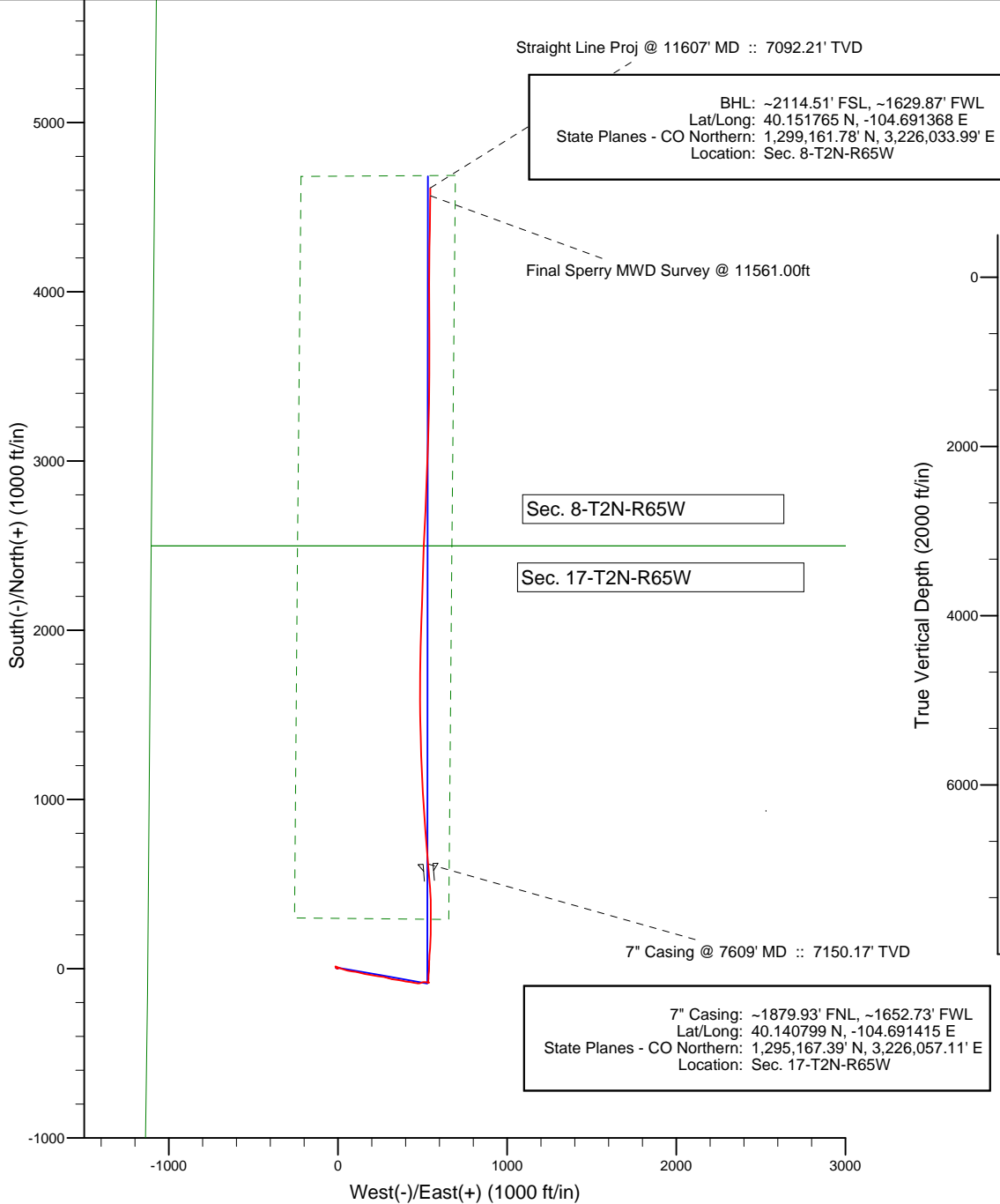
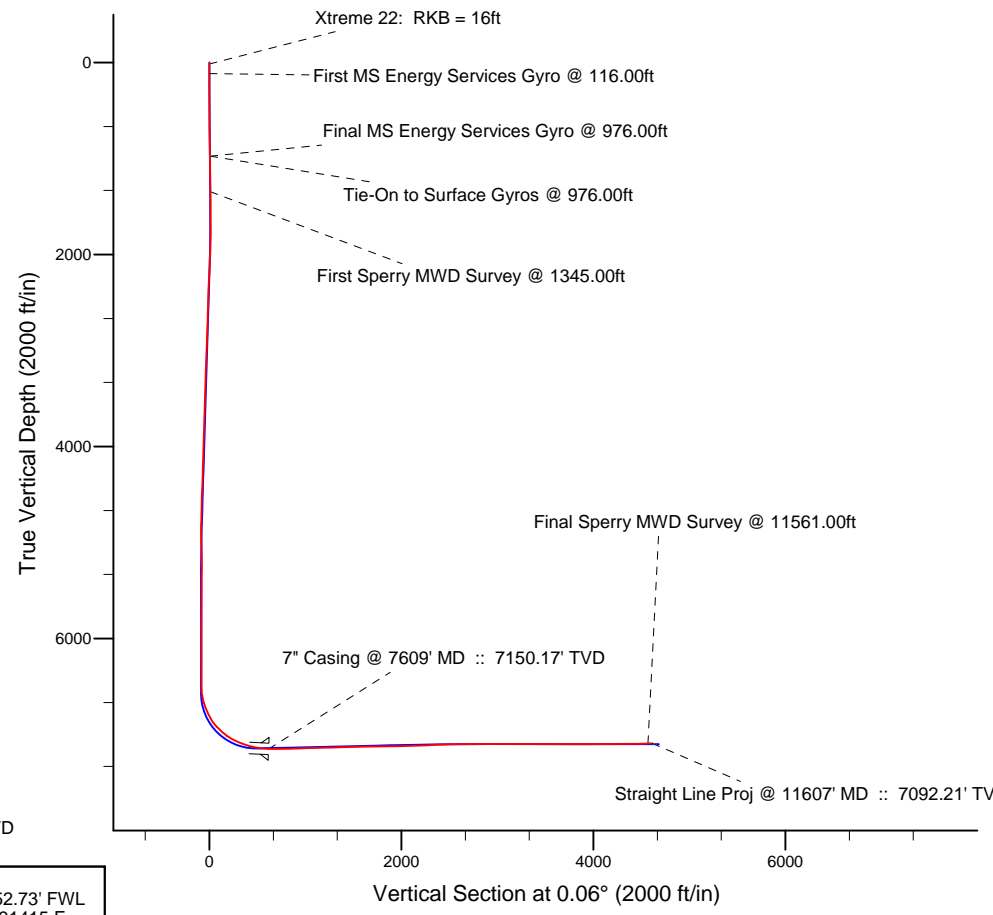


Project: Weld County, CO (NAD 83)
 Site: Sec. 17-T2N-R65W
 Well: Melbon 19N-E8HZ
 Wellbore: Plan B Rev 0
 Design: Actual Field Surveys



LEGEND

+ Melbon 19N-E8HZ, Plan B Rev 0, Plan B Rev 0 PROPOSAL VO
+ Actual Field Surveys Hudson 13N-35HZ



WELL DETAILS: Melbon 19N-E8HZ	
Ground Level:	4949.00
RKB=16 @ 4965.00ft (Xtreme 22)	
Design: Actual Field Surveys (Melbon 19N-E8HZ/Plan B Rev 0)	
Created By: Fred Hartmann	Date: 05/15/2013
Reviewed: _____	Date: _____

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 17-T2N-R65W

Melbon 19N-E8HZ

Plan B Rev 0

Design: Actual Field Surveys

Sperry Drilling Services

Standard Report

15 May, 2013

Well Coordinates: 1,294,543.18 N, 3,225,529.40 E (40° 08' 20.76" N, 104° 41' 35.96" W)

Ground Level: 4,949.00 ft

Local Coordinate Origin: Centered on Well Melbon 19N-E8HZ

Viewing Datum: RKB=16 @ 4965.00ft (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

Design Report for Melbon 19N-E8HZ - 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	1.17	284.22	115.99	0.25	-0.99	0.25	1.17
First MS Energy Services Gyro @ 116.00ft							
216.00	1.02	297.66	215.97	0.91	-2.77	0.91	0.30
316.00	0.89	293.33	315.96	1.64	-4.27	1.63	0.15
416.00	0.68	295.58	415.95	2.20	-5.52	2.19	0.21
516.00	0.71	302.57	515.94	2.79	-6.57	2.78	0.09
616.00	0.59	305.42	615.94	3.42	-7.52	3.41	0.12
716.00	0.66	299.99	715.93	4.01	-8.44	4.00	0.09
816.00	0.81	299.70	815.92	4.65	-9.55	4.64	0.15
916.00	0.78	312.82	915.91	5.46	-10.66	5.45	0.18
976.00	0.91	325.63	975.91	6.13	-11.23	6.12	0.38
Final MS Energy Services Gyro @ 976.00ft - Tie-On to Surface Gyros @ 976.00ft							
1,345.00	0.68	356.05	1,344.87	10.73	-13.03	10.72	0.13
First Sperry MWD Survey @ 1345.00ft							
1,619.00	0.84	328.78	1,618.85	14.07	-14.19	14.06	0.14
1,745.00	0.71	105.07	1,744.85	14.66	-13.91	14.64	1.14
1,802.00	2.08	114.06	1,801.83	14.15	-12.63	14.13	2.43
1,894.00	5.01	110.08	1,893.64	12.08	-7.33	12.08	3.19
1,986.00	4.95	112.72	1,985.29	9.17	0.11	9.17	0.26
2,077.00	6.47	111.16	2,075.84	5.81	8.51	5.81	1.68
2,169.00	7.36	113.17	2,167.17	1.62	18.76	1.64	1.00
2,261.00	8.86	108.81	2,258.25	-2.99	30.89	-2.96	1.76
2,352.00	9.98	106.04	2,348.02	-7.43	45.10	-7.38	1.33
2,444.00	10.20	99.73	2,438.60	-11.01	60.79	-10.94	1.22
2,535.00	8.90	99.94	2,528.34	-13.58	75.66	-13.50	1.43
2,627.00	9.27	95.70	2,619.18	-15.55	90.05	-15.45	0.83
2,718.00	9.42	100.93	2,708.98	-17.69	104.65	-17.58	0.95
2,810.00	11.17	101.93	2,799.49	-20.96	120.77	-20.83	1.91
2,902.00	10.00	104.64	2,889.93	-24.82	137.21	-24.67	1.38
2,993.00	11.34	102.87	2,979.35	-28.81	153.58	-28.65	1.52
3,086.00	10.10	103.88	3,070.73	-32.80	170.41	-32.62	1.35
3,172.00	10.60	98.18	3,155.33	-35.74	185.56	-35.54	1.32
3,258.00	9.82	96.49	3,239.97	-37.69	200.68	-37.48	0.97
3,343.00	10.73	99.61	3,323.60	-39.83	215.68	-39.60	1.25
3,429.00	9.59	97.60	3,408.25	-42.11	230.68	-41.87	1.39
3,515.00	10.29	98.21	3,492.96	-44.16	245.38	-43.90	0.82
3,601.00	10.39	98.88	3,577.57	-46.45	260.65	-46.18	0.18
3,686.00	8.67	99.63	3,661.39	-48.71	274.54	-48.42	2.03
3,772.00	9.09	106.52	3,746.36	-51.72	287.44	-51.42	1.33
3,858.00	7.62	105.94	3,831.45	-55.22	299.44	-54.91	1.71
3,943.00	8.90	106.58	3,915.56	-58.65	311.16	-58.32	1.51
4,029.00	9.35	97.27	4,000.48	-61.43	324.46	-61.09	1.79
4,115.00	11.21	100.02	4,085.09	-63.77	339.63	-63.41	2.24
4,286.00	9.27	96.13	4,253.36	-68.13	369.69	-67.74	1.20
4,372.00	9.56	101.28	4,338.21	-70.27	383.58	-69.87	1.04
4,458.00	10.31	104.39	4,422.92	-73.58	398.04	-73.16	1.07
4,543.00	11.39	98.11	4,506.40	-76.65	413.72	-76.22	1.88

Design Report for Melbon 19N-E8HZ - Actual Field Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
4,629.00	10.57	96.11	4,590.83	-78.69	429.97	-78.24	1.05
4,715.00	11.42	101.42	4,675.25	-81.21	446.16	-80.75	1.54
4,800.00	10.98	99.75	4,758.63	-84.25	462.39	-83.77	0.64
4,886.00	7.66	90.67	4,843.49	-85.71	476.19	-85.21	4.21
4,972.00	5.23	78.35	4,928.94	-84.98	485.76	-84.47	3.24
5,057.00	4.15	65.06	5,013.66	-82.90	492.35	-82.39	1.79
5,143.00	3.80	69.00	5,099.45	-80.57	497.83	-80.05	0.52
5,229.00	3.38	69.92	5,185.28	-78.68	502.87	-78.15	0.49
5,315.00	3.88	97.16	5,271.12	-78.17	508.14	-77.64	2.07
5,400.00	4.14	93.24	5,355.91	-78.70	514.06	-78.16	0.44
5,486.00	3.46	98.99	5,441.72	-79.28	519.72	-78.74	0.91
5,572.00	3.21	91.67	5,527.57	-79.76	524.69	-79.21	0.57
5,657.00	2.62	102.67	5,612.46	-80.25	528.96	-79.70	0.95
5,743.00	1.79	107.97	5,698.40	-81.10	532.16	-80.54	0.99
5,829.00	1.59	100.11	5,784.36	-81.72	534.61	-81.16	0.36
5,914.00	0.84	76.11	5,869.34	-81.78	536.38	-81.22	1.05
6,000.00	0.25	193.02	5,955.34	-81.81	536.95	-81.25	1.14
6,086.00	0.17	69.80	6,041.34	-81.95	537.02	-81.39	0.43
6,172.00	0.16	298.20	6,127.34	-81.85	537.04	-81.29	0.35
6,257.00	0.03	203.22	6,212.34	-81.81	536.93	-81.25	0.19
6,343.00	0.17	324.10	6,298.34	-81.73	536.84	-81.17	0.22
6,429.00	0.33	325.37	6,384.34	-81.42	536.63	-80.86	0.19
6,502.00	0.39	266.31	6,457.34	-81.27	536.26	-80.70	0.49
6,537.00	0.31	263.47	6,492.34	-81.28	536.05	-80.72	0.23
6,580.00	2.52	340.98	6,535.32	-80.40	535.62	-79.84	5.75
6,623.00	6.99	354.15	6,578.16	-76.91	535.05	-76.35	10.63
6,665.00	11.77	0.25	6,619.59	-70.08	534.81	-69.52	11.61
6,708.00	16.43	2.93	6,661.28	-59.61	535.14	-59.05	10.94
6,751.00	19.42	3.42	6,702.19	-46.40	535.87	-45.84	6.96
6,794.00	22.64	4.30	6,742.32	-31.01	536.92	-30.44	7.52
6,837.00	25.40	3.91	6,781.60	-13.55	538.17	-12.99	6.43
6,880.00	28.28	0.87	6,819.96	5.84	538.95	6.41	7.42
6,922.00	32.34	0.75	6,856.21	27.03	539.25	27.60	9.67
6,965.00	38.47	3.39	6,891.25	51.91	540.19	52.47	14.69
7,008.00	43.96	3.87	6,923.58	80.17	541.99	80.74	12.79
7,051.00	46.83	4.14	6,953.77	110.71	544.13	111.28	6.69
7,094.00	49.55	3.79	6,982.44	142.68	546.35	143.25	6.35
7,137.00	53.94	1.59	7,009.06	176.40	547.91	176.97	10.97
7,180.00	57.91	0.29	7,033.14	212.00	548.49	212.58	9.57
7,223.00	62.10	359.98	7,054.64	249.23	548.57	249.81	9.76
7,265.00	65.45	0.51	7,073.19	286.91	548.74	287.48	8.06
7,308.00	68.71	0.76	7,089.94	326.50	549.18	327.08	7.60
7,350.00	71.73	0.00	7,104.15	366.02	549.44	366.59	7.39
7,393.00	74.31	357.50	7,116.71	407.13	548.53	407.70	8.18
7,436.00	76.24	356.89	7,127.64	448.66	546.50	449.23	4.69
7,479.00	79.77	355.32	7,136.57	490.62	543.64	491.19	8.95
7,522.00	83.07	355.60	7,142.99	533.00	540.27	533.56	7.70
7,561.00	85.09	355.37	7,147.01	571.67	537.22	572.23	5.21
7,609.00	87.36	355.46	7,150.17	619.41	533.39	619.96	4.73
7" Casing @ 7609' MD :: 7150.17' TVD							
7,674.00	90.43	355.57	7,151.42	684.19	528.30	684.74	4.73

Design Report for Melbon 19N-E8HZ - Actual Field Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
7,767.00	91.60	354.94	7,149.78	776.85	520.61	777.40	1.43
7,853.00	91.79	355.59	7,147.23	862.52	513.52	863.06	0.79
7,939.00	91.11	356.21	7,145.06	948.27	507.37	948.80	1.07
8,024.00	91.85	356.90	7,142.86	1,033.09	502.26	1,033.61	1.19
8,110.00	92.04	357.66	7,139.94	1,118.94	498.18	1,119.46	0.91
8,196.00	91.67	358.35	7,137.16	1,204.84	495.19	1,205.36	0.91
8,281.00	91.85	358.06	7,134.55	1,289.76	492.53	1,290.28	0.40
8,367.00	90.86	358.38	7,132.51	1,375.70	489.86	1,376.21	1.21
8,453.00	91.73	358.50	7,130.57	1,461.64	487.52	1,462.15	1.02
8,539.00	91.30	0.12	7,128.30	1,547.60	486.48	1,548.11	1.95
8,624.00	90.80	359.09	7,126.74	1,632.58	485.90	1,633.09	1.35
8,710.00	91.05	1.10	7,125.35	1,718.57	486.04	1,719.08	2.35
8,796.00	90.80	1.05	7,123.96	1,804.54	487.65	1,805.05	0.30
8,881.00	90.86	0.55	7,122.73	1,889.52	488.84	1,890.04	0.59
8,967.00	91.36	2.30	7,121.06	1,975.48	490.98	1,975.99	2.12
9,053.00	91.23	2.07	7,119.12	2,061.39	494.26	2,061.91	0.31
9,139.00	91.61	1.85	7,116.99	2,147.32	497.20	2,147.84	0.51
9,224.00	92.22	1.66	7,114.15	2,232.23	499.80	2,232.75	0.75
9,309.00	93.33	1.81	7,110.03	2,317.09	502.37	2,317.61	1.32
9,395.00	92.16	1.50	7,105.92	2,402.95	504.85	2,403.48	1.41
9,481.00	92.04	2.12	7,102.76	2,488.85	507.56	2,489.38	0.73
9,566.00	91.36	2.30	7,100.24	2,573.75	510.84	2,574.28	0.83
9,652.00	90.80	3.16	7,098.62	2,659.64	514.94	2,660.17	1.19
9,738.00	89.75	3.18	7,098.21	2,745.50	519.69	2,746.05	1.22
9,823.00	88.89	1.98	7,099.22	2,830.41	523.52	2,830.95	1.74
9,909.00	89.44	1.97	7,100.47	2,916.35	526.48	2,916.90	0.64
9,994.00	90.00	1.70	7,100.89	3,001.30	529.20	3,001.86	0.73
10,079.00	91.17	1.74	7,100.02	3,086.26	531.75	3,086.81	1.38
10,165.00	89.57	1.48	7,099.46	3,172.22	534.17	3,172.78	1.88
10,250.00	90.68	1.55	7,099.28	3,257.19	536.42	3,257.75	1.31
10,336.00	89.81	0.83	7,098.91	3,343.17	538.20	3,343.73	1.31
10,421.00	89.88	0.87	7,099.14	3,428.16	539.46	3,428.72	0.09
10,506.00	89.51	0.10	7,099.59	3,513.15	540.18	3,513.72	1.01
10,592.00	90.12	0.39	7,099.87	3,599.15	540.55	3,599.72	0.79
10,678.00	89.32	0.03	7,100.29	3,685.15	540.87	3,685.71	1.02
10,763.00	90.00	359.64	7,100.79	3,770.15	540.62	3,770.71	0.92
10,848.00	90.74	359.72	7,100.25	3,855.14	540.15	3,855.71	0.88
10,934.00	90.19	359.91	7,099.55	3,941.14	539.87	3,941.70	0.68
11,020.00	89.14	0.16	7,100.05	4,027.14	539.92	4,027.70	1.26
11,105.00	90.49	359.93	7,100.32	4,112.13	539.99	4,112.70	1.61
11,191.00	90.19	0.60	7,099.81	4,198.13	540.39	4,198.69	0.85
11,277.00	91.48	0.88	7,098.56	4,284.11	541.50	4,284.68	1.53
11,362.00	90.37	1.17	7,097.19	4,369.09	543.02	4,369.65	1.35
11,447.00	90.99	1.00	7,096.18	4,454.06	544.63	4,454.63	0.76
11,533.00	91.55	0.74	7,094.27	4,540.03	545.93	4,540.60	0.72
11,561.00	91.61	0.47	7,093.50	4,568.02	546.23	4,568.59	0.99
Final Sperry MWD Survey @ 11561.00ft							
11,607.00	91.61	0.47	7,092.21	4,614.00	546.61	4,614.57	0.00
Straight Line Proj @ 11607' MD :: 7092.21' TVD							

Design Report for Melbon 19N-E8HZ - 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	115.99	0.25	-0.99	First MS Energy Services Gyro @ 116.00ft
976.00	975.91	6.13	-11.23	Final MS Energy Services Gyro @ 976.00ft
976.00	975.91	6.13	-11.23	Tie-On to Surface Gyros @ 976.00ft
1,345.00	1,344.87	10.73	-13.03	First Sperry MWD Survey @ 1345.00ft
11,561.00	7,093.50	4,568.02	546.23	Final Sperry MWD Survey @ 11561.00ft
11,607.00	7,092.21	4,614.00	546.61	Straight Line Proj @ 11607' MD :: 7092.21' TVD

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/_S (ft)	+E/-W (ft)	
User	No Target (Freehand)	0.06	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
16.00	976.00	MS Energy Services - Surface Gyros	NS-GYRO-MS
1,345.00	7,561.00	Sperry MWD Surveys - Vert/Build	MWD+SC
7,674.00	11,561.00	Sperry MWD Survey - Lateral	MWD+SC

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,609.00	7,150.17	7" Casing @ 7609' MD :: 7150.17' TVD	7	8-3/4

Design Report for Melbon 19N-E8HZ - 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
Melbon 19N-E8HZ_l	0.00	0.00	7,100.00	4,683.39	532.53	1,299,231.03	3,226,019.28	40.151955	-104.691418
- actual wellpath misses target center by 71.23ft at 11607.00ft MD (7092.21 TVD, 4614.00 N, 546.61 E)									
- Point									
Melbon 19N-E8HZ_!	0.00	0.00	0.00	0.00	0.00	1,294,543.18	3,225,529.40	40.139099	-104.693323
- actual wellpath hits target center									
- Polygon									
Point 1				-1,053.47	7,795.61	1,302,328.57	3,224,405.10		
Point 2				-1,078.39	5,147.43	1,299,680.38	3,224,404.27		
Point 3				-1,103.25	2,499.24	1,297,032.18	3,224,403.50		
Point 4				-1,114.81	1,174.36	1,295,707.31	3,224,404.00		
Point 5				-1,125.94	-151.85	1,294,381.10	3,224,404.93		
Point 6				-1,162.83	-2,825.19	1,291,707.65	3,224,392.36		
Point 7				1,510.69	-2,791.44	1,291,765.72	3,227,065.35		
Point 8				4,166.24	-2,782.90	1,291,798.41	3,229,720.61		
Point 9				4,170.15	-142.64	1,294,438.49	3,229,700.50		
Point 10				4,173.80	2,499.67	1,297,080.61	3,229,680.11		
Point 11				4,195.19	5,134.42	1,299,715.34	3,229,677.53		
Point 12				4,211.63	7,810.09	1,302,390.94	3,229,669.63		
Point 13				1,579.09	7,802.78	1,302,359.68	3,227,037.38		
Point 14				-1,053.47	7,795.61	1,302,328.57	3,224,405.10		
Melbon 19N-E8HZ_:	0.00	0.00	0.00	0.00	0.00	1,294,543.18	3,225,529.40	40.139099	-104.693323
- actual wellpath hits target center									
- Polygon									
Point 1				-1,125.94	-151.85	1,294,381.10	3,224,404.93		
Point 2				-665.91	-151.06	1,294,386.08	3,224,864.92		
Point 3				3,710.43	-141.99	1,294,434.96	3,229,240.81		
Point 4				4,170.45	-142.64	1,294,438.49	3,229,700.80		
Point 5				3,710.43	-141.99	1,294,434.96	3,229,240.81		
Point 6				-665.91	-151.06	1,294,386.08	3,224,864.92		
Point 7				-1,125.94	-151.85	1,294,381.10	3,224,404.93		
Melbon 19N-E8HZ_{	0.00	0.00	0.00	0.00	0.00	1,294,543.18	3,225,529.40	40.139099	-104.693323
- actual wellpath hits target center									
- Polygon									
Point 1				-1,078.39	5,147.43	1,299,680.38	3,224,404.27		
Point 2				1,557.07	5,140.81	1,299,697.73	3,227,039.57		
Point 3				4,195.19	5,134.42	1,299,715.34	3,229,677.53		
Point 4				1,557.07	5,140.81	1,299,697.73	3,227,039.57		
Point 5				-1,078.39	5,147.43	1,299,680.38	3,224,404.27		
Melbon 19N-E8HZ_t	0.00	0.00	7,100.00	2,499.43	530.34	1,297,047.24	3,226,036.95	40.145960	-104.691426
- actual wellpath misses target center by 22.49ft at 9492.53ft MD (7102.36 TVD, 2500.37 N, 507.99 E)									
- Point									
Melbon 19N-E8HZ_!	0.00	0.00	0.00	0.00	0.00	1,294,543.18	3,225,529.40	40.139099	-104.693323
- actual wellpath hits target center									
- Point									
Melbon 19N-E8HZ_'	0.00	0.00	0.00	0.00	0.00	1,294,543.18	3,225,529.40	40.139099	-104.693323
- actual wellpath hits target center									
- Polygon									
Point 1				-1,103.25	2,499.24	1,297,032.18	3,224,403.50		
Point 2				1,535.32	2,499.52	1,297,056.46	3,227,041.85		
Point 3				4,173.80	2,499.67	1,297,080.61	3,229,680.11		
Point 4				1,535.32	2,499.52	1,297,056.46	3,227,041.85		
Point 5				-1,103.25	2,499.24	1,297,032.18	3,224,403.50		
Melbon 19N-E8HZ_l	0.00	0.00	0.00	0.00	0.00	1,294,543.18	3,225,529.40	40.139099	-104.693323
- actual wellpath hits target center									
- Polygon									
Point 1				-217.55	4,682.59	1,299,223.41	3,225,269.27		
Point 2				-238.25	2,491.37	1,297,032.18	3,225,268.50		
Point 3				-256.76	300.28	1,294,841.10	3,225,269.93		
Point 4				655.24	291.98	1,294,841.10	3,226,181.93		
Point 5				673.75	2,483.07	1,297,032.18	3,226,180.50		
Point 6				694.58	4,688.61	1,299,237.73	3,226,181.27		

Design Report for Melbon 19N-E8HZ - Actual Field Surveys

North Reference Sheet for Sec. 17-T2N-R65W - Melbon 19N-E8HZ - Plan B 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 @ 4965.00ft (Xtreme 22). Northing and Easting are relative to Melbon 19N-E8HZ

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: 0.99995873

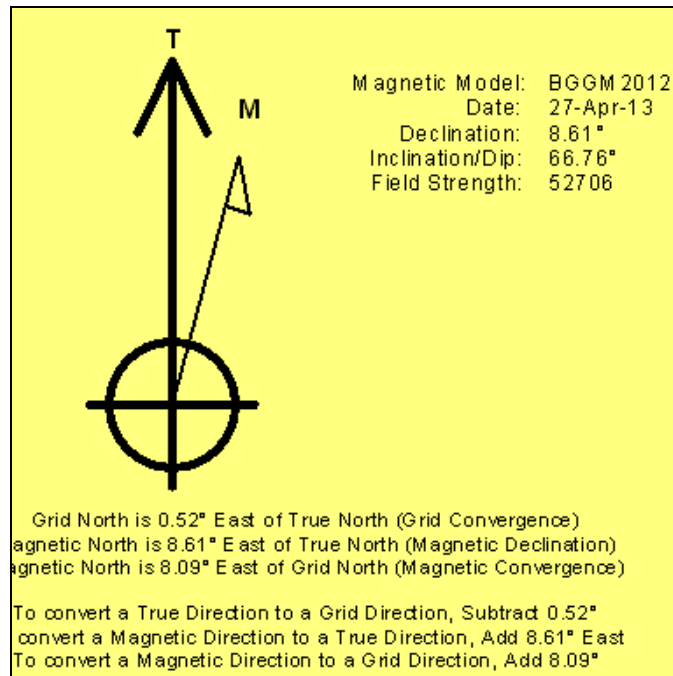
Grid Coordinates of Well: 1,294,543.18 ft N, 3,225,529.40 ft E

Geographical Coordinates of Well: 40° 08' 20.76" N, 104° 41' 35.96" W

Grid Convergence at Surface is: 0.52°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,607.00ft the Bottom Hole Displacement is 4,646.27ft in the Direction of 6.76° (True).

Magnetic Convergence at surface is: -8.09° (27 April 2013, , BGGM2012)



Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 17-T2N-R65W

Melbon 19N-E8HZ

Plan B Rev 0

Design: Actual Field Surveys

Sperry Drilling Services Geodetic Report

15 May, 2013

Well Coordinates: 1,294,543.18 N, 3,225,529.40 E (40° 08' 20.76" N, 104° 41' 35.96" W)

Ground Level: 4,949.00 ft

Local Coordinate Origin:	Centered on Well Melbon 19N-E8HZ
Viewing Datum:	RKB=16 @ 4965.00ft (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 Melbon 19N-E8HZ - 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)
0.00	0.00	0.00	0.00	0.00	0.00	40.139099	-104.693323	1,294,543.18	3,225,529.40
16.00	0.00	0.00	16.00	0.00	0.00	40.139099	-104.693323	1,294,543.18	3,225,529.40
116.00	1.17	284.22	115.99	0.25	-0.99	40.139100	-104.693327	1,294,543.43	3,225,528.41
216.00	1.02	297.66	215.97	0.91	-2.77	40.139101	-104.693333	1,294,544.07	3,225,526.62
316.00	0.89	293.33	315.96	1.64	-4.27	40.139103	-104.693338	1,294,544.78	3,225,525.11
416.00	0.68	295.58	415.95	2.20	-5.52	40.139105	-104.693343	1,294,545.33	3,225,523.86
516.00	0.71	302.57	515.94	2.79	-6.57	40.139107	-104.693347	1,294,545.91	3,225,522.80
616.00	0.59	305.42	615.94	3.42	-7.52	40.139108	-104.693350	1,294,546.54	3,225,521.85
716.00	0.66	299.99	715.93	4.01	-8.44	40.139110	-104.693353	1,294,547.11	3,225,520.93
816.00	0.81	299.70	815.92	4.65	-9.55	40.139112	-104.693357	1,294,547.74	3,225,519.81
916.00	0.78	312.82	915.91	5.46	-10.66	40.139114	-104.693361	1,294,548.55	3,225,518.69
976.00	0.91	325.63	975.91	6.13	-11.23	40.139116	-104.693363	1,294,549.21	3,225,518.11
1,345.00	0.68	356.05	1,344.87	10.73	-13.03	40.139128	-104.693370	1,294,553.80	3,225,516.27
1,619.00	0.84	328.78	1,618.85	14.07	-14.19	40.139138	-104.693374	1,294,557.13	3,225,515.08
1,745.00	0.71	105.07	1,744.85	14.66	-13.91	40.139139	-104.693373	1,294,557.72	3,225,515.35
1,802.00	2.08	114.06	1,801.83	14.15	-12.63	40.139138	-104.693368	1,294,557.21	3,225,516.64
1,894.00	5.01	110.08	1,893.64	12.08	-7.33	40.139132	-104.693349	1,294,555.20	3,225,521.96
1,986.00	4.95	112.72	1,985.29	9.17	0.11	40.139124	-104.693323	1,294,552.36	3,225,529.42
2,077.00	6.47	111.16	2,075.84	5.81	8.51	40.139115	-104.693293	1,294,549.07	3,225,537.85
2,169.00	7.36	113.17	2,167.17	1.62	18.76	40.139103	-104.693256	1,294,544.97	3,225,548.14
2,261.00	8.86	108.81	2,258.25	-2.99	30.89	40.139091	-104.693213	1,294,540.48	3,225,560.31
2,352.00	9.98	106.04	2,348.02	-7.43	45.10	40.139079	-104.693162	1,294,536.17	3,225,574.56
2,444.00	10.20	99.73	2,438.60	-11.01	60.79	40.139069	-104.693106	1,294,532.73	3,225,590.28
2,535.00	8.90	99.94	2,528.34	-13.58	75.66	40.139062	-104.693052	1,294,530.29	3,225,605.18
2,627.00	9.27	95.70	2,619.18	-15.55	90.05	40.139056	-104.693001	1,294,528.46	3,225,619.58
2,718.00	9.42	100.93	2,708.98	-17.69	104.65	40.139050	-104.692949	1,294,526.45	3,225,634.20
2,810.00	11.17	101.93	2,799.49	-20.96	120.77	40.139041	-104.692891	1,294,523.33	3,225,650.34
2,902.00	10.00	104.64	2,889.93	-24.82	137.21	40.139031	-104.692832	1,294,519.62	3,225,666.82
2,993.00	11.34	102.87	2,979.35	-28.81	153.58	40.139020	-104.692774	1,294,515.78	3,225,683.23
3,086.00	10.10	103.88	3,070.73	-32.80	170.41	40.139009	-104.692714	1,294,511.94	3,225,700.09
3,172.00	10.60	98.18	3,155.33	-35.74	185.56	40.139001	-104.692659	1,294,509.14	3,225,715.27
3,258.00	9.82	96.49	3,239.97	-37.69	200.68	40.138996	-104.692605	1,294,507.32	3,225,730.40
3,343.00	10.73	99.61	3,323.60	-39.83	215.68	40.138990	-104.692552	1,294,505.32	3,225,745.42
3,429.00	9.59	97.60	3,408.25	-42.11	230.68	40.138983	-104.692498	1,294,503.17	3,225,760.44
3,515.00	10.29	98.21	3,492.96	-44.16	245.38	40.138978	-104.692445	1,294,501.26	3,225,775.16
3,601.00	10.39	98.88	3,577.57	-46.45	260.65	40.138971	-104.692391	1,294,499.11	3,225,790.44
3,686.00	8.67	99.63	3,661.39	-48.71	274.54	40.138965	-104.692341	1,294,496.98	3,225,804.35
3,772.00	9.09	106.52	3,746.36	-51.72	287.44	40.138957	-104.692295	1,294,494.08	3,225,817.28
3,858.00	7.62	105.94	3,831.45	-55.22	299.44	40.138947	-104.692252	1,294,490.69	3,225,829.31
3,943.00	8.90	106.58	3,915.56	-58.65	311.16	40.138938	-104.692210	1,294,487.37	3,225,841.06
4,029.00	9.35	97.27	4,000.48	-61.43	324.46	40.138930	-104.692163	1,294,484.71	3,225,854.39
4,115.00	11.21	100.02	4,085.09	-63.77	339.63	40.138924	-104.692108	1,294,482.51	3,225,869.58

Design Report for Melbon 19N-E8HZ - 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)
4,286.00	9.27	96.13	4,253.36	-68.13	369.69	40.138912	-104.692001	1,294,478.42	3,225,899.68
4,372.00	9.56	101.28	4,338.21	-70.27	383.58	40.138906	-104.691951	1,294,476.41	3,225,913.59
4,458.00	10.31	104.39	4,422.92	-73.58	398.04	40.138897	-104.691899	1,294,473.23	3,225,928.07
4,543.00	11.39	98.11	4,506.40	-76.65	413.72	40.138889	-104.691843	1,294,470.30	3,225,943.78
4,629.00	10.57	96.11	4,590.83	-78.69	429.97	40.138883	-104.691785	1,294,468.41	3,225,960.05
4,715.00	11.42	101.42	4,675.25	-81.21	446.16	40.138876	-104.691727	1,294,466.04	3,225,976.26
4,800.00	10.98	99.75	4,758.63	-84.25	462.39	40.138868	-104.691669	1,294,463.15	3,225,992.51
4,886.00	7.66	90.67	4,843.49	-85.71	476.19	40.138864	-104.691620	1,294,461.82	3,226,006.33
4,972.00	5.23	78.35	4,928.94	-84.98	485.76	40.138866	-104.691586	1,294,462.63	3,226,015.89
5,057.00	4.15	65.06	5,013.66	-82.90	492.35	40.138871	-104.691562	1,294,464.77	3,226,022.46
5,143.00	3.80	69.00	5,099.45	-80.57	497.83	40.138878	-104.691542	1,294,467.15	3,226,027.92
5,229.00	3.38	69.92	5,185.28	-78.68	502.87	40.138883	-104.691524	1,294,469.09	3,226,032.94
5,315.00	3.88	97.16	5,271.12	-78.17	508.14	40.138884	-104.691506	1,294,469.64	3,226,038.21
5,400.00	4.14	93.24	5,355.91	-78.70	514.06	40.138883	-104.691484	1,294,469.17	3,226,044.13
5,486.00	3.46	98.99	5,441.72	-79.28	519.72	40.138881	-104.691464	1,294,468.64	3,226,049.80
5,572.00	3.21	91.67	5,527.57	-79.76	524.69	40.138880	-104.691446	1,294,468.21	3,226,054.77
5,657.00	2.62	102.67	5,612.46	-80.25	528.96	40.138879	-104.691431	1,294,467.75	3,226,059.05
5,743.00	1.79	107.97	5,698.40	-81.10	532.16	40.138876	-104.691420	1,294,466.93	3,226,062.25
5,829.00	1.59	100.11	5,784.36	-81.72	534.61	40.138875	-104.691411	1,294,466.33	3,226,064.71
5,914.00	0.84	76.11	5,869.34	-81.78	536.38	40.138874	-104.691405	1,294,466.29	3,226,066.47
6,000.00	0.25	193.02	5,955.34	-81.81	536.95	40.138874	-104.691403	1,294,466.26	3,226,067.04
6,086.00	0.17	69.80	6,041.34	-81.95	537.02	40.138874	-104.691402	1,294,466.13	3,226,067.12
6,172.00	0.16	298.20	6,127.34	-81.85	537.04	40.138874	-104.691402	1,294,466.23	3,226,067.14
6,257.00	0.03	203.22	6,212.34	-81.81	536.93	40.138874	-104.691403	1,294,466.26	3,226,067.02
6,343.00	0.17	324.10	6,298.34	-81.73	536.84	40.138875	-104.691403	1,294,466.34	3,226,066.94
6,429.00	0.33	325.37	6,384.34	-81.42	536.63	40.138875	-104.691404	1,294,466.65	3,226,066.72
6,502.00	0.39	266.31	6,457.34	-81.27	536.26	40.138876	-104.691405	1,294,466.80	3,226,066.35
6,537.00	0.31	263.47	6,492.34	-81.28	536.05	40.138876	-104.691406	1,294,466.78	3,226,066.14
6,580.00	2.52	340.98	6,535.32	-80.40	535.62	40.138878	-104.691407	1,294,467.66	3,226,065.71
6,623.00	6.99	354.15	6,578.16	-76.91	535.05	40.138888	-104.691409	1,294,471.15	3,226,065.10
6,665.00	11.77	0.25	6,619.59	-70.08	534.81	40.138907	-104.691410	1,294,477.98	3,226,064.80
6,708.00	16.43	2.93	6,661.28	-59.61	535.14	40.138935	-104.691409	1,294,488.45	3,226,065.03
6,751.00	19.42	3.42	6,702.19	-46.40	535.87	40.138972	-104.691406	1,294,501.66	3,226,065.65
6,794.00	22.64	4.30	6,742.32	-31.01	536.92	40.139014	-104.691403	1,294,517.06	3,226,066.55
6,837.00	25.40	3.91	6,781.60	-13.55	538.17	40.139062	-104.691398	1,294,534.53	3,226,067.65
6,880.00	28.28	0.87	6,819.96	5.84	538.95	40.139115	-104.691395	1,294,553.93	3,226,068.25
6,922.00	32.34	0.75	6,856.21	27.03	539.25	40.139173	-104.691394	1,294,575.12	3,226,068.36
6,965.00	38.47	3.39	6,891.25	51.91	540.19	40.139241	-104.691391	1,294,600.00	3,226,069.07
7,008.00	43.96	3.87	6,923.58	80.17	541.99	40.139319	-104.691384	1,294,628.28	3,226,070.62
7,051.00	46.83	4.14	6,953.77	110.71	544.13	40.139403	-104.691377	1,294,658.83	3,226,072.48
7,094.00	49.55	3.79	6,982.44	142.68	546.35	40.139491	-104.691369	1,294,690.82	3,226,074.40
7,137.00	53.94	1.59	7,009.06	176.40	547.91	40.139583	-104.691363	1,294,724.55	3,226,075.66

Design Report for Melbon 19N-E8HZ - 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)
7,180.00	57.91	0.29	7,033.14	212.00	548.49	40.139681	-104.691361	1,294,760.16	3,226,075.91
7,223.00	62.10	359.98	7,054.64	249.23	548.57	40.139783	-104.691361	1,294,797.39	3,226,075.66
7,265.00	65.45	0.51	7,073.19	286.91	548.74	40.139887	-104.691360	1,294,835.06	3,226,075.48
7,308.00	68.71	0.76	7,089.94	326.50	549.18	40.139995	-104.691359	1,294,874.66	3,226,075.56
7,350.00	71.73	0.00	7,104.15	366.02	549.44	40.140104	-104.691358	1,294,914.17	3,226,075.46
7,393.00	74.31	357.50	7,116.71	407.13	548.53	40.140217	-104.691361	1,294,955.27	3,226,074.18
7,436.00	76.24	356.89	7,127.64	448.66	546.50	40.140331	-104.691368	1,294,996.78	3,226,071.77
7,479.00	79.77	355.32	7,136.57	490.62	543.64	40.140446	-104.691379	1,295,038.71	3,226,068.52
7,522.00	83.07	355.60	7,142.99	533.00	540.27	40.140562	-104.691391	1,295,081.05	3,226,064.78
7,561.00	85.09	355.37	7,147.01	571.67	537.22	40.140668	-104.691402	1,295,119.69	3,226,061.37
7,609.00	87.36	355.46	7,150.17	619.41	533.39	40.140799	-104.691415	1,295,167.39	3,226,057.11
7,674.00	90.43	355.57	7,151.42	684.19	528.30	40.140977	-104.691433	1,295,232.12	3,226,051.43
7,767.00	91.60	354.94	7,149.78	776.85	520.61	40.141231	-104.691461	1,295,324.71	3,226,042.90
7,853.00	91.79	355.59	7,147.23	862.52	513.52	40.141467	-104.691486	1,295,410.30	3,226,035.02
7,939.00	91.11	356.21	7,145.06	948.27	507.37	40.141702	-104.691508	1,295,495.99	3,226,028.10
8,024.00	91.85	356.90	7,142.86	1,033.09	502.26	40.141935	-104.691527	1,295,580.76	3,226,022.22
8,110.00	92.04	357.66	7,139.94	1,118.94	498.18	40.142171	-104.691541	1,295,666.57	3,226,017.36
8,196.00	91.67	358.35	7,137.16	1,204.84	495.19	40.142406	-104.691552	1,295,752.43	3,226,013.59
8,281.00	91.85	358.06	7,134.55	1,289.76	492.53	40.142639	-104.691561	1,295,837.32	3,226,010.15
8,367.00	90.86	358.38	7,132.51	1,375.70	489.86	40.142875	-104.691571	1,295,923.22	3,226,006.70
8,453.00	91.73	358.50	7,130.57	1,461.64	487.52	40.143111	-104.691579	1,296,009.14	3,226,003.58
8,539.00	91.30	0.12	7,128.30	1,547.60	486.48	40.143347	-104.691583	1,296,095.08	3,226,001.76
8,624.00	90.80	359.09	7,126.74	1,632.58	485.90	40.143580	-104.691585	1,296,180.05	3,226,000.40
8,710.00	91.05	1.10	7,125.35	1,718.57	486.04	40.143816	-104.691584	1,296,266.03	3,225,999.76
8,796.00	90.80	1.05	7,123.96	1,804.54	487.65	40.144052	-104.691579	1,296,352.01	3,226,000.60
8,881.00	90.86	0.55	7,122.73	1,889.52	488.84	40.144286	-104.691574	1,296,437.00	3,226,001.01
8,967.00	91.36	2.30	7,121.06	1,975.48	490.98	40.144522	-104.691567	1,296,522.97	3,226,002.37
9,053.00	91.23	2.07	7,119.12	2,061.39	494.26	40.144758	-104.691555	1,296,608.90	3,226,004.86
9,139.00	91.61	1.85	7,116.99	2,147.32	497.20	40.144993	-104.691545	1,296,694.85	3,226,007.02
9,224.00	92.22	1.66	7,114.15	2,232.23	499.80	40.145227	-104.691535	1,296,779.77	3,226,008.85
9,309.00	93.33	1.81	7,110.03	2,317.09	502.37	40.145459	-104.691526	1,296,864.65	3,226,010.65
9,395.00	92.16	1.50	7,105.92	2,402.95	504.85	40.145695	-104.691517	1,296,950.53	3,226,012.35
9,481.00	92.04	2.12	7,102.76	2,488.85	507.56	40.145931	-104.691507	1,297,036.45	3,226,014.28
9,566.00	91.36	2.30	7,100.24	2,573.75	510.84	40.146164	-104.691496	1,297,121.37	3,226,016.78
9,652.00	90.80	3.16	7,098.62	2,659.64	514.94	40.146400	-104.691481	1,297,207.29	3,226,020.10
9,738.00	89.75	3.18	7,098.21	2,745.50	519.69	40.146635	-104.691464	1,297,293.19	3,226,024.07
9,823.00	88.89	1.98	7,099.22	2,830.41	523.52	40.146869	-104.691450	1,297,378.12	3,226,027.12
9,909.00	89.44	1.97	7,100.47	2,916.35	526.48	40.147104	-104.691440	1,297,464.08	3,226,029.31
9,994.00	90.00	1.70	7,100.89	3,001.30	529.20	40.147338	-104.691430	1,297,549.05	3,226,031.26
10,079.00	91.17	1.74	7,100.02	3,086.26	531.75	40.147571	-104.691421	1,297,634.02	3,226,033.03
10,165.00	89.57	1.48	7,099.46	3,172.22	534.17	40.147807	-104.691412	1,297,720.00	3,226,034.67
10,250.00	90.68	1.55	7,099.28	3,257.19	536.42	40.148040	-104.691404	1,297,804.98	3,226,036.14

Design Report for Melbon 19N-E8HZ - 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)
10,336.00	89.81	0.83	7,098.91	3,343.17	538.20	40.148276	-104.691398	1,297,890.97	3,226,037.15
10,421.00	89.88	0.87	7,099.14	3,428.16	539.46	40.148509	-104.691393	1,297,975.97	3,226,037.63
10,506.00	89.51	0.10	7,099.59	3,513.15	540.18	40.148743	-104.691391	1,298,060.96	3,226,037.58
10,592.00	90.12	0.39	7,099.87	3,599.15	540.55	40.148979	-104.691389	1,298,146.96	3,226,037.16
10,678.00	89.32	0.03	7,100.29	3,685.15	540.87	40.149215	-104.691388	1,298,232.95	3,226,036.70
10,763.00	90.00	359.64	7,100.79	3,770.15	540.62	40.149448	-104.691389	1,298,317.94	3,226,035.68
10,848.00	90.74	359.72	7,100.25	3,855.14	540.15	40.149681	-104.691391	1,298,402.92	3,226,034.43
10,934.00	90.19	359.91	7,099.55	3,941.14	539.87	40.149918	-104.691392	1,298,488.91	3,226,033.37
11,020.00	89.14	0.16	7,100.05	4,027.14	539.92	40.150154	-104.691392	1,298,574.90	3,226,032.64
11,105.00	90.49	359.93	7,100.32	4,112.13	539.99	40.150387	-104.691391	1,298,659.89	3,226,031.94
11,191.00	90.19	0.60	7,099.81	4,198.13	540.39	40.150623	-104.691390	1,298,745.88	3,226,031.55
11,277.00	91.48	0.88	7,098.56	4,284.11	541.50	40.150859	-104.691386	1,298,831.87	3,226,031.88
11,362.00	90.37	1.17	7,097.19	4,369.09	543.02	40.151092	-104.691380	1,298,916.85	3,226,032.63
11,447.00	90.99	1.00	7,096.18	4,454.06	544.63	40.151325	-104.691375	1,299,001.84	3,226,033.46
11,533.00	91.55	0.74	7,094.27	4,540.03	545.93	40.151561	-104.691370	1,299,087.81	3,226,033.99
11,561.00	91.61	0.47	7,093.50	4,568.02	546.23	40.151638	-104.691369	1,299,115.80	3,226,034.03
11,607.00	91.61	0.47	7,092.21	4,614.00	546.61	40.151765	-104.691368	1,299,161.78	3,226,033.99

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
16.00	16.00	0.00	0.00	Xtreme 22: RKB = 16ft
116.00	115.99	0.25	-0.99	First MS Energy Services Gyro @ 116.00ft
976.00	975.91	6.13	-11.23	Final MS Energy Services Gyro @ 976.00ft
976.00	975.91	6.13	-11.23	Tie-On to Surface Gyros @ 976.00ft
1,345.00	1,344.87	10.73	-13.03	First Sperry MWD Survey @ 1345.00ft
11,561.00	7,093.50	4,568.02	546.23	Final Sperry MWD Survey @ 11561.00ft
11,607.00	7,092.21	4,614.00	546.61	Straight Line Proj @ 11607' MD :: 7092.21' TVD

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft)	Origin +E/-W (ft)	Start TVD (ft)
User	No Target (Freehand)	0.06	Slot	0.00	0.00	0.00

Design Report for Melbon 19N-E8HZ - Actual Field Surveys

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
16.00	976.00	MS Energy Services - Surface Gyros	NS-GYRO-MS
1,345.00	7,561.00	Sperry MWD Surveys - Vert/Build	MWD+SC
7,674.00	11,561.00	Sperry MWD Survey - Lateral	MWD+SC

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,609.00	7,150.17	7" Casing @ 7609' MD :: 7150.17' TVD	7	8-3/4

Targets for Plan B Rev 0

Shape	Target Name	TVD (ft)	Northing (ft)	Easting (ft)	+N/-S ft	+E/-W ft	Created	Updated
Point	Melbon 19N-E8HZ_BHL	7,100.00	1,299,231.03	3,226,019.28	4,683.39	532.53	03-04-2013	04-25-2013
Polygon	Melbon 19N-E8HZ_Sec	0.00	1,294,543.18	3,225,529.40	0.00	0.00	03-04-2013	03-04-2013
Polygon	Melbon 19N-E8HZ_17-1/2	0.00	1,294,543.18	3,225,529.40	0.00	0.00	03-04-2013	03-04-2013
Polygon	Melbon 19N-E8HZ_8-1/2	0.00	1,294,543.18	3,225,529.40	0.00	0.00	03-04-2013	03-04-2013
Point	Melbon 19N-E8HZ_tgt1	7,100.00	1,297,047.24	3,226,036.95	2,499.43	530.34	04-25-2013	04-25-2013
Point	Melbon 19N-E8HZ_SHL	0.00	1,294,543.18	3,225,529.40	0.00	0.00	03-04-2013	03-04-2013
Polygon	Melbon 19N-E8HZ_17/8	0.00	1,294,543.18	3,225,529.40	0.00	0.00	03-04-2013	03-04-2013
Polygon	Melbon 19N-E8HZ_LD	0.00	1,294,543.18	3,225,529.40	0.00	0.00	03-04-2013	03-04-2013

North Reference Sheet for Sec. 17-T2N-R65W - Melbon 19N-E8HZ - Plan B 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 @ 4965.00ft (Xtreme 22). Northing and Easting are relative to Melbon 19N-E8HZ

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: 0.99995873

Grid Coordinates of Well: 1,294,543.18 ft N, 3,225,529.40 ft E

Geographical Coordinates of Well: 40° 08' 20.76" N, 104° 41' 35.96" W

Grid Convergence at Surface is: 0.52°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,607.00ft

the Bottom Hole Displacement is 4,646.27ft in the Direction of 6.76° (True).

Magnetic Convergence at surface is: -8.09° (27 April 2013, , BGGM2012)

