





# Actual Wellpath Report

Williams 16-20 AWP

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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANADARKO PETROLEUM	Slot	Slot #07 Williams 16-20 (1568' FSL & 1497' FEL)
Area	COLORADO	Well	Williams 16-20
Field	WELD COUNTY (ANADARKO)	Wellbore	Williams 16-20 AWB
Facility	SEC.20-T2N-R68W		

## REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado State Planes, Northern Zone (501), US feet	Software System	WellArchitect@ 2.0
North Reference	True	User	Cookdanm
Scale	0.999959	Report Generated	6/16/2009 at 12:58:54 PM
Convergence at slot	0.31° East	Database/Source file	WellArchitect_Denver/Williams_16-20_AWB.xml

## WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[USft]	Northing[USft]	Latitude	Longitude
Slot Location	-58.29	0.00	3133378.39	1287348.52	40°07'16.248"N	105°01'23.016"W
Facility Reference Pt			3133378.07	1287406.80	40°07'16.824"N	105°01'23.016"W
Field Reference Pt			3197771.84	1268891.29	40°04'09.600"N	104°47'36.000"W

## WELLPATH DATUM

Calculation method	Minimum curvature	XTREME 12 (RT) to Facility Vertical Datum	4916.00ft
Horizontal Reference Pt	Slot	XTREME 12 (RT) to Mean Sea Level	4916.00ft
Vertical Reference Pt	XTREME 12 (RT)	Facility Vertical Datum to Mud Line (Facility)	0.00ft
MD Reference Pt	XTREME 12 (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	133.81°



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## WELLPATH DATA (79 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
0.00†	0.000	14.900	0.00	0.00	0.00	0.00	0.00	
15.00	0.000	14.900	15.00	0.00	0.00	0.00	0.00	
179.00	1.800	14.900	178.97	-1.25	2.49	0.66	1.10	
274.00	1.200	21.900	273.94	-2.34	4.85	1.42	0.66	
368.00	1.200	1.500	367.92	-3.37	6.75	1.81	0.45	
461.00	0.900	36.700	460.91	-4.11	8.31	2.27	0.75	
554.00	0.400	88.700	553.90	-3.97	8.90	3.03	0.78	
647.00	0.500	106.300	646.90	-3.39	8.80	3.75	0.18	
740.00	0.500	133.400	739.89	-2.62	8.40	4.43	0.25	
860.00	0.200	203.000	859.89	-2.02	7.85	4.73	0.39	
950.00	1.500	135.800	949.88	-0.79	6.86	5.49	1.59	
1041.00	4.200	140.000	1040.76	3.72	3.46	8.46	2.97	
1132.00	6.100	132.000	1131.39	11.86	-2.33	14.20	2.23	
1222.00	7.800	141.100	1220.73	22.70	-10.29	21.59	2.24	
1313.00	9.300	135.800	1310.71	36.17	-20.36	30.59	1.86	
1403.00	10.200	144.200	1399.42	51.28	-32.04	40.32	1.87	
1494.00	12.100	137.600	1488.70	68.73	-45.62	51.47	2.51	
1584.00	14.700	135.100	1576.24	89.56	-60.68	65.89	2.96	
1675.00	16.700	133.000	1663.84	114.18	-77.78	83.61	2.28	
1765.00	17.100	132.300	1749.96	140.33	-95.50	102.85	0.50	
1856.00	17.700	134.800	1836.79	167.54	-114.25	122.56	1.05	
1945.00	19.500	134.400	1921.14	195.92	-134.18	142.78	2.03	
2035.00	19.900	129.100	2005.88	226.21	-154.35	165.40	2.03	
2126.00	19.000	132.700	2091.69	256.46	-174.17	188.31	1.65	
2216.00	17.300	132.000	2177.21	284.49	-193.06	209.02	1.90	
2307.00	17.300	141.800	2264.11	311.41	-212.75	227.45	3.20	
2397.00	18.300	134.800	2349.81	338.80	-233.22	245.75	2.62	
2488.00	18.900	133.400	2436.06	367.82	-253.42	266.60	0.82	
2578.00	18.800	132.700	2521.23	396.90	-273.27	287.85	0.27	
2669.00	18.800	136.200	2607.38	426.21	-293.80	308.77	1.24	



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Facility	SEC.20-T2N-R68W		

## WELLPATH DATA (79 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
2760.00	18.200	134.800	2693.68	455.07	-314.39	329.00	0.82	
2850.00	17.000	133.400	2779.46	482.28	-333.34	348.54	1.41	
2941.00	18.300	135.800	2866.18	509.86	-352.72	368.16	1.64	
3031.00	18.000	134.800	2951.70	537.88	-372.65	387.88	0.48	
3121.00	19.300	136.200	3036.97	566.65	-393.18	408.04	1.53	
3212.00	17.900	136.900	3123.22	595.64	-414.25	428.01	1.56	
3303.00	17.100	131.200	3210.01	622.97	-433.28	447.63	2.08	
3392.00	16.400	128.800	3295.24	648.56	-449.77	467.27	1.11	
3482.00	15.300	136.900	3381.82	673.08	-466.40	485.29	2.74	
3573.00	15.100	133.700	3469.64	696.92	-483.36	502.06	0.95	
3664.00	13.700	136.200	3557.78	719.54	-499.32	518.09	1.68	
3753.00	13.400	142.100	3644.31	740.28	-515.07	531.72	1.59	
3844.00	15.300	139.700	3732.47	762.66	-532.55	545.97	2.19	
3934.00	14.600	127.400	3819.44	785.75	-548.50	562.66	3.60	
4025.00	16.600	135.100	3907.09	810.15	-564.68	580.95	3.16	
4115.00	18.500	142.100	3992.91	837.13	-585.05	598.80	3.15	
4206.00	19.000	140.000	4079.08	866.15	-607.79	617.19	0.92	
4296.00	18.300	137.200	4164.36	894.82	-629.39	636.21	1.26	
4387.00	17.600	130.900	4250.94	922.82	-648.88	656.32	2.27	
4477.00	17.400	129.800	4336.77	949.84	-666.40	676.94	0.43	
4568.00	20.700	130.900	4422.78	979.48	-685.65	699.56	3.65	
4658.00	21.900	134.400	4506.63	1012.15	-707.81	723.57	1.94	
4748.00	21.000	133.400	4590.40	1045.06	-730.63	747.28	1.08	
4839.00	17.100	129.500	4676.40	1074.72	-750.35	769.46	4.51	
4929.00	15.200	131.900	4762.84	1099.71	-766.65	788.46	2.24	
5020.00	14.200	131.200	4850.86	1122.78	-781.97	805.74	1.12	
5110.00	11.600	137.600	4938.59	1142.84	-795.92	820.15	3.29	
5201.00	8.900	129.500	5028.13	1159.00	-807.16	831.75	3.36	
5291.00	7.500	127.700	5117.21	1171.78	-815.18	841.77	1.58	
5382.00	3.400	145.300	5207.79	1180.33	-821.03	848.01	4.81	

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Facility	SEC.20-T2N-R68W		

## WELLPATH DATA (79 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
5472.00	3.300	147.800	5297.63	1185.46	-825.42	850.91	0.20	
5563.00	1.300	83.800	5388.57	1188.67	-827.53	853.33	3.26	
5699.00	0.800	80.700	5524.54	1190.23	-827.21	855.80	0.37	
5834.00	0.500	64.100	5659.53	1191.00	-826.80	857.26	0.26	
5970.00	0.400	60.900	5795.53	1191.34	-826.31	858.21	0.08	
6106.00	0.600	16.300	5931.53	1191.16	-825.39	858.82	0.31	
6241.00	0.500	356.300	6066.52	1190.39	-824.13	858.98	0.16	
6377.00	0.400	346.400	6202.51	1189.56	-823.07	858.83	0.09	
7191.00	0.800	246.200	7016.48	1185.00	-822.60	852.97	0.12	
→ 7326.00	0.900	203.700	7151.47	1185.00	-823.96	851.68	0.46	
7462.00	1.800	189.900	7287.43	1186.56	-827.04	850.88	0.70	
7597.00	1.400	182.900	7422.38	1188.83	-830.77	850.43	0.33	
7732.00	1.000	160.400	7557.35	1190.96	-833.53	850.75	0.45	
7870.00	1.000	67.200	7695.34	1192.51	-834.20	852.26	1.05	
8005.00	0.700	30.300	7830.32	1192.79	-833.03	853.76	0.45	
8141.00	0.700	60.500	7966.31	1192.83	-831.90	854.90	0.27	
8276.00	0.700	80.700	8101.30	1193.57	-831.36	856.44	0.18	
8340.00	0.700	81.300	8165.30	1194.04	-831.24	857.21	0.01	LAST BHI MWD SURVEY
8395.00†	0.700	81.300	8220.29	1194.45	-831.14	857.87	0.00	PROJECTION TO BIT

## HOLE & CASING SECTIONS Ref Wellbore: Williams 16-20 AWB Ref Wellpath: Williams 16-20 AWP

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
12.25in Open Hole	15.00	773.00	758.00	15.00	772.89	0.00	0.00	8.22	4.61
8.625in Casing Surface	15.00	773.00	758.00	15.00	772.89	0.00	0.00	8.22	4.61
7.875in Open Hole	773.00	8395.00	7622.00	772.89	8220.29	8.22	4.61	-831.14	857.87



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**TARGETS**

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
Williams 16-20 Center of the Hardline Box (200' each direction)		4200.00	-902.79	837.27	3134220.46	1286450.29	40°07'07.326"N	105°01'12.239"W	square
Williams 16-20 Geo Target 50' radius (750' FSL & 650' FEL)		4200.00	-812.79	847.27	3134229.98	1286540.34	40°07'08.216"N	105°01'12.110"W	circle

**WELLPATH COMPOSITION** Ref Wellbore: Williams 16-20 AWB Ref Wellpath: Williams 16-20 AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
15.00	740.00	MTC (Collar, post-2000) (Standard)	BHI/MTC-POST-2000 12.25"HOLE <179-740>	Williams 16-20 AWB
740.00	8340.00	MTC (Collar, post-2000) (Standard)	BHI/MTC-POST-2000 7.875"HOLE <860-8340>	Williams 16-20 AWB
8340.00	8395.00	Blind Drilling (std)	Projection to bit	Williams 16-20 AWB



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WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
8340.00	0.700	81.300	8165.30	LAST BHI MWD SURVEY
8395.00	0.700	81.300	8220.29	PROJECTION TO BIT