

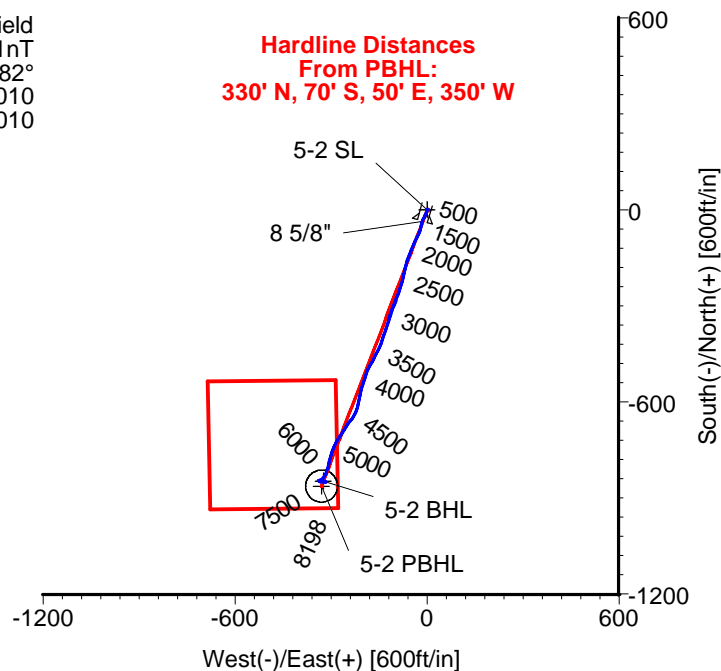
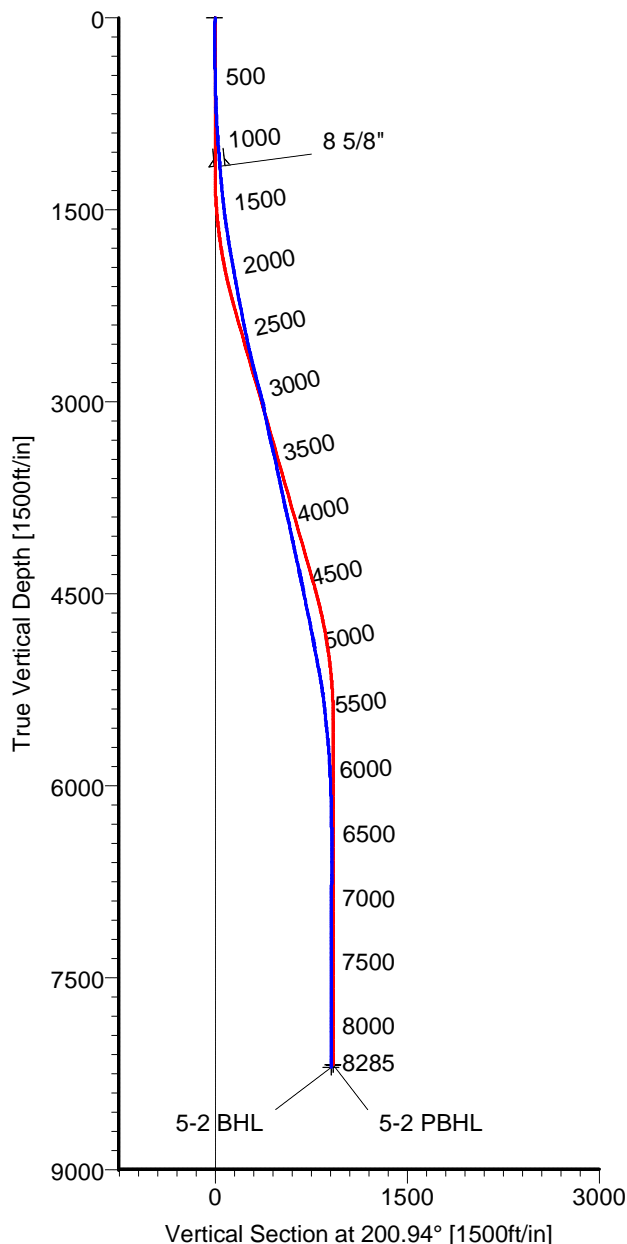
ANADARKO PETROLEUM

Field: Weld County, CO
Site: Jesser 18-2 Pad
Well: Brown 5-2
Wellpath: Original Hole



Azimuths to Grid North
True North: -0.49°
Magnetic North: 8.42°

Magnetic Field
Strength: 53061nT
Dip Angle: 66.82°
Date: 12/07/2010
Model: IGRF2010



CASING DETAILS

No.	TVD	MD	Name	Size
1	1158.83	1160.00	8 5/8"	8.625

LEGEND

- Brown 5-2, Original Hole, Plan #1
- Original Hole

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
5-2 SL	0.00	0.00	0.00	40°05'02.657N	104°44'58.481W	Point
5-2 PBHL	8181.00	-862.20	-329.93	40°04'54.164N	104°45'02.820W	Circle (Radius: 50)
5-2 BHL	8198.33	-847.54	-323.61	40°04'54.309N	104°45'02.737W	Point

Wellpath: (Brown 5-2/Original Hole)

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



**DIRECTIONAL
DRILLING SERVICES**

Allis-Chalmers Energy, Inc.

Survey Report

Company: ANADARKO PETROLEUM Field: Weld County, CO Site: Jesser 18-2 Pad Well: Brown 5-2 Wellpath: Original Hole	Date: 12/31/2010 Co-ordinate(NE) Reference: Vertical (TVD) Reference: Section (VS) Reference: Survey Calculation Method:	Time: 09:17:30 Well: Brown 5-2, Grid North 5144'GL+13'KB 5157.0 Well (0.00N,0.00E,200.94Azi) Minimum Curvature	Page: 1 Db: Sybase
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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: Jesser 18-2 Pad Centered on Jesser 21-2 Site Position: From: Geographic Position Uncertainty: 0.00 ft Ground Level: 5144.00 ft	Northing: 1274364.19 ft Easting: 3210048.09 ft Latitude: 40 5 2.663 N Longitude: 104 44 57.581 W North Reference: Grid Grid Convergence: 0.49 deg
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Well: Brown 5-2 Well Position: +N/-S -1.17 ft +E/-W -69.96 ft Position Uncertainty: 0.00 ft	Slot Name: 5-2 Latitude: 40 5 2.657 N Longitude: 104 44 58.481 W
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Wellpath: Original Hole Current Datum: 5144'GL+13'KB Magnetic Data: 12/07/2010 Field Strength: 53061 nT Vertical Section: Depth From (TVD) ft	Drilled From: Surface Tie-on Depth: 0.00 ft Above System Datum: Mean Sea Level Declination: 8.90 deg Mag Dip Angle: 66.82 deg Direction: deg
0.00	0.00

Survey Program for Definitive Wellpath				
Date: 12/31/2010	Validated: No	Version: 0		
Actual From ft	To ft	Survey	Toolcode	Tool Name
50.00	8240.00	Survey #1 (50.00-8240.00)	MWD	Std MWD
8285.00	8285.00	Survey #2 (8285.00-8285.00)	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
50.00	0.40	292.60	50.00	0.07	-0.16	-0.01	0.80	0.80	0.00	MWD
110.00	0.40	327.80	110.00	0.32	-0.47	-0.14	0.40	0.00	58.67	MWD
170.00	0.70	284.20	170.00	0.59	-0.93	-0.22	0.82	0.50	-72.67	MWD
230.00	0.70	322.90	229.99	0.97	-1.51	-0.37	0.77	0.00	64.50	MWD
291.00	0.20	52.20	290.99	1.34	-1.65	-0.66	1.19	-0.82	146.39	MWD
350.00	0.70	161.10	349.99	1.06	-1.45	-0.47	1.34	0.85	184.58	MWD
427.00	0.90	182.20	426.98	0.01	-1.32	0.46	0.46	0.26	27.40	MWD
518.00	1.80	195.50	517.96	-2.08	-1.73	2.56	1.04	0.99	14.62	MWD
608.00	1.40	180.10	607.92	-4.54	-2.11	5.00	0.65	-0.44	-17.11	MWD
699.00	2.30	196.60	698.87	-7.41	-2.64	7.86	1.14	0.99	18.13	MWD
790.00	2.80	203.00	789.78	-11.20	-4.03	11.90	0.63	0.55	7.03	MWD
881.00	3.70	206.50	880.63	-15.87	-6.20	17.04	1.01	0.99	3.85	MWD
972.00	4.00	205.80	971.43	-21.36	-8.90	23.13	0.33	0.33	-0.77	MWD
1062.00	4.80	205.80	1061.16	-27.58	-11.90	30.01	0.89	0.89	0.00	MWD
1115.00	4.80	198.40	1113.98	-31.68	-13.57	34.43	1.17	0.00	-13.96	MWD
1160.00	4.46	196.68	1158.83	-35.14	-14.66	38.06	0.82	-0.76	-3.82	8 5/8"
1194.00	4.20	195.20	1192.73	-37.61	-15.37	40.61	0.82	-0.75	-4.36	MWD
1285.00	5.30	199.10	1283.42	-44.79	-17.62	48.13	1.26	1.21	4.29	MWD
1376.00	5.80	192.80	1373.99	-53.25	-20.01	56.88	0.87	0.55	-6.92	MWD
1466.00	6.30	200.50	1463.49	-62.31	-22.75	66.32	1.06	0.56	8.56	MWD
1557.00	7.60	199.80	1553.82	-72.65	-26.53	77.33	1.43	1.43	-0.77	MWD

Allis-Chalmers Energy, Inc.

Survey Report

Company: ANADARKO PETROLEUM Field: Weld County, CO Site: Jesser 18-2 Pad Well: Brown 5-2 Wellpath: Original Hole	Date: 12/31/2010 Co-ordinate(NE) Reference: Well: Brown 5-2, Grid North Vertical (TVD) Reference: 5144'GL+13'KB 5157.0 Section (VS) Reference: Well (0.00N,0.00E,200.94Azi) Survey Calculation Method: Minimum Curvature Db: Sybase
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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
1648.00	8.60	208.20	1643.92	-84.31	-31.79	90.10	1.70	1.10	9.23	MWD
1739.00	9.00	204.40	1733.85	-96.78	-37.94	103.95	0.78	0.44	-4.18	MWD
1829.00	9.90	204.00	1822.63	-110.26	-44.00	118.71	1.00	1.00	-0.44	MWD
1920.00	10.60	204.70	1912.17	-125.01	-50.68	134.87	0.78	0.77	0.77	MWD
2011.00	10.00	198.10	2001.71	-140.13	-56.63	151.11	1.45	-0.66	-7.25	MWD
2102.00	10.40	197.70	2091.27	-155.46	-61.58	167.21	0.45	0.44	-0.44	MWD
2193.00	10.40	193.80	2180.78	-171.27	-66.04	183.56	0.77	0.00	-4.29	MWD
2283.00	11.10	188.90	2269.20	-187.71	-69.32	200.09	1.28	0.78	-5.44	MWD
2374.00	11.10	195.90	2358.50	-204.79	-73.07	217.38	1.48	0.00	7.69	MWD
2465.00	12.00	198.40	2447.66	-222.20	-78.46	235.56	1.13	0.99	2.75	MWD
2556.00	12.50	198.10	2536.58	-240.53	-84.50	254.85	0.55	0.55	-0.33	MWD
2647.00	13.40	196.30	2625.27	-260.01	-90.52	275.19	1.08	0.99	-1.98	MWD
2737.00	13.70	202.30	2712.77	-279.89	-97.50	296.24	1.60	0.33	6.67	MWD
2828.00	15.00	201.60	2800.93	-300.81	-105.92	318.79	1.44	1.43	-0.77	MWD
2919.00	15.00	198.10	2888.83	-322.95	-113.91	342.33	1.00	0.00	-3.85	MWD
3010.00	13.70	197.30	2976.99	-344.43	-120.78	364.85	1.45	-1.43	-0.88	MWD
3101.00	11.40	197.30	3065.81	-363.31	-126.66	384.58	2.53	-2.53	0.00	MWD
3191.00	11.40	196.30	3154.03	-380.34	-131.80	402.32	0.22	0.00	-1.11	MWD
3282.00	12.00	199.10	3243.14	-397.91	-137.42	420.74	0.91	0.66	3.08	MWD
3373.00	13.70	201.90	3331.86	-416.85	-144.53	440.97	1.99	1.87	3.08	MWD
3464.00	12.30	204.00	3420.53	-435.70	-152.50	461.43	1.62	-1.54	2.31	MWD
3555.00	12.30	208.60	3509.44	-453.07	-161.08	480.71	1.08	0.00	5.05	MWD
3646.00	12.80	210.00	3598.27	-470.31	-170.76	500.28	0.64	0.55	1.54	MWD
3736.00	11.60	206.00	3686.23	-487.08	-179.71	519.14	1.63	-1.33	-4.44	MWD
3827.00	11.80	202.30	3775.34	-503.91	-187.25	537.55	0.85	0.22	-4.07	MWD
3918.00	13.70	197.30	3864.10	-522.81	-193.99	557.61	2.41	2.09	-5.49	MWD
4008.00	12.10	199.10	3951.82	-541.90	-200.24	577.68	1.83	-1.78	2.00	MWD
4099.00	11.80	195.60	4040.85	-559.87	-205.87	596.47	0.86	-0.33	-3.85	MWD
4190.00	12.50	187.20	4129.82	-578.61	-209.60	615.30	2.09	0.77	-9.23	MWD
4281.00	12.30	193.50	4218.70	-597.80	-213.10	634.48	1.50	-0.22	6.92	MWD
4372.00	11.60	193.50	4307.73	-616.13	-217.50	653.17	0.77	-0.77	0.00	MWD
4462.00	12.80	207.20	4395.71	-633.80	-224.17	672.05	3.47	1.33	15.22	MWD
4553.00	12.10	216.30	4484.58	-650.45	-234.43	691.27	2.29	-0.77	10.00	MWD
4644.00	11.80	214.90	4573.61	-665.77	-245.40	709.50	0.46	-0.33	-1.54	MWD
4735.00	12.10	214.20	4662.64	-681.29	-256.08	727.81	0.37	0.33	-0.77	MWD
4825.00	11.30	217.00	4750.77	-696.13	-266.69	745.47	1.09	-0.89	3.11	MWD
4916.00	10.60	215.00	4840.11	-710.11	-276.86	762.16	0.88	-0.77	-2.20	MWD
5007.00	10.90	201.90	4929.53	-724.95	-284.87	778.88	2.70	0.33	-14.40	MWD
5098.00	11.10	201.90	5018.86	-741.06	-291.34	796.24	0.22	0.22	0.00	MWD
5188.00	10.70	199.80	5107.23	-756.96	-297.41	813.26	0.63	-0.44	-2.33	MWD
5279.00	9.30	199.50	5196.85	-771.84	-302.72	829.05	1.54	-1.54	-0.33	MWD
5370.00	7.70	191.70	5286.85	-784.74	-306.41	842.42	2.16	-1.76	-8.57	MWD
5461.00	6.50	190.70	5377.15	-795.77	-308.61	853.51	1.33	-1.32	-1.10	MWD
5552.00	5.30	194.50	5467.67	-804.90	-310.61	862.76	1.39	-1.32	4.18	MWD
5643.00	6.50	198.80	5558.18	-813.85	-313.33	872.08	1.40	1.32	4.73	MWD
5733.00	5.30	203.30	5647.70	-822.49	-316.61	881.32	1.43	-1.33	5.00	MWD
5824.00	4.20	211.40	5738.39	-829.19	-320.01	888.80	1.41	-1.21	8.90	MWD
5915.00	3.30	212.50	5829.20	-834.25	-323.15	894.64	0.99	-0.99	1.21	MWD
6006.00	2.80	218.10	5920.07	-838.21	-325.93	899.33	0.64	-0.55	6.15	MWD
6096.00	2.10	228.60	6009.98	-841.03	-328.53	902.89	0.92	-0.78	11.67	MWD
6187.00	1.90	241.60	6100.93	-842.85	-331.10	905.51	0.54	-0.22	14.29	MWD
6278.00	2.30	259.20	6191.87	-843.91	-334.23	907.62	0.83	0.44	19.34	MWD
6369.00	1.80	259.20	6282.81	-844.52	-337.42	909.33	0.55	-0.55	0.00	MWD

Allis-Chalmers Energy, Inc.

Survey Report

Company: ANADARKO PETROLEUM	Date: 12/31/2010	Time: 09:17:30	Page: 3
Field: Weld County, CO	Co-ordinate(NE) Reference:	Well: Brown 5-2, Grid North	
Site: Jesser 18-2 Pad	Vertical (TVD) Reference:	5144'GL+13'KB 5157.0	
Well: Brown 5-2	Section (VS) Reference:	Well (0.00N,0.00E,200.94Azi)	
Wellpath: Original Hole	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
6505.00	0.40	175.20	6418.79	-845.39	-339.48	910.88	1.33	-1.03	-61.76	MWD
6642.00	1.90	123.90	6555.76	-847.13	-337.56	911.82	1.23	1.09	-37.45	MWD
6778.00	2.10	88.00	6691.68	-848.30	-333.19	911.36	0.92	0.15	-26.40	MWD
6916.00	3.20	88.40	6829.53	-848.11	-326.82	908.90	0.80	0.80	0.29	MWD
7052.00	1.60	90.10	6965.41	-848.01	-321.12	906.77	1.18	-1.18	1.25	MWD
7188.00	0.20	249.70	7101.39	-848.09	-319.45	906.25	1.32	-1.03	117.35	MWD
7324.00	0.40	161.80	7237.39	-848.62	-319.52	906.77	0.32	0.15	-64.63	MWD
7461.00	0.70	86.30	7374.38	-849.02	-318.54	906.79	0.52	0.22	-55.11	MWD
7642.00	0.40	190.30	7555.38	-849.57	-317.55	906.95	0.49	-0.17	57.46	MWD
7823.00	0.40	260.60	7736.37	-850.30	-318.28	907.89	0.25	0.00	38.84	MWD
8005.00	0.90	294.40	7918.36	-849.81	-320.21	908.13	0.33	0.27	18.57	MWD
8187.00	0.90	315.10	8100.34	-848.21	-322.52	907.46	0.18	0.00	11.37	MWD
8240.00	0.70	295.10	8153.34	-847.78	-323.11	907.26	0.64	-0.38	-37.74	MWD
8267.67	0.70	295.10	8181.00	-847.63	-323.42	907.24	0.00	0.00	0.00	5-2 PBHL
8285.00	0.70	295.10	8198.33	-847.54	-323.61	907.22	0.00	0.00	0.00	5-2 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		
5-2 SL			0.00	0.00	0.00	1274363.02	3209978.13	40	5	2.657 N	104	44	58.481 W
5-2 PBHL			8181.00	-862.20	-329.93	1273500.82	3209648.20	40	4	54.164 N	104	45	2.820 W
-Circle (Radius: 50)													
5-2 BHL			8198.33	-847.54	-323.61	1273515.48	3209654.52	40	4	54.309 N	104	45	2.737 W

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
1160.00	1158.83	8.625	12.250	8 5/8"