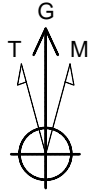


ANADARKO PETROLEUM

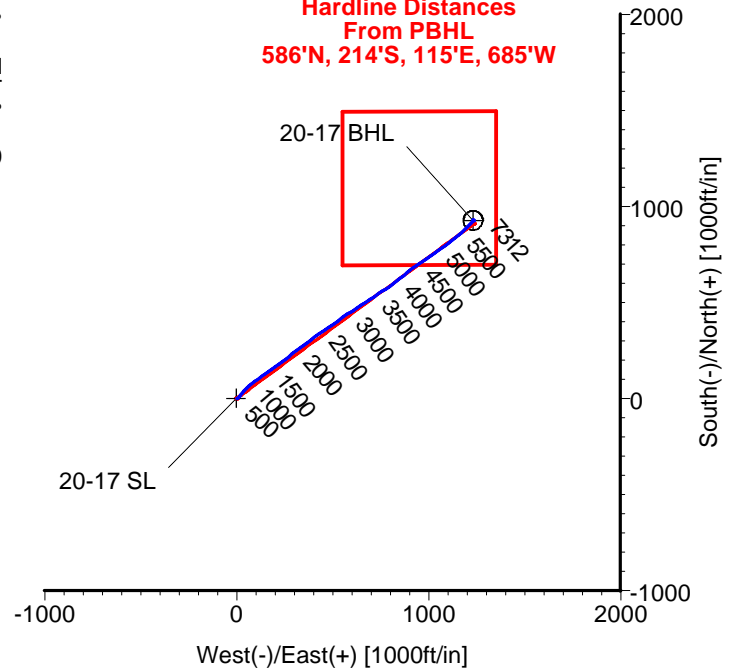
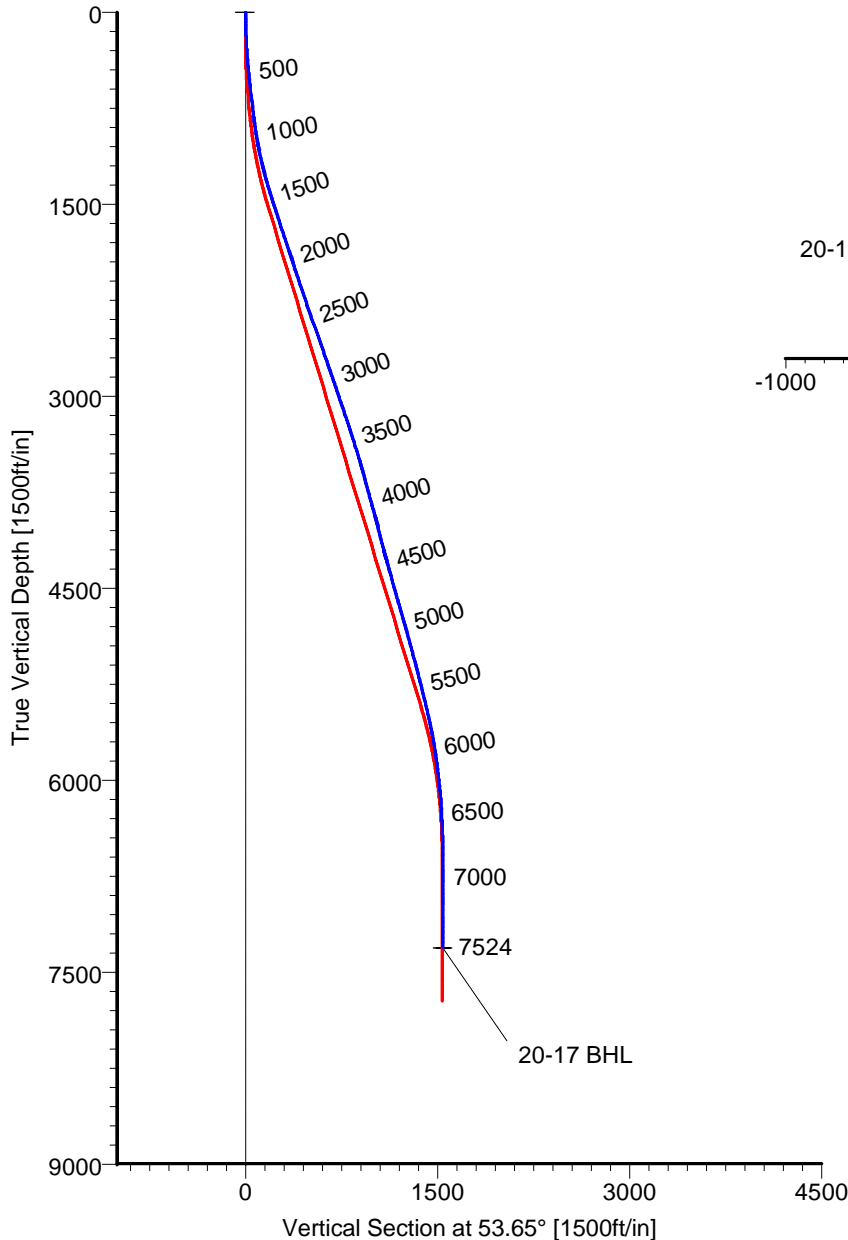
Field: Weld County, CO
Site: Sekich 15-17 Pad
Well: 20-17
Wellpath: Original Hole



Azimuths to Grid North
True North: -0.38°
Magnetic North: 8.59°

Magnetic Field
Strength: 53087nT
Dip Angle: 66.89°
Date: 3/12/2011
Model: IGRF2010

**Hardline Distances
From PBHL**
586'N, 214'S, 115'E, 685'W



LEGEND
— 20-17, Original Hole, Plan #2
— Original Hole

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
20-17 SL	0.00	0.00	0.00	40°13'09.334N	104°54'45.869W	Point
20-17 BHL	7312.23	927.48	1231.08	40°13'18.418N	104°54'29.919W	Circle (Radius: 50)

Wellpath: (20-17/Original Hole)

Created By: Ashley Wischnewsky

Date: 3/16/2011

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



**DIRECTIONAL
DRILLING SERVICES**

Survey Report

Company: ANADARKO PETROLEUM Field: Weld County, CO Site: Sekich 15-17 Pad Well: 20-17 Wellpath: Original Hole				Date: 3/16/2011 Time: 09:04:37 Page: 1 Co-ordinate(NE) Reference: Well: 20-17, Grid North Vertical (TVD) Reference: 4865'GL+13'KB 4878.0 Section (VS) Reference: Well (0.00N,0.00E,53.65Azi) Survey Calculation Method: Minimum Curvature Db: Sybase						
Field: Weld County, CO Map System: US State Plane Coordinate System 1983 Map Zone: Colorado, Northern Zone Geo Datum: GRS 1980 Coordinate System: Well Centre Sys Datum: Mean Sea Level Geomagnetic Model: IGRF2010										
Site: Sekich 15-17 Pad Centered on 19-17 Site Position: From: Geographic Northing: 1323289.54 ft Latitude: 40 13 9.588 N Position Uncertainty: 0.00 ft Easting: 3163967.97 ft Longitude: 104 54 46.264 W Ground Level: 4865.00 ft North Reference: Grid Grid Convergence: 0.38 deg										
Well: 20-17 Slot Name: 20-17 Well Position: +N/-S -25.52 ft Northing: 1323264.02 ft Latitude: 40 13 9.334 N +E/-W 30.82 ft Easting: 3163998.79 ft Longitude: 104 54 45.869 W Position Uncertainty: 0.00 ft										
Wellpath: Original Hole Drilled From: Surface Current Datum: 4865'GL+13'KB Height: 4878.00 ft Tie-on Depth: 0.00 ft Magnetic Data: 3/12/2011 Above System Datum: Mean Sea Level Field Strength: 53087 nT Declination: 8.97 deg Vertical Section: Depth From (TVD) Mag Dip Angle: 66.89 deg ft +N/-S +E/-W Direction ft ft deg 0.00 0.00 0.00 53.65										
Survey Program for Definitive Wellpath Date: 3/16/2011 Validated: No Version: 1 Actual From To Survey Toolcode Tool Name ft ft 49.00 7524.00 Survey #1 (49.00-7524.00) MWD Std MWD										
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	1.20	91.60	49.00	-0.01	0.51	0.40	2.45	2.45	0.00	MWD
140.00	2.50	77.20	139.95	0.40	3.40	2.98	1.51	1.43	-15.82	MWD
229.00	2.80	54.30	228.85	2.10	7.06	6.93	1.23	0.34	-25.73	MWD
319.00	3.90	46.60	318.70	5.48	11.07	12.16	1.32	1.22	-8.56	MWD
426.00	5.50	41.00	425.34	11.85	17.08	20.78	1.55	1.50	-5.23	MWD
517.00	6.20	41.00	515.86	18.85	23.16	29.83	0.77	0.77	0.00	MWD
607.00	6.90	37.40	605.28	26.82	29.63	39.76	0.90	0.78	-4.00	MWD
740.00	7.00	38.20	737.30	39.53	39.50	55.24	0.10	0.08	0.60	MWD
820.00	7.20	39.60	816.68	47.23	45.71	64.81	0.33	0.25	1.75	MWD
911.00	8.30	49.40	906.86	55.89	54.33	76.89	1.89	1.21	10.77	MWD
1002.00	9.70	50.10	996.73	65.09	65.20	91.09	1.54	1.54	0.77	MWD
1092.00	12.00	50.10	1085.12	75.95	78.20	108.00	2.56	2.56	0.00	MWD
1183.00	13.00	51.20	1173.96	88.44	93.43	127.67	1.13	1.10	1.21	MWD
1273.00	15.00	54.30	1261.28	101.58	110.78	149.43	2.37	2.22	3.44	MWD
1365.00	16.40	56.10	1349.85	115.77	131.23	174.31	1.61	1.52	1.96	MWD
1456.00	17.10	53.30	1436.99	130.93	152.62	200.53	1.17	0.77	-3.08	MWD
1547.00	18.70	52.90	1523.58	147.73	174.98	228.49	1.76	1.76	-0.44	MWD
1638.00	17.90	56.10	1609.98	164.33	198.23	257.05	1.41	-0.88	3.52	MWD
1728.00	17.80	54.70	1695.65	179.99	220.93	284.62	0.49	-0.11	-1.56	MWD
1819.00	18.80	54.70	1782.05	196.50	244.25	313.19	1.10	1.10	0.00	MWD
1910.00	18.50	53.30	1868.27	213.60	267.80	342.29	0.59	-0.33	-1.54	MWD
2001.00	17.80	46.90	1954.75	231.74	289.53	370.54	2.32	-0.77	-7.03	MWD

Survey Report

Company: ANADARKO PETROLEUM

Field: Weld County, CO

Site: Sekich 15-17 Pad

Well: 20-17

Wellpath: Original Hole

Date: 3/16/2011

Time: 09:04:37

Page: 2

Co-ordinate(NE) Reference: Well: 20-17, Grid North

Vertical (TVD) Reference: 4865'GL+13'KB 4878.0

Section (VS) Reference: Well (0.00N,0.00E,53.65Azi)

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
2092.00	18.50	51.20	2041.22	250.29	310.94	398.78	1.66	0.77	4.73	MWD
2183.00	18.30	54.30	2127.57	267.67	333.79	427.49	1.10	-0.22	3.41	MWD
2273.00	18.50	54.00	2212.97	284.31	356.82	455.90	0.25	0.22	-0.33	MWD
2364.00	18.70	53.30	2299.22	301.51	380.19	484.93	0.33	0.22	-0.77	MWD
2455.00	19.70	55.40	2385.16	318.94	404.52	514.84	1.34	1.10	2.31	MWD
2546.00	19.70	54.00	2470.83	336.67	429.55	545.51	0.52	0.00	-1.54	MWD
2636.00	19.70	55.40	2555.56	354.20	454.31	575.84	0.52	0.00	1.56	MWD
2727.00	19.40	56.80	2641.32	371.18	479.58	606.27	0.61	-0.33	1.54	MWD
2818.00	18.80	56.10	2727.31	387.64	504.40	636.01	0.71	-0.66	-0.77	MWD
2909.00	19.40	53.30	2813.30	404.85	528.69	665.77	1.20	0.66	-3.08	MWD
3000.00	19.00	55.40	2899.24	422.29	553.00	695.69	0.88	-0.44	2.31	MWD
3090.00	18.10	55.40	2984.56	438.55	576.57	724.31	1.00	-1.00	0.00	MWD
3181.00	18.80	55.70	3070.89	454.84	600.32	753.09	0.78	0.77	0.33	MWD
3272.00	18.50	59.20	3157.11	470.50	624.83	782.12	1.27	-0.33	3.85	MWD
3363.00	18.50	57.10	3243.41	485.73	649.35	810.90	0.73	0.00	-2.31	MWD
3454.00	17.40	57.10	3329.98	500.96	672.90	838.89	1.21	-1.21	0.00	MWD
3544.00	17.10	56.80	3415.93	515.52	695.27	865.53	0.35	-0.33	-0.33	MWD
3635.00	17.10	54.70	3502.91	530.57	717.39	892.27	0.68	0.00	-2.31	MWD
3726.00	15.30	54.30	3590.29	545.31	738.06	917.65	1.98	-1.98	-0.44	MWD
3817.00	15.10	58.90	3678.11	558.44	757.96	941.46	1.34	-0.22	5.05	MWD
3907.00	15.70	56.80	3764.88	571.17	778.18	965.30	0.91	0.67	-2.33	MWD
3998.00	15.50	55.00	3852.53	584.88	798.45	989.75	0.58	-0.22	-1.98	MWD
4089.00	15.30	50.10	3940.26	599.56	817.62	1013.89	1.45	-0.22	-5.38	MWD
4180.00	13.40	55.40	4028.42	613.25	835.51	1036.41	2.54	-2.09	5.82	MWD
4271.00	14.40	53.30	4116.76	626.00	853.26	1058.27	1.23	1.10	-2.31	MWD
4361.00	14.40	48.00	4203.93	640.18	870.55	1080.60	1.46	0.00	-5.89	MWD
4452.00	16.90	49.80	4291.55	656.29	889.07	1105.06	2.80	2.75	1.98	MWD
4543.00	15.50	52.90	4378.94	672.16	908.87	1130.42	1.81	-1.54	3.41	MWD
4634.00	15.50	52.90	4466.63	686.83	928.27	1154.73	0.00	0.00	0.00	MWD
4724.00	15.30	56.40	4553.40	700.66	947.75	1178.62	1.06	-0.22	3.89	MWD
4815.00	16.00	56.10	4641.03	714.29	968.16	1203.14	0.77	0.77	-0.33	MWD
4906.00	16.70	58.50	4728.35	728.12	989.72	1228.70	1.07	0.77	2.64	MWD
4997.00	15.70	55.40	4815.74	741.95	1011.00	1254.03	1.45	-1.10	-3.41	MWD
5087.00	14.80	52.60	4902.57	755.84	1030.16	1277.70	1.29	-1.00	-3.11	MWD
5178.00	15.50	52.90	4990.40	770.24	1049.09	1301.48	0.77	0.77	0.33	MWD
5269.00	15.30	54.70	5078.14	784.51	1068.59	1325.64	0.57	-0.22	1.98	MWD
5359.00	13.90	56.80	5165.23	797.29	1087.32	1348.31	1.66	-1.56	2.33	MWD
5450.00	14.10	54.30	5253.53	809.74	1105.47	1370.31	0.70	0.22	-2.75	MWD
5541.00	13.90	51.50	5341.82	823.02	1123.03	1392.31	0.78	-0.22	-3.08	MWD
5632.00	13.00	49.80	5430.33	836.43	1139.40	1413.45	1.08	-0.99	-1.87	MWD
5722.00	12.50	49.00	5518.11	849.35	1154.48	1433.26	0.59	-0.56	-0.89	MWD
5813.00	11.60	51.20	5607.10	861.55	1169.05	1452.21	1.11	-0.99	2.42	MWD
5904.00	10.00	48.00	5696.49	872.57	1182.05	1469.22	1.88	-1.76	-3.52	MWD
5995.00	9.00	43.10	5786.24	883.05	1192.78	1484.08	1.41	-1.10	-5.38	MWD
6085.00	7.40	41.00	5875.32	892.57	1201.40	1496.66	1.81	-1.78	-2.33	MWD
6176.00	6.70	46.90	5965.63	900.62	1209.12	1507.65	1.11	-0.77	6.48	MWD
6267.00	5.80	44.10	6056.09	907.54	1216.19	1517.45	1.04	-0.99	-3.08	MWD
6358.00	4.60	46.60	6146.71	913.35	1222.04	1525.61	1.34	-1.32	2.75	MWD
6449.00	3.00	45.20	6237.51	917.54	1226.39	1531.59	1.76	-1.76	-1.54	MWD
6539.00	2.80	41.00	6327.40	920.86	1229.50	1536.06	0.32	-0.22	-4.67	MWD
6630.00	1.90	40.60	6418.32	923.68	1231.94	1539.70	0.99	-0.99	-0.44	MWD
6721.00	1.10	57.80	6509.29	925.29	1233.66	1542.04	1.00	-0.88	18.90	MWD
6812.00	0.90	33.90	6600.27	926.35	1234.80	1543.58	0.50	-0.22	-26.26	MWD

Survey Report

Company: ANADARKO PETROLEUM	Date: 3/16/2011	Time: 09:04:37	Page: 3
Field: Weld County, CO	Co-ordinate(NE) Reference: Well: 20-17, Grid North		
Site: Sekich 15-17 Pad	Vertical (TVD) Reference: 4865'GL+13'KB 4878.0		
Well: 20-17	Section (VS) Reference: Well (0.00N,0.00E,53.65Azi)		
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
6902.00	0.40	313.10	6690.27	927.15	1234.96	1544.19	1.03	-0.56	-89.78	MWD
6993.00	0.90	308.50	6781.26	927.81	1234.17	1543.95	0.55	0.55	-5.05	MWD
7084.00	1.10	300.80	6872.25	928.71	1232.86	1543.42	0.26	0.22	-8.46	MWD
7175.00	0.50	300.80	6963.24	929.36	1231.77	1542.93	0.66	-0.66	0.00	MWD
7265.00	0.70	193.90	7053.24	929.02	1231.30	1542.35	1.08	0.22	-118.78	MWD
7356.00	0.20	140.50	7144.23	928.36	1231.27	1541.93	0.66	-0.55	-58.68	MWD
7447.00	0.50	181.90	7235.23	927.84	1231.36	1541.70	0.41	0.33	45.49	MWD
7524.00	0.40	265.30	7312.23	927.48	1231.08	1541.26	0.78	-0.13	108.31	MWD