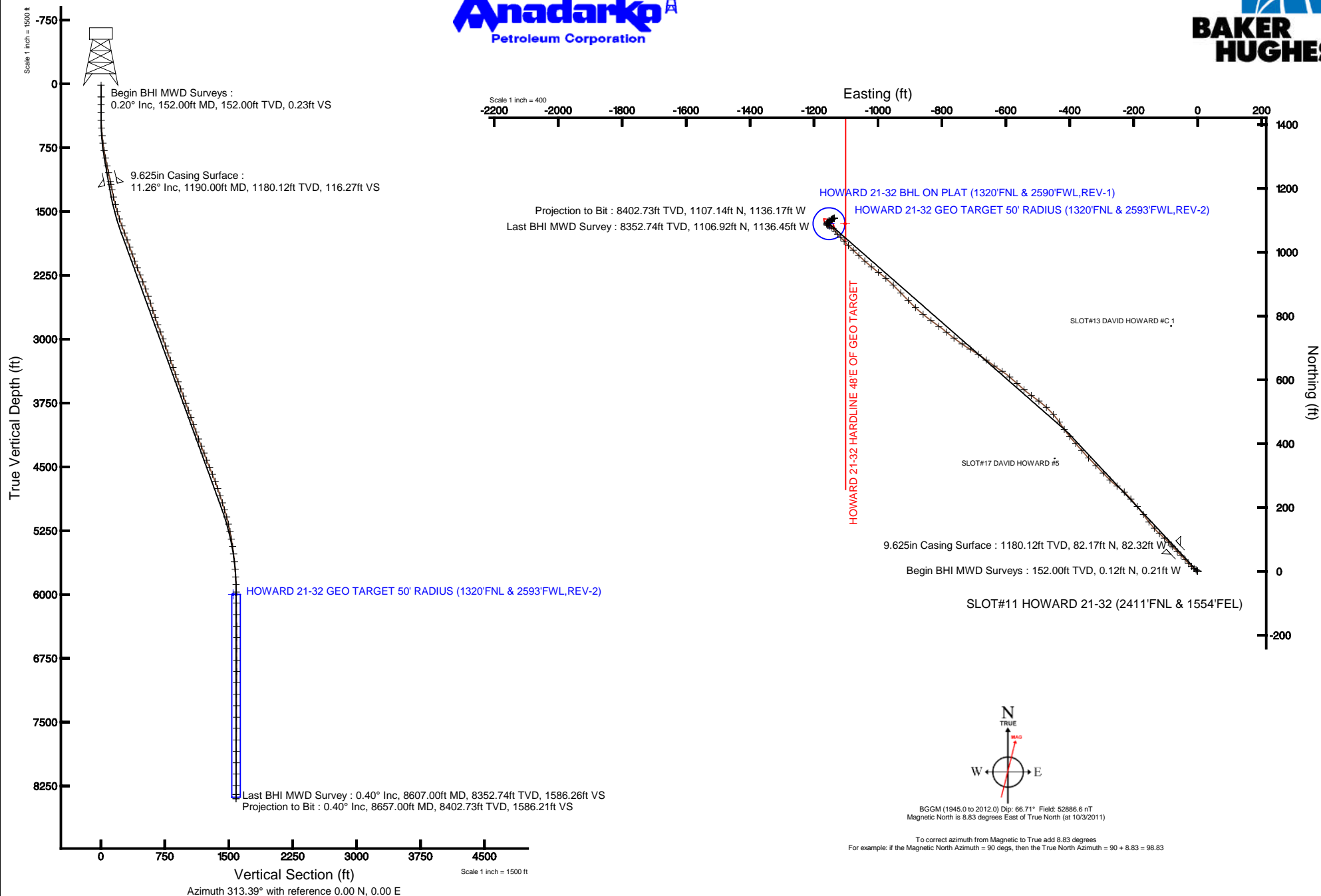


# ANADARKO E&P COMPANY LP

Location: COLORADO Slot: SLOT#11 HOWARD 21-32 (2411'FNL & 1554'FEL)  
 Field: WELD COUNTY (KERR MCGEE) Well: HOWARD 21-32  
 Facility: SEC.32-T1N-R67W Wellbore: HOWARD 21-32 PWB

Plot reference wellpath is HOWARD 21-32 (REV-D.0) PWP

True vertical depths are referenced to XTREME 15 (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to XTREME 15 (RKB)	North Reference: True north
XTREME 15 (RKB) to Mean Sea Level: 5076 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#11 HOWARD 21-32 (2411'FNL & 1554'FEL)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: wilsjef02 on 1/10/2012





# Actual Wellpath Report

HOWARD 21-32 AWP

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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANADARKO E&P COMPANY LP	Slot	SLOT#11 HOWARD 21-32 (2411'FNL & 1554'FEL)
Area	COLORADO	Well	HOWARD 21-32
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 21-32 AWB
Facility	SEC.32-T1N-R67W		

## REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 3.0.0
North Reference	True	User	Wilsjef02
Scale	0.999966	Report Generated	1/10/2012 at 8:01:21 AM
Convergence at slot	0.38° East	Database/Source file	WA_ANADARKO/HOWARD_21-32_AWB.xml

## WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	80.12	-5.32	3165156.32	1246389.50	40°00'29.585"N	104°54'37.454"W
Facility Reference Pt			3165162.17	1246309.41	40°00'28.793"N	104°54'37.386"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 15 (RKB) to Facility Vertical Datum	5076.00ft
Horizontal Reference Pt	Slot	XTREME 15 (RKB) to Mean Sea Level	5076.00ft
Vertical Reference Pt	XTREME 15 (RKB)	XTREME 15 (RKB) to Mud Line at Slot (SLOT#11 HOWARD 21-32 (2411'FNL & 1554'FEL))	5076.00ft
MD Reference Pt	XTREME 15 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	313.39°



# Actual Wellpath Report

HOWARD 21-32 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANADARKO E&P COMPANY LP	Slot	SLOT#11 HOWARD 21-32 (2411'FNL & 1554'FEL)
Area	COLORADO	Well	HOWARD 21-32
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 21-32 AWB
Facility	SEC.32-T1N-R67W		

## WELLPATH DATA (90 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00†	0.000	300.600	0.00	0.00	0.00	0.00	40°00'29.585"N	104°54'37.454"W	0.00	
15.00	0.000	300.600	15.00	0.00	0.00	0.00	40°00'29.585"N	104°54'37.454"W	0.00	
152.00	0.200	300.600	152.00	0.23	0.12	-0.21	40°00'29.586"N	104°54'37.457"W	0.15	Begin BHI MWD Surveys
244.00	0.300	306.600	244.00	0.63	0.35	-0.54	40°00'29.588"N	104°54'37.461"W	0.11	
337.00	0.400	309.100	337.00	1.19	0.70	-0.98	40°00'29.592"N	104°54'37.467"W	0.11	
428.00	1.600	335.400	427.98	2.69	2.05	-1.76	40°00'29.605"N	104°54'37.477"W	1.38	
517.00	3.600	308.000	516.89	6.62	4.90	-4.48	40°00'29.633"N	104°54'37.512"W	2.58	
607.00	5.500	301.700	606.60	13.66	8.91	-10.38	40°00'29.673"N	104°54'37.588"W	2.18	
696.00	7.600	311.200	695.02	23.72	15.03	-18.43	40°00'29.733"N	104°54'37.691"W	2.65	
785.00	9.400	317.200	783.04	36.85	24.24	-27.80	40°00'29.824"N	104°54'37.812"W	2.25	
874.00	11.300	317.900	870.59	52.80	36.04	-38.59	40°00'29.941"N	104°54'37.950"W	2.14	
968.00	11.800	315.000	962.68	71.59	49.67	-51.56	40°00'30.076"N	104°54'38.117"W	0.82	
1050.00	11.800	316.100	1042.95	88.35	61.64	-63.30	40°00'30.194"N	104°54'38.268"W	0.27	
1155.00	11.400	317.900	1145.81	109.41	77.08	-77.70	40°00'30.346"N	104°54'38.453"W	0.51	
1253.00	11.000	317.200	1241.94	128.40	91.12	-90.55	40°00'30.485"N	104°54'38.618"W	0.43	
1342.00	12.700	312.200	1329.04	146.65	103.93	-103.57	40°00'30.612"N	104°54'38.785"W	2.23	
1431.00	14.700	312.600	1415.51	167.73	118.14	-119.13	40°00'30.752"N	104°54'38.985"W	2.25	
1520.00	15.600	318.900	1501.42	190.93	134.81	-135.31	40°00'30.917"N	104°54'39.193"W	2.11	
1608.00	18.300	321.700	1585.59	216.39	154.57	-151.65	40°00'31.112"N	104°54'39.403"W	3.20	
1695.00	20.900	323.900	1667.54	245.17	177.83	-169.26	40°00'31.342"N	104°54'39.630"W	3.11	
1784.00	20.800	320.700	1750.72	276.45	202.89	-188.63	40°00'31.590"N	104°54'39.878"W	1.28	
1872.00	20.200	319.600	1833.14	307.05	226.55	-208.37	40°00'31.824"N	104°54'40.132"W	0.81	
1960.00	19.600	312.900	1915.90	336.92	248.17	-229.03	40°00'32.037"N	104°54'40.398"W	2.68	
2048.00	19.400	306.600	1998.86	366.19	266.93	-251.58	40°00'32.223"N	104°54'40.688"W	2.40	
2135.00	20.200	315.000	2080.73	395.56	286.17	-273.81	40°00'32.413"N	104°54'40.973"W	3.39	
2222.00	20.900	315.400	2162.20	426.09	307.84	-295.32	40°00'32.627"N	104°54'41.250"W	0.82	
2310.00	22.100	316.800	2244.07	458.30	331.09	-317.68	40°00'32.857"N	104°54'41.537"W	1.48	
2400.00	21.800	315.700	2327.55	491.90	355.39	-340.94	40°00'33.097"N	104°54'41.836"W	0.57	
2488.00	19.800	319.800	2409.81	523.04	378.47	-361.97	40°00'33.325"N	104°54'42.106"W	2.81	
2577.00	18.600	318.200	2493.86	552.17	400.57	-381.17	40°00'33.543"N	104°54'42.353"W	1.47	
2665.00	19.200	320.300	2577.12	580.52	422.16	-399.76	40°00'33.757"N	104°54'42.592"W	1.03	
2754.00	18.300	326.300	2661.40	608.67	445.05	-416.87	40°00'33.983"N	104°54'42.812"W	2.39	
2842.00	18.500	324.900	2744.90	635.81	467.97	-432.56	40°00'34.209"N	104°54'43.013"W	0.55	
2932.00	20.100	318.900	2829.85	665.20	491.31	-450.94	40°00'34.440"N	104°54'43.250"W	2.83	
3022.00	21.000	312.900	2914.13	696.73	513.94	-472.92	40°00'34.664"N	104°54'43.532"W	2.54	
3110.00	19.900	306.300	2996.60	727.36	533.54	-496.55	40°00'34.857"N	104°54'43.836"W	2.90	
3197.00	19.900	307.000	3078.40	756.77	551.22	-520.30	40°00'35.032"N	104°54'44.141"W	0.27	
3285.00	18.600	311.400	3161.48	785.68	569.52	-542.79	40°00'35.213"N	104°54'44.430"W	2.21	
3375.00	19.900	311.200	3246.45	815.33	589.10	-565.09	40°00'35.406"N	104°54'44.717"W	1.45	
3465.00	19.400	311.200	3331.21	845.58	609.03	-587.86	40°00'35.603"N	104°54'45.009"W	0.56	
3554.00	19.200	303.400	3415.22	874.76	626.83	-611.20	40°00'35.779"N	104°54'45.309"W	2.90	
3644.00	20.000	305.500	3500.01	904.58	643.91	-636.09	40°00'35.948"N	104°54'45.629"W	1.18	
3734.00	20.700	307.000	3584.39	935.64	662.42	-661.32	40°00'36.131"N	104°54'45.953"W	0.97	
3823.00	19.300	303.400	3668.02	965.76	679.99	-686.16	40°00'36.305"N	104°54'46.273"W	2.09	
3913.00	20.000	301.300	3752.78	995.45	696.17	-711.73	40°00'36.464"N	104°54'46.601"W	1.10	
4002.00	19.700	305.500	3836.50	1025.20	712.79	-736.95	40°00'36.629"N	104°54'46.925"W	1.64	
4091.00	20.700	307.000	3920.02	1055.69	730.97	-761.73	40°00'36.808"N	104°54'47.244"W	1.27	
4181.00	18.900	309.800	4004.70	1086.05	749.87	-785.63	40°00'36.995"N	104°54'47.551"W	2.26	
4271.00	20.000	305.500	4089.57	1115.84	768.14	-809.36	40°00'37.176"N	104°54'47.856"W	2.01	
4361.00	20.200	307.000	4174.09	1146.53	786.43	-834.30	40°00'37.356"N	104°54'48.176"W	0.61	
4450.00	21.100	309.800	4257.37	1177.79	805.93	-858.88	40°00'37.549"N	104°54'48.492"W	1.50	
4538.00	21.100	312.600	4339.47	1209.44	826.80	-882.71	40°00'37.755"N	104°54'48.799"W	1.15	
4627.00	21.000	316.100	4422.54	1241.39	849.13	-905.56	40°00'37.976"N	104°54'49.092"W	1.42	
4716.00	22.500	316.100	4505.20	1274.33	872.89	-928.43	40°00'38.211"N	104°54'49.386"W	1.69	
4806.00	21.800	315.000	4588.56	1308.24	897.12	-952.19	40°00'38.450"N	104°54'49.692"W	0.90	
4894.00	20.300	310.800	4670.69	1339.82	918.65	-975.30	40°00'38.663"N	104°54'49.989"W	2.42	
4984.00	18.600	307.000	4755.55	1369.69	937.49	-998.58	40°00'38.849"N	104°54'50.288"W	2.35	

5073.00	18.200	309.400	4840.00	1397.66	954.86	-1020.66	40°00'39.021"N	104°54'50.572"W	0.96	
5160.00	17.600	312.200	4922.79	1424.36	972.32	-1040.90	40°00'39.193"N	104°54'50.832"W	1.21	
5247.00	17.400	313.600	5005.77	1450.52	990.12	-1060.07	40°00'39.369"N	104°54'51.078"W	0.54	



# Actual Wellpath Report

HOWARD 21-32 AWP

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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANADARKO E&P COMPANY LP	Slot	SLOT#11 HOWARD 21-32 (2411'FNL & 1554'FEL)
Area	COLORADO	Well	HOWARD 21-32
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 21-32 AWB
Facility	SEC.32-T1N-R67W		

## WELLPATH DATA (90 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
5333.00	14.900	314.000	5088.37	1474.44	1006.67	-1077.34	40°00'39.533"N	104°54'51.300"W	2.91	
5422.00	12.700	314.300	5174.79	1495.66	1021.46	-1092.57	40°00'39.679"N	104°54'51.496"W	2.47	
5511.00	11.400	318.200	5261.83	1514.21	1034.85	-1105.44	40°00'39.811"N	104°54'51.661"W	1.72	
5600.00	9.700	315.000	5349.32	1530.47	1046.71	-1116.60	40°00'39.928"N	104°54'51.805"W	2.02	
5689.00	8.600	317.900	5437.19	1544.60	1056.95	-1126.36	40°00'40.030"N	104°54'51.930"W	1.34	
5778.00	7.100	325.900	5525.36	1556.61	1066.44	-1133.91	40°00'40.123"N	104°54'52.027"W	2.08	
5869.00	6.100	311.500	5615.76	1566.93	1074.30	-1140.68	40°00'40.201"N	104°54'52.114"W	2.12	
5959.00	3.700	302.700	5705.42	1574.56	1079.04	-1146.71	40°00'40.248"N	104°54'52.192"W	2.79	
6049.00	3.200	304.400	5795.26	1579.90	1082.03	-1151.23	40°00'40.277"N	104°54'52.250"W	0.57	
6137.00	3.400	282.300	5883.12	1584.56	1083.97	-1155.80	40°00'40.297"N	104°54'52.308"W	1.45	
6225.00	0.900	310.500	5971.05	1587.49	1084.97	-1158.88	40°00'40.307"N	104°54'52.348"W	3.00	
6357.00	1.000	351.600	6103.03	1589.43	1086.79	-1159.84	40°00'40.324"N	104°54'52.360"W	0.51	
6492.00	0.700	356.900	6238.02	1590.95	1088.78	-1160.05	40°00'40.344"N	104°54'52.363"W	0.23	
6628.00	0.700	24.300	6374.01	1591.82	1090.36	-1159.76	40°00'40.360"N	104°54'52.359"W	0.24	
6761.00	1.000	17.600	6506.99	1592.59	1092.21	-1159.07	40°00'40.378"N	104°54'52.350"W	0.24	
6893.00	1.100	27.800	6638.97	1593.44	1094.43	-1158.13	40°00'40.400"N	104°54'52.338"W	0.16	
7028.00	1.300	44.300	6773.94	1593.76	1096.67	-1156.46	40°00'40.422"N	104°54'52.317"W	0.29	
7159.00	1.500	61.900	6904.90	1593.19	1098.54	-1153.91	40°00'40.441"N	104°54'52.284"W	0.36	
7292.00	1.800	79.100	7037.85	1591.42	1099.76	-1150.32	40°00'40.453"N	104°54'52.238"W	0.43	
7428.00	1.000	57.300	7173.81	1589.89	1100.80	-1147.22	40°00'40.463"N	104°54'52.198"W	0.70	
7563.00	0.900	41.500	7308.79	1589.64	1102.23	-1145.53	40°00'40.477"N	104°54'52.176"W	0.21	
7697.00	0.500	51.000	7442.78	1589.60	1103.39	-1144.38	40°00'40.489"N	104°54'52.162"W	0.31	
7829.00	0.600	52.400	7574.77	1589.41	1104.17	-1143.38	40°00'40.496"N	104°54'52.149"W	0.08	
7965.00	0.500	65.400	7710.77	1589.08	1104.85	-1142.28	40°00'40.503"N	104°54'52.135"W	0.12	
8098.00	0.800	69.300	7843.76	1588.46	1105.42	-1140.88	40°00'40.509"N	104°54'52.117"W	0.23	
8233.00	0.700	68.600	7978.75	1587.69	1106.06	-1139.23	40°00'40.515"N	104°54'52.096"W	0.07	
8365.00	0.400	50.000	8110.74	1587.30	1106.65	-1138.13	40°00'40.521"N	104°54'52.081"W	0.26	
8500.00	0.500	103.800	8245.74	1586.73	1106.81	-1137.20	40°00'40.522"N	104°54'52.069"W	0.31	
8607.00	0.400	52.800	8352.74	1586.26	1106.92	-1136.45	40°00'40.524"N	104°54'52.060"W	0.37	Last BHI MWD Survey
8657.00	0.400	52.800	8402.73	1586.21	1107.14	-1136.17	40°00'40.526"N	104°54'52.056"W	0.00	Projection to Bit

## HOLE & CASING SECTIONS - Ref Wellbore: HOWARD 21-32 AWB Ref Wellpath: HOWARD 21-32 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	1190.00	1175.00	15.00	1180.12	0.00	0.00	82.17	-82.32
9.625in Casing Surface	15.00	1190.00	1175.00	15.00	1180.12	0.00	0.00	82.17	-82.32
7.875in Open Hole	1190.00	8657.00	7467.00	1180.12	8402.73	82.17	-82.32	1107.14	-1136.17



# Actual Wellpath Report

HOWARD 21-32 AWP

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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANADARKO E&P COMPANY LP	Slot	SLOT#11 HOWARD 21-32 (2411'FNL & 1554'FEL)
Area	COLORADO	Well	HOWARD 21-32
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 21-32 AWB
Facility	SEC.32-T1N-R67W		

## TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
HOWARD 21-32 BHL ON PLAT (1320'FNL & 2590'FWL,REV-1)		6000.00	1089.97	-1149.85	3163999.28	1247471.76	40°00'40.356"N	104°54'52.232"W	point
HOWARD 21-32 GEO TARGET 50' RADIUS (1320'FNL & 2593'FWL,REV-2)		6000.00	1089.97	-1152.88	3163996.25	1247471.74	40°00'40.356"N	104°54'52.271"W	circle
HOWARD 21-32 HARDLINE 48'E OF GEO TARGET		6000.00	1089.97	-1102.88	3164046.25	1247472.07	40°00'40.356"N	104°54'51.628"W	point

## WELLPATH COMPOSITION - Ref Wellbore: HOWARD 21-32 AWB Ref Wellpath: HOWARD 21-32 AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
15.00	1155.00	NaviTrak (Standard)	BHI MWD SURVEYS 12 1/4" HOLE <152-1155>	HOWARD 21-32 AWB
1155.00	8607.00	NaviTrak (Standard)	BHI MWD SURVEYS 7 7/8" HOLE <1253-8607>	HOWARD 21-32 AWB
8607.00	8657.00	Blind Drilling (std)	Projection to bit	HOWARD 21-32 AWB



# Actual Wellpath Report

HOWARD 21-32 AWP

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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANADARKO E&P COMPANY LP	Slot	SLOT#11 HOWARD 21-32 (2411'FNL & 1554'FEL)
Area	COLORADO	Well	HOWARD 21-32
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 21-32 AWB
Facility	SEC.32-T1N-R67W		

## WELLPATH COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
152.00	0.200	300.600	152.00	Begin BHI MWD Surveys
8607.00	0.400	52.800	8352.74	Last BHI MWD Survey
8657.00	0.400	52.800	8402.73	Projection to Bit