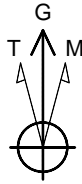


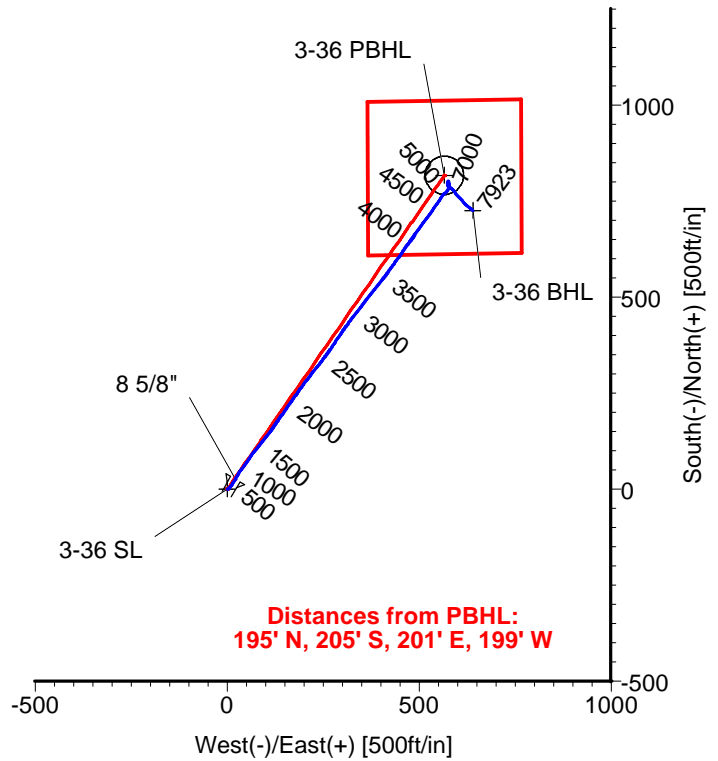
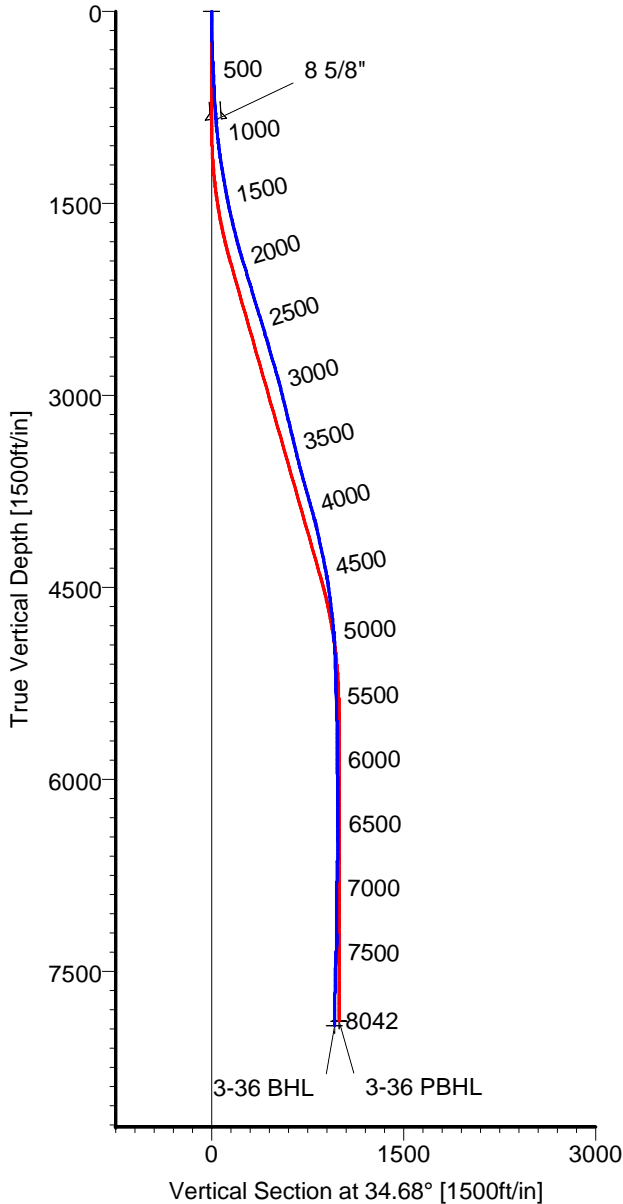
ANADARKO PETROLEUM

Field: Weld County, CO
Site: Carma 18-36 Pad
Well: 3-36
Wellpath: Original Hole



Azimuths to Grid North
True North: -0.35°
Magnetic North: 8.59°

Magnetic Field
Strength: 53030nT
Dip Angle: 66.84°
Date: 07/09/2011
Model: IGRF2010



CASING DETAILS

No.	TVD	MD	Name	Size
1	843.17	844.00	8 5/8"	8.625

LEGEND

— 3-36, Original Hole, Plan #2
— Original Hole

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
3-36 SL	0.00	0.00	0.00	40°11'08.920N	104°57'20.174W	Point
3-36 PBHL	7892.00	817.09	565.36	40°11'16.960N	104°57'12.825W	Circle (Radius: 50)
3-36 BHL	7922.84	725.04	640.72	40°11'16.046N	104°57'11.861W	Point

Wellpath: (3-36/Original Hole)

Created By: Ivonne Gonzalez

Date: 07/27/2011

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: Carma 18-36 Pad Well: 3-36 Wellpath: Original Hole	Date: 07/27/2011 Co-ordinate(NE) Reference: Vertical (TVD) Reference: Section (VS) Reference: Survey Calculation Method:	Time: 08:44:26 Well: 3-36, Grid North 4865'GL+15'KB 4880.0 Well (0.00N,0.00E,34.68Azi) 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: Carma 18-36 Pad Centered on 3-36 Site Position: From: Geographic Position Uncertainty: 0.00 ft Ground Level: 4880.00 ft	Northing: 1311003.20 ft Easting: 3152104.33 ft Latitude: 40 11 8.920 N Longitude: 104 57 20.174 W North Reference: Grid Grid Convergence: 0.35 deg
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Well: 3-36 Well Position: +N/-S 0.00 ft +E/-W 0.00 ft Position Uncertainty: 0.00 ft	Slot Name: 3-36 Latitude: 40 11 8.920 N Longitude: 104 57 20.174 W
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Wellpath: Original Hole Current Datum: 4865'GL+15'KB Magnetic Data: 07/09/2011 Field Strength: 53030 nT Vertical Section: Depth From (TVD) ft	Drilled From: Surface Tie-on Depth: 0.00 ft Above System Datum: Mean Sea Level Declination: 8.94 deg Mag Dip Angle: 66.84 deg Direction: deg
0.00	0.00

Survey Program for Definitive Wellpath			
Date: 07/27/2011	Validated: No	Version: 0	
Actual From	To	Survey	Toolcode
ft	ft		Tool Name
50.00	7997.00	Survey #1 (50.00-7997.00)	MWD
8042.00	8042.00	Survey #2 (8042.00-8042.00)	Project

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
50.00	0.70	123.20	50.00	-0.17	0.26	0.01	1.40	1.40	0.00	MWD
169.00	1.10	65.90	168.99	-0.10	1.91	1.00	0.78	0.34	-48.15	MWD
289.00	1.80	51.80	288.95	1.54	4.44	3.79	0.65	0.58	-11.75	MWD
397.00	2.50	36.40	396.87	4.48	7.17	7.77	0.83	0.65	-14.26	MWD
533.00	3.20	38.50	532.70	9.84	11.29	14.52	0.52	0.51	1.54	MWD
670.00	3.30	32.10	669.48	16.17	15.77	22.27	0.27	0.07	-4.67	MWD
799.00	3.30	28.30	798.27	22.59	19.50	29.67	0.17	0.00	-2.95	MWD
877.00	5.10	30.70	876.06	27.55	22.34	35.36	2.32	2.31	3.08	MWD
968.00	6.20	29.00	966.61	35.32	26.78	44.29	1.22	1.21	-1.87	MWD
1058.00	7.10	33.50	1056.01	44.21	32.21	54.68	1.15	1.00	5.00	MWD
1150.00	8.80	36.00	1147.12	54.65	39.49	67.40	1.89	1.85	2.72	MWD
1241.00	9.20	33.20	1237.00	66.36	47.56	81.64	0.65	0.44	-3.08	MWD
1331.00	9.50	36.00	1325.80	78.39	55.87	96.25	0.61	0.33	3.11	MWD
1422.00	10.50	36.70	1415.42	91.12	65.24	112.05	1.11	1.10	0.77	MWD
1513.00	12.10	39.90	1504.65	105.08	76.31	129.83	1.89	1.76	3.52	MWD
1603.00	12.80	38.80	1592.54	120.09	88.61	149.17	0.82	0.78	-1.22	MWD
1694.00	13.40	37.40	1681.17	136.32	101.33	169.76	0.75	0.66	-1.54	MWD
1785.00	14.30	36.00	1769.52	153.79	114.34	191.53	1.06	0.99	-1.54	MWD
1876.00	15.80	34.60	1857.40	173.08	127.98	215.15	1.70	1.65	-1.54	MWD
1967.00	17.10	36.00	1944.67	194.11	142.88	240.92	1.49	1.43	1.54	MWD
2058.00	17.10	35.30	2031.65	215.85	158.47	267.67	0.23	0.00	-0.77	MWD

ARCHER

Survey Report

Company: ANADARKO PETROLEUM	Date: 07/27/2011	Time: 08:44:26	Page: 2
Field: Weld County, CO	Co-ordinate(NE) Reference:	Well: 3-36, Grid North	
Site: Carma 18-36 Pad	Vertical (TVD) Reference:	4865'GL+15'KB 4880.0	
Well: 3-36	Section (VS) Reference:	Well (0.00N,0.00E,34.68Azi)	
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
2148.00	17.20	34.60	2117.65	237.60	173.68	294.21	0.25	0.11	-0.78	MWD
2239.00	16.50	35.60	2204.74	259.18	188.84	320.59	0.83	-0.77	1.10	MWD
2330.00	16.50	36.70	2291.99	280.05	204.09	346.42	0.34	0.00	1.21	MWD
2421.00	17.20	38.50	2379.09	300.94	220.18	372.76	0.96	0.77	1.98	MWD
2512.00	17.10	38.50	2466.04	321.94	236.89	399.54	0.11	-0.11	0.00	MWD
2602.00	17.20	36.70	2552.04	342.97	253.08	426.04	0.60	0.11	-2.00	MWD
2693.00	15.80	34.20	2639.29	364.00	268.08	451.87	1.72	-1.54	-2.75	MWD
2784.00	16.20	33.90	2726.77	384.79	282.13	476.95	0.45	0.44	-0.33	MWD
2875.00	16.00	34.20	2814.20	405.70	296.26	502.19	0.24	-0.22	0.33	MWD
2965.00	14.80	36.70	2900.96	425.17	310.10	526.08	1.52	-1.33	2.78	MWD
3056.00	13.90	35.60	2989.12	443.38	323.41	548.63	1.03	-0.99	-1.21	MWD
3147.00	13.40	38.80	3077.56	460.48	336.38	570.07	1.00	-0.55	3.52	MWD
3238.00	14.10	38.50	3165.95	477.38	349.89	591.65	0.77	0.77	-0.33	MWD
3329.00	13.70	36.00	3254.28	494.77	363.12	613.48	0.79	-0.44	-2.75	MWD
3419.00	14.10	40.60	3341.65	511.72	376.52	635.04	1.31	0.44	5.11	MWD
3510.00	13.40	38.50	3430.04	528.38	390.30	656.59	0.94	-0.77	-2.31	MWD
3601.00	13.90	37.80	3518.47	545.27	403.56	678.03	0.58	0.55	-0.77	MWD
3692.00	15.30	37.10	3606.53	563.49	417.50	700.94	1.55	1.54	-0.77	MWD
3783.00	15.80	34.60	3694.20	583.26	431.78	725.32	0.92	0.55	-2.75	MWD
3874.00	15.70	36.40	3781.78	603.37	446.12	750.02	0.55	-0.11	1.98	MWD
3964.00	16.00	33.90	3868.36	623.47	460.27	774.59	0.83	0.33	-2.78	MWD
4055.00	15.00	36.70	3956.05	643.32	474.30	798.90	1.37	-1.10	3.08	MWD
4146.00	13.00	34.90	4044.35	661.16	487.20	820.91	2.25	-2.20	-1.98	MWD
4237.00	12.30	36.00	4133.14	677.39	498.75	840.83	0.81	-0.77	1.21	MWD
4327.00	12.30	37.80	4221.07	692.72	510.26	859.99	0.43	0.00	2.00	MWD
4418.00	11.60	35.30	4310.10	707.85	521.49	878.82	0.96	-0.77	-2.75	MWD
4509.00	10.20	33.20	4399.46	722.06	531.19	896.02	1.60	-1.54	-2.31	MWD
4600.00	8.30	34.90	4489.27	734.19	539.36	910.65	2.11	-2.09	1.87	MWD
4690.00	7.40	36.70	4578.43	744.16	546.54	922.93	1.04	-1.00	2.00	MWD
4781.00	6.90	34.60	4668.72	753.36	553.14	934.26	0.62	-0.55	-2.31	MWD
4872.00	5.80	34.90	4759.16	761.63	558.88	944.32	1.21	-1.21	0.33	MWD
4962.00	4.80	44.10	4848.77	768.07	564.10	952.58	1.45	-1.11	10.22	MWD
5053.00	2.80	49.70	4939.57	772.24	568.45	958.49	2.23	-2.20	6.15	MWD
5144.00	2.50	44.80	5030.47	775.09	571.54	962.59	0.41	-0.33	-5.38	MWD
5235.00	2.10	36.00	5121.40	777.84	573.92	966.21	0.59	-0.44	-9.67	MWD
5326.00	1.80	25.50	5212.35	780.48	575.51	969.29	0.51	-0.33	-11.54	MWD
5417.00	1.60	17.70	5303.31	782.98	576.52	971.91	0.34	-0.22	-8.57	MWD
5507.00	1.60	4.00	5393.27	785.43	576.99	974.19	0.42	0.00	-15.22	MWD
5598.00	1.60	0.90	5484.24	787.97	577.09	976.34	0.10	0.00	-3.41	MWD
5689.00	0.90	20.90	5575.21	789.91	577.37	978.09	0.90	-0.77	21.98	MWD
5825.00	0.70	1.50	5711.20	791.74	577.77	979.83	0.25	-0.15	-14.26	MWD
5961.00	0.90	349.60	5847.19	793.62	577.60	981.28	0.19	0.15	-8.75	MWD
6097.00	1.20	339.40	5983.16	796.00	576.91	982.84	0.26	0.22	-7.50	MWD
6233.00	1.10	353.10	6119.14	798.63	576.25	984.63	0.21	-0.07	10.07	MWD
6415.00	0.70	315.10	6301.12	801.15	575.25	986.14	0.38	-0.22	-20.88	MWD
6597.00	0.50	182.60	6483.11	801.15	574.43	985.66	0.61	-0.11	-72.80	MWD
6778.00	2.60	184.00	6664.04	796.26	574.11	981.46	1.16	1.16	0.77	MWD
6960.00	0.90	177.00	6845.94	790.71	573.90	976.78	0.94	-0.93	-3.85	MWD
7141.00	2.30	106.00	7026.88	788.29	577.46	976.82	1.20	0.77	-39.23	MWD
7323.00	3.90	142.90	7208.63	782.35	584.71	976.05	1.36	0.88	20.27	MWD
7414.00	6.50	139.40	7299.24	775.97	589.93	973.78	2.88	2.86	-3.85	MWD
7504.00	8.10	139.40	7388.51	767.29	597.37	970.87	1.78	1.78	0.00	MWD
7550.00	9.50	141.50	7433.97	761.86	601.84	968.95	3.12	3.04	4.57	MWD

ARCHER

Survey Report

Company: ANADARKO PETROLEUM Field: Weld County, CO Site: Carma 18-36 Pad Well: 3-36 Wellpath: Original Hole	Date: 07/27/2011 Co-ordinate(NE) Reference: Well: 3-36, Grid North Vertical (TVD) Reference: 4865'GL+15'KB 4880.0 Section (VS) Reference: Well (0.00N,0.00E,34.68Azi) 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
7595.00	9.30	139.70	7478.37	756.18	606.51	966.93	0.79	-0.44	-4.00	MWD
7641.00	8.10	138.00	7523.84	750.93	611.08	965.22	2.67	-2.61	-3.70	MWD
7686.00	7.00	135.50	7568.44	746.62	615.12	963.98	2.55	-2.44	-5.56	MWD
7731.00	6.20	133.00	7613.15	743.01	618.82	963.11	1.89	-1.78	-5.56	MWD
7777.00	5.80	130.90	7658.89	739.79	622.40	962.50	0.99	-0.87	-4.57	MWD
7868.00	5.50	130.20	7749.45	733.97	629.20	961.58	0.34	-0.33	-0.77	MWD
7997.00	4.40	126.00	7877.97	727.07	637.93	960.87	0.90	-0.85	-3.26	MWD
8011.07	4.40	126.00	7892.00	726.43	638.80	960.85	0.00	0.00	0.00	3-36 PBHL
8042.00	4.40	126.00	7922.84	725.04	640.72	960.79	0.00	0.00	0.00	3-36 BHL

Targets

Name	Description Dip.	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<---- Latitude ---->			<--- Longitude --->		
3-36 SL			0.00	0.00	0.00	1311003.20	3152104.33	40	11	8.920 N	104	57	20.174 W
3-36 PBHL			7892.00	817.09	565.36	1311820.29	3152669.68	40	11	16.960 N	104	57	12.825 W
-Circle (Radius: 50)													
3-36 BHL			7922.84	725.04	640.72	1311728.24	3152745.05	40	11	16.046 N	104	57	11.861 W