

HALLIBURTON

Sperry Drilling

END OF WELL REPORT

For

Anadarko Petroleum Corp.

Cannon 14N-W3HZ

Sec. 3-T2N-R65W

Weld County, CO

Job #9484815

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SPERRY-SUN DRILLING SERVICES

CERTIFIED SURVEY WORK SHEET

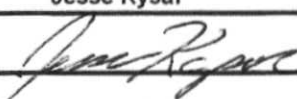
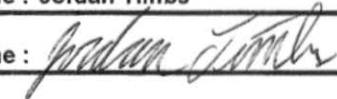


OPERATOR:	Anadarko
WELL:	Canon 14N-W3HZ
FIELD:	DJ Basin
RIG:	H & P 308
LEGALS:	Sec. 3 T2N-R65W
COUNTY:	Weld
STATE:	Co
CAL. METHOD:	True North
MAG. DECL. APPLIED:	8.62
VERTICAL SEC. DIR. :	177.930

SSDS Job Number :	9484815
Start Date of Job :	7/22/2012
End Date of Job :	7/30/2012
Lead Directional Driller:	Jesse Kysar
	Jordan Timbs
Other SSDS DD's :	
SSDS MWD Engineers :	0
MWD :	Stanley Aikorie
MWD	Andrew Bour

Geo Pilot Engineer :

	Main Hole =====>	1st Side Track =====>	2nd Side Track =====>	3rd Side Track =====>	4th Side Track =====>
Surface Casing	814.00 Tie-on	Tie On	Tie On	Tie On	Tie On
First Wireline Survey	125.00 Gyro	MWD			
Last Wireline Survey	765.00 Gyro				
KOP Depth/Sidetrack MD	6209.00 KOP	KOP-ST1	KOP-ST2	KOP-ST3	KOP-ST4
MWD Tie-on	765.00 Gyro				
First MWD Survey Depth	827.00 MWD	MWD	MWD	MWD	MWD
Last MWD Survey Depth	11046.00 MWD	MWD	MWD	MWD	MWD
Bit Extrapolation @ TD	11088.00 T.D.	T.D.	T.D.	T.D.	T.D.

The following Sperry Drilling Services personnel, certify the above survey information to be accurate to the best of our knowledge:

Print Name : Jesse Kysar	Print Name : Jordan Timbs	Print Name :
Sign Name : 	Sign Name : 	Sign Name :
Print Name : Andrew Bour	Print Name : Stanley Aikorie	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.

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 3-T2N-R65W

Cannon 14N-W3HZ

Plan D Rev 0

Design: Actual Field Surveys

Sperry Drilling Services

Standard Report

02 August, 2012

Well Coordinates: 1,307,344.93 N, 3,236,130.70 E (40° 10' 26.29" N, 104° 39' 17.89" W)

Ground Level: 4,840.00 ft

Local Coordinate Origin:

Centered on Well Cannon 14N-W3HZ

Viewing Datum:

RKB=25ft @ 4865.00ft (HP 308)

TVDs to System:

N

North Reference:

True

Unit System:

API - US Survey Feet - Custom

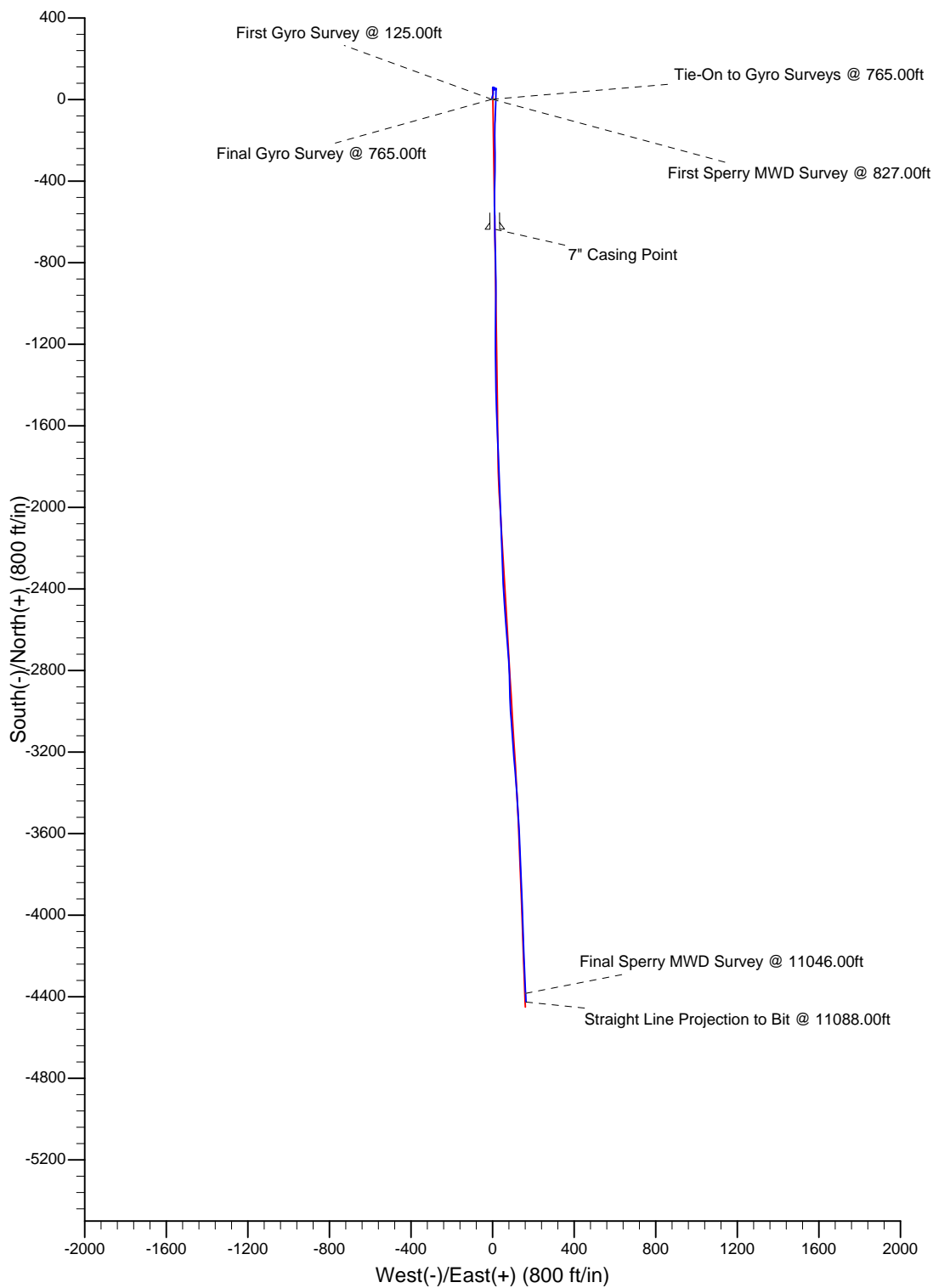
Geodetic Scale Factor Applied

Version: 2003.16 Build: 43I

HALLIBURTON

LEGEND

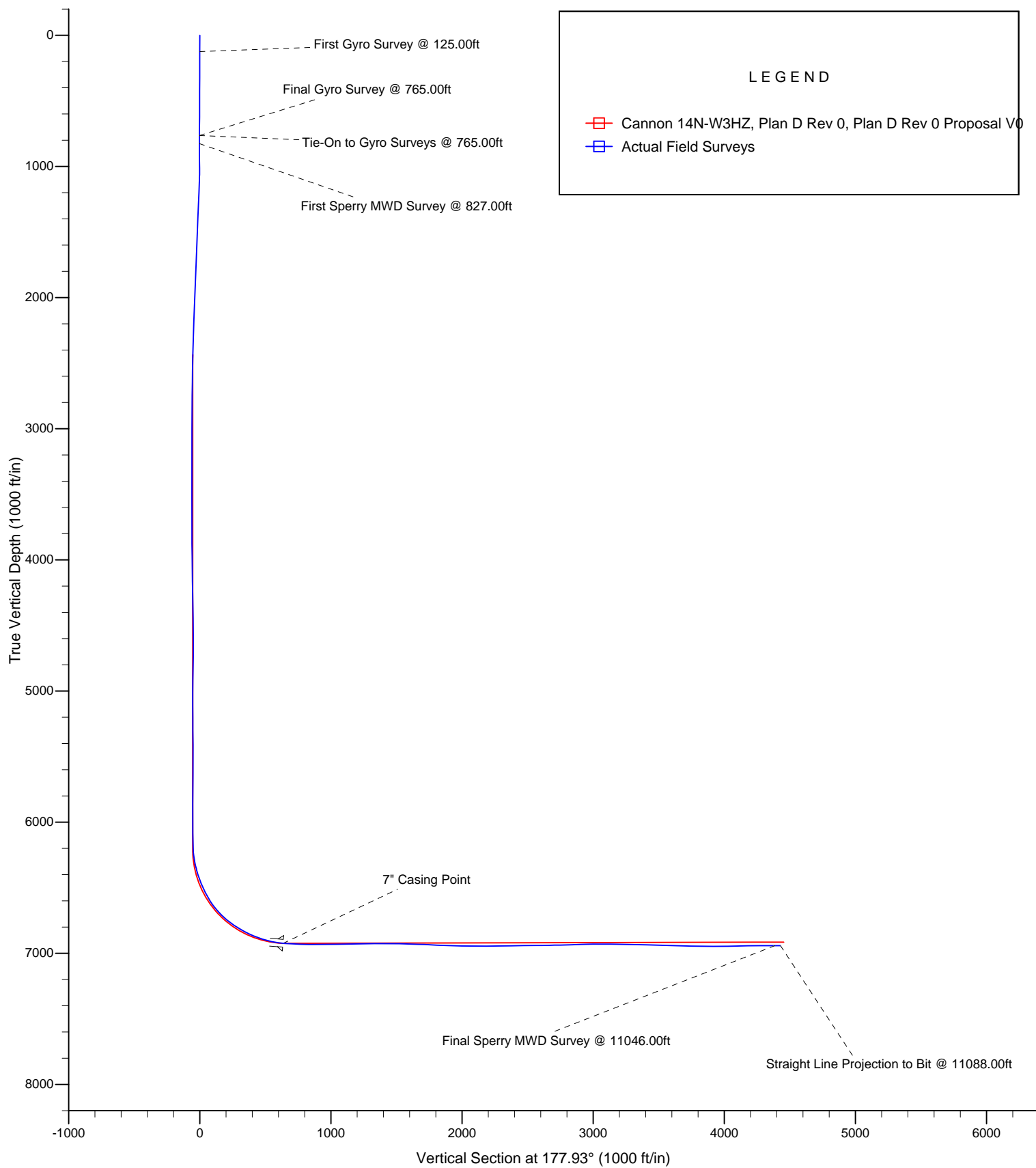
- Cannon 14N-W3HZ, Plan D Rev 0, Plan D Rev 0 Proposal V0
- Actual Field Surveys



Project: Weld County, CO (NAD 83)
Site: Sec. 3-T2N-R65W
Well: Cannon 14N-W3HZ

Anadarko Petroleum Corp.

HALLIBURTON
Sperry Drilling



Design Report for Cannon 14N-W3HZ - 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
125.00	0.36	311.41	125.00	0.26	-0.29	-0.27	0.29
First Gyro Survey @ 125.00ft							
225.00	0.28	290.27	225.00	0.55	-0.76	-0.58	0.14
325.00	0.32	328.51	325.00	0.87	-1.13	-0.92	0.20
425.00	0.21	291.74	425.00	1.18	-1.45	-1.23	0.20
525.00	0.27	327.75	524.99	1.45	-1.75	-1.51	0.16
625.00	0.41	302.30	624.99	1.84	-2.17	-1.92	0.20
725.00	0.44	292.41	724.99	2.18	-2.83	-2.28	0.08
765.00	0.42	308.27	764.99	2.33	-3.09	-2.44	0.30
Final Gyro Survey @ 765.00ft - Tie-On to Gyro Surveys @ 765.00ft							
827.00	0.27	266.95	826.99	2.46	-3.41	-2.58	0.45
First Sperry MWD Survey @ 827.00ft							
922.00	0.25	264.30	921.99	2.43	-3.84	-2.56	0.02
1,017.00	1.08	189.85	1,016.98	1.52	-4.20	-1.67	1.10
1,111.00	2.57	10.67	1,110.96	2.72	-3.96	-2.86	3.88
1,206.00	2.30	19.88	1,205.87	6.61	-2.92	-6.71	0.50
1,300.00	2.34	11.48	1,299.79	10.26	-1.90	-10.32	0.36
1,395.00	2.32	17.12	1,394.72	14.00	-0.95	-14.03	0.24
1,490.00	2.32	10.80	1,489.64	17.73	-0.02	-17.72	0.27
1,584.00	2.67	15.08	1,583.55	21.71	0.91	-21.66	0.42
1,679.00	2.60	20.08	1,678.45	25.87	2.22	-25.77	0.25
1,774.00	2.07	354.86	1,773.37	29.60	2.81	-29.48	1.20
1,868.00	2.37	359.38	1,867.30	33.24	2.64	-33.12	0.37
1,963.00	1.81	353.74	1,962.24	36.69	2.45	-36.58	0.63
2,058.00	2.10	6.59	2,057.18	39.91	2.49	-39.80	0.55
2,153.00	2.20	354.47	2,152.12	43.46	2.51	-43.34	0.49
2,248.00	2.24	358.01	2,247.05	47.13	2.27	-47.01	0.15
2,342.00	1.64	358.01	2,340.99	50.31	2.16	-50.20	0.64
2,437.00	1.46	337.23	2,435.96	52.78	1.64	-52.69	0.62
2,523.00	1.08	351.32	2,521.94	54.59	1.10	-54.52	0.57
2,554.00	1.27	351.73	2,552.93	55.22	1.00	-55.15	0.61
2,649.00	0.89	351.50	2,647.91	56.99	0.74	-56.93	0.40
2,744.00	0.21	105.16	2,742.91	57.68	0.80	-57.61	1.05
2,838.00	0.88	18.65	2,836.90	58.32	1.20	-58.24	0.95
2,933.00	0.64	57.49	2,931.90	59.29	1.88	-59.19	0.58
3,028.00	0.03	172.44	3,026.90	59.55	2.33	-59.43	0.69
3,122.00	0.53	244.01	3,120.89	59.34	1.94	-59.23	0.55
3,217.00	0.19	292.69	3,215.89	59.21	1.40	-59.12	0.45
3,311.00	0.23	58.96	3,309.89	59.36	1.42	-59.27	0.40
3,406.00	0.42	45.74	3,404.89	59.71	1.83	-59.60	0.21
3,501.00	0.92	12.83	3,499.88	60.69	2.25	-60.57	0.64
3,596.00	1.01	156.45	3,594.88	60.67	2.76	-60.53	1.93
3,690.00	1.02	105.45	3,688.87	59.69	3.89	-59.51	0.93
3,785.00	1.61	71.45	3,783.84	59.89	5.97	-59.63	1.00
3,880.00	1.41	121.52	3,878.81	59.70	8.24	-59.36	1.36
3,975.00	1.17	140.03	3,973.79	58.34	9.86	-57.95	0.50
4,070.00	0.90	150.70	4,068.77	56.95	10.84	-56.52	0.35
4,164.00	0.82	134.94	4,162.76	55.83	11.68	-55.37	0.26
4,259.00	0.92	155.97	4,257.75	54.65	12.47	-54.17	0.35

Design Report for Cannon 14N-W3HZ - Actual Field Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
4,354.00	0.90	189.49	4,352.74	53.22	12.66	-52.73	0.55
4,449.00	1.18	208.60	4,447.72	51.63	12.07	-51.16	0.47
4,544.00	1.73	241.71	4,542.70	50.09	10.34	-49.68	1.03
4,638.00	0.58	215.89	4,636.68	49.03	8.81	-48.68	1.31
4,733.00	1.87	49.30	4,731.66	49.65	9.70	-49.27	2.57
4,828.00	1.75	54.38	4,826.61	51.51	12.06	-51.04	0.21
4,923.00	1.46	47.72	4,921.58	53.17	14.13	-52.62	0.36
5,017.00	0.68	277.32	5,015.57	54.04	14.46	-53.49	2.10
5,112.00	0.28	230.53	5,110.56	53.97	13.73	-53.44	0.56
5,207.00	0.43	157.75	5,205.56	53.49	13.68	-52.96	0.46
5,302.00	0.15	157.78	5,300.56	53.05	13.86	-52.51	0.29
5,397.00	0.75	105.53	5,395.56	52.76	14.51	-52.21	0.70
5,492.00	0.89	102.14	5,490.55	52.44	15.83	-51.84	0.16
5,587.00	1.46	114.06	5,585.53	51.79	17.66	-51.12	0.65
5,682.00	1.02	330.07	5,680.52	52.03	18.34	-51.34	2.49
5,777.00	1.05	18.16	5,775.51	53.59	18.19	-52.90	0.89
5,872.00	0.80	46.02	5,870.49	54.88	18.94	-54.16	0.53
5,967.00	0.92	214.24	5,965.49	54.71	18.99	-53.99	1.80
6,062.00	0.62	202.90	6,060.48	53.61	18.36	-52.91	0.35
6,157.00	0.76	191.30	6,155.47	52.52	18.03	-51.83	0.21
6,220.00	3.18	188.63	6,218.43	50.38	17.69	-49.71	3.84
6,252.00	6.87	185.03	6,250.30	47.59	17.39	-46.93	11.57
6,284.00	9.86	182.83	6,281.96	42.95	17.09	-42.30	9.40
6,315.00	12.03	181.11	6,312.39	37.07	16.89	-36.43	7.08
6,347.00	13.37	181.65	6,343.61	30.03	16.72	-29.41	4.20
6,379.00	15.61	180.75	6,374.59	22.03	16.56	-21.42	7.04
6,410.00	17.89	181.85	6,404.27	13.10	16.35	-12.50	7.43
6,442.00	19.85	184.03	6,434.55	2.77	15.81	-2.19	6.51
6,474.00	22.48	181.42	6,464.39	-8.77	15.28	9.32	8.73
6,506.00	23.99	181.54	6,493.80	-21.39	14.95	21.92	4.72
6,537.00	26.21	180.91	6,521.87	-34.54	14.67	35.04	7.21
6,569.00	27.79	180.88	6,550.38	-49.06	14.44	49.55	4.94
6,601.00	30.09	181.76	6,578.38	-64.54	14.08	65.01	7.31
6,633.00	32.47	181.79	6,605.73	-81.15	13.57	81.58	7.44
6,664.00	35.97	182.96	6,631.36	-98.56	12.84	98.96	11.49
6,696.00	39.55	182.28	6,656.65	-118.13	11.95	118.49	11.26
6,728.00	42.25	180.93	6,680.84	-139.07	11.37	139.39	8.88
6,760.00	44.66	180.37	6,704.06	-161.08	11.12	161.38	7.63
6,792.00	47.75	179.36	6,726.21	-184.18	11.18	184.46	9.92
6,823.00	49.91	179.02	6,746.61	-207.51	11.51	207.79	7.02
6,855.00	52.73	179.54	6,766.61	-232.48	11.82	232.76	8.90
6,887.00	55.99	179.43	6,785.26	-258.48	12.06	258.75	10.19
6,918.00	58.58	179.44	6,802.01	-284.56	12.31	284.82	8.35
6,950.00	59.99	180.65	6,818.35	-312.07	12.29	312.31	5.48
6,982.00	61.50	181.01	6,833.99	-339.99	11.88	340.20	4.82
7,013.00	63.44	181.55	6,848.32	-367.47	11.27	367.64	6.45
7,045.00	66.36	180.79	6,861.89	-396.44	10.68	396.57	9.37
7,077.00	68.86	180.96	6,874.08	-426.02	10.23	426.11	7.83
7,108.00	71.14	180.83	6,884.68	-455.15	9.77	455.20	7.37
7,140.00	72.56	180.27	6,894.65	-485.55	9.48	485.58	4.74
7,171.00	74.63	179.51	6,903.40	-515.29	9.54	515.29	7.08

Design Report for Cannon 14N-W3HZ - Actual Field Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
7,203.00	77.54	179.09	6,911.10	-546.34	9.92	546.34	9.18
7,235.00	80.64	178.06	6,917.16	-577.75	10.70	577.76	10.19
7,253.00	82.47	179.68	6,919.80	-595.55	11.05	595.56	13.51
7,293.00	85.00	179.35	6,924.16	-635.31	11.39	635.30	6.38
7" Casing Point							
7,328.00	87.22	179.07	6,926.54	-670.22	11.87	670.21	6.38
7,423.00	87.16	178.69	6,931.19	-765.09	13.72	765.08	0.40
7,518.00	89.57	178.88	6,933.90	-860.02	15.74	860.03	2.54
7,613.00	91.11	180.74	6,933.34	-955.01	16.05	954.97	2.54
7,708.00	91.61	180.93	6,931.09	-1,049.97	14.67	1,049.82	0.56
7,802.00	90.80	179.99	6,929.11	-1,143.95	13.91	1,143.70	1.32
7,897.00	90.80	179.56	6,927.78	-1,238.94	14.29	1,238.65	0.45
7,992.00	90.49	178.92	6,926.71	-1,333.92	15.55	1,333.61	0.75
8,087.00	89.57	179.10	6,926.66	-1,428.91	17.19	1,428.60	0.99
8,181.00	88.39	178.13	6,928.34	-1,522.86	19.46	1,522.57	1.62
8,276.00	88.76	178.02	6,930.70	-1,617.78	22.65	1,617.54	0.41
8,371.00	87.40	177.30	6,933.88	-1,712.64	26.53	1,712.48	1.62
8,466.00	87.78	177.69	6,937.88	-1,807.47	30.68	1,807.40	0.57
8,561.00	87.96	177.64	6,941.41	-1,902.32	34.54	1,902.33	0.20
8,656.00	88.27	177.81	6,944.53	-1,997.20	38.31	1,997.28	0.37
8,750.00	89.75	177.86	6,946.16	-2,091.11	41.86	2,091.26	1.58
8,845.00	90.25	178.40	6,946.16	-2,186.06	44.96	2,186.26	0.77
8,940.00	91.48	178.04	6,944.72	-2,281.00	47.91	2,281.25	1.35
9,034.00	91.23	176.66	6,942.50	-2,374.88	52.26	2,375.21	1.49
9,129.00	90.19	176.20	6,941.32	-2,469.68	58.17	2,470.17	1.20
9,224.00	90.37	175.33	6,940.86	-2,564.42	65.19	2,565.10	0.94
9,319.00	91.54	175.64	6,939.27	-2,659.11	72.67	2,660.00	1.27
9,414.00	90.31	176.42	6,937.74	-2,753.87	79.24	2,754.93	1.53
9,509.00	92.78	178.93	6,935.18	-2,848.74	83.09	2,849.88	3.71
9,604.00	91.73	177.88	6,931.44	-2,943.63	85.74	2,944.80	1.56
9,699.00	89.57	175.52	6,930.36	-3,038.45	91.20	3,039.76	3.37
9,794.00	89.81	176.14	6,930.88	-3,133.20	98.11	3,134.70	0.70
9,889.00	88.64	175.42	6,932.16	-3,227.93	105.10	3,229.62	1.45
9,984.00	88.83	175.34	6,934.26	-3,322.60	112.75	3,324.50	0.22
10,079.00	88.83	175.77	6,936.20	-3,417.29	120.11	3,419.40	0.45
10,174.00	88.09	176.85	6,938.75	-3,512.06	126.23	3,514.33	1.38
10,269.00	87.71	177.06	6,942.23	-3,606.86	131.27	3,609.25	0.46
10,364.00	88.52	177.41	6,945.36	-3,701.70	135.85	3,704.19	0.93
10,459.00	89.94	177.87	6,946.63	-3,796.61	139.76	3,799.18	1.57
10,555.00	89.57	177.90	6,947.05	-3,892.54	143.30	3,895.18	0.39
10,650.00	90.86	178.57	6,946.69	-3,987.49	146.23	3,990.17	1.53
10,745.00	90.93	178.01	6,945.20	-4,082.44	149.06	4,085.16	0.59
10,840.00	90.74	177.46	6,943.82	-4,177.35	152.82	4,180.15	0.61
10,936.00	90.37	177.29	6,942.89	-4,273.25	157.21	4,276.14	0.42
11,031.00	89.88	177.45	6,942.68	-4,368.15	161.57	4,371.13	0.54
11,046.00	89.81	177.40	6,942.72	-4,383.13	162.25	4,386.13	0.57
Final Sperry MWD Survey @ 11046.00ft							
11,088.00	89.81	177.40	6,942.86	-4,425.09	164.15	4,428.13	0.00
Straight Line Projection to Bit @ 11088.00ft							

Design Report for Cannon 14N-W3HZ - Actual Field Surveys

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
125.00	125.00	0.26	-0.29	First Gyro Survey @ 125.00ft
765.00	764.99	2.33	-3.09	Final Gyro Survey @ 765.00ft
765.00	764.99	2.33	-3.09	Tie-On to Gyro Surveys @ 765.00ft
827.00	826.99	2.46	-3.41	First Sperry MWD Survey @ 827.00ft
11,046.00	6,942.72	-4,383.13	162.25	Final Sperry MWD Survey @ 11046.00ft
11,088.00	6,942.86	-4,425.09	164.15	Straight Line Projection to Bit @ 11088.00ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/_S (ft)	+E/-W (ft)	
Target	Cannon 14N-W3HZ_BHL ReLoc	177.93	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
125.00	765.00	Surface Gyros	NS-GYRO-MS
827.00	11,088.00	Sperry MWD Surveys	MWD

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,293.00	6,924.16	7" Casing Point	7	8-3/4

Design Report for Cannon 14N-W3HZ - 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
Cannon 14N-W3HZ_ - actual wellpath misses target center by 20.81ft at 10161.32ft MD (6938.34 TVD, -3499.41 N, 125.51 E) - Point	0.00	0.00	6,917.55	-3,500.00	125.00	,846.426733	,6,289.040677	40.164361	-104.654523
Cannon 14N-W3HZ_ - actual wellpath hits target center - Polygon	0.00	0.00	0.00	0.00	0.00	,344.928783	,6,130.700176	40.173969	-104.654970
Point 1			3,660.10	-238.23		1,307,141.60	3,239,792.75		
Point 2			1,478.05	-224.36		1,307,134.67	3,237,610.76		
Point 3			-710.55	-210.68		1,307,127.50	3,235,422.22		
Point 4			-730.36	-2,255.97		1,305,082.20	3,235,421.90		
Point 5			-751.62	-4,450.56		1,302,887.60	3,235,421.56		
Point 6			3,603.53	-4,447.67		1,302,931.99	3,239,776.30		
Point 7			3,625.57	-2,260.06		1,305,119.61	3,239,777.49		
Cannon 14N-W3HZ_ - actual wellpath misses target center by 288.19ft at 11088.00ft MD (6942.86 TVD, -4425.09 N, 164.15 E) - Point	0.00	0.00	6,915.00	-4,450.24	-121.58	,893.923824	,6,051.534186	40.161753	-104.655405
Cannon 14N-W3HZ_ - actual wellpath misses target center by 15.65ft at 8457.76ft MD (6937.55 TVD, -1799.25 N, 30.34 E) - Point	0.00	0.00	6,922.10	-1,800.00	28.00	,545.353391	,6,175.849900	40.169028	-104.654870
Cannon 14N-W3HZ_ - actual wellpath hits target center - Point	0.00	0.00	0.00	0.00	0.00	,344.928783	,6,130.700176	40.173969	-104.654970
Cannon 14N-W3HZ_ - actual wellpath hits target center - Polygon	0.00	0.00	0.00	0.00	0.00	,344.928783	,6,130.700176	40.173969	-104.654970
Point 1			4,128.01	218.83		1,307,603.08	3,240,256.26		
Point 2			1,480.92	235.65		1,307,594.67	3,237,609.24		
Point 3			-1,166.11	252.19		1,307,585.98	3,234,962.29		
Point 4			-1,190.39	-2,255.53		1,305,078.25	3,234,961.91		
Point 5			-1,216.13	-4,910.88		1,302,422.89	3,234,961.47		
Point 6			4,058.95	-4,907.38		1,302,476.66	3,240,236.06		
Point 7			4,085.61	-2,260.49		1,305,123.57	3,240,237.49		
Cannon 14N-W3HZ_ - actual wellpath hits target center - Polygon	0.00	0.00	0.00	0.00	0.00	,344.928783	,6,130.700176	40.173969	-104.654970
Point 1			607.52	-223.24		1,307,127.50	3,236,740.29		
Point 2			-307.48	-214.53		1,307,127.49	3,235,825.29		
Point 3			-348.70	-4,454.40		1,302,887.60	3,235,824.48		
Point 4			566.30	-4,463.12		1,302,887.60	3,236,739.48		
Cannon 14N-W3HZ_ - actual wellpath misses target center by 37.68ft at 11088.00ft MD (6942.86 TVD, -4425.09 N, 164.15 E) - Point	0.00	0.00	6,915.00	-4,450.24	160.92	,896.612317	,6,334.012354	40.161753	-104.654394

North Reference Sheet for Sec. 3-T2N-R65W - Cannon 14N-W3HZ - Plan D 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=25ft @ 4865.00ft (HP 308). Northing and Easting are relative to Cannon 14N-W3HZ

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: 3,000,000.000644ft, False Northing: 1,000,000.001308ft, Scale Reduction: 0.99995774

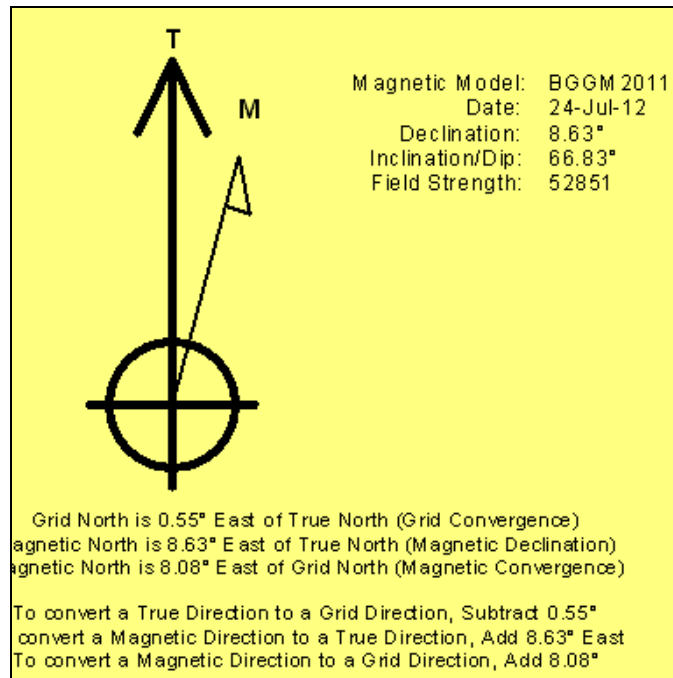
Grid Coordinates of Well: 1,307,344.928783 ft N, 3,236,130.700176 ft E

Geographical Coordinates of Well: 40° 10' 26.29" N, 104° 39' 17.89" W

Grid Convergence at Surface is: 0.55°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,088.00ft the Bottom Hole Displacement is 4,428.13ft in the Direction of 177.88° (True).

Magnetic Convergence at surface is: -8.08° (24 July 2012, , BGGM2011)



Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 3-T2N-R65W

Cannon 14N-W3HZ

Plan D Rev 0

Design: Actual Field Surveys

Survey Report - Geographic

02 August, 2012

Halliburton Company

Survey Report - Geographic

Company:	Anadarko Petroleum Corp.	Local Co-ordinate Reference:	Well Cannon 14N-W3HZ
Project:	Weld County, CO (NAD 83)	TVD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Site:	Sec. 3-T2N-R65W	MD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Well:	Cannon 14N-W3HZ	North Reference:	True
Wellbore:	Plan D Rev 0	Survey Calculation Method:	Minimum Curvature
Design:	Actual Field Surveys	Database:	EDM 2003.16 Single User Db

Project	Weld County, CO (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Sec. 3-T2N-R65W				
Site Position:		Northing:	1,307,311.710052 ft	Latitude:	40.173779
From:	Lat/Long	Easting:	3,239,877.076052 ft	Longitude:	-104.641565
Position Uncertainty:	0.00 ft	Slot Radius:	"	Grid Convergence:	0.55 °

Well	Cannon 14N-W3HZ					
Well Position	+N-S	0.00 ft	Northing:	1,307,344.928783 ft	Latitude:	40.173969
	+E-W	0.00 ft	Easting:	3,236,130.700176 ft	Longitude:	-104.654970
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,840.00 ft

Wellbore	Plan D Rev 0				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2011	2012-07-24	8.63	66.83	52,851

Design	Actual Field Surveys				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	177.93	

Survey Program	Date	2012-08-02			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
125.00	765.00	Surface Gyros (Plan D Rev 0)	NS-GYRO-MS	North sensing gyrocompassing m/s	
827.00	11,088.00	Sperry MWD Surveys (Plan D Rev 0)	MWD	MWD - Standard	

Halliburton Company

Survey Report - Geographic

Company:	Anadarko Petroleum Corp.	Local Co-ordinate Reference:	Well Cannon 14N-W3HZ
Project:	Weld County, CO (NAD 83)	TVD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Site:	Sec. 3-T2N-R65W	MD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Well:	Cannon 14N-W3HZ	North Reference:	True
Wellbore:	Plan D Rev 0	Survey Calculation Method:	Minimum Curvature
Design:	Actual Field Surveys	Database:	EDM 2003.16 Single User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	07,344.928783	36,130.700176	40.173969	-104.654970
125.00	0.36	311.41	125.00	0.26	-0.29	07,345.185701	36,130.403205	40.173970	-104.654971
First Gyro Survey @ 125.00ft									
225.00	0.28	290.27	225.00	0.55	-0.76	07,345.473695	36,129.935629	40.173970	-104.654973
325.00	0.32	328.51	325.00	0.87	-1.13	07,345.792871	36,129.557506	40.173971	-104.654974
425.00	0.21	291.74	425.00	1.18	-1.45	07,346.095837	36,129.238526	40.173972	-104.654975
525.00	0.27	327.75	524.99	1.45	-1.75	07,346.360141	36,128.940052	40.173973	-104.654976
625.00	0.41	302.30	624.99	1.84	-2.17	07,346.746483	36,128.508213	40.173974	-104.654978
725.00	0.44	292.41	724.99	2.18	-2.83	07,347.077755	36,127.847657	40.173975	-104.654980
765.00	0.42	308.27	764.99	2.33	-3.09	07,347.224648	36,127.589167	40.173975	-104.654981
Final Gyro Survey @ 765.00ft - Tie-On to Gyro Surveys @ 765.00ft									
827.00	0.27	266.95	826.99	2.46	-3.41	07,347.354519	36,127.263645	40.173976	-104.654982
First Sperry MWD Survey @ 827.00ft									
922.00	0.25	264.30	921.99	2.43	-3.84	07,347.317932	36,126.834239	40.173976	-104.654984
1,017.00	1.08	189.85	1,016.98	1.52	-4.20	07,346.411874	36,126.483472	40.173973	-104.654985
1,111.00	2.57	10.67	1,110.96	2.72	-3.96	07,347.612669	36,126.710767	40.173976	-104.654984
1,206.00	2.30	19.88	1,205.87	6.61	-2.92	07,351.508016	36,127.716236	40.173987	-104.654980
1,300.00	2.34	11.48	1,299.79	10.26	-1.90	07,355.171836	36,128.704656	40.173997	-104.654977
1,395.00	2.32	17.12	1,394.72	14.00	-0.95	07,358.918808	36,129.620972	40.174007	-104.654973
1,490.00	2.32	10.80	1,489.64	17.73	-0.02	07,362.653711	36,130.511715	40.174018	-104.654970
1,584.00	2.67	15.08	1,583.55	21.71	0.91	07,366.645115	36,131.399810	40.174029	-104.654967
1,679.00	2.60	20.08	1,678.45	25.87	2.22	07,370.817570	36,132.675521	40.174040	-104.654962
1,774.00	2.07	354.86	1,773.37	29.60	2.81	07,374.555538	36,133.226001	40.174050	-104.654960
1,868.00	2.37	359.38	1,867.30	33.24	2.64	07,378.187870	36,133.018260	40.174060	-104.654961
1,963.00	1.81	353.74	1,962.24	36.69	2.45	07,381.641317	36,132.800499	40.174070	-104.654961
2,058.00	2.10	6.59	2,057.18	39.91	2.49	07,384.861829	36,132.805971	40.174079	-104.654961
2,153.00	2.20	354.47	2,152.12	43.46	2.51	07,388.405777	36,132.796236	40.174088	-104.654961
2,248.00	2.24	358.01	2,247.05	47.13	2.27	07,392.073541	36,132.521095	40.174098	-104.654962
2,342.00	1.64	358.01	2,340.99	50.31	2.16	07,395.252450	36,132.380300	40.174107	-104.654962
2,437.00	1.46	337.23	2,435.96	52.78	1.64	07,397.721882	36,131.841146	40.174114	-104.654964
2,523.00	1.08	351.32	2,521.94	54.59	1.10	07,399.527942	36,131.277582	40.174119	-104.654966
2,554.00	1.27	351.73	2,552.93	55.22	1.00	07,400.155769	36,131.178094	40.174121	-104.654966
2,649.00	0.89	351.50	2,647.91	56.99	0.74	07,401.924678	36,130.900749	40.174125	-104.654967
2,744.00	0.21	105.16	2,742.91	57.68	0.80	07,402.609373	36,130.953209	40.174127	-104.654967
2,838.00	0.88	18.65	2,836.90	58.32	1.20	07,403.252000	36,131.344197	40.174129	-104.654966
2,933.00	0.64	57.49	2,931.90	59.29	1.88	07,404.234773	36,132.015556	40.174132	-104.654963
3,028.00	0.03	172.44	3,026.90	59.55	2.33	07,404.499545	36,132.463739	40.174132	-104.654962
3,122.00	0.53	244.01	3,120.89	59.34	1.94	07,404.280959	36,132.078267	40.174132	-104.654963
3,217.00	0.19	292.69	3,215.89	59.21	1.40	07,404.144039	36,131.539297	40.174131	-104.654965
3,311.00	0.23	58.96	3,309.89	59.36	1.42	07,404.301603	36,131.555654	40.174132	-104.654965
3,406.00	0.42	45.74	3,404.89	59.71	1.83	07,404.646833	36,131.965106	40.174133	-104.654963
3,501.00	0.92	12.83	3,499.88	60.69	2.25	07,405.637388	36,132.374397	40.174136	-104.654962
3,596.00	1.01	156.45	3,594.88	60.67	2.76	07,405.618281	36,132.878517	40.174135	-104.654960
3,690.00	1.02	105.45	3,688.87	59.69	3.89	07,404.646838	36,134.025245	40.174133	-104.654956
3,785.00	1.61	71.45	3,783.84	59.89	5.97	07,404.865959	36,136.103452	40.174133	-104.654949
3,880.00	1.41	121.52	3,878.81	59.70	8.24	07,404.701035	36,138.366723	40.174133	-104.654941
3,975.00	1.17	140.03	3,973.79	58.34	9.86	07,403.362212	36,139.998913	40.174129	-104.654935
4,070.00	0.90	150.70	4,068.77	56.95	10.84	07,401.977786	36,141.000289	40.174125	-104.654931
4,164.00	0.82	134.94	4,162.76	55.83	11.68	07,400.866941	36,141.848280	40.174122	-104.654928
4,259.00	0.92	155.97	4,257.75	54.65	12.47	07,399.697834	36,142.651181	40.174119	-104.654925
4,354.00	0.90	189.49	4,352.74	53.22	12.66	07,398.267273	36,142.852375	40.174115	-104.654925
4,449.00	1.18	208.60	4,447.72	51.63	12.07	07,396.667052	36,142.276357	40.174111	-104.654927
4,544.00	1.73	241.71	4,542.70	50.09	10.34	07,395.112196	36,140.560147	40.174106	-104.654933
4,638.00	0.58	215.89	4,636.68	49.03	8.81	07,394.039772	36,139.041956	40.174104	-104.654938
4,733.00	1.87	49.30	4,731.66	49.65	9.70	07,394.669544	36,139.929333	40.174105	-104.654935

Halliburton Company

Survey Report - Geographic

Company:	Anadarko Petroleum Corp.	Local Co-ordinate Reference:	Well Cannon 14N-W3HZ
Project:	Weld County, CO (NAD 83)	TVD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Site:	Sec. 3-T2N-R65W	MD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Well:	Cannon 14N-W3HZ	North Reference:	True
Wellbore:	Plan D Rev 0	Survey Calculation Method:	Minimum Curvature
Design:	Actual Field Surveys	Database:	EDM 2003.16 Single User Db

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
4,828.00	1.75	54.38	4,826.61	51.51	12.06	07,396.547406	36,142.265738	40.174110	-104.654927
4,923.00	1.46	47.72	4,921.58	53.17	14.13	07,398.226065	36,144.324352	40.174115	-104.654919
5,017.00	0.68	277.32	5,015.57	54.04	14.46	07,399.105949	36,144.648753	40.174117	-104.654918
5,112.00	0.28	230.53	5,110.56	53.97	13.73	07,399.023187	36,143.911208	40.174117	-104.654921
5,207.00	0.43	157.75	5,205.56	53.49	13.68	07,398.545310	36,143.871550	40.174116	-104.654921
5,302.00	0.15	157.78	5,300.56	53.05	13.86	07,398.102026	36,144.057782	40.174115	-104.654920
5,397.00	0.75	105.53	5,395.56	52.76	14.51	07,397.826614	36,144.706498	40.174114	-104.654918
5,492.00	0.89	102.14	5,490.55	52.44	15.83	07,397.517591	36,146.029812	40.174113	-104.654913
5,587.00	1.46	114.06	5,585.53	51.79	17.66	07,396.886471	36,147.862265	40.174111	-104.654907
5,682.00	1.02	330.07	5,680.52	52.03	18.34	07,397.132382	36,148.543239	40.174112	-104.654904
5,777.00	1.05	18.16	5,775.51	53.59	18.19	07,398.690714	36,148.377786	40.174116	-104.654905
5,872.00	0.80	46.02	5,870.49	54.88	18.94	07,399.985354	36,149.113975	40.174120	-104.654902
5,967.00	0.92	214.24	5,965.49	54.71	18.99	07,399.815853	36,149.163695	40.174119	-104.654902
6,062.00	0.62	202.90	6,060.48	53.61	18.36	07,398.705977	36,148.545135	40.174116	-104.654904
6,157.00	0.76	191.30	6,155.47	52.52	18.03	07,397.611678	36,148.232102	40.174113	-104.654905
6,220.00	3.18	188.63	6,218.43	50.38	17.69	07,395.470933	36,147.908378	40.174107	-104.654907
6,252.00	6.87	185.03	6,250.30	47.59	17.39	07,392.683319	36,147.633852	40.174100	-104.654908
6,284.00	9.86	182.83	6,281.96	42.95	17.09	07,388.036750	36,147.374985	40.174087	-104.654909
6,315.00	12.03	181.11	6,312.39	37.07	16.89	07,382.153735	36,147.237395	40.174071	-104.654910
6,347.00	13.37	181.65	6,343.61	30.03	16.72	07,375.119960	36,147.133284	40.174051	-104.654910
6,379.00	15.61	180.75	6,374.59	22.03	16.56	07,367.114760	36,147.046662	40.174029	-104.654911
6,410.00	17.89	181.85	6,404.27	13.10	16.35	07,358.182879	36,146.923444	40.174005	-104.654911
6,442.00	19.85	184.03	6,434.55	2.77	15.81	07,347.845502	36,146.481403	40.173977	-104.654913
6,474.00	22.48	181.42	6,464.39	-8.77	15.28	07,336.303740	36,146.057861	40.173945	-104.654915
6,506.00	23.99	181.54	6,493.80	-21.39	14.95	07,323.682223	36,145.851689	40.173910	-104.654917
6,537.00	26.21	180.91	6,521.87	-34.54	14.67	07,310.534482	36,145.698861	40.173874	-104.654918
6,569.00	27.79	180.88	6,550.38	-49.06	14.44	07,296.008129	36,145.610481	40.173834	-104.654918
6,601.00	30.09	181.76	6,578.38	-64.54	14.08	07,280.527089	36,145.397021	40.173792	-104.654920
6,633.00	32.47	181.79	6,605.73	-81.15	13.57	07,263.917745	36,145.040546	40.173746	-104.654921
6,664.00	35.97	182.96	6,631.36	-98.56	12.84	07,246.497511	36,144.476269	40.173698	-104.654924
6,696.00	39.55	182.28	6,656.65	-118.13	11.95	07,226.919080	36,143.771951	40.173645	-104.654927
6,728.00	42.25	180.93	6,680.84	-139.07	11.37	07,205.974691	36,143.391507	40.173587	-104.654929
6,760.00	44.66	180.37	6,704.06	-161.08	11.12	07,183.968346	36,143.353951	40.173527	-104.654930
6,792.00	47.75	179.36	6,726.21	-184.18	11.18	07,160.876141	36,143.633696	40.173463	-104.654930
6,823.00	49.91	179.02	6,746.61	-207.51	11.51	07,137.549583	36,144.187003	40.173399	-104.654929
6,855.00	52.73	179.54	6,766.61	-232.48	11.82	07,112.578605	36,144.736616	40.173331	-104.654928
6,887.00	55.99	179.43	6,785.26	-258.48	12.06	07,086.581473	36,145.218594	40.173259	-104.654927
6,918.00	58.58	179.44	6,802.01	-284.56	12.31	07,060.507249	36,145.724221	40.173188	-104.654926
6,950.00	59.99	180.65	6,818.35	-312.07	12.29	07,032.999922	36,145.962631	40.173112	-104.654926
6,982.00	61.50	181.01	6,833.99	-339.99	11.88	07,005.083816	36,145.823611	40.173036	-104.654927
7,013.00	63.44	181.55	6,848.32	-367.47	11.27	06,977.598869	36,145.470347	40.172960	-104.654930
7,045.00	66.36	180.79	6,861.89	-396.44	10.68	06,948.627010	36,145.157102	40.172881	-104.654932
7,077.00	68.86	180.96	6,874.08	-426.02	10.23	06,919.043511	36,144.986835	40.172800	-104.654933
7,108.00	71.14	180.83	6,884.68	-455.15	9.77	06,889.916739	36,144.809656	40.172720	-104.654935
7,140.00	72.56	180.27	6,894.65	-485.55	9.48	06,859.511131	36,144.808138	40.172636	-104.654936
7,171.00	74.63	179.51	6,903.40	-515.29	9.54	06,829.778249	36,145.149625	40.172554	-104.654936
7,203.00	77.54	179.09	6,911.10	-546.34	9.92	06,798.729422	36,145.825662	40.172469	-104.654935
7,235.00	80.64	178.06	6,917.16	-577.75	10.70	06,767.332051	36,146.907647	40.172383	-104.654932
7,253.00	82.47	179.68	6,919.80	-595.55	11.05	06,749.536946	36,147.427736	40.172334	-104.654930
7,293.00	85.00	179.35	6,924.16	-635.31	11.39	06,709.787103	36,148.142133	40.172225	-104.654929
7" Casing Point									
7,328.00	87.22	179.07	6,926.54	-670.22	11.87	06,674.880829	36,148.955246	40.172129	-104.654928
7,423.00	87.16	178.69	6,931.19	-765.09	13.72	06,580.039354	36,151.713742	40.171869	-104.654921
7,518.00	89.57	178.88	6,933.90	-860.02	15.74	06,485.133929	36,154.631512	40.171608	-104.654914
7,613.00	91.11	180.74	6,933.34	-955.01	16.05	06,390.154486	36,155.851776	40.171347	-104.654913

Halliburton Company

Survey Report - Geographic

Company:	Anadarko Petroleum Corp.	Local Co-ordinate Reference:	Well Cannon 14N-W3HZ
Project:	Weld County, CO (NAD 83)	TVD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Site:	Sec. 3-T2N-R65W	MD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Well:	Cannon 14N-W3HZ	North Reference:	True
Wellbore:	Plan D Rev 0	Survey Calculation Method:	Minimum Curvature
Design:	Actual Field Surveys	Database:	EDM 2003.16 Single User Db

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
7,708.00	91.61	180.93	6,931.09	-1,049.97	14.67	06,295.186814	36,155.372775	40.171087	-104.654918
7,802.00	90.80	179.99	6,929.11	-1,143.95	13.91	06,201.213517	36,155.513945	40.170829	-104.654920
7,897.00	90.80	179.56	6,927.78	-1,238.94	14.29	06,106.235614	36,156.792095	40.170568	-104.654919
7,992.00	90.49	178.92	6,926.71	-1,333.92	15.55	06,011.270934	36,158.957115	40.170307	-104.654914
8,087.00	89.57	179.10	6,926.66	-1,428.91	17.19	05,916.310155	36,161.503461	40.170047	-104.654908
8,181.00	88.39	178.13	6,928.34	-1,522.86	19.46	05,822.385168	36,164.670006	40.169789	-104.654900
8,276.00	88.76	178.02	6,930.70	-1,617.78	22.65	05,727.507045	36,168.764373	40.169528	-104.654889
8,371.00	87.40	177.30	6,933.88	-1,712.64	26.53	05,632.687648	36,173.544254	40.169268	-104.654875
8,466.00	87.78	177.69	6,937.88	-1,807.47	30.68	05,537.910574	36,178.595867	40.169007	-104.654860
8,561.00	87.96	177.64	6,941.41	-1,902.32	34.54	05,443.100251	36,183.367236	40.168747	-104.654846
8,656.00	88.27	177.81	6,944.53	-1,997.20	38.31	05,348.270879	36,188.039998	40.168487	-104.654833
8,750.00	89.75	177.86	6,946.16	-2,091.11	41.86	05,254.396679	36,192.485050	40.168229	-104.654820
8,845.00	90.25	178.40	6,946.16	-2,186.06	44.96	05,159.485789	36,196.489549	40.167968	-104.654809
8,940.00	91.48	178.04	6,944.72	-2,281.00	47.91	05,064.580866	36,200.344417	40.167708	-104.654799
9,034.00	91.23	176.66	6,942.50	-2,374.88	52.26	04,970.759626	36,205.583330	40.167450	-104.654783
9,129.00	90.19	176.20	6,941.32	-2,469.68	58.17	04,876.017489	36,212.401171	40.167190	-104.654762
9,224.00	90.37	175.33	6,940.86	-2,564.42	65.19	04,781.354116	36,220.318662	40.166930	-104.654737
9,319.00	91.54	175.64	6,939.27	-2,659.11	72.67	04,686.743395	36,228.697583	40.166670	-104.654710
9,414.00	90.31	176.42	6,937.74	-2,753.87	79.24	04,592.057219	36,236.176044	40.166410	-104.654686
9,509.00	92.78	178.93	6,935.18	-2,848.74	83.09	04,497.229959	36,240.932882	40.166149	-104.654673
9,604.00	91.73	177.88	6,931.44	-2,943.63	85.74	04,402.376472	36,244.479288	40.165889	-104.654663
9,699.00	89.57	175.52	6,930.36	-3,038.45	91.20	04,307.612864	36,250.850324	40.165628	-104.654644
9,794.00	89.81	176.14	6,930.88	-3,133.20	98.11	04,212.940407	36,258.660431	40.165368	-104.654619
9,889.00	88.64	175.42	6,932.16	-3,227.93	105.10	04,118.283807	36,266.552325	40.165108	-104.654594
9,984.00	88.83	175.34	6,934.26	-3,322.60	112.75	04,023.696805	36,275.103832	40.164848	-104.654567
10,079.00	88.83	175.77	6,936.20	-3,417.29	120.11	03,929.080962	36,283.366673	40.164588	-104.654540
10,174.00	88.09	176.85	6,938.75	-3,512.06	126.23	03,834.380773	36,290.381005	40.164328	-104.654518
10,269.00	87.71	177.06	6,942.23	-3,606.86	131.27	03,739.635208	36,296.326974	40.164068	-104.654500
10,364.00	88.52	177.41	6,945.36	-3,701.70	135.85	03,644.850048	36,301.810446	40.163808	-104.654484
10,459.00	89.94	177.87	6,946.63	-3,796.61	139.76	03,549.987470	36,306.625877	40.163547	-104.654470
10,555.00	89.57	177.90	6,947.05	-3,892.54	143.30	03,454.096083	36,311.082589	40.163284	-104.654457
10,650.00	90.86	178.57	6,946.69	-3,987.49	146.23	03,359.180576	36,314.913069	40.163023	-104.654447
10,745.00	90.93	178.01	6,945.20	-4,082.44	149.06	03,264.270185	36,318.652062	40.162763	-104.654437
10,840.00	90.74	177.46	6,943.82	-4,177.35	152.82	03,169.398988	36,323.310310	40.162502	-104.654423
10,936.00	90.37	177.29	6,942.89	-4,273.25	157.21	03,073.554725	36,328.620183	40.162239	-104.654408
11,031.00	89.88	177.45	6,942.68	-4,368.15	161.57	02,978.705193	36,333.883244	40.161978	-104.654392
11,046.00	89.81	177.40	6,942.72	-4,383.13	162.25	02,963.728131	36,334.699878	40.161937	-104.654390
Final Sperry MWD Survey @ 11046.00ft									
11,088.00	89.81	177.40	6,942.86	-4,425.09	164.15	02,921.793431	36,337.004750	40.161822	-104.654383
Straight Line Projection to Bit @ 11088.00ft									

Halliburton Company

Survey Report - Geographic

Company:	Anadarko Petroleum Corp.	Local Co-ordinate Reference:	Well Cannon 14N-W3HZ
Project:	Weld County, CO (NAD 83)	TVD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Site:	Sec. 3-T2N-R65W	MD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Well:	Cannon 14N-W3HZ	North Reference:	True
Wellbore:	Plan D Rev 0	Survey Calculation Method:	Minimum Curvature
Design:	Actual Field Surveys	Database:	EDM 2003.16 Single User Db

Targets

Target Name	- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape		(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
Cannon 14N-W3HZ_V	- actual wellpath misses target center by 20.81ft at 10161.32ft MD (6938.34 TVD, -3499.41 N, 125.51 E)	0.00	0.00	6,917.55	-3,500.00	125.00	303,846.426733	36,289.040677	40.164361	-104.654523
- Point										
Cannon 14N-W3HZ_ξ	- actual wellpath hits target center	0.00	0.00	0.00	0.00	0.00	307,344.928783	36,130.700176	40.173969	-104.654970
- Polygon										
Point 1				0.00	-238.23	3,660.10	1,307,141.60	3,239,792.75		
Point 2				0.00	-224.36	1,478.05	1,307,134.67	3,237,610.76		
Point 3				0.00	-210.68	-710.55	1,307,127.50	3,235,422.22		
Point 4				0.00	-2,255.97	-730.36	1,305,082.20	3,235,421.90		
Point 5				0.00	-4,450.56	-751.62	1,302,887.60	3,235,421.56		
Point 6				0.00	-4,447.67	3,603.53	1,302,931.99	3,239,776.30		
Point 7				0.00	-2,260.06	3,625.57	1,305,119.61	3,239,777.49		
Cannon 14N-W3HZ_E	- actual wellpath misses target center by 288.19ft at 11088.00ft MD (6942.86 TVD, -4425.09 N, 164.15 E)	0.00	0.00	6,915.00	-4,450.24	-121.58	302,893.923824	36,051.534186	40.161753	-104.655405
- Point										
Cannon 14N-W3HZ_V	- actual wellpath misses target center by 15.65ft at 8457.76ft MD (6937.55 TVD, -1799.25 N, 30.34 E)	0.00	0.00	6,922.10	-1,800.00	28.00	305,545.353391	36,175.849900	40.169028	-104.654870
- Point										
Cannon 14N-W3HZ_ξ	- actual wellpath hits target center	0.00	0.00	0.00	0.00	0.00	307,344.928783	36,130.700176	40.173969	-104.654970
- Point										
Cannon 14N-W3HZ_ξ	- actual wellpath hits target center	0.00	0.00	0.00	0.00	0.00	307,344.928783	36,130.700176	40.173969	-104.654970
- Polygon										
Point 1				0.00	218.83	4,128.01	1,307,603.08	3,240,256.26		
Point 2				0.00	235.65	1,480.92	1,307,594.67	3,237,609.24		
Point 3				0.00	252.19	-1,166.11	1,307,585.98	3,234,962.29		
Point 4				0.00	-2,255.53	-1,190.39	1,305,078.25	3,234,961.91		
Point 5				0.00	-4,910.88	-1,216.13	1,302,422.89	3,234,961.47		
Point 6				0.00	-4,907.38	4,058.95	1,302,476.66	3,240,236.06		
Point 7				0.00	-2,260.49	4,085.61	1,305,123.57	3,240,237.49		
Cannon 14N-W3HZ_L	- actual wellpath hits target center	0.00	0.00	0.00	0.00	0.00	307,344.928783	36,130.700176	40.173969	-104.654970
- Polygon										
Point 1				0.00	-223.24	607.52	1,307,127.50	3,236,740.29		
Point 2				0.00	-214.53	-307.48	1,307,127.49	3,235,825.29		
Point 3				0.00	-4,454.40	-348.70	1,302,887.60	3,235,824.48		
Point 4				0.00	-4,463.12	566.30	1,302,887.60	3,236,739.48		
Cannon 14N-W3HZ_E	- actual wellpath misses target center by 37.68ft at 11088.00ft MD (6942.86 TVD, -4425.09 N, 164.15 E)	0.00	0.00	6,915.00	-4,450.24	160.92	302,896.612317	36,334.012354	40.161753	-104.654394
- Point										

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,293.00	6,924.16	7" Casing Point	7	8-3/4

Halliburton Company

Survey Report - Geographic

Company:	Anadarko Petroleum Corp.	Local Co-ordinate Reference:	Well Cannon 14N-W3HZ
Project:	Weld County, CO (NAD 83)	TVD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Site:	Sec. 3-T2N-R65W	MD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Well:	Cannon 14N-W3HZ	North Reference:	True
Wellbore:	Plan D Rev 0	Survey Calculation Method:	Minimum Curvature
Design:	Actual Field Surveys	Database:	EDM 2003.16 Single User Db

Targets

Target Name	- hit/miss target	Dip Angle	Dip Dir.	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude
- Shape		(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
Cannon 14N-W3HZ_V	- actual wellpath misses target center by 20.81ft at 10161.32ft MD (6938.34 TVD, -3499.41 N, 125.51 E)	0.00	0.00	6,917.55	-3,500.00	125.00	303,846.426733	36,289.040677	40.164361	-104.654523
- Point										
Cannon 14N-W3HZ_ξ	- actual wellpath hits target center	0.00	0.00	0.00	0.00	0.00	307,344.928783	36,130.700176	40.173969	-104.654970
- Polygon										
Point 1				0.00	-238.23	3,660.10	1,307,141.60	3,239,792.75		
Point 2				0.00	-224.36	1,478.05	1,307,134.67	3,237,610.76		
Point 3				0.00	-210.68	-710.55	1,307,127.50	3,235,422.22		
Point 4				0.00	-2,255.97	-730.36	1,305,082.20	3,235,421.90		
Point 5				0.00	-4,450.56	-751.62	1,302,887.60	3,235,421.56		
Point 6				0.00	-4,447.67	3,603.53	1,302,931.99	3,239,776.30		
Point 7				0.00	-2,260.06	3,625.57	1,305,119.61	3,239,777.49		
Cannon 14N-W3HZ_E	- actual wellpath misses target center by 288.19ft at 11088.00ft MD (6942.86 TVD, -4425.09 N, 164.15 E)	0.00	0.00	6,915.00	-4,450.24	-121.58	302,893.923824	36,051.534186	40.161753	-104.655405
- Point										
Cannon 14N-W3HZ_V	- actual wellpath misses target center by 15.65ft at 8457.76ft MD (6937.55 TVD, -1799.25 N, 30.34 E)	0.00	0.00	6,922.10	-1,800.00	28.00	305,545.353391	36,175.849900	40.169028	-104.654870
- Point										
Cannon 14N-W3HZ_ξ	- actual wellpath hits target center	0.00	0.00	0.00	0.00	0.00	307,344.928783	36,130.700176	40.173969	-104.654970
- Point										
Cannon 14N-W3HZ_ξ	- actual wellpath hits target center	0.00	0.00	0.00	0.00	0.00	307,344.928783	36,130.700176	40.173969	-104.654970
- Polygon										
Point 1				0.00	218.83	4,128.01	1,307,603.08	3,240,256.26		
Point 2				0.00	235.65	1,480.92	1,307,594.67	3,237,609.24		
Point 3				0.00	252.19	-1,166.11	1,307,585.98	3,234,962.29		
Point 4				0.00	-2,255.53	-1,190.39	1,305,078.25	3,234,961.91		
Point 5				0.00	-4,910.88	-1,216.13	1,302,422.89	3,234,961.47		
Point 6				0.00	-4,907.38	4,058.95	1,302,476.66	3,240,236.06		
Point 7				0.00	-2,260.49	4,085.61	1,305,123.57	3,240,237.49		
Cannon 14N-W3HZ_L	- actual wellpath hits target center	0.00	0.00	0.00	0.00	0.00	307,344.928783	36,130.700176	40.173969	-104.654970
- Polygon										
Point 1				0.00	-223.24	607.52	1,307,127.50	3,236,740.29		
Point 2				0.00	-214.53	-307.48	1,307,127.49	3,235,825.29		
Point 3				0.00	-4,454.40	-348.70	1,302,887.60	3,235,824.48		
Point 4				0.00	-4,463.12	566.30	1,302,887.60	3,236,739.48		
Cannon 14N-W3HZ_E	- actual wellpath misses target center by 37.68ft at 11088.00ft MD (6942.86 TVD, -4425.09 N, 164.15 E)	0.00	0.00	6,915.00	-4,450.24	160.92	302,896.612317	36,334.012354	40.161753	-104.654394
- Point										

Casing Points

Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter
(ft)	(ft)		(")	(")
7,293.00	6,924.16	7" Casing Point	7	8-3/4

Design Annotations

Halliburton Company

Survey Report - Geographic

Company:	Anadarko Petroleum Corp.	Local Co-ordinate Reference:	Well Cannon 14N-W3HZ
Project:	Weld County, CO (NAD 83)	TVD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Site:	Sec. 3-T2N-R65W	MD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Well:	Cannon 14N-W3HZ	North Reference:	True
Wellbore:	Plan D Rev 0	Survey Calculation Method:	Minimum Curvature
Design:	Actual Field Surveys	Database:	EDM 2003.16 Single User Db

Targets

Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N-S (ft)	+E-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Cannon 14N-W3HZ_V	- actual wellpath misses target center by 20.81ft at 10161.32ft MD (6938.34 TVD, -3499.41 N, 125.51 E)	0.00	0.00	6,917.55	-3,500.00	125.00	303,846.426733	36,289.040677	40.164361	-104.654523
Cannon 14N-W3HZ_ξ	- actual wellpath hits target center	0.00	0.00	0.00	0.00	0.00	307,344.928783	36,130.700176	40.173969	-104.654970
- Polygon										
Point 1				0.00	-238.23	3,660.10	1,307,141.60	3,239,792.75		
Point 2				0.00	-224.36	1,478.05	1,307,134.67	3,237,610.76		
Point 3				0.00	-210.68	-710.55	1,307,127.50	3,235,422.22		
Point 4				0.00	-2,255.97	-730.36	1,305,082.20	3,235,421.90		
Point 5				0.00	-4,450.56	-751.62	1,302,887.60	3,235,421.56		
Point 6				0.00	-4,447.67	3,603.53	1,302,931.99	3,239,776.30		
Point 7				0.00	-2,260.06	3,625.57	1,305,119.61	3,239,777.49		
Cannon 14N-W3HZ_E	- actual wellpath misses target center by 288.19ft at 11088.00ft MD (6942.86 TVD, -4425.09 N, 164.15 E)	0.00	0.00	6,915.00	-4,450.24	-121.58	302,893.923824	36,051.534186	40.161753	-104.655405
Cannon 14N-W3HZ_V	- actual wellpath misses target center by 15.65ft at 8457.76ft MD (6937.55 TVD, -1799.25 N, 30.34 E)	0.00	0.00	6,922.10	-1,800.00	28.00	305,545.353391	36,175.849900	40.169028	-104.654870
Cannon 14N-W3HZ_ξ	- actual wellpath hits target center	0.00	0.00	0.00	0.00	0.00	307,344.928783	36,130.700176	40.173969	-104.654970
Cannon 14N-W3HZ_ξ	- actual wellpath hits target center	0.00	0.00	0.00	0.00	0.00	307,344.928783	36,130.700176	40.173969	-104.654970
- Polygon										
Point 1				0.00	218.83	4,128.01	1,307,603.08	3,240,256.26		
Point 2				0.00	235.65	1,480.92	1,307,594.67	3,237,609.24		
Point 3				0.00	252.19	-1,166.11	1,307,585.98	3,234,962.29		
Point 4				0.00	-2,255.53	-1,190.39	1,305,078.25	3,234,961.91		
Point 5				0.00	-4,910.88	-1,216.13	1,302,422.89	3,234,961.47		
Point 6				0.00	-4,907.38	4,058.95	1,302,476.66	3,240,236.06		
Point 7				0.00	-2,260.49	4,085.61	1,305,123.57	3,240,237.49		
Cannon 14N-W3HZ_L	- actual wellpath hits target center	0.00	0.00	0.00	0.00	0.00	307,344.928783	36,130.700176	40.173969	-104.654970
- Polygon										
Point 1				0.00	-223.24	607.52	1,307,127.50	3,236,740.29		
Point 2				0.00	-214.53	-307.48	1,307,127.49	3,235,825.29		
Point 3				0.00	-4,454.40	-348.70	1,302,887.60	3,235,824.48		
Point 4				0.00	-4,463.12	566.30	1,302,887.60	3,236,739.48		
Cannon 14N-W3HZ_E	- actual wellpath misses target center by 37.68ft at 11088.00ft MD (6942.86 TVD, -4425.09 N, 164.15 E)	0.00	0.00	6,915.00	-4,450.24	160.92	302,896.612317	36,334.012354	40.161753	-104.654394
- Point										

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,293.00	6,924.16	7" Casing Point	7	8-3/4
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N-S (ft)	+E-W (ft)	Comment
125.00	125.00	0.26	-0.29	First Gyro Survey @ 125.00ft

Halliburton Company

Survey Report - Geographic

Company:	Anadarko Petroleum Corp.	Local Co-ordinate Reference:	Well Cannon 14N-W3HZ
Project:	Weld County, CO (NAD 83)	TVD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Site:	Sec. 3-T2N-R65W	MD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Well:	Cannon 14N-W3HZ	North Reference:	True
Wellbore:	Plan D Rev 0	Survey Calculation Method:	Minimum Curvature
Design:	Actual Field Surveys	Database:	EDM 2003.16 Single User Db

Targets

Target Name	- hit/miss target	Dip Angle	Dip Dir.	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude
- Shape		(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
Cannon 14N-W3HZ_V	- actual wellpath misses target center by 20.81ft at 10161.32ft MD (6938.34 TVD, -3499.41 N, 125.51 E)	0.00	0.00	6,917.55	-3,500.00	125.00	303,846.426733	36,289.040677	40.164361	-104.654523
- Point										
Cannon 14N-W3HZ_ξ	- actual wellpath hits target center	0.00	0.00	0.00	0.00	0.00	307,344.928783	36,130.700176	40.173969	-104.654970
- Polygon										
Point 1				0.00	-238.23	3,660.10	1,307,141.60	3,239,792.75		
Point 2				0.00	-224.36	1,478.05	1,307,134.67	3,237,610.76		
Point 3				0.00	-210.68	-710.55	1,307,127.50	3,235,422.22		
Point 4				0.00	-2,255.97	-730.36	1,305,082.20	3,235,421.90		
Point 5				0.00	-4,450.56	-751.62	1,302,887.60	3,235,421.56		
Point 6				0.00	-4,447.67	3,603.53	1,302,931.99	3,239,776.30		
Point 7				0.00	-2,260.06	3,625.57	1,305,119.61	3,239,777.49		
Cannon 14N-W3HZ_E	- actual wellpath misses target center by 288.19ft at 11088.00ft MD (6942.86 TVD, -4425.09 N, 164.15 E)	0.00	0.00	6,915.00	-4,450.24	-121.58	302,893.923824	36,051.534186	40.161753	-104.655405
- Point										
Cannon 14N-W3HZ_V	- actual wellpath misses target center by 15.65ft at 8457.76ft MD (6937.55 TVD, -1799.25 N, 30.34 E)	0.00	0.00	6,922.10	-1,800.00	28.00	305,545.353391	36,175.849900	40.169028	-104.654870
- Point										
Cannon 14N-W3HZ_ξ	- actual wellpath hits target center	0.00	0.00	0.00	0.00	0.00	307,344.928783	36,130.700176	40.173969	-104.654970
- Point										
Cannon 14N-W3HZ_ξ	- actual wellpath hits target center	0.00	0.00	0.00	0.00	0.00	307,344.928783	36,130.700176	40.173969	-104.654970
- Polygon										
Point 1				0.00	218.83	4,128.01	1,307,603.08	3,240,256.26		
Point 2				0.00	235.65	1,480.92	1,307,594.67	3,237,609.24		
Point 3				0.00	252.19	-1,166.11	1,307,585.98	3,234,962.29		
Point 4				0.00	-2,255.53	-1,190.39	1,305,078.25	3,234,961.91		
Point 5				0.00	-4,910.88	-1,216.13	1,302,422.89	3,234,961.47		
Point 6				0.00	-4,907.38	4,058.95	1,302,476.66	3,240,236.06		
Point 7				0.00	-2,260.49	4,085.61	1,305,123.57	3,240,237.49		
Cannon 14N-W3HZ_L	- actual wellpath hits target center	0.00	0.00	0.00	0.00	0.00	307,344.928783	36,130.700176	40.173969	-104.654970
- Polygon										
Point 1				0.00	-223.24	607.52	1,307,127.50	3,236,740.29		
Point 2				0.00	-214.53	-307.48	1,307,127.49	3,235,825.29		
Point 3				0.00	-4,454.40	-348.70	1,302,887.60	3,235,824.48		
Point 4				0.00	-4,463.12	566.30	1,302,887.60	3,236,739.48		
Cannon 14N-W3HZ_E	- actual wellpath misses target center by 37.68ft at 11088.00ft MD (6942.86 TVD, -4425.09 N, 164.15 E)	0.00	0.00	6,915.00	-4,450.24	160.92	302,896.612317	36,334.012354	40.161753	-104.654394
- Point										

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,293.00	6,924.16	7" Casing Point	7	8-3/4
765.00	764.99	2.33	-3.09	Final Gyro Survey @ 765.00ft
765.00	764.99	2.33	-3.09	Tie-On to Gyro Surveys @ 765.00ft
827.00	826.99	2.46	-3.41	First Sperry MWD Survey @ 827.00ft
11,046.00	6,942.72	-4,383.13	162.25	Final Sperry MWD Survey @ 11046.00ft
11,088.00	6,942.86	-4,425.09	164.15	Straight Line Projection to Bit @ 11088.00ft

Halliburton Company

Survey Report - Geographic

Company:	Anadarko Petroleum Corp.	Local Co-ordinate Reference:	Well Cannon 14N-W3HZ
Project:	Weld County, CO (NAD 83)	TVD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Site:	Sec. 3-T2N-R65W	MD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Well:	Cannon 14N-W3HZ	North Reference:	True
Wellbore:	Plan D Rev 0	Survey Calculation Method:	Minimum Curvature
Design:	Actual Field Surveys	Database:	EDM 2003.16 Single User Db

Targets

Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Cannon 14N-W3HZ_V	- actual wellpath misses target center by 20.81ft at 10161.32ft MD (6938.34 TVD, -3499.41 N, 125.51 E)	0.00	0.00	6,917.55	-3,500.00	125.00	303,846.426733	36,289.040677	40.164361	-104.654523
Cannon 14N-W3HZ_ξ	- actual wellpath hits target center	0.00	0.00	0.00	0.00	0.00	307,344.928783	36,130.700176	40.173969	-104.654970
- Polygon										
Point 1				0.00	-238.23	3,660.10	1,307,141.60	3,239,792.75		
Point 2				0.00	-224.36	1,478.05	1,307,134.67	3,237,610.76		
Point 3				0.00	-210.68	-710.55	1,307,127.50	3,235,422.22		
Point 4				0.00	-2,255.97	-730.36	1,305,082.20	3,235,421.90		
Point 5				0.00	-4,450.56	-751.62	1,302,887.60	3,235,421.56		
Point 6				0.00	-4,447.67	3,603.53	1,302,931.99	3,239,776.30		
Point 7				0.00	-2,260.06	3,625.57	1,305,119.61	3,239,777.49		
Cannon 14N-W3HZ_E	- actual wellpath misses target center by 288.19ft at 11088.00ft MD (6942.86 TVD, -4425.09 N, 164.15 E)	0.00	0.00	6,915.00	-4,450.24	-121.58	302,893.923824	36,051.534186	40.161753	-104.655405
Cannon 14N-W3HZ_V	- actual wellpath misses target center by 15.65ft at 8457.76ft MD (6937.55 TVD, -1799.25 N, 30.34 E)	0.00	0.00	6,922.10	-1,800.00	28.00	305,545.353391	36,175.849900	40.169028	-104.654870
Cannon 14N-W3HZ_ξ	- actual wellpath hits target center	0.00	0.00	0.00	0.00	0.00	307,344.928783	36,130.700176	40.173969	-104.654970
Cannon 14N-W3HZ_ξ	- actual wellpath hits target center	0.00	0.00	0.00	0.00	0.00	307,344.928783	36,130.700176	40.173969	-104.654970
- Polygon										
Point 1				0.00	218.83	4,128.01	1,307,603.08	3,240,256.26		
Point 2				0.00	235.65	1,480.92	1,307,594.67	3,237,609.24		
Point 3				0.00	252.19	-1,166.11	1,307,585.98	3,234,962.29		
Point 4				0.00	-2,255.53	-1,190.39	1,305,078.25	3,234,961.91		
Point 5				0.00	-4,910.88	-1,216.13	1,302,422.89	3,234,961.47		
Point 6				0.00	-4,907.38	4,058.95	1,302,476.66	3,240,236.06		
Point 7				0.00	-2,260.49	4,085.61	1,305,123.57	3,240,237.49		
Cannon 14N-W3HZ_L	- actual wellpath hits target center	0.00	0.00	0.00	0.00	0.00	307,344.928783	36,130.700176	40.173969	-104.654970
- Polygon										
Point 1				0.00	-223.24	607.52	1,307,127.50	3,236,740.29		
Point 2				0.00	-214.53	-307.48	1,307,127.49	3,235,825.29		
Point 3				0.00	-4,454.40	-348.70	1,302,887.60	3,235,824.48		
Point 4				0.00	-4,463.12	566.30	1,302,887.60	3,236,739.48		
Cannon 14N-W3HZ_E	- actual wellpath misses target center by 37.68ft at 11088.00ft MD (6942.86 TVD, -4425.09 N, 164.15 E)	0.00	0.00	6,915.00	-4,450.24	160.92	302,896.612317	36,334.012354	40.161753	-104.654394
- Point										

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,293.00	6,924.16	7" Casing Point	7	8-3/4

Checked By: _____ Approved By: _____ Date: _____

Halliburton Company
Survey Report - Geographic

Company:	Anadarko Petroleum Corp.	Local Co-ordinate Reference:	Well Cannon 14N-W3HZ
Project:	Weld County, CO (NAD 83)	TVD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Site:	Sec. 3-T2N-R65W	MD Reference:	RKB=25ft @ 4865.00ft (HP 308)
Well:	Cannon 14N-W3HZ	North Reference:	True
Wellbore:	Plan D Rev 0	Survey Calculation Method:	Minimum Curvature
Design:	Actual Field Surveys	Database:	EDM 2003.16 Single User Db

Section 2

Contents: Proposal Data

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 3-T2N-R65W

Cannon 14N-W3HZ

Plan C Rev 0

Plan: Plan A Rev 0 Proposal

Sperry Drilling Services

Proposal Report

20 July, 2012

Well Coordinates: 1,307,344.93 N, 3,236,130.70 E (40° 10' 26.29" N, 104° 39' 17.89" W)

Ground Level: 4,840.00 ft

Local Coordinate Origin:

Centered on Well Cannon 14N-W3HZ

Viewing Datum:

RKB=25ft @ 4865.00ft (HP 308)

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. 3-T2N-R65W
Well: Cannon 14N-W3HZ
Wellbore: Plan C Rev 0
Design: Plan A Rev 0 Proposal

Anadarko Petroleum Corp.

HALLIBURTON
Sperry Drilling

SECTION DETAILS

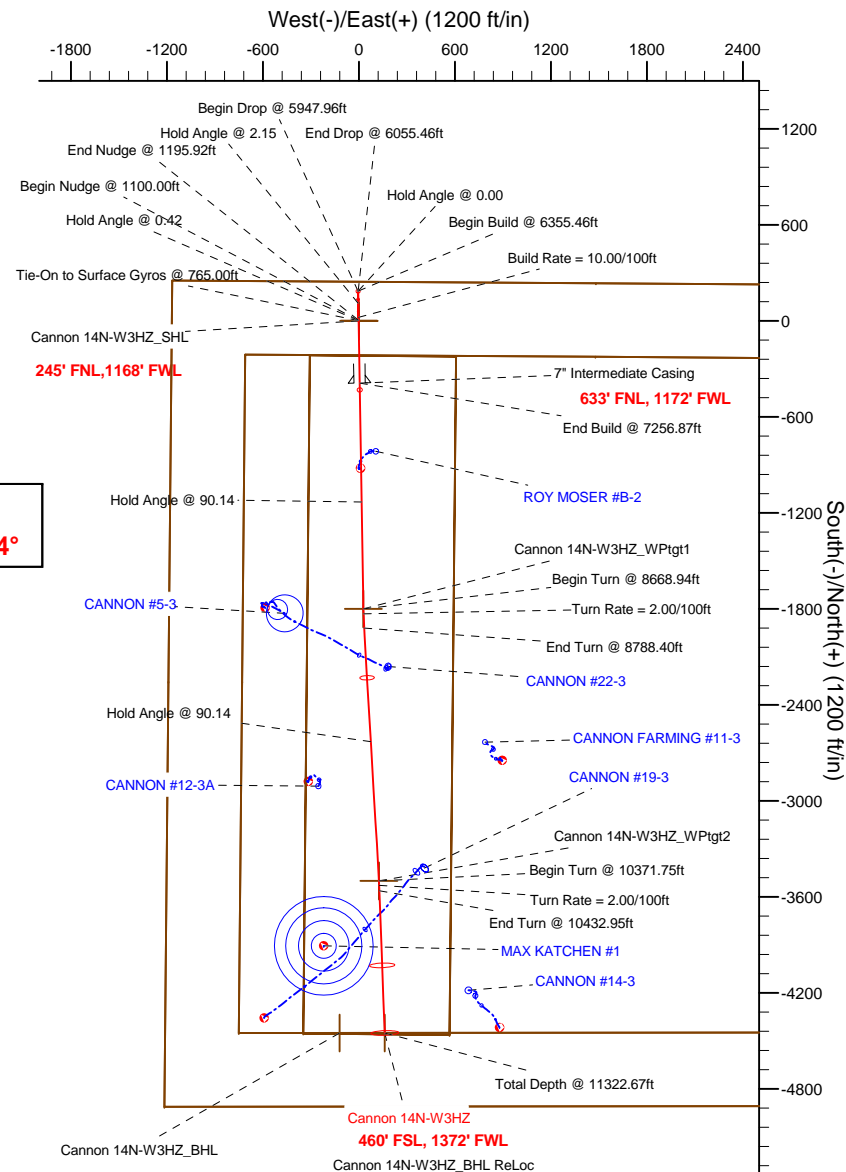
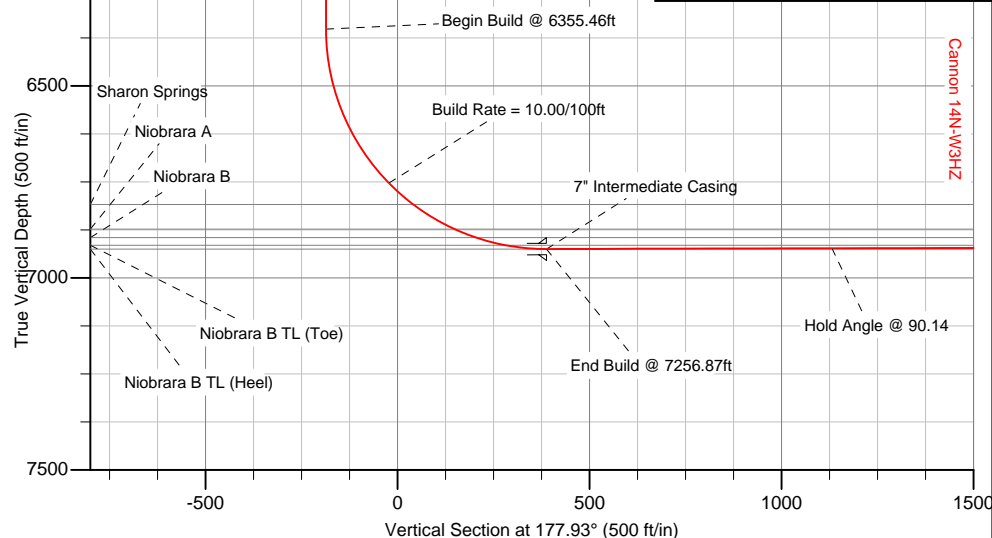
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	765.00	0.42	308.27	764.99	2.33	-3.09	0.00	0.00	-2.44	
2	1100.00	0.42	308.27	1099.98	3.85	-5.02	0.00	0.00	-4.03	
3	1195.92	2.15	0.00	1195.87	5.86	-5.29	2.00	61.62	-6.05	
4	5947.96	2.15	0.00	5944.57	184.14	-5.29	0.00	0.00	-184.21	
5	6055.46	0.00	0.00	6052.04	186.16	-5.29	2.00	180.00	-186.23	
6	6355.46	0.00	0.00	6352.04	186.16	-5.29	0.00	0.00	-186.23	
7	7256.87	90.14	179.04	6925.00	-388.13	4.33	10.00	179.04	388.04	
8	8668.94	90.14	179.04	6921.52	-1800.00	28.00	0.00	0.00	1799.84	Cannon 14N-W3HZ_WPtgt1
9	8788.40	90.14	176.65	6921.23	-1919.36	32.49	2.00	-90.01	1919.28	
10	10371.75	90.14	176.65	6917.34	-3500.00	125.00	0.00	0.00	3502.23	Cannon 14N-W3HZ_WPtgt2
11	10432.95	90.14	177.87	6917.19	-3561.13	127.92	2.00	89.98	3563.43	
12	11322.67	90.14	177.87	6915.00	-4450.24	160.92	0.00	0.00	4453.15	Cannon 14N-W3HZ_BHL ReLoc

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Cannon 14N-W3HZ_Land Spacing Unit	0.00	0.00	0.00	40.173969	-104.654970	Polygon
Cannon 14N-W3HZ_Section Lines	0.00	0.00	0.00	40.173969	-104.654970	Polygon
Cannon 14N-W3HZ_Setback Lines	0.00	0.00	0.00	40.173969	-104.654970	Polygon
Cannon 14N-W3HZ_SHL	0.00	0.00	0.00	40.173969	-104.654970	Point
Cannon 14N-W3HZ_BHL	6915.00	-4450.24	-121.58	40.161753	-104.655405	Point
Cannon 14N-W3HZ_BHL ReLoc	6915.00	-4450.24	160.92	40.161753	-104.654394	Point
Cannon 14N-W3HZ_WPtgt2	6917.34	-3500.00	125.00	40.164361	-104.654523	Point
Cannon 14N-W3HZ_WPtgt1	6921.52	-1800.00	28.00	40.169028	-104.654870	Point

Target Line:

6925.86' TVDkb @ 0° VS Drilling 90.14°

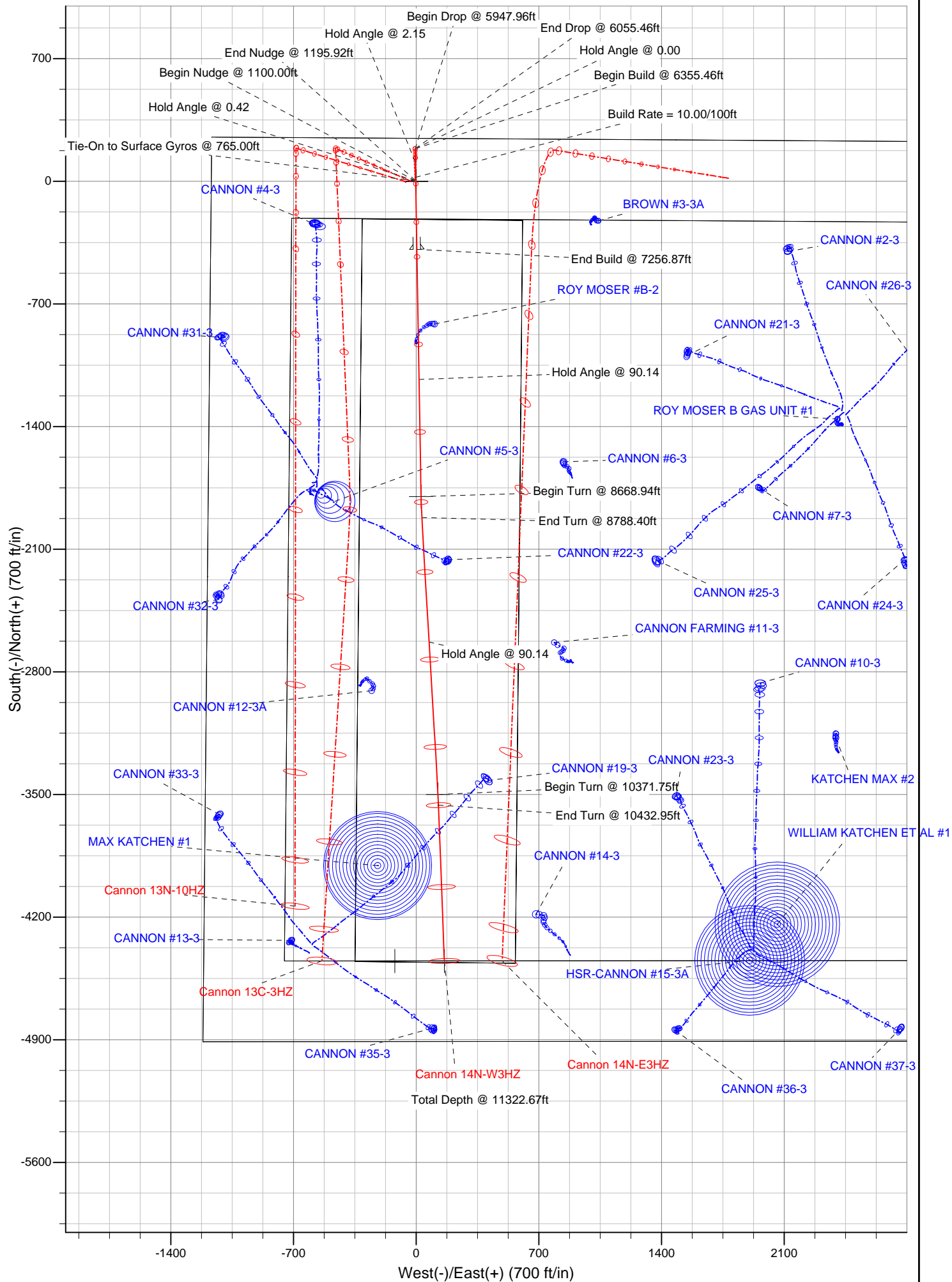


WELL DETAILS: Cannon 14N-W3HZ

Ground Level: 4840.00 RKB=25ft @ 4865.00ft (HP 308)

Plan: Plan A Rev 0 Proposal (Cannon 14N-W3HZ/Plan C Rev 0)

Created By: Fred Hartmann Date: 07/17/2012
Reviewed: Date:



Plan Report for Cannon 14N-W3HZ - Plan A Rev 0 Proposal

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
765.00	0.42	308.27	764.99	2.33	-3.09	-2.44	0.00	0.00	0.00	0.00
Tie-On to Surface Gyros @ 765.00ft - Cannon 14N-W3HZ_Land Spacing Unit - Cannon 14N-W3HZ_SHL - Cannon 14N-W3HZ_Sec										
800.00	0.42	308.27	799.99	2.48	-3.29	-2.60	0.00	0.00	0.00	0.00
900.00	0.42	308.27	899.99	2.94	-3.87	-3.08	0.00	0.00	0.00	0.00
Hold Angle @ 0.42										
1,000.00	0.42	308.27	999.98	3.39	-4.44	-3.55	0.00	0.00	0.00	0.00
1,100.00	0.42	308.27	1,099.98	3.85	-5.02	-4.03	0.00	0.00	0.00	0.00
Begin Nudge @ 1100.00ft										
1,195.92	2.15	360.00	1,195.87	5.86	-5.29	-6.05	2.00	1.80	53.93	61.62
End Nudge @ 1195.92ft										
1,200.00	2.15	0.00	1,199.95	6.02	-5.29	-6.20	0.00	0.00	0.00	9.90
1,300.00	2.15	0.00	1,299.88	9.77	-5.29	-9.95	0.00	0.00	0.00	0.00
1,400.00	2.15	0.00	1,399.81	13.52	-5.29	-13.70	0.00	0.00	0.00	0.00
1,500.00	2.15	0.00	1,499.74	17.27	-5.29	-17.45	0.00	0.00	0.00	0.00
1,600.00	2.15	0.00	1,599.67	21.02	-5.29	-21.20	0.00	0.00	0.00	0.00
1,700.00	2.15	0.00	1,699.60	24.77	-5.29	-24.95	0.00	0.00	0.00	0.00
1,800.00	2.15	0.00	1,799.53	28.53	-5.29	-28.70	0.00	0.00	0.00	0.00
1,900.00	2.15	0.00	1,899.46	32.28	-5.29	-32.45	0.00	0.00	0.00	0.00
2,000.00	2.15	0.00	1,999.39	36.03	-5.29	-36.20	0.00	0.00	0.00	0.00
2,100.00	2.15	0.00	2,099.32	39.78	-5.29	-39.95	0.00	0.00	0.00	0.00
2,200.00	2.15	0.00	2,199.25	43.53	-5.29	-43.70	0.00	0.00	0.00	0.00
2,300.00	2.15	0.00	2,299.18	47.28	-5.29	-47.44	0.00	0.00	0.00	0.00
2,400.00	2.15	0.00	2,399.11	51.04	-5.29	-51.19	0.00	0.00	0.00	0.00
2,500.00	2.15	0.00	2,499.04	54.79	-5.29	-54.94	0.00	0.00	0.00	0.00
2,600.00	2.15	0.00	2,598.97	58.54	-5.29	-58.69	0.00	0.00	0.00	0.00
2,700.00	2.15	0.00	2,698.90	62.29	-5.29	-62.44	0.00	0.00	0.00	0.00
2,800.00	2.15	0.00	2,798.82	66.04	-5.29	-66.19	0.00	0.00	0.00	0.00
2,900.00	2.15	0.00	2,898.75	69.79	-5.29	-69.94	0.00	0.00	0.00	0.00
3,000.00	2.15	0.00	2,998.68	73.55	-5.29	-73.69	0.00	0.00	0.00	0.00
3,100.00	2.15	0.00	3,098.61	77.30	-5.29	-77.44	0.00	0.00	0.00	0.00
3,200.00	2.15	0.00	3,198.54	81.05	-5.29	-81.19	0.00	0.00	0.00	0.00
3,300.00	2.15	0.00	3,298.47	84.80	-5.29	-84.94	0.00	0.00	0.00	0.00
3,400.00	2.15	0.00	3,398.40	88.55	-5.29	-88.68	0.00	0.00	0.00	0.00
3,500.00	2.15	0.00	3,498.33	92.30	-5.29	-92.43	0.00	0.00	0.00	0.00
3,600.00	2.15	0.00	3,598.26	96.05	-5.29	-96.18	0.00	0.00	0.00	0.00
3,700.00	2.15	0.00	3,698.19	99.81	-5.29	-99.93	0.00	0.00	0.00	0.00
3,800.00	2.15	0.00	3,798.12	103.56	-5.29	-103.68	0.00	0.00	0.00	0.00
3,900.00	2.15	0.00	3,898.05	107.31	-5.29	-107.43	0.00	0.00	0.00	0.00
3,958.99	2.15	0.00	3,957.00	109.52	-5.29	-109.64	0.00	0.00	0.00	0.00
Parkman										
4,000.00	2.15	0.00	3,997.98	111.06	-5.29	-111.18	0.00	0.00	0.00	0.00
Hold Angle @ 2.15										
4,100.00	2.15	0.00	4,097.91	114.81	-5.29	-114.93	0.00	0.00	0.00	0.00
4,200.00	2.15	0.00	4,197.84	118.56	-5.29	-118.68	0.00	0.00	0.00	0.00
4,300.00	2.15	0.00	4,297.77	122.32	-5.29	-122.43	0.00	0.00	0.00	0.00
4,400.00	2.15	0.00	4,397.70	126.07	-5.29	-126.18	0.00	0.00	0.00	0.00
4,456.34	2.15	0.00	4,454.00	128.18	-5.29	-128.29	0.00	0.00	0.00	0.00
Sussex										
4,500.00	2.15	0.00	4,497.63	129.82	-5.29	-129.93	0.00	0.00	0.00	0.00
4,600.00	2.15	0.00	4,597.56	133.57	-5.29	-133.67	0.00	0.00	0.00	0.00
4,700.00	2.15	0.00	4,697.49	137.32	-5.29	-137.42	0.00	0.00	0.00	0.00
4,800.00	2.15	0.00	4,797.42	141.07	-5.29	-141.17	0.00	0.00	0.00	0.00
4,900.00	2.15	0.00	4,897.35	144.83	-5.29	-144.92	0.00	0.00	0.00	0.00
5,000.00	2.15	0.00	4,997.28	148.58	-5.29	-148.67	0.00	0.00	0.00	0.00
5,100.00	2.15	0.00	5,097.21	152.33	-5.29	-152.42	0.00	0.00	0.00	0.00
5,200.00	2.15	0.00	5,197.14	156.08	-5.29	-156.17	0.00	0.00	0.00	0.00
5,300.00	2.15	0.00	5,297.06	159.83	-5.29	-159.92	0.00	0.00	0.00	0.00

Plan Report for Cannon 14N-W3HZ - Plan A Rev 0 Proposal

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
5,400.00	2.15	0.00	5,396.99	163.58	-5.29	-163.67	0.00	0.00	0.00	0.00
5,500.00	2.15	0.00	5,496.92	167.33	-5.29	-167.42	0.00	0.00	0.00	0.00
5,600.00	2.15	0.00	5,596.85	171.09	-5.29	-171.17	0.00	0.00	0.00	0.00
5,700.00	2.15	0.00	5,696.78	174.84	-5.29	-174.91	0.00	0.00	0.00	0.00
5,800.00	2.15	0.00	5,796.71	178.59	-5.29	-178.66	0.00	0.00	0.00	0.00
5,900.00	2.15	0.00	5,896.64	182.34	-5.29	-182.41	0.00	0.00	0.00	0.00
5,947.96	2.15	0.00	5,944.57	184.14	-5.29	-184.21	0.00	0.00	0.00	0.00
Begin Drop @ 5947.96ft										
6,000.00	1.11	0.00	5,996.59	185.62	-5.29	-185.69	2.00	-2.00	0.00	180.00
6,055.46	0.00	0.00	6,052.04	186.16	-5.29	-186.23	2.00	-2.00	0.00	-180.00
End Drop @ 6055.46ft										
6,100.00	0.00	0.00	6,096.58	186.16	-5.29	-186.23	0.00	0.00	0.00	180.00
6,200.00	0.00	0.00	6,196.58	186.16	-5.29	-186.23	0.00	0.00	0.00	0.00
Hold Angle @ 0.00										
6,300.00	0.00	0.00	6,296.58	186.16	-5.29	-186.23	0.00	0.00	0.00	0.00
6,355.46	0.00	0.00	6,352.04	186.16	-5.29	-186.23	0.00	0.00	0.00	0.00
Begin Build @ 6355.46ft										
6,400.00	4.45	179.04	6,396.54	184.43	-5.26	-184.50	10.00	10.00	0.00	179.04
6,500.00	14.45	179.04	6,495.06	168.02	-4.99	-168.10	10.00	10.00	0.00	0.00
6,600.00	24.45	179.04	6,589.23	134.77	-4.43	-134.84	10.00	10.00	0.00	0.00
6,700.00	34.45	179.04	6,676.19	85.66	-3.61	-85.74	10.00	10.00	0.00	0.00
6,800.00	44.45	179.04	6,753.31	22.21	-2.54	-22.29	10.00	10.00	0.00	0.00
Build Rate = 10.00/100ft										
6,884.42	52.90	179.04	6,809.00	-41.12	-1.48	41.04	10.00	10.00	0.00	0.00
Sharon Springs										
6,900.00	54.45	179.04	6,818.23	-53.67	-1.27	53.59	10.00	10.00	0.00	0.00
7,000.00	64.45	179.04	6,868.99	-139.67	0.17	139.59	10.00	10.00	0.00	0.00
7,009.46	65.40	179.04	6,873.00	-148.25	0.31	148.16	10.00	10.00	0.00	0.00
Niobrara A										
7,069.22	71.38	179.04	6,895.00	-203.77	1.24	203.68	10.00	10.00	0.00	0.00
Niobrara B										
7,100.00	74.45	179.04	6,904.04	-233.18	1.74	233.09	10.00	10.00	0.00	0.00
7,148.24	79.28	179.04	6,915.00	-280.14	2.52	280.05	10.00	10.00	0.00	0.00
Niobrara B TL (Toe)										
7,200.00	84.45	179.04	6,922.32	-331.35	3.38	331.26	10.00	10.00	0.00	0.00
7,253.75	89.83	179.04	6,925.00	-385.01	4.28	384.91	10.00	10.00	0.00	0.00
Niobrara B TL (Heel)										
7,256.87	90.14	179.04	6,925.00	-388.13	4.33	388.03	10.00	10.00	0.00	0.00
End Build @ 7256.87ft - 7" Intermediate Casing										
7,300.00	90.14	179.04	6,924.89	-431.25	5.06	431.15	0.00	0.00	0.00	0.00
7,400.00	90.14	179.04	6,924.65	-531.24	6.73	531.13	0.00	0.00	0.00	0.00
7,500.00	90.14	179.04	6,924.40	-631.22	8.41	631.12	0.00	0.00	0.00	0.00
7,600.00	90.14	179.04	6,924.16	-731.21	10.08	731.10	0.00	0.00	0.00	0.00
7,700.00	90.14	179.04	6,923.91	-831.20	11.76	831.08	0.00	0.00	0.00	0.00
7,800.00	90.14	179.04	6,923.66	-931.18	13.44	931.06	0.00	0.00	0.00	0.00
7,900.00	90.14	179.04	6,923.42	-1,031.17	15.11	1,031.04	0.00	0.00	0.00	0.00
8,000.00	90.14	179.04	6,923.17	-1,131.15	16.79	1,131.02	0.00	0.00	0.00	0.00
Hold Angle @ 90.14										
8,100.00	90.14	179.04	6,922.92	-1,231.14	18.46	1,231.00	0.00	0.00	0.00	0.00
8,200.00	90.14	179.04	6,922.68	-1,331.12	20.14	1,330.98	0.00	0.00	0.00	0.00
8,300.00	90.14	179.04	6,922.43	-1,431.11	21.82	1,430.96	0.00	0.00	0.00	0.00
8,400.00	90.14	179.04	6,922.18	-1,531.09	23.49	1,530.94	0.00	0.00	0.00	0.00
8,500.00	90.14	179.04	6,921.94	-1,631.08	25.17	1,630.92	0.00	0.00	0.00	0.00
8,600.00	90.14	179.04	6,921.69	-1,731.07	26.84	1,730.91	0.00	0.00	0.00	0.00
8,668.94	90.14	179.04	6,921.52	-1,800.00	28.00	1,799.84	0.00	0.00	0.00	0.00
Begin Turn @ 8668.94ft - Cannon 14N-W3HZ_WPtgt1										
8,700.00	90.14	178.42	6,921.44	-1,831.05	28.69	1,830.89	2.00	0.00	-2.00	-90.01
Turn Rate = 2.00/100ft										

Plan Report for Cannon 14N-W3HZ - Plan A Rev 0 Proposal

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
8,788.40	90.14	176.65	6,921.23	-1,919.36	32.49	1,919.28	2.00	0.00	-2.00	-90.01
End Turn @ 8788.40ft										
8,800.00	90.14	176.65	6,921.20	-1,930.94	33.17	1,930.88	0.00	0.00	0.00	-90.02
8,900.00	90.14	176.65	6,920.95	-2,030.77	39.01	2,030.86	0.00	0.00	0.00	0.00
9,000.00	90.14	176.65	6,920.71	-2,130.60	44.85	2,130.83	0.00	0.00	0.00	0.00
9,100.00	90.14	176.65	6,920.46	-2,230.43	50.70	2,230.80	0.00	0.00	0.00	0.00
9,200.00	90.14	176.65	6,920.22	-2,330.26	56.54	2,330.78	0.00	0.00	0.00	0.00
9,300.00	90.14	176.65	6,919.97	-2,430.09	62.38	2,430.75	0.00	0.00	0.00	0.00
9,400.00	90.14	176.65	6,919.73	-2,529.92	68.22	2,530.73	0.00	0.00	0.00	0.00
9,500.00	90.14	176.65	6,919.48	-2,629.74	74.07	2,630.70	0.00	0.00	0.00	0.00
Hold Angle @ 90.14										
9,600.00	90.14	176.65	6,919.23	-2,729.57	79.91	2,730.68	0.00	0.00	0.00	0.00
9,700.00	90.14	176.65	6,918.99	-2,829.40	85.75	2,830.65	0.00	0.00	0.00	0.00
9,800.00	90.14	176.65	6,918.74	-2,929.23	91.60	2,930.63	0.00	0.00	0.00	0.00
9,900.00	90.14	176.65	6,918.50	-3,029.06	97.44	3,030.60	0.00	0.00	0.00	0.00
10,000.00	90.14	176.65	6,918.25	-3,128.89	103.28	3,130.58	0.00	0.00	0.00	0.00
10,100.00	90.14	176.65	6,918.01	-3,228.72	109.12	3,230.55	0.00	0.00	0.00	0.00
10,200.00	90.14	176.65	6,917.76	-3,328.55	114.97	3,330.53	0.00	0.00	0.00	0.00
10,300.00	90.14	176.65	6,917.52	-3,428.38	120.81	3,430.50	0.00	0.00	0.00	0.00
10,371.75	90.14	176.65	6,917.34	-3,500.00	125.00	3,502.23	0.00	0.00	0.00	0.00
Begin Turn @ 10371.75ft - Cannon 14N-W3HZ_WPtgt2										
10,400.00	90.14	177.22	6,917.27	-3,528.21	126.51	3,530.48	2.00	0.00	2.00	89.98
Turn Rate = 2.00/100ft										
10,432.95	90.14	177.87	6,917.19	-3,561.13	127.92	3,563.43	2.00	0.00	2.00	89.98
End Turn @ 10432.95ft										
10,500.00	90.14	177.87	6,917.02	-3,628.14	130.41	3,630.48	0.00	0.00	0.00	0.00
10,600.00	90.14	177.87	6,916.78	-3,728.07	134.12	3,730.48	0.00	0.00	0.00	0.00
10,700.00	90.14	177.87	6,916.53	-3,828.00	137.83	3,830.48	0.00	0.00	0.00	0.00
10,800.00	90.14	177.87	6,916.29	-3,927.93	141.54	3,930.48	0.00	0.00	0.00	0.00
Hold Angle @ 90.14										
10,900.00	90.14	177.87	6,916.04	-4,027.86	145.24	4,030.48	0.00	0.00	0.00	0.00
11,000.00	90.14	177.87	6,915.79	-4,127.79	148.95	4,130.48	0.00	0.00	0.00	0.00
11,100.00	90.14	177.87	6,915.55	-4,227.72	152.66	4,230.48	0.00	0.00	0.00	0.00
11,200.00	90.14	177.87	6,915.30	-4,327.65	156.37	4,330.48	0.00	0.00	0.00	0.00
11,300.00	90.14	177.87	6,915.06	-4,427.58	160.08	4,430.48	0.00	0.00	0.00	0.00
11,312.19	90.14	177.87	6,915.03	-4,439.77	160.53	4,442.67	0.00	0.00	0.00	0.00
Cannon 14N-W3HZ_BHL										
11,322.67	90.14	177.87	6,915.00	-4,450.24	160.92	4,453.15	0.00	0.00	0.00	0.00
Total Depth @ 11322.67ft - Cannon 14N-W3HZ_BHL ReLoc										

Plan Report for Cannon 14N-W3HZ - Plan A Rev 0 Proposal

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
765.00	764.99	2.33	-3.09	Tie-On to Surface Gyros @ 765.00ft
900.00	899.99	2.94	-3.87	Hold Angle @ 0.42
1,100.00	1,099.98	3.85	-5.02	Begin Nudge @ 1100.00ft
1,195.92	1,195.87	5.86	-5.29	End Nudge @ 1195.92ft
4,000.00	3,997.98	111.06	-5.29	Hold Angle @ 2.15
5,947.96	5,944.57	184.14	-5.29	Begin Drop @ 5947.96ft
6,055.46	6,052.04	186.16	-5.29	End Drop @ 6055.46ft
6,200.00	6,196.58	186.16	-5.29	Hold Angle @ 0.00
6,355.46	6,352.04	186.16	-5.29	Begin Build @ 6355.46ft
6,800.00	6,753.31	22.21	-2.54	Build Rate = 10.00/100ft
7,256.87	6,925.00	-388.13	4.33	End Build @ 7256.87ft
8,000.00	6,923.17	-1,131.15	16.79	Hold Angle @ 90.14
8,668.94	6,921.52	-1,800.00	28.00	Begin Turn @ 8668.94ft
8,700.00	6,921.44	-1,831.05	28.69	Turn Rate = 2.00/100ft
8,788.40	6,921.23	-1,919.36	32.49	End Turn @ 8788.40ft
9,500.00	6,919.48	-2,629.74	74.07	Hold Angle @ 90.14
10,371.75	6,917.34	-3,500.00	125.00	Begin Turn @ 10371.75ft
10,400.00	6,917.27	-3,528.21	126.51	Turn Rate = 2.00/100ft
10,432.95	6,917.19	-3,561.13	127.92	End Turn @ 10432.95ft
10,800.00	6,916.29	-3,927.93	141.54	Hold Angle @ 90.14
11,322.67	6,915.00	-4,450.24	160.92	Total Depth @ 11322.67ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/-S (ft)	+E/-W (ft)	
Target	Cannon 14N-W3HZ_BHL ReLoc	177.93	Slot	0.00	0.00	6,915.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
765.00	11,322.67	Plan A Rev 0 Proposal	MWD

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,256.87	6,925.00	7" Intermediate Casing	7	8-3/4

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,958.99	3,957.00	Parkman			
4,456.34	4,454.00	Sussex			
6,884.42	6,809.00	Sharon Springs			
7,009.46	6,873.00	Niobrara A			
7,069.22	6,895.00	Niobrara B		0.00	
7,148.24	6,915.00	Niobrara B TL (Toe)			
7,253.75	6,925.00	Niobrara B TL (Heel)			

Plan Report for Cannon 14N-W3HZ - Plan A Rev 0 Proposal

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Cannon 14N-W3HZ_WPtgt2	6,917.34	-3,500.00	125.00	Point
Cannon 14N-W3HZ_Setback Lines	0.00	0.00	0.00	Polygon
Cannon 14N-W3HZ_BHL	6,915.00	-4,450.24	-121.58	Point
Cannon 14N-W3HZ_WPtgt1	6,921.52	-1,800.00	28.00	Point
Cannon 14N-W3HZ_SHL	0.00	0.00	0.00	Point
Cannon 14N-W3HZ_Section Lines	0.00	0.00	0.00	Polygon
Cannon 14N-W3HZ_Land Spacing Unit	0.00	0.00	0.00	Polygon
Cannon 14N-W3HZ_BHL ReLoc	6,915.00	-4,450.24	160.92	Point

North Reference Sheet for Sec. 3-T2N-R65W - Cannon 14N-W3HZ - 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=25ft @ 4865.00ft (HP 308). Northing and Easting are relative to Cannon 14N-W3HZ

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 -105.50°, Longitude Origin:0.000000°, Latitude Origin:40.783333°

False Easting: 3,000,000.000644ft, False Northing: 1,000,000.001308ft, Scale Reduction: 0.99995774

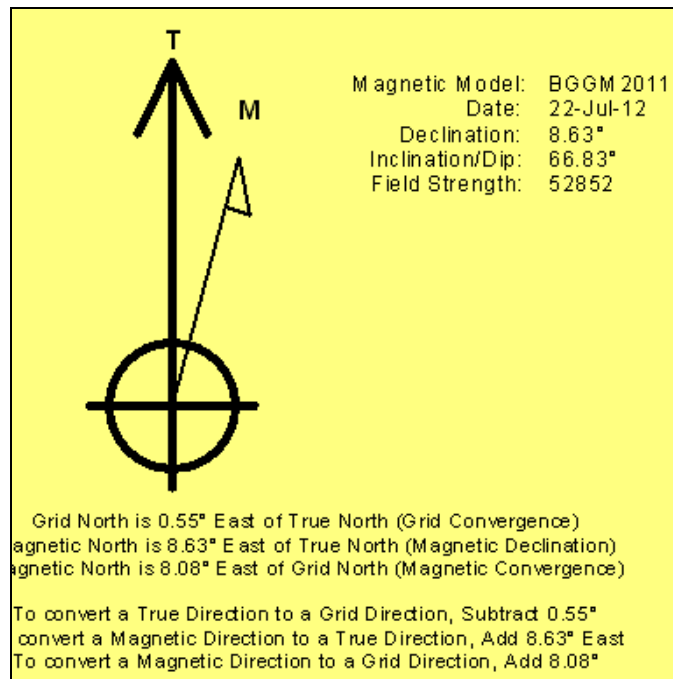
Grid Coordinates of Well: 1,307,344.928783 ft N, 3,236,130.700176 ft E

Geographical Coordinates of Well: 40° 10' 26.29" N, 104° 39' 17.89" W

Grid Convergence at Surface is: 0.55°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,322.67ft
the Bottom Hole Displacement is 4,453.15ft in the Direction of 177.93° (True).

Magnetic Convergence at surface is: -8.08° (22 July 2012, , BGGM2011)



Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 3-T2N-R65W

Cannon 14N-W3HZ

Plan D Rev 0

Plan: Plan D Rev 0 Proposal

Sperry Drilling Services

Proposal Report

24 July, 2012

Well Coordinates: 1,307,344.93 N, 3,236,130.70 E (40° 10' 26.29" N, 104° 39' 17.89" W)

Ground Level: 4,840.00 ft

Local Coordinate Origin:

Centered on Well Cannon 14N-W3HZ

Viewing Datum:

RKB=25ft @ 4865.00ft (HP 308)

TVDs to System:

N

North Reference:

True

Unit System:

API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 2003.16 Build: 43I

HALLIBURTON

WELL DETAILS: Cannon 14N-W3HZ	
Ground Level: 4840.00	RKB=25ft @ 4865.00ft (HP 308)
Plan: Plan D Rev 0 Proposal (Cannon 14N-W3HZ/Plan D Rev 0)	
Created By: Fred Hartmann	Date: 07/24/2012
Reviewed: _____	Date: _____

Plan Report for Cannon 14N-W3HZ - Plan D Rev 0 Proposal

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
2,437.00	1.46	337.23	2,435.96	52.78	1.64	-52.69	0.00	0.00	0.00	0.00
Tie-On to Sperry MWD Surveys @ 2437.00ft - Begin Drop @ 2437.00ft - Cannon 14N-W3HZ_Land Spacing Unit - Cannon 14N-W3										
2,500.00	0.20	337.23	2,498.95	53.62	1.29	-53.54	2.00	-2.00	0.00	180.00
2,510.00	0.00	0.00	2,508.95	53.64	1.28	-53.56	2.00	-2.00	0.00	180.00
End Drop @ 2510.00ft										
2,600.00	0.00	0.00	2,598.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,698.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,798.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,898.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	2,998.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,098.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,198.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,298.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,398.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,498.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,598.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,698.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,798.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,898.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
3,958.05	0.00	0.00	3,957.00	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
Parkman										
4,000.00	0.00	0.00	3,998.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
Hold Angle @ 0.00										
4,100.00	0.00	0.00	4,098.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,198.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,298.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,398.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
4,455.05	0.00	0.00	4,454.00	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
Sussex										
4,500.00	0.00	0.00	4,498.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,598.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,698.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,798.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,898.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	4,998.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,098.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,198.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,298.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,398.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,498.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,598.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,698.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,798.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,898.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	5,998.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,098.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,198.95	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
6,209.86	0.00	0.00	6,208.81	53.64	1.28	-53.56	0.00	0.00	0.00	0.00
Begin Build @ 6209.86ft										
6,300.00	7.21	179.17	6,298.71	47.98	1.37	-47.89	8.00	8.00	0.00	179.17
6,400.00	15.21	179.17	6,396.72	28.55	1.65	-28.47	8.00	8.00	0.00	0.00
6,500.00	23.21	179.17	6,491.08	-4.32	2.12	4.40	8.00	8.00	0.00	0.00
6,600.00	31.21	179.17	6,579.94	-50.01	2.78	50.08	8.00	8.00	0.00	0.00
6,700.00	39.21	179.17	6,661.58	-107.62	3.61	107.68	8.00	8.00	0.00	0.00
6,800.00	47.21	179.17	6,734.40	-176.02	4.59	176.07	8.00	8.00	0.00	0.00
Build Rate = 8.00/100ft										
6,900.00	55.21	179.17	6,796.99	-253.90	5.72	253.94	8.00	8.00	0.00	0.00

Plan Report for Cannon 14N-W3HZ - Plan D Rev 0 Proposal

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
6,921.51	56.93	179.17	6,809.00	-271.74	5.97	271.78	8.00	8.00	0.00	0.00
Sharon Springs										
7,000.00	63.21	179.17	6,848.14	-339.72	6.95	339.75	8.00	8.00	0.00	0.00
7,060.24	68.03	179.17	6,873.00	-394.57	7.74	394.60	8.00	8.00	0.00	0.00
Niobrara A										
7,100.00	71.21	179.17	6,886.84	-431.83	8.28	431.85	8.00	8.00	0.00	0.00
7,126.81	73.36	179.17	6,895.00	-457.37	8.65	457.38	8.00	8.00	0.00	0.00
Niobrara B										
7,200.00	79.21	179.17	6,912.35	-528.43	9.67	528.44	8.00	8.00	0.00	0.00
7,214.99	80.41	179.17	6,915.00	-543.19	9.89	543.19	8.00	8.00	0.00	0.00
Niobrara B TL (Toe)										
7,300.00	87.21	179.17	6,924.16	-627.64	11.10	627.63	8.00	8.00	0.00	0.00
7,331.64	89.74	179.17	6,925.00	-659.26	11.56	659.25	8.00	8.00	0.00	0.00
Niobrara B TL (Heel)										
7,336.69	90.15	179.17	6,925.00	-664.31	11.63	664.30	8.00	8.00	0.00	0.00
End Build @ 7336.69ft - 7" Intermediate Casing										
7,400.00	90.15	179.17	6,924.84	-727.62	12.54	727.59	0.00	0.00	0.00	0.00
7,500.00	90.15	179.17	6,924.59	-827.60	13.99	827.57	0.00	0.00	0.00	0.00
7,600.00	90.15	179.17	6,924.33	-927.59	15.43	927.55	0.00	0.00	0.00	0.00
7,700.00	90.15	179.17	6,924.08	-1,027.58	16.87	1,027.52	0.00	0.00	0.00	0.00
7,800.00	90.15	179.17	6,923.82	-1,127.57	18.31	1,127.50	0.00	0.00	0.00	0.00
7,900.00	90.15	179.17	6,923.56	-1,227.56	19.75	1,227.47	0.00	0.00	0.00	0.00
Hold Angle @ 90.15										
8,000.00	90.15	179.17	6,923.31	-1,327.55	21.19	1,327.45	0.00	0.00	0.00	0.00
8,100.00	90.15	179.17	6,923.05	-1,427.54	22.63	1,427.43	0.00	0.00	0.00	0.00
8,200.00	90.15	179.17	6,922.80	-1,527.53	24.07	1,527.40	0.00	0.00	0.00	0.00
8,300.00	90.15	179.17	6,922.54	-1,627.52	25.51	1,627.38	0.00	0.00	0.00	0.00
8,400.00	90.15	179.17	6,922.29	-1,727.51	26.96	1,727.35	0.00	0.00	0.00	0.00
8,472.50	90.15	179.17	6,922.10	-1,800.00	28.00	1,799.84	0.00	0.00	0.00	0.00
Begin Turn @ 8472.50ft - Cannon 14N-W3HZ_WPtgt1										
8,500.00	90.15	178.62	6,922.03	-1,827.50	28.53	1,827.33	2.00	0.01	-2.00	-89.84
Turn Rate = 2.00/100ft										
8,599.21	90.15	176.64	6,921.77	-1,926.62	32.63	1,926.54	2.00	0.01	-2.00	-89.84
End Turn @ 8599.21ft										
8,600.00	90.15	176.64	6,921.77	-1,927.40	32.67	1,927.33	0.00	0.00	0.00	-89.85
8,700.00	90.15	176.64	6,921.50	-2,027.23	38.53	2,027.30	0.00	0.00	0.00	0.00
8,800.00	90.15	176.64	6,921.23	-2,127.06	44.39	2,127.27	0.00	0.00	0.00	0.00
8,900.00	90.15	176.64	6,920.96	-2,226.89	50.26	2,227.25	0.00	0.00	0.00	0.00
9,000.00	90.15	176.64	6,920.70	-2,326.71	56.12	2,327.22	0.00	0.00	0.00	0.00
Hold Angle @ 90.15										
9,100.00	90.15	176.64	6,920.43	-2,426.54	61.98	2,427.20	0.00	0.00	0.00	0.00
9,200.00	90.15	176.64	6,920.16	-2,526.37	67.84	2,527.17	0.00	0.00	0.00	0.00
9,300.00	90.15	176.64	6,919.89	-2,626.20	73.70	2,627.15	0.00	0.00	0.00	0.00
9,400.00	90.15	176.64	6,919.63	-2,726.03	79.56	2,727.12	0.00	0.00	0.00	0.00
9,500.00	90.15	176.64	6,919.36	-2,825.85	85.42	2,827.09	0.00	0.00	0.00	0.00
9,600.00	90.15	176.64	6,919.09	-2,925.68	91.28	2,927.07	0.00	0.00	0.00	0.00
9,700.00	90.15	176.64	6,918.82	-3,025.51	97.14	3,027.04	0.00	0.00	0.00	0.00
9,800.00	90.15	176.64	6,918.55	-3,125.34	103.00	3,127.02	0.00	0.00	0.00	0.00
9,900.00	90.15	176.64	6,918.29	-3,225.16	108.86	3,226.99	0.00	0.00	0.00	0.00
10,000.00	90.15	176.64	6,918.02	-3,324.99	114.73	3,326.97	0.00	0.00	0.00	0.00
10,100.00	90.15	176.64	6,917.75	-3,424.82	120.59	3,426.94	0.00	0.00	0.00	0.00
10,175.31	90.15	176.64	6,917.55	-3,500.00	125.00	3,502.23	0.00	0.00	0.00	0.00
Begin Turn @ 10175.31ft - Cannon 14N-W3HZ_WPtgt2										
10,200.00	90.15	177.13	6,917.48	-3,524.65	126.34	3,526.92	2.00	0.00	2.00	89.98
Turn Rate = 2.00/100ft										
10,237.07	90.15	177.88	6,917.38	-3,561.69	127.95	3,563.99	2.00	0.00	2.00	89.99
End Turn @ 10237.07ft										
10,300.00	90.15	177.88	6,917.22	-3,624.57	130.29	3,626.92	0.00	0.00	0.00	89.99

Plan Report for Cannon 14N-W3HZ - Plan D Rev 0 Proposal

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
10,400.00	90.15	177.88	6,916.95	-3,724.51	134.00	3,726.92	0.00	0.00	0.00	0.00
10,500.00	90.15	177.88	6,916.68	-3,824.44	137.70	3,826.91	0.00	0.00	0.00	0.00
10,600.00	90.15	177.88	6,916.41	-3,924.37	141.41	3,926.91	0.00	0.00	0.00	0.00
10,700.00	90.15	177.88	6,916.14	-4,024.30	145.12	4,026.91	0.00	0.00	0.00	0.00
10,800.00	90.15	177.88	6,915.87	-4,124.23	148.83	4,126.91	0.00	0.00	0.00	0.00
10,900.00	90.15	177.88	6,915.61	-4,224.16	152.53	4,226.91	0.00	0.00	0.00	0.00
11,000.00	90.15	177.88	6,915.34	-4,324.09	156.24	4,326.91	0.00	0.00	0.00	0.00
Hold Angle @ 90.15										
11,100.00	90.15	177.88	6,915.07	-4,424.02	159.95	4,426.91	0.00	0.00	0.00	0.00
11,115.76	90.15	177.88	6,915.03	-4,439.77	160.53	4,442.67	0.00	0.00	0.00	0.00
Cannon 14N-W3HZ_BHL										
11,126.24	90.15	177.88	6,915.00	-4,450.24	160.92	4,453.15	0.00	0.00	0.00	0.00
Cannon 14N-W3HZ_BHL ReLoc										

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,437.00	2,435.96	52.78	1.64	Tie-On to Sperry MWD Surveys @ 2437.00ft
2,437.00	2,435.96	52.78	1.64	Begin Drop @ 2437.00ft
2,510.00	2,508.95	53.64	1.28	End Drop @ 2510.00ft
4,000.00	3,998.95	53.64	1.28	Hold Angle @ 0.00
6,209.86	6,208.81	53.64	1.28	Begin Build @ 6209.86ft
6,800.00	6,734.40	-176.02	4.59	Build Rate = 8.00/100ft
7,336.69	6,925.00	-664.31	11.63	End Build @ 7336.69ft
7,900.00	6,923.56	-1,227.56	19.75	Hold Angle @ 90.15
8,472.50	6,922.10	-1,800.00	28.00	Begin Turn @ 8472.50ft
8,500.00	6,922.03	-1,827.50	28.53	Turn Rate = 2.00/100ft
8,599.21	6,921.77	-1,926.62	32.63	End Turn @ 8599.21ft
9,000.00	6,920.70	-2,326.71	56.12	Hold Angle @ 90.15
10,175.31	6,917.55	-3,500.00	125.00	Begin Turn @ 10175.31ft
10,200.00	6,917.48	-3,524.65	126.34	Turn Rate = 2.00/100ft
10,237.07	6,917.38	-3,561.69	127.95	End Turn @ 10237.07ft
11,000.00	6,915.34	-4,324.09	156.24	Hold Angle @ 90.15
11,126.24	6,915.00	-4,450.24	160.92	Total Depth @ 11126.24ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/-S (ft)	+E/-W (ft)	
Target	Cannon 14N-W3HZ_BHL ReLoc	177.93	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
125.00	765.00	Surface Gyros	NS-GYRO-MS
827.00	2,437.00	Sperry MWD Surveys - Vert	MWD
2,437.00	11,126.21	Plan D Rev 0 Proposal	MWD

Plan Report for Cannon 14N-W3HZ - Plan D Rev 0 Proposal

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,336.69	6,925.00	7" Intermediate Casing	7	8-3/4

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,958.05	3,957.00	Parkman			
4,455.05	4,454.00	Sussex			
6,921.51	6,809.00	Sharon Springs			
7,060.24	6,873.00	Niobrara A			
7,126.81	6,895.00	Niobrara B			
7,214.99	6,915.00	Niobrara B TL (Toe)			
7,331.64	6,925.00	Niobrara B TL (Heel)			

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Cannon 14N-W3HZ_WPtgt2	6,917.55	-3,500.00	125.00	Point
Cannon 14N-W3HZ_Setback Lines	0.00	0.00	0.00	Polygon
Cannon 14N-W3HZ_BHL	6,915.00	-4,450.24	-121.58	Point
Cannon 14N-W3HZ_WPtgt1	6,922.10	-1,800.00	28.00	Point
Cannon 14N-W3HZ_SHL	0.00	0.00	0.00	Point
Cannon 14N-W3HZ_Section Lines	0.00	0.00	0.00	Polygon
Cannon 14N-W3HZ_Land Spacing Unit	0.00	0.00	0.00	Polygon
Cannon 14N-W3HZ_BHL ReLoc	6,915.00	-4,450.24	160.92	Point

North Reference Sheet for Sec. 3-T2N-R65W - Cannon 14N-W3HZ - Plan D Rev 0

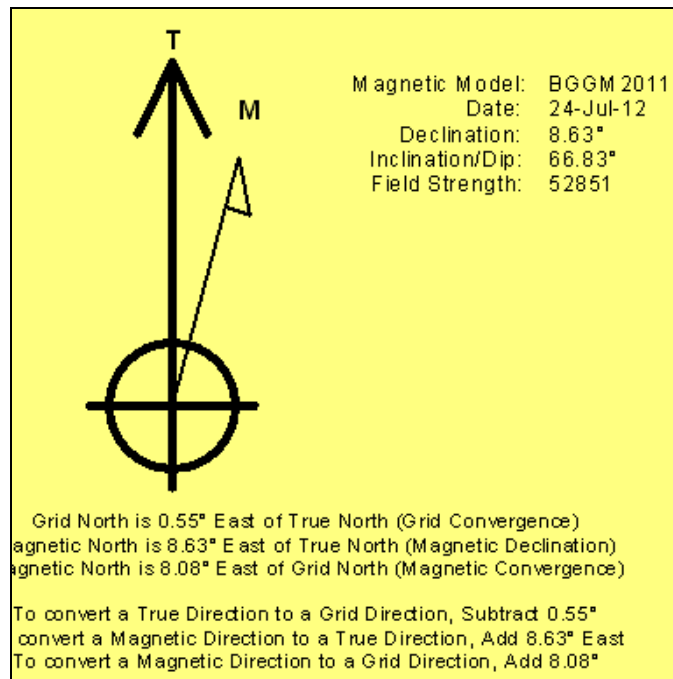
All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.
Vertical Depths are relative to RKB=25ft @ 4865.00ft (HP 308). Northing and Easting are relative to Cannon 14N-W3HZ
Coordinate System is US State Plane 1983, Colorado Northern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)
Central Meridian is -105.50°, Longitude Origin:0.000000°, Latitude Origin:40.783333°
False Easting: 3,000,000.000644ft, False Northing: 1,000,000.001308ft, Scale Reduction: 0.99995774

Grid Coordinates of Well: 1,307,344.928783 ft N, 3,236,130.700176 ft E
Geographical Coordinates of Well: 40° 10' 26.29" N, 104° 39' 17.89" W
Grid Convergence at Surface is: 0.55°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,126.24ft
the Bottom Hole Displacement is 4,453.15ft in the Direction of 177.93° (True).

Magnetic Convergence at surface is: -8.08° (24 July 2012, , BGGM2011)



Section 3

Contents: BHA Reports, BHA Schematics, Motor Performance Reports, &
Survey & Drilling Parameters.

WELL INFORMATION

BHA Report

IADC Rig BHA# 100
Run# 0100

Customer : Anadarko Petroleum Corp.
Well Name : Cannon 14N-W3HZ
Job Number : CA-XX-0009484815

Date In :07/23/2012 MD In (ft) : 814 TVD In (ft) : 814 Date Out :07/26/2012 MD Out (ft) : 7303 TVD Out (ft) : 6924

BIT DATA

Bit Number	: 1	Nozzles	: 5x15
Bit Size (in)	: 8.750	TFA (in2)	: 0.8629
Manufacturer	: Baker	Dull Grade In	: NEW
Model	: DP505F	Dull Grade Out	: 1-2-WT-G-X-I-CT-TD
Serial Number	: 7140535		

MOTOR DATA

Motor Number	: 1	Bend (deg)	: 1.83
OD (in)	: 6.750	Nozzles (32nd)	: 0.0
Manufacturer	: Sperry Drilling	Avg Diff Press	: 361.12
Model	: SperryDrill	Cumul Cir Hrs	: 54.31
Serial Number	: 675-1215		

COMPONENT DATA

Item #	Description	Serial Number	OD (in)	ID (in)	Gauge (in)	Weight (lbpf)	Top Connection	Length (ft)	Bit - Center Blade (ft)
1	PDC	7140535	6.000	1.750	8.750	88.16	P 4-1/2" REG	0.88	
2	6 3/4" SperryDrill Lobe 6/7 - 5.0 stg	675-1215	6.750	4.498		87.63	B 4-1/2" IF	27.08	
3	Flex Collar	SD45965	6.820	2.875		102.37	B 4-1/2" IF	30.20	
4	HOS	11082361	6.580	2.875		93.76	B 4-1/2" IF	5.90	
5	Pony Flex Collar	10740091	6.470	2.813		90.87	B 4-1/2" IF	19.42	
6	Flex Collar	SD49727	6.810	2.875		102.01	B 4-1/2" IF	30.77	
7	X-Over Sub	11911449	6.700	2.750		99.91	B 4-1/2" XH	3.99	
8	20 Jts 4.5 DP		4.500	3.500		24.56		630.31	
9	X-Over Sub	TT-83268	6.500	2.500		96.36	B 4-1/2" XH	4.05	
10	45 Jts HWDP		4.000	2.563		29.70		1378.98	
Total:								2131.58	

PERFORMANCE Section A

Parameter	Min	Max	Avg	Activity	Hours	BHA Weight (klb)	
WOB (klb) :	2	26	16	Drilling :	37.65	in Air (Total) :	11.40
RPM (rpm) :	20	75	53	Reaming :	1.85	in Mud (Total) :	
Flow (gpm) :	420	602	569	Circ-Other :	14.81	in Air (Bel Jars) :	
SPP (psig) :	1000	4250	3376	Total :	54.31	in Mud (Bel Jars) :	

BHA WEIGHT CALCULATION MESSAGE

Jar not found. Could not calculate weight below jars. Mud Weight not valid could not calculate BHA weight in mud.

PERFORMANCE Section B

	In	Out	Distance (ft)	ROP (fph)	Build (°/100')	Turn (°/100')	DLS (°/100')
Inclination (deg)	0.28	87.58	Oriented : 876	50	n/a	n/a	7.03
Azimuth (deg)	278.84	184.13	Rotating : 5613	277	-0.01	7.39	2.76
			Total : 6489	172	1.35	0.00	1.35

COMMENTS

Probe to Bit = 50'
 Bit to Gamma = 52.62'
 Rev per gal = 0.29
 Flow Range= 300-600 gal
 Bit to Bend= 3.03'
 Float OD= 3.5"
 RFO= 123.4
 Theoretical Build Rates= 23.00

OBJECTIVES

TD with one BHA

RESULTS

BHA performed as expected to TD in one run

RECOMMENDATIONS

OTHER

BHA Schematic

Anadarko Petroleum Corp.

Cannon 14N-W3HZ

IADC Rig BHA # : 100

Run # : 100

Drillstring : Drillstring

COMPONENT DATA

OD (in)	Length (ft)	Description
6.000	0.88	PDC (Gauge: 8.750 in)
6.750	27.08	6 3/4" SperryDrill Lobe 6/7 - 5.0 stg
6.820	30.20	Flex Collar
6.580	5.90	HOS
6.470	19.42	Pony Flex Collar
6.810	30.77	Flex Collar
6.700	3.99	X-Over Sub
4.500	630.31	20 Jts 4.5 DP
6.500	4.05	X-Over Sub
4.000	1378.98	45 Jts HWDP

*Pos: Measured as distance from bottom of the component.

X-Over Sub



Flex Collar

Pony Flex Collar

HOS

Flex Collar

6 3/4" SperryDrill Lobe
6/7 - 5.0 stg

PDC



WELL INFORMATION

Motor Performance
Report

Customer : Anadarko Petroleum Corp.

Well Name : Cannon 14N-W3HZ

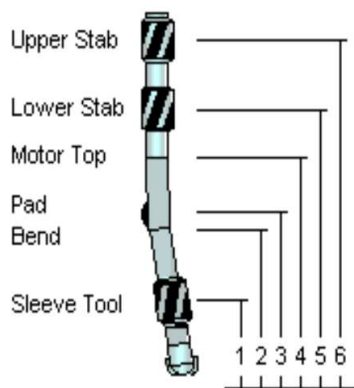
Job Number : CA-XX-0009484815

SUMMARY

BHA Number : 100
Run Number : 0100
Bit Number : 1

Depth In/Out (ft) : 814.00 / 7303.00
Date In/Out : 07/23/2012 / 07/26/2012
Hole Size (in) : 8.75

MOTOR CONFIGURATION



DFB (ft)	Component	Yes/No	Type	Value
	Sleeve Stab	No		
3.91	Bent Housing	Yes	Fixed	1.83° bend
	Bent Housing Pad	No		
27.96	Motor Top	Yes		
	Lower String Stab	No		
	Upper String Stab	No		

MOTOR PARAMETERS

Serial Number : 675-1215 Lobe Config : 6:7
Motor Run # : 1 Stat Elastomer : Nitrile
OD (in) : 6.75 ID (in) : 4.5 Short Brg Pack : Yes
Flex Collar Used : Yes Arr Ret
Rotor Nozzle (32nd) : 0.0 Pick Up Sub : Yes No
Bit Box Protr : Yes No

MOTOR RUN DATA

Directional Driller(s) : Jessy Kysar, Jordan Timbs
Application Details : Kickoff

Max Dogleg While Rotating	(°/100') : 13.51	RPM	: 25.00	Motor Stalled	: Yes
Max Dogleg Overpulled In	(°/100') : 13.51	Force (klb)	: 30.00	Float Valve	: Yes
Max Dogleg Pushed Through	(°/100') : 13.51	Force (klb)	: 30.00	DP Filter	: Yes

Inc Start/End	(deg)	:	0.282 / 87.58	Interval Oriented / Rot.	(ft)	:	876.00 / 5613.00
Hole Azimuth Start / End	(deg)	:	278.838 / 184.13	Directional Perf Ori / Rot	(°/100')	:	7.03 / 2.76
Jarring Occurred		:				:	

HOURS

Existing Hrs	:	0.00	Circ Hrs	:	14.81	Total Hrs This Run	:	54.31
Drilling Hrs	:	37.65	Reaming Hrs	:	1.85	New Cumulative Hrs	:	54.31

DRILLING DATA

	Diff Press (psig)	RPM	Rotn Torque (ft-lb)	Drag Up/Down (klb)	WOB (klb)	ROP Oriented (fph)	ROP Rotated (fph)
Avg	361.12	53	4946.30	104.51 / 87.45	15.56	50	277
Max	500.00	75	8400.00	160.00 / 129.00	26.00	250	800

PRE-RUN TESTS

Motor Tested Pre-Run	:	Yes	with Bit/MWD	:	Yes / Yes
Dump Sub Operating	:	No	Brg Play	:	0.20
Flow 1 (gpm)	:	420.00	Pressure 1 (psig)	:	860.00
Flow 2 (gpm)	:		Pressure 2 (psig)	:	
Driveshaft Rotation Observed	:	No			
Bearing Leakage Observed	:	No			

POST-RUN TESTS

Motor Tested Post-Run	:	No	with Bit/MWD	:	No / No
Dump Sub Operating	:	No	Brg Play	:	
Flow 1 (gpm)	:		Pressure 1 (psig)	:	
Flow 2 (gpm)	:		Pressure 2 (psig)	:	
Driveshaft Rotation Observed	:	No	Fluid Flushed	:	No
Bearing Leakage Observed	:	No	Fluid Used	:	
DriveShaft Rotated to Drain Mud	:	Yes			

MUD DATA

Type	:		Mud Wt (ppg)	:	
Name	:		pH	:	
% Oil / Water	:	/	% Solid	:	
DH Temp Avg / Max (degF)	:	0.00 / 0.00	% Sand	:	
SPP Start / End (gpm)	:	1000.00 / 4250.00	PV (cP)	:	
Flow Rate Avg / Max (gpm)	:	569.46 / 602.00	YP (lbf2)	:	
Chloride Content (ppm)	:				

Lithology	:	Shale
Principal Formation Name(s)	:	Niobrara

BIT DATA

Bit Number	:	1	Nozzles	:	5x15
Bit Size (in)	:	8.750	TFA (in2)	:	0.8629
Manufacturer	:	Baker	Gauge Length (in)	:	0.170
Model	:	DP505F	Dull Grade In	:	NEW
Serial Number	:	7140535	Dull Grade Out	:	1-2-WT-G-X-I-CT-TD
Existing Bit Hrs	:	37.00	Existing Ream Hrs	:	0.00
Cum Drilling Hrs	:	74.65	Cum Ream Hrs	:	1.85

PERFORMANCE

Service Interrupt	:	No	Trip For Failure	:	No
LIH	:	No	Service Interrupt Hrs	:	
Problem Date	:	07/26/2012			

COMMENTS

Motor preformed as expected

WELL INFORMATION
Drilling Activity
Customer : Anadarko Petroleum Corp.

North Ref : True

Well Name : Cannon 14N-W3HZ

Declination (deg) : 8.63

Job Number : CA-XX-0009484815

Vert Sec Dir (deg) : 177.93

SURVEY										STEERING				DRILLING PARAMETERS						
Measured Depth (ft)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (ft)	Vertical Section (ft)	Coordinates		DLS (°/100')	Build Rate (°/100')	Turn Rate (°/100')	Orientation		Tool Face (deg)		RPM	WOB (klb)	Flow Rate (gpm)	Stand Pipe (psig)	ROP (fph)	Comment	
					N/S (ft)	E/W (ft)				From (ft)	To (ft)								Run	
814.0										814	877			40	10	420	1000	400	100	
827.0	0.27	266.95	826.99	-2.58	2.46	-3.41	0.45	-0.25	0.00										100	
877.0										877	972			40	15	600	1900	750	100	
922.0	0.25	264.30	921.99	-2.57	2.43	-3.84	0.02	-0.01	0.00										100	
972.0										972	1067			65	15	600	1775	775	100	
1017.0	1.08	189.85	1016.98	-1.68	1.53	-4.20	1.10	0.87	0.00										100	
1067.0										1067	1082	0M			3	600	1600	250	100	
1082.0										1082	1161			65	14	600	2000	800	100	
1111.0	2.57	10.67	1110.96	-2.86	2.72	-3.97	3.89	1.58	0.00										100	
1161.0										1161	1256			65	16	420	1250	550	100	
1206.0	2.30	19.88	1205.87	-6.71	6.61	-2.92	0.50	-0.28	0.00										100	
1256.0										1256	1350			65	16	420	1250	550	100	
1300.0	2.34	11.48	1299.80	-10.33	10.27	-1.90	0.36	0.04	0.00										100	
1350.0										1350	1445			65	15	420	1250	550	100	
1395.0	2.32	17.12	1394.72	-14.03	14.01	-0.95	0.24	-0.02	0.00										100	
1445.0										1445	1540			65	15	420	1250	525	100	
1490.0	2.32	10.80	1489.64	-17.72	17.74	-0.02	0.27	0.00	0.00										100	
1540.0										1540	1634			65	14	420	1250	475	100	

SURVEY										STEERING				DRILLING PARAMETERS						
Measured Depth (ft)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (ft)	Vertical Section (ft)	Coordinates		DLS (°/100')	Build Rate (°/100')	Turn Rate (°/100')	Orientation		Tool Face (deg)		RPM	WOB (klb)	Flow Rate (gpm)	Stand Pipe (psig)	ROP (fph)	Comment	
					N/S (ft)	E/W (ft)				From (ft)	To (ft)								Run	
1584.0	2.67	15.08	1583.55	-21.68	21.72	0.91	0.42	0.37	0.00										100	
1634.0										1634	1729			65	15	592	2275	600	100	
1679.0	2.60	20.08	1678.45	-25.78	25.88	2.22	0.25	-0.08	0.00										100	
1729.0										1729	1734	255M			2	600	1850	150	100	
1734.0										1734	1824			65	15	602	2100	650	100	
1774.0	2.07	354.86	1773.37	-29.49	29.61	2.81	1.20	-0.55	0.00										100	
1824.0										1824	1918			65	14	599	2150	575	100	
1868.0	2.37	359.38	1867.30	-33.13	33.25	2.63	0.37	0.31	0.00										100	
1918.0										1918	2013			70	14	601	2225	600	100	
1963.0	1.81	353.74	1962.24	-36.60	36.71	2.45	0.63	-0.59	0.00										100	
2013.0										2013	2108			70	14	601	2225	600	100	
2058.0	2.10	6.59	2057.18	-39.81	39.93	2.48	0.55	0.30	0.00										100	
2108.0										2108	2203			70	18	602	2500	550	100	
2153.0	2.20	354.47	2152.12	-43.35	43.47	2.51	0.49	0.11	0.00										100	
2203.0										2203	2298			70	14	602	2400	550	100	
2248.0	2.24	358.01	2247.05	-47.03	47.14	2.27	0.15	0.04	0.00										100	
2298.0										2298	2392			70	14	602	2400	550	100	
2342.0	1.64	358.01	2340.99	-50.20	50.31	2.16	0.64	-0.64	0.00										100	
2392.0										2392	2487			70	15	600	2550	525	100	
2437.0	1.46	337.23	2435.96	-52.69	52.78	1.64	0.62	-0.19	0.00										100	
2487.0										2487	2582			70	14	601	2675	500	100	
2523.0	1.08	351.32	2521.94	-54.51	54.59	1.10	0.57	-0.44	0.00										100	
2554.0	1.27	351.73	2552.93	-55.15	55.22	1.00	0.62	0.62	0.00										100	
2582.0										2582	2604			70	20	601	2675	500	100	
2604.0										2604	2699			75	20	601	2675	500	100	
2649.0	0.89	351.50	2647.91	-56.93	56.99	0.74	0.40	-0.40	0.00										100	
2699.0										2699	2794			75	24	601	2675	500	100	
2744.0	0.21	105.16	2742.91	-57.61	57.67	0.80	1.04	-0.72	0.00										100	
2794.0										2794	2888			75	24	601	2675	500	100	
2838.0	0.88	18.65	2836.91	-58.23	58.31	1.20	0.95	0.71	0.00										100	
2888.0										2888	2983			75	24	601	2675	500	100	
2933.0	0.64	57.49	2931.90	-59.18	59.29	1.87	0.58	-0.25	0.00										100	

SURVEY										STEERING					DRILLING PARAMETERS					
Measured Depth (ft)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (ft)	Vertical Section (ft)	Coordinates		DLS (°/100')	Build Rate (°/100')	Turn Rate (°/100')	Orientation		Tool Face (deg)		RPM	WOB (klb)	Flow Rate (gpm)	Stand Pipe (psig)	ROP (fph)	Comment	
					N/S (ft)	E/W (ft)				From (ft)	To (ft)								Run	
2983.0										2983	2988	270M			6	600	1850	70	100	
2988.0										2988	3078			75	24	601	2675	500	100	
3028.0	0.03	172.44	3026.90	-59.42	59.54	2.32	0.68	-0.64	0.00										100	
3078.0										3078	3172			75	24	601	2675	450	100	
3122.0	0.53	244.01	3120.89	-59.22	59.33	1.94	0.55	0.53	0.00										100	
3172.0										3172	3267			75	24	601	2675	420	100	
3217.0	0.19	292.69	3215.89	-59.11	59.20	1.39	0.45	-0.35	0.00										100	
3267.0										3267	3361			75	24	601	2675	413	100	
3311.0	0.23	58.96	3309.89	-59.27	59.36	1.41	0.41	0.04	0.00										100	
3361.0										3361	3456			75	24	601	2675	413	100	
3406.0	0.42	45.74	3404.89	-59.60	59.70	1.82	0.21	0.19	0.00										100	
3456.0										3456	3551			75	24	601	2675	413	100	
3501.0	0.92	12.83	3499.88	-60.57	60.69	2.24	0.65	0.53	0.00										100	
3551.0										3551	3560	180M			6	600	1850	80	100	
3560.0										3560	3646			75	24	601	2675	413	100	
3596.0	1.01	156.45	3594.88	-60.53	60.67	2.75	1.94	0.09	0.00										100	
3646.0										3646	3740			75	24	601	2675	413	100	
3690.0	1.02	105.45	3688.87	-59.50	59.68	3.89	0.93	0.01	0.00										100	
3740.0										3740	3835			75	24	601	2675	413	100	
3785.0	1.61	71.45	3783.84	-59.63	59.88	5.97	1.00	0.62	0.00										100	
3835.0										3835	3843	200M			6	600	1850	80	100	
3843.0										3843	3930			70	24	601	2675	413	100	
3880.0	1.41	121.52	3878.81	-59.36	59.69	8.23	1.36	-0.20	0.00										100	
3930.0										3930	3938	225M			6	600	1850	80	100	
3938.0										3938	4025			70	24	601	3675	413	100	
3975.0	1.17	140.03	3973.79	-57.94	58.34	9.85	0.51	-0.26	0.00										100	
4025.0										4025	4120			70	21	602	3700	420	100	
4070.0	0.90	150.70	4068.77	-56.52	56.95	10.84	0.34	-0.28	0.00										100	
4120.0										4120	4214			70	20	600	3800	450	100	
4164.0	0.82	134.94	4162.76	-55.37	55.83	11.68	0.27	-0.09	0.00										100	
4214.0										4214	4222	250M			3	600	3275	100	100	
4222.0										4222	4309			70	24	602	3600	400	100	

SURVEY										STEERING				DRILLING PARAMETERS						
Measured Depth (ft)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (ft)	Vertical Section (ft)	Coordinates		DLS (°/100')	Build Rate (°/100')	Turn Rate (°/100')	Orientation		Tool Face (deg)		RPM	WOB (klb)	Flow Rate (gpm)	Stand Pipe (psig)	ROP (fph)	Comment	
					N/S (ft)	E/W (ft)				From (ft)	To (ft)								Run	
4259.0	0.92	155.97	4257.75	-54.17	54.65	12.47	0.35	0.10	0.00										100	
4309.0										4309	4404			70	20	600	3775	375	100	
4354.0	0.90	189.49	4352.74	-52.73	53.23	12.65	0.55	-0.02	0.00										100	
4404.0										4404	4499			70	21	601	3700	350	100	
4449.0	1.18	208.60	4447.73	-51.16	51.63	12.06	0.47	0.30	0.00										100	
4499.0										4499	4594			70	23	599	3675	400	100	
4544.0	1.73	241.71	4542.70	-49.68	50.09	10.33	1.03	0.57	0.00										100	
4594.0										4594	4600	90M			3	595	3250	60	100	
4600.0										4600	4688			70	22	592	3800	375	100	
4638.0	0.58	215.89	4636.68	-48.68	49.03	8.80	1.31	-1.22	0.00										100	
4688.0										4688	4783			70	22	600	3850	375	100	
4733.0	1.87	49.30	4731.66	-49.26	49.64	9.68	2.57	1.35	0.00										100	
4783.0										4783	4788	225M			3	595	3250	60	100	
4788.0										4788	4878			70	24	600	3800	375	100	
4828.0	1.75	54.38	4826.62	-51.03	51.50	12.04	0.21	-0.12	0.00										100	
4878.0										4878	4886	225M			3	595	3250	60	100	
4886.0										4886	4973			70	24	597	4000	400	100	
4923.0	1.46	47.72	4921.58	-52.62	53.16	14.11	0.36	-0.30	0.00										100	
4973.0										4973	4988	225M			3	601	3550	80	100	
4988.0										4988	5067			70	23	597	3950	375	100	
5017.0	0.68	277.32	5015.57	-53.48	54.04	14.45	2.10	-0.83	0.00										100	
5067.0										5067	5162			70	23	598	4000	375	100	
5112.0	0.28	230.53	5110.57	-53.44	53.97	13.71	0.56	-0.43	0.00										100	
5162.0										5162	5257			70	26	597	4050	400	100	
5207.0	0.43	157.75	5205.56	-52.96	53.49	13.67	0.46	0.16	0.00										100	
5257.0										5257	5352			70	23	599	4000	400	100	
5302.0	0.15	157.78	5300.56	-52.51	53.04	13.85	0.29	-0.29	0.00										100	
5352.0										5352	5447			70	23	599	4000	400	100	
5397.0	0.75	105.53	5395.56	-52.20	52.76	14.50	0.70	0.63	0.00										100	
5447.0										5447	5542			70	24	591	4200	350	100	
5492.0	0.89	102.14	5490.55	-51.83	52.43	15.82	0.15	0.15	0.00										100	
5542.0										5542	5637			70	20	599	4000	300	100	

SURVEY										STEERING					DRILLING PARAMETERS					
Measured Depth (ft)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (ft)	Vertical Section (ft)	Coordinates		DLS (°/100')	Build Rate (°/100')	Turn Rate (°/100')	Orientation		Tool Face (deg)		RPM	WOB (klb)	Flow Rate (gpm)	Stand Pipe (psig)	ROP (fph)	Comment	
					N/S (ft)	E/W (ft)				From (ft)	To (ft)								Run	
5587.0	1.46	114.06	5585.53	-51.12	51.79	17.64	0.65	0.60	0.00										100	
5637.0										5637	5652	290M			3	602	3750	100	100	
5652.0										5652	5732			70	25	600	4200	325	100	
5682.0	1.02	330.07	5680.52	-51.34	52.03	18.31	2.48	-0.46	0.00										100	
5732.0										5732	5827			70	25	600	4250	325	100	
5777.0	1.05	18.16	5775.51	-52.90	53.60	18.16	0.89	0.03	0.00										100	
5827.0										5827	5922			70	21	577	4150	290	100	
5872.0	0.80	46.02	5870.49	-54.17	54.89	18.91	0.54	-0.27	0.00										100	
5922.0										5922	5939	225M			6	555	3750	45	100	
5939.0										5939	6017			70	24	554	3900	350	100	
5967.0	0.92	214.24	5965.49	-53.99	54.71	18.96	1.81	0.13	0.00										100	
6017.0										6017	6112			70	18	548	3600	225	100	
6062.0	0.62	202.90	6060.48	-52.91	53.61	18.33	0.36	-0.32	0.00										100	
6112.0										6112	6207			70	24	569	4025	325	100	
6157.0	0.76	191.30	6155.48	-51.83	52.52	18.01	0.21	0.15	0.00										100	
6207.0										6207	6270	180M			7	555	3750	45	100	
6220.0	3.18	188.63	6218.43	-49.71	50.38	17.66	3.84	3.84	0.00										100	
6252.0	6.87	185.03	6250.30	-46.93	47.59	17.36	11.58	11.54	0.00										100	
6270.0										6270	6275			20	10	569	3725	150	100	
6275.0										6275	6302	0G			7	570	3825	70	100	
6284.0	9.86	182.83	6281.96	-42.30	42.95	17.06	9.37	9.32	-6.86										100	
6302.0										6302	6315			20	10	569	3725	150	100	
6315.0	12.03	181.11	6312.40	-36.43	37.07	16.86	7.09	7.01	-5.56	6315	6334	0G			7	570	3825	70	100	
6334.0										6334	6349			20	15	569	3725	150	100	
6347.0	13.37	181.65	6343.61	-29.41	30.03	16.69	4.19	4.18	1.69										100	
6349.0										6349	6365	0G			10	570	3825	70	100	
6365.0										6365	6378			20	15	569	3725	150	100	
6378.0										6378	6397	0G			10	570	3825	70	100	
6379.0	15.61	180.75	6374.59	-21.42	22.03	16.53	7.03	7.00	-2.82										100	
6397.0										6397	6405			20	15	569	3725	150	100	
6405.0										6405	6429	0G			10	570	3825	70	100	
6410.0	17.89	181.85	6404.28	-12.50	13.10	16.32	7.45	7.38	3.55										100	

SURVEY										STEERING				DRILLING PARAMETERS						
Measured Depth	Incl Angle	Azi Dir	Vertical Depth	Vertical Section	Coordinates		DLS	Build Rate	Turn Rate	Orientation		Tool Face		RPM	WOB	Flow Rate	Stand Pipe	ROP	Comment	
(ft)	(deg)	(deg)	(ft)	(ft)	N/S (ft)	E/W (ft)	(°/100')	(°/100')	(°/100')	From (ft)	To (ft)	(deg)			(klb)	(gpm)	(psig)	(fph)	Run	
6429.0										6429	6441			20	15	569	3725	150	100	
6441.0										6441	6460	0G			10	570	3825	70	100	
6442.0	19.85	184.03	6434.55	-2.20	2.77	15.78	6.49	6.10	6.82										100	
6460.0										6460	6468			20	15	569	3725	150	100	
6468.0										6468	6492	-20G			10	570	3825	70	100	
6474.0	22.48	181.42	6464.39	9.31	-8.77	15.25	8.75	8.24	-8.15										100	
6492.0										6492	6503			20	15	569	3725	100	100	
6503.0										6503	6524	-20G			10	570	3825	70	100	
6506.0	23.99	181.54	6493.80	21.91	-21.39	14.92	4.71	4.70	0.35										100	
6524.0										6524	6534			20	15	569	3725	100	100	
6534.0										6534	6556	0G			10	570	3825	70	100	
6537.0	26.21	180.91	6521.87	35.04	-34.53	14.64	7.22	7.17	-2.02										100	
6556.0										6556	6566			20	15	569	3725	100	100	
6566.0										6566	6587	0G			10	550	3825	70	100	
6569.0	27.79	180.88	6550.38	49.55	-49.06	14.42	4.94	4.94	-0.09										100	
6587.0										6587	6596			20	15	550	3725	100	100	
6596.0										6596	6619	0G			12	550	3825	70	100	
6601.0	30.09	181.76	6578.38	65.01	-64.54	14.06	7.31	7.19	2.73										100	
6619.0										6619	6651	0G			12	550	3825	70	100	
6633.0	32.47	181.79	6605.73	81.58	-81.15	13.54	7.43	7.43	0.11										100	
6651.0										6651	6655			20	15	550	4050	100	100	
6655.0										6655	6683	-20G			12	550	3950	70	100	
6664.0	35.97	182.96	6631.36	98.96	-98.56	12.81	11.49	11.29	3.77										100	
6683.0										6683	6714	-20G			12	550	3950	70	100	
6696.0	39.55	182.28	6656.65	118.49	-118.13	11.92	11.27	11.19	-2.14										100	
6714.0										6714	6724			20	15	550	4050	100	100	
6724.0										6724	6746	-30G			12	550	3950	70	100	
6728.0	42.25	180.93	6680.84	139.39	-139.07	11.34	8.87	8.43	-4.22										100	
6746.0										6746	6756			20	15	550	4050	100	100	
6756.0										6756	6778	-20G			15	550	3950	70	100	
6760.0	44.66	180.37	6704.07	161.37	-161.08	11.10	7.64	7.54	-1.76										100	
6778.0										6778	6796	-15G			15	550	3950	70	100	

SURVEY										STEERING					DRILLING PARAMETERS					
Measured Depth (ft)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (ft)	Vertical Section (ft)	Coordinates		DLS (°/100')	Build Rate (°/100')	Turn Rate (°/100')	Orientation		Tool Face (deg)		RPM	WOB (klb)	Flow Rate (gpm)	Stand Pipe (psig)	ROP (fph)	Comment	
					N/S (ft)	E/W (ft)				From (ft)	To (ft)								Run	
6792.0	47.75	179.36	6726.21	184.46	-184.17	11.16	9.92	9.65	-3.15										100	
6796.0										6796	6810			20	15	550	4050	100	100	
6810.0										6810	6830	-15G			15	550	3950	70	100	
6823.0	49.91	179.02	6746.62	207.78	-207.50	11.49	7.01	6.96	-1.08										100	
6830.0										6830	6842			20	15	550	4050	100	100	
6842.0										6842	6865	0G			15	550	3950	70	100	
6855.0	52.73	179.54	6766.62	232.75	-232.48	11.80	8.90	8.81	1.61										100	
6865.0										6865	6873			20	15	550	4050	160	100	
6873.0										6873	6895	0G			15	550	3950	70	100	
6887.0	55.99	179.43	6785.26	258.75	-258.48	12.03	10.21	10.20	-0.32										100	
6895.0										6895	6905			20	13	550	4050	160	100	
6905.0										6905	6921	0G			15	550	3950	70	100	
6918.0	58.58	179.44	6802.01	284.82	-284.56	12.29	8.35	8.35	0.01										100	
6921.0										6921	6937			20	13	550	4050	160	100	
6937.0										6937	6951	0G			15	550	3950	70	100	
6950.0	59.99	180.65	6818.36	312.31	-312.07	12.27	5.48	4.42	3.78										100	
6951.0										6951	6968			20	13	550	4050	160	100	
6968.0										6968	6980	20G			15	550	3950	70	100	
6980.0										6980	7000			20	13	550	4050	160	100	
6982.0	61.50	181.01	6833.99	340.19	-339.99	11.86	4.81	4.71	1.14										100	
7000.0										7000	7020	0G			15	550	3950	70	100	
7013.0	63.44	181.55	6848.32	367.63	-367.47	11.25	6.43	6.24	1.74										100	
7020.0										7020	7032			20	13	550	4050	160	100	
7032.0										7032	7052	-15G			15	550	3950	70	100	
7045.0	66.36	180.79	6861.90	396.56	-396.43	10.66	9.38	9.13	-2.38										100	
7052.0										7052	7063			20	13	550	4050	160	100	
7063.0										7063	7079	-15G			15	550	3950	70	100	
7077.0	68.86	180.96	6874.09	426.11	-426.02	10.21	7.84	7.82	0.55										100	
7079.0										7079	7095			20	13	550	4050	160	100	
7095.0										7095	7109	-15G			15	550	3950	70	100	
7108.0	71.14	180.83	6884.69	455.20	-455.14	9.75	7.35	7.34	-0.45										100	
7109.0										7109	7127			25	18	550	4050	100	100	

SURVEY										STEERING					DRILLING PARAMETERS					
Measured Depth (ft)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (ft)	Vertical Section (ft)	Coordinates		DLS (°/100')	Build Rate (°/100')	Turn Rate (°/100')	Orientation		Tool Face (deg)		RPM	WOB (klb)	Flow Rate (gpm)	Stand Pipe (psig)	ROP (fph)	Comment	
					N/S (ft)	E/W (ft)				From (ft)	To (ft)								Run	
7127.0										7127	7143	-30G			15	550	3950	70	100	
7140.0	72.56	180.27	6894.66	485.57	-485.55	9.46	4.75	4.45	-1.73										100	
7143.0										7143	7158			25	18	550	4050	100	100	
7158.0										7158	7176	-30G			15	550	3950	70	100	
7171.0	74.63	179.51	6903.41	515.29	-515.28	9.52	7.09	6.69	-2.45										100	
7176.0										7176	7190			25	18	550	4050	100	100	
7190.0										7190	7213	-15G			15	550	3950	70	100	
7203.0	77.54	179.09	6911.11	546.34	-546.34	9.90	9.16	9.07	-1.32										100	
7213.0										7213	7221			25	18	550	4050	100	100	
7221.0										7221	7249	0G			15	550	3950	70	100	
7235.0	80.64	178.06	6917.16	577.75	-577.74	10.68	10.21	9.70	-3.22										100	
7249.0										7249	7253			25	18	550	4050	100	100	
7253.0	82.47	179.68	6919.81	595.55	-595.54	11.03	13.52	10.17	9.02	7253	7274	0G			15	550	3950	70	100	
7274.0										7274	7285			25	18	550	4050	100	100	
7285.0										7285	7303	0G			15	550	3950	70	100	

WARRANTY

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WELL INFORMATION

BHA Report

IADC Rig BHA# 0200

Run# 0200

Customer : Anadarko Petroleum Corp.
Well Name : Cannon 14N-W3HZ
Job Number : CA-XX-0009484815

Date In : 07/27/2012 **MD In (ft)** : 7303 **TVD In (ft)** : 6925 **Date Out** : 07/29/2012 **MD Out (ft)** : 11088 **TVD Out (ft)** : 6943

BIT DATA

Bit Number	: 3	Nozzles	: 5x14
Bit Size (in)	: 6.125	TFA (in2)	: 0.7517
Manufacturer	: Other	Dull Grade In	: NEW
Model	: SDI513	Dull Grade Out	: 2-3-WT-A-X-I-LT-TD
Serial Number	: JF8093		

MOTOR DATA

Motor Number	:	Bend (deg)	: 1.50
OD (in)	: 5.000	Nozzles (32nd)	: 0.0
Manufacturer	: Sperry Drilling	Avg Diff Press	: 616.15
Model	: GeoForce	Cumul Cir Hrs	: 36.23
Serial Number	: 500-196		

COMPONENT DATA

Item #	Description	Serial Number	OD (in)	ID (in)	Gauge (in)	Weight (lbpf)	Top Connection	Length (ft)	Bit - Center Blade (ft)
1	PDC	JF8093	4.350	1.500	6.125	44.63	P 3-1/2" REG	0.54	
2	5" GeoForce Lobe 4/5 - 5.4 stg	500-196	5.000	3.120		52.94	P 3-1/2" IF	26.26	
3	Slide Reamer	DDSR58001NM	4.810	2.250	6.000	49.67		5.94	
	Stabilizer				6.000				29.17
4	Pony Collar	11667068	4.730	2.688		40.55	B 3-1/2" IF	7.97	
5	4 3/4" DM Collar	11105160	4.750	2.610		47.00	B 3-1/2" IF	8.77	
6	ADR	90323307	4.730	2.250		46.33	B 3-1/2" IF	27.27	
7	Inline Stabilizer (ILS)	CP1984704	4.750	2.500	5.875	43.66	B 3-1/2" IF	3.59	77.93
8	4 3/4" TM	11486653	4.790	2.812		46.30	B NC 38	11.27	
9	X-Over Sub	DR8561	4.760	2.313		46.33		3.82	
10	57 Jts 4" DP		4.000	3.240		18.03		1800.40	
11	Agitator	1113893-6	5.000	2.000		56.21		11.22	
12	Shock Sub	B-426260-17	5.000	2.000		56.21		11.16	
13	90 Jts 4" DP		4.000	3.240		18.03		2843.54	
14	45 Jts 4" HWDP		4.000	2.563		29.70		1378.98	

Total: 6140.73

PERFORMANCE Section A

Parameter	Min	Max	Avg	Activity	Hours	BHA Weight (klb)	
WOB (klb) :	6	18	13	Drilling :	26.23	in Air (Total) :	4.56
RPM (rpm) :	20	75	65	Reaming :	2.87	in Mud (Total) :	
Flow (gpm) :	250	300	277	Circ-Other :	7.13	in Air (Bel Jars) :	
SPP (psig) :	2975	4000	3519	Total :	36.23	in Mud (Bel Jars) :	

BHA WEIGHT CALCULATION MESSAGE

Jar not found. Could not calculate weight below jars. Mud Weight not valid could not calculate BHA weight in mud.

PERFORMANCE Section B

	In	Out	Distance (ft)	ROP (fph)	Build (°/100')	Turn (°/100')	DLS (°/100')
Inclination (deg)	85.64	89.64	Oriented : 311	60	n/a	n/a	1.52
Azimuth (deg)	179.27	177.24	Rotating : 3474	165	0.44	0.21	0.47
			Total : 3785	144	0.11	-0.05	0.12

COMMENTS

Probe to Bit = 42.00'
 Bit to Gamma = 44.73
 Bit to Res = 66.14
 Rev per gal = 1.06
 Float OD = 3.25
 Flow Range = 150-300 gal
 Bit to Bend = 5.1
 RFO = 117.13

OBJECTIVES

TD well in one run

RESULTS

TD well in one run and hit all targets

RECOMMENDATIONS**OTHER**

BHA Schematic

Anadarko Petroleum Corp.

Cannon 14N-W3HZ

IADC Rig BHA # :

Run # : 200

Drillstring : Drillstring

COMPONENT DATA

OD (in)	Length (ft)	Description
4.350	0.54	PDC (Gauge: 6.125 in)
5.000	26.26	5" GeoForce Lobe 4/5 - 5.4 stg
4.810	5.94	Slide Reamer (Gauge: 6.000 in)
		Stabilizer (Gauge: 6.000 in, Pos*: 2.37 ft)
4.730	7.97	Pony Collar
4.750	8.77	4 3/4" DM Collar
4.730	27.27	ADR
4.750	3.59	Inline Stabilizer (ILS) (Gauge: 5.875 in, Pos*: 1.18 ft)
4.790	11.27	4 3/4" TM
4.760	3.82	X-Over Sub
4.000	1800.40	57 Jts 4" DP
5.000	11.22	Agitator
5.000	11.16	Shock Sub
4.000	2843.54	90 Jts 4" DP
4.000	1378.98	45 Jts 4" HWDP

*Pos: Measured as distance from bottom of the component.

X-Over Sub

4 3/4" TM

Inline Stabilizer (ILS)

ADR

4 3/4" DM Collar

Pony Collar

Slide Reamer

5" GeoForce Lobe 4/5 - 5.4 stg

PDC



WELL INFORMATION

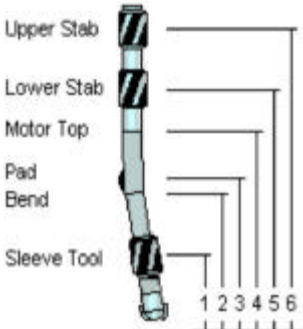
Motor Performance
Report

Customer : Anadarko Petroleum Corp.
 Well Name : Cannon 14N-W3HZ
 Job Number : CA-XX-0009484815

SUMMARY

BHA Number : 0200 Depth In/Out (ft) : 7303.00 / 11088.00
 Run Number : 0200 Date In/Out : 07/27/2012 / 07/29/2012
 Bit Number : 3 Hole Size (in) : 6.13

MOTOR CONFIGURATION

	DFB (ft)	Component	Yes/No	Type	Value
		Sleeve Stab	No		
	5.64	Bent Housing	Yes	Adjustable	1.50° bend
		Bent Housing Pad	No		
	26.80	Motor Top	Yes		
	77.93	Lower String Stab	Yes	Reg	Gauge 5.88 in
		Upper String Stab	No		

MOTOR PARAMETERS

Serial Number : 500-196 Lobe Config : 4:5
 Motor Run # : 0 Stat Elastomer : Nitrile
 OD (in) : 5 ID (in) : 3.12 Short Brg Pack : Yes
 Flex Collar Used : Yes Arr Ret
 Rotor Nozzle (32nd) : 0.0 Pick Up Sub : Yes No
 Bit Box Protr : Yes No

MOTOR RUN DATA

Directional Driller(s) : Jessie Kysar, Jordan Timbs
 Application Details : Horizontal

Max Dogleg While Rotating (°/100') : 3.71 RPM : 70.00 Motor Stalled : No
 Max Dogleg Overpulled In (°/100') : 3.71 Force (klb) : 72.00 Float Valve : Yes
 Max Dogleg Pushed Through (°/100') : 3.71 Force (klb) : 88.00 DP Filter : Yes

Inc Start/End	(deg)	: 85.637 / 89.642	Interval Oriented / Rot.	(ft)	: 311.00 / 3474.00
Hole Azimuth Start / End	(deg)	: 179.273 / 177.245	Directional Perf Ori / Rot	(°/100')	: 1.52 / 0.47
Jarring Occurred		: No			

HOURS

Existing Hrs	: 0.00	Circ Hrs	: 7.13	Total Hrs This Run	: 36.23
Drilling Hrs	: 26.23	Reaming Hrs	: 2.87	New Cumulative Hrs	: 36.23

DRILLING DATA

	Diff Press (psig)	RPM	Rotn Torque (ft-lb)	Drag Up/Down (klb)	WOB (klb)	ROP Oriented (fph)	ROP Rotated (fph)
Avg	616.15	65	5809.23	173.78 / 95.93	12.94	60	165
Max	700.00	75	10000.00	200.00 / 117.00	18.00	100	325

PRE-RUN TESTS

Motor Tested Pre-Run	: Yes	with Bit/MWD	: Yes / Yes
Dump Sub Operating	: No	Brg Play	: 0.20
Flow 1 (gpm)	: 420.00	Pressure 1 (psig)	: 800.00
Flow 2 (gpm)	:	Pressure 2 (psig)	:
Driveshaft Rotation Observed	: No		
Bearing Leakage Observed	: No		

POST-RUN TESTS

Motor Tested Post-Run	: No	with Bit/MWD	: No / No
Dump Sub Operating	: No	Brg Play	: 0.20
Flow 1 (gpm)	:	Pressure 1 (psig)	:
Flow 2 (gpm)	:	Pressure 2 (psig)	:
Driveshaft Rotation Observed	: No	Fluid Flushed	: No
Bearing Leakage Observed	: No	Fluid Used	:
DriveShaft Rotated to Drain Mud	: Yes		

MUD DATA

Type	:	Mud Wt (ppg)	:
Name	:	pH	:
% Oil / Water	:	% Solid	:
DH Temp Avg / Max (degF)	: 0.00 / 0.00	% Sand	:
SPP Start / End (gpm)	: 2975.00 / 4000.00	PV (cP)	:
Flow Rate Avg / Max (gpm)	: 277.45 / 300.00	YP (lbf2)	:
Chloride Content (ppm)	:		
Lithology	: Mixed		
Principal Formation Name(s)	: Niobrara		

BIT DATA

Bit Number	: 3	Nozzles	: 5x14
Bit Size (in)	: 6.125	TFA (in2)	: 0.7517
Manufacturer	: Other	Gauge Length (in)	: 0.150
Model	: SDi513	Dull Grade In	: NEW
Serial Number	: JF8093	Dull Grade Out	: 2-3-WT-A-X-I-LT-TD
Existing Bit Hrs	: 0.00	Existing Ream Hrs	: 0.00
Cum Drilling Hrs	: 26.23	Cum Ream Hrs	: 2.87

PERFORMANCE

Service Interrupt	: No	Trip For Failure	: No
LIH	: No	Service Interrupt Hrs	:
Problem Date	: 07/28/2012		

COMMENTS

Motor Preformed well

WELL INFORMATION
Drilling Activity
Customer : Anadarko Petroleum Corp.

North Ref : True

Well Name : Cannon 14N-W3HZ

Declination (deg) : 8.63

Job Number : CA-XX-0009484815

Vert Sec Dir (deg) : 177.93

SURVEY										STEERING				DRILLING PARAMETERS					
Measured Depth (ft)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (ft)	Vertical Section (ft)	Coordinates		DLS (°/100')	Build Rate (°/100')	Turn Rate (°/100')	Orientation		Tool Face (deg)		RPM	WOB (klb)	Flow Rate (gpm)	Stand Pipe (psig)	ROP (fph)	Comment Run
					N/S (ft)	E/W (ft)				From (ft)	To (ft)								
7303.0										7303	7320			20	6	296	2975	75	200
7320.0										7320	7345			20	10	296	3175	145	200
7328.0	87.22	179.07	6926.54	670.21	-670.21	11.85	6.38	6.33	-0.82										200
7345.0										7345	7370			20	13	296	3375	190	200
7370.0										7370	7465			60	12	250	3425	230	200
7423.0	87.16	178.69	6931.20	765.08	-765.08	13.70	0.40	-0.06	-0.40										200
7465.0										7465	7481	0G			12	250	3425	100	200
7481.0										7481	7560			65	12	250	3425	200	200
7518.0	89.57	178.88	6933.91	860.02	-860.02	15.71	2.54	2.53	0.20										200
7560.0										7560	7655			65	12	250	3425	200	200
7613.0	91.11	180.74	6933.35	954.96	-955.01	16.03	2.54	1.62	1.96										200
7655.0										7655	7750			70	12	250	3425	200	200
7708.0	91.61	180.93	6931.10	1049.81	-1049.97	14.64	0.56	0.52	0.20										200
7750.0										7750	7766	-150G			12	250	3425	100	200
7766.0										7766	7844			60	12	250	3425	200	200
7802.0	90.80	179.99	6929.12	1143.70	-1143.94	13.89	1.32	-0.86	-1.00										200
7844.0										7844	7860	-150G			12	300	3425	100	200
7860.0										7860	7939			60	12	300	3425	200	200

SURVEY										STEERING				DRILLING PARAMETERS					
Measured Depth	Incl Angle	Azi Dir	Vertical Depth	Vertical Section	Coordinates		DLS	Build Rate	Turn Rate	Orientation		Tool Face		RPM	WOB	Flow Rate	Stand Pipe	ROP	Comment
(ft)	(deg)	(deg)	(ft)	(ft)	N/S (ft)	E/W (ft)	(°/100')	(°/100')	(°/100')	From (ft)	To (ft)	(deg)			(klb)	(gpm)	(psig)	(fph)	Run
7897.0	90.80	179.56	6927.79	1238.64	-1238.93	14.27	0.46	0.00	-0.46										200
7939.0										7939	7959	-150G			12	268	3425	100	200
7959.0										7959	8034			68	12	268	3170	250	200
7992.0	90.49	178.92	6926.72	1333.61	-1333.92	15.53	0.74	-0.33	-0.67										200
8034.0										8034	8055	180G			12	268	3425	100	200
8055.0										8055	8129			68	12	268	3170	250	200
8087.0	89.57	179.10	6926.66	1428.59	-1428.90	17.16	0.99	-0.97	0.19										200
8129.0										8129	8149	-170G			12	268	3425	100	200
8149.0										8149	8223			68	12	268	3170	250	200
8181.0	88.39	178.13	6928.34	1522.57	-1522.86	19.44	1.62	-1.25	-1.04										200
8223.0										8223	8318			68	12	268	3170	250	200
8276.0	88.76	178.02	6930.69	1617.54	-1617.77	22.63	0.41	0.39	-0.11										200
8318.0										8318	8339	180G			12	268	3425	100	200
8339.0										8339	8413			68	12	268	3170	250	200
8371.0	87.40	177.30	6933.87	1712.48	-1712.64	26.50	1.62	-1.43	-0.76										200
8413.0										8413	8508			68	12	268	3170	250	200
8466.0	87.78	177.69	6937.86	1807.39	-1807.46	30.65	0.57	0.39	0.41										200
8508.0										8508	8603			68	12	268	3170	250	200
8561.0	87.96	177.64	6941.39	1902.33	-1902.32	34.51	0.20	0.20	-0.05										200
8603.0										8603	8698			68	12	268	3170	250	200
8656.0	88.27	177.81	6944.51	1997.27	-1997.19	38.28	0.36	0.32	0.17										200
8698.0										8698	8708	-45G			12	268	3425	100	200
8708.0										8708	8792			68	12	268	3170	250	200
8750.0	89.75	177.86	6946.13	2091.26	-2091.11	41.83	1.58	1.58	0.05										200
8792.0										8792	8887			68	12	268	3170	250	200
8845.0	90.25	178.40	6946.13	2186.26	-2186.06	44.94	0.77	0.52	0.57										200
8887.0										8887	8900	-90G			12	268	3425	100	200
8900.0										8900	8982			68	12	268	3400	250	200
8940.0	91.48	178.04	6944.70	2281.24	-2281.00	47.89	1.36	1.30	-0.38										200
8982.0										8982	8998	-135G			12	268	3425	100	200
8998.0										8998	9076			68	12	268	3400	250	200
9034.0	91.23	176.66	6942.47	2375.21	-2374.87	52.23	1.49	-0.27	-1.46										200

SURVEY										STEERING					DRILLING PARAMETERS					
Measured Depth (ft)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (ft)	Vertical Section (ft)	Coordinates		DLS (°/100')	Build Rate (°/100')	Turn Rate (°/100')	Orientation		Tool Face (deg)		RPM	WOB (klb)	Flow Rate (gpm)	Stand Pipe (psig)	ROP (fph)	Comment	
					N/S (ft)	E/W (ft)				From (ft)	To (ft)								Run	
9076.0										9076	9092	-170G			12	272	3050	80	200	
9092.0										9092	9171			68	11	272	3375	250	200	
9129.0	90.19	176.20	6941.29	2470.17	-2469.68	58.15	1.21	-1.10	-0.49										200	
9171.0										9171	9266			75	11	272	3475	230	200	
9224.0	90.37	175.33	6940.83	2565.10	-2564.42	65.16	0.94	0.20	-0.92										200	
9266.0										9266	9361			75	13	272	3475	225	200	
9319.0	91.54	175.64	6939.25	2660.00	-2659.11	72.64	1.28	1.23	0.33										200	
9361.0										9361	9377	160G			12	272	3050	80	200	
9377.0										9377	9456			75	12	272	3475	250	200	
9414.0	90.31	176.42	6937.71	2754.93	-2753.86	79.22	1.53	-1.30	0.82										200	
9456.0										9456	9551			75	12	272	3450	210	200	
9509.0	92.78	178.93	6935.15	2849.88	-2848.74	83.08	3.71	2.60	2.64										200	
9551.0										9551	9571	-160G			13	272	3050	90	200	
9571.0										9571	9618			70	17	291	3850	225	200	
9604.0	91.73	177.88	6931.41	2944.80	-2943.62	85.72	1.56	-1.11	-1.10										200	
9618.0										9618	9646			70	17	291	3850	320	200	
9646.0										9646	9666	-160G			13	272	3050	90	200	
9666.0										9666	9741			70	17	291	3850	260	200	
9699.0	89.57	175.52	6930.34	3039.76	-3038.45	91.18	3.37	-2.27	-2.49										200	
9741.0										9741	9836			70	13	291	3825	210	200	
9794.0	89.81	176.14	6930.85	3134.69	-3133.19	98.09	0.70	0.26	0.65										200	
9836.0										9836	9850	-150G			13	272	3400	70	200	
9850.0										9850	9931			70	14	291	3900	250	200	
9889.0	88.64	175.42	6932.13	3229.61	-3227.93	105.08	1.45	-1.23	-0.75										200	
9931.0										9931	10026			70	14	291	3900	250	200	
9984.0	88.83	175.34	6934.23	3324.50	-3322.59	112.72	0.21	0.19	-0.09										200	
10026.0										10026	10121			70	14	291	3900	275	200	
10079.0	88.83	175.77	6936.18	3419.40	-3417.29	120.08	0.45	0.00	0.45										200	
10121.0										10121	10133	90G			15	291	3500	80	200	
10133.0										10133	10216			70	15	291	4000	325	200	
10174.0	88.09	176.85	6938.74	3514.32	-3512.05	126.20	1.38	-0.78	1.13										200	
10216.0										10216	10311			70	15	291	4000	325	200	

SURVEY										STEERING					DRILLING PARAMETERS					
Measured Depth (ft)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (ft)	Vertical Section (ft)	Coordinates		DLS (°/100')	Build Rate (°/100')	Turn Rate (°/100')	Orientation		Tool Face (deg)		RPM	WOB (klb)	Flow Rate (gpm)	Stand Pipe (psig)	ROP (fph)	Comment	
					N/S (ft)	E/W (ft)				From (ft)	To (ft)								Run	
10269.0	87.71	177.06	6942.22	3609.24	-3606.86	131.24	0.45	-0.39	0.23										200	
10311.0										10311	10321			70	15	291	4000	325	200	
10321.0										10321	10331	0G			15	291	3500	80	200	
10331.0										10331	10406			70	15	291	4000	325	200	
10364.0	88.52	177.41	6945.34	3704.18	-3701.69	135.83	0.92	0.85	0.36										200	
10406.0										10406	10419			70	15	291	4000	325	200	
10419.0										10419	10431	0G			18	291	3500	80	200	
10431.0										10431	10501			70	15	291	4000	325	200	
10459.0	89.94	177.87	6946.62	3799.17	-3796.60	139.74	1.57	1.49	0.49										200	
10501.0										10501	10597			70	15	291	4000	325	200	
10555.0	89.57	177.90	6947.04	3895.17	-3892.54	143.28	0.39	-0.39	0.03										200	
10597.0										10597	10619	0G			17	291	3500	80	200	
10619.0										10619	10692			68	13	291	4000	325	200	
10650.0	90.86	178.57	6946.68	3990.17	-3987.49	146.21	1.53	1.37	0.70										200	
10692.0										10692	10787			68	13	291	4000	325	200	
10745.0	90.93	178.01	6945.19	4085.15	-4082.43	149.05	0.59	0.07	-0.58										200	
10787.0										10787	10882			68	13	291	4000	325	200	
10840.0	90.74	177.46	6943.81	4180.14	-4177.35	152.80	0.61	-0.20	-0.58										200	
10882.0										10882	10978			68	13	291	4000	325	200	
10936.0	90.37	177.29	6942.88	4276.13	-4273.24	157.19	0.43	-0.39	-0.18										200	
10978.0										10978	11073			68	13	291	4000	325	200	
11031.0	89.88	177.45	6942.67	4371.13	-4368.14	161.55	0.55	-0.52	0.17										200	
11046.0	89.81	177.40	6942.71	4386.13	-4383.13	162.23	0.55	-0.41	-0.36										200	
11073.0										11073	11088			68	13	291	4000	325	200	

WARRANTY

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Section 4

Contents: Daily Morning Reports

WELL INFORMATION

Daily Drilling Report

Customer : Anadarko Petroleum Corp.

Well Name : Cannon 14N-W3HZ

Job Number : CA-XX-0009484815

CURRENT STATUS Report # 1

Date : 07/22/2012

Total Depth (ft) : 0.00

Depth Last 24 (ft) : 0.00

Hole Size (in) :

Casing Depth (ft) :

Casing Diameter (in) :

Casing ID (in) :

Customer Reps : Stan Walters

Customer Reps : Travis Lourance

SDS Reps : Jessy Kysar

SDS Reps : Jordan Timbs

SDS Reps :

LAST SURVEY

LAST FORMATION TOP

Depth (ft)	Inc (deg)	Azi (deg)	TVD (ft)	Displ (ft)	Direct(deg)	Formation Name	MD Top (ft)	TVD Top(ft)

BHA SUMMARY

MUD DATA

Type	Weight (ppg)	FV (spqt)	PV (cP)	YP (lbf2)	Gels 10 sec	10 Min	30 sec	30 min	(lbf2)

Flowline	Weight Out (ppg)	FV Out (spqt)	Solids (%)	Sand (%)	Oil (%)	Fluid Loss (mptm)	pH

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
00:00	08:00	8.00			1	Rig up and strap tools
08:00	00:00	16.00			15	Test BOP

COMMENTS

Daily: \$7,150; Total: \$7,150

WELL INFORMATION

Daily Drilling Report

Customer : Anadarko Petroleum Corp.

Well Name : Cannon 14N-W3HZ

Job Number : CA-XX-0009484815

CURRENT STATUS Report # 2 **Date :** 07/23/2012

Total Depth (ft) : 1161.00

Depth Last 24 (ft) : 347.00

Hole Size (in) : 8.750

Casing Depth (ft) :

Casing Diameter (in) :

Casing ID (in) :

Customer Reps : Stan Walters

Customer Reps : Travis Lourance

SDS Reps : Jessy Kysar

SDS Reps : Jordan Timbs

SDS Reps :

LAST SURVEY
LAST FORMATION TOP

Depth (ft)	Inc (deg)	Azi (deg)	TVD (ft)	Displ (ft)	Direct(deg)	Formation Name	MD Top (ft)	TVD Top(ft)
1111.00	2.57	10.67	1110.96	4.81	177.93			

BHA SUMMARY

Well:9484815 Run:0100 - 2131.58 ft;Bit, Motor, Collar, MWD, Collar, Collar, Sub, Drill Pipe, Sub, Drill Pipe

MUD DATA

Type	Weight (ppg)	FV (spqt)	PV (cP)	YP (lbf2)	Gels 10 sec	10 Min	30 sec	30 min	(lbf2)

Flowline	Weight Out (ppg)	FV Out (spqt)	Solids (%)	Sand (%)	Oil (%)	Fluid Loss (mptm)	pH

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
00:00	15:00	15.00			15	Test BOP
15:00	17:10	2.17		100	6c	Pick up tools
17:10	20:11	3.02	814.00	100	6a	Trip in
20:11	20:24	0.22	814.00	100	5	Shallow pulse test
20:24	20:26	0.03	814.00	100	6a	Trip in
20:26	20:42	0.27	814.00	100	26	Drill float at 772

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
20:42	21:09	0.45	814.00	100	21	Drill cement to 814
21:09	21:11	0.03	814.00	100	27	Drill shoe at 814
21:11	21:27	0.27	877.00	100	2a	Rotate
21:27	21:37	0.17	877.00	100	5	C/S
21:37	21:52	0.25	972.00	100	2a	Rotate
21:52	21:59	0.12	972.00	100	5	C/S
21:59	22:09	0.17	1067.00	100	2a	Rotate
22:09	22:16	0.12	1067.00	100	5	C/S
22:16	22:21	0.08	1082.00	100	2b	Slide 15' @ 0M
22:21	22:29	0.13	1161.00	100	2a	Rotate
22:29	00:00	1.52	1161.00	100	8	Pumps

COMMENTS

Daily: \$47,825; Total: \$54,975

PTB: 50.00'

GTB: 52.62'

RFO: 123.4 deg

WELL INFORMATION

Daily Drilling Report

Customer : Anadarko Petroleum Corp.

Well Name : Cannon 14N-W3HZ

Job Number : CA-XX-0009484815

CURRENT STATUS Report # 3

Date : 07/24/2012

Total Depth (ft) : 5067.00

Depth Last 24 (ft) : 3906.00

Hole Size (in) : 8.750

Casing Depth (ft) :

Casing Diameter (in) :

Casing ID (in) :

Customer Reps : Stan Walters

Customer Reps : Travis Lourance

SDS Reps : Jessy Kysar

SDS Reps : Jordan Timbs

SDS Reps :

LAST SURVEY

LAST FORMATION TOP

Depth (ft)	Inc (deg)	Azi (deg)	TVD (ft)	Displ (ft)	Direct(deg)	Formation Name	MD Top (ft)	TVD Top(ft)
5017.00	0.68	277.32	5015.57	55.94	177.93			

BHA SUMMARY

Well:9484815 Run:0100 - 2131.58 ft;Bit, Motor, Collar, MWD, Collar, Collar, Sub, Drill Pipe, Sub, Drill Pipe

MUD DATA

Type	Weight (ppg)	FV (spqt)	PV (cP)	YP (lbf2)	Gels 10 sec	10 Min	30 sec	30 min	(lbf2)

Flowline	Weight Out (ppg)	FV Out (spqt)	Solids (%)	Sand (%)	Oil (%)	Fluid Loss (mptm)	pH

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
00:00	00:20	0.33	1161.00	100	8	Pumps
00:20	00:34	0.23	1161.00	100	5	C/S
00:34	00:47	0.22	1256.00	100	2a	Rotate
00:47	00:55	0.13	1256.00	100	5	C/S
00:55	01:07	0.20	1350.00	100	2a	Rotate
01:07	01:16	0.15	1350.00	100	5	C/S

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
01:16	01:29	0.22	1445.00	100	2a	Rotate
01:29	01:38	0.15	1445.00	100	5	C/S
01:38	01:51	0.22	1540.00	100	2a	Rotate
01:51	01:59	0.13	1540.00	100	5	C/S
01:59	02:13	0.23	1634.00	100	2a	Rotate
02:13	02:29	0.27	1634.00	100	5	C/S
02:29	02:42	0.22	1729.00	100	2a	Rotate
02:42	02:50	0.13	1729.00	100	5	C/S
02:50	02:53	0.05	1734.00	100	2b	Slide 5' @ 255M
02:53	03:05	0.20	1824.00	100	2a	Rotate
03:05	03:14	0.15	1824.00	100	5	C/S
03:14	03:27	0.22	1918.00	100	2a	Rotate
03:27	03:35	0.13	1918.00	100	5	C/S
03:35	03:49	0.23	2013.00	100	2a	Rotate
03:49	03:57	0.13	2013.00	100	5	C/S
03:57	04:11	0.23	2108.00	100	2a	Rotate
04:11	04:18	0.12	2108.00	100	5	C/S
04:18	04:32	0.23	2203.00	100	2a	Rotate
04:32	04:43	0.18	2203.00	100	5	C/S
04:43	04:54	0.18	2298.00	100	2a	Rotate
04:54	05:08	0.23	2298.00	100	5	C/S
05:08	05:22	0.23	2392.00	100	2a	Rotate
05:22	05:30	0.13	2392.00	100	5	C/S
05:30	05:47	0.28	2487.00	100	2a	Rotate
05:47	05:55	0.13	2487.00	100	5	C/S
05:55	06:07	0.20	2582.00	100	2a	Rotate
06:07	06:50	0.72	2582.00	100	5	Circulate
06:50	10:30	3.67	2582.00	100	6d	Short Trip
10:30	10:47	0.28	2582.00	100	5	Survey
10:47	10:51	0.07	2604.00	100	2a	Rotate
10:51	11:02	0.18	2604.00	100	5	C/S
11:02	11:20	0.30	2699.00	100	2a	Rotate
11:20	11:27	0.12	2699.00	100	5	C/S
11:27	11:41	0.23	2794.00	100	2a	Rotate
11:41	11:49	0.13	2794.00	100	5	C/S
11:49	12:01	0.20	2888.00	100	2a	Rotate
12:01	12:11	0.17	2888.00	100	5	C/S
12:11	12:23	0.20	2983.00	100	2a	Rotate
12:23	12:38	0.25	2983.00	100	5	C/S
12:38	12:44	0.10	2988.00	100	2b	Slide 5' @ 270
12:44	12:56	0.20	3078.00	100	2a	Rotate
12:56	13:08	0.20	3078.00	100	5	C/S
13:08	13:20	0.20	3172.00	100	2a	Rotate

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
13:20	13:30	0.17	3172.00	100	5	C/S
13:30	13:57	0.45	3267.00	100	2a	Rotate
13:57	14:18	0.35	3267.00	100	5	C/S
14:18	14:35	0.28	3361.00	100	2a	Rotate
14:35	14:43	0.13	3361.00	100	5	C/S
14:43	14:57	0.23	3456.00	100	2a	Rotate
14:57	15:05	0.13	3456.00	100	5	C/S
15:05	15:23	0.30	3551.00	100	2a	Rotate
15:23	15:34	0.18	3551.00	100	5	C/S
15:34	15:42	0.13	3560.00	100	2b	Slide 9' @ 180
15:42	15:56	0.23	3646.00	100	2a	Rotate
15:56	16:10	0.23	3646.00	100	5	C/S
16:10	16:25	0.25	3740.00	100	2a	Rotate
16:25	16:38	0.22	3740.00	100	5	C/S
16:38	16:53	0.25	3835.00	100	2a	Rotate
16:53	17:06	0.22	3835.00	100	5	C/S
17:06	17:14	0.13	3843.00	100	2b	Slide 8' @ 200
17:14	17:34	0.33	3930.00	100	2a	Rotate
17:34	17:43	0.15	3930.00	100	5	C/S
17:43	17:54	0.18	3938.00	100	2b	Slide 8' @ 225
17:54	18:10	0.27	4025.00	100	2a	Rotate
18:10	18:18	0.13	4025.00	100	5	C/S
18:18	18:32	0.23	4120.00	100	2a	Rotate
18:32	18:40	0.13	4120.00	100	5	C/S
18:40	18:56	0.27	4214.00	100	2a	Rotate
18:56	19:03	0.12	4214.00	100	5	C/S
19:03	19:17	0.23	4222.00	100	2b	Slide 8' @ 250M
19:17	19:31	0.23	4309.00	100	2a	Rotate
19:31	19:39	0.13	4309.00	100	5	C/S
19:39	19:55	0.27	4405.00	100	2a	Rotate
19:55	20:03	0.13	4405.00	100	5	C/S
20:03	20:20	0.28	4499.00	100	2a	Rotate
20:20	20:26	0.10	4499.00	100	5	C/S
20:26	20:44	0.30	4594.00	100	2a	Rotate
20:44	20:52	0.13	4594.00	100	5	C/S
20:52	21:07	0.25	4600.00	100	2b	Slide 6' @ 90M
21:07	21:24	0.28	4688.00	100	2a	Rotate
21:24	21:30	0.10	4688.00	100	5	C/S
21:30	21:47	0.28	4783.00	100	2a	Rotate
21:47	21:56	0.15	4783.00	100	5	C/S
21:56	22:07	0.18	4788.00	100	2b	Slide 5' @ 225M
22:07	22:22	0.25	4878.00	100	2a	Rotate
22:22	22:31	0.15	4878.00	100	5	C/S

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
22:31	22:43	0.20	4886.00	100	2b	Slide 8' @ 225M
22:43	22:57	0.23	4973.00	100	2a	Rotate
22:57	23:05	0.13	4973.00	100	5	C/S
23:05	23:19	0.23	4988.00	100	2b	Slide 15' @ 225M
23:19	23:33	0.23	5067.00	100	2a	Rotate
23:33	23:52	0.32	5067.00	100	7	Rig Service
23:52	00:00	0.13	5067.00	100	5	C/S

COMMENTS

Daily: \$13,050; Total: \$68,025

PTB: 50.00'

GTB: 52.62'

RFO: 123.4 deg

WELL INFORMATION

Daily Drilling Report

Customer : Anadarko Petroleum Corp.
Well Name : Cannon 14N-W3HZ
Job Number : CA-XX-0009484815

CURRENT STATUS Report # 4 **Date :** 07/25/2012

Total Depth (ft) : 7063.00	Casing Depth (ft) :	Customer Reps : Stan Walters
Depth Last 24 (ft) : 1996.00	Casing Diameter (in) :	Customer Reps : Travis Lourance
Hole Size (in) : 8.750	Casing ID (in) :	SDS Reps : Jessy Kysar
		SDS Reps : Jordan Timbs
		SDS Reps :

LAST SURVEY
LAST FORMATION TOP

Depth (ft)	Inc (deg)	Azi (deg)	TVD (ft)	Displ (ft)	Direct(deg)	Formation Name	MD Top (ft)	TVD Top(ft)
7045.00	66.36	180.79	6861.90	396.58	177.93			

BHA SUMMARY

Well:9484815 Run:0100 - 2131.58 ft;Bit, Motor, Collar, MWD, Collar, Collar, Sub, Drill Pipe, Sub, Drill Pipe

MUD DATA

Type	Weight (ppg)	FV (spqt)	PV (cP)	YP (lbf2)	Gels 10 sec	10 Min	30 sec	30 min	(lbf2)

Flowline	Weight Out (ppg)	FV Out (spqt)	Solids (%)	Sand (%)	Oil (%)	Fluid Loss (mptm)	pH

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
00:00	00:17	0.28	5162.00	100	2a	Rotate
00:17	00:25	0.13	5162.00	100	5	C/S
00:25	00:43	0.30	5257.00	100	2a	Rotate
00:43	00:50	0.12	5257.00	100	5	C/S
00:50	01:07	0.28	5352.00	100	2a	Rotate
01:07	01:14	0.12	5352.00	100	5	C/S

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
01:14	01:31	0.28	5447.00	100	2a	Rotate
01:31	01:37	0.10	5447.00	100	5	C/S
01:37	01:55	0.30	5542.00	100	2a	Rotate
01:55	02:02	0.12	5542.00	100	5	C/S
02:02	02:24	0.37	5637.00	100	2a	Rotate
02:24	02:32	0.13	5637.00	100	5	C/S
02:32	02:45	0.22	5652.00	100	2b	Slide 15' @ 290M
02:45	03:02	0.28	5732.00	100	2a	Rotate
03:02	03:10	0.13	5732.00	100	5	C/S
03:10	03:30	0.33	5827.00	100	2a	Rotate
03:30	03:37	0.12	5827.00	100	5	C/S
03:37	04:01	0.40	5922.00	100	2a	Rotate
04:01	04:10	0.15	5922.00	100	5	C/S
04:10	04:38	0.47	5940.00	100	2b	Slide 17' @ 225M
04:38	04:57	0.32	6017.00	100	2a	Rotate
04:57	05:05	0.13	6017.00	100	5	C/S
05:05	05:35	0.50	6112.00	100	2a	Rotate
05:35	05:48	0.22	6112.00	100	5	C/S
05:48	06:14	0.43	6207.00	100	2a	Rotate
06:14	06:25	0.18	6207.00	100	5	C/S
06:25	07:33	1.13	6270.00	100	2b	Slide
07:33	07:40	0.12	6270.00	100	5	Survey
07:40	07:45	0.08	6275.00	100	2a	Rotate
07:45	08:41	0.93	6302.00	100	2b	Slide
08:41	08:50	0.15	6302.00	100	5	C/S
08:50	09:01	0.18	6315.00	100	2a	Rotate
09:01	09:20	0.32	6334.00	100	2b	Slide
09:20	09:26	0.10	6334.00	100	5	Survey
09:26	09:35	0.15	6349.00	100	2a	Rotate
09:35	09:55	0.33	6365.00	100	2b	Slide
09:55	10:00	0.08	6365.00	100	5	Survey
10:00	10:07	0.12	6378.00	100	2a	Rotate
10:07	10:30	0.38	6397.00	100	2b	Slide
10:30	10:40	0.17	6397.00	100	10	C/S
10:40	10:45	0.08	6405.00	100	2a	Rotate
10:45	11:07	0.37	6429.00	100	2b	Slide
11:07	11:12	0.08	6429.00	100	5	Survey
11:12	11:19	0.12	6441.00	100	2a	Rotate
11:19	11:40	0.35	6460.00	100	2b	Slide
11:40	11:46	0.10	6460.00	100	5	Survey
11:46	11:55	0.15	6468.00	100	2a	Rotate
11:55	12:17	0.37	6492.00	100	2b	Slide
12:17	12:25	0.13	6492.00	100	5	C/S

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
12:25	12:35	0.17	6503.00	100	2a	Rotate
12:35	13:02	0.45	6524.00	100	2b	Slide
13:02	13:07	0.08	6524.00	100	5	Survey
13:07	13:15	0.13	6534.00	100	2a	Rotate
13:15	13:36	0.35	6556.00	100	2b	Slide
13:36	13:42	0.10	6556.00	100	5	Survey
13:42	13:47	0.08	6566.00	100	2a	Rotate
13:47	14:10	0.38	6587.00	100	2b	Slide
14:10	14:20	0.17	6587.00	100	5	C/S
14:20	14:25	0.08	6596.00	100	2a	Rotate
14:25	14:42	0.28	6619.00	100	2b	Slide
14:42	14:48	0.10	6619.00	100	5	Survey
14:48	15:28	0.67	6651.00	100	2b	Slide
15:28	15:35	0.12	6651.00	100	5	Survey
15:35	15:36	0.02	6655.00	100	2a	Rotate
15:36	16:10	0.57	6683.00	100	2b	Slide
16:10	16:25	0.25	6683.00	100	5	C/S
16:25	16:44	0.32	6714.00	100	2b	Slide
16:44	16:52	0.13	6714.00	100	5	Survey
16:52	16:56	0.07	6724.00	100	2a	Rotate
16:56	17:25	0.48	6746.00	100	2b	Slide
17:25	17:30	0.08	6746.00	100	5	Survey
17:30	17:35	0.08	6756.00	100	2a	Rotate
17:35	17:36	0.02	6778.00	100	2b	Slide
17:36	17:45	0.15	6778.00	100	5	C/S ?
17:45	18:10	0.42	6796.00	100	2b	Slide ?
18:10	18:20	0.17	6810.00	100	2a	Rotate ?
18:20	18:30	0.17	6810.00	100	5	Survey ?
18:30	18:55	0.42	6830.00	100	2b	Slide ?
18:55	19:15	0.33	6842.00	100	2a	Rotate
19:15	19:23	0.13	6842.00	100	5	Survey ?
19:23	19:45	0.37	6865.00	100	2b	Slide
19:45	19:51	0.10	6873.00	100	2a	Rotate
19:51	20:07	0.27	6873.00	100	5	C/S
20:07	20:28	0.35	6895.00	100	2b	Slide
20:28	20:37	0.15	6905.00	100	2a	Rotate
20:37	20:42	0.08	6905.00	100	5	Survey
20:42	20:59	0.28	6921.00	100	2b	Slide
20:59	21:08	0.15	6937.00	100	2a	Rotate
21:08	21:12	0.07	6937.00	100	5	Survey
21:12	21:32	0.33	6951.00	100	2b	Slide
21:32	21:48	0.27	6968.00	100	2a	Rotate
21:48	21:58	0.17	6968.00	100	5	C/S

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
21:58	22:15	0.28	6980.00	100	2b	Slide
22:15	22:28	0.22	7000.00	100	2a	Rotate
22:28	22:38	0.17	7000.00	100	5	C/S
22:38	23:01	0.38	7020.00	100	2b	Slide
23:01	23:09	0.13	7032.00	100	2a	Rotate
23:09	23:19	0.17	7032.00	100	5	C/S
23:19	23:42	0.38	7052.00	100	2b	Slide
23:42	23:54	0.20	7063.00	100	2a	Rotate
23:54	00:00	0.10	7063.00	100	7	Rig Service

COMMENTS

Daily: \$13,050; Total: \$81,075

PTB: 50.00'

GTB: 52.62'

RFO: 123.4 deg

WELL INFORMATION

Daily Drilling Report

Customer : Anadarko Petroleum Corp.

Well Name : Cannon 14N-W3HZ

Job Number : CA-XX-0009484815

CURRENT STATUS Report # 5 **Date :** 07/26/2012

Total Depth (ft) : 7303.00	Casing Depth (ft) :	Customer Reps : Stan Walters
Depth Last 24 (ft) : 240.00	Casing Diameter (in) :	Customer Reps : Travis Lourance
Hole Size (in) : 8.750	Casing ID (in) :	SDS Reps : Jessy Kysar
		SDS Reps : Jordan Timbs
		SDS Reps :

LAST SURVEY
LAST FORMATION TOP

Depth (ft)	Inc (deg)	Azi (deg)	TVD (ft)	Displ (ft)	Direct(deg)	Formation Name	MD Top (ft)	TVD Top(ft)
7253.00	82.47	179.68	6919.81	595.65	177.93			

BHA SUMMARY

Well:9484815 Run:0100 - 2131.58 ft;Bit, Motor, Collar, MWD, Collar, Collar, Sub, Drill Pipe, Sub, Drill Pipe

MUD DATA

Type	Weight (ppg)	FV (spqt)	PV (cP)	YP (lbf2)	Gels 10 sec	10 Min	30 sec	30 min	(lbf2)

Flowline	Weight Out (ppg)	FV Out (spqt)	Solids (%)	Sand (%)	Oil (%)	Fluid Loss (mptm)	pH

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
00:00	00:10	0.17	7063.00	100	5	C/S
00:10	00:33	0.38	7079.00	100	2b	Slide
00:33	00:47	0.23	7095.00	100	2a	Rotate
00:47	01:02	0.25	7095.00	100	5	C/S
01:02	01:38	0.60	7109.00	100	2b	Slide
01:38	01:55	0.28	7127.00	100	2a	Rotate

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
01:55	02:05	0.17	7127.00	100	5	C/S
02:05	03:08	1.05	7143.00	100	2b	Slide
03:08	03:23	0.25	7158.00	100	2a	Rotate
03:23	03:35	0.20	7158.00	100	5	C/S
03:35	04:02	0.45	7176.00	100	2b	Slide
04:02	04:16	0.23	7190.00	100	2a	Rotate
04:16	04:29	0.22	7190.00	100	5	C/S
04:29	05:02	0.55	7213.00	100	2b	Slide
05:02	05:13	0.18	7221.00	100	2a	Rotate
05:13	05:24	0.18	7221.00	100	5	C/S
05:24	06:07	0.72	7249.00	100	2b	Slide
06:07	06:13	0.10	7253.00	100	2a	Rotate
06:13	06:20	0.12	7253.00	100	5	C/S
06:20	06:47	0.45	7274.00	100	2b	Slide
06:47	06:55	0.13	7285.00	100	2a	Rotate
06:55	07:05	0.17	7285.00	100	5	C/S
07:05	07:30	0.42	7303.00	100	2b	Slide
07:30	07:38	0.13	7303.00	100	5	TD Survey
07:38	08:44	1.10	7303.00	100	3a	Cir/Ream
08:44	12:40	3.93	7303.00	100	6b	Trip out
12:40	13:00	0.33	7303.00	100	6e	Trip out
13:00	14:00	1.00	7303.00	100	6c	Lay Down Tools
14:00	00:00	10.00	7303.00	100	12	Run casing

COMMENTS

Daily: \$13,050; Total: \$94,125

PTB: 50.00'

GTB: 52.62'

RFO: 123.4 deg

WELL INFORMATION

Daily Drilling Report

Customer : Anadarko Petroleum Corp.

Well Name : Cannon 14N-W3HZ

Job Number : CA-XX-0009484815

CURRENT STATUS Report # 6

Date : 07/27/2012

Total Depth (ft) : 7303.00

Depth Last 24 (ft) : 0.00

Hole Size (in) : 6.125

Casing Depth (ft) :

Casing Diameter (in) :

Casing ID (in) :

Customer Reps : Stan Walters

Customer Reps : Travis Lourance

SDS Reps : Jessy Kysar

SDS Reps : Jordan Timbs

SDS Reps :

LAST SURVEY

LAST FORMATION TOP

Depth (ft)	Inc (deg)	Azi (deg)	TVD (ft)	Displ (ft)	Direct(deg)	Formation Name	MD Top (ft)	TVD Top(ft)
7253.00	82.47	179.68	6919.81	595.65	177.93			

BHA SUMMARY

Well:9484815 Run:0100 - 2131.58 ft;Bit, Motor, Collar, MWD, Collar, Collar, Sub, Drill Pipe, Sub, Drill Pipe

Well:9484815 Run:0200 - 6140.73 ft;Bit, Motor, Reamer, Collar, MWD, Collar, Stabilizer, MWD, Sub, Drill Pipe, Sub, Sub, Drill Pipe, Drill Pipe

MUD DATA

Type	Weight (ppg)	FV (spqt)	PV (cP)	YP (lbf2)	Gels 10 sec	10 Min	30 sec	30 min	(lbf2)

Flowline	Weight Out (ppg)	FV Out (spqt)	Solids (%)	Sand (%)	Oil (%)	Fluid Loss (mptm)	pH

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
00:00	13:30	13.50	7303.00	100	12	Run casing and cement
13:30	15:45	2.25	7303.00	100	1	Rig down CRT
15:45	17:00	1.25	7303.00	200	6c	Pick up tools
17:00	17:30	0.50	7303.00	200	90	MWD down load
17:30	18:49	1.32	7303.00	200	6a	Trip in

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
18:49	18:59	0.17	7303.00	200	5	Shallow pulse test
18:59	00:00	5.02	7303.00	200	6a	Trip in

COMMENTS

Daily: \$46,475; Total: \$140,600

PTB: 42.00'

GTB: 44.73'

RTB: 66.14'

RFO: 117.13 deg

WELL INFORMATION

Daily Drilling Report

Customer : Anadarko Petroleum Corp.

Well Name : Cannon 14N-W3HZ

Job Number : CA-XX-0009484815

CURRENT STATUS Report # 7 **Date :** 07/28/2012

Total Depth (ft) : 9559.00

Depth Last 24 (ft) : 2256.00

Hole Size (in) : 6.125

Casing Depth (ft) :

Casing Diameter (in) :

Casing ID (in) :

Customer Reps : Stan Walters

Customer Reps : Travis Lourance

SDS Reps : Jessy Kysar

SDS Reps : Jordan Timbs

SDS Reps :

LAST SURVEY
LAST FORMATION TOP

Depth (ft)	Inc (deg)	Azi (deg)	TVD (ft)	Displ (ft)	Direct(deg)	Formation Name	MD Top (ft)	TVD Top(ft)
9509.00	92.78	178.93	6935.15	2849.95	177.93			

BHA SUMMARY

Well:9484815 Run:0200 - 6140.73 ft;Bit, Motor, Reamer, Collar, MWD, Collar, Stabilizer, MWD, Sub, Drill Pipe, Sub, Sub, Drill Pipe, Drill Pipe

MUD DATA

Type	Weight (ppg)	FV (spqt)	PV (cP)	YP (lbf2)	Gels 10 sec	10 Min	30 sec	30 min	(lbf2)

Flowline	Weight Out (ppg)	FV Out (spqt)	Solids (%)	Sand (%)	Oil (%)	Fluid Loss (mptm)	pH

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
00:00	02:07	2.12	7303.00	200	6a	Trip in (tag cement at 7181)
02:07	02:36	0.48	7303.00	200	21	Trip in (drill cement to 7200)
02:36	02:43	0.12	7303.00	200	26	Drill float at 7208
02:43	03:29	0.77	7303.00	200	21	Drill cement to 7284
03:29	03:32	0.05	7303.00	200	27	Drill shoe at 7284
03:32	03:40	0.13	7303.00	200	6a	Rat hole

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
03:40	04:27	0.78	7370.00	200	2a	Rotate
04:27	04:46	0.32	7370.00	200	5	C/S
04:46	05:37	0.85	7465.00	200	2a	Rotate
05:37	05:44	0.12	7465.00	200	90	Troubleshoot vibration
05:44	05:53	0.15	7465.00	200	5	C/S
05:53	06:16	0.38	7481.00	200	2b	Slide 16' @ HS
06:16	06:42	0.43	7560.00	200	2a	Rotate
06:42	06:54	0.20	7560.00	200	5	C/S
06:54	07:30	0.60	7655.00	200	2a	Rotate
07:30	07:40	0.17	7655.00	200	5	C/S
07:40	08:09	0.48	7750.00	200	2a	Rotate
08:09	08:20	0.18	7750.00	200	5	C/S
08:20	08:45	0.42	7766.00	200	2b	Slide 16' @ 150L
08:45	09:13	0.47	7844.00	200	2a	Rotate
09:13	09:22	0.15	7844.00	200	5	C/S
09:22	09:38	0.27	7860.00	200	2b	Slide 16' @ 150L
09:38	10:03	0.42	7939.00	200	2a	Rotate
10:03	10:10	0.12	7939.00	200	5	C/S
10:10	10:27	0.28	7959.00	200	2b	Slide 20' @ 150L
10:27	10:50	0.38	8034.00	200	2a	Rotate
10:50	10:57	0.12	8034.00	200	5	C/S
10:57	11:17	0.33	8055.00	200	2b	Slide 20' @ 180
11:17	11:51	0.57	8129.00	200	2a	Rotate
11:51	12:00	0.15	8129.00	200	5	C/S
12:00	12:19	0.32	8149.00	200	2b	Slide 20' @ 170L
12:19	12:47	0.47	8223.00	200	2a	Rotate
12:47	12:55	0.13	8223.00	200	5	C/S
12:55	13:28	0.55	8318.00	200	2a	Rotate
13:28	13:35	0.12	8318.00	200	5	C/S
13:35	13:57	0.37	8339.00	200	2b	Slide 21' @ 180
13:57	14:23	0.43	8413.00	200	2a	Rotate
14:23	14:33	0.17	8413.00	200	5	C/S
14:33	15:04	0.52	8508.00	200	2a	Rotate
15:04	15:11	0.12	8508.00	200	5	C/S
15:11	15:40	0.48	8603.00	200	2a	Rotate
15:40	15:47	0.12	8603.00	200	5	C/S
15:47	16:16	0.48	8698.00	200	2a	Rotate
16:16	16:30	0.23	8698.00	200	5	C/S
16:30	16:42	0.20	8708.00	200	2b	Slide 10 @ 45L
16:42	17:07	0.42	8792.00	200	2a	Rotate
17:07	17:15	0.13	8792.00	200	5	C/S
17:15	17:44	0.48	8887.00	200	2a	Rotate
17:44	17:51	0.12	8887.00	200	5	C/S

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
17:51	18:07	0.27	8900.00	200	2b	Slide 13' @ 90L
18:07	18:31	0.40	8982.00	200	2a	Rotate
18:31	18:41	0.17	8982.00	200	5	C/S
18:41	18:59	0.30	8998.00	200	2b	Slide 16' @ 135L
18:59	19:26	0.45	9076.00	200	2a	Rotate
19:26	19:36	0.17	9076.00	200	5	C/S
19:36	19:53	0.28	9092.00	200	2b	Slide 16' @ 170L
19:53	20:26	0.55	9171.00	200	2a	Rotate
20:26	20:36	0.17	9171.00	200	5	C/S
20:36	21:05	0.48	9266.00	200	2a	Rotate
21:05	21:15	0.17	9266.00	200	5	C/S
21:15	21:44	0.48	9361.00	200	2a	Rotate
21:44	21:54	0.17	9361.00	200	5	C/S
21:54	22:09	0.25	9377.00	200	2b	Slide 16' @ 170R
22:09	22:32	0.38	9456.00	200	2a	Rotate
22:32	22:41	0.15	9456.00	200	5	C/S
22:41	23:25	0.73	9551.00	200	2a	Rotate
23:25	23:36	0.18	9551.00	200	7	Rig Service
23:36	23:51	0.25	9551.00	200	5	C/S
23:51	00:00	0.15	9559.00	200	2b	Slide 8' @ 160L

COMMENTS

Daily: \$21,125; Total: \$161,725

PTB: 42.00'

GTB: 44.73'

RTB: 66.14'

RFO: 117.13 deg

WELL INFORMATION

Daily Drilling Report

Customer : Anadarko Petroleum Corp.

Well Name : Cannon 14N-W3HZ

Job Number : CA-XX-0009484815

CURRENT STATUS Report # 8

Date : 07/29/2012

Total Depth (ft) : 11088.00

Depth Last 24 (ft) : 1529.00

Hole Size (in) : 6.125

Casing Depth (ft) :

Casing Diameter (in) :

Casing ID (in) :

Customer Reps : Stan Walters

Customer Reps : Travis Lourance

SDS Reps : Jessy Kysar

SDS Reps : Jordan Timbs

SDS Reps :

LAST SURVEY
LAST FORMATION TOP

Depth (ft)	Inc (deg)	Azi (deg)	TVD (ft)	Displ (ft)	Direct(deg)	Formation Name	MD Top (ft)	TVD Top(ft)
11046.00	89.81	177.40	6942.71	4386.13	177.93			

BHA SUMMARY

Well:9484815 Run:0200 - 6140.73 ft;Bit, Motor, Reamer, Collar, MWD, Collar, Stabilizer, MWD, Sub, Drill Pipe, Sub, Sub, Drill Pipe, Drill Pipe

MUD DATA

Type	Weight (ppg)	FV (spqt)	PV (cP)	YP (lbf2)	Gels 10 sec	10 Min	30 sec	30 min	(lbf2)

Flowline	Weight Out (ppg)	FV Out (spqt)	Solids (%)	Sand (%)	Oil (%)	Fluid Loss (mptm)	pH

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
00:00	00:13	0.22	9571.00	200	2b	Slide 12' @ 160L
00:13	00:37	0.40	9646.00	200	2a	Rotate
00:37	00:57	0.33	9646.00	200	5	C/S
00:57	01:12	0.25	9646.00	200	90	Swap Pumps
01:12	01:30	0.30	9666.00	200	2b	Slide 20' @ 160L
01:30	01:53	0.38	9741.00	200	2a	Rotate

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
01:53	02:02	0.15	9741.00	200	5	C/S
02:02	02:36	0.57	9836.00	200	2a	Rotate
02:36	02:45	0.15	9836.00	200	5	C/S
02:45	03:06	0.35	9850.00	200	2b	Slide 14' @ 150L
03:06	03:31	0.42	9931.00	200	2a	Rotate
03:31	03:40	0.15	9931.00	200	5	C/S
03:40	04:07	0.45	10026.00	200	2a	Rotate
04:07	04:15	0.13	10026.00	200	5	C/S
04:15	04:48	0.55	10121.00	200	2a	Rotate
04:48	04:58	0.17	10121.00	200	5	C/S
04:58	05:20	0.37	10133.00	200	2b	Slide 12' @ 90R
05:20	05:43	0.38	10216.00	200	2a	Rotate
05:43	05:52	0.15	10216.00	200	5	C/S
05:52	06:20	0.47	10311.00	200	2a	Rotate
06:20	06:28	0.13	10311.00	200	5	C/S
06:28	06:41	0.22	10321.00	200	2a	Rotate
06:41	07:04	0.38	10331.00	200	2b	Slide 10' @ HS
07:04	07:26	0.37	10406.00	200	2a	Rotate
07:26	07:36	0.17	10406.00	200	5	C/S
07:36	07:41	0.08	10419.00	200	2a	Rotate
07:41	08:03	0.37	10431.00	200	2b	Slide 12' @ HS
08:03	08:08	0.08	10438.00	200	2a	Rotate
08:08	08:13	0.08	10438.00	200	5	Check Shot
08:13	08:22	0.15	10470.00	200	2a	Rotate
08:22	08:28	0.10	10470.00	200	5	Check Shot
08:28	08:37	0.15	10501.00	200	2a	Rotate
08:37	08:50	0.22	10501.00	200	5	C/S
08:50	09:04	0.23	10533.00	200	2a	Rotate
09:04	09:10	0.10	10533.00	200	5	Check Shot
09:10	09:22	0.20	10565.00	200	2a	Rotate
09:22	09:30	0.13	10565.00	200	5	Check Shot
09:30	09:38	0.13	10597.00	200	2a	Rotate
09:38	09:48	0.17	10597.00	200	10	C/S
09:48	09:52	0.07	10607.00	200	2a	Rotate
09:52	10:11	0.32	10619.00	200	2b	Slide 12' @ HS
10:11	10:32	0.35	10692.00	200	2a	Rotate
10:32	10:44	0.20	10692.00	200	5	C/S
10:44	11:13	0.48	10787.00	200	2a	Rotate
11:13	11:20	0.12	10787.00	200	5	C/S
11:20	11:48	0.47	10882.00	200	2a	Rotate
11:48	11:54	0.10	10882.00	200	5	C/S
11:54	12:30	0.60	10978.00	200	2a	Rotate
12:30	12:38	0.13	10978.00	200	5	C/S

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
12:38	13:06	0.47	11073.00	200	2a	Rotate
13:06	13:13	0.12	11073.00	200	5	C/S
13:13	13:22	0.15	11088.00	200	2a	Rotate to TD
13:22	13:33	0.18	11088.00	200	5	Final Survey
13:33	15:00	1.45	11088.00	200	3a	Circulating and Reaming
15:00	20:00	5.00	11088.00	200	6b	Trip out
20:00	20:10	0.17	11088.00	200	6e	Trip out
20:10	20:45	0.58	11088.00	200	30d	MWD down load
20:45	22:00	1.25	11088.00	200	6c	Lay down tools
22:00	00:00	2.00	11088.00	200	90	Reamer Run

COMMENTS

Daily: \$21,125; Total: \$182,850

PTB: 42.00'

GTB: 44.73'

RTB: 66.14'

RFO: 117.13 deg

Section 5

Contents: Graphics

WELL INFORMATION

End of Well Report

Customer : Anadarko Petroleum Corp.
Well Name : Cannon 14N-W3HZ
Job Number : CA-XX-0009484815

DIRECTIONAL DRILLERS

Driller 1 : Jessy Kysar
Driller 2 : Jordan Timbs

Driller 3 :
Driller 4 :

JOB OBJECTIVES

JOB SUMMARY

BHA SUMMARY

BHA CHART

Run #	Bit #	Motor #	Hole Size (in)	MD In (ft)	MD Out (ft)	TVD In (ft)	TVD Out (ft)	Inc In (deg)	Inc Out (deg)	Azi In (deg)	Azi Out (deg)	Time Drilling (hr)	Time Circ (hr)
0100	1	1		814.00	7303.00	813.99	6924.98	0.28	85.64	278.84	179.27	37.65	14.81
0200	3	0		7303.00	11088.00	6924.98	6942.91	85.64	89.64	179.27	177.24	26.23	7.13

MOTOR RUN SUMMARY

MOTOR CHART

Motor #	Manufacturer	Model	Lobe	OD (in)	Gauge (in)	Bend (deg)	DLS (Ori) (°/100')	ROP (Ori) (fph)	ROP (Rot) (fph)
1	Sperry Drilling	SperryDrill	6:7	6.75		1.83	7.03	50.403	276.91
0	Sperry Drilling	GeoForce	4:5	5		1.50	1.52	60.006	165.058

BIT RUN SUMMARY

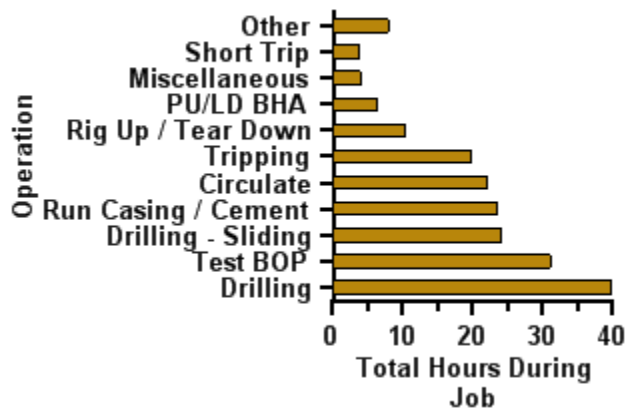
BIT CHART

Bit #	Manufacturer	Style	Gauge (in)	Gauge Length (in)	Nozzles	TFA (in2)	Dull Grades I O D L B G O R	Footage (ft)	Time Drilling (hr)	ROP (fph)
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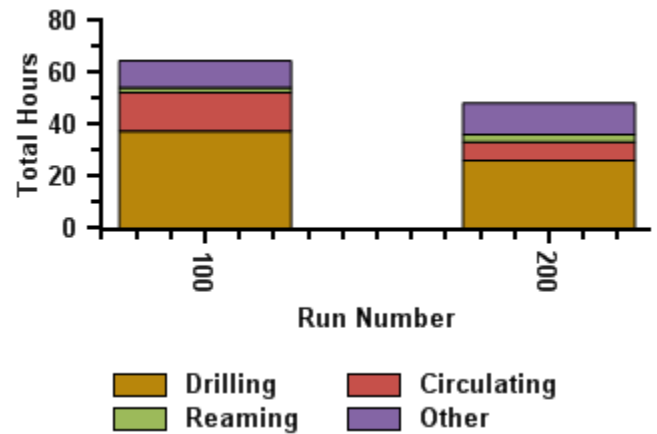
BIT CHART

Bit #	Manufacturer	Style	Gauge (in)	Gauge Length (in)	Nozzles	TFA (in ²)	Dull Grades I O D L B G O R	Footage (ft)	Time Drilling (hr)	ROP (fph)
1	Baker	DP505F	8.75	0.17	5x15	0.86	1-2-WT-G-X-I-CT-TD	6489.00	37.65	172.35
3	Other	SDi513	6.13	0.15	5x14	0.75	2-3-WT-A-X-I-LT-TD	3785.00	26.23	144.30

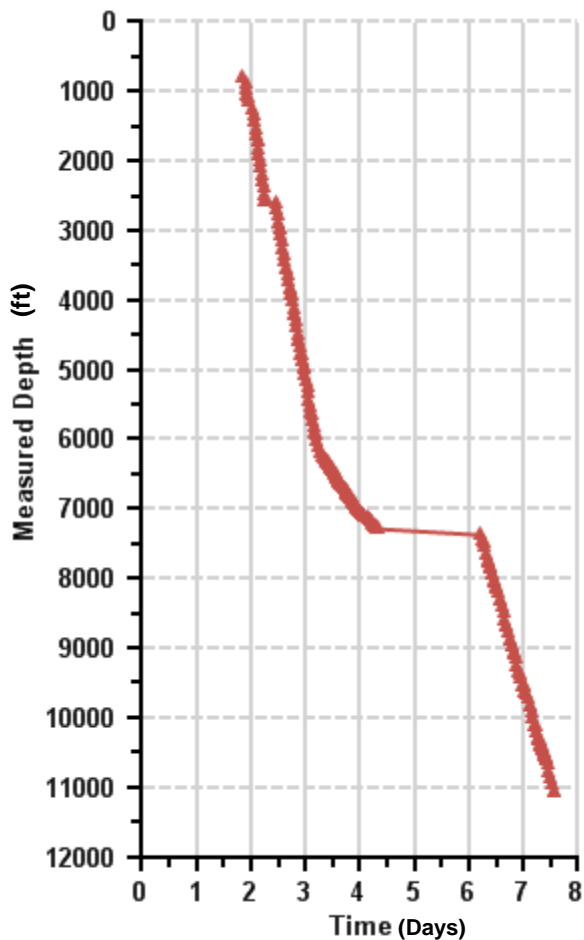
HOURS BY OPERATION



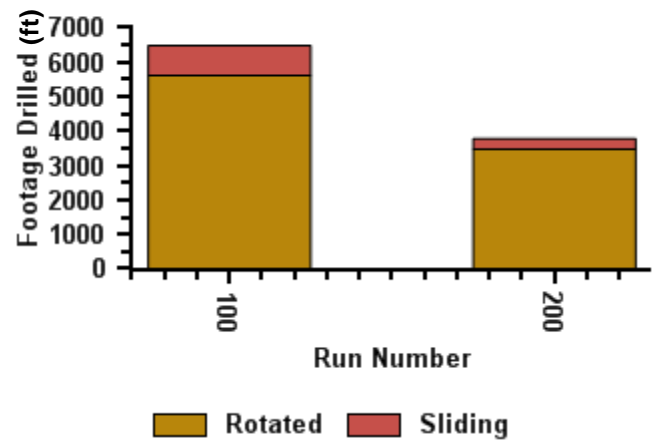
HOURS PER RUN



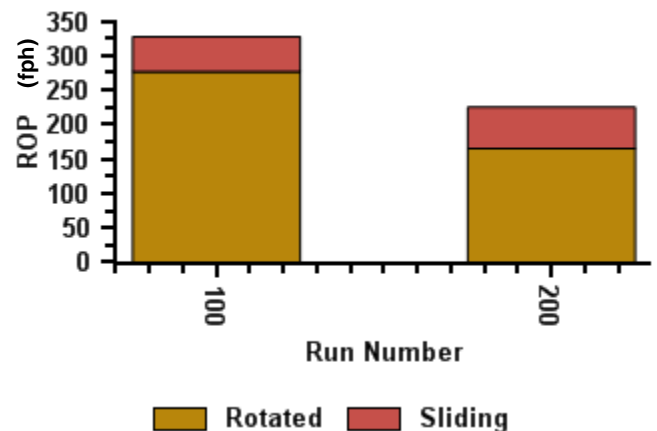
DAY vs DEPTH



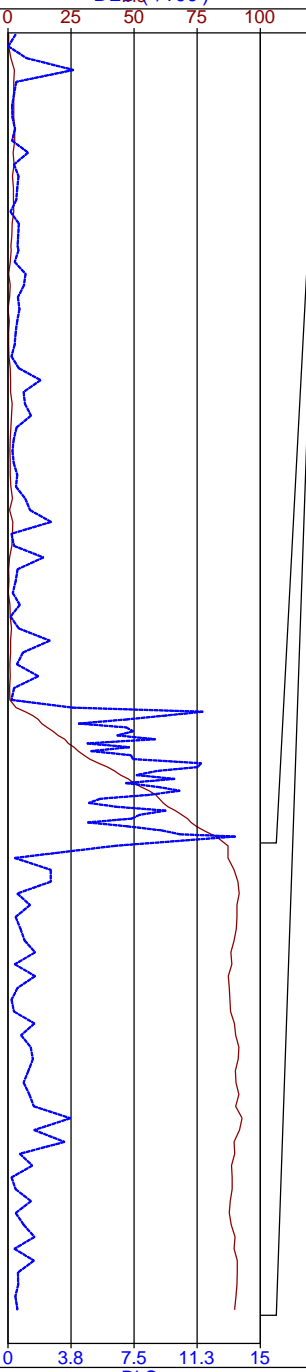
FOOTAGE PER RUN



AVERAGE ROP PER RUN



SURFACE HOLE SECTION**INTERMEDIATE HOLE SECTION 1****INTERMEDIATE HOLE SECTION 2****PRODUCTION HOLE SECTION**

MD (ft)	Formation Name MD/TVD (ft)	<div>Inclination (deg) — DLS (°/100') —</div>	Bit Data	Drilling Parameters	Motor	BHA Stabilizers	Comments	Run # @ MD (ft)
814.00	Niobrara 6942.9/6814.8		DP505F 5x15 172.35 fph 37.65 hr	WOB 15.56 kib RPM 52.78 FLO 569.46 gpm SPP 3375.56 psig	6.75" SperryDrill 6/7 1.83 deg		Probe to Bit = 50' Bit to Gamma = 52.62' Rev per gal = 0.29 Flow Range= 300-600 gal Bit to Bend= 3.03' Float OD= 3.5" RFO= 123.4 Theoretical Build Rates= 23.00	#100 @ 814.0
1314.00								
1814.00			SDi513 5x14 144.3 fph 26.23 hr	WOB 12.94 kib RPM 65.48 FLO 277.45 gpm SPP 3519.23 psig	5" GeoForce 4/5 1.5 deg	5.88 in@ 77.93 ft	Probe to Bit = 42.00' Bit to Gamma = 44.73' Bit to Res = 66.14' Rev per gal = 1.06 Float OD = 3.25 Flow Range = 150-300 gal Bit to Bend = 5.1 RFO = 117.13	#200 @ 7303.0
2314.00								
2814.00								
3314.00								
3814.00								
4314.00								
4814.00								
5314.00								
5814.00								
6314.00								
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11314.00								