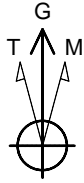


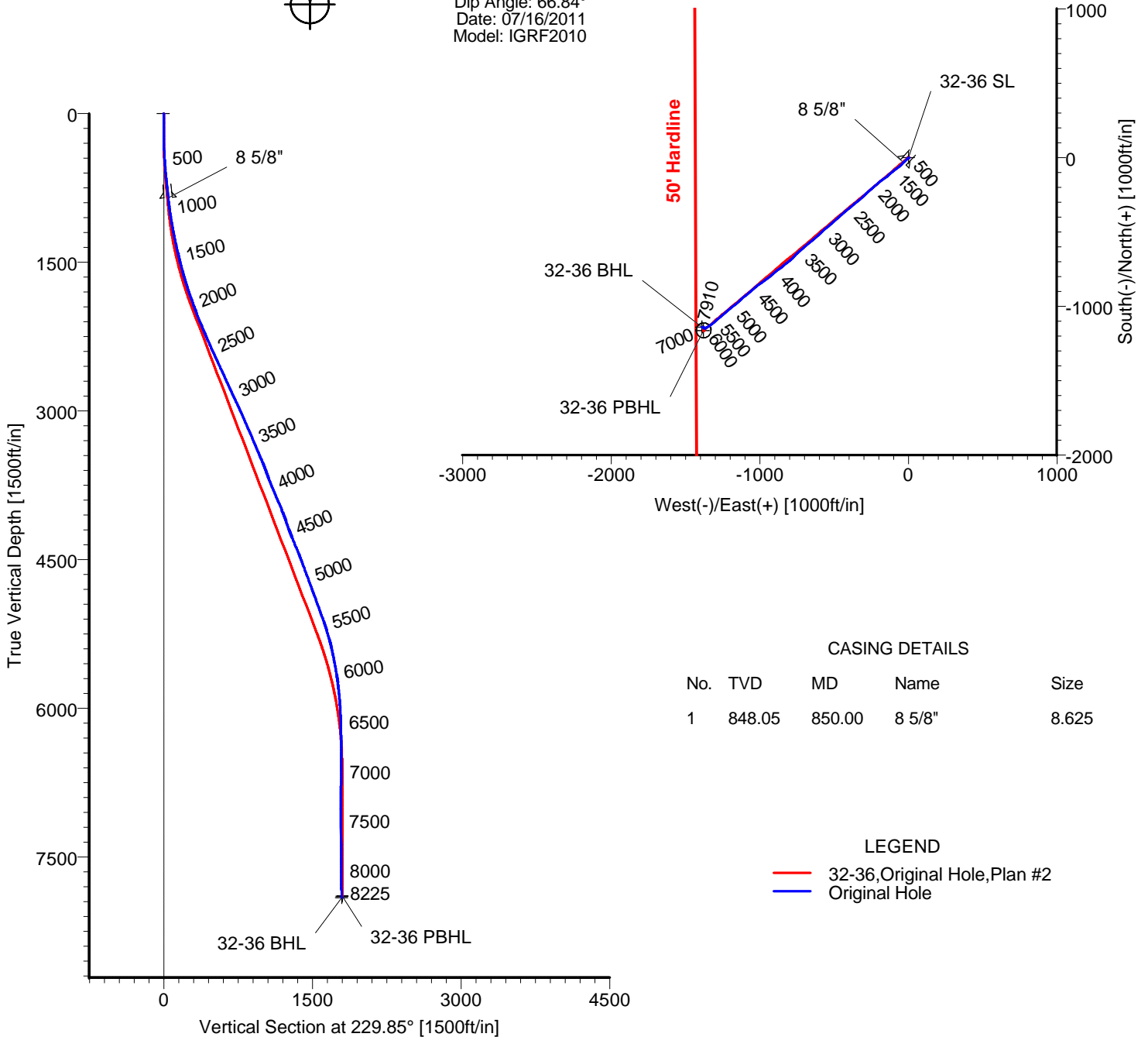
ANADARKO PETROLEUM

Field: Weld County, CO
 Site: Carma 18-36 Pad
 Well: 32-36
 Wellpath: Original Hole



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

Magnetic Field
 Strength: 53028nT
 Dip Angle: 66.84°
 Date: 07/16/2011
 Model: IGRF2010



CASING DETAILS

No.	TVD	MD	Name	Size
1	848.05	850.00	8 5/8"	8.625

LEGEND

- 32-36, Original Hole, Plan #2
- Original Hole

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
32-36 SL	0.00	0.00	0.00	$40^{\circ}11'08.711\text{N}$	$104^{\circ}57'19.899\text{W}$	Point
32-36 PBHL	7896.00	-1161.70	-1377.12	$40^{\circ}10'57.314\text{N}$	$104^{\circ}57'37.734\text{W}$	Circle (Radius: 50)
32-36 BHL	7909.95	-1138.61	-1389.73	$40^{\circ}10'57.543\text{N}$	$104^{\circ}57'37.894\text{W}$	Point

Wellpath: (32-36/Original Hole)

Created By: Ivonne Gonzalez

Date: 07/19/2011

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: 32-36 Wellpath: Original Hole	Date: 07/19/2011 Co-ordinate(NE) Reference: Vertical (TVD) Reference: Section (VS) Reference: Survey Calculation Method:	Time: 09:57:31 Well: 32-36, Grid North 4865'GL+15'KB 4880.0 Well (0.00N,0.00E,229.85Azi) 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

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: 32-36 Well Position: +N/-S -20.98 ft +E/-W 21.50 ft Position Uncertainty: 0.00 ft	Slot Name: 32-36 Well Position: +N/-S -20.98 ft +E/-W 21.50 ft Position Uncertainty: 0.00 ft Latitude: 40 11 8.711 N Longitude: 104 57 19.899 W
---	---

Wellpath: Original Hole Current Datum: 4865'GL+15'KB Magnetic Data: 07/16/2011 Field Strength: 53028 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 <table style="width: 100%;"> <tr> <td style="width: 25%;">0.00</td> <td style="width: 25%;">0.00</td> <td style="width: 25%;">0.00</td> <td style="width: 25%;">229.85</td> </tr> </table>	0.00	0.00	0.00	229.85
0.00	0.00	0.00	229.85		

Survey Program for Definitive Wellpath				
Date: 07/19/2011	Validated: No	Version: 0		
Actual From ft	To ft	Survey	Toolcode	Tool Name
51.00	8180.00	Survey #1 (51.00-8180.00)	MWD	Std MWD
8225.00	8225.00	Survey #2 (8225.00-8225.00)	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
51.00	1.10	154.10	51.00	-0.44	0.21	0.12	2.16	2.16	0.00	MWD
141.00	1.20	152.70	140.98	-2.05	1.02	0.54	0.12	0.11	-1.56	MWD
229.00	0.70	220.90	228.97	-3.28	1.09	1.28	1.30	-0.57	77.50	MWD
320.00	1.80	242.70	319.95	-4.36	-0.54	3.22	1.30	1.21	23.96	MWD
398.00	2.80	246.60	397.88	-5.67	-3.38	6.24	1.30	1.28	5.00	MWD
488.00	3.90	231.80	487.73	-8.44	-7.80	11.40	1.55	1.22	-16.44	MWD
579.00	4.90	228.00	578.46	-12.95	-13.12	18.38	1.14	1.10	-4.18	MWD
670.00	6.00	223.70	669.05	-18.99	-19.29	27.00	1.29	1.21	-4.73	MWD
761.00	6.00	226.90	759.55	-25.68	-26.05	36.47	0.37	0.00	3.52	MWD
805.00	6.00	224.10	803.31	-28.90	-29.33	41.06	0.67	0.00	-6.36	MWD
850.00	6.18	223.43	848.05	-32.35	-32.63	45.81	0.43	0.40	-1.50	8 5/8"
880.00	6.30	223.00	877.88	-34.73	-34.87	49.04	0.43	0.40	-1.42	MWD
970.00	7.90	224.10	967.18	-42.78	-42.54	60.10	1.78	1.78	1.22	MWD
1061.00	9.50	226.90	1057.13	-52.41	-52.38	73.82	1.82	1.76	3.08	MWD
1152.00	10.20	233.20	1146.79	-62.36	-64.31	89.37	1.41	0.77	6.92	MWD
1243.00	11.60	233.90	1236.15	-72.58	-78.16	106.54	1.55	1.54	0.77	MWD
1334.00	12.10	232.50	1325.21	-83.78	-93.11	125.19	0.63	0.55	-1.54	MWD
1424.00	13.40	234.60	1412.99	-95.56	-109.10	145.01	1.53	1.44	2.33	MWD
1515.00	14.40	226.90	1501.33	-109.40	-125.96	166.82	2.31	1.10	-8.46	MWD
1606.00	15.30	229.00	1589.29	-125.01	-143.28	190.13	1.15	0.99	2.31	MWD
1697.00	16.90	233.90	1676.72	-140.68	-163.03	215.33	2.31	1.76	5.38	MWD

ARCHER

Survey Report

Company: ANADARKO PETROLEUM	Date: 07/19/2011	Time: 09:57:31	Page: 2
Field: Weld County, CO	Co-ordinate(NE) Reference: Well: 32-36, Grid North		
Site: Carma 18-36 Pad	Vertical (TVD) Reference: 4865'GL+15'KB 4880.0		
Well: 32-36	Section (VS) Reference: Well (0.00N,0.00E,229.85Azi)		
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
1787.00	18.10	230.80	1762.56	-157.23	-184.44	242.36	1.69	1.33	-3.44	MWD
1878.00	19.50	229.40	1848.70	-176.05	-206.93	271.68	1.62	1.54	-1.54	MWD
1969.00	20.20	230.80	1934.30	-195.86	-230.63	302.58	0.93	0.77	1.54	MWD
2059.00	21.80	228.00	2018.32	-216.87	-255.10	334.82	2.10	1.78	-3.11	MWD
2150.00	21.80	228.00	2102.81	-239.48	-280.21	368.60	0.00	0.00	0.00	MWD
2241.00	22.50	228.30	2187.09	-262.37	-305.77	402.89	0.78	0.77	0.33	MWD
2332.00	23.80	231.50	2270.77	-285.39	-333.14	438.65	1.99	1.43	3.52	MWD
2423.00	23.60	228.70	2354.10	-308.84	-361.20	475.22	1.26	-0.22	-3.08	MWD
2514.00	24.80	231.10	2437.10	-332.85	-389.74	512.52	1.70	1.32	2.64	MWD
2604.00	25.30	228.00	2518.64	-357.57	-418.72	550.61	1.56	0.56	-3.44	MWD
2697.00	25.20	229.00	2602.75	-383.86	-448.43	590.27	0.47	-0.11	1.08	MWD
2788.00	24.00	228.00	2685.49	-408.95	-476.80	628.14	1.40	-1.32	-1.10	MWD
2879.00	25.00	227.60	2768.30	-434.30	-504.76	665.85	1.11	1.10	-0.44	MWD
2970.00	25.20	231.10	2850.71	-459.43	-534.04	704.43	1.65	0.22	3.85	MWD
3061.00	25.00	228.00	2933.12	-484.47	-563.40	743.02	1.46	-0.22	-3.41	MWD
3152.00	23.60	228.70	3016.05	-509.36	-591.38	780.46	1.57	-1.54	0.77	MWD
3242.00	24.00	227.30	3098.40	-533.66	-618.37	816.75	0.77	0.44	-1.56	MWD
3333.00	23.80	229.70	3181.60	-558.09	-645.97	853.60	1.09	-0.22	2.64	MWD
3424.00	23.40	232.20	3264.99	-581.04	-674.25	890.02	1.18	-0.44	2.75	MWD
3515.00	22.70	230.10	3348.73	-603.38	-702.00	925.64	1.19	-0.77	-2.31	MWD
3605.00	23.40	227.30	3431.54	-626.64	-728.46	960.86	1.45	0.78	-3.11	MWD
3696.00	22.50	223.40	3515.34	-651.55	-753.71	996.21	1.94	-0.99	-4.29	MWD
3787.00	20.10	224.80	3600.12	-675.30	-776.69	1029.10	2.70	-2.64	1.54	MWD
3877.00	21.10	231.50	3684.38	-696.36	-800.27	1060.70	2.84	1.11	7.44	MWD
3968.00	22.50	233.20	3768.87	-716.99	-827.03	1094.46	1.69	1.54	1.87	MWD
4059.00	23.60	232.90	3852.60	-738.40	-855.51	1130.03	1.22	1.21	-0.33	MWD
4150.00	22.30	231.50	3936.40	-760.14	-883.55	1165.48	1.55	-1.43	-1.54	MWD
4241.00	22.00	230.10	4020.68	-781.82	-910.14	1199.78	0.67	-0.33	-1.54	MWD
4332.00	19.20	231.80	4105.86	-802.01	-934.98	1231.79	3.15	-3.08	1.87	MWD
4422.00	19.70	236.00	4190.73	-819.65	-959.18	1261.66	1.65	0.56	4.67	MWD
4513.00	22.90	232.20	4275.50	-839.08	-985.90	1294.61	3.83	3.52	-4.18	MWD
4604.00	22.50	231.50	4359.45	-860.78	-1013.52	1329.71	0.53	-0.44	-0.77	MWD
4695.00	21.60	232.50	4443.80	-881.81	-1040.43	1363.85	1.07	-0.99	1.10	MWD
4786.00	20.80	227.60	4528.64	-902.90	-1065.65	1396.73	2.14	-0.88	-5.38	MWD
4876.00	20.60	229.70	4612.84	-923.92	-1089.53	1428.53	0.85	-0.22	2.33	MWD
4967.00	20.40	229.00	4698.07	-944.68	-1113.71	1460.39	0.35	-0.22	-0.77	MWD
5058.00	19.90	228.00	4783.50	-965.45	-1137.19	1491.73	0.67	-0.55	-1.10	MWD
5149.00	20.40	232.50	4868.94	-985.47	-1161.28	1523.06	1.79	0.55	4.95	MWD
5240.00	19.40	230.10	4954.50	-1004.82	-1185.46	1554.01	1.42	-1.10	-2.64	MWD
5330.00	20.10	230.80	5039.21	-1024.18	-1208.91	1584.42	0.82	0.78	0.78	MWD
5421.00	19.40	229.40	5124.86	-1043.90	-1232.50	1615.17	0.93	-0.77	-1.54	MWD
5512.00	17.10	229.70	5211.27	-1062.39	-1254.19	1643.67	2.53	-2.53	0.33	MWD
5603.00	15.80	229.70	5298.55	-1079.06	-1273.84	1669.44	1.43	-1.43	0.00	MWD
5694.00	13.20	227.30	5386.64	-1094.12	-1290.93	1692.21	2.93	-2.86	-2.64	MWD
5784.00	11.60	230.40	5474.54	-1106.86	-1305.45	1711.52	1.92	-1.78	3.44	MWD
5875.00	10.20	233.20	5563.90	-1117.52	-1318.95	1728.72	1.64	-1.54	3.08	MWD
5966.00	9.30	231.50	5653.58	-1126.92	-1331.16	1744.11	1.04	-0.99	-1.87	MWD
6057.00	7.70	244.10	5743.59	-1134.16	-1342.40	1757.37	2.69	-1.76	13.85	MWD
6148.00	6.00	237.80	5833.94	-1139.36	-1351.91	1767.99	2.04	-1.87	-6.92	MWD
6239.00	4.60	235.70	5924.54	-1143.95	-1358.95	1776.33	1.55	-1.54	-2.31	MWD
6330.00	3.30	237.40	6015.33	-1147.42	-1364.17	1782.56	1.43	-1.43	1.87	MWD
6420.00	1.90	246.20	6105.23	-1149.41	-1367.72	1786.56	1.61	-1.56	9.78	MWD
6602.00	1.00	294.80	6287.18	-1149.97	-1371.92	1790.13	0.80	-0.49	26.70	MWD

ARCHER

Survey Report

Company: ANADARKO PETROLEUM Field: Weld County, CO Site: Carma 18-36 Pad Well: 32-36 Wellpath: Original Hole	Date: 07/19/2011 Co-ordinate(NE) Reference: Well: 32-36, Grid North Vertical (TVD) Reference: 4865'GL+15'KB 4880.0 Section (VS) Reference: Well (0.00N,0.00E,229.85Azi) Survey Calculation Method: Minimum Curvature	Page: 3 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
6783.00	1.20	321.80	6468.15	-1147.81	-1374.53	1790.73	0.30	0.11	14.92	MWD
6965.00	1.10	326.00	6650.11	-1144.87	-1376.68	1790.48	0.07	-0.05	2.31	MWD
7146.00	0.50	8.60	6831.09	-1142.65	-1377.53	1789.70	0.45	-0.33	23.54	MWD
7328.00	0.40	334.50	7013.09	-1141.29	-1377.69	1788.94	0.15	-0.05	-18.74	MWD
7509.00	0.50	208.30	7194.08	-1141.41	-1378.34	1789.52	0.44	0.06	-69.72	MWD
7691.00	0.50	263.50	7376.08	-1142.20	-1379.50	1790.92	0.25	0.00	30.33	MWD
7873.00	0.90	296.50	7558.06	-1141.65	-1381.57	1792.14	0.30	0.22	18.13	MWD
8054.00	1.40	294.40	7739.03	-1140.11	-1384.85	1793.66	0.28	0.28	-1.16	MWD
8180.00	1.90	283.90	7864.97	-1138.97	-1388.28	1795.54	0.46	0.40	-8.33	MWD
8211.04	1.90	283.90	7896.00	-1138.72	-1389.28	1796.15	0.00	0.00	0.00	32-36 PBHL
8225.00	1.90	283.90	7909.95	-1138.61	-1389.73	1796.42	0.00	0.00	0.00	32-36 BHL

Targets

Name	Description Dip.	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<---- Latitude ---->			<--- Longitude --->		
32-36 SL			0.00	0.00	0.00	1310982.22	3152125.83	40	11	8.711 N	104	57	19.899 W
32-36 PBHL			7896.00	-1161.70	-1377.12	1309820.52	3150748.71	40	10	57.314 N	104	57	37.734 W
-Circle (Radius: 50)													
32-36 BHL			7909.95	-1138.61	-1389.73	1309843.61	3150736.10	40	10	57.543 N	104	57	37.894 W

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
850.00	848.05	8.625	9.875	8 5/8"