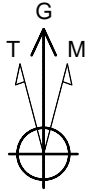


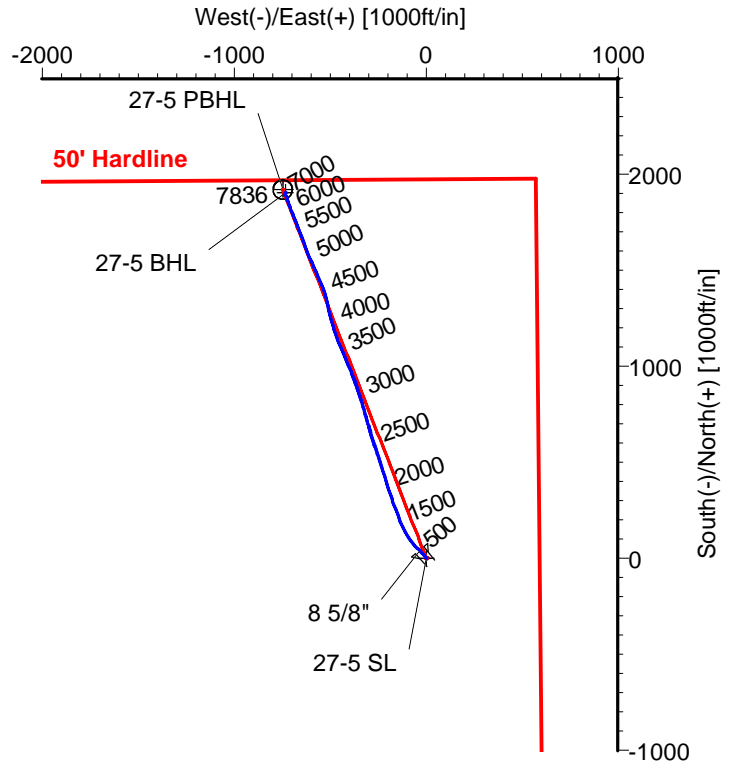
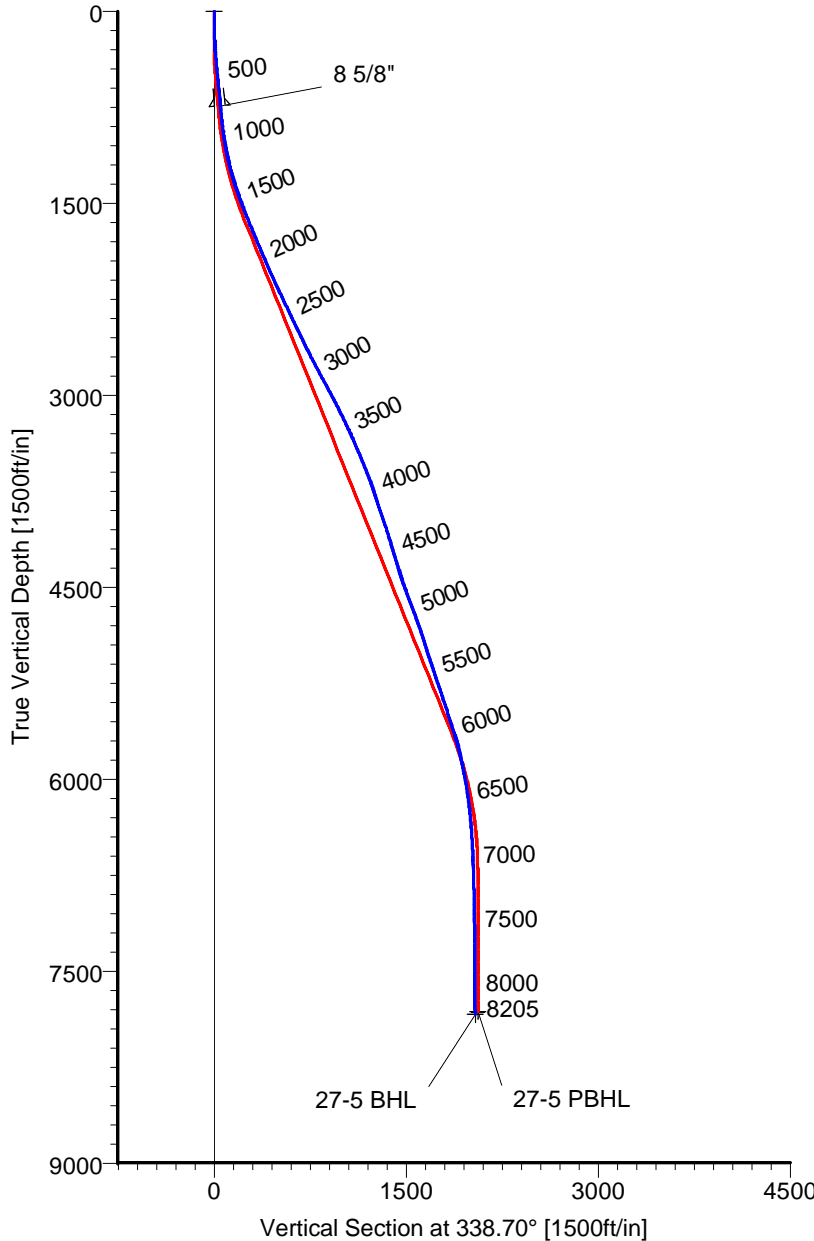
ANADARKO PETROLEUM

Field: Weld County, CO
Site: REI 8-5 Pad
Well: 27-5
Wellpath: Original Hole



Azimuths to Grid North
True North: -0.53°
Magnetic North: 8.29°

Magnetic Field
Strength: 53113nT
Dip Angle: 66.95°
Date: 05/18/2011
Model: IGRF2010



CASING DETAILS

No.	TVD	MD	Name	Size
1	738.69	741.00	8 5/8"	8.625

LEGEND

- 27-5, Original Hole, Plan #1
- Original Hole

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
27-5 SL	0.00	0.00	0.00	40°15'22.450N	104°40'47.377W	Point
27-5 PBHL	7813.00	1919.28	-748.30	40°15'41.484N	104°40'56.800W	Circle (Radius: 50)
27-5 BHL	7835.64	1903.65	-733.44	40°15'41.329N	104°40'56.611W	Point

Wellpath: (27-5/Original Hole)

Created By: Ivonne Gonzalez

Date: 05/23/2011

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

Archer

ARCHER

Survey Report

Company: ANADARKO PETROLEUM Field: Weld County, CO Site: REI 8-5 Pad Well: 27-5 Wellpath: Original Hole	Date: 05/23/2011 Co-ordinate(NE) Reference: Vertical (TVD) Reference: Section (VS) Reference: Survey Calculation Method:	Time: 09:18:27 Well: 27-5, Grid North 4853'GL+15'KB 4868.0 Well (0.00N,0.00E,338.70Azi) Minimum Curvature	Page: 1 Db: Adapti
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Field: Weld County, CO Map System: US State Plane Coordinate System 1983 Geo Datum: GRS 1980 Sys Datum: Mean Sea Level	Map Zone: Colorado, Northern Zone Coordinate System: Well Centre Geomagnetic Model: IGRF2010
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Site: REI 8-5 Pad Centered on 27-5 Site Position: From: Geographic Position Uncertainty: 0.00 ft Ground Level: 4863.00 ft	Northing: 1337249.71 ft Easting: 3228914.28 ft Latitude: 40 15 22.450 N Longitude: 104 40 47.377 W North Reference: Grid Grid Convergence: 0.53 deg
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Well: 27-5 Well Position: +N/-S 0.00 ft +E/-W 0.00 ft Position Uncertainty: 0.00 ft	Slot Name: 27-5 Well Position: +N/-S 0.00 ft +E/-W 0.00 ft Position Uncertainty: 0.00 ft
---	--

Wellpath: Original Hole Current Datum: 4853'GL+15'KB Magnetic Data: 05/18/2011 Field Strength: 53113 nT Vertical Section: Depth From (TVD) ft	Drilled From: Surface Tie-on Depth: 0.00 ft Above System Datum: Mean Sea Level Declination: 8.82 deg Mag Dip Angle: 66.95 deg +N/-S ft +E/-W ft Direction deg
0.00	0.00

Survey Program for Definitive Wellpath			
Date: 05/23/2011	Validated: No	Version: 0	
Actual From ft	To ft	Survey	Toolcode Tool Name
49.00	8160.00	Survey #1 (49.00-8160.00)	MWD Std MWD
8205.00	8205.00	Survey #2 (8205.00-8205.00)	Project Projection

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
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	338.70	49.00	0.36	-0.14	0.38	1.84	1.84	0.00	MWD
140.00	1.60	316.50	139.98	1.95	-1.27	2.28	0.92	0.77	-24.40	MWD
229.00	2.50	314.80	228.92	4.22	-3.51	5.20	1.01	1.01	-1.91	MWD
319.00	4.60	320.10	318.74	8.37	-7.21	10.42	2.36	2.33	5.89	MWD
426.00	5.60	320.80	425.32	15.70	-13.27	19.45	0.94	0.93	0.65	MWD
516.00	6.00	319.70	514.86	22.70	-19.08	28.08	0.46	0.44	-1.22	MWD
607.00	5.80	317.90	605.37	29.73	-25.24	36.87	0.30	-0.22	-1.98	MWD
696.00	5.80	317.60	693.92	36.39	-31.29	45.27	0.03	0.00	-0.34	MWD
741.00	5.61	320.28	738.69	39.76	-34.23	49.48	0.73	-0.43	5.95	8 5/8"
743.00	5.60	320.40	740.69	39.91	-34.35	49.67	0.73	-0.41	6.16	MWD
833.00	6.70	312.00	830.17	46.81	-41.05	58.53	1.58	1.22	-9.33	MWD
924.00	7.70	312.30	920.45	54.46	-49.51	68.73	1.10	1.10	0.33	MWD
1015.00	9.70	315.80	1010.40	64.06	-59.36	81.25	2.27	2.20	3.85	MWD
1105.00	11.80	318.60	1098.81	76.40	-70.74	96.88	2.40	2.33	3.11	MWD
1196.00	14.40	323.60	1187.44	92.49	-83.61	116.55	3.11	2.86	5.49	MWD
1287.00	16.00	328.50	1275.26	112.30	-96.88	139.82	2.25	1.76	5.38	MWD
1378.00	18.10	331.70	1362.26	135.44	-110.13	166.19	2.53	2.31	3.52	MWD
1468.00	19.90	336.20	1447.35	161.77	-122.94	195.38	2.58	2.00	5.00	MWD
1559.00	21.60	339.40	1532.45	191.62	-135.09	227.60	2.24	1.87	3.52	MWD
1650.00	22.50	338.30	1616.79	223.48	-147.42	261.76	1.09	0.99	-1.21	MWD
1741.00	22.00	339.00	1701.02	255.57	-159.97	296.22	0.62	-0.55	0.77	MWD

ARCHER

Survey Report

Company: ANADARKO PETROLEUM	Date: 05/23/2011	Time: 09:18:27	Page: 2
Field: Weld County, CO	Co-ordinate(NE) Reference: Well: 27-5, Grid North		
Site: REI 8-5 Pad	Vertical (TVD) Reference: 4853'GL+15'KB 4868.0		
Well: 27-5	Section (VS) Reference: Well (0.00N,0.00E,338.70Azi)		
Wellpath: Original Hole	Survey Calculation Method: Minimum Curvature	Db: Adapti	

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
1832.00	23.10	340.10	1785.06	288.27	-172.15	331.11	1.29	1.21	1.21	MWD
1922.00	23.40	340.40	1867.75	321.71	-184.16	366.62	0.36	0.33	0.33	MWD
2013.00	23.80	343.60	1951.14	356.34	-195.40	402.98	1.47	0.44	3.52	MWD
2104.00	23.90	341.90	2034.37	391.48	-206.31	439.68	0.76	0.11	-1.87	MWD
2195.00	24.10	341.90	2117.51	426.66	-217.81	476.64	0.22	0.22	0.00	MWD
2286.00	25.70	341.90	2200.04	463.08	-229.72	514.89	1.76	1.76	0.00	MWD
2377.00	25.50	343.30	2282.11	500.60	-241.47	554.12	0.70	-0.22	1.54	MWD
2467.00	25.90	342.20	2363.21	537.87	-253.05	593.05	0.69	0.44	-1.22	MWD
2559.00	26.00	339.70	2445.94	575.91	-266.19	633.27	1.19	0.11	-2.72	MWD
2649.00	25.50	342.20	2527.00	612.86	-278.96	672.33	1.33	-0.56	2.78	MWD
2740.00	26.00	344.30	2608.97	650.71	-290.34	711.73	1.14	0.55	2.31	MWD
2831.00	27.60	344.00	2690.19	690.18	-301.55	752.58	1.76	1.76	-0.33	MWD
2921.00	28.00	344.70	2769.80	730.60	-312.87	794.35	0.57	0.44	0.78	MWD
3012.00	28.30	343.60	2850.04	771.90	-324.60	837.08	0.66	0.33	-1.21	MWD
3103.00	28.70	342.90	2930.01	813.48	-337.11	880.37	0.57	0.44	-0.77	MWD
3194.00	28.00	341.00	3010.10	854.56	-350.49	923.50	1.25	-0.77	-2.09	MWD
3285.00	26.70	341.50	3090.92	894.15	-363.94	965.27	1.45	-1.43	0.55	MWD
3376.00	26.00	338.70	3172.47	932.12	-377.67	1005.63	1.57	-0.77	-3.08	MWD
3467.00	25.20	339.70	3254.54	968.87	-391.63	1044.95	1.00	-0.88	1.10	MWD
3558.00	23.60	337.60	3337.41	1003.89	-405.30	1082.54	2.00	-1.76	-2.31	MWD
3648.00	23.60	337.60	3419.88	1037.20	-419.03	1118.56	0.00	0.00	0.00	MWD
3739.00	22.50	335.90	3503.62	1069.94	-433.08	1154.17	1.41	-1.21	-1.87	MWD
3830.00	21.60	337.60	3587.96	1101.32	-446.57	1188.31	1.21	-0.99	1.87	MWD
3921.00	20.20	338.00	3672.97	1131.37	-458.84	1220.76	1.55	-1.54	0.44	MWD
4012.00	18.10	338.30	3758.93	1159.08	-469.96	1250.61	2.31	-2.31	0.33	MWD
4101.00	18.70	343.60	3843.39	1185.61	-479.10	1278.66	2.00	0.67	5.96	MWD
4193.00	18.70	343.60	3930.53	1213.91	-487.43	1308.04	0.00	0.00	0.00	MWD
4285.00	18.30	345.00	4017.77	1242.01	-495.33	1337.09	0.65	-0.43	1.52	MWD
4375.00	17.90	346.80	4103.32	1269.12	-502.14	1364.83	0.76	-0.44	2.00	MWD
4466.00	16.40	345.00	4190.27	1295.15	-508.66	1391.45	1.75	-1.65	-1.98	MWD
4557.00	17.40	348.90	4277.35	1320.91	-514.61	1417.61	1.66	1.10	4.29	MWD
4647.00	16.50	346.10	4363.44	1346.52	-520.27	1443.53	1.35	-1.00	-3.11	MWD
4738.00	19.20	343.30	4450.05	1373.40	-527.67	1471.27	3.11	2.97	-3.08	MWD
4829.00	20.40	339.00	4535.67	1402.54	-537.66	1502.04	2.07	1.32	-4.73	MWD
4920.00	21.10	336.20	4620.77	1432.34	-549.95	1534.27	1.33	0.77	-3.08	MWD
5011.00	20.20	338.70	4705.93	1461.97	-562.27	1566.35	1.38	-0.99	2.75	MWD
5101.00	19.40	334.80	4790.61	1489.97	-574.28	1596.80	1.72	-0.89	-4.33	MWD
5192.00	18.30	336.90	4876.73	1516.79	-586.32	1626.16	1.42	-1.21	2.31	MWD
5283.00	17.10	334.80	4963.42	1542.03	-597.62	1653.79	1.49	-1.32	-2.31	MWD
5374.00	18.70	335.20	5050.01	1567.38	-609.44	1681.70	1.76	1.76	0.44	MWD
5465.00	18.10	339.00	5136.36	1593.82	-620.62	1710.39	1.47	-0.66	4.18	MWD
5556.00	18.70	342.90	5222.71	1620.97	-629.98	1739.08	1.50	0.66	4.29	MWD
5646.00	18.80	340.10	5307.94	1648.39	-639.16	1767.97	1.01	0.11	-3.11	MWD
5737.00	18.10	339.00	5394.26	1675.38	-649.22	1796.76	0.86	-0.77	-1.21	MWD
5828.00	17.90	337.30	5480.81	1701.47	-659.68	1824.88	0.62	-0.22	-1.87	MWD
5919.00	17.90	338.00	5567.40	1727.34	-670.31	1852.84	0.24	0.00	0.77	MWD
6010.00	17.40	334.40	5654.12	1752.58	-681.43	1880.39	1.32	-0.55	-3.96	MWD
6101.00	15.10	341.10	5741.49	1776.07	-691.15	1905.81	3.26	-2.53	7.36	MWD
6190.00	13.00	340.10	5827.82	1796.45	-698.32	1927.40	2.38	-2.36	-1.12	MWD
6282.00	11.30	339.40	5917.76	1814.62	-705.01	1946.76	1.85	-1.85	-0.76	MWD
6373.00	9.70	340.40	6007.23	1830.19	-710.72	1963.34	1.77	-1.76	1.10	MWD
6464.00	8.70	341.50	6097.06	1843.94	-715.47	1977.88	1.12	-1.10	1.21	MWD
6555.00	7.20	339.70	6187.18	1855.81	-719.64	1990.46	1.67	-1.65	-1.98	MWD

ARCHER

Survey Report

Company: ANADARKO PETROLEUM Field: Weld County, CO Site: REI 8-5 Pad Well: 27-5 Wellpath: Original Hole	Date: 05/23/2011 Co-ordinate(NE) Reference: Well: 27-5, Grid North Vertical (TVD) Reference: 4853'GL+15'KB 4868.0 Section (VS) Reference: Well (0.00N,0.00E,338.70Azi) Survey Calculation Method: Minimum Curvature Db: Adapti
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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
6645.00	5.60	339.40	6276.62	1865.22	-723.14	2000.49	1.78	-1.78	-0.33	MWD
6736.00	4.40	342.90	6367.27	1872.71	-725.73	2008.41	1.36	-1.32	3.85	MWD
6827.00	3.70	341.10	6458.04	1878.82	-727.70	2014.82	0.78	-0.77	-1.98	MWD
6963.00	2.10	335.20	6593.86	1885.24	-730.17	2021.69	1.20	-1.18	-4.34	MWD
7144.00	1.80	334.80	6774.76	1890.82	-732.77	2027.84	0.17	-0.17	-0.22	MWD
7326.00	1.10	324.30	6956.70	1894.82	-735.01	2032.38	0.41	-0.38	-5.77	MWD
7508.00	0.70	5.40	7138.68	1897.35	-735.92	2035.07	0.40	-0.22	22.58	MWD
7689.00	0.50	40.90	7319.67	1899.05	-735.30	2036.43	0.23	-0.11	19.61	MWD
7871.00	0.50	22.30	7501.66	1900.38	-734.48	2037.37	0.09	0.00	-10.22	MWD
8052.00	0.50	38.80	7682.65	1901.73	-733.69	2038.34	0.08	0.00	9.12	MWD
8160.00	0.90	358.40	7790.65	1902.94	-733.42	2039.37	0.57	0.37	-37.41	MWD
8182.36	0.90	358.40	7813.00	1903.29	-733.43	2039.70	0.00	0.00	0.00	27-5 PBHL
8205.00	0.90	358.40	7835.64	1903.65	-733.44	2040.04	0.00	0.00	0.00	27-5 BHL

Targets

Name	Description Dip.	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<---- Latitude ----> Deg Min Sec			<--- Longitude ---> Deg Min Sec		
27-5 SL			0.00	0.00	0.00	1337249.71	3228914.28	40	15	22.450 N	104	40	47.377 W
27-5 PBHL			7813.00	1919.28	-748.30	1339169.00	3228165.99	40	15	41.484 N	104	40	56.800 W
-Circle (Radius: 50)													
27-5 BHL			7835.64	1903.65	-733.44	1339153.36	3228180.84	40	15	41.329 N	104	40	56.611 W

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
741.00	738.69	8.625	9.875	8 5/8"