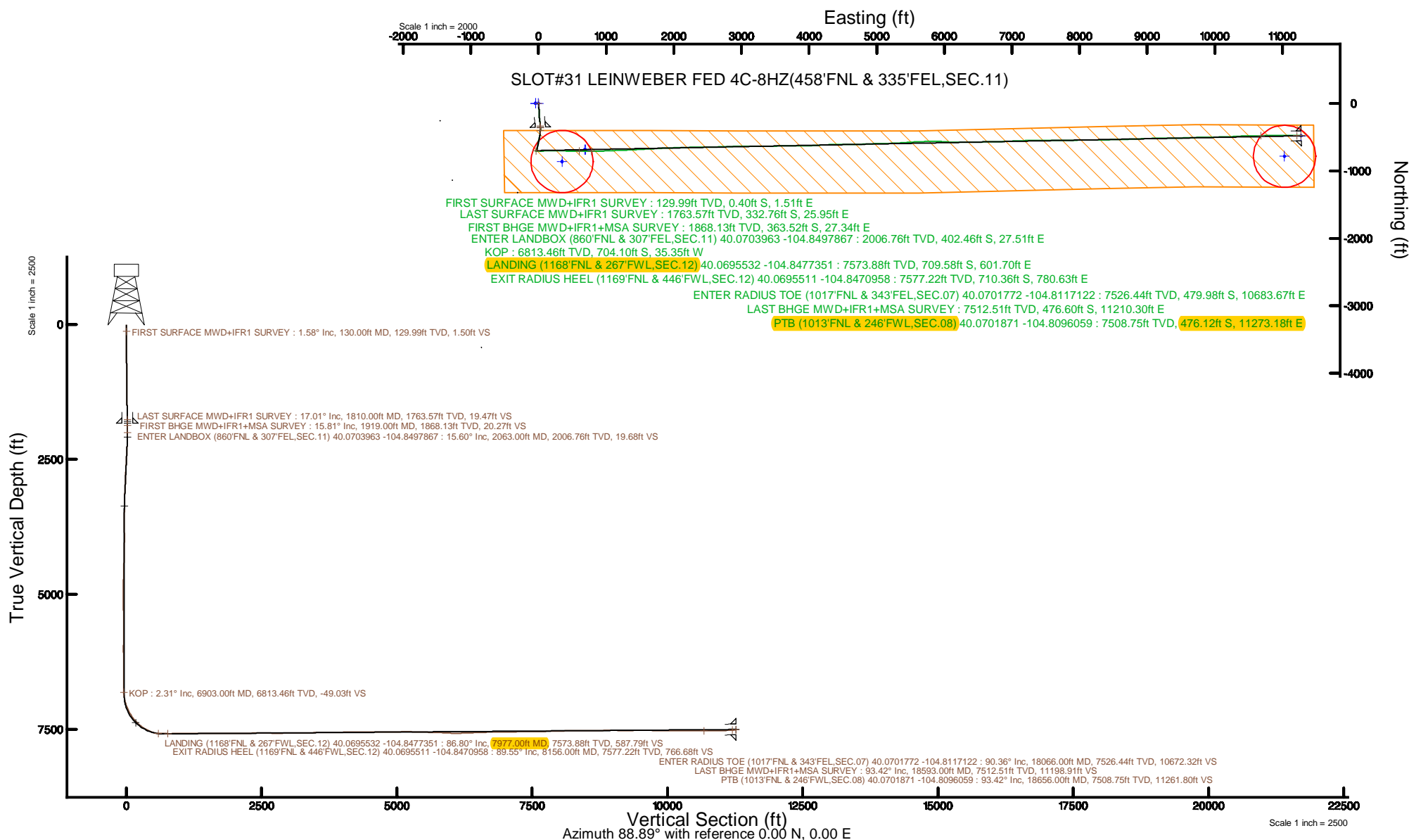


KERR-MCGEE OIL & GAS ONSHORE LP (WA)

Location: COLORADO Slot: SLOT#31 LEINWEBER FED 4C-8HZ(458'FNL & 335'FEL,SEC.11)
 Field: WELD COUNTY (UTM/TRUE NORTH) Well: LEINWEBER FED 4C-8HZ
 Facility: SEC.11-T1N-R67W Wellbore: LEINWEBER FED 4C-8HZ PWB

Plot reference wellpath is LEINWEBER FED 4C-8HZ PWP Rev-B.0	Grid System: NAD83 / UTM Zone 13 North, US feet
True vertical depths are referenced to Xtreme 22 (17') (RT)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to Xtreme 22 (17') (RT)	North Reference: True north
Xtreme 22 (17') (RT) to Mean Sea Level: 4975 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#31 LEINWEBER FED 4C-8HZ(458'FNL & 335'FEL,SEC.11)): 0	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: painsetr on 2018-01-12
	Database: WA_DEN_Anadarko_Defn



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#31 LEINWEBER FED 4C-8HZ(458'FNL & 335'FEL,SEC.11)
Area	COLORADO	Well	LEINWEBER FED 4C-8HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	LEINWEBER FED 4C-8HZ AWB
Facility	SEC.11-T1N-R67W		

REPORT SETUP INFORMATION			
Projection System	NAD83 / UTM Zone 13 North, US feet	Software System	WellArchitect® 5.0
North Reference	True	User	Painsetr
Scale	0.999602	Report Generated	1/12/2018 at 7:46 AM
Convergence at slot	0.10° East	Database/Source file	WA_DEN_Anadarko_Defn/LEINWEBER_FED_4C-8HZ_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	257.78	1456.50	1682412.64	14552805.50	40°04'17.404"N	104°50'59.586"W
Facility Reference Pt			1680957.15	14552545.45	40°04'14.857"N	104°51'18.321"W
Field Reference Pt			1698235.31	14552047.82	40°04'09.600"N	104°47'36.000"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Xtreme 22 (17') (RT) to Facility Vertical Datum	4975.00ft
Horizontal Reference Pt	Slot	Xtreme 22 (17') (RT) to Mean Sea Level	4975.00ft
Vertical Reference Pt	Xtreme 22 (17') (RT)	Xtreme 22 (17') (RT) to Mud Line at Slot (SLOT#31 LEINWEBER FED 4C-8HZ(458'FNL & 335'FEL, SEC.11))	4975.00ft
MD Reference Pt	Xtreme 22 (17') (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	88.89°

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#31 LEINWEBER FED 4C-8HZ(458'FNL & 335'FEL,SEC.11)
Area	COLORADO	Well	LEINWEBER FED 4C-8HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	LEINWEBER FED 4C-8HZ AWB
Facility	SEC.11-T1N-R67W		

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	104.690	0.00	0.00	0.00	0.00	1682412.64	14552805.50	40°04'17.404"N	104°50'59.586"W	0.00	
17.00	0.000	104.690	17.00	0.00	0.00	0.00	1682412.64	14552805.50	40°04'17.404"N	104°50'59.586"W	0.00	
130.00	1.580	104.690	129.99	1.50	-0.40	1.51	1682414.15	14552805.10	40°04'17.400"N	104°50'59.567"W	1.40	FIRST SURFACE MWD+IFR1 SURVEY
161.00	1.230	110.140	160.98	2.22	-0.62	2.23	1682414.87	14552804.88	40°04'17.398"N	104°50'59.557"W	1.21	
193.00	1.100	130.450	192.97	2.77	-0.94	2.79	1682415.43	14552804.56	40°04'17.395"N	104°50'59.550"W	1.34	
225.00	1.410	136.160	224.96	3.27	-1.42	3.30	1682415.94	14552804.08	40°04'17.390"N	104°50'59.544"W	1.04	
256.00	1.410	163.670	255.95	3.63	-2.06	3.67	1682416.31	14552803.44	40°04'17.384"N	104°50'59.539"W	2.16	
287.00	0.700	166.830	286.95	3.77	-2.61	3.82	1682416.46	14552802.89	40°04'17.378"N	104°50'59.537"W	2.30	
319.00	0.570	181.070	318.95	3.80	-2.96	3.86	1682416.50	14552802.54	40°04'17.375"N	104°50'59.536"W	0.64	
350.00	1.010	188.010	349.94	3.75	-3.38	3.82	1682416.46	14552802.12	40°04'17.371"N	104°50'59.537"W	1.45	
382.00	1.670	184.850	381.93	3.66	-4.13	3.74	1682416.39	14552801.37	40°04'17.363"N	104°50'59.538"W	2.07	
414.00	2.150	176.500	413.92	3.63	-5.19	3.74	1682416.39	14552800.31	40°04'17.353"N	104°50'59.538"W	1.73	
445.00	2.500	181.860	444.89	3.62	-6.45	3.75	1682416.40	14552799.06	40°04'17.340"N	104°50'59.538"W	1.33	
476.00	3.250	185.550	475.85	3.49	-8.00	3.64	1682416.30	14552797.51	40°04'17.325"N	104°50'59.539"W	2.49	
508.00	3.600	184.940	507.79	3.28	-9.90	3.47	1682416.13	14552795.60	40°04'17.306"N	104°50'59.541"W	1.10	
572.00	4.390	178.960	571.64	3.06	-14.35	3.34	1682416.01	14552791.15	40°04'17.262"N	104°50'59.543"W	1.39	
604.00	5.410	173.860	603.52	3.19	-17.08	3.52	1682416.19	14552788.43	40°04'17.235"N	104°50'59.541"W	3.46	
636.00	5.930	176.240	635.36	3.40	-20.23	3.79	1682416.47	14552785.28	40°04'17.204"N	104°50'59.537"W	1.78	
667.00	6.590	176.590	666.18	3.54	-23.60	4.00	1682416.68	14552781.91	40°04'17.171"N	104°50'59.534"W	2.13	
699.00	7.430	176.850	697.94	3.69	-27.50	4.23	1682416.91	14552778.01	40°04'17.132"N	104°50'59.532"W	2.63	
731.00	8.090	174.570	729.65	3.93	-31.81	4.55	1682417.25	14552773.71	40°04'17.090"N	104°50'59.527"W	2.28	
763.00	8.610	173.780	761.31	4.32	-36.43	5.03	1682417.73	14552769.09	40°04'17.044"N	104°50'59.521"W	1.66	
794.00	9.180	174.130	791.93	4.73	-41.20	5.53	1682418.24	14552764.32	40°04'16.997"N	104°50'59.515"W	1.85	
826.00	10.020	173.250	823.49	5.21	-46.50	6.12	1682418.84	14552759.02	40°04'16.944"N	104°50'59.507"W	2.66	
858.00	10.410	175.450	854.98	5.66	-52.15	6.68	1682419.40	14552753.38	40°04'16.889"N	104°50'59.500"W	1.72	
890.00	11.380	177.820	886.40	5.89	-58.18	7.03	1682419.76	14552747.35	40°04'16.829"N	104°50'59.496"W	3.34	
921.00	12.170	179.050	916.75	5.94	-64.51	7.20	1682419.94	14552741.03	40°04'16.767"N	104°50'59.493"W	2.67	
953.00	12.960	180.020	947.98	5.86	-71.47	7.25	1682420.01	14552734.07	40°04'16.698"N	104°50'59.493"W	2.56	
985.00	14.020	179.840	979.10	5.72	-78.93	7.26	1682420.03	14552726.61	40°04'16.624"N	104°50'59.493"W	3.32	
1017.00	15.120	177.910	1010.07	5.73	-86.98	7.42	1682420.21	14552718.56	40°04'16.544"N	104°50'59.491"W	3.76	
1048.00	15.920	177.640	1039.94	5.89	-95.27	7.75	1682420.55	14552710.28	40°04'16.463"N	104°50'59.486"W	2.59	
1080.00	16.260	177.120	1070.69	6.13	-104.13	8.15	1682420.97	14552701.42	40°04'16.375"N	104°50'59.481"W	1.15	
1112.00	16.520	177.730	1101.39	6.36	-113.15	8.56	1682421.39	14552692.41	40°04'16.286"N	104°50'59.476"W	0.97	
1143.00	17.180	176.410	1131.05	6.64	-122.12	9.02	1682421.86	14552683.44	40°04'16.197"N	104°50'59.470"W	2.46	
1175.00	17.490	177.200	1161.60	6.99	-131.64	9.55	1682422.41	14552673.92	40°04'16.103"N	104°50'59.463"W	1.22	
1207.00	17.580	176.850	1192.11	7.30	-141.27	10.05	1682422.93	14552664.30	40°04'16.008"N	104°50'59.457"W	0.43	
1239.00	17.890	178.700	1222.59	7.49	-151.01	10.43	1682423.32	14552654.56	40°04'15.912"N	104°50'59.452"W	2.01	
1271.00	18.370	177.960	1253.00	7.59	-160.96	10.72	1682423.63	14552644.62	40°04'15.813"N	104°50'59.448"W	1.66	
1302.00	18.110	177.640	1282.45	7.77	-170.66	11.09	1682424.01	14552634.92	40°04'15.718"N	104°50'59.443"W	0.90	
1334.00	18.020	177.120	1312.87	8.03	-180.57	11.54	1682424.48	14552625.02	40°04'15.620"N	104°50'59.438"W	0.58	
1366.00	18.590	176.850	1343.25	8.36	-190.61	12.07	1682425.03	14552614.99	40°04'15.520"N	104°50'59.431"W	1.80	
1397.00	18.410	176.060	1372.65	8.78	-200.42	12.68	1682425.65	14552605.17	40°04'15.423"N	104°50'59.423"W	1.00	
1429.00	18.940	175.450	1402.96	9.34	-210.64	13.44	1682426.43	14552594.96	40°04'15.322"N	104°50'59.413"W	1.77	
1461.00	19.730	174.300	1433.16	10.08	-221.19	14.39	1682427.40	14552584.41	40°04'15.218"N	104°50'59.401"W	2.74	
1492.00	19.470	174.740	1462.36	10.88	-231.55	15.38	1682428.41	14552574.07	40°04'15.116"N	104°50'59.388"W	0.96	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#31 LEINWEBER FED 4C-8HZ(458'FNL & 335'FEL,SEC.11)
Area	COLORADO	Well	LEINWEBER FED 4C-8HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	LEINWEBER FED 4C-8HZ AWB
Facility	SEC.11-T1N-R67W		

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
1524.00	19.690	172.460	1492.51	11.87	-242.20	16.58	1682429.62	14552563.42	40°04'15.011"N	104°50'59.373"W	2.48	
1556.00	19.820	171.490	1522.63	13.17	-252.91	18.09	1682431.15	14552552.72	40°04'14.905"N	104°50'59.353"W	1.10	
1619.00	19.420	173.160	1581.97	15.59	-273.87	20.92	1682434.01	14552531.77	40°04'14.698"N	104°50'59.317"W	1.09	
1651.00	19.290	173.600	1612.16	16.60	-284.41	22.14	1682435.25	14552521.24	40°04'14.593"N	104°50'59.301"W	0.61	
1683.00	18.060	176.330	1642.48	17.31	-294.61	23.04	1682436.17	14552511.04	40°04'14.493"N	104°50'59.290"W	4.71	
1746.00	17.670	174.480	1702.44	18.48	-313.87	24.59	1682437.75	14552491.79	40°04'14.302"N	104°50'59.270"W	1.09	
1778.00	17.090	176.060	1732.98	19.09	-323.40	25.38	1682438.56	14552482.27	40°04'14.208"N	104°50'59.260"W	2.34	
1810.00	17.010	177.030	1763.57	19.47	-332.76	25.95	1682439.14	14552472.91	40°04'14.116"N	104°50'59.252"W	0.92	LAST SURFACE MWD+IFR1 SURVEY
1919.00	15.810	177.810	1868.13	20.27	-363.52	27.34	1682440.58	14552442.16	40°04'13.812"N	104°50'59.234"W	1.12	FIRST BHGE MWD+IFR1+MSA SURVEY
2006.00	15.660	180.330	1951.87	20.19	-387.11	27.72	1682441.01	14552418.59	40°04'13.579"N	104°50'59.229"W	0.80	
2063.00†	15.601	181.306	2006.76	19.68	-402.46	27.51	1682440.81	14552403.24	40°04'13.427"N	104°50'59.232"W	0.47	ENTER LANDBOX (860'FNL & 307'FEL,SEC.11) 40.0703963 -104.8497867
2094.00	15.570	181.840	2036.63	19.29	-410.79	27.28	1682440.60	14552394.92	40°04'13.344"N	104°50'59.235"W	0.47	
2181.00	15.230	184.330	2120.50	17.60	-433.85	26.04	1682439.40	14552371.86	40°04'13.117"N	104°50'59.251"W	0.85	
2269.00	14.040	188.930	2205.65	14.64	-455.93	23.51	1682436.91	14552349.79	40°04'12.898"N	104°50'59.284"W	1.89	
2356.00	13.290	190.770	2290.19	10.74	-476.18	20.00	1682433.44	14552329.54	40°04'12.698"N	104°50'59.329"W	1.00	
2443.00	11.730	191.130	2375.12	6.81	-494.68	16.43	1682429.90	14552311.04	40°04'12.515"N	104°50'59.375"W	1.80	
2531.00	11.530	192.510	2461.31	2.84	-512.04	12.79	1682426.29	14552293.68	40°04'12.344"N	104°50'59.421"W	0.39	
2618.00	11.960	196.620	2546.49	-1.96	-529.17	8.33	1682421.86	14552276.55	40°04'12.175"N	104°50'59.479"W	1.08	
2706.00	12.330	196.000	2632.52	-7.50	-546.94	3.13	1682416.70	14552258.78	40°04'11.999"N	104°50'59.546"W	0.45	
2794.00	13.200	189.850	2718.35	-12.18	-565.87	-1.17	1682412.42	14552239.85	40°04'11.812"N	104°50'59.601"W	1.83	
2881.00	13.280	186.230	2803.04	-15.34	-585.59	-3.96	1682409.67	14552220.13	40°04'11.617"N	104°50'59.637"W	0.96	
2969.00	12.220	188.760	2888.87	-18.23	-604.84	-6.47	1682407.19	14552200.88	40°04'11.427"N	104°50'59.669"W	1.36	
3056.00	11.370	193.000	2974.03	-21.90	-622.30	-9.80	1682403.89	14552183.43	40°04'11.254"N	104°50'59.712"W	1.39	
3143.00	11.360	193.020	3059.33	-26.08	-639.00	-13.66	1682400.06	14552166.73	40°04'11.089"N	104°50'59.762"W	0.01	
3230.00	10.800	193.490	3144.70	-30.23	-655.28	-17.50	1682396.26	14552150.45	40°04'10.928"N	104°50'59.811"W	0.65	
3318.00	9.860	189.610	3231.28	-33.71	-670.72	-20.68	1682393.10	14552135.01	40°04'10.776"N	104°50'59.852"W	1.33	
3405.00	8.150	185.070	3317.20	-35.76	-684.21	-22.47	1682391.34	14552121.52	40°04'10.642"N	104°50'59.875"W	2.13	
3493.00	5.770	184.510	3404.55	-36.87	-694.84	-23.37	1682390.46	14552110.90	40°04'10.537"N	104°50'59.887"W	2.71	
3580.00	4.450	186.740	3491.20	-37.76	-702.55	-24.11	1682389.73	14552103.19	40°04'10.461"N	104°50'59.896"W	1.53	
3667.00	2.680	191.600	3578.03	-38.67	-707.89	-24.91	1682388.94	14552097.84	40°04'10.408"N	104°50'59.906"W	2.06	
3754.00	0.790	195.100	3664.99	-39.28	-710.47	-25.48	1682388.37	14552095.27	40°04'10.383"N	104°50'59.914"W	2.17	
3842.00	0.620	59.400	3752.98	-39.04	-710.81	-25.22	1682388.63	14552094.93	40°04'10.380"N	104°50'59.910"W	1.49	
3929.00	0.940	79.700	3839.97	-37.92	-710.44	-24.12	1682389.73	14552095.30	40°04'10.383"N	104°50'59.896"W	0.48	
4017.00	0.660	358.850	3927.97	-37.21	-709.81	-23.42	1682390.43	14552095.93	40°04'10.390"N	104°50'59.887"W	1.20	
4104.00	1.140	340.060	4014.96	-37.49	-708.49	-23.72	1682390.12	14552097.25	40°04'10.403"N	104°50'59.891"W	0.64	
4192.00	0.900	301.350	4102.94	-38.36	-707.31	-24.61	1682389.23	14552098.43	40°04'10.414"N	104°50'59.903"W	0.81	
4279.00	1.260	268.590	4189.93	-39.89	-706.98	-26.15	1682387.69	14552098.76	40°04'10.418"N	104°50'59.922"W	0.80	
4367.00	1.610	258.740	4277.90	-42.07	-707.24	-28.33	1682385.52	14552098.49	40°04'10.415"N	104°50'59.950"W	0.49	
4454.00	1.680	283.110	4364.87	-44.51	-707.19	-30.77	1682383.08	14552098.54	40°04'10.415"N	104°50'59.982"W	0.80	
4542.00	1.940	290.620	4452.82	-47.15	-706.37	-33.42	1682380.43	14552099.35	40°04'10.423"N	104°51'00.016"W	0.40	
4630.00	1.820	300.090	4540.78	-49.73	-705.15	-36.02	1682377.82	14552100.57	40°04'10.436"N	104°51'00.049"W	0.38	
4717.00	1.930	306.530	4627.73	-52.07	-703.58	-38.40	1682375.45	14552102.13	40°04'10.451"N	104°51'00.080"W	0.27	
4804.00	1.610	294.590	4714.69	-54.33	-702.20	-40.69	1682373.16	14552103.50	40°04'10.465"N	104°51'00.109"W	0.56	
4892.00	0.430	240.600	4802.67	-55.73	-701.85	-42.10	1682371.74	14552103.85	40°04'10.468"N	104°51'00.127"W	1.59	
4979.00	0.910	186.250	4889.67	-56.11	-702.70	-42.46	1682371.39	14552103.01	40°04'10.460"N	104°51'00.132"W	0.86	

REFERENCE WELLPATH IDENTIFICATION				
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)		Slot	SLOT#31 LEINWEBER FED 4C-8HZ(458'FNL & 335'FEL,SEC.11)
Area	COLORADO		Well	LEINWEBER FED 4C-8HZ
Field	WELD COUNTY (UTM/TRUE NORTH)		Wellbore	LEINWEBER FED 4C-8HZ AWB
Facility	SEC.11-T1N-R67W			

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
5066.00	1.170	175.290	4976.65	-56.14	-704.27	-42.46	1682371.39	14552101.44	40°04'10.444"N	104°51'00.132"W	0.37	
5177.00	1.450	183.630	5087.63	-56.19	-706.80	-42.46	1682371.40	14552098.91	40°04'10.419"N	104°51'00.132"W	0.30	
5264.00	0.470	105.220	5174.61	-55.94	-707.99	-42.18	1682371.67	14552097.71	40°04'10.407"N	104°51'00.129"W	1.65	
5352.00	1.450	36.370	5262.60	-54.91	-707.19	-41.17	1682372.68	14552098.52	40°04'10.415"N	104°51'00.116"W	1.54	
5439.00	1.620	24.210	5349.57	-53.72	-705.18	-40.01	1682373.83	14552100.53	40°04'10.435"N	104°51'00.101"W	0.42	
5527.00	1.170	19.290	5437.55	-52.87	-703.20	-39.21	1682374.64	14552102.51	40°04'10.455"N	104°51'00.090"W	0.53	
5615.00	0.750	10.890	5525.53	-52.44	-701.79	-38.80	1682375.04	14552103.92	40°04'10.469"N	104°51'00.085"W	0.50	
5703.00	0.430	343.160	5613.53	-52.41	-700.91	-38.79	1682375.05	14552104.81	40°04'10.478"N	104°51'00.085"W	0.48	
5790.00	0.310	286.250	5700.53	-52.72	-700.53	-39.11	1682374.73	14552105.18	40°04'10.481"N	104°51'00.089"W	0.42	
5877.00	0.370	283.530	5787.53	-53.22	-700.40	-39.61	1682374.23	14552105.31	40°04'10.483"N	104°51'00.095"W	0.07	
5965.00	0.590	237.370	5875.52	-53.88	-700.57	-40.27	1682373.57	14552105.13	40°04'10.481"N	104°51'00.104"W	0.49	
6053.00	0.540	237.300	5963.52	-54.62	-701.04	-41.00	1682372.84	14552104.67	40°04'10.476"N	104°51'00.113"W	0.06	
6140.00	0.470	80.760	6050.52	-54.61	-701.21	-40.99	1682372.85	14552104.50	40°04'10.475"N	104°51'00.113"W	1.14	
6227.00	0.770	71.450	6137.51	-53.70	-700.96	-40.08	1682373.76	14552104.75	40°04'10.477"N	104°51'00.102"W	0.36	
6315.00	0.150	40.490	6225.51	-53.06	-700.69	-39.45	1682374.39	14552105.02	40°04'10.480"N	104°51'00.093"W	0.73	
6402.00	0.070	295.000	6312.51	-53.04	-700.58	-39.42	1682374.42	14552105.13	40°04'10.481"N	104°51'00.093"W	0.21	
6490.00	0.120	173.840	6400.51	-53.08	-700.65	-39.46	1682374.38	14552105.06	40°04'10.480"N	104°51'00.094"W	0.19	
6577.00	0.460	138.680	6487.51	-52.84	-701.00	-39.22	1682374.62	14552104.71	40°04'10.477"N	104°51'00.090"W	0.42	
6665.00	0.740	140.020	6575.50	-52.26	-701.70	-38.62	1682375.22	14552104.01	40°04'10.470"N	104°51'00.083"W	0.32	
6752.00	0.840	133.090	6662.49	-51.45	-702.57	-37.80	1682376.05	14552103.15	40°04'10.461"N	104°51'00.072"W	0.16	
6839.00	0.860	141.410	6749.48	-50.59	-703.51	-36.92	1682376.92	14552102.20	40°04'10.452"N	104°51'00.061"W	0.14	
6903.00†	2.307	99.384	6813.46	-49.03	-704.10	-35.35	1682378.49	14552101.62	40°04'10.446"N	104°51'00.041"W	2.76	KOP
6927.00	2.940	95.170	6837.43	-47.95	-704.23	-34.26	1682379.58	14552101.49	40°04'10.445"N	104°51'00.027"W	2.76	
7014.00	10.910	91.340	6923.73	-37.49	-704.63	-23.79	1682390.05	14552101.11	40°04'10.441"N	104°50'59.892"W	9.17	
7102.00	17.060	93.720	7009.08	-16.28	-705.66	-2.57	1682411.27	14552100.11	40°04'10.431"N	104°50'59.619"W	7.02	
7189.00	22.150	91.760	7091.01	12.83	-706.99	26.58	1682440.41	14552098.83	40°04'10.417"N	104°50'59.244"W	5.90	
7277.00	27.420	87.280	7170.89	49.68	-706.54	63.43	1682477.24	14552099.35	40°04'10.422"N	104°50'58.770"W	6.35	
7364.00	33.020	85.800	7246.03	93.41	-703.85	107.12	1682520.90	14552102.11	40°04'10.448"N	104°50'58.208"W	6.49	
7452.00	38.880	87.980	7317.24	145.02	-701.12	158.68	1682572.44	14552104.92	40°04'10.475"N	104°50'57.545"W	6.82	
7539.00	45.870	91.810	7381.49	203.58	-701.14	217.26	1682630.99	14552105.00	40°04'10.475"N	104°50'56.791"W	8.56	
7627.00	53.640	91.120	7438.30	270.63	-702.84	284.35	1682698.06	14552103.42	40°04'10.458"N	104°50'55.928"W	8.85	
7714.00	58.930	91.880	7486.57	342.90	-704.74	356.67	1682770.35	14552101.63	40°04'10.440"N	104°50'54.998"W	6.12	
7802.00	63.860	90.460	7528.69	420.07	-706.30	433.88	1682847.54	14552100.21	40°04'10.424"N	104°50'54.005"W	5.78	
7889.00	74.470	91.210	7559.59	501.22	-707.50	515.07	1682928.70	14552099.15	40°04'10.412"N	104°50'52.961"W	12.22	
7977.00	86.800	91.540	7573.88	587.79	-709.58	601.70	1683015.30	14552097.21	40°04'10.392"N	104°50'51.846"W	14.02	LANDING (1168'FNL & 267'FWL,SEC.12) 40.0695532 -104.8477351
8064.00	89.690	90.280	7576.55	674.69	-710.97	688.64	1683102.21	14552095.98	40°04'10.378"N	104°50'50.728"W	3.62	
8151.00	89.480	89.030	7577.18	761.68	-710.44	775.64	1683189.16	14552096.65	40°04'10.383"N	104°50'49.609"W	1.46	
8156.00†	89.546	89.017	7577.22	766.68	-710.36	780.63	1683194.16	14552096.74	40°04'10.384"N	104°50'49.545"W	1.35	EXIT RADIUS HEEL (1169'FNL & 446'FWL,SEC.12) 40.0695511 -104.8470958
8239.00	90.650	88.800	7577.08	849.68	-708.77	863.62	1683277.11	14552098.46	40°04'10.400"N	104°50'48.478"W	1.35	
8326.00	90.920	88.210	7575.88	936.66	-706.51	950.58	1683364.03	14552100.88	40°04'10.422"N	104°50'47.359"W	0.75	
8413.00	90.060	87.590	7575.14	1023.65	-703.32	1037.52	1683450.93	14552104.21	40°04'10.453"N	104°50'46.241"W	1.22	
8501.00	90.520	87.490	7574.70	1111.62	-699.54	1125.43	1683538.80	14552108.13	40°04'10.491"N	104°50'45.110"W	0.53	
8588.00	90.310	88.150	7574.07	1198.60	-696.23	1212.37	1683625.70	14552111.59	40°04'10.523"N	104°50'43.992"W	0.80	
8676.00	89.850	87.550	7573.94	1286.59	-692.93	1300.31	1683713.59	14552115.04	40°04'10.556"N	104°50'42.861"W	0.86	
8763.00	90.580	87.590	7573.62	1373.56	-689.24	1387.23	1683800.47	14552118.87	40°04'10.592"N	104°50'41.743"W	0.84	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#31 LEINWEBER FED 4C-8HZ(458'FNL & 335'FEL,SEC.11)
Area	COLORADO	Well	LEINWEBER FED 4C-8HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	LEINWEBER FED 4C-8HZ AWB
Facility	SEC.11-T1N-R67W		

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
8851.00	89.380	86.820	7573.65	1461.52	-684.95	1475.12	1683888.32	14552123.31	40°04'10.635°N	104°50'40.612°W	1.62	
8938.00	89.910	86.610	7574.19	1548.46	-679.96	1561.97	1683975.14	14552128.44	40°04'10.684°N	104°50'39.495°W	0.66	
9026.00	90.950	87.180	7573.53	1636.40	-675.20	1649.84	1684062.96	14552133.35	40°04'10.731°N	104°50'38.365°W	1.35	
9113.00	89.140	86.730	7573.46	1723.35	-670.58	1736.71	1684149.79	14552138.12	40°04'10.777°N	104°50'37.247°W	2.14	
9201.00	89.540	86.770	7574.47	1811.28	-665.59	1824.57	1684237.60	14552143.25	40°04'10.826°N	104°50'36.117°W	0.46	
9288.00	90.710	87.650	7574.28	1898.24	-661.35	1911.46	1684324.45	14552147.63	40°04'10.868°N	104°50'34.999°W	1.68	
9376.00	91.690	89.260	7572.44	1986.22	-658.98	1999.41	1684412.36	14552150.15	40°04'10.891°N	104°50'33.868°W	2.14	
9463.00	91.050	88.170	7570.36	2073.19	-657.03	2086.36	1684499.27	14552152.25	40°04'10.910°N	104°50'32.750°W	1.45	
9550.00	89.880	88.190	7569.65	2160.18	-654.27	2173.31	1684586.18	14552155.15	40°04'10.937°N	104°50'31.631°W	1.35	
9638.00	90.150	88.720	7569.63	2248.18	-651.90	2261.28	1684674.11	14552157.67	40°04'10.961°N	104°50'30.500°W	0.68	
9726.00	91.260	89.070	7568.55	2336.17	-650.20	2349.25	1684762.05	14552159.52	40°04'10.978°N	104°50'29.368°W	1.32	
9814.00	91.540	89.210	7566.40	2424.14	-648.88	2437.22	1684849.97	14552160.99	40°04'10.990°N	104°50'28.237°W	0.36	
9901.00	89.540	89.370	7565.58	2511.13	-647.80	2524.20	1684936.92	14552162.21	40°04'11.001°N	104°50'27.118°W	2.31	
9989.00	88.580	88.890	7567.02	2599.12	-646.46	2612.18	1685024.86	14552163.69	40°04'11.014°N	104°50'25.986°W	1.22	
10076.00	88.460	88.160	7569.27	2686.08	-644.23	2699.12	1685111.76	14552166.08	40°04'11.036°N	104°50'24.868°W	0.85	
10164.00	90.000	88.260	7570.45	2774.07	-641.48	2787.07	1685199.67	14552168.97	40°04'11.063°N	104°50'23.737°W	1.75	
10251.00	91.260	88.710	7569.49	2861.06	-639.18	2874.03	1685286.59	14552171.42	40°04'11.086°N	104°50'22.618°W	1.54	
10339.00	91.230	89.720	7567.58	2949.04	-637.97	2962.00	1685374.53	14552172.77	40°04'11.098°N	104°50'21.487°W	1.15	
10426.00	90.340	89.950	7566.39	3036.01	-637.72	3048.99	1685461.48	14552173.17	40°04'11.100°N	104°50'20.368°W	1.06	
10514.00	90.400	89.320	7565.82	3124.00	-637.16	3136.98	1685549.44	14552173.88	40°04'11.105°N	104°50'19.236°W	0.72	
10601.00	91.420	89.350	7564.44	3210.99	-636.15	3223.97	1685636.39	14552175.03	40°04'11.115°N	104°50'18.117°W	1.17	
10689.00	91.230	88.670	7562.40	3298.97	-634.63	3311.93	1685724.31	14552176.70	40°04'11.130°N	104°50'16.986°W	0.80	
10777.00	90.490	89.690	7561.08	3386.95	-633.37	3399.91	1685812.25	14552178.11	40°04'11.143°N	104°50'15.854°W	1.43	
10864.00	90.680	89.660	7560.19	3473.94	-632.88	3486.90	1685899.21	14552178.75	40°04'11.147°N	104°50'14.735°W	0.22	
10952.00	92.030	89.130	7558.11	3561.91	-631.95	3574.87	1685987.14	14552179.83	40°04'11.156°N	104°50'13.603°W	1.65	
11040.00	91.290	89.500	7555.56	3649.87	-630.90	3662.83	1686075.06	14552181.03	40°04'11.167°N	104°50'12.472°W	0.94	
11127.00	89.540	89.800	7554.93	3736.86	-630.37	3749.82	1686162.02	14552181.70	40°04'11.172°N	104°50'11.353°W	2.04	
11215.00	90.030	89.410	7555.26	3824.85	-629.76	3837.82	1686249.98	14552182.46	40°04'11.178°N	104°50'10.221°W	0.71	
11302.00	91.140	89.210	7554.38	3911.84	-628.71	3924.80	1686336.93	14552183.65	40°04'11.188°N	104°50'09.102°W	1.30	
11389.00	91.540	88.740	7552.34	3998.81	-627.16	4011.77	1686423.86	14552185.35	40°04'11.203°N	104°50'07.984°W	0.71	
11477.00	91.200	86.410	7550.24	4086.76	-623.43	4099.66	1686511.70	14552189.22	40°04'11.240°N	104°50'06.853°W	2.68	
11565.00	89.720	85.750	7549.53	4174.65	-617.42	4187.44	1686599.45	14552195.38	40°04'11.299°N	104°50'05.724°W	1.84	
11652.00	90.030	88.300	7549.72	4261.60	-612.90	4274.32	1686686.28	14552200.04	40°04'11.344°N	104°50'04.607°W	2.95	
11743.00	91.110	89.760	7548.82	4352.59	-611.36	4365.30	1686777.22	14552201.74	40°04'11.359°N	104°50'03.436°W	2.00	
11835.00	90.120	89.970	7547.83	4444.57	-611.15	4457.29	1686869.17	14552202.11	40°04'11.361°N	104°50'02.253°W	1.10	
11926.00	89.320	89.310	7548.27	4535.56	-610.57	4548.29	1686960.13	14552202.83	40°04'11.366°N	104°50'01.083°W	1.14	
12017.00	89.380	88.980	7549.30	4626.55	-609.22	4639.27	1687051.08	14552204.34	40°04'11.379°N	104°49'59.912°W	0.37	
12108.00	90.180	88.720	7549.65	4717.55	-607.39	4730.25	1687142.02	14552206.32	40°04'11.397°N	104°49'58.742°W	0.92	
12195.00	91.320	87.290	7548.52	4804.53	-604.36	4817.19	1687228.91	14552209.50	40°04'11.427°N	104°49'57.624°W	2.10	
12283.00	90.830	87.670	7546.86	4892.48	-600.49	4905.09	1687316.77	14552213.51	40°04'11.465°N	104°49'56.493°W	0.70	
12370.00	90.990	89.410	7545.48	4979.47	-598.28	4992.04	1687403.69	14552215.87	40°04'11.487°N	104°49'55.375°W	2.01	
12457.00	90.920	89.050	7544.03	5066.46	-597.11	5079.02	1687490.63	14552217.19	40°04'11.498°N	104°49'54.256°W	0.42	
12545.00	89.750	87.760	7543.52	5154.45	-594.66	5166.98	1687578.56	14552219.79	40°04'11.522°N	104°49'53.124°W	1.98	
12632.00	89.970	86.950	7543.73	5241.41	-590.64	5253.89	1687665.42	14552223.95	40°04'11.562°N	104°49'52.006°W	0.96	
12720.00	89.230	86.730	7544.35	5329.36	-585.79	5341.75	1687753.24	14552228.94	40°04'11.609°N	104°49'50.876°W	0.88	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#31 LEINWEBER FED 4C-8HZ(458'FNL & 335'FEL,SEC.11)
Area	COLORADO	Well	LEINWEBER FED 4C-8HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	LEINWEBER FED 4C-8HZ AWB
Facility	SEC.11-T1N-R67W		

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
12807.00	87.630	85.830	7546.73	5416.23	-580.15	5428.53	1687839.98	14552234.73	40°04'11.665"N	104°49'49.760"W	2.11	
12982.00	88.620	87.010	7552.45	5590.97	-569.23	5603.09	1688014.45	14552245.94	40°04'11.773"N	104°49'47.515"W	0.88	
13069.00	89.170	88.770	7554.13	5677.94	-566.03	5690.02	1688101.33	14552249.29	40°04'11.804"N	104°49'46.397"W	2.12	
13157.00	87.200	88.250	7556.92	5765.89	-563.74	5777.94	1688189.21	14552251.72	40°04'11.826"N	104°49'45.266"W	2.32	
13244.00	86.520	90.750	7561.69	5852.74	-562.98	5864.80	1688276.03	14552252.63	40°04'11.834"N	104°49'44.148"W	2.97	
13332.00	87.010	92.620	7566.65	5940.49	-565.57	5952.61	1688363.82	14552250.19	40°04'11.808"N	104°49'43.019"W	2.19	
13419.00	88.640	93.720	7569.95	6027.18	-570.38	6039.41	1688450.59	14552245.53	40°04'11.760"N	104°49'41.902"W	2.26	
13507.00	90.520	92.160	7570.60	6114.95	-574.89	6127.29	1688538.44	14552241.17	40°04'11.715"N	104°49'40.772"W	2.78	
13594.00	92.340	90.290	7568.43	6201.85	-576.75	6214.23	1688625.35	14552239.46	40°04'11.697"N	104°49'39.654"W	3.00	
13682.00	92.000	89.550	7565.10	6289.77	-576.62	6302.17	1688713.25	14552239.73	40°04'11.698"N	104°49'38.523"W	0.92	
13770.00	92.310	88.830	7561.79	6377.70	-575.38	6390.10	1688801.15	14552241.12	40°04'11.710"N	104°49'37.392"W	0.89	
13858.00	92.340	89.340	7558.22	6465.63	-573.98	6478.01	1688889.02	14552242.67	40°04'11.724"N	104°49'36.261"W	0.58	
13945.00	91.350	88.610	7555.42	6552.58	-572.42	6564.95	1688975.93	14552244.37	40°04'11.739"N	104°49'35.143"W	1.41	
14033.00	92.590	88.360	7552.39	6640.53	-570.10	6652.87	1689063.80	14552246.84	40°04'11.761"N	104°49'34.012"W	1.44	
14121.00	92.280	89.220	7548.65	6728.45	-568.24	6740.77	1689151.66	14552248.85	40°04'11.780"N	104°49'32.881"W	1.04	
14208.00	90.770	88.900	7546.34	6815.41	-566.81	6827.72	1689238.58	14552250.42	40°04'11.793"N	104°49'31.763"W	1.77	
14297.00	90.340	87.600	7545.47	6904.40	-564.10	6916.68	1689327.49	14552253.29	40°04'11.820"N	104°49'30.618"W	1.54	
14384.00	90.520	86.220	7544.82	6991.35	-559.41	7003.55	1689414.32	14552258.12	40°04'11.866"N	104°49'29.501"W	1.60	
14472.00	90.090	87.530	7544.35	7079.29	-554.61	7091.41	1689502.14	14552263.06	40°04'11.913"N	104°49'28.371"W	1.57	
14560.00	90.120	89.680	7544.19	7167.28	-552.47	7179.38	1689590.07	14552265.35	40°04'11.934"N	104°49'27.239"W	2.44	
14647.00	91.300	90.140	7543.11	7254.26	-552.33	7266.37	1689677.03	14552265.64	40°04'11.935"N	104°49'26.120"W	1.46	
14734.00	89.720	89.260	7542.34	7341.24	-551.87	7353.36	1689763.98	14552266.24	40°04'11.940"N	104°49'25.001"W	2.08	
14822.00	89.910	89.390	7542.62	7429.24	-550.84	7441.36	1689851.94	14552267.42	40°04'11.950"N	104°49'23.870"W	0.26	
14910.00	92.310	89.890	7540.92	7517.21	-550.29	7529.33	1689939.88	14552268.12	40°04'11.955"N	104°49'22.738"W	2.79	
14997.00	90.830	89.890	7538.54	7604.16	-550.12	7616.30	1690026.81	14552268.44	40°04'11.956"N	104°49'21.619"W	1.70	
15085.00	90.980	89.810	7537.15	7692.14	-549.89	7704.28	1690114.76	14552268.82	40°04'11.958"N	104°49'20.488"W	0.19	
15172.00	92.000	89.440	7534.88	7779.10	-549.32	7791.25	1690201.69	14552269.53	40°04'11.963"N	104°49'19.369"W	1.25	
15259.00	92.310	88.460	7531.61	7866.04	-547.73	7878.17	1690288.58	14552271.27	40°04'11.979"N	104°49'18.251"W	1.18	
15347.00	91.200	89.080	7528.92	7953.99	-545.84	7966.11	1690376.48	14552273.31	40°04'11.997"N	104°49'17.120"W	1.44	
15434.00	90.430	89.240	7527.68	8040.98	-544.56	8053.09	1690463.42	14552274.73	40°04'12.010"N	104°49'16.001"W	0.90	
15522.00	91.020	88.970	7526.57	8128.98	-543.19	8141.07	1690551.36	14552276.25	40°04'12.023"N	104°49'14.869"W	0.74	
15609.00	90.000	89.190	7525.79	8215.97	-541.79	8228.06	1690638.31	14552277.79	40°04'12.036"N	104°49'13.750"W	1.20	
15697.00	90.090	89.440	7525.72	8303.97	-540.74	8316.05	1690726.27	14552278.99	40°04'12.047"N	104°49'12.618"W	0.30	
15784.00	91.200	89.230	7524.74	8390.96	-539.73	8403.04	1690813.22	14552280.15	40°04'12.056"N	104°49'11.500"W	1.30	
15872.00	90.280	88.680	7523.61	8478.95	-538.12	8491.02	1690901.16	14552281.90	40°04'12.072"N	104°49'10.368"W	1.22	
15959.00	89.820	88.340	7523.53	8565.95	-535.86	8577.99	1690988.09	14552284.31	40°04'12.094"N	104°49'09.249"W	0.66	
16047.00	91.020	88.900	7522.89	8653.94	-533.74	8665.96	1691076.02	14552286.58	40°04'12.115"N	104°49'08.118"W	1.50	
16134.00	91.230	87.560	7521.18	8740.92	-531.06	8752.90	1691162.92	14552289.41	40°04'12.141"N	104°49'06.999"W	1.56	
16222.00	92.370	88.010	7518.41	8828.86	-527.66	8840.79	1691250.77	14552292.95	40°04'12.174"N	104°49'05.869"W	1.39	
16309.00	91.330	88.340	7515.60	8915.80	-524.89	8927.69	1691337.64	14552295.87	40°04'12.201"N	104°49'04.751"W	1.25	
16396.00	87.600	87.170	7516.42	9002.76	-521.48	9014.61	1691424.51	14552299.42	40°04'12.235"N	104°49'03.633"W	4.49	
16484.00	88.250	87.780	7519.60	9090.68	-517.61	9102.46	1691512.32	14552303.44	40°04'12.272"N	104°49'02.503"W	1.01	
16572.00	89.420	89.060	7521.39	9178.66	-515.18	9190.41	1691600.23	14552306.02	40°04'12.296"N	104°49'01.372"W	1.97	
16659.00	90.460	89.750	7521.48	9265.65	-514.28	9277.40	1691687.19	14552307.06	40°04'12.305"N	104°49'00.253"W	1.43	
16746.00	91.970	89.930	7519.64	9352.62	-514.03	9364.38	1691774.13	14552307.45	40°04'12.307"N	104°48'59.134"W	1.75	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#31 LEINWEBER FED 4C-8HZ(458'FNL & 335'FEL,SEC.11)
Area	COLORADO	Well	LEINWEBER FED 4C-8HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	LEINWEBER FED 4C-8HZ AWB
Facility	SEC.11-T1N-R67W		

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
16834.00	90.430	89.450	7517.80	9440.58	-513.56	9452.36	1691862.07	14552308.08	40°04'12.311"N	104°48'58.002"W	1.83	
16921.00	90.030	88.880	7517.45	9527.58	-512.29	9539.35	1691949.02	14552309.49	40°04'12.323"N	104°48'56.883"W	0.80	
17008.00	90.460	87.730	7517.07	9614.58	-509.72	9626.30	1692035.94	14552312.21	40°04'12.348"N	104°48'55.765"W	1.41	
17096.00	88.060	87.840	7518.21	9702.55	-506.32	9714.23	1692123.82	14552315.76	40°04'12.382"N	104°48'54.634"W	2.73	
17183.00	88.610	88.350	7520.74	9789.50	-503.43	9801.14	1692210.70	14552318.80	40°04'12.410"N	104°48'53.516"W	0.86	
17271.00	90.740	89.070	7521.24	9877.49	-501.45	9889.11	1692298.63	14552320.92	40°04'12.429"N	104°48'52.384"W	2.55	
17358.00	89.910	89.510	7520.74	9964.49	-500.37	9976.10	1692385.58	14552322.15	40°04'12.440"N	104°48'51.265"W	1.08	
17446.00	89.720	88.740	7521.03	10052.49	-499.02	10064.09	1692473.53	14552323.64	40°04'12.452"N	104°48'50.134"W	0.90	
17533.00	90.180	88.440	7521.10	10139.48	-496.88	10151.06	1692560.47	14552325.93	40°04'12.473"N	104°48'49.015"W	0.63	
17621.00	89.570	87.000	7521.30	10227.46	-493.38	10238.99	1692648.35	14552329.57	40°04'12.508"N	104°48'47.884"W	1.78	
17708.00	88.030	86.840	7523.12	10314.39	-488.71	10325.84	1692735.16	14552334.39	40°04'12.553"N	104°48'46.767"W	1.78	
17796.00	88.610	88.500	7525.70	10402.33	-485.13	10413.73	1692823.01	14552338.11	40°04'12.588"N	104°48'45.636"W	2.00	
17883.00	89.940	89.070	7526.80	10489.32	-483.29	10500.70	1692909.94	14552340.10	40°04'12.606"N	104°48'44.518"W	1.66	
17971.00	90.060	89.200	7526.80	10577.32	-481.96	10588.69	1692997.89	14552341.58	40°04'12.619"N	104°48'43.386"W	0.20	
18057.00	90.340	88.490	7526.50	10663.32	-480.23	10674.67	1693083.84	14552343.46	40°04'12.636"N	104°48'42.280"W	0.89	
18066.00†	90.359	88.410	7526.44	10672.32	-479.98	10683.67	1693092.83	14552343.72	40°04'12.638"N	104°48'42.164"W	0.91	ENTER RADIUS TOE (1017'FNL & 343'FEL,SEC.07) 40.0701772 -104.8117122
18144.00	90.520	87.720	7525.85	10750.31	-477.35	10761.62	1693170.75	14552346.48	40°04'12.664"N	104°48'41.161"W	0.91	
18231.00	90.650	89.640	7524.96	10837.30	-475.35	10848.59	1693257.68	14552348.63	40°04'12.683"N	104°48'40.043"W	2.21	
18319.00	90.460	90.290	7524.11	10925.28	-475.29	10936.58	1693345.64	14552348.83	40°04'12.683"N	104°48'38.911"W	0.77	
18406.00	92.030	90.550	7522.21	11012.22	-475.93	11023.56	1693432.58	14552348.34	40°04'12.677"N	104°48'37.792"W	1.83	
18494.00	93.080	90.330	7518.29	11100.10	-476.60	11111.47	1693520.45	14552347.82	40°04'12.670"N	104°48'36.661"W	1.22	
18581.00	93.580	89.760	7513.24	11186.94	-476.67	11198.32	1693607.27	14552347.89	40°04'12.669"N	104°48'35.544"W	0.87	
18593.00	93.420	89.560	7512.51	11198.91	-476.60	11210.30	1693619.24	14552347.98	40°04'12.669"N	104°48'35.390"W	2.13	LAST BHGE MWD+IFR1+MSA SURVEY
18656.00	93.420	89.560	7508.75	11261.80	-476.12	11273.18	1693682.10	14552348.57	40°04'12.674"N	104°48'34.581"W	0.00	PTB (1013'FNL & 246'FWL,SEC.08) 40.0701871 -104.8096059

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#31 LEINWEBER FED 4C-8HZ(458'FNL & 335'FEL,SEC.11)
Area	COLORADO	Well	LEINWEBER FED 4C-8HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	LEINWEBER FED 4C-8HZ AWB
Facility	SEC.11-T1N-R67W		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.07-T1N-R66W	-3.00	0.30	-45.09	1682367.57	14552805.72	40°04'17.407"N	104°51'00.166"W	polygon
SEC.12-T1N-R67W	-3.00	0.30	-45.09	1682367.57	14552805.72	40°04'17.407"N	104°51'00.166"W	polygon
LEINWEBER FED 4C-8HZ BHL REV-1(1018'FNL & 249'FWL,SEC.08)	7501.00	-480.54	11275.67	1693684.60	14552344.16	40°04'12.630"N	104°48'34.549"W	point
LEINWEBER FED 4C-8HZ HEEL REV-1(1143'FNL & 337'FWL,SEC.12)	7582.00	-686.36	679.83	1683093.35	14552120.56	40°04'10.621"N	104°50'50.842"W	point
LEINWEBER FED 4C-8HZ HEEL REV-2(1143'FNL & 352'FWL,SEC.12)	7582.00	-686.36	694.83	1683108.35	14552120.59	40°04'10.621"N	104°50'50.649"W	point
LEINWEBER FED 4C-8HZ LANDBOX	7582.00	0.00	0.00	1682412.64	14552805.50	40°04'17.404"N	104°50'59.586"W	polygon
LEINWEBER FED 4C-8HZ RADIUS 1	7582.00	-862.43	347.74	1682761.70	14551944.00	40°04'08.881"N	104°50'55.113"W	polygon
LEINWEBER FED 4C-8HZ RADIUS 2	7582.00	-784.01	11029.96	1693439.50	14552040.40	40°04'09.632"N	104°48'37.711"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: LEINWEBER FED 4C-8HZ AWB				Ref Wellpath: LEINWEBER FED 4C-8HZ AWP	
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment		Wellbore
17.00	1810.00	Custom APC ISCWSA REV 2 MWD+IFR1 (approximation)	Custom APC ISCWSA Rev-2 MWD+IFR1 <130 - 1810>		LEINWEBER FED 4C-8HZ AWB
1810.00	18593.00	Custom APC ISCWSA REV 2 MWD+IFR1+MSA (approximation)	Custom APC ISCWSA Rev-2 MWD+IFR1+MSA <1919 - 18593>		LEINWEBER FED 4C-8HZ AWB
18593.00	18656.00	Blind Drilling (std)	Projection to bit		LEINWEBER FED 4C-8HZ AWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#31 LEINWEBER FED 4C-8HZ(458'FNL & 335'FEL,SEC.11)
Area	COLORADO	Well	LEINWEBER FED 4C-8HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	LEINWEBER FED 4C-8HZ AWB
Facility	SEC.11-T1N-R67W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
130.00	1.580	104.690	129.99	FIRST SURFACE MWD+IFR1 SURVEY
1810.00	17.010	177.030	1763.57	LAST SURFACE MWD+IFR1 SURVEY
1919.00	15.810	177.810	1868.13	FIRST BHGE MWD+IFR1+MSA SURVEY
2063.00	15.601	181.306	2006.76	ENTER LANDBOX (860'FNL & 307'FEL,SEC.11) 40.0703963 -104.8497867
6903.00	2.307	99.384	6813.46	KOP
7977.00	86.800	91.540	7573.88	LANDING (1168'FNL & 267'FWL,SEC.12) 40.0695532 -104.8477351
8156.00	89.546	89.017	7577.22	EXIT RADIUS HEEL (1169'FNL & 446'FWL,SEC.12) 40.0695511 -104.8470958
18066.00	90.359	88.410	7526.44	ENTER RADIUS TOE (1017'FNL & 343'FEL,SEC.07) 40.0701772 -104.8117122
18593.00	93.420	89.560	7512.51	LAST BHGE MWD+IFR1+MSA SURVEY
18656.00	93.420	89.560	7508.75	PTB (1013'FNL & 246'FWL,SEC.08) 40.0701871 -104.8096059