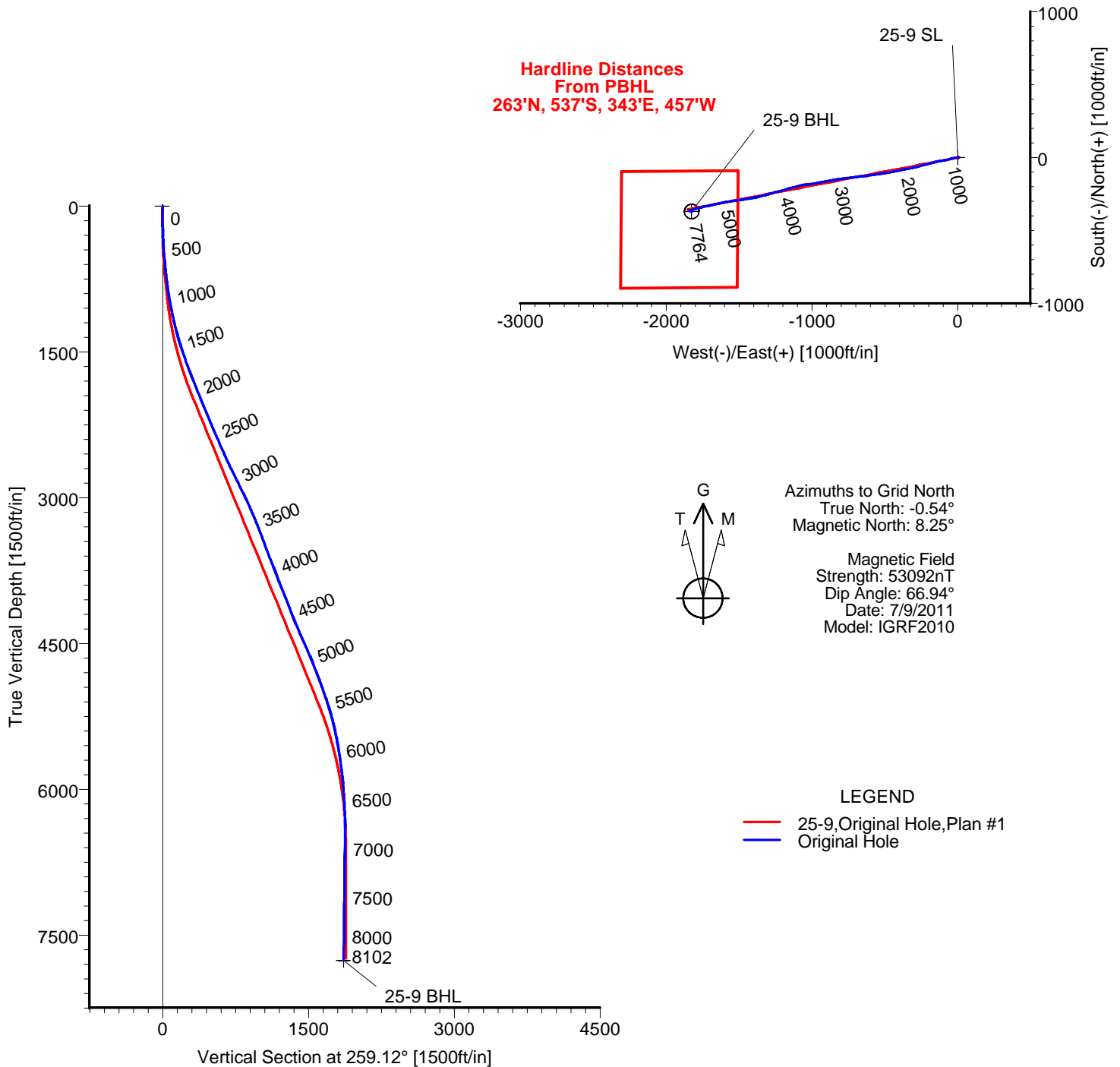


ANADARKO PETROLEUM

Field: Weld County, CO
Site: REI 8-9 Pad
Well: 25-9
Wellpath: Original Hole



TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
25-9 SL	0.00	0.00	0.00	40°14'28.252N	104°39'41.658W	Point
25-9 BHL	7764.49	-370.05	-1826.04	40°14'24.766N	104°40'05.250W	Circle (Radius: 50)

Wellpath: (25-9/Original Hole)

ALLIS CHALMERS DIRECTIONAL DRILLING SERVICES
911 Regional Park Drive Houston, Texas 77060
Phone: 713-934-9600 Fax: 713-934-9067

Created By: Ashley Wischnewsky

Date: 6/5/2011

Archer

Survey Report

Company: ANADARKO PETROLEUM				Date: 6/5/2011		Time: 08:39:24		Page: 1		
Field: Weld County, CO				Co-ordinate(NE) Reference: Well: 25-9, Grid North						
Site: REI 8-9 Pad				Vertical (TVD) Reference: 4816'GL+13'KB 4829.0						
Well: 25-9				Section (VS) Reference: Well (0.00N,0.00E,259.12Azi)						
Wellpath: Original Hole				Survey Calculation Method: Minimum Curvature				Db: Sybase		
Field: Weld County, CO										
Map System:US State Plane Coordinate System 1983				Map Zone: Colorado, Northern Zone						
Geo Datum:GRS 1980				Coordinate System: Well Centre						
Sys Datum:Mean Sea Level				Geomagnetic Model: IGRF2010						
Site: REI 8-9 Pad										
Site Position:		Northing: 1331813.57 ft		Latitude: 40 14 28.252 N						
From: Geographic		Easting: 3234093.02 ft		Longitude: 104 39 41.245 W						
Position Uncertainty: 0.00 ft				North Reference: Grid						
Ground Level: 4816.00 ft				Grid Convergence: 0.54 deg						
Well: 25-9										
				Slot Name: 25-9						
Well Position: +N/-S -0.26 ft		Northing: 1331813.31 ft		Latitude: 40 14 28.252 N						
+E/-W -32.03 ft		Easting : 3234060.99 ft		Longitude: 104 39 41.658 W						
Position Uncertainty: 0.00 ft										
Wellpath: Original Hole				Drilled From: Surface						
Current Datum: 4816'GL+13'KB		Height:4829.00 ft		Tie-on Depth: 0.00 ft						
Magnetic Data: 7/9/2011				Above System Datum: Mean Sea Level						
Field Strength: 53092 nT				Declination: 8.79 deg						
Vertical Section: Depth From (TVD)		+N/-S		Mag Dip Angle: 66.94 deg						
ft		ft		+E/-W		Direction				
				ft		deg				
0.00		0.00		0.00		259.12				
Survey Program for Definitive Wellpath										
Date: 6/5/2011		Validated: No		Version: 0						
Actual From To		Survey		Toolcode		Tool Name				
ft ft										
49.00 8057.00		Survey #1 (49.00-8057.00)		MWD		Std MWD				
8102.00 8102.00		Survey #2 (8102.00-8102.00)		Project		Projection				
Survey										
MD	Incl	Azim	TVD	+N/-S	+E/-W	VS	DLS	Build	Turn	Tool/Comment
ft	deg	deg	ft	ft	ft	ft	deg/100ft	deg/100ft	deg/100ft	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	TIE LINE
49.00	0.90	118.80	49.00	-0.19	0.34	-0.30	1.84	1.84	0.00	MWD
140.00	0.20	162.10	139.99	-0.68	1.01	-0.87	0.84	-0.77	47.58	MWD
229.00	1.80	252.40	228.98	-1.25	-0.27	0.50	2.04	1.80	101.46	MWD
319.00	3.30	298.40	318.90	-0.45	-3.90	3.91	2.69	1.67	51.11	MWD
426.00	4.40	262.60	425.67	0.49	-10.68	10.39	2.42	1.03	-33.46	MWD
517.00	5.10	264.70	516.35	-0.33	-18.17	17.90	0.79	0.77	2.31	MWD
607.00	5.10	249.60	606.00	-2.10	-25.90	25.83	1.49	0.00	-16.78	MWD
698.00	6.20	252.10	696.56	-5.02	-34.37	34.70	1.24	1.21	2.75	MWD
758.00	7.40	251.70	756.14	-7.23	-41.12	41.75	2.00	2.00	-0.67	MWD
832.00	7.70	257.00	829.49	-9.84	-50.48	51.43	1.02	0.41	7.16	MWD
923.00	9.00	254.50	919.53	-13.11	-63.28	64.61	1.48	1.43	-2.75	MWD
1014.00	10.60	257.30	1009.20	-16.85	-78.30	80.07	1.83	1.76	3.08	MWD
1105.00	12.00	259.10	1098.43	-20.48	-95.76	97.90	1.59	1.54	1.98	MWD
1195.00	13.00	258.80	1186.30	-24.22	-114.87	117.38	1.11	1.11	-0.33	MWD
1286.00	14.10	259.80	1274.76	-28.17	-135.82	138.70	1.24	1.21	1.10	MWD
1377.00	16.20	257.00	1362.60	-32.99	-159.10	162.47	2.44	2.31	-3.08	MWD
1468.00	18.10	254.50	1449.55	-39.62	-185.10	189.25	2.24	2.09	-2.75	MWD
1558.00	19.50	257.30	1534.75	-46.66	-213.23	218.20	1.85	1.56	3.11	MWD
1649.00	19.70	255.60	1620.47	-53.82	-242.90	248.69	0.66	0.22	-1.87	MWD
1740.00	20.80	255.20	1705.85	-61.76	-273.38	280.12	1.22	1.21	-0.44	MWD
1831.00	22.70	258.00	1790.37	-69.54	-306.18	313.80	2.38	2.09	3.08	MWD

Survey Report

Company: ANADARKO PETROLEUM

Field: Weld County, CO

Site: REI 8-9 Pad

Well: 25-9

Wellpath: Original Hole

Date: 6/5/2011

Time: 08:39:24

Page: 2

Co-ordinate(NE) Reference: Well: 25-9, Grid North

Vertical (TVD) Reference: 4816'GL+13'KB 4829.0

Section (VS) Reference: Well (0.00N,0.00E,259.12Azi)

Survey Calculation Method: Minimum Curvature

Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
1922.00	21.80	258.40	1874.59	-76.58	-339.90	348.25	1.00	-0.99	0.44	MWD
2012.00	21.60	257.00	1958.21	-83.67	-372.42	381.51	0.62	-0.22	-1.56	MWD
2103.00	22.20	261.20	2042.65	-90.07	-405.73	415.44	1.84	0.66	4.62	MWD
2194.00	22.50	260.90	2126.82	-95.45	-439.91	450.02	0.35	0.33	-0.33	MWD
2285.00	23.20	258.00	2210.68	-101.94	-474.64	485.35	1.46	0.77	-3.19	MWD
2376.00	23.60	259.80	2294.19	-108.89	-510.10	521.48	0.90	0.44	1.98	MWD
2467.00	23.80	262.30	2377.52	-114.57	-546.22	558.03	1.13	0.22	2.75	MWD
2557.00	23.20	262.30	2460.06	-119.38	-581.79	593.86	0.67	-0.67	0.00	MWD
2648.00	23.90	261.90	2543.48	-124.38	-617.80	630.17	0.79	0.77	-0.44	MWD
2739.00	25.00	264.70	2626.32	-128.75	-655.20	667.73	1.76	1.21	3.08	MWD
2830.00	26.40	263.70	2708.31	-132.75	-694.46	707.03	1.61	1.54	-1.10	MWD
2921.00	27.10	263.00	2789.57	-137.50	-735.14	747.88	0.84	0.77	-0.77	MWD
3012.00	26.60	262.30	2870.76	-142.75	-775.90	788.90	0.65	-0.55	-0.77	MWD
3103.00	26.20	260.90	2952.27	-148.66	-815.93	829.32	0.81	-0.44	-1.54	MWD
3193.00	24.30	260.50	3033.67	-154.86	-853.81	867.70	2.12	-2.11	-0.44	MWD
3284.00	24.10	259.80	3116.67	-161.24	-890.57	904.99	0.38	-0.22	-0.77	MWD
3375.00	22.90	258.80	3200.13	-167.97	-926.22	941.28	1.39	-1.32	-1.10	MWD
3466.00	21.50	260.20	3284.38	-174.25	-960.02	975.66	1.64	-1.54	1.54	MWD
3556.00	21.30	262.60	3368.17	-179.16	-992.49	1008.46	1.00	-0.22	2.67	MWD
3647.00	19.90	262.60	3453.35	-183.28	-1024.24	1040.42	1.54	-1.54	0.00	MWD
3738.00	21.10	261.90	3538.59	-187.59	-1055.81	1072.24	1.35	1.32	-0.77	MWD
3829.00	21.10	256.60	3623.50	-193.69	-1087.97	1104.97	2.10	0.00	-5.82	MWD
3920.00	22.20	255.60	3708.08	-201.76	-1120.55	1138.49	1.27	1.21	-1.10	MWD
4011.00	19.90	254.50	3793.00	-210.18	-1152.13	1171.09	2.56	-2.53	-1.21	MWD
4101.00	21.80	252.80	3877.10	-219.21	-1182.86	1202.97	2.22	2.11	-1.89	MWD
4192.00	22.50	255.20	3961.39	-228.66	-1215.84	1237.14	1.26	0.77	2.64	MWD
4282.00	21.80	252.80	4044.75	-238.00	-1248.45	1270.93	1.27	-0.78	-2.67	MWD
4373.00	20.60	253.80	4129.59	-247.46	-1279.97	1303.67	1.38	-1.32	1.10	MWD
4464.00	20.90	256.30	4214.68	-255.77	-1311.11	1335.82	1.03	0.33	2.75	MWD
4555.00	23.20	256.60	4299.02	-263.77	-1344.32	1369.94	2.53	2.53	0.33	MWD
4646.00	23.80	257.30	4382.48	-271.96	-1379.67	1406.20	0.73	0.66	0.77	MWD
4737.00	24.60	261.20	4465.48	-278.90	-1416.30	1443.49	1.96	0.88	4.29	MWD
4827.00	23.60	261.00	4547.64	-284.58	-1452.61	1480.21	1.11	-1.11	-0.22	MWD
4918.00	23.40	261.20	4631.09	-290.20	-1488.46	1516.48	0.24	-0.22	0.22	MWD
5009.00	20.90	260.50	4715.37	-295.64	-1522.33	1550.77	2.76	-2.75	-0.77	MWD
5100.00	21.80	262.30	4800.12	-300.58	-1555.09	1583.87	1.22	0.99	1.98	MWD
5190.00	20.10	262.60	4884.17	-304.82	-1586.98	1615.99	1.89	-1.89	0.33	MWD
5281.00	19.90	257.70	4969.69	-310.13	-1617.63	1647.09	1.85	-0.22	-5.38	MWD
5372.00	18.80	257.30	5055.55	-316.65	-1647.06	1677.22	1.22	-1.21	-0.44	MWD
5463.00	17.20	254.90	5142.09	-323.38	-1674.36	1705.30	1.94	-1.76	-2.64	MWD
5554.00	16.00	261.60	5229.30	-328.72	-1699.76	1731.25	2.48	-1.32	7.36	MWD
5644.00	14.30	259.10	5316.17	-332.63	-1722.95	1754.76	2.02	-1.89	-2.78	MWD
5735.00	12.30	254.90	5404.73	-337.28	-1743.34	1775.67	2.44	-2.20	-4.62	MWD
5826.00	10.70	250.30	5493.90	-342.66	-1760.66	1793.68	2.03	-1.76	-5.05	MWD
5917.00	9.50	259.50	5583.50	-346.87	-1775.99	1809.54	2.21	-1.32	10.11	MWD
6007.00	8.40	256.60	5672.40	-349.75	-1789.69	1823.54	1.32	-1.22	-3.22	MWD
6098.00	7.90	252.80	5762.48	-353.14	-1802.13	1836.40	0.81	-0.55	-4.18	MWD
6189.00	6.70	247.50	5852.74	-357.02	-1813.01	1847.81	1.51	-1.32	-5.82	MWD
6280.00	5.10	260.90	5943.26	-359.69	-1821.91	1857.05	2.31	-1.76	14.73	MWD
6371.00	4.00	259.10	6033.97	-360.93	-1829.02	1864.27	1.22	-1.21	-1.98	MWD
6461.00	3.20	252.80	6123.80	-362.27	-1834.50	1869.91	0.99	-0.89	-7.00	MWD
6552.00	2.60	244.70	6214.68	-363.90	-1838.80	1874.43	0.80	-0.66	-8.90	MWD
6643.00	1.90	232.40	6305.61	-365.70	-1841.86	1877.78	0.93	-0.77	-13.52	MWD

Survey Report

Company: ANADARKO PETROLEUM

Field: Weld County, CO

Site: REI 8-9 Pad

Well: 25-9

Wellpath: Original Hole

Date: 6/5/2011

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Page: 3

Co-ordinate(NE) Reference: Well: 25-9, Grid North

Vertical (TVD) Reference: 4816'GL+13'KB 4829.0

Section (VS) Reference: Well (0.00N,0.00E,259.12Azi)

Survey Calculation Method: Minimum Curvature

Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
6737.00	0.90	104.10	6399.59	-366.84	-1842.38	1878.50	2.72	-1.06	-136.49	MWD
6915.00	0.70	94.20	6577.58	-367.26	-1839.94	1876.18	0.14	-0.11	-5.56	MWD
7097.00	0.70	97.00	6759.56	-367.47	-1837.72	1874.05	0.02	0.00	1.54	MWD
7278.00	0.70	106.20	6940.55	-367.92	-1835.56	1872.01	0.06	0.00	5.08	MWD
7460.00	0.50	99.10	7122.54	-368.35	-1833.71	1870.28	0.12	-0.11	-3.90	MWD
7642.00	0.70	90.00	7304.53	-368.48	-1831.82	1868.44	0.12	0.11	-5.00	MWD
7823.00	0.50	110.40	7485.52	-368.75	-1829.97	1866.68	0.16	-0.11	11.27	MWD
8005.00	1.10	111.40	7667.50	-369.67	-1827.60	1864.52	0.33	0.33	0.55	MWD
8057.00	0.90	100.50	7719.49	-369.92	-1826.73	1863.72	0.53	-0.38	-20.96	MWD
8102.00	0.90	100.50	7764.49	-370.05	-1826.04	1863.06	0.00	0.00	0.00	PROJECTED to TD