

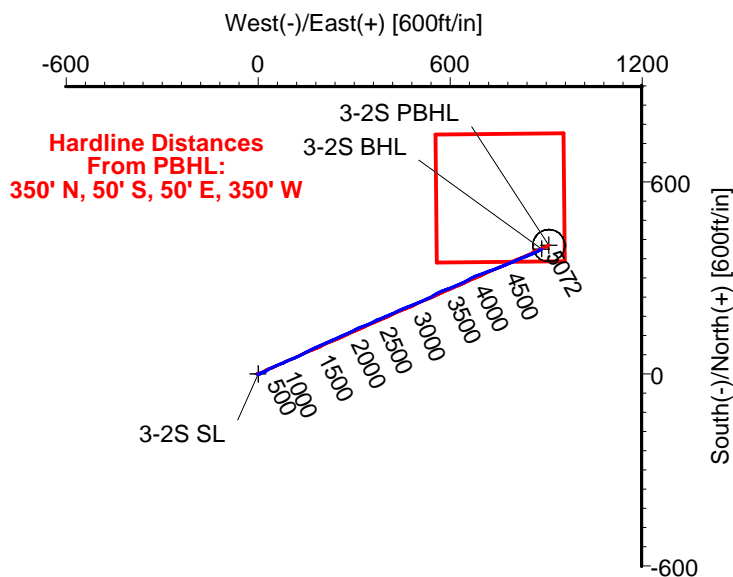
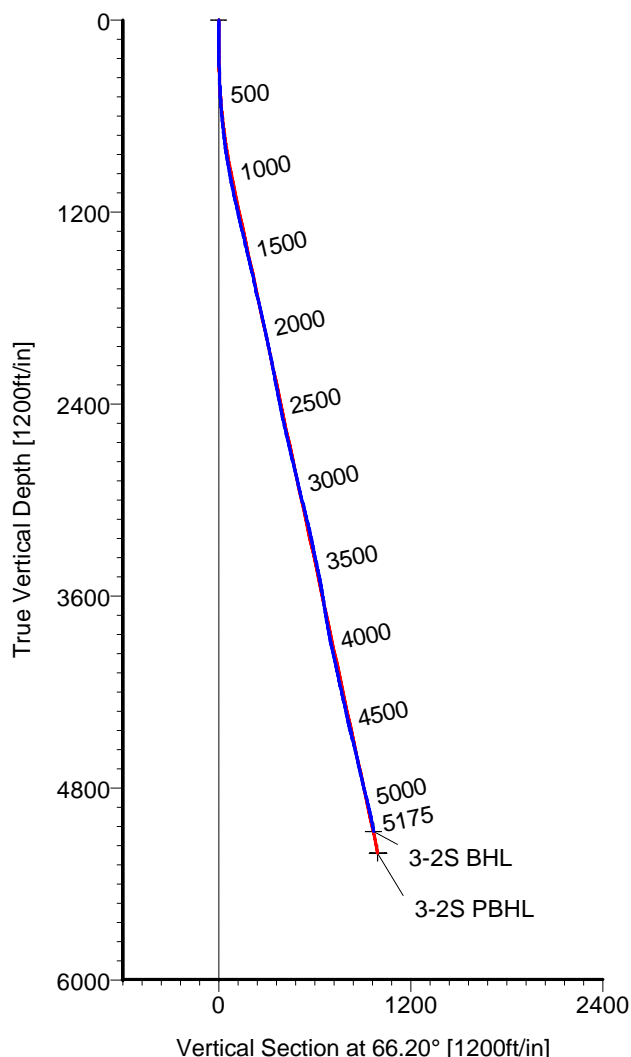
ANADARKO PETROLEUM

Field: Weld County, CO
Site: Jesser 18-2 Pad
Well: Brown 3-2S
Wellpath: Original Hole



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

Magnetic Field
Strength: 53067nT
Dip Angle: 66.82°
Date: 11/16/2010
Model: IGRF2010



TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
3-2S SL	0.00	0.00	0.00	40°05'02.662N	104°44'57.710W	Point
3-2S BHL	5071.98	390.74	887.78	40°05'06.449N	104°44'46.245W	Point
3-2S PBHL	5206.00	401.03	909.18	40°05'06.549N	104°44'45.969W	Circle (Radius: 50)

Wellpath: (Brown 3-2S/Original Hole)

Created By: Mekka Williams

Date: 11/30/2010

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 3-2S Wellpath: Original Hole	Date: 11/30/2010 Co-ordinate(NE) Reference: Vertical (TVD) Reference: Section (VS) Reference: Survey Calculation Method:	Time: 09:48:56 Well: Brown 3-2S, Grid North 5144'GL+13'KB 5157.0 Well (0.00N,0.00E,66.20Azi) 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: 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 3-2S Well Position: +N/-S -0.15 ft +E/-W -10.01 ft Position Uncertainty: 0.00 ft	Slot Name: 3-2S Latitude: 40 5 2.662 N Longitude: 104 44 57.710 W
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Wellpath: Original Hole Current Datum: 5144'GL+13'KB Magnetic Data: 11/16/2010 Field Strength: 53067 nT Vertical Section: Depth From (TVD) ft	Drilled From: Surface Tie-on Depth: 0.00 ft Above System Datum: Mean Sea Level Declination: 8.91 deg Mag Dip Angle: 66.82 deg +N/-S ft +E/-W ft Direction deg
0.00	0.00

Survey Program for Definitive Wellpath				
Date: 11/30/2010	Validated: No	Version: 0		
Actual From ft	To ft	Survey	Toolcode	Tool Name
44.00	5130.00	Survey #1 (44.00-5130.00)	MWD	Std MWD
5175.00	5175.00	Survey #2 (5175.00-5175.00)	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
44.00	0.70	137.60	44.00	-0.20	0.18	0.09	1.59	1.59	0.00	MWD
105.00	0.70	154.60	104.99	-0.81	0.59	0.21	0.34	0.00	27.87	MWD
166.00	0.70	143.60	165.99	-1.45	0.97	0.31	0.22	0.00	-18.03	MWD
226.00	0.90	101.70	225.98	-1.84	1.65	0.77	1.00	0.33	-69.83	MWD
286.00	1.20	63.40	285.98	-1.65	2.68	1.78	1.24	0.50	-63.83	MWD
347.00	1.90	56.00	346.95	-0.80	4.08	3.41	1.19	1.15	-12.13	MWD
425.00	2.60	57.40	424.89	0.88	6.65	6.44	0.90	0.90	1.79	MWD
516.00	4.10	63.80	515.73	3.42	11.31	11.73	1.70	1.65	7.03	MWD
607.00	5.30	64.10	606.43	6.70	18.01	19.18	1.32	1.32	0.33	MWD
697.00	6.20	62.40	695.97	10.76	26.05	28.18	1.02	1.00	-1.89	MWD
788.00	7.70	64.80	786.30	15.64	35.92	39.18	1.68	1.65	2.64	MWD
879.00	9.50	67.30	876.28	21.13	48.37	52.78	2.02	1.98	2.75	MWD
970.00	10.40	66.60	965.91	27.29	62.83	68.50	1.00	0.99	-0.77	MWD
1061.00	12.30	65.50	1055.12	34.57	79.19	86.41	2.10	2.09	-1.21	MWD
1095.00	12.50	64.80	1088.33	37.64	85.82	93.71	0.74	0.59	-2.06	MWD
1146.00	12.50	65.90	1138.12	42.25	95.85	104.75	0.47	0.00	2.16	MWD
1237.00	13.00	67.60	1226.88	50.17	114.30	124.83	0.69	0.55	1.87	MWD
1327.00	13.00	64.10	1314.57	58.45	132.77	145.06	0.87	0.00	-3.89	MWD
1418.00	13.60	62.40	1403.13	67.87	151.46	165.97	0.79	0.66	-1.87	MWD
1509.00	13.20	62.40	1491.65	77.64	170.15	187.01	0.44	-0.44	0.00	MWD
1600.00	12.70	65.90	1580.34	86.54	188.49	207.38	1.02	-0.55	3.85	MWD

Allis-Chalmers Energy, Inc.

Survey Report

Company:	ANADARKO PETROLEUM	Date:	11/30/2010	Time:	09:48:56	Page:	2
Field:	Weld County, CO	Co-ordinate(NE) Reference:	Well: Brown 3-2S, Grid North				
Site:	Jesser 18-2 Pad	Vertical (TVD) Reference:	5144'GL+13'KB 5157.0				
Well:	Brown 3-2S	Section (VS) Reference:	Well (0.00N,0.00E,66.20Azi)				
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
1691.00	12.50	66.90	1669.15	94.49	206.68	227.23	0.33	-0.22	1.10	MWD
1781.00	12.70	66.60	1756.98	102.24	224.71	246.86	0.23	0.22	-0.33	MWD
1872.00	12.70	67.30	1845.75	110.07	243.12	266.87	0.17	0.00	0.77	MWD
1963.00	13.00	65.90	1934.47	118.11	261.69	287.10	0.48	0.33	-1.54	MWD
2054.00	11.80	63.10	2023.35	126.50	279.34	306.63	1.47	-1.32	-3.08	MWD
2145.00	11.60	66.20	2112.46	134.41	296.00	325.07	0.72	-0.22	3.41	MWD
2236.00	10.60	65.20	2201.76	141.61	311.97	342.59	1.12	-1.10	-1.10	MWD
2326.00	10.90	69.70	2290.18	148.03	327.47	359.36	0.99	0.33	5.00	MWD
2417.00	11.10	64.80	2379.51	154.75	343.47	376.70	1.05	0.22	-5.38	MWD
2508.00	12.00	65.50	2468.67	162.40	360.00	394.92	1.00	0.99	0.77	MWD
2644.00	12.80	68.30	2601.49	173.83	386.86	424.11	0.74	0.59	2.06	MWD
2734.00	13.70	66.90	2689.10	181.70	405.93	444.73	1.06	1.00	-1.56	MWD
2826.00	13.90	63.10	2778.44	190.98	425.81	466.66	1.01	0.22	-4.13	MWD
2916.00	12.80	68.00	2866.01	199.60	444.69	487.42	1.75	-1.22	5.44	MWD
3007.00	13.90	68.30	2954.55	207.42	464.19	508.42	1.21	1.21	0.33	MWD
3098.00	14.40	68.30	3042.79	215.65	484.86	530.65	0.55	0.55	0.00	MWD
3188.00	13.70	68.70	3130.10	223.66	505.19	552.49	0.79	-0.78	0.44	MWD
3279.00	12.00	66.80	3218.82	231.30	523.93	572.71	1.92	-1.87	-2.09	MWD
3370.00	11.60	56.70	3307.90	240.05	540.27	591.20	2.31	-0.44	-11.10	MWD
3461.00	12.50	61.30	3396.90	249.80	556.56	610.03	1.45	0.99	5.05	MWD
3552.00	11.10	63.10	3485.97	258.49	573.01	628.59	1.59	-1.54	1.98	MWD
3642.00	9.70	73.60	3574.50	264.55	588.01	644.77	2.61	-1.56	11.67	MWD
3733.00	8.60	73.30	3664.34	268.67	601.88	659.12	1.21	-1.21	-0.33	MWD
3824.00	9.70	64.80	3754.19	273.89	615.34	673.54	1.91	1.21	-9.34	MWD
3915.00	10.70	64.80	3843.75	280.76	629.92	689.65	1.10	1.10	0.00	MWD
4005.00	12.80	63.80	3931.86	288.72	646.42	707.96	2.34	2.33	-1.11	MWD
4096.00	12.40	64.50	4020.66	297.37	664.29	727.80	0.47	-0.44	0.77	MWD
4187.00	12.00	67.30	4109.61	305.23	681.83	747.02	0.78	-0.44	3.08	MWD
4278.00	12.50	69.40	4198.54	312.34	699.78	766.32	0.74	0.55	2.31	MWD
4368.00	12.80	66.90	4286.35	319.68	718.07	786.01	0.69	0.33	-2.78	MWD
4459.00	12.10	72.50	4375.22	326.51	736.44	805.57	1.53	-0.77	6.15	MWD
4550.00	14.80	67.60	4463.72	333.81	756.28	826.67	3.22	2.97	-5.38	MWD
4641.00	13.90	68.00	4551.88	342.33	777.16	849.22	0.99	-0.99	0.44	MWD
4732.00	12.50	64.80	4640.47	350.62	796.21	869.99	1.73	-1.54	-3.52	MWD
4822.00	12.70	69.00	4728.30	358.31	814.26	889.61	1.04	0.22	4.67	MWD
4913.00	14.30	70.40	4816.79	365.66	834.19	910.81	1.79	1.76	1.54	MWD
5004.00	13.40	66.60	4905.14	373.62	854.45	932.56	1.41	-0.99	-4.18	MWD
5095.00	12.80	62.00	4993.78	382.54	873.03	953.16	1.32	-0.66	-5.05	MWD
5130.00	12.00	60.60	5027.96	386.15	879.62	960.65	2.44	-2.29	-4.00	MWD
5175.00	12.00	60.60	5071.98	390.74	887.78	969.96	0.00	0.00	0.00	3-2S BHL

Targets

Name	Description	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<---- Latitude ---->			<--- Longitude --->		
								Deg	Min	Sec	Deg	Min	Sec
3-2S SL			0.00	0.00	0.00	1274364.04	3210038.08	40	5	2.662 N	104	44	57.710 W
3-2S BHL			5071.98	390.74	887.78	1274754.78	3210925.86	40	5	6.449 N	104	44	46.245 W
3-2S PBHL			5206.00	401.03	909.18	1274765.07	3210947.26	40	5	6.549 N	104	44	45.969 W
-Circle (Radius: 50)													