.111290	-104.636329	1,284,563.61	3,241,561.85
8,302.00	89.69	179.05	7,027.46	-1,712.53	404.22	40.111175	-104.636327	1,284,521.62	3,241,562.87
8,388.00	90.31	180.04	7,027.46	-1,798.52	404.90	40.110939	-104.636324	1,284,435.64	3,241,564.39
8,474.00	90.43	180.24	7,026.91	-1,884.52	404.69	40.110703	-104.636325	1,284,349.65	3,241,565.02
8,560.00	90.87	180.73	7,025.93	-1,970.51	403.97	40.110467	-104.636328	1,284,263.66	3,241,565.12
8,646.00	90.06	181.61	7,025.23	-2,056.49	402.21	40.110231	-104.636334	1,284,177.67	3,241,564.20
8,731.00	88.76	180.26	7,026.11	-2,141.47	400.82	40.109998	-104.636339	1,284,092.68	3,241,563.64
8,817.00	88.95	179.99	7,027.83	-2,227.45	400.64	40.109762	-104.636340	1,284,006.71	3,241,564.29
8,903.00	90.31	180.45	7,028.38	-2,313.45	400.31	40.109525	-104.636341	1,283,920.72	3,241,564.80
8,989.00	91.11	179.96	7,027.32	-2,399.44	400.00	40.109289	-104.636342	1,283,834.73	3,241,565.33
9,075.00	89.88	178.36	7,026.57	-2,485.42	401.26	40.109053	-104.636337	1,283,748.77	3,241,567.42
9,167.00	90.43	178.48	7,026.32	-2,577.39	403.79	40.108801	-104.636328	1,283,656.83	3,241,570.85
9,259.00	91.54	179.31	7,024.74	-2,669.35	405.57	40.108548	-104.636322	1,283,564.89	3,241,573.52
9,350.00	91.91	180.88	7,022.00	-2,760.31	405.42	40.108299	-104.636323	1,283,473.94	3,241,574.26
9,442.00	91.11	181.16	7,019.58	-2,852.26	403.78	40.108046	-104.636328	1,283,381.98	3,241,573.51
9,534.00	90.19	180.65	7,018.54	-2,944.24	402.33	40.107794	-104.636334	1,283,290.00	3,241,572.95
9,626.00	89.81	180.12	7,018.54	-3,036.24	401.71	40.107541	-104.636336	1,283,198.00	3,241,573.23
9,718.00	89.88	179.85	7,018.78	-3,128.24	401.73	40.107289	-104.636336	1,283,106.01	3,241,574.15
9,810.00	89.75	179.64	7,019.08	-3,220.24	402.14	40.107036	-104.636334	1,283,014.02	3,241,575.45
9,901.00	89.81	180.20	7,019.43	-3,311.24	402.27	40.106786	-104.636334	1,282,923.03	3,241,576.46
9,993.00	89.69	180.28	7,019.83	-3,403.23	401.89	40.106534	-104.636335	1,282,831.04	3,241,576.97

Design Report for Hudson 35N-35HZ - Actual Field Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	Local Coordinates		Geographic Coordinates		UTM Coordinates	
				+N/-S (ft)	+E/-W (ft)	Latitude (ft)	Longitude (ft)	Northing (ft)	Easting (ft)
10,085.00	89.63	180.23	7,020.38	-3,495.23	401.48	40.106281	-104.636337	1,282,739.05	3,241,577.46
10,177.00	89.26	180.16	7,021.27	-3,587.23	401.16	40.106029	-104.636338	1,282,647.06	3,241,578.04
10,268.00	89.20	180.92	7,022.49	-3,678.21	400.31	40.105779	-104.636341	1,282,556.07	3,241,578.07
10,360.00	89.20	180.20	7,023.78	-3,770.20	399.41	40.105527	-104.636344	1,282,464.08	3,241,578.06
10,452.00	89.81	179.97	7,024.57	-3,862.20	399.27	40.105274	-104.636345	1,282,372.09	3,241,578.82
10,544.00	90.50	180.90	7,024.32	-3,954.19	398.57	40.105022	-104.636347	1,282,280.10	3,241,579.02
10,636.00	90.12	180.23	7,023.83	-4,046.19	397.66	40.104769	-104.636350	1,282,188.10	3,241,579.00
10,727.00	89.57	178.99	7,024.07	-4,137.18	398.28	40.104519	-104.636348	1,282,097.12	3,241,580.51
10,817.00	90.06	179.68	7,024.36	-4,227.17	399.33	40.104272	-104.636344	1,282,007.15	3,241,582.43
10,909.00	90.18	179.71	7,024.17	-4,319.17	399.82	40.104020	-104.636343	1,281,915.16	3,241,583.81
11,001.00	89.20	177.94	7,024.67	-4,411.15	401.70	40.103767	-104.636336	1,281,823.21	3,241,586.59
11,091.00	88.70	177.29	7,026.32	-4,501.05	405.45	40.103520	-104.636323	1,281,733.35	3,241,591.21
11,182.00	89.57	176.65	7,027.69	-4,591.91	410.26	40.103271	-104.636305	1,281,642.55	3,241,596.90
11,273.00	89.63	175.57	7,028.33	-4,682.70	416.43	40.103022	-104.636283	1,281,551.83	3,241,603.96
11,366.00	90.12	175.99	7,028.53	-4,775.45	423.27	40.102767	-104.636259	1,281,459.15	3,241,611.70
11,457.00	90.68	175.96	7,027.89	-4,866.22	429.66	40.102518	-104.636236	1,281,368.45	3,241,618.97
11,549.00	91.24	177.15	7,026.35	-4,958.04	435.19	40.102266	-104.636216	1,281,276.69	3,241,625.39
11,640.00	92.41	177.68	7,023.45	-5,048.90	439.29	40.102017	-104.636202	1,281,185.88	3,241,630.38
11,730.00	92.91	178.99	7,019.28	-5,138.76	441.90	40.101770	-104.636192	1,281,096.05	3,241,633.86
11,821.00	93.71	179.43	7,014.02	-5,229.60	443.16	40.101520	-104.636188	1,281,005.23	3,241,636.00
11,907.00	93.71	179.51	7,008.46	-5,315.42	443.95	40.101285	-104.636185	1,280,919.43	3,241,637.63
11,992.00	93.53	180.45	7,003.09	-5,400.25	443.98	40.101052	-104.636185	1,280,834.61	3,241,638.48
12,078.00	92.66	181.41	6,998.45	-5,486.11	442.59	40.100816	-104.636190	1,280,748.74	3,241,637.92
12,164.00	92.16	181.62	6,994.83	-5,572.00	440.31	40.100581	-104.636198	1,280,662.84	3,241,636.49
12,249.00	90.56	181.24	6,992.81	-5,656.95	438.19	40.100347	-104.636206	1,280,577.88	3,241,635.19
12,335.00	91.17	181.33	6,991.52	-5,742.92	436.27	40.100111	-104.636213	1,280,491.90	3,241,634.10
12,421.00	90.31	181.17	6,990.40	-5,828.89	434.39	40.099875	-104.636219	1,280,405.91	3,241,633.06
12,507.00	90.19	181.39	6,990.03	-5,914.86	432.47	40.099639	-104.636226	1,280,319.93	3,241,631.97
12,593.00	91.36	181.12	6,988.87	-6,000.83	430.59	40.099403	-104.636233	1,280,233.95	3,241,630.93
12,678.00	90.74	180.65	6,987.31	-6,085.81	429.27	40.099170	-104.636238	1,280,148.97	3,241,630.44
12,764.00	90.31	180.40	6,986.52	-6,171.80	428.48	40.098934	-104.636240	1,280,062.97	3,241,630.49
12,850.00	89.69	180.16	6,986.52	-6,257.80	428.06	40.098698	-104.636242	1,279,976.98	3,241,630.91
12,935.00	89.81	179.61	6,986.89	-6,342.80	428.24	40.098465	-104.636241	1,279,891.99	3,241,631.90
13,021.00	90.86	179.53	6,986.39	-6,428.79	428.88	40.098229	-104.636239	1,279,806.01	3,241,633.38
13,107.00	92.04	179.17	6,984.21	-6,514.76	429.86	40.097993	-104.636235	1,279,720.06	3,241,635.19
13,193.00	90.80	179.77	6,982.08	-6,600.73	430.65	40.097757	-104.636233	1,279,634.11	3,241,636.83
13,279.00	91.54	179.71	6,980.33	-6,686.71	431.04	40.097521	-104.636231	1,279,548.14	3,241,638.05
13,364.00	90.56	180.92	6,978.77	-6,771.69	430.57	40.097287	-104.636233	1,279,463.16	3,241,638.41
13,450.00	89.51	180.89	6,978.72	-6,857.68	429.22	40.097051	-104.636238	1,279,377.16	3,241,637.89
13,536.00	90.25	181.30	6,978.90	-6,943.66	427.57	40.096815	-104.636244	1,279,291.17	3,241,637.08
13,622.00	89.44	182.27	6,979.13	-7,029.62	424.89	40.096579	-104.636253	1,279,205.20	3,241,635.24
13,707.00	90.00	182.45	6,979.54	-7,114.54	421.39	40.096346	-104.636266	1,279,120.24	3,241,632.56

Design Report for Hudson 35N-35HZ - Actual Field Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	Local Coordinates		Geographic Coordinates		UTM Coordinates	
				+N/-S (ft)	+E/-W (ft)	Latitude (ft)	Longitude (ft)	Northing (ft)	Easting (ft)
13,793.00	90.93	182.55	6,978.85	-7,200.46	417.64	40.096110	-104.636279	1,279,034.30	3,241,629.65
13,879.00	90.93	182.75	6,977.45	-7,286.35	413.67	40.095875	-104.636293	1,278,948.37	3,241,626.51
13,965.00	89.07	181.73	6,977.45	-7,372.28	410.31	40.095639	-104.636305	1,278,862.42	3,241,623.98
14,050.00	90.74	181.79	6,977.59	-7,457.24	407.69	40.095406	-104.636315	1,278,777.44	3,241,622.20
14,136.00	90.19	182.28	6,976.89	-7,543.18	404.64	40.095170	-104.636326	1,278,691.48	3,241,619.98
14,222.00	90.37	182.48	6,976.47	-7,629.11	401.07	40.094934	-104.636338	1,278,605.53	3,241,617.25
14,308.00	89.20	182.59	6,976.79	-7,715.02	397.27	40.094698	-104.636352	1,278,519.58	3,241,614.28
14,394.00	89.63	181.83	6,977.67	-7,800.95	393.95	40.094462	-104.636364	1,278,433.63	3,241,611.80
14,479.00	89.14	180.69	6,978.59	-7,885.93	392.08	40.094229	-104.636371	1,278,348.65	3,241,610.76
14,565.00	88.33	179.50	6,980.48	-7,971.90	391.94	40.093993	-104.636371	1,278,262.68	3,241,611.45
14,651.00	87.10	178.75	6,983.91	-8,057.82	393.25	40.093757	-104.636366	1,278,176.78	3,241,613.60
14,737.00	87.22	177.55	6,988.17	-8,143.67	396.02	40.093521	-104.636357	1,278,090.96	3,241,617.20
14,822.00	88.33	177.38	6,991.47	-8,228.52	399.78	40.093288	-104.636343	1,278,006.16	3,241,621.78
14,908.00	88.14	177.55	6,994.12	-8,314.40	403.58	40.093053	-104.636330	1,277,920.32	3,241,626.42
14,994.00	88.89	176.90	6,996.35	-8,400.26	407.74	40.092817	-104.636315	1,277,834.50	3,241,631.42
15,080.00	89.94	177.21	6,997.23	-8,486.15	412.16	40.092581	-104.636299	1,277,748.67	3,241,636.67
15,165.00	91.48	177.57	6,996.18	-8,571.05	416.03	40.092348	-104.636285	1,277,663.82	3,241,641.37
15,294.00	91.92	177.81	6,992.35	-8,699.89	421.23	40.091994	-104.636266	1,277,535.04	3,241,647.82
15,380.00	91.42	178.08	6,989.84	-8,785.79	424.31	40.091759	-104.636255	1,277,449.17	3,241,651.73
15,466.00	90.49	178.41	6,988.41	-8,871.74	426.95	40.091523	-104.636246	1,277,363.26	3,241,655.20
15,552.00	91.24	178.53	6,987.11	-8,957.70	429.24	40.091287	-104.636238	1,277,277.33	3,241,658.33
15,637.00	92.41	178.50	6,984.40	-9,042.63	431.44	40.091054	-104.636230	1,277,192.43	3,241,661.36
15,723.00	92.35	178.80	6,980.83	-9,128.53	433.47	40.090818	-104.636223	1,277,106.55	3,241,664.22
15,809.00	93.09	179.25	6,976.75	-9,214.42	434.93	40.090582	-104.636218	1,277,020.69	3,241,666.52
15,894.00	92.78	178.73	6,972.40	-9,299.29	436.43	40.090349	-104.636212	1,276,935.83	3,241,668.84
15,980.00	92.16	178.95	6,968.69	-9,385.19	438.16	40.090113	-104.636206	1,276,849.96	3,241,671.41
16,065.00	93.21	179.06	6,964.71	-9,470.09	439.64	40.089880	-104.636201	1,276,765.08	3,241,673.71
16,151.00	94.39	179.26	6,959.01	-9,555.89	440.90	40.089645	-104.636196	1,276,679.30	3,241,675.80
16,237.00	95.19	179.18	6,951.83	-9,641.58	442.06	40.089409	-104.636192	1,276,593.63	3,241,677.80
16,322.00	96.25	178.91	6,943.36	-9,726.14	443.47	40.089177	-104.636187	1,276,509.09	3,241,680.04
16,403.00	97.24	178.91	6,933.85	-9,806.57	445.00	40.088956	-104.636182	1,276,428.69	3,241,682.35
16,450.00	97.24	178.91	6,927.92	-9,853.18	445.89	40.088829	-104.636178	1,276,382.08	3,241,683.69

Design Report for Hudson 35N-35HZ - Actual Field Surveys

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
16.00	16.00	0.00	0.00	Xtreme 22: RKB = 16ft
116.00	116.00	-0.15	0.34	First MS Energy Services Gyro @ 116.00ft
1,251.00	1,250.97	-4.37	-0.18	Tie-On to Surface Gyros @ 1251.00ft
1,251.00	1,250.97	-4.37	-0.18	Final MS Energy Services Gyro @ 1251.00ft
1,435.00	1,434.97	-4.14	-1.09	First Sperry MWD Survey @ 1435.00ft
16,403.00	6,933.85	-9,806.57	445.00	Final Sperry MWD Survey @ 16403.00ft
16,450.00	6,927.92	-9,853.18	445.89	Straight Line Proj @ 16450' MD :: 6927.92' TVD

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/-S (ft)	+E/-W (ft)	
User	No Target (Freehand)	179.64	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
16.00	1,251.00	MS Energy Services - Surface Gyros	NS-GYRO-MS
1,435.00	7,471.00	Sperry MWD Surveys - Vert/Build	MWD+SC
7,616.00	16,403.00	Sperry MWD Surveys - Lateral	MWD+SC

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,510.60	7,028.08	7" Casing @ 7510.6' MD :: 7028.08' TVD	7	8-3/4

Design Report for Hudson 35N-35HZ - Actual Field Surveys

Targets for Plan C Rev 0

Shape	Target Name	TVD (ft)	Northing (ft)	Easting (ft)	+N/-S ft	+E/-W ft	Created	Updated
Polygon	Hudson 35N-35HZ_LD	0.00	1,286,230.07	3,241,142.03	0.00	0.00	01-17-2013	01-23-2013
Point	Hudson 35N-35HZ_WP 1	7,026.00	1,279,934.76	3,241,628.25	-6,300.00	425.00	01-16-2013	02-07-2013
Polygon	Hudson 35N-35HZ_SB	0.00	1,286,230.07	3,241,142.03	0.00	0.00	01-17-2013	01-23-2013
Polygon	Hudson 35N-35HZ_Sec	0.00	1,286,230.07	3,241,142.03	0.00	0.00	01-17-2013	01-23-2013
Point	Hudson 35N-35HZ_SHL	0.00	1,286,230.07	3,241,142.03	0.00	0.00	01-16-2013	01-16-2013
Point	Hudson 35N-35HZ_BHL reloc	6,970.00	1,276,355.15	3,241,668.23	-9,879.97	430.17	01-18-2013	02-07-2013
Point	Hudson 35N-35HZ_BHL	6,973.00	1,276,356.73	3,241,830.94	-9,879.97	592.90	01-16-2013	01-16-2013

North Reference Sheet for Sec. 26-T2N-R65W - Hudson 35N-35HZ - Plan C Rev 0

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

Vertical Depths are relative to RKB=16 @ 4926.00ft (Xtreme 22). Northing and Easting are relative to Hudson 35N-35HZ

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: 0.99995960

Grid Coordinates of Well: 1,286,230.07 ft N, 3,241,142.03 ft E

Geographical Coordinates of Well: 40° 06' 57.15" N, 104° 38' 15.98" W

Grid Convergence at Surface is: 0.56°

Based upon Minimum Curvature type calculations, at a Measured Depth of 16,450.00ft

the Bottom Hole Displacement is 9,863.27ft in the Direction of 177.41° (True).

Magnetic Convergence at surface is: -8.04° (9 March 2013, , BGGM2012)

