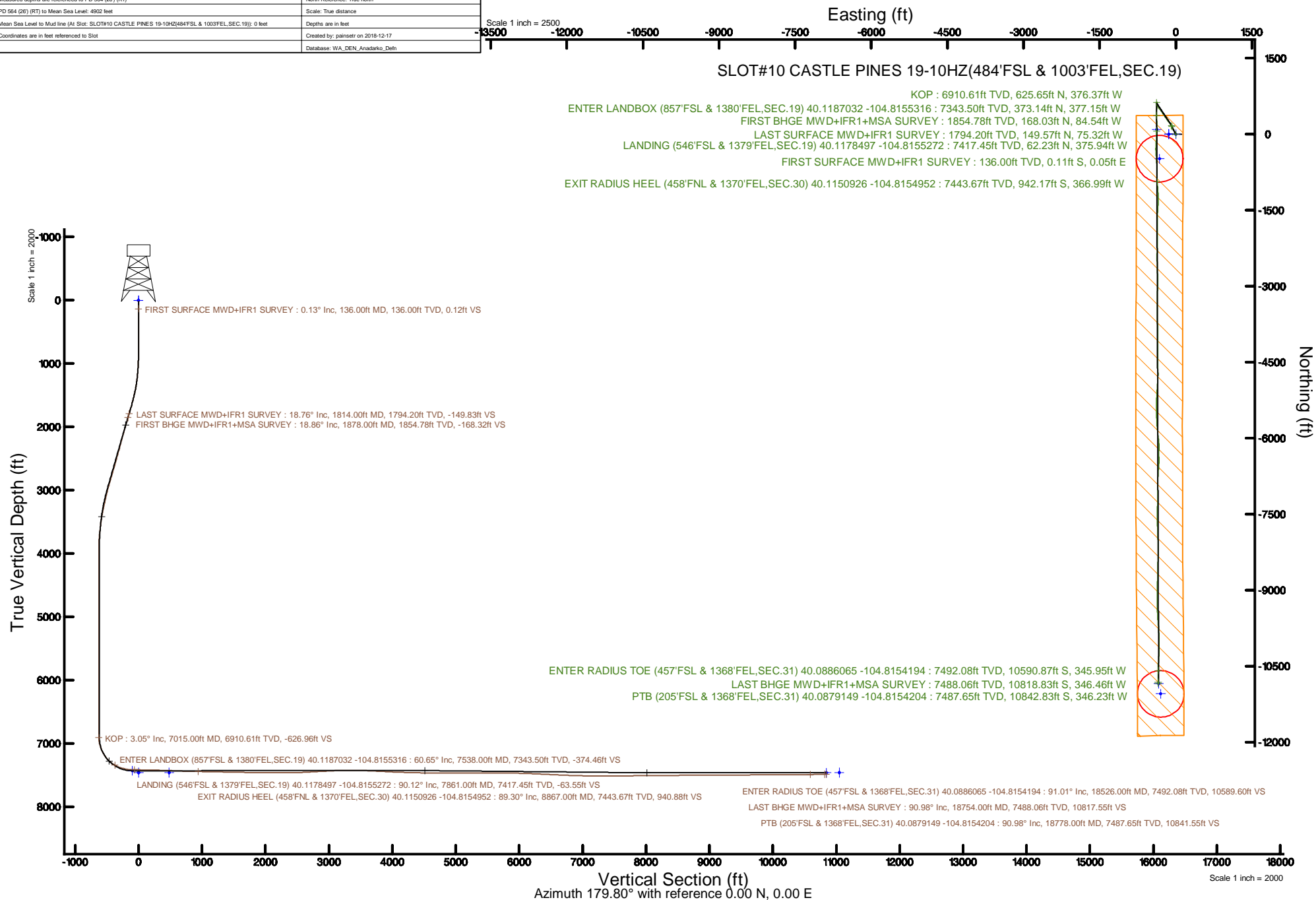


Location:	COLORADO	Slot:	SLOT#10 CASTLE PINES 19-10HZ(484'FSL & 1003FEL,SEC.19)
Field:	WELD COUNTY (UTM/TRUE NORTH)	Well:	CASTLE PINES 19-10HZ
Facility:	SEC.19-T2N-R66W	Wellbore:	CASTLE PINES 19-10HZ PWB



Plot reference filepath is CASTLE PINES 19-10HZ P1WP Rev-A.0	Grid System: NAD83 / UTM Zone 13 North, US feet
True vertical depths are referenced to PD 564 (26') (RT)	* = Wellpath was transformed from a different geoidic datum
Measured depths are referenced to PD 564 (26') (RT)	North Reference: True north
PD 564 (26') (RT) to Mean Sea Level: 4902 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#10 CASTLE PINES 19-10HZ/484FSL & 1003FEL, SEC.19): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: psmstnr on 2018-12-17
	Database: WA_DEN_Anadarko_Delhi



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#10 CASTLE PINES 19-10HZ(484'FSL & 1003'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-10HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-10HZ AWP
Facility	SEC.19-T2N-R66W		

REPORT SETUP INFORMATION			
Projection System	NAD83 / UTM Zone 13 North, US feet	Software System	WellArchitect® 5.0
North Reference	True	User	Painsetr
Scale	0.999603	Report Generated	12/17/2018 at 8:34 AM
Convergence at slot	0.12° East	Database/Source file	WA_DEN_Anadarko_Defn/CASTLE_PINES_19-10HZ_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-1.11	135.10	1692365.45	14569639.83	40°07'03.644"N	104°48'51.059"W
Facility Reference Pt			1692230.40	14569640.66	40°07'03.655"N	104°48'52.798"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 564 (26') (RT) to Facility Vertical Datum	4902.00ft
Horizontal Reference Pt	Slot	PD 564 (26') (RT) to Mean Sea Level	4902.00ft
Vertical Reference Pt	PD 564 (26') (RT)	PD 564 (26') (RT) to Mud Line at Slot (SLOT#10 CASTLE PINES 19-10HZ(484'FSL & 1003'FEL,SEC.19))	4902.00ft
MD Reference Pt	PD 564 (26') (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	179.80°

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#10 CASTLE PINES 19-10HZ(484'FSL & 1003'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-10HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-10HZ AWB
Facility	SEC.19-T2N-R66W		

WELLPATH DATA (249 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	157.150	0.00	0.00	0.00	0.00	1692365.45	14569639.83	40°07'03.644°N	104°48'51.059°W	0.00	
26.00	0.000	157.150	26.00	0.00	0.00	0.00	1692365.45	14569639.83	40°07'03.644°N	104°48'51.059°W	0.00	
136.00	0.130	157.150	136.00	0.12	-0.11	0.05	1692365.50	14569639.71	40°07'03.643°N	104°48'51.058°W	0.12	FIRST SURFACE MWD+IFR1 SURVEY
168.00	0.260	104.680	168.00	0.17	-0.17	0.13	1692365.59	14569639.66	40°07'03.642°N	104°48'51.057°W	0.65	
199.00	0.440	103.540	199.00	0.21	-0.21	0.32	1692365.77	14569639.62	40°07'03.642°N	104°48'51.055°W	0.58	
231.00	0.660	136.320	231.00	0.38	-0.37	0.56	1692366.02	14569639.46	40°07'03.640°N	104°48'51.052°W	1.17	
263.00	0.660	150.740	263.00	0.67	-0.67	0.78	1692366.24	14569639.16	40°07'03.637°N	104°48'51.049°W	0.52	
295.00	0.880	142.910	294.99	1.03	-1.03	1.02	1692366.47	14569638.81	40°07'03.634°N	104°48'51.046°W	0.76	
326.00	0.530	151.790	325.99	1.35	-1.34	1.23	1692366.69	14569638.49	40°07'03.631°N	104°48'51.043°W	1.18	
358.00	0.350	158.120	357.99	1.57	-1.56	1.34	1692366.79	14569638.27	40°07'03.629°N	104°48'51.042°W	0.58	
390.00	0.530	124.720	389.99	1.74	-1.74	1.49	1692366.95	14569638.10	40°07'03.627°N	104°48'51.040°W	0.96	
422.00	0.400	110.040	421.99	1.87	-1.86	1.72	1692367.18	14569637.97	40°07'03.626°N	104°48'51.037°W	0.55	
454.00	0.530	123.230	453.99	1.99	-1.98	1.95	1692367.41	14569637.85	40°07'03.624°N	104°48'51.034°W	0.52	
486.00	0.350	104.590	485.99	2.09	-2.09	2.17	1692367.63	14569637.75	40°07'03.623°N	104°48'51.031°W	0.71	
517.00	0.350	145.460	516.98	2.20	-2.19	2.31	1692367.77	14569637.65	40°07'03.622°N	104°48'51.029°W	0.79	
549.00	0.440	113.560	548.98	2.33	-2.32	2.48	1692367.94	14569637.52	40°07'03.621°N	104°48'51.027°W	0.73	
581.00	0.480	119.540	580.98	2.44	-2.43	2.71	1692368.17	14569637.40	40°07'03.620°N	104°48'51.024°W	0.20	
612.00	0.830	113.730	611.98	2.60	-2.59	3.03	1692368.49	14569637.25	40°07'03.618°N	104°48'51.020°W	1.15	
644.00	0.620	129.550	643.98	2.80	-2.79	3.38	1692368.83	14569637.05	40°07'03.616°N	104°48'51.016°W	0.90	
675.00	0.220	112.680	674.98	2.93	-2.92	3.56	1692369.02	14569636.92	40°07'03.615°N	104°48'51.013°W	1.34	
707.00	0.130	208.300	706.98	2.99	-2.98	3.60	1692369.06	14569636.86	40°07'03.615°N	104°48'51.013°W	0.83	
739.00	0.130	328.010	738.98	2.99	-2.98	3.56	1692369.02	14569636.86	40°07'03.615°N	104°48'51.013°W	0.70	
770.00	1.050	323.620	769.98	2.73	-2.72	3.38	1692368.83	14569637.12	40°07'03.617°N	104°48'51.016°W	2.97	
802.00	1.410	333.720	801.97	2.14	-2.13	3.03	1692368.48	14569637.71	40°07'03.623°N	104°48'51.020°W	1.31	
834.00	1.270	336.540	833.96	1.46	-1.45	2.71	1692368.17	14569638.39	40°07'03.630°N	104°48'51.024°W	0.48	
866.00	1.760	330.650	865.95	0.71	-0.70	2.33	1692367.78	14569639.14	40°07'03.637°N	104°48'51.029°W	1.60	
898.00	1.980	336.540	897.93	-0.23	0.24	1.87	1692367.32	14569640.07	40°07'03.646°N	104°48'51.035°W	0.91	
929.00	2.640	338.910	928.91	-1.39	1.40	1.40	1692366.85	14569641.23	40°07'03.658°N	104°48'51.041°W	2.15	
961.00	3.120	341.280	960.87	-2.91	2.91	0.85	1692366.30	14569642.74	40°07'03.673°N	104°48'51.048°W	1.55	
993.00	3.300	333.990	992.82	-4.56	4.56	0.17	1692365.61	14569644.39	40°07'03.689°N	104°48'51.057°W	1.39	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#10 CASTLE PINES 19-10HZ(484'FSL & 1003'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-10HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-10HZ AWB
Facility	SEC.19-T2N-R66W		

WELLPATH DATA (249 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
1025.00	4.220	327.570	1024.75	-6.39	6.38	-0.86	1692364.58	14569646.21	40°07'03.707"N	104°48'51.070"W	3.16	
1057.00	4.790	323.530	1056.65	-8.46	8.45	-2.29	1692363.15	14569648.27	40°07'03.728"N	104°48'51.088"W	2.04	
1088.00	4.810	323.180	1087.54	-10.50	10.49	-3.81	1692361.63	14569650.31	40°07'03.748"N	104°48'51.108"W	0.59	
1120.00	5.230	326.080	1119.42	-12.75	12.73	-5.39	1692360.04	14569652.54	40°07'03.770"N	104°48'51.128"W	2.09	
1152.00	5.980	326.780	1151.27	-15.36	15.33	-7.12	1692358.31	14569655.14	40°07'03.796"N	104°48'51.151"W	2.35	
1183.00	6.500	329.070	1182.09	-18.22	18.19	-8.90	1692356.51	14569657.99	40°07'03.824"N	104°48'51.174"W	1.86	
1215.00	6.720	329.860	1213.88	-21.40	21.36	-10.78	1692354.64	14569661.16	40°07'03.855"N	104°48'51.198"W	0.74	
1247.00	7.380	332.410	1245.63	-24.85	24.80	-12.67	1692352.74	14569664.60	40°07'03.889"N	104°48'51.222"W	2.28	
1279.00	8.390	330.910	1277.33	-28.72	28.66	-14.75	1692350.64	14569668.45	40°07'03.927"N	104°48'51.249"W	3.22	
1310.00	9.050	333.200	1307.97	-32.88	32.82	-16.95	1692348.44	14569672.60	40°07'03.968"N	104°48'51.277"W	2.41	
1342.00	10.330	332.050	1339.51	-37.67	37.60	-19.43	1692345.95	14569677.37	40°07'04.016"N	104°48'51.309"W	4.05	
1373.00	11.290	332.580	1369.96	-42.82	42.75	-22.13	1692343.24	14569682.51	40°07'04.066"N	104°48'51.344"W	3.11	
1405.00	12.220	333.720	1401.29	-48.65	48.56	-25.08	1692340.29	14569688.32	40°07'04.124"N	104°48'51.382"W	3.00	
1437.00	12.570	334.080	1432.55	-54.83	54.73	-28.10	1692337.25	14569694.48	40°07'04.185"N	104°48'51.421"W	1.12	
1468.00	13.450	333.290	1462.75	-61.10	60.99	-31.19	1692334.15	14569700.73	40°07'04.247"N	104°48'51.460"W	2.90	
1500.00	14.590	332.490	1493.80	-68.01	67.89	-34.73	1692330.60	14569707.62	40°07'04.315"N	104°48'51.506"W	3.61	
1531.00	15.470	332.850	1523.74	-75.16	75.03	-38.42	1692326.90	14569714.75	40°07'04.385"N	104°48'51.553"W	2.85	
1562.00	16.000	333.450	1553.57	-82.68	82.53	-42.21	1692323.09	14569722.24	40°07'04.460"N	104°48'51.602"W	1.79	
1594.00	16.300	333.720	1584.31	-90.66	90.50	-46.17	1692319.11	14569730.20	40°07'04.538"N	104°48'51.653"W	0.97	
1658.00	16.660	332.930	1645.68	-106.91	106.72	-54.32	1692310.93	14569746.40	40°07'04.699"N	104°48'51.758"W	0.66	
1689.00	17.180	333.720	1675.34	-114.99	114.79	-58.37	1692306.86	14569754.45	40°07'04.778"N	104°48'51.810"W	1.83	
1721.00	17.530	333.990	1705.88	-123.57	123.35	-62.58	1692302.64	14569763.00	40°07'04.863"N	104°48'51.865"W	1.12	
1753.00	18.060	333.990	1736.35	-132.38	132.14	-66.87	1692298.34	14569771.78	40°07'04.950"N	104°48'51.920"W	1.66	
1785.00	18.630	334.160	1766.73	-141.45	141.20	-71.27	1692293.92	14569780.83	40°07'05.039"N	104°48'51.976"W	1.79	
1814.00	18.760	334.160	1794.20	-149.83	149.57	-75.32	1692289.85	14569789.18	40°07'05.122"N	104°48'52.029"W	0.45	LAST SURFACE MWD+IFR1 SURVEY
1878.00	18.860	332.800	1854.78	-168.32	168.03	-84.54	1692280.60	14569807.62	40°07'05.304"N	104°48'52.147"W	0.70	FIRST BHGE MWD+IFR1+MSA SURVEY
1967.00	18.820	325.140	1939.02	-192.95	192.61	-99.32	1692265.77	14569832.15	40°07'05.547"N	104°48'52.337"W	2.78	
2057.00	18.790	324.420	2024.22	-216.71	216.31	-116.05	1692249.00	14569855.81	40°07'05.782"N	104°48'52.553"W	0.26	
2146.00	18.850	324.270	2108.46	-240.10	239.64	-132.79	1692232.22	14569879.09	40°07'06.012"N	104°48'52.768"W	0.09	
2236.00	18.240	322.530	2193.79	-263.14	262.62	-149.84	1692215.12	14569902.03	40°07'06.239"N	104°48'52.988"W	0.92	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#10 CASTLE PINES 19-10HZ(484'FSL & 1003'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-10HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-10HZ AWB
Facility	SEC.19-T2N-R66W		

### WELLPATH DATA (249 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
2325.00	17.800	324.390	2278.42	-285.31	284.73	-166.24	1692198.69	14569924.10	40°07'06.458"N	104°48'53.199"W	0.81	
2415.00	19.190	324.650	2363.77	-308.62	307.98	-182.81	1692182.08	14569947.31	40°07'06.688"N	104°48'53.412"W	1.55	
2504.00	18.350	325.370	2448.04	-332.13	331.44	-199.23	1692165.61	14569970.72	40°07'06.919"N	104°48'53.624"W	0.98	
2594.00	18.660	325.970	2533.39	-355.78	355.03	-215.34	1692149.46	14569994.27	40°07'07.152"N	104°48'53.831"W	0.40	
2683.00	18.910	325.730	2617.64	-379.55	378.75	-231.43	1692133.33	14570017.94	40°07'07.387"N	104°48'54.038"W	0.29	
2772.00	18.970	328.360	2701.83	-403.84	402.98	-247.14	1692117.57	14570042.13	40°07'07.626"N	104°48'54.240"W	0.96	
2861.00	19.220	327.680	2785.93	-428.59	427.68	-262.56	1692102.11	14570066.79	40°07'07.870"N	104°48'54.439"W	0.38	
2951.00	19.510	325.130	2870.84	-453.50	452.53	-279.07	1692085.55	14570091.59	40°07'08.116"N	104°48'54.651"W	0.99	
3040.00	18.900	322.170	2954.89	-477.14	476.11	-296.41	1692068.17	14570115.13	40°07'08.349"N	104°48'54.874"W	1.29	
3129.00	17.320	321.190	3039.48	-498.91	497.82	-313.55	1692050.98	14570136.79	40°07'08.563"N	104°48'55.095"W	1.81	
3219.00	15.220	323.570	3125.87	-518.91	517.76	-328.97	1692035.54	14570156.70	40°07'08.761"N	104°48'55.293"W	2.45	
3308.00	14.490	330.490	3211.90	-538.04	536.85	-341.39	1692023.08	14570175.75	40°07'08.949"N	104°48'55.453"W	2.15	
3397.00	13.580	336.560	3298.25	-557.35	556.13	-351.03	1692013.40	14570195.00	40°07'09.140"N	104°48'55.578"W	1.94	
3486.00	11.020	338.670	3385.20	-574.89	573.64	-358.28	1692006.11	14570212.50	40°07'09.313"N	104°48'55.671"W	2.92	
3576.00	9.100	338.730	3473.81	-589.56	588.29	-364.00	1692000.37	14570227.12	40°07'09.458"N	104°48'55.744"W	2.13	
3665.00	7.330	337.210	3561.89	-601.37	600.08	-368.75	1691995.60	14570238.90	40°07'09.574"N	104°48'55.806"W	2.00	
3755.00	6.200	340.190	3651.27	-611.25	609.95	-372.62	1691991.71	14570248.76	40°07'09.672"N	104°48'55.855"W	1.31	
3844.00	4.550	355.790	3739.88	-619.30	617.99	-374.51	1691989.80	14570256.79	40°07'09.751"N	104°48'55.880"W	2.46	
3934.00	2.920	2.590	3829.68	-625.15	623.84	-374.67	1691989.63	14570262.64	40°07'09.809"N	104°48'55.882"W	1.87	
4023.00	0.470	306.470	3918.64	-627.63	626.33	-374.86	1691989.44	14570265.12	40°07'09.833"N	104°48'55.884"W	3.02	
4113.00	0.070	236.010	4008.64	-627.82	626.51	-375.20	1691989.10	14570265.31	40°07'09.835"N	104°48'55.889"W	0.50	
4202.00	0.040	330.060	4097.64	-627.82	626.51	-375.26	1691989.03	14570265.31	40°07'09.835"N	104°48'55.889"W	0.09	
4291.00	0.030	107.870	4186.64	-627.84	626.53	-375.25	1691989.04	14570265.33	40°07'09.835"N	104°48'55.889"W	0.07	
4380.00	0.110	317.640	4275.64	-627.89	626.59	-375.29	1691989.01	14570265.38	40°07'09.836"N	104°48'55.890"W	0.15	
4470.00	0.070	358.510	4365.64	-628.01	626.71	-375.35	1691988.95	14570265.50	40°07'09.837"N	104°48'55.891"W	0.08	
4559.00	0.100	314.350	4454.64	-628.12	626.81	-375.41	1691988.89	14570265.61	40°07'09.838"N	104°48'55.891"W	0.08	
4648.00	0.030	216.430	4543.64	-628.16	626.85	-375.48	1691988.82	14570265.64	40°07'09.839"N	104°48'55.892"W	0.12	
4738.00	0.240	259.000	4633.64	-628.10	626.79	-375.67	1691988.62	14570265.59	40°07'09.838"N	104°48'55.895"W	0.24	
4827.00	0.040	68.850	4722.64	-628.08	626.77	-375.83	1691988.47	14570265.56	40°07'09.838"N	104°48'55.897"W	0.31	
4917.00	0.100	29.990	4812.64	-628.16	626.85	-375.76	1691988.53	14570265.64	40°07'09.839"N	104°48'55.896"W	0.08	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#10 CASTLE PINES 19-10HZ(484'FSL & 1003'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-10HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-10HZ AWB
Facility	SEC.19-T2N-R66W		

WELLPATH DATA (249 stations) † = interpolated/extrapolated station												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
5006.00	0.120	91.850	4901.64	-628.22	626.91	-375.63	1691988.67	14570265.71	40°07'09.839"N	104°48'55.894"W	0.13	
5095.00	0.190	193.140	4990.64	-628.07	626.77	-375.57	1691988.73	14570265.56	40°07'09.838"N	104°48'55.893"W	0.27	
5185.00	0.070	359.500	5080.64	-627.98	626.68	-375.60	1691988.69	14570265.47	40°07'09.837"N	104°48'55.894"W	0.29	
5274.00	0.100	96.860	5169.64	-628.03	626.72	-375.53	1691988.77	14570265.52	40°07'09.837"N	104°48'55.893"W	0.15	
5363.00	0.000	8.180	5258.64	-628.02	626.71	-375.45	1691988.85	14570265.51	40°07'09.837"N	104°48'55.892"W	0.11	
5452.00	0.030	62.840	5347.64	-628.03	626.72	-375.43	1691988.87	14570265.52	40°07'09.837"N	104°48'55.892"W	0.03	
5541.00	0.000	8.180	5436.64	-628.04	626.73	-375.41	1691988.89	14570265.53	40°07'09.837"N	104°48'55.891"W	0.03	
5630.00	0.070	282.190	5525.64	-628.05	626.75	-375.46	1691988.83	14570265.54	40°07'09.838"N	104°48'55.892"W	0.08	
5720.00	0.100	239.290	5615.64	-628.02	626.72	-375.58	1691988.71	14570265.51	40°07'09.837"N	104°48'55.894"W	0.08	
5809.00	0.140	252.390	5704.64	-627.95	626.64	-375.75	1691988.54	14570265.44	40°07'09.837"N	104°48'55.896"W	0.05	
5898.00	0.040	263.130	5793.64	-627.92	626.61	-375.89	1691988.41	14570265.40	40°07'09.836"N	104°48'55.897"W	0.11	
5988.00	0.070	318.490	5883.64	-627.95	626.65	-375.95	1691988.34	14570265.44	40°07'09.837"N	104°48'55.898"W	0.06	
6077.00	0.070	253.510	5972.64	-627.98	626.67	-376.04	1691988.25	14570265.46	40°07'09.837"N	104°48'55.899"W	0.08	
6166.00	0.140	282.790	6061.64	-627.99	626.68	-376.20	1691988.09	14570265.47	40°07'09.837"N	104°48'55.901"W	0.10	
6256.00	0.070	254.730	6151.64	-628.00	626.69	-376.36	1691987.93	14570265.48	40°07'09.837"N	104°48'55.904"W	0.09	
6345.00	0.030	280.600	6240.64	-627.99	626.68	-376.44	1691987.86	14570265.47	40°07'09.837"N	104°48'55.905"W	0.05	
6434.00	0.000	8.180	6329.64	-627.99	626.68	-376.46	1691987.84	14570265.48	40°07'09.837"N	104°48'55.905"W	0.03	
6523.00	0.070	96.400	6418.64	-627.99	626.68	-376.41	1691987.89	14570265.47	40°07'09.837"N	104°48'55.904"W	0.08	
6613.00	0.130	351.210	6508.64	-628.08	626.77	-376.37	1691987.93	14570265.56	40°07'09.838"N	104°48'55.904"W	0.18	
6702.00	0.000	8.190	6597.64	-628.18	626.87	-376.38	1691987.91	14570265.66	40°07'09.839"N	104°48'55.904"W	0.15	
6791.00	0.130	102.250	6686.64	-628.16	626.85	-376.28	1691988.01	14570265.64	40°07'09.839"N	104°48'55.903"W	0.15	
6880.00	0.180	281.100	6775.64	-628.17	626.86	-376.32	1691987.97	14570265.65	40°07'09.839"N	104°48'55.903"W	0.35	
6970.00	0.070	232.940	6865.64	-628.16	626.85	-376.50	1691987.79	14570265.64	40°07'09.839"N	104°48'55.905"W	0.16	
7015.00†	3.051	172.629	6910.61	-626.96	625.65	-376.37	1691987.93	14570264.44	40°07'09.827"N	104°48'55.904"W	6.70	KOP
7059.00	6.000	172.060	6954.47	-623.51	622.21	-375.90	1691988.40	14570261.00	40°07'09.793"N	104°48'55.898"W	6.70	
7148.00	17.440	177.250	7041.47	-605.52	604.22	-374.62	1691989.72	14570243.02	40°07'09.615"N	104°48'55.881"W	12.90	
7237.00	24.670	180.450	7124.48	-573.58	572.28	-374.12	1691990.29	14570211.10	40°07'09.299"N	104°48'55.875"W	8.22	
7326.00	34.800	181.090	7201.66	-529.50	528.20	-374.75	1691989.75	14570167.03	40°07'08.864"N	104°48'55.883"W	11.39	
7416.00	45.280	181.410	7270.47	-471.70	470.39	-376.03	1691988.59	14570109.25	40°07'08.292"N	104°48'55.899"W	11.65	
7504.00	56.630	180.440	7325.81	-403.48	402.17	-377.09	1691987.68	14570041.05	40°07'07.618"N	104°48'55.913"W	12.93	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#10 CASTLE PINES 19-10HZ(484'FSL & 1003'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-10HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-10HZ AWB
Facility	SEC.19-T2N-R66W		

WELLPATH DATA (249 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
7538.00†	60.647	179.807	7343.50	-374.46	373.14	-377.15	1691987.68	14570012.04	40°07'07.331"N	104°48'55.914"W	11.92	ENTER LANDBOX (857'FSL & 1380'FEL,SEC.19) 40.1187032 -104.8155316
7593.00	67.150	178.880	7367.69	-325.10	323.78	-376.57	1691988.36	14569962.70	40°07'06.844"N	104°48'55.906"W	11.92	
7683.00	76.040	179.200	7396.08	-239.79	238.49	-375.15	1691989.96	14569877.44	40°07'06.001"N	104°48'55.888"W	9.88	
7772.00	83.090	180.400	7412.19	-152.32	151.01	-374.85	1691990.44	14569790.00	40°07'05.136"N	104°48'55.884"W	8.03	
7861.00	90.120	181.000	7417.45	-63.55	62.23	-375.94	1691989.54	14569701.25	40°07'04.259"N	104°48'55.898"W	7.93	LANDING (546'FSL & 1379'FEL,SEC.19) 40.1178497 -104.8155272
7950.00	89.170	181.900	7418.00	25.41	-26.73	-378.19	1691987.47	14569612.32	40°07'03.380"N	104°48'55.927"W	1.47	
8040.00	89.050	184.100	7419.40	115.26	-116.59	-382.90	1691982.95	14569522.48	40°07'02.492"N	104°48'55.988"W	2.45	
8129.00	88.580	184.120	7421.24	203.99	-205.35	-389.28	1691976.76	14569433.75	40°07'01.615"N	104°48'56.070"W	0.53	
8218.00	88.400	179.660	7423.59	292.87	-294.24	-392.21	1691974.01	14569344.88	40°07'00.736"N	104°48'56.107"W	5.01	
8307.00	88.460	175.150	7426.03	381.74	-383.10	-388.18	1691978.23	14569256.08	40°06'59.858"N	104°48'56.056"W	5.07	
8396.00	87.690	175.790	7429.02	470.43	-471.77	-381.16	1691985.43	14569167.45	40°06'58.982"N	104°48'55.965"W	1.12	
8486.00	87.720	177.530	7432.62	560.22	-561.54	-375.92	1691990.86	14569077.73	40°06'58.095"N	104°48'55.898"W	1.93	
8575.00	87.720	179.080	7436.16	649.12	-650.43	-373.29	1691993.67	14568988.88	40°06'57.216"N	104°48'55.864"W	1.74	
8664.00	87.380	179.760	7439.97	738.04	-739.34	-372.39	1691994.76	14568900.01	40°06'56.338"N	104°48'55.852"W	0.85	
8753.00	89.380	179.480	7442.48	827.00	-828.30	-371.80	1691995.53	14568811.09	40°06'55.459"N	104°48'55.845"W	2.27	
8843.00	89.450	176.430	7443.40	916.93	-918.23	-368.59	1691998.93	14568721.20	40°06'54.570"N	104°48'55.803"W	3.39	
8867.00†	89.299	175.958	7443.67	940.88	-942.17	-366.99	1692000.57	14568697.27	40°06'54.333"N	104°48'55.783"W	2.06	EXIT RADIUS HEEL (458'FNL & 1370'FEL,SEC.30) 40.1150926 -104.8154952
8932.00	88.890	174.680	7444.69	1005.68	-1006.95	-361.69	1692006.01	14568632.53	40°06'53.693"N	104°48'55.714"W	2.06	
9021.00	88.800	175.560	7446.49	1094.36	-1095.60	-354.12	1692013.76	14568543.93	40°06'52.817"N	104°48'55.617"W	0.99	
9110.00	88.650	177.260	7448.47	1183.18	-1184.40	-348.55	1692019.52	14568455.17	40°06'51.940"N	104°48'55.545"W	1.92	
9199.00	88.740	179.580	7450.50	1272.13	-1273.34	-346.10	1692022.16	14568366.28	40°06'51.061"N	104°48'55.514"W	2.61	
9288.00	90.000	182.940	7451.47	1361.08	-1362.30	-348.05	1692020.39	14568277.35	40°06'50.182"N	104°48'55.539"W	4.03	
9378.00	89.910	183.590	7451.54	1450.91	-1452.15	-353.18	1692015.45	14568187.52	40°06'49.294"N	104°48'55.605"W	0.73	
9467.00	87.840	182.620	7453.29	1539.74	-1541.00	-358.00	1692010.82	14568098.70	40°06'48.416"N	104°48'55.667"W	2.57	
9556.00	87.690	181.740	7456.76	1628.59	-1629.87	-361.38	1692007.62	14568009.86	40°06'47.537"N	104°48'55.710"W	1.00	
9646.00	87.750	180.410	7460.34	1718.50	-1719.78	-363.07	1692006.12	14567919.98	40°06'46.649"N	104°48'55.732"W	1.48	
9735.00	89.690	179.380	7462.33	1807.47	-1808.75	-362.91	1692006.47	14567831.05	40°06'45.770"N	104°48'55.730"W	2.47	
9824.00	89.850	179.660	7462.69	1896.47	-1897.75	-362.16	1692007.40	14567742.09	40°06'44.890"N	104°48'55.720"W	0.36	
9914.00	89.940	180.540	7462.85	1986.47	-1987.74	-362.32	1692007.43	14567652.13	40°06'44.001"N	104°48'55.722"W	0.98	
10003.00	89.850	181.040	7463.02	2075.45	-2076.74	-363.54	1692006.39	14567563.17	40°06'43.121"N	104°48'55.738"W	0.57	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#10 CASTLE PINES 19-10HZ(484'FSL & 1003'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-10HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-10HZ AWB
Facility	SEC.19-T2N-R66W		

### WELLPATH DATA (249 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
10092.00	89.750	180.570	7463.33	2164.44	-2165.73	-364.79	1692005.33	14567474.21	40°06'42.242"N	104°48'55.754"W	0.54	
10182.00	89.880	180.730	7463.62	2254.43	-2255.72	-365.82	1692004.50	14567384.25	40°06'41.353"N	104°48'55.767"W	0.23	
10271.00	90.830	180.960	7463.07	2343.41	-2344.71	-367.13	1692003.37	14567295.30	40°06'40.473"N	104°48'55.784"W	1.10	
10360.00	90.770	179.980	7461.82	2432.40	-2433.69	-367.86	1692002.83	14567206.34	40°06'39.594"N	104°48'55.794"W	1.10	
10450.00	91.170	178.730	7460.30	2522.38	-2523.67	-366.85	1692004.03	14567116.40	40°06'38.705"N	104°48'55.780"W	1.46	
10539.00	93.170	177.540	7456.93	2611.27	-2612.56	-363.95	1692007.10	14567027.56	40°06'37.826"N	104°48'55.743"W	2.61	
10629.00	93.110	177.690	7452.00	2701.07	-2702.34	-360.21	1692011.03	14566937.82	40°06'36.939"N	104°48'55.695"W	0.18	
10718.00	93.140	178.890	7447.15	2789.90	-2791.17	-357.56	1692013.87	14566849.03	40°06'36.061"N	104°48'55.661"W	1.35	
10807.00	92.960	179.600	7442.41	2878.77	-2880.04	-356.39	1692015.22	14566760.20	40°06'35.183"N	104°48'55.646"W	0.82	
10897.00	93.110	180.350	7437.65	2968.65	-2969.91	-356.35	1692015.45	14566670.37	40°06'34.295"N	104°48'55.645"W	0.85	
10986.00	93.140	181.630	7432.80	3057.49	-3058.76	-357.89	1692014.10	14566581.55	40°06'33.417"N	104°48'55.665"W	1.44	
11075.00	93.330	182.150	7427.77	3146.29	-3147.57	-360.82	1692011.36	14566492.77	40°06'32.539"N	104°48'55.703"W	0.62	
11165.00	89.940	179.730	7425.21	3236.22	-3237.50	-362.29	1692010.07	14566402.87	40°06'31.651"N	104°48'55.722"W	4.63	
11254.00	90.030	179.670	7425.23	3325.22	-3326.50	-361.82	1692010.72	14566313.91	40°06'30.771"N	104°48'55.716"W	0.12	
11344.00	88.740	182.400	7426.20	3415.18	-3416.47	-363.45	1692009.29	14566223.97	40°06'29.882"N	104°48'55.737"W	3.35	
11433.00	88.890	180.190	7428.04	3504.13	-3505.42	-365.46	1692007.46	14566135.05	40°06'29.003"N	104°48'55.762"W	2.49	
11522.00	87.970	178.150	7430.47	3593.08	-3594.37	-364.17	1692008.94	14566046.14	40°06'28.124"N	104°48'55.746"W	2.51	
11612.00	86.830	178.120	7434.56	3682.95	-3684.23	-361.25	1692012.05	14565956.32	40°06'27.236"N	104°48'55.708"W	1.27	
11702.00	86.830	177.930	7439.53	3772.77	-3774.04	-358.15	1692015.33	14565866.55	40°06'26.348"N	104°48'55.668"W	0.21	
11791.00	87.850	178.520	7443.66	3861.64	-3862.90	-355.40	1692018.27	14565777.73	40°06'25.470"N	104°48'55.633"W	1.32	
11881.00	86.920	179.980	7447.77	3951.54	-3952.80	-354.22	1692019.63	14565687.88	40°06'24.582"N	104°48'55.618"W	1.92	
11970.00	86.800	181.250	7452.65	4040.39	-4041.66	-355.17	1692018.87	14565599.05	40°06'23.704"N	104°48'55.630"W	1.43	
12060.00	88.460	180.900	7456.37	4130.29	-4131.56	-356.86	1692017.37	14565509.18	40°06'22.815"N	104°48'55.652"W	1.88	
12149.00	88.370	180.000	7458.83	4219.25	-4220.52	-357.56	1692016.86	14565420.25	40°06'21.936"N	104°48'55.661"W	1.02	
12239.00	88.520	179.670	7461.27	4309.22	-4310.49	-357.30	1692017.30	14565330.32	40°06'21.047"N	104°48'55.657"W	0.40	
12328.00	88.430	178.870	7463.64	4398.18	-4399.45	-356.16	1692018.62	14565241.40	40°06'20.168"N	104°48'55.643"W	0.90	
12418.00	89.510	178.600	7465.26	4488.15	-4489.41	-354.18	1692020.80	14565151.48	40°06'19.279"N	104°48'55.617"W	1.24	
12507.00	89.820	179.220	7465.78	4577.14	-4578.39	-352.49	1692022.67	14565062.54	40°06'18.400"N	104°48'55.595"W	0.78	
12597.00	89.850	178.840	7466.04	4667.13	-4668.38	-350.96	1692024.38	14564972.59	40°06'17.510"N	104°48'55.576"W	0.42	
12686.00	89.850	180.470	7466.27	4756.12	-4757.38	-350.43	1692025.11	14564883.63	40°06'16.631"N	104°48'55.569"W	1.83	



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#10 CASTLE PINES 19-10HZ(484'FSL & 1003'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-10HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-10HZ AWB
Facility	SEC.19-T2N-R66W		

### WELLPATH DATA (249 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
12776.00	89.750	183.000	7466.59	4846.06	-4847.33	-353.15	1692022.57	14564793.71	40°06'15.742"N	104°48'55.604"W	2.81	
12865.00	89.780	184.500	7466.95	4934.85	-4936.13	-358.97	1692016.94	14564704.93	40°06'14.864"N	104°48'55.679"W	1.69	
12955.00	89.820	183.880	7467.26	5024.58	-5025.89	-365.55	1692010.55	14564615.19	40°06'13.977"N	104°48'55.763"W	0.69	
13044.00	89.820	183.480	7467.54	5113.38	-5114.71	-371.26	1692005.03	14564526.40	40°06'13.100"N	104°48'55.837"W	0.45	
13134.00	89.970	182.240	7467.71	5203.25	-5204.59	-375.75	1692000.73	14564436.54	40°06'12.211"N	104°48'55.895"W	1.39	
13223.00	89.970	180.240	7467.76	5292.22	-5293.57	-377.68	1691998.99	14564347.60	40°06'11.332"N	104°48'55.919"W	2.25	
13313.00	89.940	179.880	7467.83	5382.22	-5383.57	-377.77	1691999.08	14564257.63	40°06'10.443"N	104°48'55.920"W	0.40	
13402.00	89.910	179.710	7467.94	5471.22	-5472.57	-377.45	1691999.59	14564168.67	40°06'09.563"N	104°48'55.916"W	0.19	
13491.00	89.750	178.970	7468.21	5560.21	-5561.56	-376.43	1692000.80	14564079.71	40°06'08.684"N	104°48'55.903"W	0.85	
13581.00	89.850	177.760	7468.52	5650.18	-5651.52	-373.86	1692003.55	14563989.80	40°06'07.795"N	104°48'55.870"W	1.35	
13670.00	89.570	175.520	7468.97	5739.04	-5740.36	-368.64	1692008.95	14563901.00	40°06'06.917"N	104°48'55.803"W	2.54	
13759.00	89.570	174.430	7469.64	5827.72	-5829.01	-360.85	1692016.93	14563812.40	40°06'06.041"N	104°48'55.703"W	1.22	
13849.00	89.480	174.490	7470.39	5917.33	-5918.59	-352.16	1692025.80	14563722.88	40°06'05.156"N	104°48'55.591"W	0.12	
13938.00	89.320	173.650	7471.32	6005.88	-6007.11	-342.96	1692035.17	14563634.41	40°06'04.281"N	104°48'55.472"W	0.96	
14027.00	88.060	176.030	7473.35	6094.51	-6095.72	-334.96	1692043.36	14563545.86	40°06'03.405"N	104°48'55.369"W	3.03	
14117.00	86.860	181.060	7477.34	6184.37	-6185.57	-332.68	1692045.83	14563456.05	40°06'02.517"N	104°48'55.340"W	5.74	
14206.00	87.410	181.180	7481.79	6273.23	-6274.44	-334.42	1692044.28	14563367.21	40°06'01.639"N	104°48'55.362"W	0.63	
14296.00	87.230	178.390	7486.00	6363.13	-6364.33	-334.08	1692044.80	14563277.35	40°06'00.751"N	104°48'55.358"W	3.10	
14385.00	87.290	180.310	7490.26	6452.02	-6453.22	-333.07	1692046.00	14563188.50	40°05'59.872"N	104°48'55.345"W	2.16	
14474.00	87.230	183.580	7494.51	6540.84	-6542.06	-336.09	1692043.17	14563099.70	40°05'58.994"N	104°48'55.384"W	3.67	
14564.00	87.260	184.340	7498.84	6630.50	-6631.74	-342.30	1692037.15	14563010.04	40°05'58.108"N	104°48'55.464"W	0.84	
14653.00	88.090	183.310	7502.45	6719.21	-6720.46	-348.23	1692031.40	14562921.33	40°05'57.231"N	104°48'55.540"W	1.49	
14743.00	88.250	181.280	7505.32	6809.07	-6810.34	-351.83	1692027.99	14562831.49	40°05'56.343"N	104°48'55.586"W	2.26	
14832.00	88.120	179.870	7508.14	6898.02	-6899.29	-352.72	1692027.29	14562742.57	40°05'55.464"N	104°48'55.598"W	1.59	
14922.00	88.120	180.390	7511.09	6987.97	-6989.24	-352.93	1692027.27	14562652.66	40°05'54.575"N	104°48'55.600"W	0.58	
15011.00	90.280	179.640	7512.34	7076.95	-7078.23	-352.95	1692027.43	14562563.71	40°05'53.696"N	104°48'55.601"W	2.57	
15101.00	88.980	181.090	7512.92	7166.94	-7168.22	-353.52	1692027.05	14562473.75	40°05'52.807"N	104°48'55.608"W	2.16	
15191.00	89.200	181.750	7514.35	7256.89	-7258.18	-355.75	1692025.01	14562383.82	40°05'51.918"N	104°48'55.637"W	0.77	
15280.00	89.230	182.730	7515.57	7345.80	-7347.10	-359.23	1692021.71	14562294.93	40°05'51.039"N	104°48'55.682"W	1.10	
15370.00	89.880	182.240	7516.27	7435.70	-7437.01	-363.13	1692018.00	14562205.04	40°05'50.150"N	104°48'55.732"W	0.90	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#10 CASTLE PINES 19-10HZ(484'FSL & 1003'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-10HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-10HZ AWB
Facility	SEC.19-T2N-R66W		

### WELLPATH DATA (249 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
15459.00	90.860	179.930	7515.69	7524.67	-7525.99	-364.82	1692016.50	14562116.10	40°05'49.271"N	104°48'55.753"W	2.82	
15549.00	90.740	178.850	7514.43	7614.66	-7615.97	-363.86	1692017.65	14562026.15	40°05'48.382"N	104°48'55.741"W	1.21	
15638.00	90.950	177.090	7513.12	7703.60	-7704.90	-360.71	1692020.99	14561937.26	40°05'47.503"N	104°48'55.700"W	1.99	
15727.00	91.320	177.220	7511.36	7792.48	-7793.78	-356.29	1692025.59	14561848.44	40°05'46.625"N	104°48'55.644"W	0.44	
15817.00	91.350	178.290	7509.26	7882.40	-7883.68	-352.77	1692029.30	14561758.57	40°05'45.736"N	104°48'55.598"W	1.19	
15906.00	91.230	179.180	7507.26	7971.36	-7972.64	-350.80	1692031.45	14561669.66	40°05'44.857"N	104°48'55.573"W	1.01	
15996.00	90.400	180.030	7505.98	8061.35	-8062.62	-350.18	1692032.25	14561579.71	40°05'43.968"N	104°48'55.565"W	1.32	
16085.00	90.090	179.510	7505.60	8150.35	-8151.62	-349.82	1692032.80	14561490.75	40°05'43.089"N	104°48'55.560"W	0.68	
16175.00	90.150	179.750	7505.41	8240.35	-8241.62	-349.24	1692033.57	14561400.79	40°05'42.199"N	104°48'55.553"W	0.27	
16264.00	90.180	180.260	7505.15	8329.35	-8330.62	-349.25	1692033.74	14561311.82	40°05'41.320"N	104°48'55.553"W	0.57	
16354.00	90.120	180.930	7504.92	8419.34	-8420.61	-350.19	1692033.00	14561221.86	40°05'40.430"N	104°48'55.565"W	0.75	
16443.00	90.150	181.500	7504.71	8508.31	-8509.59	-352.07	1692031.30	14561132.92	40°05'39.551"N	104°48'55.589"W	0.64	
16533.00	90.120	181.790	7504.49	8598.26	-8599.55	-354.66	1692028.90	14561042.98	40°05'38.662"N	104°48'55.622"W	0.32	
16623.00	90.120	181.080	7504.31	8688.23	-8689.53	-356.91	1692026.84	14560953.04	40°05'37.773"N	104°48'55.651"W	0.79	
16712.00	90.090	180.730	7504.14	8777.21	-8778.51	-358.32	1692025.62	14560864.09	40°05'36.893"N	104°48'55.669"W	0.39	
16801.00	90.150	180.560	7503.96	8866.20	-8867.51	-359.32	1692024.80	14560775.13	40°05'36.014"N	104°48'55.682"W	0.20	
16891.00	89.910	180.730	7503.91	8956.19	-8957.50	-360.33	1692023.98	14560685.17	40°05'35.125"N	104°48'55.695"W	0.33	
16980.00	89.940	180.710	7504.03	9045.18	-9046.50	-361.45	1692023.05	14560596.21	40°05'34.245"N	104°48'55.710"W	0.04	
17070.00	90.620	180.720	7503.59	9135.17	-9136.49	-362.57	1692022.11	14560506.25	40°05'33.356"N	104°48'55.724"W	0.76	
17160.00	90.680	179.400	7502.57	9225.16	-9226.48	-362.67	1692022.21	14560416.29	40°05'32.467"N	104°48'55.725"W	1.47	
17249.00	90.550	179.240	7501.61	9314.15	-9315.47	-361.61	1692023.45	14560327.34	40°05'31.587"N	104°48'55.712"W	0.23	
17339.00	90.890	178.960	7500.48	9404.13	-9405.45	-360.20	1692025.05	14560237.40	40°05'30.698"N	104°48'55.694"W	0.49	
17428.00	90.550	176.290	7499.36	9493.05	-9494.36	-356.51	1692028.92	14560148.54	40°05'29.819"N	104°48'55.646"W	3.02	
17518.00	90.490	176.100	7498.54	9582.87	-9584.16	-350.54	1692035.08	14560058.79	40°05'28.932"N	104°48'55.569"W	0.22	
17697.00	90.520	176.380	7496.97	9761.52	-9762.76	-338.80	1692047.18	14559880.28	40°05'27.167"N	104°48'55.418"W	0.16	
17786.00	90.310	176.330	7496.32	9850.36	-9851.58	-333.14	1692053.02	14559791.50	40°05'26.289"N	104°48'55.345"W	0.24	
17875.00	90.280	177.130	7495.86	9939.23	-9940.43	-328.06	1692058.28	14559702.70	40°05'25.411"N	104°48'55.280"W	0.90	
17965.00	90.310	179.750	7495.40	10029.19	-10030.39	-325.61	1692060.92	14559612.78	40°05'24.522"N	104°48'55.248"W	2.91	
18054.00	90.090	181.040	7495.09	10118.19	-10119.39	-326.23	1692060.49	14559523.82	40°05'23.643"N	104°48'55.256"W	1.47	
18144.00	90.150	182.760	7494.90	10208.12	-10209.33	-329.21	1692057.70	14559433.90	40°05'22.754"N	104°48'55.295"W	1.91	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#10 CASTLE PINES 19-10HZ(484'FSL & 1003'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-10HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-10HZ AWB
Facility	SEC.19-T2N-R66W		

WELLPATH DATA (249 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
18233.00	90.030	183.060	7494.76	10296.99	-10298.22	-333.73	1692053.37	14559345.04	40°05'21.875"N	104°48'55.353"W	0.36	
18322.00	89.910	184.220	7494.81	10385.79	-10387.04	-339.38	1692047.91	14559256.25	40°05'20.998"N	104°48'55.426"W	1.31	
18412.00	91.020	181.690	7494.08	10475.64	-10476.91	-344.02	1692043.46	14559166.41	40°05'20.110"N	104°48'55.485"W	3.07	
18501.00	90.990	180.510	7492.52	10564.60	-10565.87	-345.73	1692041.93	14559077.47	40°05'19.230"N	104°48'55.507"W	1.33	
18526.00†	91.007	180.488	7492.08	10589.60	-10590.87	-345.95	1692041.77	14559052.49	40°05'18.983"N	104°48'55.510"W	0.11	ENTER RADIUS TOE (457'FSL & 1368'FEL,SEC.31) 40.0886065 -104.8154194
18590.00	91.050	180.430	7490.93	10653.58	-10654.86	-346.46	1692041.39	14558988.52	40°05'18.351"N	104°48'55.517"W	0.11	
18680.00	90.990	180.020	7489.33	10743.57	-10744.84	-346.81	1692041.23	14558898.57	40°05'17.462"N	104°48'55.521"W	0.46	
18754.00	90.980	179.440	7488.06	10817.55	-10818.83	-346.46	1692041.73	14558824.62	40°05'16.731"N	104°48'55.517"W	0.78	LAST BHGE MWD+IFR1+MSA SURVEY
18778.00	90.980	179.440	7487.65	10841.55	-10842.83	-346.23	1692042.01	14558800.63	40°05'16.494"N	104°48'55.514"W	0.00	PTB (205'FSL & 1368'FEL,SEC.31) 40.0879149 -104.8154204

HOLE & CASING SECTIONS - Ref Wellbore: CASTLE PINES 19-10HZ AWB Ref Wellpath: CASTLE PINES 19-10HZ 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]
9.625in Casing Surface	26.00	1854.00	1828.00	26.00	1832.06	0.00	0.00	161.12	-81.02

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#10 CASTLE PINES 19-10HZ(484'FSL & 1003'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-10HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-10HZ AWB
Facility	SEC.19-T2N-R66W		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.30-T2N-R66W	2.00	1.11	-135.10	1692230.40	14569640.66	40°07'03.655"N	104°48'52.798"W	polygon
SEC.31-T2N-R66W	2.00	1.11	-135.10	1692230.40	14569640.66	40°07'03.655"N	104°48'52.798"W	polygon
CASTLE PINES 19-10HZ HEEL REV-1(578'FSL & 1378'FEL,SEC.19)	7432.00	94.72	-375.32	1691990.09	14569733.73	40°07'04.580"N	104°48'55.890"W	point
CASTLE PINES 19-10HZ LANDBOX	7462.00	0.00	0.00	1692365.45	14569639.83	40°07'03.644"N	104°48'51.059"W	polygon
CASTLE PINES 19-10HZ RADIUS 1	7462.00	-483.36	-317.99	1692048.60	14569156.00	40°06'58.867"N	104°48'55.152"W	polygon
CASTLE PINES 19-10HZ RADIUS 2	7462.00	-11047.84	-297.75	1692090.90	14558595.80	40°05'14.468"N	104°48'54.890"W	polygon
CASTLE PINES 19-10HZ BHL REV-1(203'FSL & 1359'FEL,SEC.31)	7464.00	-10844.61	-337.17	1692051.07	14558798.87	40°05'16.476"N	104°48'55.397"W	point

WELLPATH COMPOSITION - Ref Wellbore: CASTLE PINES 19-10HZ AWB				Ref Wellpath: CASTLE PINES 19-10HZ AWP		
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment		Wellbore	
26.00	1814.00	Custom APC ISCWSA REV 2 MWD+IFR1 (approximation)	Custom APC ISCWSA Rev-2 MWD+IFR1 <136 - 1814>		CASTLE PINES 19-10HZ AWB	
1814.00	18754.00	Custom APC ISCWSA REV 2 MWD+IFR1+MSA (approximation)	BHGE Custom APC ISCWSA Rev-2 MWD+IFR1+MSA <1878 - 18754>		CASTLE PINES 19-10HZ AWB	
18754.00	18778.00	Blind Drilling (std)	Projection to bit		CASTLE PINES 19-10HZ AWB	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#10 CASTLE PINES 19-10HZ(484'FSL & 1003'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-10HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-10HZ AWB
Facility	SEC.19-T2N-R66W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
136.00	0.130	157.150	136.00	FIRST SURFACE MWD+IFR1 SURVEY
1814.00	18.760	334.160	1794.20	LAST SURFACE MWD+IFR1 SURVEY
1878.00	18.860	332.800	1854.78	FIRST BHGE MWD+IFR1+MSA SURVEY
7015.00	3.051	172.629	6910.61	KOP
7538.00	60.647	179.807	7343.50	ENTER LANDBOX (857'FSL & 1380'FEL,SEC.19) 40.1187032 -104.8155316
7861.00	90.120	181.000	7417.45	LANDING (546'FSL & 1379'FEL,SEC.19) 40.1178497 -104.8155272
8867.00	89.299	175.958	7443.67	EXIT RADIUS HEEL (458'FNL & 1370'FEL,SEC.30) 40.1150926 -104.8154952
18526.00	91.007	180.488	7492.08	ENTER RADIUS TOE (457'FSL & 1368'FEL,SEC.31) 40.0886065 -104.8154194
18754.00	90.980	179.440	7488.06	LAST BHGE MWD+IFR1+MSA SURVEY
18778.00	90.980	179.440	7487.65	PTB (205'FSL & 1368'FEL,SEC.31) 40.0879149 -104.8154204