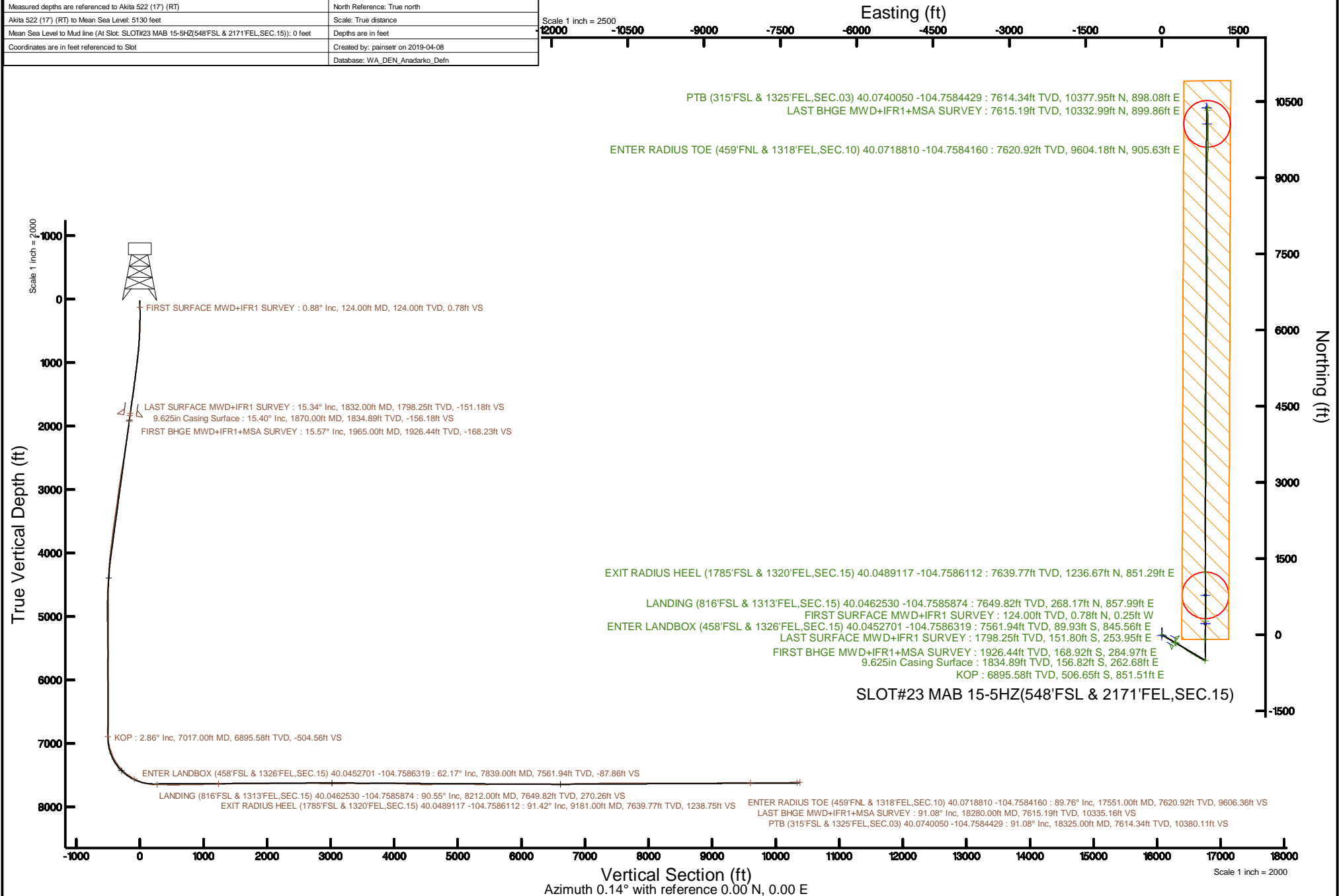


KERR-MCGEE OIL & GAS ONSHORE LP (WA)

Location: COLORADO Slot: SLOT#23 MAB 15-5HZ(548'FSL & 2171'FEL,SEC.15)
Field: WELD COUNTY (UTM/TRUE NORTH) Well: MAB 15-5HZ
Facility: SEC.15-T1N-R66W Wellbore: MAB 15-5HZ PWB

Plot reference wellpath is MAB 15-5HZ PWP Rev-B.0	Grid System: NAD83 / UTM Zone 13 North, US feet
True vertical depths are referenced to Akita 522 (17) (RT)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to Akita 522 (17) (RT)	North Reference: True north
Akita 522 (17) (RT) to Mean Sea Level: 5130 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#23 MAB 15-5HZ(548'FSL & 2171'FEL,SEC.15)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: painsetr on 2019-04-08
	Database: WA_DEN_Anadarko_Defn



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#23 MAB 15-5HZ(548'FSL & 2171'FEL,SEC.15)
Area	COLORADO	Well	MAB 15-5HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	MAB 15-5HZ AWB
Facility	SEC.15-T1N-R66W		

REPORT SETUP INFORMATION			
Projection System	NAD83 / UTM Zone 13 North, US feet	Software System	WellArchitect® 5.0
North Reference	True	User	Painsetr
Scale	0.999605	Report Generated	4/8/2019 at 10:21 AM
Convergence at slot	0.16° East	Database/Source file	WA_DEN_Anadarko_Defn/MAB_15-5HZ_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-719.31	1678.85	1707121.96	14543397.37	40°02'43.861"N	104°45'41.947"W
Facility Reference Pt			1705441.90	14544112.02	40°02'50.970"N	104°46'03.534"W
Field Reference Pt			1698235.31	14552047.82	40°04'09.600"N	104°47'36.000"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Akita 522 (17') (RT) to Facility Vertical Datum	5130.00ft
Horizontal Reference Pt	Slot	Akita 522 (17') (RT) to Mean Sea Level	5130.00ft
Vertical Reference Pt	Akita 522 (17') (RT)	Akita 522 (17') (RT) to Mud Line at Slot (SLOT#23 MAB 15-5HZ (548'FSL & 2171'FEL,SEC.15))	5130.00ft
MD Reference Pt	Akita 522 (17') (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	0.14°

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#23 MAB 15-5HZ(548'FSL & 2171'FEL,SEC.15)
Area	COLORADO	Well	MAB 15-5HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	MAB 15-5HZ AWB
Facility	SEC.15-T1N-R66W		

WELLPATH DATA (213 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	342.520	0.00	0.00	0.00	0.00	1707121.96	14543397.37	40°02'43.861"N	104°45'41.947"W	0.00	
17.00	0.000	342.520	17.00	0.00	0.00	0.00	1707121.96	14543397.37	40°02'43.861"N	104°45'41.947"W	0.00	
124.00	0.880	342.520	124.00	0.78	0.78	-0.25	1707121.71	14543398.15	40°02'43.869"N	104°45'41.950"W	0.82	FIRST SURFACE MWD+IFR1 SURVEY
219.00	0.750	39.390	218.99	1.96	1.96	-0.07	1707121.88	14543399.33	40°02'43.880"N	104°45'41.948"W	0.83	
314.00	1.230	134.920	313.98	1.72	1.72	1.05	1707123.00	14543399.09	40°02'43.878"N	104°45'41.934"W	1.58	
409.00	2.770	126.660	408.92	-0.36	-0.37	3.61	1707125.57	14543397.01	40°02'43.857"N	104°45'41.901"W	1.65	
504.00	4.480	127.450	503.72	-3.98	-4.00	8.40	1707130.36	14543393.39	40°02'43.822"N	104°45'41.839"W	1.80	
599.00	6.900	119.810	598.25	-9.05	-9.09	16.29	1707138.27	14543388.32	40°02'43.771"N	104°45'41.737"W	2.66	
694.00	8.220	120.950	692.42	-15.35	-15.42	27.07	1707149.06	14543382.03	40°02'43.709"N	104°45'41.599"W	1.40	
788.00	8.570	120.420	785.41	-22.33	-22.42	38.87	1707160.88	14543375.06	40°02'43.639"N	104°45'41.447"W	0.38	
884.00	10.990	122.880	880.01	-30.88	-31.01	52.73	1707174.75	14543366.51	40°02'43.555"N	104°45'41.269"W	2.56	
979.00	12.390	123.150	973.04	-41.33	-41.50	68.87	1707190.91	14543356.07	40°02'43.451"N	104°45'41.061"W	1.47	
1074.00	12.790	123.060	1065.76	-52.60	-52.81	86.21	1707208.28	14543344.81	40°02'43.339"N	104°45'40.838"W	0.42	
1169.00	15.070	121.920	1157.96	-64.82	-65.08	105.51	1707227.60	14543332.60	40°02'43.218"N	104°45'40.590"W	2.42	
1264.00	13.750	118.930	1249.97	-76.76	-77.07	125.88	1707247.99	14543320.66	40°02'43.099"N	104°45'40.328"W	1.59	
1360.00	14.810	118.660	1343.00	-88.12	-88.48	146.63	1707268.76	14543309.32	40°02'42.987"N	104°45'40.062"W	1.11	
1455.00	15.380	121.210	1434.72	-100.42	-100.83	168.06	1707290.22	14543297.03	40°02'42.865"N	104°45'39.786"W	0.92	
1549.00	15.120	121.650	1525.41	-113.26	-113.72	189.15	1707311.34	14543284.20	40°02'42.737"N	104°45'39.515"W	0.30	
1645.00	15.560	120.860	1617.99	-126.38	-126.89	210.87	1707333.08	14543271.09	40°02'42.607"N	104°45'39.236"W	0.51	
1739.00	15.420	119.460	1708.58	-138.94	-139.51	232.57	1707354.81	14543258.54	40°02'42.482"N	104°45'38.957"W	0.42	
1832.00	15.340	120.330	1798.25	-151.18	-151.80	253.95	1707376.22	14543246.31	40°02'42.361"N	104°45'38.682"W	0.26	LAST SURFACE MWD+IFR1 SURVEY
1965.00	15.570	117.490	1926.44	-168.23	-168.92	284.97	1707407.27	14543229.27	40°02'42.192"N	104°45'38.283"W	0.59	FIRST BHGE MWD+IFR1+MSA SURVEY
2052.00	15.430	116.570	2010.28	-178.74	-179.49	305.68	1707428.00	14543218.77	40°02'42.087"N	104°45'38.017"W	0.33	
2139.00	16.140	122.130	2094.00	-190.30	-191.10	326.27	1707448.61	14543207.22	40°02'41.972"N	104°45'37.752"W	1.92	
2226.00	16.060	121.160	2177.59	-202.91	-203.76	346.81	1707469.18	14543194.62	40°02'41.847"N	104°45'37.488"W	0.32	
2314.00	15.730	121.300	2262.22	-215.35	-216.25	367.42	1707489.81	14543182.18	40°02'41.724"N	104°45'37.223"W	0.38	
2401.00	15.450	121.550	2346.02	-227.50	-228.44	387.37	1707509.79	14543170.05	40°02'41.603"N	104°45'36.966"W	0.33	
2489.00	14.960	122.840	2430.94	-239.74	-240.74	406.91	1707529.34	14543157.82	40°02'41.482"N	104°45'36.715"W	0.68	
2576.00	16.160	127.240	2514.75	-253.11	-254.15	425.98	1707548.45	14543144.46	40°02'41.349"N	104°45'36.470"W	1.93	
2664.00	15.550	128.020	2599.41	-267.74	-268.83	445.02	1707567.52	14543129.84	40°02'41.204"N	104°45'36.225"W	0.73	
2752.00	14.770	128.450	2684.34	-281.94	-283.07	463.10	1707585.63	14543115.65	40°02'41.064"N	104°45'35.992"W	0.90	
2840.00	15.590	124.710	2769.27	-295.60	-296.78	481.61	1707604.17	14543102.00	40°02'40.928"N	104°45'35.754"W	1.45	
2928.00	14.420	124.750	2854.27	-308.54	-309.76	500.33	1707622.92	14543089.07	40°02'40.800"N	104°45'35.514"W	1.33	
3015.00	15.200	122.570	2938.38	-320.80	-322.07	518.84	1707641.45	14543076.81	40°02'40.678"N	104°45'35.276"W	1.10	
3120.00	13.780	122.070	3040.04	-334.80	-336.12	541.04	1707663.68	14543062.83	40°02'40.539"N	104°45'34.990"W	1.36	
3208.00	15.730	119.890	3125.13	-346.26	-347.63	560.27	1707682.93	14543051.37	40°02'40.426"N	104°45'34.743"W	2.30	
3294.00	14.880	119.720	3208.08	-357.50	-358.92	579.96	1707702.65	14543040.14	40°02'40.314"N	104°45'34.490"W	0.99	
3382.00	15.800	123.800	3292.95	-369.72	-371.19	599.73	1707722.44	14543027.94	40°02'40.193"N	104°45'34.236"W	1.61	
3469.00	14.370	123.330	3376.95	-382.19	-383.71	618.60	1707741.33	14543015.47	40°02'40.069"N	104°45'33.993"W	1.65	
3557.00	15.810	122.240	3461.91	-394.54	-396.10	637.86	1707760.62	14543003.13	40°02'39.947"N	104°45'33.745"W	1.67	
3645.00	14.200	121.940	3546.91	-406.60	-408.21	657.16	1707779.95	14542991.08	40°02'39.827"N	104°45'33.497"W	1.83	
3732.00	15.260	118.180	3631.05	-417.61	-419.26	676.31	1707799.12	14542980.08	40°02'39.718"N	104°45'33.251"W	1.64	
3819.00	13.610	118.120	3715.30	-427.79	-429.49	695.43	1707818.26	14542969.91	40°02'39.617"N	104°45'33.005"W	1.90	
3907.00	14.610	118.870	3800.64	-437.99	-439.73	714.28	1707837.13	14542959.72	40°02'39.515"N	104°45'32.763"W	1.16	
3994.00	14.930	121.680	3884.77	-449.12	-450.92	733.43	1707856.30	14542948.59	40°02'39.405"N	104°45'32.517"W	0.90	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#23 MAB 15-5HZ(548'FSL & 2171'FEL,SEC.15)
Area	COLORADO	Well	MAB 15-5HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	MAB 15-5HZ AWB
Facility	SEC.15-T1N-R66W		

WELLPATH DATA (213 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
4082.00	13.370	120.130	3970.10	-460.14	-461.98	751.88	1707874.77	14542937.59	40°02'39.296"N	104°45'32.279"W	1.82	
4169.00	11.600	119.010	4055.04	-469.39	-471.27	768.23	1707891.14	14542928.34	40°02'39.204"N	104°45'32.069"W	2.05	
4256.00	10.300	116.340	4140.45	-477.05	-478.96	782.85	1707905.77	14542920.69	40°02'39.128"N	104°45'31.881"W	1.60	
4344.00	9.410	115.650	4227.15	-483.62	-485.57	796.38	1707919.32	14542914.13	40°02'39.062"N	104°45'31.707"W	1.02	
4431.00	8.360	112.180	4313.11	-489.06	-491.03	808.65	1707931.60	14542908.69	40°02'39.008"N	104°45'31.549"W	1.35	
4519.00	7.730	114.880	4400.24	-493.93	-495.94	819.94	1707942.90	14542903.82	40°02'38.960"N	104°45'31.404"W	0.83	
4607.00	7.440	115.780	4487.47	-498.88	-500.91	830.44	1707953.41	14542898.88	40°02'38.911"N	104°45'31.269"W	0.36	
4695.00	7.140	116.340	4574.76	-503.76	-505.81	840.47	1707963.45	14542894.01	40°02'38.862"N	104°45'31.140"W	0.35	
4783.00	5.330	117.310	4662.24	-508.04	-510.11	849.01	1707971.99	14542889.73	40°02'38.820"N	104°45'31.031"W	2.06	
4870.00	3.890	118.130	4748.95	-511.27	-513.36	855.20	1707978.19	14542886.50	40°02'38.788"N	104°45'30.951"W	1.66	
4958.00	1.810	97.290	4836.84	-512.84	-514.94	859.21	1707982.20	14542884.93	40°02'38.772"N	104°45'30.899"W	2.60	
5045.00	1.860	82.110	4923.80	-512.82	-514.92	861.97	1707984.96	14542884.96	40°02'38.772"N	104°45'30.864"W	0.56	
5132.00	0.700	340.410	5010.78	-512.12	-514.23	863.20	1707986.18	14542885.65	40°02'38.779"N	104°45'30.848"W	2.43	
5220.00	0.910	3.260	5098.77	-510.91	-513.02	863.05	1707986.04	14542886.86	40°02'38.791"N	104°45'30.850"W	0.43	
5308.00	0.660	23.020	5186.76	-509.75	-511.86	863.29	1707986.27	14542888.02	40°02'38.803"N	104°45'30.847"W	0.41	
5396.00	1.090	330.850	5274.76	-508.55	-510.66	863.08	1707986.06	14542889.22	40°02'38.814"N	104°45'30.850"W	0.98	
5483.00	0.920	334.910	5361.74	-507.20	-509.31	862.38	1707985.36	14542890.57	40°02'38.828"N	104°45'30.859"W	0.21	
5571.00	1.050	348.150	5449.73	-505.77	-507.88	861.92	1707984.89	14542892.00	40°02'38.842"N	104°45'30.865"W	0.30	
5658.00	0.810	15.120	5536.72	-504.40	-506.50	861.92	1707984.88	14542893.37	40°02'38.855"N	104°45'30.865"W	0.57	
5746.00	0.690	227.160	5624.72	-504.16	-506.26	861.69	1707984.66	14542893.61	40°02'38.858"N	104°45'30.867"W	1.64	
5833.00	0.410	237.170	5711.71	-504.68	-506.79	861.04	1707984.01	14542893.08	40°02'38.853"N	104°45'30.876"W	0.34	
5921.00	0.180	158.370	5799.71	-504.98	-507.09	860.83	1707983.80	14542892.79	40°02'38.850"N	104°45'30.879"W	0.47	
6008.00	1.010	270.840	5886.71	-505.10	-507.20	860.11	1707983.08	14542892.67	40°02'38.849"N	104°45'30.888"W	1.25	
6113.00	0.830	297.920	5991.69	-504.74	-506.83	858.52	1707981.49	14542893.03	40°02'38.852"N	104°45'30.908"W	0.44	
6200.00	0.930	302.480	6078.68	-504.06	-506.16	857.36	1707980.33	14542893.70	40°02'38.859"N	104°45'30.923"W	0.14	
6287.00	0.930	308.950	6165.67	-503.24	-505.34	856.22	1707979.19	14542894.52	40°02'38.867"N	104°45'30.938"W	0.12	
6375.00	0.950	302.260	6253.66	-502.41	-504.50	855.05	1707978.01	14542895.36	40°02'38.875"N	104°45'30.953"W	0.13	
6462.00	1.450	324.600	6340.64	-501.13	-503.22	853.80	1707976.76	14542896.64	40°02'38.888"N	104°45'30.969"W	0.78	
6550.00	0.750	256.800	6428.63	-500.36	-502.44	852.59	1707975.55	14542897.41	40°02'38.896"N	104°45'30.984"W	1.54	
6638.00	1.340	193.660	6516.61	-501.49	-503.57	851.79	1707974.75	14542896.28	40°02'38.884"N	104°45'30.995"W	1.37	
6725.00	0.830	190.120	6603.60	-503.10	-505.18	851.44	1707974.41	14542894.67	40°02'38.869"N	104°45'30.999"W	0.59	
6813.00	0.540	209.650	6691.59	-504.09	-506.17	851.12	1707974.09	14542893.68	40°02'38.859"N	104°45'31.003"W	0.42	
6900.00	0.470	157.420	6778.59	-504.77	-506.85	851.06	1707974.03	14542892.99	40°02'38.852"N	104°45'31.004"W	0.52	
6988.00	0.290	127.210	6866.59	-505.24	-507.32	851.37	1707974.35	14542892.53	40°02'38.847"N	104°45'31.000"W	0.30	
7017.00†	2.862	6.055	6895.58	-504.56	-506.65	851.51	1707974.48	14542893.20	40°02'38.854"N	104°45'30.998"W	10.42	KOP
7075.00	8.900	2.850	6953.24	-498.64	-500.72	851.88	1707974.84	14542899.13	40°02'38.913"N	104°45'30.994"W	10.42	
7163.00	13.730	3.400	7039.51	-481.40	-483.49	852.84	1707975.75	14542916.36	40°02'39.083"N	104°45'30.981"W	5.49	
7250.00	17.430	0.770	7123.30	-458.06	-460.14	853.63	1707976.48	14542939.69	40°02'39.314"N	104°45'30.971"W	4.33	
7338.00	24.030	359.420	7205.56	-426.93	-429.01	853.62	1707976.39	14542970.81	40°02'39.621"N	104°45'30.971"W	7.52	
7425.00	32.070	359.240	7282.27	-386.05	-388.14	853.14	1707975.79	14543011.67	40°02'40.025"N	104°45'30.977"W	9.24	
7513.00	37.500	356.470	7354.52	-335.92	-338.00	851.18	1707973.70	14543061.78	40°02'40.521"N	104°45'31.003"W	6.43	
7600.00	44.050	356.880	7420.37	-279.24	-281.31	847.90	1707970.27	14543118.44	40°02'41.081"N	104°45'31.045"W	7.53	
7687.00	51.820	0.010	7478.62	-214.74	-216.81	846.25	1707968.45	14543182.91	40°02'41.718"N	104°45'31.066"W	9.32	
7775.00	57.240	359.220	7529.67	-143.10	-145.17	845.76	1707967.76	14543254.52	40°02'42.426"N	104°45'31.072"W	6.20	
7839.00†	62.175	0.342	7561.94	-87.86	-89.93	845.56	1707967.42	14543309.74	40°02'42.972"N	104°45'31.075"W	7.86	ENTER LANDBOX (458'FSL & 1326'FEL,SEC.15) 40.0452701 -104.7586319

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#23 MAB 15-5HZ(548'FSL & 2171'FEL,SEC.15)
Area	COLORADO	Well	MAB 15-5HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	MAB 15-5HZ AWB
Facility	SEC.15-T1N-R66W		

WELLPATH DATA (213 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
7862.00	63.950	0.720	7572.36	-67.36	-69.42	845.75	1707967.55	14543330.23	40°02'43.175"N	104°45'31.072"W	7.86	
7950.00	70.600	2.270	7606.34	13.74	11.67	847.89	1707969.48	14543411.30	40°02'43.976"N	104°45'31.045"W	7.73	
8037.00	75.330	2.720	7631.82	96.83	94.75	851.52	1707972.88	14543494.36	40°02'44.797"N	104°45'30.998"W	5.46	
8125.00	85.260	1.720	7646.64	183.40	181.31	854.86	1707975.99	14543580.90	40°02'45.653"N	104°45'30.955"W	11.34	
8212.00	90.550	2.410	7649.82	270.26	268.17	857.99	1707978.89	14543667.72	40°02'46.511"N	104°45'30.915"W	6.13	LANDING (816'FSL & 1313'FEL,SEC.15) 40.0462530 -104.7585874
8299.00	89.270	2.160	7649.95	357.20	355.10	861.46	1707982.13	14543754.63	40°02'47.370"N	104°45'30.870"W	1.50	
8387.00	89.380	1.320	7650.99	445.16	443.05	864.13	1707984.56	14543842.55	40°02'48.239"N	104°45'30.836"W	0.96	
8474.00	89.980	1.360	7651.47	532.14	530.02	866.17	1707986.36	14543929.50	40°02'49.099"N	104°45'30.809"W	0.69	
8562.00	90.760	359.870	7650.91	620.13	618.01	867.11	1707987.07	14544017.45	40°02'49.968"N	104°45'30.797"W	1.91	
8649.00	90.650	359.110	7649.84	707.12	705.00	866.34	1707986.06	14544104.41	40°02'50.828"N	104°45'30.807"W	0.88	
8736.00	91.010	358.600	7648.58	794.09	791.98	864.60	1707984.09	14544191.34	40°02'51.687"N	104°45'30.829"W	0.72	
8823.00	91.010	357.830	7647.04	881.02	878.92	861.89	1707981.15	14544278.24	40°02'52.547"N	104°45'30.864"W	0.88	
8911.00	91.620	357.450	7645.02	968.92	966.82	858.27	1707977.30	14544366.10	40°02'53.415"N	104°45'30.911"W	0.82	
8998.00	90.720	358.890	7643.25	1055.84	1053.76	855.49	1707974.29	14544452.99	40°02'54.274"N	104°45'30.946"W	1.95	
9086.00	91.050	358.680	7641.89	1143.81	1141.73	853.63	1707972.19	14544540.92	40°02'55.144"N	104°45'30.970"W	0.44	
9173.00	91.470	358.500	7639.97	1230.75	1228.68	851.49	1707969.81	14544627.83	40°02'56.003"N	104°45'30.998"W	0.53	
9181.00†	91.416	358.721	7639.77	1238.75	1236.67	851.29	1707969.60	14544635.82	40°02'56.082"N	104°45'31.000"W	2.84	EXIT RADIUS HEEL (1785'FSL & 1320'FEL,SEC.15) 40.0489117 -104.7586112
9261.00	90.880	0.930	7638.17	1318.73	1316.65	851.05	1707969.14	14544715.77	40°02'56.872"N	104°45'31.003"W	2.84	
9348.00	92.090	1.410	7635.91	1405.68	1403.60	852.82	1707970.68	14544802.69	40°02'57.732"N	104°45'30.981"W	1.50	
9435.00	90.410	359.990	7634.02	1492.65	1490.57	853.89	1707971.51	14544889.62	40°02'58.591"N	104°45'30.967"W	2.53	
9523.00	89.850	0.500	7633.82	1580.65	1578.57	854.26	1707971.65	14544977.59	40°02'59.461"N	104°45'30.962"W	0.86	
9610.00	90.450	0.000	7633.59	1667.65	1665.57	854.64	1707971.80	14545064.55	40°03'00.320"N	104°45'30.957"W	0.90	
9698.00	90.520	359.540	7632.84	1755.64	1753.56	854.29	1707971.21	14545152.51	40°03'01.190"N	104°45'30.962"W	0.53	
9785.00	90.150	357.710	7632.34	1842.61	1840.53	852.20	1707968.89	14545239.44	40°03'02.049"N	104°45'30.988"W	2.15	
9873.00	90.220	358.630	7632.05	1930.56	1928.49	849.39	1707965.85	14545327.35	40°03'02.919"N	104°45'31.025"W	1.05	
9960.00	90.890	357.940	7631.21	2017.50	2015.44	846.79	1707963.01	14545414.27	40°03'03.778"N	104°45'31.058"W	1.11	
10048.00	89.900	359.080	7630.60	2105.46	2103.41	844.50	1707960.49	14545502.19	40°03'04.647"N	104°45'31.087"W	1.72	
10135.00	89.990	359.860	7630.69	2192.46	2190.40	843.69	1707959.45	14545589.15	40°03'05.507"N	104°45'31.098"W	0.90	
10222.00	90.700	1.270	7630.16	2279.45	2277.39	844.55	1707960.08	14545676.11	40°03'06.367"N	104°45'31.087"W	1.81	
10310.00	91.180	0.840	7628.72	2367.43	2365.37	846.17	1707961.46	14545764.05	40°03'07.236"N	104°45'31.066"W	0.73	
10397.00	91.580	0.550	7626.62	2454.40	2452.33	847.23	1707962.28	14545850.99	40°03'08.095"N	104°45'31.052"W	0.57	
10485.00	89.190	0.600	7626.03	2542.39	2540.32	848.11	1707962.93	14545938.94	40°03'08.965"N	104°45'31.041"W	2.72	
10572.00	90.270	1.680	7626.44	2629.37	2627.30	849.84	1707964.43	14546025.89	40°03'09.824"N	104°45'31.018"W	1.76	
10660.00	87.680	1.290	7628.02	2717.32	2715.25	852.12	1707966.47	14546113.81	40°03'10.694"N	104°45'30.989"W	2.98	
10747.00	89.150	0.660	7630.42	2804.28	2802.20	853.60	1707967.72	14546200.73	40°03'11.553"N	104°45'30.970"W	1.84	
10834.00	89.020	359.880	7631.81	2891.27	2889.19	854.01	1707967.90	14546287.68	40°03'12.412"N	104°45'30.965"W	0.91	
10922.00	90.360	0.580	7632.29	2979.26	2977.18	854.36	1707968.01	14546375.64	40°03'13.282"N	104°45'30.960"W	1.72	
11010.00	90.160	0.270	7631.89	3067.26	3065.18	855.02	1707968.43	14546463.61	40°03'14.152"N	104°45'30.952"W	0.42	
11097.00	90.380	359.620	7631.48	3154.26	3152.18	854.93	1707968.12	14546550.57	40°03'15.011"N	104°45'30.953"W	0.79	
11185.00	90.520	358.220	7630.79	3242.23	3240.16	853.27	1707966.22	14546638.51	40°03'15.881"N	104°45'30.974"W	1.60	
11273.00	89.680	359.390	7630.63	3330.21	3328.14	851.44	1707964.15	14546726.45	40°03'16.750"N	104°45'30.998"W	1.64	
11360.00	90.020	358.480	7630.86	3417.19	3415.12	849.82	1707962.30	14546813.39	40°03'17.610"N	104°45'31.018"W	1.12	
11448.00	89.610	0.010	7631.15	3505.17	3503.11	848.66	1707960.91	14546901.34	40°03'18.479"N	104°45'31.033"W	1.80	
11535.00	90.450	359.790	7631.10	3592.17	3590.11	848.51	1707960.52	14546988.31	40°03'19.339"N	104°45'31.035"W	1.00	
11622.00	90.810	1.410	7630.14	3679.16	3677.10	849.42	1707961.20	14547075.26	40°03'20.199"N	104°45'31.023"W	1.91	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#23 MAB 15-5HZ(548'FSL & 2171'FEL,SEC.15)
Area	COLORADO	Well	MAB 15-5HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	MAB 15-5HZ AWB
Facility	SEC.15-T1N-R66W		

WELLPATH DATA (213 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
11710.00	91.560	1.110	7628.32	3767.12	3765.05	851.36	1707962.90	14547163.19	40°03'21.068"N	104°45'30.998"W	0.92	
11797.00	89.500	1.140	7627.52	3854.10	3852.03	853.06	1707964.37	14547250.14	40°03'21.928"N	104°45'30.976"W	2.37	
11885.00	89.130	359.940	7628.57	3942.09	3940.02	853.89	1707964.97	14547338.09	40°03'22.797"N	104°45'30.966"W	1.43	
11973.00	87.840	359.300	7630.90	4030.06	4027.98	853.31	1707964.15	14547426.02	40°03'23.666"N	104°45'30.973"W	1.64	
12060.00	87.340	357.870	7634.56	4116.94	4114.88	851.16	1707961.77	14547512.87	40°03'24.525"N	104°45'31.001"W	1.74	
12150.00	87.540	358.130	7638.58	4206.79	4204.73	848.03	1707958.40	14547602.68	40°03'25.413"N	104°45'31.041"W	0.36	
12237.00	88.580	0.380	7641.52	4293.72	4291.67	846.90	1707957.03	14547689.58	40°03'26.272"N	104°45'31.056"W	2.85	
12325.00	88.680	0.870	7643.63	4381.70	4379.64	847.86	1707957.76	14547777.52	40°03'27.141"N	104°45'31.043"W	0.57	
12413.00	89.290	359.890	7645.18	4469.68	4467.62	848.44	1707958.11	14547865.47	40°03'28.011"N	104°45'31.036"W	1.31	
12500.00	91.020	0.530	7644.95	4556.68	4554.62	848.76	1707958.19	14547952.43	40°03'28.871"N	104°45'31.031"W	2.12	
12588.00	90.710	1.150	7643.62	4644.66	4642.60	850.05	1707959.25	14548040.38	40°03'29.740"N	104°45'31.015"W	0.79	
12676.00	90.710	1.260	7642.53	4732.64	4730.57	851.90	1707960.86	14548128.32	40°03'30.609"N	104°45'30.991"W	0.12	
12763.00	90.220	1.430	7641.82	4819.61	4817.54	853.94	1707962.67	14548215.26	40°03'31.469"N	104°45'30.965"W	0.60	
12851.00	89.850	1.440	7641.77	4907.59	4905.51	856.14	1707964.64	14548303.21	40°03'32.338"N	104°45'30.936"W	0.42	
12938.00	90.550	2.700	7641.47	4994.54	4992.45	859.29	1707967.54	14548390.12	40°03'33.197"N	104°45'30.896"W	1.66	
13026.00	89.780	2.370	7641.21	5082.46	5080.37	863.18	1707971.20	14548478.01	40°03'34.066"N	104°45'30.846"W	0.95	
13113.00	88.680	1.690	7642.38	5169.40	5167.30	866.26	1707974.05	14548564.92	40°03'34.925"N	104°45'30.806"W	1.49	
13201.00	89.020	0.840	7644.15	5257.37	5255.26	868.20	1707975.75	14548652.85	40°03'35.795"N	104°45'30.781"W	1.04	
13288.00	88.980	1.040	7645.67	5344.35	5342.24	869.63	1707976.95	14548739.79	40°03'36.654"N	104°45'30.763"W	0.23	
13376.00	91.230	1.120	7645.51	5432.33	5430.22	871.29	1707978.37	14548827.74	40°03'37.523"N	104°45'30.741"W	2.56	
13463.00	91.260	0.520	7643.61	5519.30	5517.19	872.53	1707979.38	14548914.68	40°03'38.383"N	104°45'30.725"W	0.69	
13551.00	91.390	1.020	7641.58	5607.27	5605.15	873.72	1707980.33	14549002.62	40°03'39.252"N	104°45'30.710"W	0.59	
13638.00	90.180	0.400	7640.39	5694.26	5692.14	874.79	1707981.17	14549089.57	40°03'40.112"N	104°45'30.696"W	1.56	
13725.00	89.910	0.740	7640.32	5781.26	5779.13	875.66	1707981.80	14549176.53	40°03'40.972"N	104°45'30.685"W	0.50	
13813.00	89.630	0.820	7640.67	5869.25	5867.12	876.86	1707982.77	14549264.49	40°03'41.841"N	104°45'30.670"W	0.33	
13901.00	89.720	1.240	7641.17	5957.24	5955.11	878.44	1707984.11	14549352.44	40°03'42.711"N	104°45'30.649"W	0.49	
13988.00	90.030	1.410	7641.36	6044.22	6042.08	880.45	1707985.89	14549439.39	40°03'43.570"N	104°45'30.623"W	0.41	
14075.00	89.630	1.880	7641.62	6131.19	6129.05	882.95	1707988.15	14549526.32	40°03'44.430"N	104°45'30.591"W	0.71	
14163.00	89.940	1.440	7641.95	6219.16	6217.01	885.50	1707990.47	14549614.26	40°03'45.299"N	104°45'30.558"W	0.61	
14250.00	90.710	1.990	7641.46	6306.12	6303.97	888.10	1707992.84	14549701.19	40°03'46.158"N	104°45'30.525"W	1.09	
14338.00	90.180	0.320	7640.77	6394.10	6391.95	889.87	1707994.37	14549789.13	40°03'47.028"N	104°45'30.502"W	1.99	
14425.00	89.850	0.780	7640.75	6481.10	6478.94	890.71	1707994.98	14549876.10	40°03'47.887"N	104°45'30.491"W	0.65	
14513.00	90.800	359.550	7640.25	6569.09	6566.94	890.96	1707994.99	14549964.06	40°03'48.757"N	104°45'30.488"W	1.77	
14600.00	90.650	0.110	7639.15	6656.09	6653.93	890.71	1707994.50	14550051.01	40°03'49.616"N	104°45'30.491"W	0.67	
14688.00	90.580	0.010	7638.21	6744.08	6741.92	890.80	1707994.36	14550138.97	40°03'50.486"N	104°45'30.490"W	0.14	
14775.00	90.430	359.940	7637.44	6831.08	6828.92	890.76	1707994.09	14550225.94	40°03'51.346"N	104°45'30.490"W	0.19	
14863.00	90.310	0.420	7636.87	6919.07	6916.92	891.04	1707994.13	14550313.90	40°03'52.215"N	104°45'30.487"W	0.56	
14950.00	90.580	359.420	7636.20	7006.07	7003.91	890.91	1707993.78	14550400.86	40°03'53.075"N	104°45'30.488"W	1.19	
15038.00	91.660	0.570	7634.47	7094.05	7091.89	890.91	1707993.53	14550488.80	40°03'53.945"N	104°45'30.488"W	1.79	
15125.00	91.600	0.480	7632.00	7181.01	7178.86	891.70	1707994.10	14550575.73	40°03'54.804"N	104°45'30.478"W	0.12	
15213.00	91.450	0.970	7629.66	7268.98	7266.82	892.82	1707994.97	14550663.66	40°03'55.673"N	104°45'30.464"W	0.58	
15300.00	92.000	0.350	7627.04	7355.93	7353.77	893.82	1707995.74	14550750.58	40°03'56.532"N	104°45'30.451"W	0.95	
15388.00	90.030	359.450	7625.48	7443.91	7441.75	893.66	1707995.35	14550838.53	40°03'57.402"N	104°45'30.453"W	2.46	
15475.00	89.780	359.760	7625.62	7530.91	7528.75	893.06	1707994.52	14550925.49	40°03'58.262"N	104°45'30.460"W	0.46	
15563.00	88.610	359.360	7626.86	7618.89	7616.74	892.39	1707993.61	14551013.44	40°03'59.131"N	104°45'30.469"W	1.41	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#23 MAB 15-5HZ(548'FSL & 2171'FEL,SEC.15)
Area	COLORADO	Well	MAB 15-5HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	MAB 15-5HZ AWB
Facility	SEC.15-T1N-R66W		

WELLPATH DATA (213 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
15650.00	90.120	359.420	7627.83	7705.88	7703.72	891.46	1707992.45	14551100.39	40°03'59.991"N	104°45'30.481"W	1.74	
15738.00	89.540	358.830	7628.09	7793.86	7791.71	890.12	1707990.87	14551188.34	40°04'00.860"N	104°45'30.498"W	0.94	
15825.00	90.120	358.790	7628.34	7880.84	7878.69	888.31	1707988.84	14551275.28	40°04'01.720"N	104°45'30.521"W	0.67	
15912.00	89.720	358.480	7628.47	7967.81	7965.67	886.24	1707986.53	14551362.22	40°04'02.579"N	104°45'30.548"W	0.58	
16000.00	90.800	359.240	7628.07	8055.78	8053.65	884.49	1707984.55	14551450.16	40°04'03.449"N	104°45'30.570"W	1.50	
16087.00	90.520	359.620	7627.06	8142.77	8140.64	883.62	1707983.45	14551537.11	40°04'04.308"N	104°45'30.581"W	0.54	
16175.00	90.680	359.950	7626.14	8230.76	8228.63	883.29	1707982.88	14551625.07	40°04'05.178"N	104°45'30.586"W	0.42	
16263.00	90.740	359.370	7625.05	8318.75	8316.62	882.77	1707982.12	14551713.02	40°04'06.048"N	104°45'30.592"W	0.66	
16350.00	90.250	0.190	7624.30	8405.75	8403.62	882.44	1707981.56	14551799.98	40°04'06.907"N	104°45'30.597"W	1.10	
16438.00	89.690	359.530	7624.35	8493.75	8491.62	882.22	1707981.11	14551887.94	40°04'07.777"N	104°45'30.599"W	0.98	
16525.00	89.570	359.550	7624.91	8580.74	8578.61	881.52	1707980.18	14551974.90	40°04'08.637"N	104°45'30.608"W	0.14	
16612.00	89.820	0.340	7625.37	8667.74	8665.61	881.44	1707979.86	14552061.87	40°04'09.496"N	104°45'30.609"W	0.95	
16699.00	89.780	0.100	7625.68	8754.74	8752.61	881.77	1707979.96	14552148.83	40°04'10.356"N	104°45'30.605"W	0.28	
16787.00	90.220	0.730	7625.68	8842.74	8840.61	882.41	1707980.36	14552236.79	40°04'11.226"N	104°45'30.597"W	0.87	
16874.00	90.310	0.760	7625.27	8929.73	8927.60	883.54	1707981.26	14552323.75	40°04'12.085"N	104°45'30.582"W	0.11	
16962.00	90.490	0.900	7624.66	9017.72	9015.59	884.82	1707982.30	14552411.71	40°04'12.955"N	104°45'30.566"W	0.26	
17050.00	90.430	1.560	7623.95	9105.70	9103.56	886.71	1707983.95	14552499.66	40°04'13.824"N	104°45'30.541"W	0.75	
17137.00	90.400	2.030	7623.32	9192.66	9190.52	889.43	1707986.44	14552586.58	40°04'14.684"N	104°45'30.506"W	0.54	
17225.00	90.340	1.660	7622.75	9280.62	9278.47	892.26	1707989.04	14552674.51	40°04'15.553"N	104°45'30.470"W	0.43	
17312.00	90.310	1.890	7622.26	9367.59	9365.43	894.96	1707991.50	14552761.44	40°04'16.412"N	104°45'30.435"W	0.27	
17400.00	90.520	2.540	7621.62	9455.52	9453.36	898.36	1707994.67	14552849.34	40°04'17.281"N	104°45'30.391"W	0.78	
17487.00	90.340	3.280	7620.97	9542.42	9540.24	902.78	1707998.85	14552936.20	40°04'18.140"N	104°45'30.334"W	0.88	
17551.00†	89.758	1.825	7620.92	9606.36	9604.18	905.63	1708001.53	14553000.12	40°04'18.771"N	104°45'30.298"W	2.45	ENTER RADIUS TOE (459'FNL & 1318'FEL,SEC.10) 40.0718810 -104.7584160
17575.00	89.540	1.280	7621.06	9630.35	9628.17	906.28	1708002.11	14553024.10	40°04'19.009"N	104°45'30.289"W	2.45	
17662.00	89.780	359.910	7621.58	9717.35	9715.16	907.18	1708002.78	14553111.06	40°04'19.868"N	104°45'30.278"W	1.60	
17750.00	89.780	0.110	7621.92	9805.35	9803.16	907.20	1708002.56	14553199.03	40°04'20.738"N	104°45'30.277"W	0.23	
17837.00	90.490	359.910	7621.71	9892.34	9890.16	907.21	1708002.35	14553285.99	40°04'21.598"N	104°45'30.277"W	0.85	
17924.00	90.520	0.210	7620.94	9979.34	9977.15	907.30	1708002.20	14553372.95	40°04'22.457"N	104°45'30.276"W	0.35	
18011.00	90.430	359.660	7620.22	10066.34	10064.15	907.20	1708001.87	14553459.91	40°04'23.317"N	104°45'30.277"W	0.64	
18099.00	91.260	358.440	7618.93	10154.31	10152.13	905.75	1708000.18	14553547.85	40°04'24.186"N	104°45'30.296"W	1.68	
18186.00	91.200	358.200	7617.06	10241.25	10239.07	903.20	1707997.40	14553634.75	40°04'25.046"N	104°45'30.329"W	0.28	
18280.00	91.080	357.730	7615.19	10335.16	10332.99	899.86	1707993.81	14553728.63	40°04'25.974"N	104°45'30.372"W	0.52	LAST BHGE MWD+IFR1+MSA SURVEY
18325.00	91.080	357.730	7614.34	10380.11	10377.95	898.08	1707991.91	14553773.56	40°04'26.418"N	104°45'30.394"W	0.00	PTB (315'FSL & 1325'FEL,SEC.03) 40.0740050 -104.7584429

HOLE & CASING SECTIONS - Ref Wellbore: MAB 15-5HZ AWB Ref Wellpath: MAB 15-5HZ 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	17.00	1870.00	1853.00	17.00	1834.89	0.00	0.00	-156.82	262.68

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#23 MAB 15-5HZ(548'FSL & 2171'FEL,SEC.15)
Area	COLORADO	Well	MAB 15-5HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	MAB 15-5HZ AWB
Facility	SEC.15-T1N-R66W		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.10-T1N-R66W	34.00	584.44	-1679.83	1705441.24	14543977.08	40°02'49.636"N	104°46'03.547"W	polygon
SEC.15-T1N-R66W	34.00	584.44	-1679.83	1705441.24	14543977.08	40°02'49.636"N	104°46'03.547"W	polygon
MAB 15-5HZ SU 1 LANDBOX	7463.00	-14.88	0.00	1707122.00	14543382.50	40°02'43.714"N	104°45'41.947"W	polygon
MAB 15-5HZ SU 1 RADIUS 1	7463.00	10063.58	890.22	1707984.90	14553459.30	40°04'23.311"N	104°45'30.496"W	polygon
MAB 15-5HZ SU 1 RADIUS 2	7463.00	777.06	855.36	1707974.90	14544176.40	40°02'51.540"N	104°45'30.948"W	polygon
MAB 15-5HZ HEEL REV-1(765'FSL & 1319'FEL,SEC.15)	7605.00	215.69	853.63	1707974.67	14543615.26	40°02'45.992"N	104°45'30.971"W	point
MAB 15-5HZ BHL REV-1(316'FSL & 1345'FEL,SEC.03)	7623.00	10379.41	878.46	1707972.30	14553774.97	40°04'26.432"N	104°45'30.647"W	point
MAB 15-5HZ BHL REV-2(316'FSL & 1345'FEL,SEC.03)	7624.00	10379.41	878.46	1707972.30	14553774.97	40°04'26.432"N	104°45'30.647"W	point
MAB 15-5HZ HEEL REV-2(765'FSL & 1319'FEL,SEC.15)	7638.00	215.69	853.63	1707974.67	14543615.26	40°02'45.992"N	104°45'30.971"W	point

WELLPATH COMPOSITION - Ref Wellbore: MAB 15-5HZ AWB Ref Wellpath: MAB 15-5HZ AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
17.00	1832.00	Custom APC ISCWSA REV 2 MWD+IFR1 (approximation)	Custom APC ISCWSA Rev-2 MWD+IFR1 <124 - 1832>	MAB 15-5HZ AWB
1832.00	18280.00	Custom APC ISCWSA REV 2 MWD+IFR1+MSA (approximation)	BHGE Custom APC ISCWSA Rev-2 MWD+IFR1+MSA <1965 - 18280>	MAB 15-5HZ AWB
18280.00	18325.00	Blind Drilling (std)	Projection to bit	MAB 15-5HZ AWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#23 MAB 15-5HZ(548'FSL & 2171'FEL,SEC.15)
Area	COLORADO	Well	MAB 15-5HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	MAB 15-5HZ AWB
Facility	SEC.15-T1N-R66W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
124.00	0.880	342.520	124.00	FIRST SURFACE MWD+IFR1 SURVEY
1832.00	15.340	120.330	1798.25	LAST SURFACE MWD+IFR1 SURVEY
1965.00	15.570	117.490	1926.44	FIRST BHGE MWD+IFR1+MSA SURVEY
7017.00	2.862	6.055	6895.58	KOP
7839.00	62.175	0.342	7561.94	ENTER LANDBOX (458'FSL & 1326'FEL,SEC.15) 40.0452701 -104.7586319
8212.00	90.550	2.410	7649.82	LANDING (816'FSL & 1313'FEL,SEC.15) 40.0462530 -104.7585874
9181.00	91.416	358.721	7639.77	EXIT RADIUS HEEL (1785'FSL & 1320'FEL,SEC.15) 40.0489117 -104.7586112
17551.00	89.758	1.825	7620.92	ENTER RADIUS TOE (459'FNL & 1318'FEL,SEC.10) 40.0718810 -104.7584160
18280.00	91.080	357.730	7615.19	LAST BHGE MWD+IFR1+MSA SURVEY
18325.00	91.080	357.730	7614.34	PTB (315'FSL & 1325'FEL,SEC.03) 40.0740050 -104.7584429