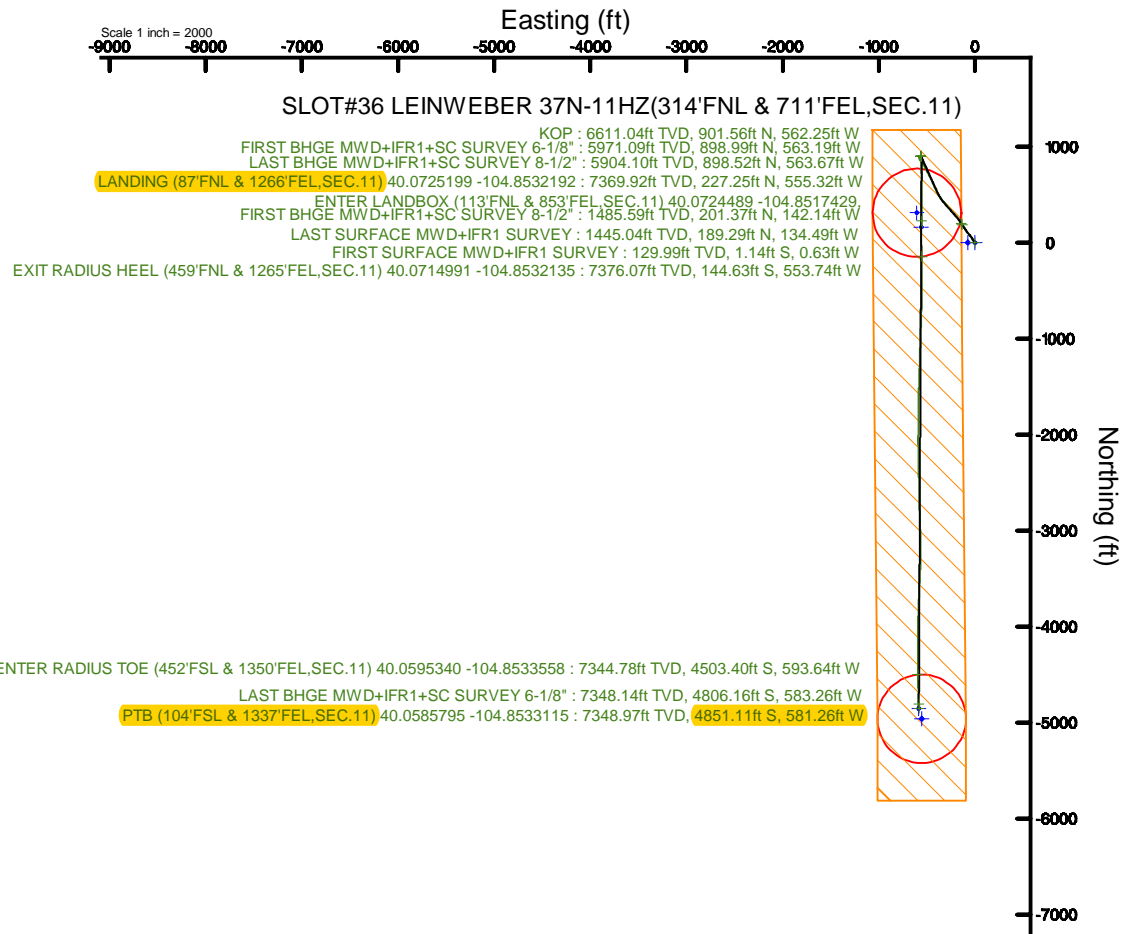
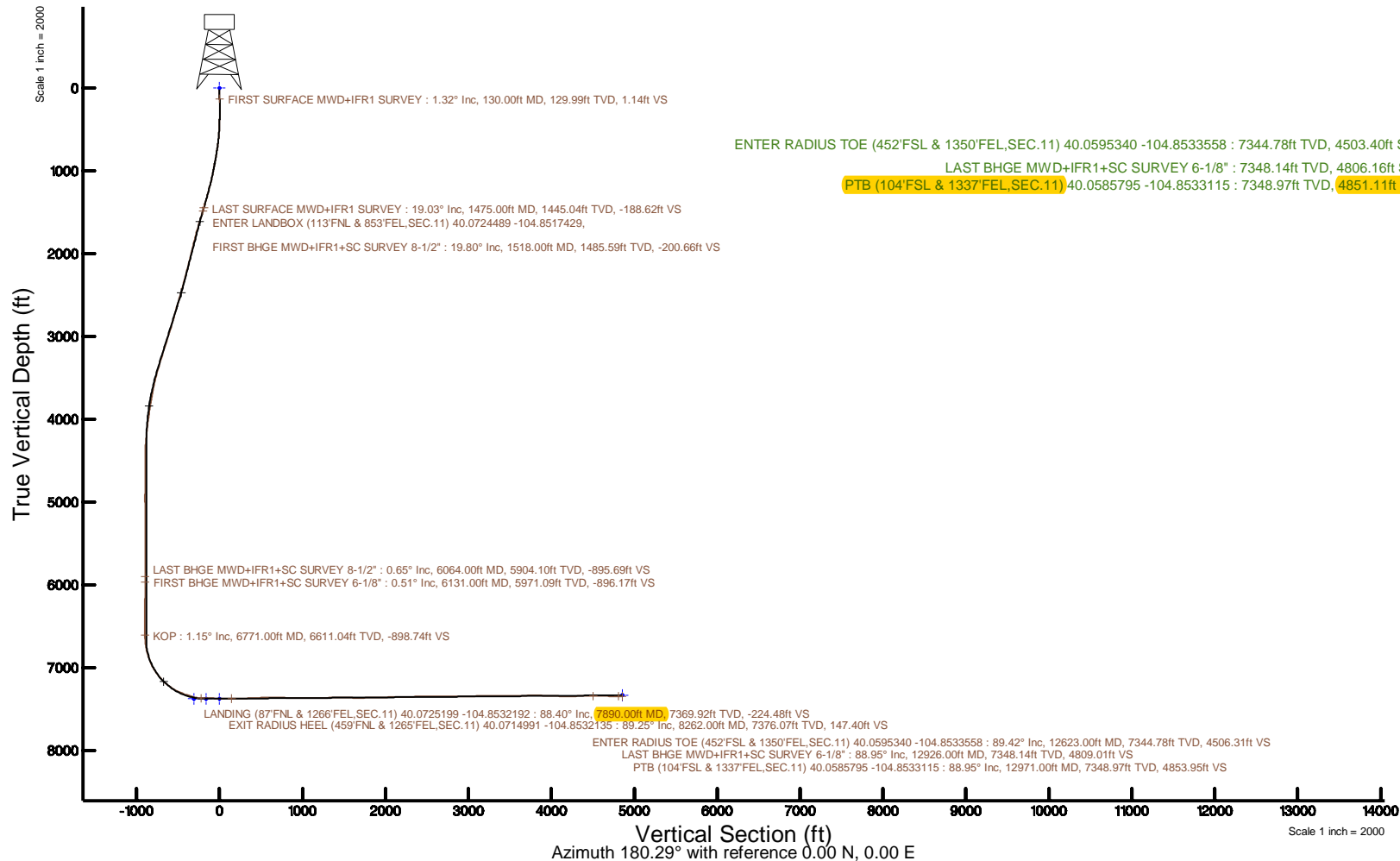


Location:	COLORADO	Slot:	SLOT#36 LEINWEBER 37N-11HZ(314F.N. & 711FEL,SEC.11)
Field:	WELD COUNTY (UTM/TRUE NORTH)	Well:	LEINWEBER 37N-11HZ
Facility:	SEC.11-T1N-R67W	Wellbore:	LEINWEBER 37N-11HZ PWB
Plot reference wellbore is LEINWEBER 37N-11HZ PWP Rev-A.0		Grid System: NAD83 / UTM Zone 13 North, US feet	
True vertical depths are referenced to Xreme 22 (17) (RT)		* = Wellpath was transformed from a different geoidic datum	
Measured depths are referenced to Xreme 22 (17) (RT)		North Reference: True north	
Xreme 22 (17) to Mean Sea Level: 4982 feet		Scale: True distance	
Mean Sea Level to Mud line (At Slot: SLOT#36 LEINWEBER 37N-11HZ(314F.N. & 711FEL,SEC.11)): 0 feet		Depths are in feet	
Coordinates are in feet referenced to Slot		Created by: painseir on 2018-02-13	
		Database: WA_DEN_Anadarko_Defn	



Actual Wellpath Report

LEINWEBER 37N-11HZ AWP

Page 1 of 7

REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#36 LEINWEBER 37N-11HZ(314'FNL & 711'FEL,SEC.11)
Area	COLORADO	Well	LEINWEBER 37N-11HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	LEINWEBER 37N-11HZ 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	2/13/2018 at 10:52 AM
Convergence at slot	0.10° East	Database/Source file	WA_DEN_Anadarko_Defn/LEINWEBER_37N-11HZ_AWP.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	401.65	1078.66	1682034.73	14552948.70	40°04'18.826"N	104°51'04.446"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	4982.00ft
Horizontal Reference Pt	Slot	Xtreme 22 (17') (RT) to Mean Sea Level	4982.00ft
Vertical Reference Pt	Xtreme 22 (17') (RT)	Xtreme 22 (17') (RT) to Mud Line at Slot (SLOT#36 LEINWEBER 37N-11HZ(314'FNL & 711'FEL,SEC.11))	4982.00ft
MD Reference Pt	Xtreme 22 (17') (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	180.29°

REFERENCE WELLPATH IDENTIFICATION				
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)			Slot
Area	COLORADO			Well
Field	WELD COUNTY (UTM/TRUE NORTH)			Wellbore
Facility	SEC.11-T1N-R67W			LEINWEBER 37N-11HZ AWP

WELLPATH DATA (181 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	209.110	0.00	0.00	0.00	0.00	1682034.73	14552948.70	40°04'18.826"N	104°51'04.446"W	0.00	
17.00	0.000	209.110	17.00	0.00	0.00	0.00	1682034.73	14552948.70	40°04'18.826"N	104°51'04.446"W	0.00	
130.00	1.320	209.110	129.99	1.14	-1.14	-0.63	1682034.10	14552947.56	40°04'18.815"N	104°51'04.454"W	1.17	FIRST SURFACE MWD+IFR1 SURVEY
161.00	1.320	217.020	160.98	1.74	-1.73	-1.02	1682033.71	14552946.96	40°04'18.809"N	104°51'04.459"W	0.59	
193.00	1.140	230.550	192.97	2.24	-2.23	-1.49	1682033.24	14552946.47	40°04'18.804"N	104°51'04.465"W	1.06	
225.00	0.970	214.730	224.97	2.67	-2.66	-1.89	1682032.84	14552946.04	40°04'18.800"N	104°51'04.470"W	1.05	
256.00	0.700	241.720	255.97	2.97	-2.96	-2.21	1682032.53	14552945.73	40°04'18.797"N	104°51'04.474"W	1.52	
287.00	0.750	318.970	286.96	2.91	-2.90	-2.51	1682032.23	14552945.80	40°04'18.797"N	104°51'04.478"W	2.92	
319.00	1.230	320.380	318.96	2.49	-2.48	-2.86	1682031.87	14552946.22	40°04'18.802"N	104°51'04.483"W	1.50	
350.00	1.490	324.330	349.95	1.91	-1.89	-3.31	1682031.42	14552946.80	40°04'18.807"N	104°51'04.489"W	0.89	
382.00	1.980	326.970	381.94	1.11	-1.09	-3.85	1682030.88	14552947.60	40°04'18.815"N	104°51'04.496"W	1.55	
413.00	2.550	328.460	412.91	0.08	-0.05	-4.51	1682030.22	14552948.64	40°04'18.825"N	104°51'04.504"W	1.85	
445.00	3.080	334.880	444.87	-1.31	1.33	-5.24	1682029.48	14552950.02	40°04'18.839"N	104°51'04.513"W	1.92	
476.00	3.300	335.760	475.82	-2.87	2.90	-5.96	1682028.76	14552951.59	40°04'18.855"N	104°51'04.523"W	0.73	
508.00	3.740	332.410	507.76	-4.63	4.66	-6.82	1682027.90	14552953.35	40°04'18.872"N	104°51'04.534"W	1.52	
540.00	4.480	331.800	539.68	-6.65	6.69	-7.90	1682026.82	14552955.37	40°04'18.892"N	104°51'04.548"W	2.32	
572.00	4.970	336.460	571.57	-9.02	9.06	-9.04	1682025.67	14552957.74	40°04'18.916"N	104°51'04.562"W	1.94	
604.00	5.800	332.950	603.43	-11.72	11.77	-10.33	1682024.38	14552960.45	40°04'18.942"N	104°51'04.579"W	2.79	
636.00	6.810	332.240	635.24	-14.83	14.89	-11.95	1682022.76	14552963.57	40°04'18.973"N	104°51'04.600"W	3.17	
667.00	8.350	333.210	665.97	-18.46	18.53	-13.82	1682020.88	14552967.20	40°04'19.009"N	104°51'04.624"W	4.98	
699.00	9.270	332.420	697.59	-22.81	22.89	-16.06	1682018.63	14552971.55	40°04'19.052"N	104°51'04.653"W	2.90	
731.00	10.330	328.900	729.12	-27.54	27.63	-18.74	1682015.95	14552976.28	40°04'19.099"N	104°51'04.687"W	3.80	
763.00	10.850	326.350	760.58	-32.48	32.59	-21.89	1682012.79	14552981.24	40°04'19.148"N	104°51'04.728"W	2.19	
794.00	11.470	325.560	790.99	-37.44	37.56	-25.25	1682009.43	14552986.20	40°04'19.197"N	104°51'04.771"W	2.06	
826.00	12.040	325.740	822.32	-42.80	42.95	-28.93	1682005.74	14552991.58	40°04'19.250"N	104°51'04.818"W	1.78	
890.00	12.080	325.830	884.91	-53.82	54.00	-36.45	1681998.21	14553002.62	40°04'19.360"N	104°51'04.915"W	0.07	
921.00	12.390	324.510	915.20	-59.19	59.40	-40.20	1681994.45	14553008.00	40°04'19.413"N	104°51'04.963"W	1.35	
953.00	13.230	322.310	946.41	-64.87	65.09	-44.43	1681990.21	14553013.69	40°04'19.469"N	104°51'05.018"W	3.04	
985.00	14.280	322.400	977.49	-70.87	71.11	-49.08	1681985.55	14553019.70	40°04'19.529"N	104°51'05.077"W	3.28	
1017.00	14.240	320.200	1008.50	-76.99	77.26	-54.00	1681980.62	14553025.84	40°04'19.590"N	104°51'05.141"W	1.70	
1048.00	14.630	320.290	1038.52	-82.91	83.20	-58.95	1681975.67	14553031.77	40°04'19.648"N	104°51'05.204"W	1.26	
1080.00	14.850	319.230	1069.47	-89.10	89.42	-64.21	1681970.40	14553037.97	40°04'19.710"N	104°51'05.272"W	1.09	
1143.00	17.580	323.720	1129.96	-102.83	103.21	-75.11	1681959.47	14553051.74	40°04'19.846"N	104°51'05.412"W	4.77	
1175.00	17.840	325.830	1160.44	-110.75	111.16	-80.72	1681953.85	14553059.68	40°04'19.924"N	104°51'05.484"W	2.16	
1207.00	17.580	326.270	1190.93	-118.80	119.23	-86.16	1681948.40	14553067.74	40°04'20.004"N	104°51'05.554"W	0.91	
1271.00	17.890	322.750	1251.89	-134.61	135.10	-97.48	1681937.06	14553083.58	40°04'20.161"N	104°51'05.700"W	1.74	
1302.00	18.720	325.300	1281.32	-142.46	142.98	-103.19	1681931.34	14553091.44	40°04'20.239"N	104°51'05.773"W	3.72	
1334.00	18.760	327.230	1311.62	-150.98	151.52	-108.90	1681925.62	14553099.98	40°04'20.323"N	104°51'05.847"W	1.94	
1366.00	18.980	326.790	1341.90	-159.63	160.21	-114.54	1681919.97	14553108.65	40°04'20.409"N	104°51'05.919"W	0.82	
1397.00	18.900	325.560	1371.22	-167.96	168.56	-120.14	1681914.36	14553116.99	40°04'20.492"N	104°51'05.991"W	1.31	
1429.00	18.850	324.420	1401.50	-176.41	177.04	-126.07	1681908.41	14553125.46	40°04'20.576"N	104°51'06.068"W	1.16	
1461.00	18.810	326.000	1431.79	-184.86	185.52	-131.97	1681902.50	14553133.93	40°04'20.659"N	104°51'06.144"W	1.60	
1475.00	19.030	326.350	1445.04	-188.62	189.29	-134.49	1681899.97	14553137.69	40°04'20.697"N	104°51'06.176"W	1.77	LAST SURFACE MWD+IFR1 SURVEY
1518.00	19.800	328.910	1485.59	-200.66	201.37	-142.14	1681892.31	14553149.75	40°04'20.816"N	104°51'06.274"W	2.67	ENTER LANDBOX (113°FNL & 853°FEL, SEC.11) 40.0724489 -104.8517429, FIRST BHGE MWD+IFR1+SC SURVEY 8
1603.00	19.860	328.420	1565.55	-225.21	226.00	-157.14	1681877.28	14553174.34	40°04'21.059"N	104°51'06.467"W	0.21	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#36 LEINWEBER 37N-11HZ(314°FNL & 711°FEL,SEC.11)
Area	COLORADO	Well	LEINWEBER 37N-11HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	LEINWEBER 37N-11HZ AWB
Facility	SEC.11-T1N-R67W		

WELLPATH DATA (181 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
1688.00	20.250	326.060	1645.40	-249.63	250.50	-172.91	1681861.47	14553198.81	40°04'21.301"N	104°51'06.670"W	1.06	
1773.00	19.740	318.790	1725.29	-272.55	273.51	-190.58	1681843.76	14553221.78	40°04'21.529"N	104°51'06.898"W	2.98	
1858.00	18.770	317.500	1805.53	-293.34	294.39	-209.28	1681825.04	14553242.62	40°04'21.735"N	104°51'07.138"W	1.25	
1943.00	19.010	317.120	1885.95	-313.47	314.62	-227.94	1681806.36	14553262.81	40°04'21.935"N	104°51'07.378"W	0.32	
2028.00	18.150	315.290	1966.52	-332.93	334.17	-246.67	1681787.60	14553282.32	40°04'22.128"N	104°51'07.619"W	1.22	
2115.00	18.560	318.260	2049.10	-352.80	354.13	-265.42	1681768.82	14553302.24	40°04'22.326"N	104°51'07.860"W	1.17	
2202.00	18.520	320.990	2131.58	-373.78	375.20	-283.34	1681750.87	14553323.27	40°04'22.534"N	104°51'08.091"W	1.00	
2288.00	19.560	319.590	2212.88	-395.27	396.77	-301.27	1681732.92	14553344.81	40°04'22.747"N	104°51'08.321"W	1.32	
2375.00	18.770	317.830	2295.06	-416.64	418.24	-320.11	1681714.05	14553366.23	40°04'22.959"N	104°51'08.564"W	1.12	
2460.00	18.830	320.800	2375.52	-437.31	439.00	-337.96	1681696.17	14553386.96	40°04'23.164"N	104°51'08.793"W	1.13	
2548.00	19.670	325.000	2458.61	-460.36	462.14	-355.43	1681678.67	14553410.06	40°04'23.393"N	104°51'09.018"W	1.84	
2633.00	19.200	327.040	2538.76	-483.73	485.59	-371.24	1681662.82	14553433.47	40°04'23.625"N	104°51'09.221"W	0.97	
2720.00	18.440	332.590	2621.12	-507.88	509.81	-385.36	1681648.67	14553457.66	40°04'23.864"N	104°51'09.403"W	2.23	
2807.00	17.470	333.300	2703.88	-531.70	533.69	-397.56	1681636.43	14553481.51	40°04'24.100"N	104°51'09.560"W	1.14	
2893.00	17.880	334.290	2785.82	-555.07	557.12	-409.09	1681624.87	14553504.91	40°04'24.332"N	104°51'09.708"W	0.59	
2978.00	18.000	336.440	2866.69	-578.81	580.92	-420.00	1681613.93	14553528.68	40°04'24.567"N	104°51'09.849"W	0.79	
3065.00	18.780	337.310	2949.25	-604.00	606.16	-430.77	1681603.11	14553553.89	40°04'24.816"N	104°51'09.987"W	0.95	
3150.00	19.320	335.170	3029.59	-629.33	631.54	-441.96	1681591.89	14553579.25	40°04'25.067"N	104°51'10.131"W	1.04	
3235.00	19.520	333.970	3109.76	-654.79	657.06	-454.09	1681579.72	14553604.74	40°04'25.319"N	104°51'10.287"W	0.53	
3320.00	18.810	333.500	3190.04	-679.75	682.09	-466.44	1681567.34	14553629.73	40°04'25.566"N	104°51'10.446"W	0.85	
3405.00	18.840	332.970	3270.50	-704.18	706.58	-478.79	1681554.95	14553654.19	40°04'25.808"N	104°51'10.605"W	0.20	
3492.00	18.780	334.740	3352.85	-729.29	731.76	-491.15	1681542.55	14553679.34	40°04'26.057"N	104°51'10.764"W	0.66	
3579.00	17.190	334.160	3435.60	-753.47	755.99	-502.73	1681530.93	14553703.55	40°04'26.297"N	104°51'10.913"W	1.84	
3664.00	15.200	331.460	3517.22	-774.52	777.09	-513.53	1681520.10	14553724.62	40°04'26.505"N	104°51'11.052"W	2.50	
3749.00	13.290	329.110	3599.61	-792.64	795.26	-523.87	1681509.74	14553742.77	40°04'26.685"N	104°51'11.185"W	2.35	
3835.00	12.310	324.220	3683.47	-808.51	811.18	-534.31	1681499.28	14553758.66	40°04'26.842"N	104°51'11.319"W	1.70	
3919.00	11.870	326.450	3765.61	-822.92	825.65	-544.32	1681489.25	14553773.11	40°04'26.985"N	104°51'11.448"W	0.76	
4004.00	10.720	323.770	3848.96	-836.54	839.31	-553.82	1681479.73	14553786.75	40°04'27.120"N	104°51'11.570"W	1.49	
4089.00	10.340	327.480	3932.53	-849.30	852.12	-562.59	1681470.93	14553799.54	40°04'27.247"N	104°51'11.683"W	0.91	
4174.00	9.100	326.510	4016.31	-861.30	864.16	-570.40	1681463.11	14553811.56	40°04'27.366"N	104°51'11.783"W	1.47	
4259.00	7.480	331.620	4100.42	-871.74	874.63	-576.74	1681456.75	14553822.02	40°04'27.469"N	104°51'11.865"W	2.09	
4344.00	5.940	341.310	4184.84	-880.76	883.67	-580.78	1681452.70	14553831.04	40°04'27.559"N	104°51'11.917"W	2.24	
4429.00	4.190	349.000	4269.50	-887.96	890.88	-582.79	1681450.69	14553838.25	40°04'27.630"N	104°51'11.943"W	2.20	
4514.00	2.460	353.570	4354.36	-892.82	895.75	-583.58	1681449.88	14553843.11	40°04'27.678"N	104°51'11.953"W	2.06	
4599.00	0.810	316.080	4439.32	-895.06	897.99	-584.20	1681449.26	14553845.35	40°04'27.700"N	104°51'11.961"W	2.22	
4684.00	1.050	91.230	4524.31	-895.48	898.41	-583.84	1681449.62	14553845.77	40°04'27.704"N	104°51'11.956"W	2.03	
4768.00	0.770	73.420	4608.30	-895.63	898.55	-582.53	1681450.93	14553845.92	40°04'27.706"N	104°51'11.939"W	0.47	
4853.00	0.380	60.110	4693.30	-895.94	898.85	-581.74	1681451.72	14553846.22	40°04'27.709"N	104°51'11.929"W	0.48	
4938.00	0.560	29.790	4778.30	-896.44	899.36	-581.29	1681452.17	14553846.72	40°04'27.714"N	104°51'11.923"W	0.35	
5023.00	0.500	21.590	4863.29	-897.15	900.06	-580.95	1681452.51	14553847.43	40°04'27.721"N	104°51'11.919"W	0.11	
5108.00	1.450	90.380	4948.28	-897.49	900.40	-579.73	1681453.72	14553847.77	40°04'27.724"N	104°51'11.903"W	1.59	
5194.00	1.860	98.110	5034.25	-897.30	900.19	-577.26	1681456.19	14553847.57	40°04'27.722"N	104°51'11.872"W	0.54	
5278.00	1.590	98.060	5118.21	-896.96	899.84	-574.76	1681458.69	14553847.22	40°04'27.718"N	104°51'11.839"W	0.32	
5363.00	1.780	106.310	5203.17	-896.43	899.30	-572.33	1681461.13	14553846.68	40°04'27.713"N	104°51'11.808"W	0.36	
5448.00	1.170	119.590	5288.14	-895.65	898.50	-570.30	1681463.15	14553845.89	40°04'27.705"N	104°51'11.782"W	0.82	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)		Slot
Area	COLORADO		Well
Field	WELD COUNTY (UTM/TRUE NORTH)		Wellbore
Facility	SEC.11-T1N-R67W		LEINWEBER 37N-11HZ AWB

WELLPATH DATA (181 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
5533.00	0.850	110.020	5373.13	-895.01	897.86	-568.96	1681464.50	14553845.25	40°04'27.699"N	104°51'11.765"W	0.42	
5618.00	0.720	114.390	5458.12	-894.58	897.42	-567.88	1681465.58	14553844.81	40°04'27.694"N	104°51'11.751"W	0.17	
5703.00	0.570	91.320	5543.12	-894.35	897.19	-566.97	1681466.49	14553844.58	40°04'27.692"N	104°51'11.739"W	0.35	
5788.00	0.630	79.820	5628.11	-894.43	897.27	-566.09	1681467.37	14553844.66	40°04'27.693"N	104°51'11.728"W	0.16	
5873.00	0.420	77.710	5713.11	-894.58	897.41	-565.32	1681468.13	14553844.81	40°04'27.694"N	104°51'11.718"W	0.25	
5957.00	0.660	53.320	5797.10	-894.94	897.77	-564.63	1681468.82	14553845.16	40°04'27.698"N	104°51'11.709"W	0.39	
6064.00	0.650	51.370	5904.10	-895.69	898.52	-563.67	1681469.79	14553845.91	40°04'27.705"N	104°51'11.697"W	0.02	LAST BHGE MWD+IFR1+SC SURVEY 8-1/2"
6131.00	0.510	36.740	5971.09	-896.17	898.99	-563.19	1681470.26	14553846.39	40°04'27.710"N	104°51'11.691"W	0.30	FIRST BHGE MWD+IFR1+SC SURVEY 6-1/8"
6216.00	0.380	36.590	6056.09	-896.70	899.52	-562.80	1681470.65	14553846.92	40°04'27.715"N	104°51'11.686"W	0.15	
6301.00	0.420	341.420	6141.09	-897.22	900.04	-562.73	1681470.72	14553847.44	40°04'27.720"N	104°51'11.685"W	0.44	
6386.00	0.750	307.740	6226.09	-897.86	900.68	-563.27	1681470.18	14553848.07	40°04'27.727"N	104°51'11.692"W	0.55	
6478.00	1.310	278.340	6318.07	-898.37	901.20	-564.78	1681468.67	14553848.59	40°04'27.732"N	104°51'11.711"W	0.82	
6570.00	1.050	82.400	6410.06	-898.63	901.46	-564.99	1681468.46	14553848.86	40°04'27.734"N	104°51'11.714"W	2.54	
6661.00	0.870	85.440	6501.05	-898.81	901.63	-563.47	1681469.97	14553849.02	40°04'27.736"N	104°51'11.694"W	0.21	
6753.00	0.480	84.790	6593.04	-898.90	901.72	-562.39	1681471.05	14553849.12	40°04'27.737"N	104°51'11.680"W	0.42	
6771.00†	1.151	159.143	6611.04	-898.74	901.56	-562.25	1681471.19	14553848.95	40°04'27.735"N	104°51'11.679"W	6.23	KOP
6846.00	5.740	178.760	6685.89	-894.29	897.10	-561.90	1681471.55	14553844.50	40°04'27.691"N	104°51'11.674"W	6.23	
6939.00	9.700	180.220	6778.03	-881.80	884.61	-561.83	1681471.64	14553832.02	40°04'27.568"N	104°51'11.673"W	4.26	
7032.00	19.690	179.500	6867.87	-858.24	861.05	-561.73	1681471.79	14553808.47	40°04'27.335"N	104°51'11.672"W	10.74	
7124.00	22.840	177.840	6953.60	-824.89	827.70	-560.92	1681472.65	14553775.13	40°04'27.005"N	104°51'11.661"W	3.49	
7216.00	32.880	178.460	7034.83	-781.98	784.79	-559.57	1681474.07	14553732.23	40°04'26.581"N	104°51'11.644"W	10.92	
7309.00	39.150	176.370	7110.02	-727.41	730.20	-557.03	1681476.70	14553677.67	40°04'26.042"N	104°51'11.611"W	6.87	
7400.00	47.710	178.730	7176.05	-664.98	667.76	-554.46	1681479.37	14553615.26	40°04'25.425"N	104°51'11.578"W	9.57	
7493.00	53.060	178.790	7235.33	-593.39	596.16	-552.91	1681481.04	14553543.69	40°04'24.717"N	104°51'11.558"W	5.75	
7585.00	63.740	181.320	7283.47	-515.15	517.92	-553.09	1681481.00	14553465.49	40°04'23.944"N	104°51'11.561"W	11.84	
7678.00	70.440	180.260	7319.65	-429.54	432.32	-554.25	1681479.98	14553379.91	40°04'23.098"N	104°51'11.575"W	7.28	
7762.00	72.530	179.650	7346.33	-349.90	352.67	-554.18	1681480.18	14553300.30	40°04'22.311"N	104°51'11.575"W	2.58	
7848.00	80.960	180.830	7366.03	-266.27	269.04	-554.55	1681479.95	14553216.70	40°04'21.485"N	104°51'11.579"W	9.89	
7890.00	88.400	181.280	7369.92	-224.48	227.25	-555.32	1681479.25	14553174.93	40°04'21.072"N	104°51'11.589"W	17.75	LANDING (87°FNL & 1266°FEL, SEC.11) 40.0725199 -104.8532192
7932.00	89.200	181.300	7370.80	-182.50	185.27	-556.26	1681478.38	14553132.97	40°04'20.657"N	104°51'11.601"W	1.91	
8018.00	89.140	180.100	7372.04	-96.51	99.29	-557.31	1681477.47	14553047.02	40°04'19.807"N	104°51'11.615"W	1.40	
8103.00	89.080	179.660	7373.36	-11.52	14.30	-557.14	1681477.79	14552962.06	40°04'18.967"N	104°51'11.613"W	0.52	
8190.00	88.890	178.540	7374.91	75.45	-72.67	-555.77	1681479.30	14552875.13	40°04'18.108"N	104°51'11.595"W	1.31	
8262.00†	89.254	178.227	7376.07	147.40	-144.63	-553.74	1681481.45	14552803.20	40°04'17.397"N	104°51'11.569"W	0.67	EXIT RADIUS HEEL (459°FNL & 1265°FEL, SEC.11) 40.0714991 -104.8532135
8275.00	89.320	178.170	7376.23	160.39	-157.63	-553.33	1681481.88	14552790.21	40°04'17.268"N	104°51'11.564"W	0.67	
8360.00	91.790	180.400	7375.41	245.36	-242.60	-552.27	1681483.09	14552705.27	40°04'16.428"N	104°51'11.550"W	3.91	
8445.00	92.010	180.110	7372.59	330.31	-327.56	-552.65	1681482.85	14552620.35	40°04'15.589"N	104°51'11.555"W	0.43	
8531.00	92.590	180.020	7369.14	416.24	-413.49	-552.74	1681482.90	14552534.45	40°04'14.740"N	104°51'11.556"W	0.68	
8616.00	92.130	180.420	7365.64	501.17	-498.41	-553.07	1681482.71	14552449.56	40°04'13.901"N	104°51'11.560"W	0.72	
8701.00	90.220	181.000	7363.90	586.14	-583.38	-554.12	1681481.80	14552364.62	40°04'13.061"N	104°51'11.574"W	2.35	
8786.00	89.780	181.510	7363.90	671.13	-668.36	-555.99	1681480.08	14552279.67	40°04'12.221"N	104°51'11.598"W	0.79	
8873.00	88.710	181.190	7365.04	758.11	-755.33	-558.04	1681478.18	14552192.74	40°04'11.362"N	104°51'11.624"W	1.28	
8958.00	88.580	182.850	7367.05	843.04	-840.25	-561.03	1681475.33	14552107.85	40°04'10.522"N	104°51'11.662"W	1.96	
9043.00	89.350	182.050	7368.59	927.97	-925.16	-564.66	1681471.84	14552022.97	40°04'09.683"N	104°51'11.709"W	1.31	
9128.00	89.450	181.630	7369.48	1012.93	-1010.11	-567.39	1681469.25	14551938.05	40°04'08.844"N	104°51'11.744"W	0.51	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#36 LEINWEBER 37N-11HZ(314'FNL & 711'FEL,SEC.11)
Area	COLORADO	Well	LEINWEBER 37N-11HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	LEINWEBER 37N-11HZ AWB
Facility	SEC.11-T1N-R67W		

WELLPATH DATA (181 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
9213.00	90.060	181.900	7369.84	1097.90	-1095.07	-570.01	1681466.78	14551853.12	40°04'08.004"N	104°51'11.778"W	0.78	
9298.00	90.990	181.690	7369.06	1182.87	-1180.02	-572.67	1681464.26	14551768.19	40°04'07.165"N	104°51'11.812"W	1.12	
9383.00	91.750	181.930	7367.03	1267.81	-1264.95	-575.36	1681461.72	14551683.29	40°04'06.325"N	104°51'11.847"W	0.94	
9470.00	91.230	181.520	7364.77	1354.75	-1351.88	-577.97	1681459.24	14551596.39	40°04'05.466"N	104°51'11.880"W	0.76	
9556.00	90.120	182.010	7363.76	1440.72	-1437.84	-580.62	1681456.74	14551510.47	40°04'04.617"N	104°51'11.914"W	1.41	
9641.00	89.290	181.880	7364.19	1525.68	-1522.79	-583.51	1681454.00	14551425.55	40°04'03.777"N	104°51'11.951"W	0.99	
9726.00	88.340	181.710	7365.95	1610.63	-1607.72	-586.17	1681451.48	14551340.64	40°04'02.938"N	104°51'11.985"W	1.14	
9811.00	90.550	180.350	7366.78	1695.61	-1692.70	-587.70	1681450.09	14551255.70	40°04'02.098"N	104°51'12.005"W	3.05	
9898.00	91.360	180.200	7365.33	1782.60	-1779.69	-588.11	1681449.82	14551168.74	40°04'01.239"N	104°51'12.010"W	0.95	
9983.00	91.480	180.430	7363.22	1867.57	-1864.66	-588.58	1681449.50	14551083.81	40°04'00.399"N	104°51'12.016"W	0.31	
10068.00	91.390	180.650	7361.09	1952.55	-1949.63	-589.38	1681448.84	14550998.87	40°03'59.559"N	104°51'12.027"W	0.28	
10153.00	91.600	181.020	7358.87	2037.51	-2034.59	-590.62	1681447.74	14550913.94	40°03'58.720"N	104°51'12.043"W	0.50	
10237.00	91.570	178.070	7356.55	2121.46	-2118.55	-589.95	1681448.55	14550830.02	40°03'57.890"N	104°51'12.034"W	3.51	
10322.00	91.570	179.020	7354.22	2206.39	-2203.49	-587.80	1681450.85	14550745.12	40°03'57.051"N	104°51'12.006"W	1.12	
10407.00	90.310	178.590	7352.83	2291.35	-2288.45	-586.02	1681452.76	14550660.18	40°03'56.211"N	104°51'11.983"W	1.57	
10494.00	90.620	179.260	7352.12	2378.32	-2375.43	-584.39	1681454.54	14550573.24	40°03'55.351"N	104°51'11.962"W	0.85	
10579.00	90.520	179.120	7351.27	2463.30	-2460.42	-583.19	1681455.88	14550488.29	40°03'54.512"N	104°51'11.947"W	0.20	
10664.00	90.180	179.340	7350.75	2548.29	-2545.41	-582.05	1681457.17	14550403.34	40°03'53.672"N	104°51'11.932"W	0.48	
10749.00	90.310	178.670	7350.39	2633.26	-2630.40	-580.57	1681458.78	14550318.39	40°03'52.832"N	104°51'11.913"W	0.80	
10834.00	90.310	178.660	7349.93	2718.23	-2715.37	-578.59	1681460.90	14550233.45	40°03'51.992"N	104°51'11.888"W	0.01	
10919.00	90.620	178.260	7349.24	2803.18	-2800.34	-576.31	1681463.33	14550148.52	40°03'51.152"N	104°51'11.858"W	0.60	
11004.00	90.680	178.150	7348.28	2888.12	-2885.29	-573.65	1681466.13	14550063.60	40°03'50.313"N	104°51'11.824"W	0.15	
11089.00	90.680	178.200	7347.27	2973.06	-2970.24	-570.94	1681468.98	14549978.69	40°03'49.473"N	104°51'11.789"W	0.06	
11173.00	90.680	177.970	7346.27	3056.99	-3054.19	-568.13	1681471.93	14549894.78	40°03'48.644"N	104°51'11.753"W	0.27	
11258.00	90.680	180.060	7345.26	3141.96	-3139.17	-566.67	1681473.53	14549809.84	40°03'47.804"N	104°51'11.734"W	2.46	
11343.00	90.150	178.310	7344.65	3226.94	-3224.15	-565.46	1681474.88	14549724.89	40°03'46.964"N	104°51'11.719"W	2.15	
11428.00	90.960	182.480	7343.82	3311.91	-3309.13	-566.05	1681474.44	14549639.95	40°03'46.124"N	104°51'11.726"W	5.00	
11515.00	90.800	182.650	7342.49	3398.83	-3396.03	-569.94	1681470.69	14549553.08	40°03'45.266"N	104°51'11.776"W	0.27	
11600.00	90.250	182.300	7341.71	3483.77	-3480.95	-573.61	1681467.16	14549468.19	40°03'44.426"N	104°51'11.823"W	0.77	
11685.00	90.710	182.440	7341.00	3568.71	-3565.87	-577.13	1681463.79	14549383.29	40°03'43.587"N	104°51'11.869"W	0.57	
11772.00	90.890	182.930	7339.78	3655.62	-3652.77	-581.20	1681459.86	14549296.43	40°03'42.729"N	104°51'11.921"W	0.60	
11857.00	90.520	182.270	7338.74	3740.55	-3737.67	-585.06	1681456.15	14549211.55	40°03'41.889"N	104°51'11.971"W	0.89	
11942.00	89.850	181.860	7338.46	3825.50	-3822.62	-588.12	1681453.23	14549126.63	40°03'41.050"N	104°51'12.010"W	0.92	
12027.00	88.800	181.560	7339.46	3910.47	-3907.57	-590.66	1681450.84	14549041.71	40°03'40.210"N	104°51'12.042"W	1.28	
12112.00	88.030	180.960	7341.81	3995.42	-3992.52	-592.52	1681449.11	14548956.79	40°03'39.371"N	104°51'12.066"W	1.15	
12199.00	87.600	180.270	7345.13	4082.36	-4079.45	-593.46	1681448.32	14548869.90	40°03'38.512"N	104°51'12.078"W	0.93	
12284.00	89.780	180.010	7347.07	4167.33	-4164.42	-593.66	1681448.26	14548784.96	40°03'37.672"N	104°51'12.081"W	2.58	
12368.00	90.740	179.900	7346.69	4251.33	-4248.42	-593.60	1681448.46	14548700.99	40°03'36.842"N	104°51'12.080"W	1.15	
12453.00	91.110	180.140	7345.32	4336.32	-4333.41	-593.63	1681448.58	14548616.04	40°03'36.002"N	104°51'12.081"W	0.52	
12539.00	90.090	179.930	7344.42	4422.31	-4419.40	-593.68	1681448.67	14548530.08	40°03'35.152"N	104°51'12.081"W	1.21	
12623.00	89.420	180.020	7344.78	4506.31	-4503.40	-593.64	1681448.85	14548446.11	40°03'34.322"N	104°51'12.081"W	0.80	ENTER RADIUS TOE (452'FSL & 1350'FEL,SEC.11) 40.0595340 -104.8533558
12709.00	90.430	178.190	7344.89	4592.28	-4589.38	-592.30	1681450.33	14548360.17	40°03'33.473"N	104°51'12.063"W	2.43	
12793.00	88.950	177.730	7345.35	4676.21	-4673.33	-589.31	1681453.46	14548276.26	40°03'32.643"N	104°51'12.025"W	1.85	
12880.00	88.640	177.150	7347.18	4763.08	-4760.22	-585.43	1681457.49	14548189.41	40°03'31.784"N	104°51'11.975"W	0.76	
12926.00	88.950	177.450	7348.14	4809.01	-4806.16	-583.26	1681459.73	14548143.49	40°03'31.330"N	104°51'11.947"W	0.94	LAST BHGE MWD+IFR1+SC SURVEY 6-1/8"

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#36 LEINWEBER 37N-11HZ(314'FNL & 711'FEL,SEC.11)
Area	COLORADO	Well	LEINWEBER 37N-11HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	LEINWEBER 37N-11HZ AWB
Facility	SEC.11-T1N-R67W		

WELLPATH DATA (181 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
12971.00	88.950	177.450	7348.97	4853.95	-4851.11	-581.26	1681461.81	14548098.57	40°03'30.886"N	104°51'11.921"W	0.00	PTB (104°FSL & 1337°FEL,SEC.11) 40.0585795 -104.8533115

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.11-T1N-R67W	0.00	0.71	-74.71	1681960.05	14552949.28	40°04'18.833"N	104°51'05.407"W	polygon
LEINWEBER 37N-11HZ BHL REV-1(100°FSL & 1340°FEL,SEC.11)	7335.00	-4854.57	-584.20	1681458.87	14548095.10	40°03'30.852"N	104°51'11.959"W	point
LEINWEBER 37N-11HZ HEEL REV-1(150°FNL & 1268°FEL,SEC.11)	7379.00	164.26	-559.18	1681475.50	14553111.96	40°04'20.449"N	104°51'11.639"W	point
LEINWEBER 37N-11HZ LANDBOX	7379.00	0.00	0.00	1682034.73	14552948.70	40°04'18.826"N	104°51'04.446"W	polygon
LEINWEBER 37N-11HZ RADIUS 1	7379.00	311.94	-604.05	1681430.40	14553259.50	40°04'21.909"N	104°51'12.216"W	polygon
LEINWEBER 37N-11HZ RADIUS 2	7379.00	-4961.36	-553.64	1681489.60	14547988.40	40°03'29.797"N	104°51'11.566"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: LEINWEBER 37N-11HZ AWB					Ref Wellpath: LEINWEBER 37N-11HZ AWP		
Start MD [ft]	End MD [ft]	Positional Uncertainty Model			Log Name/Comment		Wellbore
17.00	1475.00	Custom APC ISCWSA REV 2 MWD+IFR1 (approximation)			Custom APC ISCWSA Rev-2 MWD+IFR1 <130 - 1475>		LEINWEBER 37N-11HZ AWB
1475.00	6064.00	Custom APC ISCWSA REV 2 MWD+IFR1+SC (approximation)			BHGE Custom APC ISCWSA Rev-2 MWD+IFR1+SC 8-1/2" <1518 - 6064>		LEINWEBER 37N-11HZ AWB
6064.00	12926.00	Custom APC ISCWSA REV 2 MWD+IFR1+SC (approximation)			BHGE Custom APC ISCWSA Rev-2 MWD+IFR1+SC 6-1/8" <6131 - 12926>		LEINWEBER 37N-11HZ AWB
12926.00	12971.00	Blind Drilling (std)			Projection to bit		LEINWEBER 37N-11HZ AWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#36 LEINWEBER 37N-11HZ(314'FNL & 711'FEL,SEC.11)
Area	COLORADO	Well	LEINWEBER 37N-11HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	LEINWEBER 37N-11HZ AWB
Facility	SEC.11-T1N-R67W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
130.00	1.320	209.110	129.99	FIRST SURFACE MWD+IFR1 SURVEY
1475.00	19.030	326.350	1445.04	LAST SURFACE MWD+IFR1 SURVEY
1518.00	19.800	328.910	1485.59	ENTER LANDBOX (113'FNL & 853'FEL,SEC.11) 40.0724489 -104.8517429, FIRST BHGE MWD+IFR1+SC SURVEY 8-1/2"
6064.00	0.650	51.370	5904.10	LAST BHGE MWD+IFR1+SC SURVEY 8-1/2"
6131.00	0.510	36.740	5971.09	FIRST BHGE MWD+IFR1+SC SURVEY 6-1/8"
6771.00	1.151	159.143	6611.04	KOP
7890.00	88.400	181.280	7369.92	LANDING (87'FNL & 1266'FEL,SEC.11) 40.0725199 -104.8532192
8262.00	89.254	178.227	7376.07	EXIT RADIUS HEEL (459'FNL & 1265'FEL,SEC.11) 40.0714991 -104.8532135
12623.00	89.420	180.020	7344.78	ENTER RADIUS TOE (452'FSL & 1350'FEL,SEC.11) 40.0595340 -104.8533558
12926.00	88.950	177.450	7348.14	LAST BHGE MWD+IFR1+SC SURVEY 6-1/8"
12971.00	88.950	177.450	7348.97	PTB (104'FSL & 1337'FEL,SEC.11) 40.0585795 -104.8533115