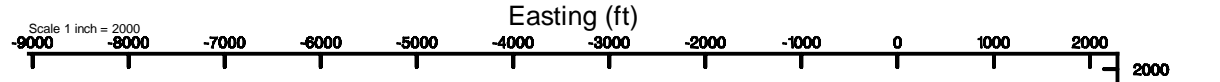


# KERR-MCGEE OIL & GAS ONSHORE LP (WA)

Location: COLORADO	Slot: SLOT#35 PUTTER 27-7HZ (358'FNL & 1241'FWL,SEC.27)
Field: WELD COUNTY (UTM/TRUE NORTH)	Well: PUTTER 27-7HZ
Facility: SEC.27-T3N-R68W	Wellbore: PUTTER 27-7HZ PWB
Plot reference wellpath is PUTTER 27-7HZ PWP Rev-A.0	Grid System: NAD83 / UTM Zone 13 North, US feet
True vertical depths are referenced to PD 464 (21) (RT)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to PD 464 (21) (RT)	North Reference: True north
PD 464 (21) (RT) to Mean Sea Level: 5001 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#35 PUTTER 27-7HZ (358'FNL & 1241'FWL,SEC.27)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: painsetr on 2018-01-18
	Database: WA_DEN_Anadarko_Defn

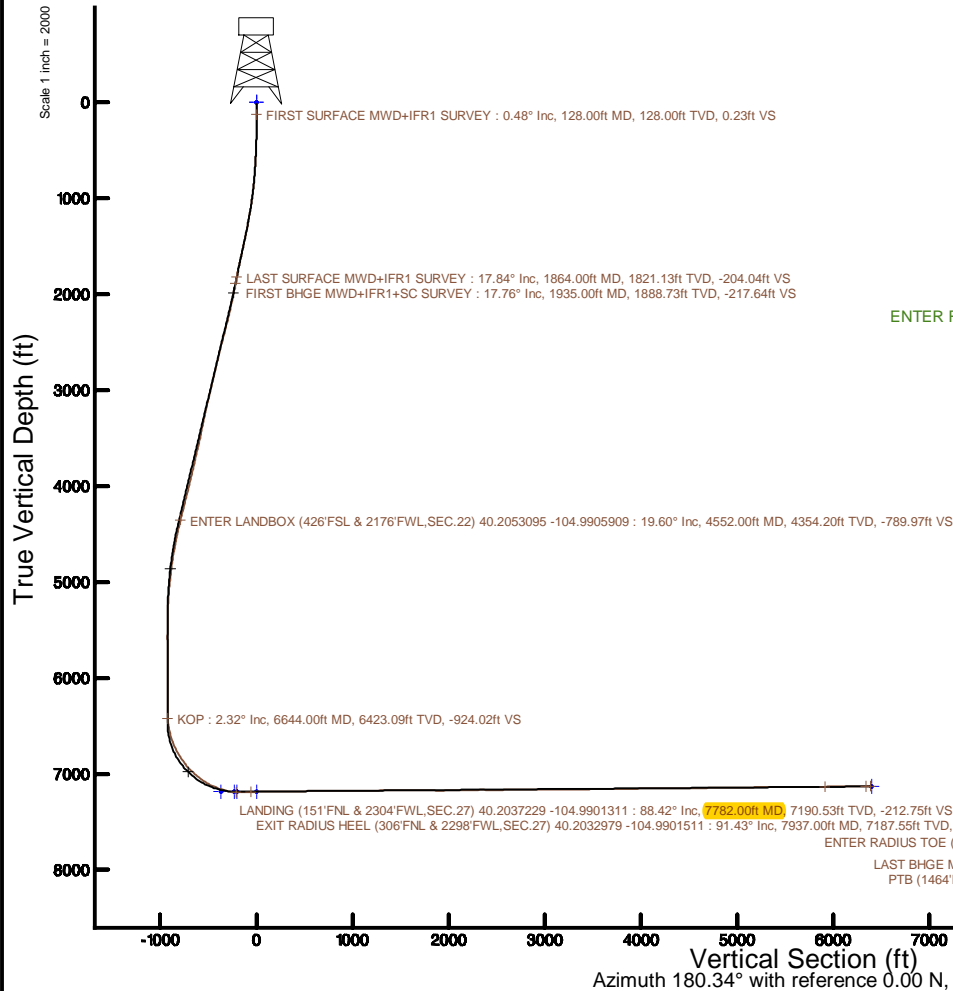


## SLOT#35 PUTTER 27-7HZ (358'FNL & 1241'FWL,SEC.27)

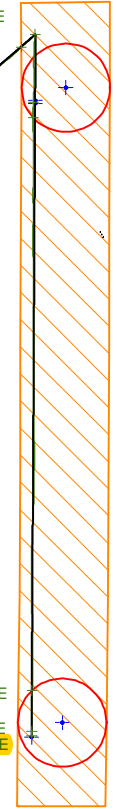
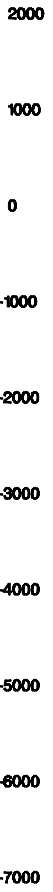
KOP : 6423.09ft TVD, 917.69ft N, 1079.22ft E  
 ENTER LANDBOX (426'FSL & 2176'FWL,SEC.22) 40.2053095 -104.9905909 : 4354.20ft TVD, 784.49ft N, 934.08ft E  
 FIRST BHGE MWD+IFR1+SC SURVEY : 1888.73ft TVD, 216.06ft N, 268.50ft E  
**LANDING (151'FNL & 2304'FWL,SEC.27) 40.2037229 -104.9901311 : 7190.53ft TVD, 206.50ft N, 1062.55ft E**  
 LAST SURFACE MWD+IFR1 SURVEY : 1821.13ft TVD, 202.56ft N, 251.50ft E  
 EXIT RADIUS HEEL (306'FNL & 2298'FWL,SEC.27) 40.2032979 -104.9901511 : 7187.55ft TVD, 51.69ft N, 1056.95ft E  
 FIRST SURFACE MWD+IFR1 SURVEY : 128.00ft TVD, 0.23ft S, 0.38ft E

ENTER RADIUS TOE (993'FNL & 2280'FWL,SEC.34) 40.1869032 -104.9901912 : 7133.56ft TVD, 5920.89ft S, 1046.02ft E

LAST BHGE MWD+IFR1+SC SURVEY : 7129.66ft TVD, 6344.84ft S, 1042.99ft E  
**PTB (1464'FNL & 2277'FWL,SEC.34) 40.1856105 -104.9902025 : 7128.72ft TVD, 6391.83ft S, 1042.88ft E**



Northing (ft)



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#35 PUTTER 27-7HZ (358'FNL & 1241'FWL,SEC.27)
Area	COLORADO	Well	PUTTER 27-7HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUTTER 27-7HZ AWB
Facility	SEC.27-T3N-R68W		

REPORT SETUP INFORMATION			
Projection System	NAD83 / UTM Zone 13 North, US feet	Software System	WellArchitect® 5.0
North Reference	True	User	Painsetr
Scale	0.999600	Report Generated	1/18/2018 at 10:07 AM
Convergence at slot	0.00°	Database/Source file	WA_DEN_Anadarko_Defn/PUTTER_27-7HZ_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	3761.80	331.01	1642110.13	14600712.18	40°12'11.362"N	104°59'38.166"W
Facility Reference Pt			1641779.46	14596951.88	40°11'34.188"N	104°59'42.432"W
Field Reference Pt			1698235.31	14552047.82	40°04'09.600"N	104°47'36.000"W

WELLPATH DATUM			
Calculation method	Minimum curvature	PD 464 (21') (RT) to Facility Vertical Datum	5001.00ft
Horizontal Reference Pt	Slot	PD 464 (21') (RT) to Mean Sea Level	5001.00ft
Vertical Reference Pt	PD 464 (21') (RT)	PD 464 (21') (RT) to Mud Line at Slot (SLOT#35 PUTTER 27-7HZ (358'FNL & 1241'FWL,SEC.27))	5001.00ft
MD Reference Pt	PD 464 (21') (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	180.34°

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#35 PUTTER 27-7HZ (358'FNL & 1241'FWL,SEC.27)
Area	COLORADO	Well	PUTTER 27-7HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUTTER 27-7HZ AWB
Facility	SEC.27-T3N-R68W		

WELLPATH DATA (202 stations) † = interpolated/extrapolated station												
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	DLS (°/100ft)	Comments
0.00†	0.000	121.030	0.00	0.00	0.00	0.00	1642110.13	14600712.18	40°12'11.362"N	104°59'38.166"W	0.00	
21.00	0.000	121.030	21.00	0.00	0.00	0.00	1642110.13	14600712.18	40°12'11.362"N	104°59'38.166"W	0.00	
128.00	0.480	121.030	128.00	0.23	-0.23	0.38	1642110.52	14600711.95	40°12'11.360"N	104°59'38.161"W	0.45	FIRST SURFACE MWD+IFR1 SURVEY
159.00	0.400	144.240	159.00	0.38	-0.39	0.56	1642110.69	14600711.80	40°12'11.358"N	104°59'38.159"W	0.62	
191.00	0.570	135.890	191.00	0.59	-0.59	0.73	1642110.87	14600711.59	40°12'11.356"N	104°59'38.157"W	0.57	
223.00	0.260	131.490	223.00	0.75	-0.75	0.90	1642111.03	14600711.43	40°12'11.355"N	104°59'38.154"W	0.97	
254.00	0.000	278.270	254.00	0.79	-0.80	0.95	1642111.08	14600711.38	40°12'11.354"N	104°59'38.154"W	0.84	
286.00	0.130	278.270	286.00	0.79	-0.79	0.92	1642111.05	14600711.39	40°12'11.354"N	104°59'38.154"W	0.41	
317.00	0.440	356.050	317.00	0.67	-0.67	0.87	1642111.00	14600711.51	40°12'11.355"N	104°59'38.155"W	1.39	
349.00	0.790	12.230	348.99	0.33	-0.33	0.91	1642111.04	14600711.85	40°12'11.359"N	104°59'38.154"W	1.21	
412.00	1.850	31.560	411.98	-0.97	0.96	1.54	1642111.67	14600713.14	40°12'11.371"N	104°59'38.146"W	1.80	
443.00	2.550	41.840	442.95	-1.91	1.90	2.26	1642112.39	14600714.08	40°12'11.381"N	104°59'38.137"W	2.58	
475.00	2.990	44.920	474.92	-3.04	3.02	3.32	1642113.45	14600715.20	40°12'11.392"N	104°59'38.123"W	1.45	
506.00	3.300	42.720	505.87	-4.27	4.25	4.50	1642114.63	14600716.43	40°12'11.404"N	104°59'38.108"W	1.07	
538.00	3.780	45.100	537.81	-5.70	5.67	5.87	1642116.00	14600717.85	40°12'11.418"N	104°59'38.090"W	1.57	
570.00	4.530	47.820	569.72	-7.31	7.26	7.55	1642117.68	14600719.44	40°12'11.434"N	104°59'38.069"W	2.42	
602.00	4.880	46.850	601.62	-9.10	9.04	9.48	1642119.61	14600721.22	40°12'11.451"N	104°59'38.044"W	1.12	
634.00	5.270	46.770	633.49	-11.05	10.98	11.55	1642121.67	14600723.16	40°12'11.470"N	104°59'38.017"W	1.22	
665.00	5.710	45.450	664.35	-13.12	13.04	13.68	1642123.81	14600725.22	40°12'11.491"N	104°59'37.990"W	1.48	
697.00	5.980	47.640	696.18	-15.37	15.28	16.05	1642126.17	14600727.45	40°12'11.513"N	104°59'37.959"W	1.09	
729.00	6.550	49.840	727.99	-17.69	17.58	18.68	1642128.80	14600729.75	40°12'11.536"N	104°59'37.925"W	1.93	
761.00	7.470	53.360	759.75	-20.12	19.99	21.74	1642131.86	14600732.17	40°12'11.560"N	104°59'37.886"W	3.17	
792.00	8.130	55.560	790.46	-22.58	22.44	25.17	1642135.28	14600734.61	40°12'11.584"N	104°59'37.842"W	2.34	
824.00	8.700	57.840	822.12	-25.18	25.01	29.08	1642139.20	14600737.18	40°12'11.609"N	104°59'37.791"W	2.06	
856.00	9.490	56.260	853.72	-27.95	27.76	33.32	1642143.44	14600739.93	40°12'11.636"N	104°59'37.737"W	2.59	
888.00	10.500	53.180	885.23	-31.19	30.97	37.85	1642147.96	14600743.14	40°12'11.668"N	104°59'37.678"W	3.57	
919.00	11.250	53.180	915.67	-34.73	34.48	42.53	1642152.64	14600746.65	40°12'11.703"N	104°59'37.618"W	2.42	
951.00	11.690	53.800	947.04	-38.54	38.26	47.65	1642157.76	14600750.43	40°12'11.740"N	104°59'37.552"W	1.43	
983.00	12.040	53.620	978.35	-42.47	42.16	52.95	1642163.06	14600754.33	40°12'11.779"N	104°59'37.484"W	1.10	
1015.00	12.830	53.360	1009.60	-46.60	46.26	58.49	1642168.59	14600758.42	40°12'11.819"N	104°59'37.412"W	2.47	
1046.00	13.750	53.970	1039.77	-50.85	50.48	64.23	1642174.33	14600762.64	40°12'11.861"N	104°59'37.338"W	3.00	
1078.00	14.370	55.120	1070.81	-55.40	54.99	70.56	1642180.66	14600767.15	40°12'11.905"N	104°59'37.257"W	2.13	
1110.00	14.990	54.590	1101.77	-60.11	59.65	77.19	1642187.29	14600771.82	40°12'11.951"N	104°59'37.171"W	1.98	
1141.00	15.340	52.040	1131.69	-64.99	64.50	83.69	1642193.79	14600776.66	40°12'11.999"N	104°59'37.087"W	2.43	
1173.00	15.950	52.220	1162.50	-70.33	69.80	90.51	1642200.60	14600781.96	40°12'12.052"N	104°59'37.000"W	1.91	
1205.00	16.390	52.130	1193.24	-75.83	75.26	97.55	1642207.63	14600787.42	40°12'12.106"N	104°59'36.909"W	1.38	
1237.00	16.130	50.020	1223.96	-81.50	80.89	104.52	1642214.60	14600793.05	40°12'12.161"N	104°59'36.819"W	2.02	
1269.00	15.950	51.340	1254.71	-87.15	86.49	111.36	1642221.44	14600798.65	40°12'12.217"N	104°59'36.731"W	1.27	
1301.00	17.050	52.390	1285.39	-92.80	92.10	118.51	1642228.58	14600804.26	40°12'12.272"N	104°59'36.639"W	3.56	
1332.00	16.570	50.900	1315.07	-98.40	97.66	125.54	1642235.61	14600809.82	40°12'12.327"N	104°59'36.548"W	2.08	
1364.00	16.170	49.400	1345.77	-104.22	103.44	132.46	1642242.53	14600815.59	40°12'12.384"N	104°59'36.459"W	1.82	
1396.00	17.050	49.490	1376.43	-110.21	109.39	139.41	1642249.48	14600821.54	40°12'12.443"N	104°59'36.369"W	2.75	
1427.00	17.490	48.790	1406.04	-116.27	115.41	146.37	1642256.43	14600827.56	40°12'12.502"N	104°59'36.280"W	1.57	
1459.00	18.540	50.720	1436.47	-122.70	121.80	153.93	1642263.99	14600833.94	40°12'12.566"N	104°59'36.182"W	3.77	
1491.00	18.680	50.630	1466.79	-129.22	128.27	161.83	1642271.88	14600840.41	40°12'12.630"N	104°59'36.080"W	0.45	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#35 PUTTER 27-7HZ (358'FNL & 1241'FWL,SEC.27)
Area	COLORADO	Well	PUTTER 27-7HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUTTER 27-7HZ AWB
Facility	SEC.27-T3N-R68W		

WELLPATH DATA (202 stations) † = interpolated/extrapolated station												
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	DLS (°/100ft)	Comments
1522.00	18.720	51.160	1496.16	-135.53	134.54	169.54	1642279.59	14600846.68	40°12'12.692"N	104°59'35.981"W	0.56	
1554.00	18.460	51.070	1526.49	-141.98	140.94	177.48	1642287.53	14600853.08	40°12'12.755"N	104°59'35.879"W	0.82	
1586.00	18.630	51.860	1556.83	-148.37	147.28	185.44	1642295.49	14600859.42	40°12'12.817"N	104°59'35.776"W	0.95	
1617.00	18.460	50.550	1586.22	-154.59	153.46	193.12	1642303.17	14600865.59	40°12'12.878"N	104°59'35.677"W	1.45	
1649.00	18.500	50.370	1616.57	-161.10	159.92	200.95	1642310.99	14600872.05	40°12'12.942"N	104°59'35.576"W	0.22	
1681.00	18.540	49.670	1646.91	-167.67	166.45	208.74	1642318.77	14600878.58	40°12'13.007"N	104°59'35.476"W	0.71	
1713.00	18.280	50.020	1677.27	-174.23	172.96	216.46	1642326.49	14600885.09	40°12'13.071"N	104°59'35.376"W	0.88	
1744.00	17.180	48.080	1706.80	-180.46	179.15	223.59	1642333.62	14600891.27	40°12'13.132"N	104°59'35.284"W	4.03	
1776.00	17.530	48.700	1737.34	-186.84	185.49	230.73	1642340.75	14600897.61	40°12'13.195"N	104°59'35.192"W	1.24	
1808.00	17.800	50.190	1767.83	-193.19	191.80	238.11	1642348.13	14600903.92	40°12'13.257"N	104°59'35.097"W	1.65	
1840.00	17.930	51.950	1798.29	-199.41	197.97	245.74	1642355.76	14600910.09	40°12'13.318"N	104°59'34.999"W	1.74	
1864.00	17.840	50.900	1821.13	-204.04	202.56	251.50	1642361.52	14600914.68	40°12'13.364"N	104°59'34.925"W	1.39	LAST SURFACE MWD+IFR1 SURVEY
1935.00	17.760	52.180	1888.73	-217.64	216.06	268.50	1642378.51	14600928.17	40°12'13.497"N	104°59'34.706"W	0.56	FIRST BHGE MWD+IFR1+SC SURVEY
2025.00	17.070	51.800	1974.61	-234.35	232.65	289.72	1642399.72	14600944.75	40°12'13.661"N	104°59'34.432"W	0.78	
2115.00	16.930	49.060	2060.68	-251.22	249.40	310.00	1642419.99	14600961.51	40°12'13.827"N	104°59'34.171"W	0.90	
2205.00	19.330	50.610	2146.20	-269.39	267.44	331.42	1642441.40	14600979.54	40°12'14.005"N	104°59'33.895"W	2.72	
2294.00	20.420	51.020	2229.90	-288.64	286.56	354.87	1642464.84	14600998.65	40°12'14.194"N	104°59'33.592"W	1.23	
2384.00	20.680	48.050	2314.17	-309.28	307.06	378.89	1642488.85	14601019.14	40°12'14.396"N	104°59'33.283"W	1.19	
2474.00	21.670	48.600	2398.10	-331.04	328.67	403.18	1642513.13	14601040.75	40°12'14.610"N	104°59'32.970"W	1.12	
2564.00	20.960	46.930	2481.94	-353.16	350.65	427.40	1642537.34	14601062.72	40°12'14.827"N	104°59'32.658"W	1.04	
2653.00	19.470	48.760	2565.46	-373.94	371.30	450.19	1642560.11	14601083.37	40°12'15.031"N	104°59'32.364"W	1.82	
2743.00	19.500	48.600	2650.30	-393.90	391.12	472.73	1642582.65	14601103.18	40°12'15.227"N	104°59'32.073"W	0.07	
2832.00	20.640	50.350	2733.90	-413.87	410.96	495.95	1642605.86	14601123.01	40°12'15.423"N	104°59'31.774"W	1.45	
2922.00	19.030	48.260	2818.56	-433.89	430.85	519.12	1642629.01	14601142.89	40°12'15.620"N	104°59'31.476"W	1.95	
3012.00	19.870	47.840	2903.42	-454.06	450.88	541.40	1642651.29	14601162.92	40°12'15.818"N	104°59'31.188"W	0.95	
3101.00	19.980	50.880	2987.09	-473.94	470.63	564.41	1642674.29	14601182.66	40°12'16.013"N	104°59'30.892"W	1.17	
3191.00	20.170	47.560	3071.63	-494.25	490.80	587.79	1642697.66	14601202.83	40°12'16.212"N	104°59'30.590"W	1.28	
3280.00	20.370	49.260	3155.12	-514.85	511.27	610.85	1642720.71	14601223.29	40°12'16.414"N	104°59'30.293"W	0.70	
3370.00	17.610	52.760	3240.21	-533.45	529.73	633.57	1642743.41	14601241.75	40°12'16.597"N	104°59'30.000"W	3.32	
3460.00	17.690	51.250	3325.98	-550.37	546.53	655.07	1642764.90	14601258.54	40°12'16.763"N	104°59'29.723"W	0.52	
3549.00	17.930	48.690	3410.71	-568.00	564.04	675.90	1642785.73	14601276.04	40°12'16.936"N	104°59'29.455"W	0.92	
3639.00	17.630	51.030	3496.42	-585.84	581.75	696.91	1642806.72	14601293.75	40°12'17.111"N	104°59'29.184"W	0.86	
3728.00	18.980	49.690	3580.91	-603.81	599.59	718.42	1642828.23	14601311.59	40°12'17.287"N	104°59'28.907"W	1.59	
3818.00	19.580	48.660	3665.86	-623.37	619.02	740.91	1642850.70	14601331.01	40°12'17.479"N	104°59'28.617"W	0.77	
3908.00	20.360	52.400	3750.46	-643.02	638.54	764.63	1642874.42	14601350.52	40°12'17.672"N	104°59'28.311"W	1.66	
3997.00	22.250	54.790	3833.37	-662.34	657.70	790.67	1642900.44	14601369.68	40°12'17.861"N	104°59'27.976"W	2.34	
4087.00	19.900	51.800	3917.35	-681.79	677.00	816.63	1642926.39	14601388.97	40°12'18.052"N	104°59'27.641"W	2.87	
4177.00	19.920	45.270	4001.98	-702.19	697.27	839.57	1642949.31	14601409.23	40°12'18.252"N	104°59'27.345"W	2.47	
4267.00	19.460	48.320	4086.72	-723.08	718.03	861.66	1642971.39	14601429.98	40°12'18.457"N	104°59'27.061"W	1.25	
4357.00	19.320	46.570	4171.61	-743.42	738.23	883.67	1642993.39	14601450.18	40°12'18.657"N	104°59'26.777"W	0.66	
4446.00	21.570	48.610	4255.00	-764.49	759.17	906.63	1643016.35	14601471.11	40°12'18.864"N	104°59'26.481"W	2.65	
4536.00	19.990	46.330	4339.15	-786.19	780.73	930.17	1643039.88	14601492.67	40°12'19.077"N	104°59'26.178"W	1.97	
4552.00†	19.604	45.803	4354.20	-789.97	784.49	934.08	1643043.78	14601496.43	40°12'19.114"N	104°59'26.127"W	2.66	ENTER LANDBOX (426'FSL & 2176'FWL,SEC.22) 40.2053095 -104.9905909
4626.00	17.840	43.080	4424.29	-807.01	801.43	950.72	1643060.42	14601513.36	40°12'19.282"N	104°59'25.913"W	2.66	
4715.00	17.300	49.860	4509.14	-825.61	819.92	970.15	1643079.84	14601531.84	40°12'19.464"N	104°59'25.662"W	2.38	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#35 PUTTER 27-7HZ (358'FNL & 1241'FWL,SEC.27)
Area	COLORADO	Well	PUTTER 27-7HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUTTER 27-7HZ AWB
Facility	SEC.27-T3N-R68W		

WELLPATH DATA (202 stations) † = interpolated/extrapolated station												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS ["/100ft]	Comments
4805.00	15.660	48.300	4595.44	-842.43	836.63	989.45	1643099.13	14601548.54	40°12'19.629"N	104°59'25.414"W	1.89	
4895.00	14.810	46.690	4682.28	-858.51	852.60	1006.89	1643116.56	14601564.51	40°12'19.787"N	104°59'25.189"W	1.05	
4985.00	13.290	50.740	4769.59	-873.04	867.04	1023.27	1643132.93	14601578.94	40°12'19.930"N	104°59'24.978"W	2.01	
5074.00	10.570	51.470	4856.66	-884.69	878.60	1037.58	1643147.24	14601590.50	40°12'20.044"N	104°59'24.793"W	3.06	
5164.00	8.800	47.250	4945.37	-894.57	888.41	1049.10	1643158.74	14601600.31	40°12'20.141"N	104°59'24.645"W	2.12	
5254.00	7.480	43.990	5034.46	-903.51	897.30	1058.22	1643167.86	14601609.20	40°12'20.229"N	104°59'24.527"W	1.55	
5344.00	6.440	39.160	5123.80	-911.68	905.43	1065.48	1643175.12	14601617.32	40°12'20.309"N	104°59'24.434"W	1.32	
5433.00	4.320	36.260	5212.40	-918.29	912.00	1070.61	1643180.25	14601623.89	40°12'20.374"N	104°59'24.368"W	2.40	
5523.00	3.160	50.460	5302.21	-922.62	916.32	1074.53	1643184.17	14601628.21	40°12'20.417"N	104°59'24.317"W	1.64	
5638.00	0.590	302.230	5417.15	-924.97	918.65	1076.47	1643186.11	14601630.54	40°12'20.440"N	104°59'24.292"W	2.95	
5727.00	0.730	309.510	5506.15	-925.57	919.26	1075.65	1643185.28	14601631.14	40°12'20.446"N	104°59'24.303"W	0.18	
5817.00	0.620	254.320	5596.14	-925.80	919.49	1074.74	1643184.37	14601631.38	40°12'20.448"N	104°59'24.314"W	0.70	
5907.00	0.510	243.910	5686.14	-925.48	919.18	1073.91	1643183.55	14601631.07	40°12'20.445"N	104°59'24.325"W	0.17	
5996.00	0.480	270.640	5775.13	-925.31	919.01	1073.18	1643182.82	14601630.90	40°12'20.443"N	104°59'24.334"W	0.26	
6086.00	0.960	89.570	5865.13	-925.32	919.02	1073.56	1643183.19	14601630.91	40°12'20.444"N	104°59'24.330"W	1.60	
6176.00	0.740	94.460	5955.12	-925.29	918.98	1074.89	1643184.53	14601630.87	40°12'20.443"N	104°59'24.312"W	0.26	
6265.00	0.640	104.590	6044.11	-925.12	918.81	1075.94	1643185.58	14601630.70	40°12'20.441"N	104°59'24.299"W	0.18	
6355.00	0.500	94.050	6134.11	-924.98	918.66	1076.82	1643186.46	14601630.55	40°12'20.440"N	104°59'24.287"W	0.19	
6445.00	0.510	99.180	6224.11	-924.89	918.57	1077.61	1643187.25	14601630.45	40°12'20.439"N	104°59'24.277"W	0.05	
6534.00	0.500	101.550	6313.10	-924.75	918.43	1078.38	1643188.02	14601630.31	40°12'20.438"N	104°59'24.267"W	0.03	
6624.00	0.520	120.170	6403.10	-924.47	918.14	1079.12	1643188.75	14601630.03	40°12'20.435"N	104°59'24.258"W	0.18	
6644.00†	2.322	177.443	6423.09	-924.02	917.69	1079.22	1643188.85	14601629.58	40°12'20.430"N	104°59'24.257"W	10.44	KOP
6714.00	9.590	186.650	6492.67	-916.80	910.47	1078.60	1643188.24	14601622.36	40°12'20.359"N	104°59'24.265"W	10.44	
6804.00	15.020	183.290	6580.57	-897.69	891.37	1077.06	1643186.70	14601603.27	40°12'20.170"N	104°59'24.284"W	6.08	
6893.00	20.120	185.930	6665.39	-870.92	864.61	1074.82	1643184.46	14601576.52	40°12'19.906"N	104°59'24.313"W	5.80	
6983.00	26.510	182.690	6748.00	-835.41	829.11	1072.27	1643181.92	14601541.04	40°12'19.555"N	104°59'24.346"W	7.24	
7073.00	32.400	181.950	6826.34	-791.19	784.91	1070.51	1643180.16	14601496.85	40°12'19.118"N	104°59'24.369"W	6.56	
7162.00	39.060	182.900	6898.54	-739.29	733.02	1068.28	1643177.93	14601444.98	40°12'18.605"N	104°59'24.398"W	7.51	
7252.00	44.020	182.310	6965.89	-679.67	673.41	1065.58	1643175.24	14601385.40	40°12'18.016"N	104°59'24.433"W	5.53	
7342.00	51.440	179.040	7026.39	-613.14	606.88	1064.91	1643174.57	14601318.90	40°12'17.359"N	104°59'24.441"W	8.67	
7431.00	56.410	176.540	7078.79	-541.31	535.04	1067.73	1643177.40	14601247.08	40°12'16.649"N	104°59'24.405"W	6.03	
7521.00	64.870	180.030	7122.88	-463.00	456.72	1069.98	1643179.65	14601168.79	40°12'15.875"N	104°59'24.376"W	9.99	
7610.00	71.140	182.170	7156.20	-380.54	374.26	1068.36	1643178.04	14601086.37	40°12'15.060"N	104°59'24.397"W	7.39	
7700.00	77.520	181.050	7180.50	-293.95	287.68	1065.94	1643175.62	14600999.82	40°12'14.205"N	104°59'24.428"W	7.19	
7782.00†	88.416	183.706	7190.53	-212.75	206.50	1062.55	1643172.24	14600918.67	40°12'13.402"N	104°59'24.472"W	13.67	LANDING (151'FNL & 2304'FWL,SEC.27) 40.2037229 -104.9901311
7790.00	89.480	183.960	7190.67	-204.76	198.52	1062.01	1643171.70	14600910.70	40°12'13.324"N	104°59'24.479"W	13.67	
7879.00	92.180	181.600	7189.38	-115.87	109.65	1057.70	1643167.39	14600821.86	40°12'12.445"N	104°59'24.534"W	4.03	
7937.00†	91.433	179.873	7187.55	-57.90	51.69	1056.95	1643166.65	14600763.92	40°12'11.873"N	104°59'24.544"W	3.24	EXIT RADIUS HEEL (306'FNL & 2298'FWL,SEC.27) 40.2032979 -104.9901511
7969.00	91.020	178.920	7186.87	-25.91	19.70	1057.29	1643166.99	14600731.94	40°12'11.556"N	104°59'24.540"W	3.24	
8058.00	90.980	178.940	7185.32	63.05	-69.27	1058.95	1643168.66	14600643.01	40°12'10.677"N	104°59'24.518"W	0.05	
8148.00	91.600	178.400	7183.29	152.98	-159.23	1061.04	1643170.75	14600553.09	40°12'09.788"N	104°59'24.492"W	0.91	
8238.00	90.250	178.830	7181.84	242.93	-249.19	1063.21	1643172.93	14600463.17	40°12'08.899"N	104°59'24.464"W	1.57	
8328.00	90.400	178.620	7181.33	332.89	-339.16	1065.22	1643174.94	14600373.23	40°12'08.010"N	104°59'24.438"W	0.29	
8417.00	90.430	181.780	7180.68	421.88	-428.15	1064.90	1643174.64	14600284.28	40°12'07.131"N	104°59'24.442"W	3.55	
8507.00	90.430	180.840	7180.01	511.86	-518.12	1062.85	1643172.59	14600194.34	40°12'06.242"N	104°59'24.468"W	1.04	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#35 PUTTER 27-7HZ (358°FNL & 1241°FWL, SEC.27)
Area	COLORADO	Well	PUTTER 27-7HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUTTER 27-7HZ AWB
Facility	SEC.27-T3N-R68W		

WELLPATH DATA (202 stations)												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8596.00	91.600	181.530	7178.43	600.84	-607.09	1061.01	1643170.75	14600105.41	40°12'05.363"N	104°59'24.492"W	1.53	
8686.00	90.590	180.370	7176.71	690.81	-697.06	1059.52	1643169.27	14600015.48	40°12'04.473"N	104°59'24.511"W	1.71	
8775.00	89.380	179.710	7176.73	779.81	-786.05	1059.45	1643169.21	14599926.52	40°12'03.594"N	104°59'24.512"W	1.55	
8865.00	90.960	179.850	7176.47	869.80	-876.05	1059.80	1643169.56	14599836.56	40°12'02.705"N	104°59'24.508"W	1.76	
8954.00	89.200	179.290	7176.34	958.79	-965.04	1060.47	1643170.24	14599747.60	40°12'01.825"N	104°59'24.499"W	2.08	
9044.00	91.700	181.630	7175.63	1048.77	-1055.02	1059.74	1643169.52	14599657.66	40°12'00.936"N	104°59'24.509"W	3.80	
9134.00	90.650	180.200	7173.79	1138.75	-1144.99	1058.31	1643168.09	14599567.73	40°12'00.047"N	104°59'24.527"W	1.97	
9223.00	89.970	179.590	7173.31	1227.74	-1233.99	1058.47	1643168.26	14599478.76	40°11'59.168"N	104°59'24.525"W	1.03	
9313.00	90.430	179.590	7172.99	1317.73	-1323.98	1059.12	1643168.91	14599388.80	40°11'58.278"N	104°59'24.517"W	0.51	
9402.00	90.990	179.520	7171.89	1406.72	-1412.97	1059.81	1643169.61	14599299.85	40°11'57.399"N	104°59'24.508"W	0.63	
9492.00	89.820	179.070	7171.25	1496.70	-1502.96	1060.91	1643170.72	14599209.90	40°11'56.510"N	104°59'24.494"W	1.39	
9582.00	91.420	179.400	7170.28	1586.67	-1592.95	1062.12	1643171.93	14599119.95	40°11'55.620"N	104°59'24.478"W	1.82	
9672.00	90.120	178.680	7169.07	1676.64	-1682.92	1063.62	1643173.44	14599030.01	40°11'54.731"N	104°59'24.459"W	1.65	
9761.00	87.750	179.560	7170.73	1765.60	-1771.89	1064.99	1643174.81	14598941.08	40°11'53.852"N	104°59'24.441"W	2.84	
9851.00	89.170	179.610	7173.14	1855.55	-1861.85	1065.64	1643175.47	14598851.15	40°11'52.963"N	104°59'24.433"W	1.58	
9940.00	90.490	180.710	7173.41	1944.55	-1950.85	1065.39	1643175.23	14598762.19	40°11'52.084"N	104°59'24.436"W	1.93	
10030.00	90.710	180.750	7172.47	2034.54	-2040.84	1064.25	1643174.09	14598672.24	40°11'51.194"N	104°59'24.451"W	0.25	
10120.00	91.170	180.840	7170.99	2124.53	-2130.82	1063.00	1643172.85	14598582.30	40°11'50.305"N	104°59'24.467"W	0.52	
10209.00	92.090	181.040	7168.46	2213.49	-2219.77	1061.54	1643171.39	14598493.38	40°11'49.426"N	104°59'24.486"W	1.06	
10299.00	90.220	180.230	7166.64	2303.46	-2309.74	1060.54	1643170.40	14598403.45	40°11'48.537"N	104°59'24.499"W	2.26	
10389.00	89.780	180.120	7166.64	2393.46	-2399.74	1060.27	1643170.14	14598313.48	40°11'47.648"N	104°59'24.503"W	0.50	
10478.00	89.880	179.650	7166.91	2482.46	-2488.74	1060.45	1643170.32	14598224.52	40°11'46.768"N	104°59'24.500"W	0.54	
10568.00	90.590	180.760	7166.54	2572.45	-2578.73	1060.12	1643170.00	14598134.56	40°11'45.879"N	104°59'24.505"W	1.46	
10657.00	90.400	179.500	7165.77	2661.45	-2667.73	1059.92	1643169.81	14598045.60	40°11'44.999"N	104°59'24.507"W	1.43	
10747.00	89.970	180.090	7165.48	2751.44	-2757.73	1060.24	1643170.14	14597955.64	40°11'44.110"N	104°59'24.503"W	0.81	
10837.00	91.110	180.100	7164.63	2841.44	-2847.72	1060.09	1643169.99	14597865.68	40°11'43.221"N	104°59'24.505"W	1.27	
10926.00	90.340	179.830	7163.50	2930.43	-2936.71	1060.15	1643170.05	14597776.72	40°11'42.341"N	104°59'24.505"W	0.92	
11016.00	90.960	180.220	7162.48	3020.42	-3026.71	1060.11	1643170.02	14597686.77	40°11'41.452"N	104°59'24.505"W	0.81	
11106.00	89.350	178.310	7162.24	3110.40	-3116.69	1061.26	1643171.18	14597596.82	40°11'40.563"N	104°59'24.490"W	2.78	
11195.00	89.410	178.170	7163.20	3199.33	-3205.64	1064.00	1643173.92	14597507.90	40°11'39.684"N	104°59'24.455"W	0.17	
11285.00	90.580	179.310	7163.21	3289.29	-3295.62	1065.98	1643175.90	14597417.96	40°11'38.795"N	104°59'24.430"W	1.82	
11375.00	91.360	179.230	7161.69	3379.26	-3385.60	1067.12	1643177.06	14597328.02	40°11'37.905"N	104°59'24.415"W	0.87	
11465.00	90.920	179.140	7159.90	3469.23	-3475.57	1068.40	1643178.34	14597238.08	40°11'37.016"N	104°59'24.398"W	0.50	
11554.00	90.680	181.470	7158.65	3558.21	-3564.56	1067.93	1643177.87	14597149.13	40°11'36.137"N	104°59'24.405"W	2.63	
11644.00	90.800	181.360	7157.49	3648.19	-3654.52	1065.71	1643175.66	14597059.20	40°11'35.248"N	104°59'24.433"W	0.18	
11734.00	89.880	180.750	7156.96	3738.18	-3744.50	1064.05	1643174.01	14596969.26	40°11'34.359"N	104°59'24.455"W	1.23	
11824.00	90.860	181.310	7156.38	3828.17	-3834.48	1062.43	1643172.40	14596879.31	40°11'33.469"N	104°59'24.476"W	1.25	
11913.00	91.730	180.980	7154.36	3917.14	-3923.44	1060.65	1643170.63	14596790.39	40°11'32.590"N	104°59'24.499"W	1.05	
12003.00	90.060	181.110	7152.96	4007.12	-4013.41	1059.01	1643168.99	14596700.45	40°11'31.701"N	104°59'24.520"W	1.86	
12093.00	90.860	181.710	7152.24	4097.10	-4103.38	1056.80	1643166.78	14596610.52	40°11'30.812"N	104°59'24.548"W	1.11	
12182.00	90.890	182.920	7150.88	4186.03	-4192.30	1053.20	1643163.20	14596521.64	40°11'29.934"N	104°59'24.595"W	1.36	
12272.00	90.310	181.390	7149.93	4275.98	-4282.23	1049.82	1643159.82	14596431.75	40°11'29.045"N	104°59'24.638"W	1.82	
12362.00	89.450	181.970	7150.12	4365.95	-4372.19	1047.18	1643157.19	14596341.83	40°11'28.156"N	104°59'24.672"W	1.15	
12451.00	90.770	181.020	7149.95	4454.93	-4461.15	1044.86	1643154.88	14596252.90	40°11'27.277"N	104°59'24.702"W	1.83	
12541.00	90.950	180.720	7148.60	4544.92	-4551.13	1043.49	1643153.52	14596162.95	40°11'26.388"N	104°59'24.720"W	0.39	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#35 PUTTER 27-7HZ (358'FNL & 1241'FWL,SEC.27)
Area	COLORADO	Well	PUTTER 27-7HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUTTER 27-7HZ AWB
Facility	SEC.27-T3N-R68W		

WELLPATH DATA (202 stations) † = interpolated/extrapolated station												
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	DLS (°/100ft)	Comments
12631.00	90.550	180.280	7147.42	4634.91	-4641.12	1042.71	1643152.74	14596073.00	40°11'25.498"N	104°59'24.730"W	0.66	
12720.00	91.140	179.930	7146.11	4723.90	-4730.11	1042.54	1643152.58	14595984.05	40°11'24.619"N	104°59'24.732"W	0.77	
12810.00	90.590	179.570	7144.75	4813.88	-4820.10	1042.94	1643152.98	14595894.09	40°11'23.730"N	104°59'24.727"W	0.73	
12900.00	89.750	178.850	7144.49	4903.86	-4910.09	1044.18	1643154.22	14595804.14	40°11'22.840"N	104°59'24.711"W	1.23	
12989.00	91.260	179.630	7143.70	4992.84	-4999.07	1045.36	1643155.41	14595715.19	40°11'21.961"N	104°59'24.696"W	1.91	
13079.00	91.360	179.410	7141.64	5082.81	-5089.05	1046.11	1643156.17	14595625.25	40°11'21.072"N	104°59'24.687"W	0.27	
13169.00	90.740	179.320	7139.99	5172.78	-5179.03	1047.11	1643157.17	14595535.31	40°11'20.183"N	104°59'24.674"W	0.70	
13259.00	90.250	178.350	7139.22	5262.74	-5269.00	1048.94	1643159.01	14595445.37	40°11'19.294"N	104°59'24.650"W	1.21	
13348.00	90.860	179.620	7138.35	5351.71	-5357.98	1050.52	1643160.59	14595356.43	40°11'18.414"N	104°59'24.630"W	1.58	
13438.00	90.960	179.800	7136.93	5441.69	-5447.97	1050.97	1643161.05	14595266.48	40°11'17.525"N	104°59'24.624"W	0.23	
13528.00	90.220	180.000	7136.00	5531.69	-5537.96	1051.13	1643161.22	14595176.52	40°11'16.636"N	104°59'24.622"W	0.85	
13617.00	90.180	180.450	7135.69	5620.68	-5626.96	1050.78	1643160.87	14595087.55	40°11'15.756"N	104°59'24.627"W	0.51	
13707.00	89.570	180.090	7135.88	5710.68	-5716.96	1050.35	1643160.45	14594997.59	40°11'14.867"N	104°59'24.632"W	0.79	
13797.00	90.890	181.660	7135.52	5800.67	-5806.94	1048.98	1643159.09	14594907.64	40°11'13.978"N	104°59'24.650"W	2.28	
13886.00	91.080	181.400	7133.99	5889.64	-5895.90	1046.60	1643156.72	14594818.72	40°11'13.099"N	104°59'24.681"W	0.36	
13911.00†	90.916	181.289	7133.56	5914.63	-5920.89	1046.02	1643156.13	14594793.75	40°11'12.852"N	104°59'24.688"W	0.79	ENTER RADIUS TOE (993'FNL & 2280'FWL,SEC.34) 40.1869032 -104.9901912
13976.00	90.490	181.000	7132.76	5979.62	-5985.87	1044.72	1643154.84	14594728.79	40°11'12.209"N	104°59'24.705"W	0.79	
14066.00	90.120	180.320	7132.28	6069.62	-6075.86	1043.68	1643153.81	14594638.83	40°11'11.320"N	104°59'24.718"W	0.86	
14155.00	90.150	180.320	7132.07	6158.62	-6164.86	1043.19	1643153.32	14594549.87	40°11'10.441"N	104°59'24.725"W	0.03	
14245.00	90.890	179.900	7131.25	6248.61	-6254.86	1043.01	1643153.15	14594459.91	40°11'09.551"N	104°59'24.727"W	0.95	
14335.00	91.140	180.130	7129.66	6338.60	-6344.84	1042.99	1643153.13	14594369.96	40°11'08.662"N	104°59'24.727"W	0.38	LAST BHGE MWD+IFR1+SC SURVEY
14382.00	91.140	180.130	7128.72	6385.59	-6391.83	1042.88	1643153.03	14594322.99	40°11'08.198"N	104°59'24.729"W	0.00	PTB (1464'FNL & 2277'FWL,SEC.34) 40.1856105 -104.9902025

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#35 PUTTER 27-7HZ (358'FNL & 1241'FWL,SEC.27)
Area	COLORADO	Well	PUTTER 27-7HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUTTER 27-7HZ AWB
Facility	SEC.27-T3N-R68W		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.27-T3N-R68W	1.00	0.71	-134.93	1641975.25	14600712.88	40°12'11.369"N	104°59'39.905"W	polygon
SEC.34-T3N-R68W	1.00	0.71	-134.93	1641975.25	14600712.88	40°12'11.369"N	104°59'39.905"W	polygon
PUTTER 27-7HZ BHL REV-1(1884'FNL & 2274'FWL,SEC.34)	7131.00	-6812.05	1039.96	1643150.14	14593902.95	40°11'04.045"N	104°59'24.767"W	point
PUTTER 27-7HZ BHL REV-2(1478'FNL & 2274'FWL,SEC.34)	7131.00	-6406.23	1039.96	1643150.11	14594308.60	40°11'08.055"N	104°59'24.767"W	point
PUTTER 27-7HZ HEEL REV-1(136'FNL & 2320'FWL,SEC.27)	7186.00	225.85	1078.77	1643188.45	14600938.01	40°12'13.594"N	104°59'24.263"W	point
PUTTER 27-7HZ HEEL REV-2(166'FNL & 2320'FWL,SEC.27)	7186.00	195.85	1078.77	1643188.45	14600908.03	40°12'13.297"N	104°59'24.263"W	point
PUTTER 27-7HZ LANDBOX	7186.00	0.00	0.00	1642110.13	14600712.18	40°12'11.362"N	104°59'38.166"W	polygon
PUTTER 27-7HZ RADIUS 1	7186.00	360.57	1397.96	1643507.50	14601072.70	40°12'14.925"N	104°59'20.149"W	polygon
PUTTER 27-7HZ RADIUS 2	7186.00	-6256.79	1359.89	1643469.90	14594458.00	40°11'09.532"N	104°59'20.644"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: PUTTER 27-7HZ AWB    Ref Wellpath: PUTTER 27-7HZ AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
21.00	1864.00	Custom APC ISCWSA REV 2 MWD+IFR1 (approximation)	Custom APC ISCWSA Rev-2 MWD+IFR1 <128 - 1864>	PUTTER 27-7HZ AWB
1864.00	14335.00	Custom APC ISCWSA REV 2 MWD+IFR1+SC (approximation)	BHGE Custom APC ISCWSA Rev-2 MWD+IFR1+SC <1935 - 14335>	PUTTER 27-7HZ AWB
14335.00	14382.00	Blind Drilling (std)	Projection to bit	PUTTER 27-7HZ AWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#35 PUTTER 27-7HZ (358'FNL & 1241'FWL,SEC.27)
Area	COLORADO	Well	PUTTER 27-7HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUTTER 27-7HZ AWB
Facility	SEC.27-T3N-R68W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
128.00	0.480	121.030	128.00	FIRST SURFACE MWD+IFR1 SURVEY
1864.00	17.840	50.900	1821.13	LAST SURFACE MWD+IFR1 SURVEY
1935.00	17.760	52.180	1888.73	FIRST BHGE MWD+IFR1+SC SURVEY
4552.00	19.604	45.803	4354.20	ENTER LANDBOX (426'FSL & 2176'FWL,SEC.22) 40.2053095 -104.9905909
6644.00	2.322	177.443	6423.09	KOP
7782.00	88.416	183.706	7190.53	LANDING (151'FNL & 2304'FWL,SEC.27) 40.2037229 -104.9901311
7937.00	91.433	179.873	7187.55	EXIT RADIUS HEEL (306'FNL & 2298'FWL,SEC.27) 40.2032979 -104.9901511
13911.00	90.916	181.289	7133.56	ENTER RADIUS TOE (993'FNL & 2280'FWL,SEC.34) 40.1869032 -104.9901912
14335.00	91.140	180.130	7129.66	LAST BHGE MWD+IFR1+SC SURVEY
14382.00	91.140	180.130	7128.72	PTB (1464'FNL & 2277'FWL,SEC.34) 40.1856105 -104.9902025