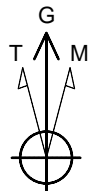


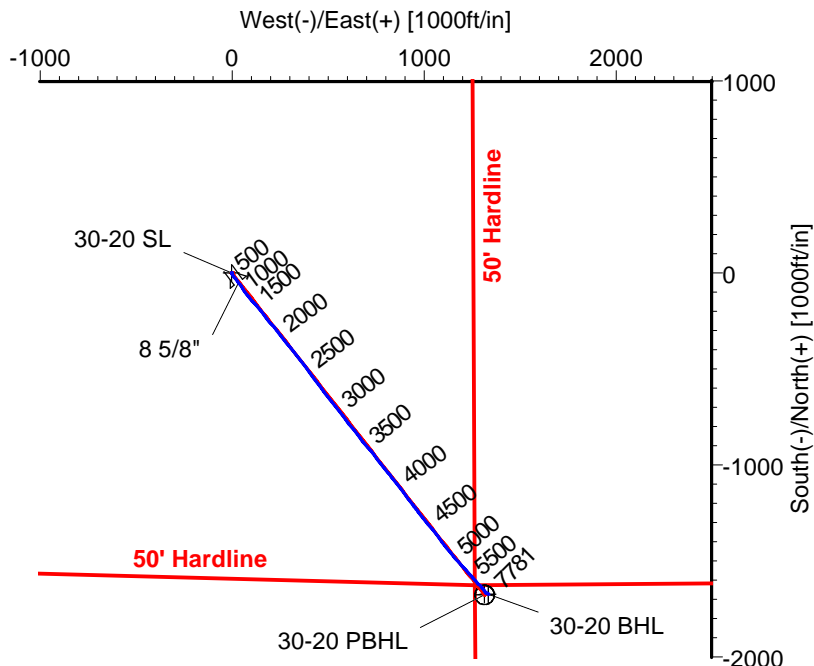
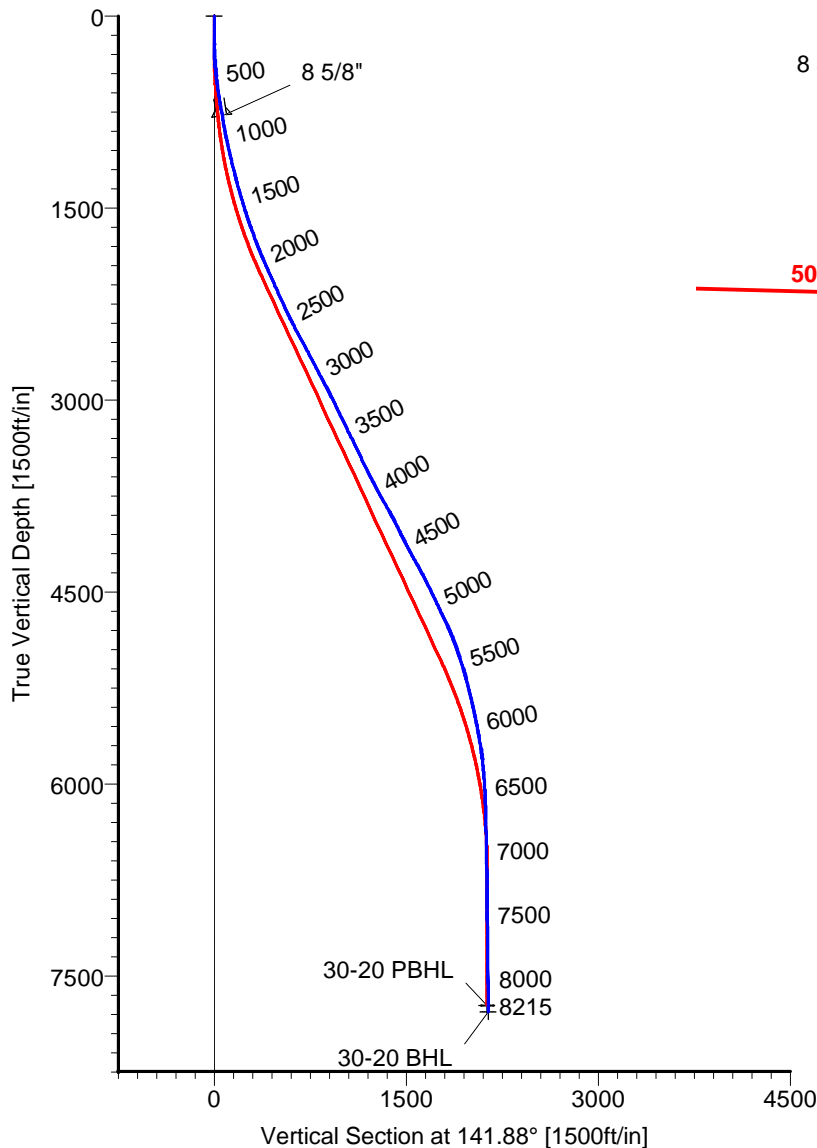
ANADARKO PETROLEUM

Field: Weld County, CO
Site: Sekich 20-18 Pad
Well: 30-20
Wellpath: Original Hole



Azimuths to Grid North
True North: -0.37°
Magnetic North: 8.60°

Magnetic Field
Strength: 53084nT
Dip Angle: 66.89°
Date: 03/25/2011
Model: IGRF2010



LEGEND
— 30-20, Original Hole, Plan #1
— Original Hole

CASING DETAILS

No.	TVD	MD	Name	Size
1	780.77	785.00	8 5/8"	8.625

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
30-20 SL	0.00	0.00	0.00	40°13'23.211N	104°55'39.994W	Point
30-20 PBHL	7732.00	-1677.14	1315.99	40°13'06.553N	104°55'23.168W	Circle (Radius: 50)
30-20 BHL	7780.92	-1671.89	1335.75	40°13'06.604N	104°55'22.913W	Point

Wellpath: (30-20/Original Hole)

Created By: Ivonne Gonzalez

Date: 03/27/2011

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: Sekich 20-18 Pad Well: 30-20 Wellpath: Original Hole	Date: 03/27/2011 Co-ordinate(NE) Reference: Vertical (TVD) Reference: Section (VS) Reference: Survey Calculation Method:	Time: 07:32:33 Well: 30-20, Grid North 4865'GL+13'KB 4878.0 Well (0.00N,0.00E,141.88Azi) 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

Site: Sekich 20-18 Pad Centered on 24-18 Site Position: From: Geographic Position Uncertainty: 0.00 ft Ground Level: 4865.00 ft	Northing: 1324641.38 ft Easting: 3159775.41 ft Latitude: 40 13 23.218 N Longitude: 104 55 40.199 W North Reference: Grid Grid Convergence: 0.37 deg
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Well: 30-20 Well Position: +N/-S -0.57 ft +E/-W 15.94 ft Position Uncertainty: 0.00 ft	Slot Name: 30-20 Latitude: 40 13 23.211 N Longitude: 104 55 39.994 W Easting : 3159791.35 ft
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Wellpath: Original Hole Current Datum: 4865'GL+13'KB Magnetic Data: 03/25/2011 Field Strength: 53084 nT Vertical Section: Depth From (TVD) ft	Drilled From: Surface Tie-on Depth: 0.00 ft Above System Datum: Mean Sea Level Declination: 8.97 deg Mag Dip Angle: 66.89 deg Direction deg Height 4878.00 ft +N/-S ft 0.00 0.00 0.00 141.88
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Survey Program for Definitive Wellpath					
Date: 03/27/2011	Validated: No	Version: 0			
Actual From	To	Survey	Toolcode	Tool Name	
49.00	8170.00	Survey #1 (49.00-8170.00)	MWD	Std MWD	
8215.00	8215.00	Survey #2 (8215.00-8215.00)	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
49.00	0.90	224.80	49.00	-0.27	-0.27	0.05	1.84	1.84	0.00	MWD
140.00	1.10	283.90	139.99	-0.57	-1.62	-0.55	1.10	0.22	64.95	MWD
199.00	0.90	236.40	198.98	-0.69	-2.56	-1.04	1.40	-0.34	-80.51	MWD
260.00	1.20	165.40	259.97	-1.57	-2.80	-0.49	2.04	0.49	-116.39	MWD
319.00	2.60	140.80	318.94	-3.21	-1.79	1.42	2.69	2.37	-41.69	MWD
381.00	4.40	141.50	380.82	-6.16	0.57	5.20	2.90	2.90	1.13	MWD
471.00	6.90	144.30	470.37	-13.25	5.88	14.06	2.79	2.78	3.11	MWD
562.00	8.60	141.90	560.54	-23.05	13.27	26.32	1.90	1.87	-2.64	MWD
653.00	8.60	142.90	650.52	-33.83	21.57	39.93	0.16	0.00	1.10	MWD
740.00	9.70	142.60	736.41	-44.84	29.95	53.76	1.27	1.26	-0.34	MWD
785.00	9.70	142.60	780.77	-50.86	34.55	61.34	0.00	0.00	0.00	8 5/8"
792.00	9.70	142.60	787.67	-51.80	35.27	62.52	0.00	0.00	0.00	MWD
883.00	10.40	146.80	877.27	-64.76	44.42	78.37	1.11	0.77	4.62	MWD
974.00	12.10	143.30	966.52	-79.28	54.62	96.09	2.01	1.87	-3.85	MWD
1065.00	13.00	145.40	1055.34	-95.36	66.13	115.84	1.11	0.99	2.31	MWD
1156.00	13.90	145.00	1143.85	-112.74	78.21	136.97	0.99	0.99	-0.44	MWD
1247.00	13.90	140.10	1232.19	-130.08	91.49	158.81	1.29	0.00	-5.38	MWD
1337.00	15.70	137.60	1319.20	-147.36	106.64	181.76	2.12	2.00	-2.78	MWD
1428.00	16.20	138.30	1406.69	-165.93	123.39	206.71	0.59	0.55	0.77	MWD
1519.00	16.90	140.10	1493.92	-185.56	140.32	232.60	0.95	0.77	1.98	MWD
1610.00	18.30	143.60	1580.66	-207.21	157.28	260.10	1.93	1.54	3.85	MWD

Allis-Chalmers Energy, Inc.

Survey Report

Company: ANADARKO PETROLEUM
Field: Weld County, CO
Site: Sekich 20-18 Pad
Well: 30-20
Wellpath: Original Hole

Date: 03/27/2011 **Time:** 07:32:33 **Page:** 2

Co-ordinate(NE) Reference: Well: 30-20, Grid North

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

Section (VS) Reference: Well (0.00N,0.00E,141.88Azi)

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
1700.00	20.10	141.90	1665.66	-230.75	175.21	289.70	2.09	2.00	-1.89	MWD
1791.00	20.60	140.50	1750.98	-255.41	195.04	321.34	0.77	0.55	-1.54	MWD
1882.00	22.30	138.30	1835.67	-280.65	216.71	354.57	2.07	1.87	-2.42	MWD
1973.00	23.60	141.50	1919.47	-307.80	239.54	390.02	1.98	1.43	3.52	MWD
2063.00	24.10	143.30	2001.79	-336.64	261.74	426.41	0.98	0.56	2.00	MWD
2154.00	24.10	140.10	2084.86	-365.79	284.76	463.56	1.44	0.00	-3.52	MWD
2245.00	24.50	138.30	2167.80	-394.13	309.23	500.96	0.93	0.44	-1.98	MWD
2336.00	24.50	143.30	2250.61	-423.35	333.06	538.66	2.28	0.00	5.49	MWD
2427.00	25.90	142.60	2332.95	-454.27	356.41	577.39	1.57	1.54	-0.77	MWD
2517.00	27.60	144.00	2413.31	-486.75	380.60	617.89	2.01	1.89	1.56	MWD
2608.00	28.30	142.90	2493.70	-521.01	406.00	660.52	0.96	0.77	-1.21	MWD
2699.00	28.30	142.90	2573.82	-555.42	432.03	703.65	0.00	0.00	0.00	MWD
2790.00	27.60	142.90	2654.21	-589.44	457.76	746.30	0.77	-0.77	0.00	MWD
2881.00	27.80	143.30	2734.78	-623.27	483.15	788.59	0.30	0.22	0.44	MWD
2971.00	27.40	142.90	2814.54	-656.61	508.19	830.28	0.49	-0.44	-0.44	MWD
3062.00	28.00	140.10	2895.11	-689.70	534.52	872.57	1.57	0.66	-3.08	MWD
3153.00	25.90	142.60	2976.23	-721.88	560.30	913.80	2.62	-2.31	2.75	MWD
3244.00	26.60	142.20	3057.84	-753.77	584.86	954.04	0.79	0.77	-0.44	MWD
3335.00	25.70	141.50	3139.53	-785.31	609.63	994.15	1.05	-0.99	-0.77	MWD
3425.00	26.40	141.90	3220.38	-816.33	634.12	1033.67	0.80	0.78	0.44	MWD
3516.00	26.00	142.90	3302.03	-848.15	658.64	1073.84	0.65	-0.44	1.10	MWD
3607.00	25.50	141.50	3384.00	-879.39	682.86	1113.37	0.87	-0.55	-1.54	MWD
3697.00	26.00	140.10	3465.06	-909.69	707.58	1152.47	0.87	0.56	-1.56	MWD
3789.00	26.00	140.10	3547.75	-940.63	733.45	1192.78	0.00	0.00	0.00	MWD
3879.00	27.40	141.20	3628.15	-971.90	759.08	1233.20	1.65	1.56	1.22	MWD
3970.00	28.90	142.60	3708.39	-1005.69	785.56	1276.13	1.80	1.65	1.54	MWD
4061.00	29.60	141.50	3787.78	-1040.75	812.90	1320.59	0.97	0.77	-1.21	MWD
4151.00	29.20	141.20	3866.19	-1075.26	840.50	1364.77	0.47	-0.44	-0.33	MWD
4242.00	26.90	143.30	3946.50	-1109.07	866.71	1407.55	2.75	-2.53	2.31	MWD
4333.00	25.70	143.60	4028.08	-1141.45	890.72	1447.86	1.33	-1.32	0.33	MWD
4424.00	27.40	141.00	4109.48	-1173.61	915.61	1488.52	2.26	1.87	-2.86	MWD
4515.00	28.50	142.20	4189.87	-1207.04	942.10	1531.17	1.36	1.21	1.32	MWD
4606.00	29.60	142.60	4269.42	-1242.05	969.06	1575.36	1.23	1.21	0.44	MWD
4696.00	28.20	140.80	4348.21	-1276.19	996.00	1618.84	1.83	-1.56	-2.00	MWD
4787.00	26.60	141.20	4429.00	-1308.73	1022.36	1660.72	1.77	-1.76	0.44	MWD
4878.00	26.00	141.90	4510.58	-1340.31	1047.43	1701.03	0.74	-0.66	0.77	MWD
4969.00	25.00	141.50	4592.71	-1371.05	1071.71	1740.21	1.12	-1.10	-0.44	MWD
5060.00	25.90	142.20	4674.88	-1401.81	1095.86	1779.31	1.04	0.99	0.77	MWD
5150.00	24.50	143.60	4756.32	-1432.36	1118.98	1817.62	1.69	-1.56	1.56	MWD
5241.00	22.30	139.80	4839.83	-1460.74	1141.33	1853.74	2.93	-2.42	-4.18	MWD
5332.00	19.70	141.20	4924.78	-1485.88	1162.09	1886.34	2.91	-2.86	1.54	MWD
5423.00	17.60	138.00	5011.00	-1508.06	1180.91	1915.41	2.57	-2.31	-3.52	MWD
5514.00	17.60	134.80	5097.74	-1527.98	1199.87	1942.79	1.06	0.00	-3.52	MWD
5604.00	15.10	138.00	5184.10	-1546.29	1217.38	1967.99	2.95	-2.78	3.56	MWD
5695.00	14.10	135.50	5272.16	-1563.00	1233.08	1990.83	1.30	-1.10	-2.75	MWD
5786.00	13.20	139.80	5360.59	-1578.84	1247.55	2012.23	1.49	-0.99	4.73	MWD
5877.00	11.80	145.00	5449.43	-1594.40	1259.60	2031.91	1.97	-1.54	5.71	MWD
5967.00	11.30	136.20	5537.62	-1608.31	1270.98	2049.87	2.03	-0.56	-9.78	MWD
6058.00	9.50	133.10	5627.12	-1619.87	1282.63	2066.17	2.07	-1.98	-3.41	MWD
6148.00	9.10	131.70	5715.94	-1629.68	1293.37	2080.51	0.51	-0.44	-1.56	MWD
6240.00	6.50	139.40	5807.08	-1638.48	1302.19	2092.88	3.04	-2.83	8.37	MWD
6330.00	5.10	144.70	5896.62	-1645.61	1307.82	2101.97	1.66	-1.56	5.89	MWD
6421.00	3.90	141.20	5987.33	-1651.32	1312.10	2109.10	1.35	-1.32	-3.85	MWD

Allis-Chalmers Energy, Inc.

Survey Report

Company: ANADARKO PETROLEUM Field: Weld County, CO Site: Sekich 20-18 Pad Well: 30-20 Wellpath: Original Hole	Date: 03/27/2011 Co-ordinate(NE) Reference: Well: 30-20, Grid North Vertical (TVD) Reference: 4865'GL+13'KB 4878.0 Section (VS) Reference: Well (0.00N,0.00E,141.88Azi) 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
6512.00	2.50	151.70	6078.19	-1655.48	1314.98	2114.15	1.66	-1.54	11.54	MWD
6693.00	1.40	149.20	6259.08	-1660.86	1317.98	2120.23	0.61	-0.61	-1.38	MWD
6875.00	1.10	144.00	6441.04	-1664.18	1320.15	2124.18	0.18	-0.16	-2.86	MWD
7056.00	0.90	125.30	6622.01	-1666.41	1322.33	2127.28	0.21	-0.11	-10.33	MWD
7238.00	0.70	114.10	6804.00	-1667.69	1324.51	2129.64	0.14	-0.11	-6.15	MWD
7420.00	0.70	96.50	6985.98	-1668.27	1326.63	2131.40	0.12	0.00	-9.67	MWD
7692.00	0.80	119.00	7257.96	-1669.38	1329.94	2134.32	0.11	0.04	8.27	MWD
8055.00	0.70	109.90	7620.93	-1671.36	1334.24	2138.53	0.04	-0.03	-2.51	MWD
8166.08	0.51	108.85	7732.00	-1671.75	1335.34	2139.52	0.17	-0.17	-0.94	30-20 PBHL
8170.00	0.50	108.80	7735.92	-1671.76	1335.38	2139.55	0.17	-0.17	-1.32	MWD
8215.00	0.50	108.80	7780.92	-1671.89	1335.75	2139.88	0.00	0.00	0.00	30-20 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		
30-20 SL			0.00	0.00	0.00	1324640.81	3159791.35	40	13	23.211 N	104	55	39.994 W
30-20 PBHL			7732.00	-1677.14	1315.99	1322963.67	3161107.34	40	13	6.553 N	104	55	23.168 W
-Circle (Radius: 50)													
30-20 BHL			7780.92	-1671.89	1335.75	1322968.92	3161127.10	40	13	6.604 N	104	55	22.913 W

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
785.00	780.77	8.625	9.875	8 5/8"