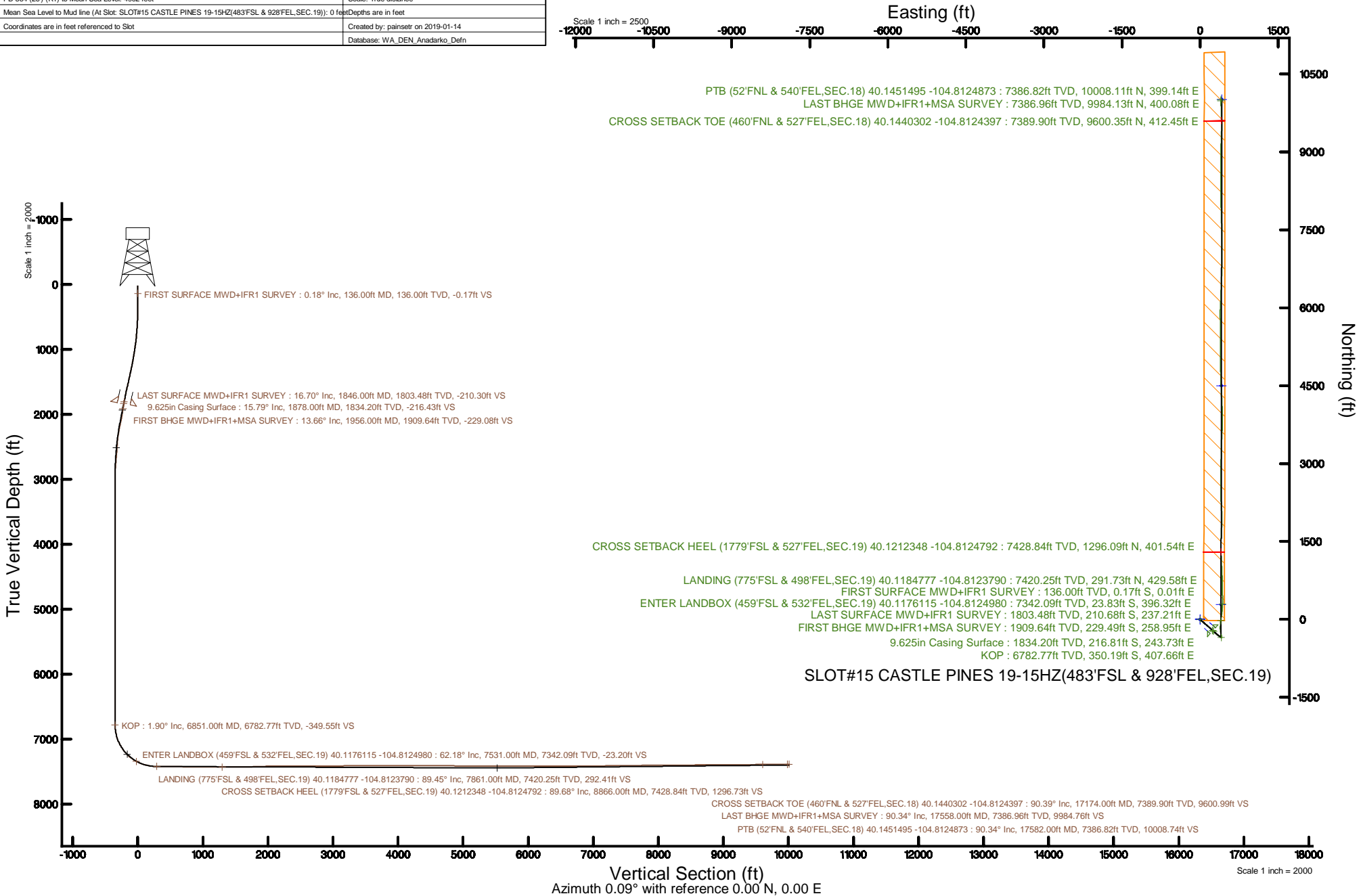


KERR-MCGEE OIL & GAS ONSHORE LP (WA)

Location: COLORADO Slot: SLOT#15 CASTLE PINES 19-15HZ(483'FSL & 928'FEL,SEC.19)  
Field: WELD COUNTY (UTM/TRUE NORTH) Well: CASTLE PINES 19-15HZ  
Facility: SEC.19-T2N-R66W Wellbore: CASTLE PINES 19-15HZ PWB

Plot reference wellpath is CASTLE PINES 19-15HZ PWP 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 geodetic 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#15 CASTLE PINES 19-15HZ(483'FSL & 928'FEL,SEC.19)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: painsetr on 2019-01-14
	Database: WA_DEN_Anadarko_Defn



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#15 CASTLE PINES 19-15HZ(483'FSL & 928'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-15HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-15HZ 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	1/14/2019 at 9:13 AM
Convergence at slot	0.12° East	Database/Source file	WA_DEN_Anadarko_Defn/CASTLE_PINES_19-15HZ_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-1.82	210.07	1692440.40	14569639.28	40°07'03.637"N	104°48'50.094"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#15 CASTLE PINES 19-15HZ(483'FSL & 928'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	0.09°

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#15 CASTLE PINES 19-15HZ(483'FSL & 928'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-15HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-15HZ AWB
Facility	SEC.19-T2N-R66W		

WELLPATH DATA (201 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	175.870	0.00	0.00	0.00	0.00	1692440.40	14569639.28	40°07'03.637°N	104°48'50.094°W	0.00	
26.00	0.000	175.870	26.00	0.00	0.00	0.00	1692440.40	14569639.28	40°07'03.637°N	104°48'50.094°W	0.00	
136.00	0.180	175.870	136.00	-0.17	-0.17	0.01	1692440.41	14569639.11	40°07'03.635°N	104°48'50.094°W	0.16	FIRST SURFACE MWD+IFR1 SURVEY
231.00	0.350	215.250	231.00	-0.56	-0.56	-0.14	1692440.25	14569638.72	40°07'03.631°N	104°48'50.096°W	0.25	
326.00	0.350	200.570	326.00	-1.07	-1.07	-0.41	1692439.98	14569638.21	40°07'03.626°N	104°48'50.099°W	0.09	
422.00	0.970	136.760	421.99	-1.93	-1.93	0.04	1692440.44	14569637.35	40°07'03.618°N	104°48'50.093°W	0.91	
517.00	2.460	134.040	516.95	-3.93	-3.94	2.06	1692442.46	14569635.35	40°07'03.598°N	104°48'50.068°W	1.57	
612.00	5.010	132.190	611.74	-8.13	-8.14	6.60	1692447.01	14569631.16	40°07'03.557°N	104°48'50.009°W	2.69	
707.00	6.990	130.260	706.21	-14.64	-14.66	14.08	1692454.50	14569624.65	40°07'03.492°N	104°48'49.913°W	2.09	
802.00	8.790	129.950	800.31	-23.02	-23.06	24.06	1692464.49	14569616.28	40°07'03.409°N	104°48'49.784°W	1.90	
898.00	10.590	129.640	894.93	-33.34	-33.40	36.48	1692476.93	14569605.97	40°07'03.307°N	104°48'49.624°W	1.88	
993.00	12.880	131.660	987.94	-45.93	-46.01	51.11	1692491.58	14569593.40	40°07'03.182°N	104°48'49.436°W	2.45	
1088.00	14.020	132.630	1080.34	-60.73	-60.84	67.49	1692507.98	14569578.60	40°07'03.036°N	104°48'49.225°W	1.22	
1183.00	15.950	129.730	1172.10	-76.84	-76.98	85.99	1692526.52	14569562.51	40°07'02.876°N	104°48'48.987°W	2.18	
1279.00	16.830	129.820	1264.20	-94.14	-94.31	106.81	1692547.36	14569545.23	40°07'02.705°N	104°48'48.719°W	0.92	
1373.00	18.240	130.960	1353.83	-112.46	-112.67	128.38	1692568.96	14569526.92	40°07'02.524°N	104°48'48.442°W	1.54	
1468.00	19.160	131.750	1443.81	-132.55	-132.79	151.23	1692591.85	14569506.85	40°07'02.325°N	104°48'48.147°W	1.00	
1562.00	19.420	130.960	1532.54	-153.03	-153.31	174.54	1692615.19	14569486.39	40°07'02.122°N	104°48'47.847°W	0.39	
1658.00	17.930	131.310	1623.48	-173.21	-173.53	197.70	1692638.38	14569466.23	40°07'01.922°N	104°48'47.549°W	1.56	
1753.00	16.220	133.860	1714.29	-192.03	-192.38	218.25	1692658.96	14569447.44	40°07'01.736°N	104°48'47.285°W	1.96	
1846.00	16.700	134.130	1803.48	-210.30	-210.68	237.21	1692677.95	14569429.18	40°07'01.555°N	104°48'47.041°W	0.52	LAST SURFACE MWD+IFR1 SURVEY
1956.00†	13.663	126.876	1909.64	-229.08	-229.49	258.95	1692699.72	14569410.42	40°07'01.369°N	104°48'46.761°W	3.25	FIRST BHGE MWD+IFR1+MSA SURVEY
1966.00	13.400	126.060	1919.36	-230.46	-230.88	260.83	1692701.61	14569409.04	40°07'01.355°N	104°48'46.737°W	3.25	
2056.00	14.120	127.210	2006.78	-243.21	-243.66	278.01	1692718.80	14569396.30	40°07'01.229°N	104°48'46.516°W	0.86	
2145.00	15.220	138.410	2092.89	-258.49	-258.96	294.41	1692735.23	14569381.04	40°07'01.078°N	104°48'46.304°W	3.41	
2234.00	15.700	138.850	2178.67	-276.27	-276.77	310.09	1692750.94	14569363.27	40°07'00.902°N	104°48'46.103°W	0.56	
2324.00	15.030	132.650	2265.46	-293.32	-293.84	326.69	1692767.56	14569346.24	40°07'00.733°N	104°48'45.889°W	1.97	
2413.00	14.320	120.610	2351.58	-306.72	-307.27	344.65	1692785.55	14569332.85	40°07'00.600°N	104°48'45.658°W	3.51	
2503.00	11.940	107.560	2439.24	-315.17	-315.75	363.11	1692804.02	14569324.41	40°07'00.517°N	104°48'45.420°W	4.21	
2592.00	10.540	113.310	2526.53	-321.15	-321.75	379.37	1692820.28	14569318.45	40°07'00.457°N	104°48'45.211°W	2.01	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#15 CASTLE PINES 19-15HZ(483'FSL & 928'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-15HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-15HZ AWB
Facility	SEC.19-T2N-R66W		

### WELLPATH DATA (201 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
2681.00	8.220	121.970	2614.34	-327.72	-328.34	392.24	1692833.17	14569311.89	40°07'00.392"N	104°48'45.045"W	3.04	
2771.00	6.880	138.760	2703.57	-335.16	-335.80	401.26	1692842.19	14569304.45	40°07'00.319"N	104°48'44.929"W	2.85	
2860.00	4.670	155.700	2792.12	-342.47	-343.11	406.26	1692847.21	14569297.15	40°07'00.246"N	104°48'44.865"W	3.11	
2949.00	3.880	166.220	2880.87	-348.69	-349.34	408.47	1692849.43	14569290.93	40°07'00.185"N	104°48'44.836"W	1.25	
3038.00	1.060	89.680	2969.79	-351.61	-352.26	410.01	1692850.98	14569288.02	40°07'00.156"N	104°48'44.817"W	4.24	
3128.00	0.030	85.900	3059.79	-351.60	-352.25	410.87	1692851.83	14569288.02	40°07'00.156"N	104°48'44.805"W	1.14	
3217.00	0.040	139.870	3148.79	-351.62	-352.28	410.91	1692851.88	14569288.00	40°07'00.156"N	104°48'44.805"W	0.04	
3307.00	0.070	254.430	3238.79	-351.66	-352.32	410.88	1692851.84	14569287.96	40°07'00.155"N	104°48'44.805"W	0.10	
3396.00	0.070	285.590	3327.79	-351.66	-352.32	410.77	1692851.74	14569287.96	40°07'00.155"N	104°48'44.807"W	0.04	
3485.00	0.360	322.090	3416.79	-351.43	-352.08	410.55	1692851.52	14569288.20	40°07'00.158"N	104°48'44.810"W	0.34	
3575.00	0.040	328.020	3506.78	-351.18	-351.83	410.36	1692851.32	14569288.45	40°07'00.160"N	104°48'44.812"W	0.36	
3664.00	0.100	115.380	3595.78	-351.18	-351.84	410.41	1692851.38	14569288.44	40°07'00.160"N	104°48'44.811"W	0.15	
3753.00	0.100	63.000	3684.78	-351.18	-351.84	410.55	1692851.52	14569288.44	40°07'00.160"N	104°48'44.810"W	0.10	
3843.00	0.180	312.070	3774.78	-351.05	-351.70	410.52	1692851.48	14569288.57	40°07'00.161"N	104°48'44.810"W	0.26	
3933.00	0.180	306.780	3864.78	-350.87	-351.53	410.30	1692851.26	14569288.75	40°07'00.163"N	104°48'44.813"W	0.02	
4022.00	0.150	272.320	3953.78	-350.79	-351.44	410.07	1692851.04	14569288.84	40°07'00.164"N	104°48'44.816"W	0.11	
4111.00	0.040	57.850	4042.78	-350.76	-351.42	409.98	1692850.95	14569288.86	40°07'00.164"N	104°48'44.817"W	0.21	
4200.00	0.040	55.000	4131.78	-350.73	-351.38	410.03	1692851.00	14569288.90	40°07'00.165"N	104°48'44.816"W	0.00	
4290.00	0.070	146.050	4221.78	-350.76	-351.41	410.09	1692851.05	14569288.87	40°07'00.164"N	104°48'44.816"W	0.09	
4379.00	0.070	93.510	4310.78	-350.81	-351.46	410.17	1692851.14	14569288.82	40°07'00.164"N	104°48'44.814"W	0.07	
4468.00	0.030	106.390	4399.78	-350.82	-351.47	410.25	1692851.22	14569288.81	40°07'00.164"N	104°48'44.813"W	0.05	
4557.00	0.000	8.160	4488.78	-350.82	-351.47	410.27	1692851.24	14569288.80	40°07'00.164"N	104°48'44.813"W	0.03	
4647.00	0.030	312.240	4578.78	-350.81	-351.46	410.25	1692851.22	14569288.82	40°07'00.164"N	104°48'44.813"W	0.03	
4736.00	0.030	162.830	4667.78	-350.81	-351.46	410.24	1692851.21	14569288.81	40°07'00.164"N	104°48'44.814"W	0.07	
4826.00	0.040	264.220	4757.78	-350.84	-351.49	410.22	1692851.19	14569288.79	40°07'00.163"N	104°48'44.814"W	0.06	
5005.00	0.070	180.530	4936.78	-350.95	-351.61	410.16	1692851.12	14569288.67	40°07'00.162"N	104°48'44.815"W	0.04	
5094.00	0.180	196.450	5025.78	-351.14	-351.79	410.12	1692851.08	14569288.48	40°07'00.160"N	104°48'44.815"W	0.13	
5183.00	0.160	255.350	5114.78	-351.31	-351.96	409.96	1692850.92	14569288.32	40°07'00.159"N	104°48'44.817"W	0.19	
5273.00	0.030	316.080	5204.78	-351.32	-351.97	409.82	1692850.79	14569288.30	40°07'00.159"N	104°48'44.819"W	0.16	
5361.00	0.070	331.220	5292.78	-351.26	-351.91	409.78	1692850.74	14569288.37	40°07'00.159"N	104°48'44.820"W	0.05	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#15 CASTLE PINES 19-15HZ(483'FSL & 928'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-15HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-15HZ AWB
Facility	SEC.19-T2N-R66W		

WELLPATH DATA (201 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
5450.00	0.000	8.170	5381.78	-351.21	-351.86	409.75	1692850.72	14569288.41	40°07'00.160"N	104°48'44.820"W	0.08	
5540.00	0.060	152.470	5471.78	-351.25	-351.91	409.77	1692850.74	14569288.37	40°07'00.159"N	104°48'44.820"W	0.07	
5629.00	0.030	20.670	5560.78	-351.27	-351.92	409.80	1692850.77	14569288.35	40°07'00.159"N	104°48'44.819"W	0.09	
5718.00	0.040	303.760	5649.78	-351.23	-351.89	409.78	1692850.75	14569288.39	40°07'00.160"N	104°48'44.819"W	0.05	
5807.00	0.060	310.100	5738.78	-351.19	-351.84	409.72	1692850.69	14569288.44	40°07'00.160"N	104°48'44.820"W	0.02	
5897.00	0.030	310.900	5828.78	-351.14	-351.79	409.67	1692850.64	14569288.48	40°07'00.161"N	104°48'44.821"W	0.03	
5986.00	0.130	267.910	5917.78	-351.13	-351.78	409.55	1692850.52	14569288.50	40°07'00.161"N	104°48'44.822"W	0.12	
6076.00	0.060	281.650	6007.78	-351.12	-351.78	409.40	1692850.37	14569288.50	40°07'00.161"N	104°48'44.824"W	0.08	
6165.00	0.190	327.550	6096.78	-350.99	-351.64	409.28	1692850.24	14569288.63	40°07'00.162"N	104°48'44.826"W	0.17	
6254.00	0.100	259.110	6185.78	-350.88	-351.53	409.12	1692850.09	14569288.74	40°07'00.163"N	104°48'44.828"W	0.20	
6344.00	0.120	256.650	6275.78	-350.92	-351.57	408.95	1692849.92	14569288.71	40°07'00.163"N	104°48'44.830"W	0.02	
6434.00	0.110	289.910	6365.78	-350.91	-351.56	408.78	1692849.75	14569288.71	40°07'00.163"N	104°48'44.832"W	0.07	
6523.00	0.100	348.830	6454.78	-350.81	-351.46	408.69	1692849.65	14569288.82	40°07'00.164"N	104°48'44.834"W	0.12	
6613.00	0.250	294.670	6544.78	-350.65	-351.30	408.49	1692849.46	14569288.98	40°07'00.165"N	104°48'44.836"W	0.23	
6702.00	0.190	270.230	6633.78	-350.57	-351.21	408.17	1692849.13	14569289.06	40°07'00.166"N	104°48'44.840"W	0.12	
6791.00	0.090	300.330	6722.78	-350.53	-351.18	407.96	1692848.93	14569289.09	40°07'00.167"N	104°48'44.843"W	0.14	
6851.00†	1.901	344.671	6782.77	-349.55	-350.19	407.66	1692848.62	14569290.08	40°07'00.176"N	104°48'44.847"W	3.06	KOP
6881.00	2.820	345.310	6812.74	-348.35	-349.00	407.34	1692848.30	14569291.27	40°07'00.188"N	104°48'44.851"W	3.06	
6970.00	10.710	358.590	6901.06	-337.95	-338.60	406.58	1692847.52	14569301.67	40°07'00.291"N	104°48'44.861"W	8.98	
7059.00	18.490	355.980	6987.12	-315.57	-316.22	405.38	1692846.28	14569324.03	40°07'00.512"N	104°48'44.876"W	8.77	
7148.00	26.530	350.470	7069.28	-281.84	-282.48	401.09	1692841.92	14569357.75	40°07'00.845"N	104°48'44.931"W	9.33	
7237.00	34.800	349.380	7145.77	-237.21	-237.84	393.11	1692833.84	14569402.36	40°07'01.287"N	104°48'45.034"W	9.31	
7326.00	40.900	358.240	7216.06	-183.05	-183.66	387.52	1692828.15	14569456.50	40°07'01.822"N	104°48'45.106"W	9.17	
7416.00	50.830	2.720	7278.67	-118.57	-119.19	388.28	1692828.77	14569520.95	40°07'02.459"N	104°48'45.096"W	11.59	
7505.00	59.560	5.840	7329.43	-45.78	-46.41	393.83	1692834.16	14569593.72	40°07'03.178"N	104°48'45.025"W	10.22	
7531.00†	62.177	6.716	7342.09	-23.20	-23.83	396.32	1692836.60	14569616.28	40°07'03.401"N	104°48'44.993"W	10.49	ENTER LANDBOX (459'FSL & 532'FEL,SEC.19) 40.1176115 -104.8124980
7594.00	68.540	8.680	7368.34	33.52	32.88	404.01	1692844.17	14569672.99	40°07'03.962"N	104°48'44.894"W	10.49	
7683.00	74.680	7.680	7396.41	117.09	116.43	416.00	1692855.99	14569756.54	40°07'04.788"N	104°48'44.739"W	6.98	
7772.00	82.500	4.160	7414.01	203.81	203.13	424.96	1692864.76	14569843.22	40°07'05.644"N	104°48'44.624"W	9.60	
7861.00	89.450	1.820	7420.25	292.41	291.73	429.58	1692869.19	14569931.79	40°07'06.520"N	104°48'44.565"W	8.24	LANDING (775'FSL & 498'FEL,SEC.19) 40.1184777 -104.8123790

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#15 CASTLE PINES 19-15HZ(483'FSL & 928'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-15HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-15HZ AWB
Facility	SEC.19-T2N-R66W		

WELLPATH DATA (201 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
7950.00	89.420	359.790	7421.13	381.40	380.71	430.83	1692870.25	14570020.74	40°07'07.399"N	104°48'44.548"W	2.28	
8040.00	89.380	357.390	7422.07	471.35	470.67	428.61	1692867.85	14570110.66	40°07'08.288"N	104°48'44.577"W	2.67	
8129.00	89.450	358.620	7422.98	560.29	559.61	425.51	1692864.57	14570199.56	40°07'09.167"N	104°48'44.617"W	1.38	
8218.00	89.450	0.310	7423.83	649.28	648.60	424.68	1692863.55	14570288.51	40°07'10.047"N	104°48'44.627"W	1.90	
8307.00	89.660	359.280	7424.53	738.27	737.60	424.37	1692863.05	14570377.47	40°07'10.926"N	104°48'44.632"W	1.18	
8396.00	89.510	357.510	7425.17	827.23	826.56	421.87	1692860.37	14570466.39	40°07'11.805"N	104°48'44.664"W	2.00	
8486.00	89.510	357.070	7425.94	917.12	916.45	417.62	1692855.93	14570556.24	40°07'12.693"N	104°48'44.718"W	0.49	
8575.00	89.380	357.390	7426.80	1006.00	1005.34	413.32	1692851.44	14570645.08	40°07'13.572"N	104°48'44.774"W	0.39	
8664.00	89.630	357.980	7427.57	1094.92	1094.27	409.72	1692847.66	14570733.97	40°07'14.451"N	104°48'44.820"W	0.72	
8753.00	89.630	357.080	7428.15	1183.83	1183.18	405.89	1692843.64	14570822.84	40°07'15.329"N	104°48'44.869"W	1.01	
8843.00	89.660	358.220	7428.70	1273.74	1273.10	402.20	1692839.77	14570912.71	40°07'16.218"N	104°48'44.917"W	1.27	
8866.00†	89.675	358.528	7428.84	1296.73	1296.09	401.54	1692839.07	14570935.69	40°07'16.445"N	104°48'44.925"W	1.34	CROSS SETBACK HEEL (1779'FSL & 527'FEL,SEC.19) 40.1212348 -104.8124792
8932.00	89.720	359.410	7429.19	1362.72	1362.08	400.36	1692837.74	14571001.65	40°07'17.097"N	104°48'44.940"W	1.34	
9021.00	89.690	0.770	7429.64	1451.71	1451.08	400.50	1692837.69	14571090.61	40°07'17.977"N	104°48'44.939"W	1.53	
9110.00	90.980	2.390	7429.12	1540.68	1540.04	402.95	1692839.96	14571179.54	40°07'18.856"N	104°48'44.907"W	2.33	
9199.00	90.980	2.510	7427.60	1629.59	1628.94	406.75	1692843.58	14571268.42	40°07'19.734"N	104°48'44.858"W	0.13	
9288.00	91.720	2.490	7425.50	1718.48	1717.83	410.63	1692847.27	14571357.28	40°07'20.613"N	104°48'44.808"W	0.83	
9378.00	92.030	1.630	7422.56	1808.38	1807.73	413.87	1692850.32	14571447.15	40°07'21.501"N	104°48'44.766"W	1.02	
9467.00	92.000	0.470	7419.43	1897.31	1896.66	415.50	1692851.76	14571536.04	40°07'22.380"N	104°48'44.745"W	1.30	
9556.00	91.630	359.260	7416.61	1986.27	1985.61	415.29	1692851.36	14571624.96	40°07'23.259"N	104°48'44.748"W	1.42	
9646.00	90.270	357.340	7415.12	2076.20	2075.55	412.62	1692848.51	14571714.86	40°07'24.148"N	104°48'44.782"W	2.61	
9735.00	89.810	357.220	7415.06	2165.10	2164.45	408.39	1692844.10	14571803.71	40°07'25.026"N	104°48'44.837"W	0.53	
9824.00	89.720	357.750	7415.42	2254.00	2253.36	404.49	1692840.01	14571892.58	40°07'25.905"N	104°48'44.887"W	0.60	
9914.00	89.660	358.180	7415.91	2343.94	2343.30	401.29	1692836.63	14571982.48	40°07'26.794"N	104°48'44.928"W	0.48	
10003.00	89.780	358.530	7416.34	2432.90	2432.27	398.74	1692833.89	14572071.40	40°07'27.673"N	104°48'44.961"W	0.42	
10093.00	90.620	359.920	7416.03	2522.88	2522.26	397.52	1692832.48	14572161.35	40°07'28.562"N	104°48'44.977"W	1.80	
10182.00	90.710	359.820	7415.00	2611.88	2611.25	397.32	1692832.09	14572250.31	40°07'29.442"N	104°48'44.979"W	0.15	
10271.00	90.490	0.010	7414.06	2700.87	2700.24	397.19	1692831.77	14572339.27	40°07'30.321"N	104°48'44.981"W	0.33	
10360.00	90.620	0.310	7413.20	2789.87	2789.24	397.44	1692831.84	14572428.23	40°07'31.201"N	104°48'44.978"W	0.37	
10450.00	90.550	0.830	7412.28	2879.86	2879.23	398.33	1692832.54	14572518.19	40°07'32.090"N	104°48'44.966"W	0.58	

REFERENCE WELLPATH IDENTIFICATION			
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Area	COLORADO	Well	CASTLE PINES 19-15HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-15HZ AWB
Facility	SEC.19-T2N-R66W		

### WELLPATH DATA (201 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
10539.00	90.680	1.540	7411.33	2968.84	2968.20	400.17	1692834.20	14572607.13	40°07'32.969"N	104°48'44.942"W	0.81	
10629.00	89.880	2.060	7410.89	3058.79	3058.16	403.00	1692836.83	14572697.05	40°07'33.858"N	104°48'44.906"W	1.06	
10718.00	90.220	2.150	7410.81	3147.74	3147.10	406.27	1692839.92	14572785.96	40°07'34.737"N	104°48'44.864"W	0.40	
10807.00	90.340	1.820	7410.38	3236.69	3236.04	409.35	1692842.81	14572874.88	40°07'35.616"N	104°48'44.824"W	0.39	
10897.00	90.310	0.560	7409.87	3326.67	3326.02	411.22	1692844.49	14572964.83	40°07'36.505"N	104°48'44.800"W	1.40	
10986.00	90.460	0.410	7409.27	3415.67	3415.02	411.97	1692845.06	14573053.79	40°07'37.385"N	104°48'44.790"W	0.24	
11075.00	90.400	2.050	7408.60	3504.64	3503.99	413.88	1692846.78	14573142.73	40°07'38.264"N	104°48'44.766"W	1.84	
11165.00	90.030	4.240	7408.26	3594.51	3593.85	418.82	1692851.53	14573232.56	40°07'39.152"N	104°48'44.702"W	2.47	
11254.00	89.880	2.980	7408.33	3683.34	3682.67	424.42	1692856.95	14573321.36	40°07'40.030"N	104°48'44.630"W	1.43	
11344.00	90.120	1.640	7408.33	3773.27	3772.59	428.05	1692860.38	14573411.25	40°07'40.918"N	104°48'44.583"W	1.51	
11433.00	90.000	359.690	7408.24	3862.26	3861.58	429.08	1692861.23	14573500.21	40°07'41.798"N	104°48'44.570"W	2.20	
11523.00	90.000	358.530	7408.24	3952.25	3951.57	427.69	1692859.64	14573590.16	40°07'42.687"N	104°48'44.588"W	1.29	
11612.00	89.910	356.780	7408.31	4041.16	4040.49	424.05	1692855.82	14573679.04	40°07'43.566"N	104°48'44.635"W	1.97	
11702.00	89.940	357.140	7408.43	4131.03	4130.37	419.27	1692850.86	14573768.87	40°07'44.454"N	104°48'44.696"W	0.40	
11791.00	89.880	357.550	7408.57	4219.92	4219.27	415.15	1692846.55	14573857.73	40°07'45.332"N	104°48'44.749"W	0.47	
11881.00	90.030	357.630	7408.64	4309.84	4309.19	411.37	1692842.58	14573947.60	40°07'46.221"N	104°48'44.798"W	0.19	
11970.00	89.940	357.480	7408.66	4398.75	4398.11	407.57	1692838.60	14574036.48	40°07'47.100"N	104°48'44.847"W	0.20	
12060.00	89.910	358.030	7408.78	4488.68	4488.04	404.04	1692834.89	14574126.36	40°07'47.988"N	104°48'44.892"W	0.61	
12149.00	91.230	358.300	7407.89	4577.62	4576.99	401.19	1692831.85	14574215.27	40°07'48.867"N	104°48'44.929"W	1.51	
12239.00	89.050	358.490	7407.67	4667.57	4666.95	398.67	1692829.14	14574305.19	40°07'49.756"N	104°48'44.961"W	2.43	
12328.00	88.800	358.350	7409.34	4756.52	4755.90	396.22	1692826.51	14574394.10	40°07'50.635"N	104°48'44.993"W	0.32	
12418.00	89.540	358.390	7410.65	4846.47	4845.85	393.66	1692823.76	14574484.01	40°07'51.524"N	104°48'45.026"W	0.82	
12507.00	89.630	358.990	7411.29	4935.44	4934.83	391.62	1692821.54	14574572.94	40°07'52.403"N	104°48'45.052"W	0.68	
12597.00	89.540	359.560	7411.94	5025.43	5024.82	390.49	1692820.21	14574662.90	40°07'53.293"N	104°48'45.067"W	0.64	
12686.00	89.600	359.990	7412.61	5114.42	5113.81	390.14	1692819.68	14574751.86	40°07'54.172"N	104°48'45.071"W	0.49	
12776.00	89.690	0.340	7413.17	5204.42	5203.81	390.40	1692819.75	14574841.82	40°07'55.062"N	104°48'45.068"W	0.40	
12865.00	89.540	1.060	7413.77	5293.42	5292.80	391.48	1692820.65	14574930.77	40°07'55.941"N	104°48'45.054"W	0.83	
12955.00	89.910	0.590	7414.20	5383.41	5382.79	392.78	1692821.76	14575020.73	40°07'56.830"N	104°48'45.037"W	0.66	
13044.00	89.970	0.490	7414.29	5472.40	5471.79	393.62	1692822.41	14575109.69	40°07'57.710"N	104°48'45.026"W	0.13	
13134.00	89.750	359.350	7414.51	5562.40	5561.78	393.49	1692822.09	14575199.65	40°07'58.599"N	104°48'45.028"W	1.29	

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Area	COLORADO	Well	CASTLE PINES 19-15HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-15HZ AWB
Facility	SEC.19-T2N-R66W		

### WELLPATH DATA (201 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
13223.00	89.690	358.810	7414.95	5651.39	5650.77	392.06	1692820.48	14575288.60	40°07'59.478"N	104°48'45.046"W	0.61	
13313.00	89.720	357.520	7415.41	5741.33	5740.72	389.18	1692817.41	14575378.51	40°08'00.367"N	104°48'45.083"W	1.43	
13402.00	89.660	358.690	7415.89	5830.28	5829.67	386.24	1692814.28	14575467.42	40°08'01.246"N	104°48'45.121"W	1.32	
13491.00	89.750	1.200	7416.35	5919.27	5918.66	386.15	1692814.01	14575556.37	40°08'02.126"N	104°48'45.122"W	2.82	
13581.00	90.180	2.490	7416.40	6009.22	6008.61	389.05	1692816.72	14575646.30	40°08'03.015"N	104°48'45.085"W	1.51	
13670.00	90.370	4.310	7415.98	6098.07	6097.45	394.33	1692821.81	14575735.11	40°08'03.893"N	104°48'45.017"W	2.06	
13760.00	90.370	2.510	7415.40	6187.91	6187.29	399.68	1692826.97	14575824.92	40°08'04.780"N	104°48'44.948"W	2.00	
13849.00	90.310	1.260	7414.87	6276.87	6276.23	402.61	1692829.71	14575913.84	40°08'05.659"N	104°48'44.910"W	1.41	
13938.00	90.340	1.700	7414.36	6365.84	6365.20	404.91	1692831.82	14576002.78	40°08'06.539"N	104°48'44.881"W	0.50	
14027.00	90.280	2.300	7413.88	6454.79	6454.15	408.01	1692834.74	14576091.69	40°08'07.418"N	104°48'44.841"W	0.68	
14117.00	90.030	1.770	7413.64	6544.74	6544.09	411.21	1692837.75	14576181.60	40°08'08.306"N	104°48'44.800"W	0.65	
14206.00	90.120	0.470	7413.52	6633.72	6633.07	412.95	1692839.30	14576270.55	40°08'09.186"N	104°48'44.777"W	1.46	
14296.00	90.250	359.840	7413.23	6723.72	6723.07	413.19	1692839.36	14576360.52	40°08'10.075"N	104°48'44.774"W	0.71	
14385.00	90.220	0.170	7412.87	6812.72	6812.07	413.20	1692839.18	14576449.48	40°08'10.955"N	104°48'44.774"W	0.37	
14475.00	90.150	0.870	7412.57	6902.71	6902.06	414.02	1692839.81	14576539.44	40°08'11.844"N	104°48'44.763"W	0.78	
14564.00	89.910	0.440	7412.53	6991.71	6991.06	415.03	1692840.64	14576628.40	40°08'12.723"N	104°48'44.750"W	0.55	
14654.00	90.620	359.980	7412.11	7081.71	7081.06	415.36	1692840.78	14576718.36	40°08'13.613"N	104°48'44.746"W	0.94	
14743.00	90.740	359.970	7411.06	7170.70	7170.05	415.32	1692840.55	14576807.32	40°08'14.492"N	104°48'44.746"W	0.14	
14832.00	90.770	0.260	7409.88	7259.69	7259.04	415.50	1692840.55	14576896.28	40°08'15.372"N	104°48'44.744"W	0.33	
14922.00	90.680	0.090	7408.74	7349.68	7349.03	415.78	1692840.63	14576986.23	40°08'16.261"N	104°48'44.741"W	0.21	
15011.00	90.710	359.580	7407.66	7438.68	7438.03	415.52	1692840.19	14577075.19	40°08'17.140"N	104°48'44.744"W	0.57	
15101.00	90.650	359.000	7406.60	7528.66	7528.01	414.41	1692838.89	14577165.14	40°08'18.030"N	104°48'44.758"W	0.65	
15191.00	90.770	358.830	7405.48	7618.64	7617.99	412.70	1692837.00	14577255.08	40°08'18.919"N	104°48'44.780"W	0.23	
15280.00	90.620	358.230	7404.40	7707.60	7706.95	410.42	1692834.53	14577344.00	40°08'19.798"N	104°48'44.809"W	0.69	
15370.00	90.460	358.940	7403.55	7797.56	7796.92	408.20	1692832.12	14577433.93	40°08'20.687"N	104°48'44.838"W	0.81	
15459.00	90.430	357.520	7402.86	7886.51	7885.87	405.45	1692829.18	14577522.84	40°08'21.566"N	104°48'44.873"W	1.60	
15549.00	90.710	358.370	7401.97	7976.44	7975.81	402.22	1692825.77	14577612.73	40°08'22.455"N	104°48'44.915"W	0.99	
15638.00	90.710	359.550	7400.86	8065.41	8064.79	400.61	1692823.97	14577701.67	40°08'23.334"N	104°48'44.936"W	1.33	
15728.00	90.680	1.010	7399.77	8155.40	8154.78	401.05	1692824.22	14577791.62	40°08'24.223"N	104°48'44.930"W	1.62	
15817.00	90.310	1.100	7399.00	8244.39	8243.76	402.68	1692825.67	14577880.57	40°08'25.103"N	104°48'44.909"W	0.43	



REFERENCE WELLPATH IDENTIFICATION			
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Area	COLORADO	Well	CASTLE PINES 19-15HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-15HZ AWB
Facility	SEC.19-T2N-R66W		

WELLPATH DATA (201 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
15907.00	90.280	359.860	7398.54	8334.38	8333.75	403.44	1692826.24	14577970.53	40°08'25.992"N	104°48'44.899"W	1.38	
15996.00	90.280	359.190	7398.10	8423.38	8422.75	402.70	1692825.31	14578059.49	40°08'26.871"N	104°48'44.909"W	0.75	
16085.00	90.280	358.700	7397.67	8512.36	8511.73	401.06	1692823.49	14578148.44	40°08'27.751"N	104°48'44.930"W	0.55	
16175.00	90.180	359.340	7397.31	8602.34	8601.72	399.52	1692821.76	14578238.38	40°08'28.640"N	104°48'44.950"W	0.72	
16264.00	90.280	359.320	7396.95	8691.33	8690.71	398.48	1692820.54	14578327.34	40°08'29.519"N	104°48'44.963"W	0.11	
16354.00	90.250	358.700	7396.54	8781.32	8780.70	396.93	1692818.79	14578417.28	40°08'30.409"N	104°48'44.983"W	0.69	
16443.00	90.060	0.470	7396.29	8870.31	8869.69	396.28	1692817.96	14578506.24	40°08'31.288"N	104°48'44.991"W	2.00	
16533.00	90.180	1.070	7396.11	8960.30	8959.68	397.49	1692818.98	14578596.20	40°08'32.177"N	104°48'44.976"W	0.68	
16623.00	90.250	1.760	7395.77	9050.28	9049.65	399.71	1692821.02	14578686.14	40°08'33.067"N	104°48'44.947"W	0.77	
16712.00	90.710	2.250	7395.02	9139.22	9138.59	402.83	1692823.94	14578775.05	40°08'33.945"N	104°48'44.907"W	0.76	
16802.00	90.680	2.670	7393.93	9229.14	9228.50	406.69	1692827.62	14578864.93	40°08'34.834"N	104°48'44.857"W	0.47	
16891.00	90.710	1.860	7392.85	9318.07	9317.43	410.21	1692830.95	14578953.83	40°08'35.713"N	104°48'44.812"W	0.91	
16981.00	90.710	1.400	7391.74	9408.03	9407.38	412.77	1692833.32	14579043.75	40°08'36.602"N	104°48'44.779"W	0.51	
17070.00	90.580	0.170	7390.73	9497.01	9496.37	413.99	1692834.35	14579132.70	40°08'37.481"N	104°48'44.763"W	1.39	
17160.00	90.370	358.380	7389.99	9587.00	9586.35	412.85	1692833.02	14579222.65	40°08'38.370"N	104°48'44.778"W	2.00	
17174.00†	90.389	358.366	7389.90	9600.99	9600.35	412.45	1692832.60	14579236.64	40°08'38.509"N	104°48'44.783"W	0.17	CROSS SETBACK TOE (460'FNL & 527'FEL,SEC.18) 40.1440302 -104.8124397
17249.00	90.490	358.290	7389.32	9675.95	9675.31	410.26	1692830.25	14579311.57	40°08'39.249"N	104°48'44.811"W	0.17	
17339.00	90.490	358.630	7388.55	9765.91	9765.28	407.84	1692827.65	14579401.49	40°08'40.138"N	104°48'44.842"W	0.38	
17428.00	90.430	357.830	7387.84	9854.86	9854.23	405.09	1692824.71	14579490.41	40°08'41.017"N	104°48'44.878"W	0.90	
17558.00	90.340	357.750	7386.96	9984.76	9984.13	400.08	1692819.43	14579620.24	40°08'42.301"N	104°48'44.942"W	0.09	LAST BHGE MWD+IFR1+MSA SURVEY
17582.00	90.340	357.750	7386.82	10008.74	10008.11	399.14	1692818.44	14579644.21	40°08'42.538"N	104°48'44.954"W	0.00	PTB (52'FNL & 540'FEL,SEC.18) 40.1451495 -104.8124873

HOLE & CASING SECTIONS - Ref Wellbore: CASTLE PINES 19-15HZ AWB Ref Wellpath: CASTLE PINES 19-15HZ 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	1878.00	1852.00	26.00	1834.20	0.00	0.00	-216.81	243.73

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#15 CASTLE PINES 19-15HZ(483'FSL & 928'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-15HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-15HZ 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.18-T2N-R66W	2.00	1.82	-210.07	1692230.40	14569640.66	40°07'03.655"N	104°48'52.798"W	polygon
SEC.19-T2N-R66W	2.00	1.82	-210.07	1692230.40	14569640.66	40°07'03.655"N	104°48'52.798"W	polygon
CASTLE PINES 19-15HZ BHL REV-1(51'FNL & 521'FEL,SEC.18)	7398.00	10009.03	417.67	1692836.96	14579645.17	40°08'42.547"N	104°48'44.716"W	point
CASTLE PINES 19-15HZ HEEL REV-1(768'FSL & 526'FEL,SEC.19)	7420.00	284.17	402.18	1692841.82	14569924.18	40°07'06.445"N	104°48'44.917"W	point
CASTLE PINES 19-15HZ LANDBOX	7420.00	0.00	0.00	1692440.40	14569639.28	40°07'03.637"N	104°48'50.094"W	polygon
CASTLE PINES 19-15HZ SETBACK 1	7420.00	0.00	0.00	1692440.40	14569639.28	40°07'03.637"N	104°48'50.094"W	polygon
CASTLE PINES 19-15HZ SETBACK 2	7420.00	0.00	0.00	1692440.40	14569639.28	40°07'03.637"N	104°48'50.094"W	polygon
CASTLE PINES 19-15HZ INT. TARGET@4500'VS	7443.00	4499.36	408.89	1692839.71	14574137.69	40°07'48.100"N	104°48'44.830"W	point

WELLPATH COMPOSITION - Ref Wellbore: CASTLE PINES 19-15HZ AWB					Ref Wellpath: CASTLE PINES 19-15HZ AWP	
Start MD [ft]	End MD [ft]	Positional Uncertainty Model		Log Name/Comment		Wellbore
26.00	1846.00	Custom APC ISCWSA REV 2 MWD+IFR1 (approximation)		Custom APC ISCWSA Rev-2 MWD+IFR1 <136 - 1846>		CASTLE PINES 19-15HZ AWB
1846.00	17558.00	Custom APC ISCWSA REV 2 MWD+IFR1+MSA (approximation)		BHGE Custom APC ISCWSA Rev-2 MWD+IFR1+MSA <1966 - 17558>		CASTLE PINES 19-15HZ AWB
17558.00	17582.00	Blind Drilling (std)		Projection to bit		CASTLE PINES 19-15HZ AWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#15 CASTLE PINES 19-15HZ(483'FSL & 928'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-15HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-15HZ AWB
Facility	SEC.19-T2N-R66W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
136.00	0.180	175.870	136.00	FIRST SURFACE MWD+IFR1 SURVEY
1846.00	16.700	134.130	1803.48	LAST SURFACE MWD+IFR1 SURVEY
1956.00	13.663	126.876	1909.64	FIRST BHGE MWD+IFR1+MSA SURVEY
6851.00	1.901	344.671	6782.77	KOP
7531.00	62.177	6.716	7342.09	ENTER LANDBOX (459'FSL & 532'FEL,SEC.19) 40.1176115 -104.8124980
7861.00	89.450	1.820	7420.25	LANDING (775'FSL & 498'FEL,SEC.19) 40.1184777 -104.8123790
8866.00	89.675	358.528	7428.84	CROSS SETBACK HEEL (1779'FSL & 527'FEL,SEC.19) 40.1212348 -104.8124792
17174.00	90.389	358.366	7389.90	CROSS SETBACK TOE (460'FNL & 527'FEL,SEC.18) 40.1440302 -104.8124397
17558.00	90.340	357.750	7386.96	LAST BHGE MWD+IFR1+MSA SURVEY
17582.00	90.340	357.750	7386.82	PTB (52'FNL & 540'FEL,SEC.18) 40.1451495 -104.8124873