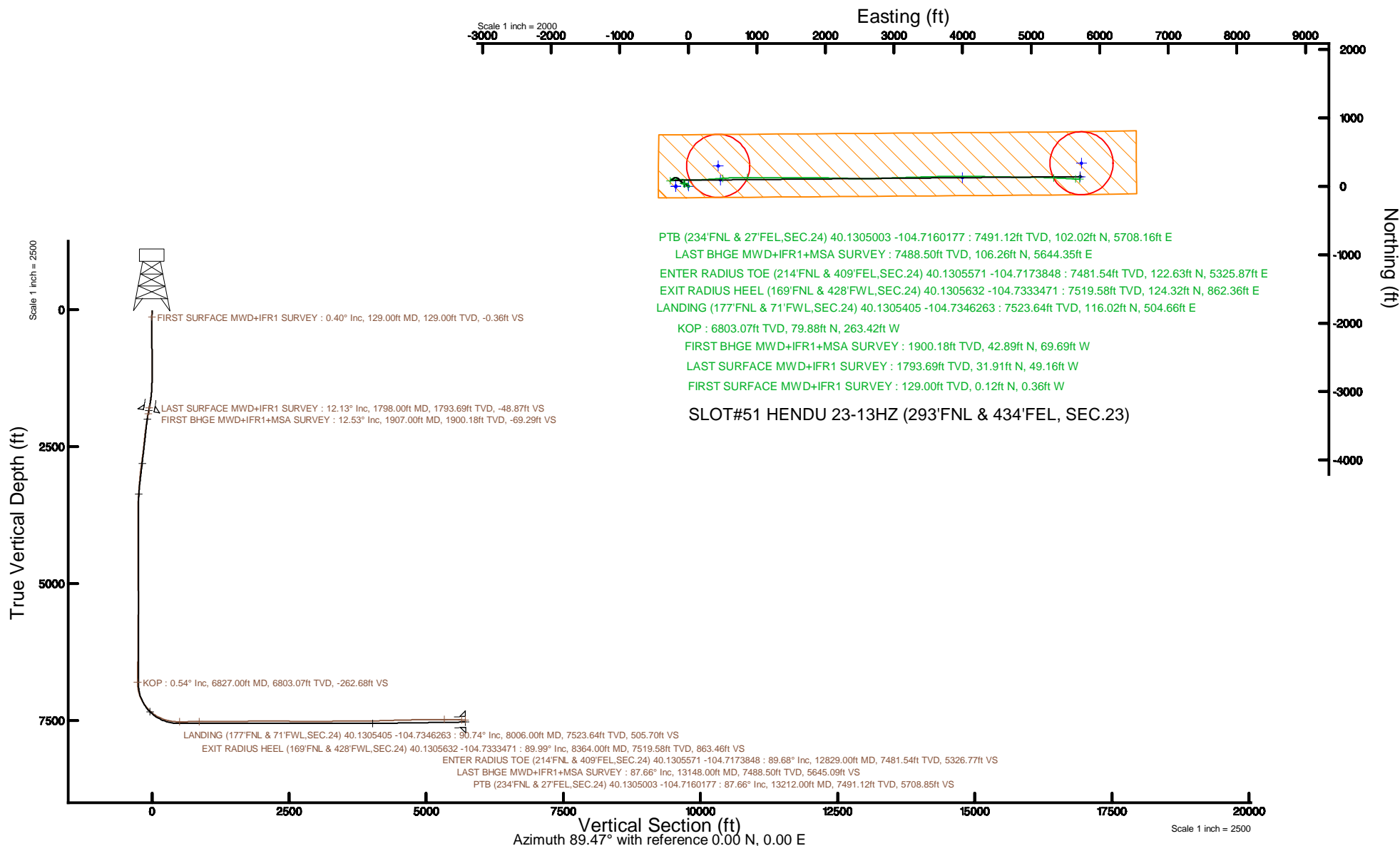


KERR-MCGEE OIL & GAS ONSHORE LP (WA)

Location: COLORADO Slot: SLOT#51 HENDU 23-13HZ (293'FNL & 434'FEL, SEC.23)
 Field: WELD COUNTY (UTM/TRUE NORTH) Well: HENDU 23-13HZ
 Facility: SEC.23-T2N-R66W Wellbore: HENDU 23-13HZ PWB

Plot reference wellpath is HENDU 23-13HZ PWP Rev-A.0	Grid System: NAD83 / UTM Zone 13 North, US feet
True vertical depths are referenced to PD 464 (21') (RT)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to PD 464 (21') (RT)	North Reference: True north
PD 464 (21') (RT) to Mean Sea Level: 5121 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#51 HENDU 23-13HZ (293'FNL & 434'FEL, SEC.23)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: painsetr on 2018-11-13
	Database: WA_DEN_Anadarko_Defn



Actual Wellpath Report

HENDU 23-13HZ AWP

Page 1 of 9

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#51 HENDU 23-13HZ (293'FNL & 434'FEL, SEC.23)
Area	COLORADO	Well	HENDU 23-13HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	HENDU 23-13HZ AWB
Facility	SEC.23-T2N-R66W		

REPORT SETUP INFORMATION			
Projection System	NAD83 / UTM Zone 13 North, US feet	Software System	WellArchitect® 5.0
North Reference	True	User	Painsetr
Scale	0.999606	Report Generated	11/13/2018 at 8:47 AM
Convergence at slot	0.17° East	Database/Source file	WA_DEN_Anadarko_Defn/HENDU_23-13HZ_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	4761.97	692.12	1714089.05	14574262.32	40°07'48.799"N	104°44'11.152"W
Facility Reference Pt			1713411.19	14569500.22	40°07'01.741"N	104°44'20.062"W
Field Reference Pt			1698235.31	14552047.82	40°04'09.600"N	104°47'36.000"W

WELLPATH DATUM			
Calculation method	Minimum curvature	PD 464 (21') (RT) to Facility Vertical Datum	5121.00ft
Horizontal Reference Pt	Slot	PD 464 (21') (RT) to Mean Sea Level	5121.00ft
Vertical Reference Pt	PD 464 (21') (RT)	PD 464 (21') (RT) to Mud Line at Slot (SLOT#51 HENDU 23-13HZ (293'FNL & 434'FEL, SEC.23))	5121.00ft
MD Reference Pt	PD 464 (21') (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	89.47°

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#51 HENDU 23-13HZ (293'FNL & 434'FEL, SEC.23)
Area	COLORADO	Well	HENDU 23-13HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	HENDU 23-13HZ AWP
Facility	SEC.23-T2N-R66W		

WELLPATH DATA (180 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	288.070	0.00	0.00	0.00	0.00	1714089.05	14574262.32	40°07'48.799"N	104°44'11.152"W	0.00	
21.00	0.000	288.070	21.00	0.00	0.00	0.00	1714089.05	14574262.32	40°07'48.799"N	104°44'11.152"W	0.00	
129.00	0.400	288.070	129.00	-0.36	0.12	-0.36	1714088.70	14574262.43	40°07'48.800"N	104°44'11.156"W	0.37	FIRST SURFACE MWD+IFR1 SURVEY
161.00	0.530	213.270	161.00	-0.55	0.03	-0.55	1714088.51	14574262.34	40°07'48.799"N	104°44'11.159"W	1.79	
192.00	0.620	261.880	192.00	-0.79	-0.12	-0.79	1714088.26	14574262.20	40°07'48.798"N	104°44'11.162"W	1.55	
224.00	0.660	217.490	224.00	-1.08	-0.29	-1.07	1714087.98	14574262.03	40°07'48.796"N	104°44'11.165"W	1.52	
256.00	0.440	194.820	255.99	-1.22	-0.55	-1.22	1714087.84	14574261.76	40°07'48.794"N	104°44'11.167"W	0.95	
288.00	0.790	232.790	287.99	-1.43	-0.80	-1.42	1714087.63	14574261.51	40°07'48.791"N	104°44'11.170"W	1.62	
319.00	0.570	200.090	318.99	-1.66	-1.08	-1.65	1714087.41	14574261.24	40°07'48.789"N	104°44'11.173"W	1.41	
351.00	0.750	205.100	350.99	-1.80	-1.42	-1.79	1714087.27	14574260.90	40°07'48.785"N	104°44'11.175"W	0.59	
383.00	1.010	219.430	382.98	-2.08	-1.82	-2.06	1714087.00	14574260.49	40°07'48.781"N	104°44'11.178"W	1.06	
415.00	0.480	169.590	414.98	-2.23	-2.17	-2.21	1714086.85	14574260.14	40°07'48.778"N	104°44'11.180"W	2.47	
447.00	0.440	146.650	446.98	-2.14	-2.41	-2.12	1714086.94	14574259.90	40°07'48.775"N	104°44'11.179"W	0.58	
479.00	0.480	157.290	478.98	-2.03	-2.63	-2.00	1714087.06	14574259.68	40°07'48.773"N	104°44'11.177"W	0.29	
510.00	0.040	16.140	509.98	-1.98	-2.74	-1.95	1714087.11	14574259.57	40°07'48.772"N	104°44'11.177"W	1.65	
542.00	0.480	147.180	541.98	-1.90	-2.85	-1.87	1714087.19	14574259.47	40°07'48.771"N	104°44'11.176"W	1.58	
574.00	0.530	72.300	573.98	-1.69	-2.91	-1.66	1714087.40	14574259.40	40°07'48.770"N	104°44'11.173"W	1.92	
605.00	0.350	135.840	604.98	-1.49	-2.94	-1.46	1714087.60	14574259.38	40°07'48.770"N	104°44'11.170"W	1.57	
637.00	0.620	64.830	636.98	-1.26	-2.93	-1.23	1714087.83	14574259.38	40°07'48.770"N	104°44'11.167"W	1.89	
669.00	0.570	81.970	668.97	-0.95	-2.84	-0.92	1714088.14	14574259.48	40°07'48.771"N	104°44'11.163"W	0.58	
700.00	0.790	98.050	699.97	-0.58	-2.85	-0.55	1714088.51	14574259.47	40°07'48.771"N	104°44'11.159"W	0.93	
732.00	1.710	85.570	731.96	0.11	-2.84	0.14	1714089.20	14574259.48	40°07'48.771"N	104°44'11.150"W	2.98	
764.00	1.450	74.670	763.95	0.98	-2.70	1.01	1714090.07	14574259.63	40°07'48.773"N	104°44'11.139"W	1.24	
796.00	1.190	68.780	795.94	1.68	-2.47	1.71	1714090.77	14574259.85	40°07'48.775"N	104°44'11.130"W	0.92	
827.00	0.660	91.630	826.94	2.16	-2.36	2.18	1714091.24	14574259.97	40°07'48.776"N	104°44'11.123"W	2.05	
859.00	0.480	41.180	858.94	2.44	-2.26	2.46	1714091.52	14574260.06	40°07'48.777"N	104°44'11.120"W	1.60	
891.00	0.970	42.330	890.94	2.71	-1.96	2.73	1714091.79	14574260.37	40°07'48.780"N	104°44'11.116"W	1.53	
923.00	0.660	59.470	922.93	3.05	-1.67	3.07	1714092.13	14574260.66	40°07'48.783"N	104°44'11.112"W	1.22	
961.00	1.360	48.920	960.93	3.59	-1.26	3.60	1714092.65	14574261.07	40°07'48.787"N	104°44'11.105"W	1.90	
986.00	1.010	35.650	985.92	3.94	-0.89	3.95	1714093.00	14574261.44	40°07'48.790"N	104°44'11.101"W	1.77	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#51 HENDU 23-13HZ (293'FNL & 434'FEL, SEC.23)
Area	COLORADO	Well	HENDU 23-13HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	HENDU 23-13HZ AWP
Facility	SEC.23-T2N-R66W		

WELLPATH DATA (180 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
1018.00	0.830	43.730	1017.92	4.27	-0.49	4.27	1714093.33	14574261.84	40°07'48.794"N	104°44'11.097"W	0.69	
1050.00	0.130	82.050	1049.92	4.47	-0.32	4.47	1714093.52	14574262.01	40°07'48.796"N	104°44'11.094"W	2.29	
1081.00	0.220	111.410	1080.92	4.56	-0.33	4.56	1714093.61	14574262.00	40°07'48.796"N	104°44'11.093"W	0.40	
1113.00	0.480	333.770	1112.91	4.56	-0.24	4.56	1714093.61	14574262.10	40°07'48.797"N	104°44'11.093"W	2.06	
1145.00	0.920	319.270	1144.91	4.33	0.08	4.33	1714093.38	14574262.41	40°07'48.800"N	104°44'11.096"W	1.47	
1177.00	1.850	307.760	1176.90	3.76	0.59	3.76	1714092.81	14574262.92	40°07'48.805"N	104°44'11.103"W	3.02	
1208.00	1.670	323.930	1207.89	3.11	1.26	3.09	1714092.14	14574263.59	40°07'48.812"N	104°44'11.112"W	1.70	
1240.00	1.850	320.760	1239.87	2.51	2.04	2.49	1714091.54	14574264.36	40°07'48.819"N	104°44'11.120"W	0.64	
1272.00	1.890	319.530	1271.86	1.85	2.84	1.82	1714090.87	14574265.16	40°07'48.827"N	104°44'11.128"W	0.18	
1303.00	2.550	312.590	1302.83	1.02	3.70	0.98	1714090.03	14574266.02	40°07'48.836"N	104°44'11.139"W	2.30	
1335.00	2.550	310.390	1334.80	-0.04	4.64	-0.08	1714088.96	14574266.95	40°07'48.845"N	104°44'11.153"W	0.31	
1366.00	2.860	320.850	1365.77	-1.04	5.68	-1.10	1714087.94	14574268.00	40°07'48.855"N	104°44'11.166"W	1.88	
1398.00	3.120	314.170	1397.72	-2.16	6.91	-2.22	1714086.81	14574269.22	40°07'48.867"N	104°44'11.180"W	1.36	
1430.00	3.650	313.470	1429.67	-3.51	8.22	-3.59	1714085.44	14574270.52	40°07'48.880"N	104°44'11.198"W	1.66	
1461.00	4.350	301.080	1460.59	-5.22	9.50	-5.31	1714083.72	14574271.80	40°07'48.893"N	104°44'11.220"W	3.58	
1493.00	5.100	302.220	1492.48	-7.45	10.89	-7.55	1714081.47	14574273.18	40°07'48.907"N	104°44'11.249"W	2.36	
1525.00	6.020	295.540	1524.33	-10.16	12.37	-10.27	1714078.75	14574274.65	40°07'48.921"N	104°44'11.284"W	3.51	
1556.00	6.330	292.820	1555.15	-13.19	13.73	-13.31	1714075.71	14574276.01	40°07'48.935"N	104°44'11.323"W	1.37	
1587.00	7.210	294.750	1585.94	-16.51	15.21	-16.66	1714072.36	14574277.47	40°07'48.950"N	104°44'11.366"W	2.93	
1619.00	8.530	294.220	1617.63	-20.49	17.03	-20.64	1714068.37	14574279.28	40°07'48.967"N	104°44'11.417"W	4.13	
1651.00	9.320	298.180	1649.25	-24.91	19.22	-25.09	1714063.91	14574281.46	40°07'48.989"N	104°44'11.475"W	3.13	
1683.00	9.760	296.860	1680.80	-29.60	21.67	-29.80	1714059.21	14574283.89	40°07'49.013"N	104°44'11.535"W	1.54	
1714.00	10.720	297.830	1711.31	-34.47	24.21	-34.69	1714054.31	14574286.41	40°07'49.038"N	104°44'11.598"W	3.15	
1746.00	10.940	297.030	1742.74	-39.78	26.98	-40.03	1714048.96	14574289.16	40°07'49.066"N	104°44'11.667"W	0.83	
1778.00	11.650	299.580	1774.12	-45.26	29.95	-45.54	1714043.44	14574292.12	40°07'49.095"N	104°44'11.738"W	2.71	
1798.00	12.130	297.390	1793.69	-48.87	31.91	-49.16	1714039.82	14574294.07	40°07'49.115"N	104°44'11.785"W	3.29	LAST SURFACE MWD+IFR1 SURVEY
1907.00	12.530	298.840	1900.18	-69.29	42.89	-69.69	1714019.27	14574304.98	40°07'49.223"N	104°44'12.049"W	0.46	FIRST BHGE MWD+IFR1+MSA SURVEY
2001.00	12.190	306.460	1992.00	-86.11	53.70	-86.60	1714002.33	14574315.74	40°07'49.330"N	104°44'12.267"W	1.77	
2094.00	10.140	311.590	2083.24	-100.03	64.97	-100.63	1713988.28	14574326.97	40°07'49.441"N	104°44'12.447"W	2.45	
2187.00	9.990	307.410	2174.81	-112.46	75.31	-113.16	1713975.72	14574337.26	40°07'49.543"N	104°44'12.608"W	0.80	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#51 HENDU 23-13HZ (293'FNL & 434'FEL, SEC.23)
Area	COLORADO	Well	HENDU 23-13HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	HENDU 23-13HZ AWB
Facility	SEC.23-T2N-R66W		

WELLPATH DATA (180 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
2279.00	9.670	304.920	2265.46	-125.05	84.58	-125.83	1713963.02	14574346.49	40°07'49.635"N	104°44'12.772"W	0.58	
2371.00	8.630	313.260	2356.29	-136.33	93.73	-137.19	1713951.64	14574355.61	40°07'49.725"N	104°44'12.918"W	1.83	
2463.00	8.150	314.760	2447.31	-145.90	103.06	-146.85	1713941.96	14574364.90	40°07'49.818"N	104°44'13.042"W	0.57	
2556.00	7.770	313.930	2539.41	-155.03	112.06	-156.06	1713932.73	14574373.87	40°07'49.907"N	104°44'13.161"W	0.43	
2648.00	8.410	294.290	2630.51	-165.57	119.14	-166.67	1713922.10	14574380.92	40°07'49.977"N	104°44'13.297"W	3.07	
2741.00	7.620	282.400	2722.61	-177.76	123.26	-178.89	1713909.87	14574385.00	40°07'50.017"N	104°44'13.455"W	1.97	
2835.00	7.950	269.380	2815.75	-190.33	124.53	-191.48	1713897.28	14574386.23	40°07'50.030"N	104°44'13.617"W	1.90	
2927.00	7.460	253.790	2906.93	-202.45	122.80	-203.58	1713885.19	14574384.46	40°07'50.013"N	104°44'13.773"W	2.33	
3018.00	6.640	244.400	2997.25	-212.90	118.87	-214.00	1713874.79	14574380.51	40°07'49.974"N	104°44'13.907"W	1.55	
3110.00	6.740	228.630	3088.63	-221.80	113.01	-222.85	1713865.96	14574374.62	40°07'49.916"N	104°44'14.021"W	1.99	
3203.00	6.240	226.850	3181.03	-229.65	105.94	-230.63	1713858.20	14574367.54	40°07'49.846"N	104°44'14.121"W	0.58	
3295.00	5.610	226.780	3272.54	-236.63	99.44	-237.55	1713851.30	14574361.02	40°07'49.782"N	104°44'14.210"W	0.68	
3386.00	4.530	235.260	3363.18	-242.87	94.35	-243.75	1713845.12	14574355.91	40°07'49.732"N	104°44'14.290"W	1.44	
3479.00	3.940	231.150	3455.93	-248.42	90.25	-249.26	1713839.63	14574351.80	40°07'49.691"N	104°44'14.361"W	0.71	
3570.00	3.040	233.700	3546.76	-252.83	86.86	-253.64	1713835.26	14574348.39	40°07'49.658"N	104°44'14.417"W	1.00	
3662.00	0.250	113.370	3638.72	-254.62	85.34	-255.42	1713833.49	14574346.87	40°07'49.643"N	104°44'14.440"W	3.45	
3754.00	0.790	68.840	3730.71	-253.85	85.49	-254.64	1713834.26	14574347.02	40°07'49.644"N	104°44'14.430"W	0.69	
3869.00	1.010	69.660	3845.70	-252.15	86.13	-252.95	1713835.95	14574347.66	40°07'49.650"N	104°44'14.408"W	0.19	
3962.00	1.240	29.980	3938.68	-250.87	87.28	-251.68	1713837.21	14574348.82	40°07'49.662"N	104°44'14.392"W	0.85	
4146.00	2.580	339.690	4122.59	-251.26	92.89	-252.12	1713836.76	14574354.43	40°07'49.717"N	104°44'14.397"W	1.10	
4237.00	0.930	324.290	4213.54	-252.38	95.41	-253.27	1713835.61	14574356.94	40°07'49.742"N	104°44'14.412"W	1.87	
4328.00	0.380	11.790	4304.54	-252.74	96.31	-253.63	1713835.23	14574357.84	40°07'49.751"N	104°44'14.417"W	0.80	
4420.00	0.660	7.680	4396.53	-252.60	97.13	-253.50	1713835.37	14574358.66	40°07'49.759"N	104°44'14.415"W	0.31	
4511.00	0.440	347.960	4487.53	-252.60	97.99	-253.50	1713835.36	14574359.52	40°07'49.768"N	104°44'14.415"W	0.32	
4602.00	1.260	316.190	4578.52	-253.35	99.06	-254.27	1713834.59	14574360.58	40°07'49.778"N	104°44'14.425"W	1.01	
4694.00	2.130	343.890	4670.48	-254.50	101.43	-255.44	1713833.41	14574362.95	40°07'49.802"N	104°44'14.440"W	1.27	
4785.00	0.880	19.730	4761.45	-254.72	103.71	-255.68	1713833.17	14574365.23	40°07'49.824"N	104°44'14.443"W	1.66	
4877.00	1.440	109.270	4853.43	-253.38	104.00	-254.35	1713834.50	14574365.52	40°07'49.827"N	104°44'14.426"W	1.83	
5060.00	0.740	26.960	5036.41	-250.68	104.29	-251.64	1713837.20	14574365.82	40°07'49.830"N	104°44'14.391"W	0.84	
5151.00	0.720	111.320	5127.40	-249.87	104.61	-250.84	1713838.00	14574366.14	40°07'49.833"N	104°44'14.381"W	1.08	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#51 HENDU 23-13HZ (293'FNL & 434'FEL, SEC.23)
Area	COLORADO	Well	HENDU 23-13HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	HENDU 23-13HZ AWB
Facility	SEC.23-T2N-R66W		

WELLPATH DATA (180 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
5243.00	0.550	96.580	5219.40	-248.90	104.34	-249.87	1713838.98	14574365.88	40°07'49.830"N	104°44'14.368"W	0.25	
5335.00	0.300	77.280	5311.39	-248.23	104.35	-249.19	1713839.65	14574365.89	40°07'49.830"N	104°44'14.360"W	0.31	
5426.00	1.680	201.610	5402.38	-248.50	103.16	-249.45	1713839.40	14574364.70	40°07'49.819"N	104°44'14.363"W	2.05	
5517.00	1.650	191.500	5493.34	-249.27	100.64	-250.20	1713838.65	14574362.17	40°07'49.794"N	104°44'14.373"W	0.32	
5610.00	1.330	197.980	5586.31	-249.89	98.30	-250.80	1713838.06	14574359.83	40°07'49.771"N	104°44'14.380"W	0.39	
5704.00	1.280	185.300	5680.29	-250.35	96.21	-251.24	1713837.63	14574357.75	40°07'49.750"N	104°44'14.386"W	0.31	
5797.00	1.540	207.390	5773.26	-251.04	94.07	-251.91	1713836.97	14574355.60	40°07'49.729"N	104°44'14.395"W	0.64	
5889.00	1.230	216.750	5865.23	-252.21	92.18	-253.07	1713835.81	14574353.71	40°07'49.710"N	104°44'14.410"W	0.42	
5980.00	1.360	209.760	5956.21	-253.35	90.46	-254.19	1713834.70	14574351.99	40°07'49.693"N	104°44'14.424"W	0.22	
6072.00	1.560	202.780	6048.18	-254.39	88.36	-255.21	1713833.68	14574349.89	40°07'49.672"N	104°44'14.437"W	0.29	
6163.00	1.080	204.650	6139.16	-255.25	86.44	-256.05	1713832.85	14574347.96	40°07'49.653"N	104°44'14.448"W	0.53	
6256.00	1.080	211.900	6232.14	-256.09	84.90	-256.88	1713832.02	14574346.42	40°07'49.638"N	104°44'14.459"W	0.15	
6349.00	0.960	213.500	6325.12	-257.00	83.50	-257.77	1713831.14	14574345.02	40°07'49.624"N	104°44'14.470"W	0.13	
6440.00	0.930	230.560	6416.11	-258.00	82.40	-258.77	1713830.15	14574343.92	40°07'49.613"N	104°44'14.483"W	0.31	
6532.00	0.800	241.590	6508.10	-259.15	81.62	-259.91	1713829.01	14574343.13	40°07'49.606"N	104°44'14.498"W	0.23	
6625.00	0.800	254.480	6601.09	-260.35	81.14	-261.10	1713827.81	14574342.65	40°07'49.601"N	104°44'14.513"W	0.19	
6717.00	0.860	239.890	6693.08	-261.57	80.62	-262.32	1713826.60	14574342.13	40°07'49.596"N	104°44'14.529"W	0.24	
6809.00	0.730	237.030	6785.07	-262.66	79.95	-263.41	1713825.51	14574341.46	40°07'49.589"N	104°44'14.543"W	0.15	
6827.00†	0.538	93.593	6803.07	-262.68	79.88	-263.42	1713825.50	14574341.39	40°07'49.589"N	104°44'14.543"W	6.70	KOP
6902.00	5.530	74.460	6877.95	-258.83	80.83	-259.58	1713829.33	14574342.35	40°07'49.598"N	104°44'14.494"W	6.70	
6996.00	13.120	75.910	6970.64	-244.07	84.65	-244.85	1713844.05	14574346.21	40°07'49.636"N	104°44'14.304"W	8.08	
7088.00	21.300	78.090	7058.44	-217.49	90.65	-218.33	1713870.54	14574352.28	40°07'49.695"N	104°44'13.962"W	8.92	
7179.00	29.540	83.500	7140.57	-178.90	96.61	-179.80	1713909.04	14574358.36	40°07'49.754"N	104°44'13.466"W	9.40	
7272.00	35.900	92.400	7218.82	-128.79	98.06	-129.69	1713959.12	14574359.96	40°07'49.768"N	104°44'12.821"W	8.56	
7363.00	42.930	93.770	7289.08	-71.17	94.91	-72.04	1714016.76	14574356.97	40°07'49.737"N	104°44'12.079"W	7.78	
7455.00	49.730	91.060	7352.58	-4.76	92.19	-5.60	1714083.18	14574354.46	40°07'49.710"N	104°44'11.224"W	7.69	
7546.00	57.140	90.710	7406.75	68.26	91.08	67.43	1714156.18	14574353.56	40°07'49.699"N	104°44'10.284"W	8.15	
7638.00	64.790	87.930	7451.38	148.63	92.10	147.79	1714236.51	14574354.82	40°07'49.709"N	104°44'09.249"W	8.72	
7729.00	72.430	85.500	7484.55	233.19	97.00	232.31	1714320.98	14574359.97	40°07'49.758"N	104°44'08.161"W	8.76	
7823.00	78.910	86.250	7507.80	324.03	103.54	323.10	1714411.72	14574366.77	40°07'49.822"N	104°44'06.992"W	6.94	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#51 HENDU 23-13HZ (293'FNL & 434'FEL, SEC.23)
Area	COLORADO	Well	HENDU 23-13HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	HENDU 23-13HZ AWP
Facility	SEC.23-T2N-R66W		

WELLPATH DATA (180 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
7914.00	85.190	86.090	7520.38	413.96	109.56	412.98	1714501.54	14574373.06	40°07'49.882"N	104°44'05.835"W	6.90	
8006.00	90.740	85.840	7523.64	505.70	116.02	504.66	1714593.16	14574379.79	40°07'49.946"N	104°44'04.655"W	6.04	LANDING (177'FNL & 71'FWL, SEC.24) 40.1305405 -104.7346263
8098.00	90.950	86.900	7522.29	597.55	121.85	596.46	1714684.91	14574385.89	40°07'50.003"N	104°44'03.473"W	1.17	
8190.00	91.540	89.030	7520.29	689.49	125.11	688.37	1714776.78	14574389.42	40°07'50.036"N	104°44'02.289"W	2.40	
8282.00	89.660	90.900	7519.32	781.47	125.17	780.36	1714868.73	14574389.75	40°07'50.036"N	104°44'01.105"W	2.88	
8364.00†	89.986	90.292	7519.58	863.46	124.32	862.36	1714950.70	14574389.14	40°07'50.028"N	104°44'00.049"W	0.84	EXIT RADIUS HEEL (169'FNL & 428'FWL, SEC.24) 40.1305632 -104.7333471
8375.00	90.030	90.210	7519.58	874.46	124.27	873.36	1714961.69	14574389.13	40°07'50.027"N	104°43'59.908"W	0.84	
8467.00	90.000	89.850	7519.55	966.45	124.22	965.35	1715053.65	14574389.35	40°07'50.027"N	104°43'58.723"W	0.39	
8558.00	89.850	89.850	7519.67	1057.45	124.46	1056.35	1715144.62	14574389.86	40°07'50.029"N	104°43'57.552"W	0.16	
8652.00	89.720	89.470	7520.02	1151.45	125.02	1150.35	1715238.57	14574390.70	40°07'50.034"N	104°43'56.342"W	0.43	
8744.00	90.460	90.310	7519.88	1243.45	125.19	1242.35	1715330.54	14574391.14	40°07'50.036"N	104°43'55.157"W	1.22	
8837.00	90.650	89.900	7518.98	1336.44	125.02	1335.35	1715423.49	14574391.25	40°07'50.034"N	104°43'53.960"W	0.49	
8928.00	90.740	90.130	7517.88	1427.42	125.00	1426.34	1715514.45	14574391.50	40°07'50.034"N	104°43'52.789"W	0.27	
9020.00	90.890	90.110	7516.57	1519.41	124.81	1518.33	1715606.41	14574391.58	40°07'50.032"N	104°43'51.604"W	0.16	
9113.00	90.920	89.380	7515.10	1612.40	125.22	1611.32	1715699.35	14574392.27	40°07'50.036"N	104°43'50.407"W	0.79	
9204.00	90.950	89.220	7513.61	1703.38	126.33	1702.30	1715790.30	14574393.65	40°07'50.047"N	104°43'49.236"W	0.18	
9297.00	90.860	90.320	7512.14	1796.37	126.71	1795.28	1715883.24	14574394.29	40°07'50.051"N	104°43'48.039"W	1.19	
9388.00	90.580	91.200	7511.00	1887.34	125.50	1886.27	1715974.19	14574393.36	40°07'50.039"N	104°43'46.867"W	1.01	
9481.00	90.370	91.790	7510.23	1980.28	123.07	1979.23	1716067.13	14574391.21	40°07'50.015"N	104°43'45.671"W	0.67	
9572.00	90.590	91.940	7509.47	2071.19	120.11	2070.18	1716158.05	14574388.52	40°07'49.985"N	104°43'44.500"W	0.29	
9663.00	89.940	91.130	7509.05	2162.13	117.67	2161.15	1716248.99	14574386.35	40°07'49.961"N	104°43'43.329"W	1.14	
9755.00	90.340	91.230	7508.82	2254.09	115.78	2253.13	1716340.93	14574384.73	40°07'49.942"N	104°43'42.144"W	0.45	
9846.00	88.860	91.030	7509.46	2345.05	113.98	2344.10	1716431.88	14574383.21	40°07'49.925"N	104°43'40.973"W	1.64	
9938.00	88.770	90.990	7511.36	2437.00	112.36	2436.07	1716523.81	14574381.86	40°07'49.908"N	104°43'39.789"W	0.11	
10031.00	88.340	89.600	7513.70	2529.95	111.88	2529.04	1716616.75	14574381.65	40°07'49.904"N	104°43'38.592"W	1.56	
10122.00	88.550	89.330	7516.17	2620.92	112.73	2620.00	1716707.67	14574382.77	40°07'49.912"N	104°43'37.421"W	0.38	
10215.00	89.690	89.140	7517.60	2713.91	113.98	2712.98	1716800.61	14574384.29	40°07'49.924"N	104°43'36.224"W	1.24	
10307.00	90.680	88.200	7517.31	2805.90	116.11	2804.95	1716892.54	14574386.70	40°07'49.945"N	104°43'35.040"W	1.48	
10398.00	90.770	88.360	7516.15	2896.87	118.84	2895.90	1716983.44	14574389.70	40°07'49.972"N	104°43'33.869"W	0.20	
10492.00	90.150	88.040	7515.40	2990.84	121.79	2989.85	1717077.35	14574392.93	40°07'50.001"N	104°43'32.660"W	0.74	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#51 HENDU 23-13HZ (293'FNL & 434'FEL, SEC.23)
Area	COLORADO	Well	HENDU 23-13HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	HENDU 23-13HZ AWP
Facility	SEC.23-T2N-R66W		

WELLPATH DATA (180 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]
10587.00	89.880	88.060	7515.37	3085.81	125.03	3084.80	1717172.25	14574396.44	40°07'50.033"N	104°43'31.437"W	0.28
10678.00	90.950	88.570	7514.71	3176.79	127.70	3175.75	1717263.16	14574399.38	40°07'50.059"N	104°43'30.266"W	1.30
10770.00	90.860	88.480	7513.26	3268.77	130.07	3267.71	1717355.07	14574402.02	40°07'50.082"N	104°43'29.082"W	0.14
10863.00	90.340	87.610	7512.29	3361.73	133.24	3360.65	1717447.96	14574405.47	40°07'50.114"N	104°43'27.886"W	1.09
10956.00	91.050	88.450	7511.16	3454.69	136.44	3453.59	1717540.85	14574408.94	40°07'50.145"N	104°43'26.689"W	1.18
11047.00	90.920	88.240	7509.60	3545.66	139.07	3544.54	1717631.76	14574411.84	40°07'50.171"N	104°43'25.519"W	0.27
11140.00	91.230	89.030	7507.85	3638.63	141.28	3637.49	1717724.67	14574414.33	40°07'50.193"N	104°43'24.322"W	0.91
11234.00	90.400	88.670	7506.51	3732.62	143.17	3731.46	1717818.60	14574416.49	40°07'50.211"N	104°43'23.112"W	0.96
11328.00	89.140	90.030	7506.89	3826.61	144.24	3825.45	1717912.55	14574417.83	40°07'50.222"N	104°43'21.902"W	1.97
11421.00	89.850	90.300	7507.71	3919.60	143.97	3918.45	1718005.51	14574417.84	40°07'50.219"N	104°43'20.705"W	0.82
11514.00	91.110	90.040	7506.93	4012.59	143.69	4011.44	1718098.46	14574417.84	40°07'50.216"N	104°43'19.508"W	1.38
11605.00	90.800	90.120	7505.41	4103.57	143.56	4102.43	1718189.42	14574417.98	40°07'50.215"N	104°43'18.336"W	0.35
11697.00	92.250	90.740	7502.97	4195.52	142.87	4194.39	1718281.34	14574417.57	40°07'50.208"N	104°43'17.152"W	1.71
11789.00	91.690	90.820	7499.80	4287.45	141.62	4286.33	1718373.25	14574416.59	40°07'50.195"N	104°43'15.969"W	0.61
11882.00	91.660	91.050	7497.09	4380.38	140.11	4379.28	1718466.16	14574415.35	40°07'50.180"N	104°43'14.772"W	0.25
11973.00	91.570	91.200	7494.52	4471.30	138.32	4470.22	1718557.08	14574413.83	40°07'50.162"N	104°43'13.601"W	0.19
12065.00	91.600	90.960	7491.98	4563.23	136.59	4562.17	1718648.99	14574412.37	40°07'50.145"N	104°43'12.417"W	0.26
12159.00	91.510	90.940	7489.43	4657.16	135.03	4656.12	1718742.91	14574411.09	40°07'50.129"N	104°43'11.208"W	0.10
12251.00	91.080	90.450	7487.35	4749.12	133.91	4748.09	1718834.85	14574410.25	40°07'50.118"N	104°43'10.024"W	0.71
12344.00	90.800	89.820	7485.82	4842.10	133.69	4841.08	1718927.80	14574410.31	40°07'50.116"N	104°43'08.827"W	0.74
12528.00	90.890	90.940	7483.11	5026.05	132.47	5025.05	1719111.70	14574409.63	40°07'50.103"N	104°43'06.458"W	0.61
12621.00	90.580	91.680	7481.91	5119.00	130.35	5118.02	1719204.64	14574407.78	40°07'50.082"N	104°43'05.261"W	0.86
12714.00	90.090	92.120	7481.37	5211.91	127.26	5210.97	1719297.56	14574404.98	40°07'50.051"N	104°43'04.065"W	0.71
12807.00	89.820	92.440	7481.44	5304.80	123.57	5303.89	1719390.46	14574401.55	40°07'50.015"N	104°43'02.868"W	0.45
12829.00†	89.680	92.442	7481.54	5326.77	122.63	5325.87	1719412.43	14574400.68	40°07'50.005"N	104°43'02.585"W	0.63
12900.00	89.230	92.450	7482.21	5397.67	119.60	5396.80	1719483.34	14574397.86	40°07'49.975"N	104°43'01.672"W	0.63
12992.00	88.920	92.930	7483.70	5489.52	115.28	5488.69	1719575.21	14574393.82	40°07'49.932"N	104°43'00.489"W	0.62
13085.00	88.060	93.350	7486.15	5582.29	110.19	5581.52	1719668.01	14574389.00	40°07'49.882"N	104°42'59.294"W	1.03
13148.00	87.660	93.800	7488.50	5645.09	106.26	5644.35	1719730.83	14574385.27	40°07'49.843"N	104°42'58.485"W	0.96
13212.00	87.660	93.800	7491.12	5708.85	102.02	5708.16	1719794.62	14574381.22	40°07'49.801"N	104°42'57.664"W	0.00

HOLE & CASING SECTIONS - Ref Wellbore: HENDU 23-13HZ AWP Ref Wellpath: HENDU 23-13HZ 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	21.00	1848.00	1827.00	21.00	1842.56	0.00	0.00	36.84	-58.53

TARGETS									
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape	
SEC.13-T2N-R66W	0.00	-1.82	-180.08	1713909.05	14574259.96	40°07'48.781"N	104°44'13.470"W	polygon	
SEC.14-T2N-R66W	0.00	-1.82	-180.08	1713909.05	14574259.96	40°07'48.781"N	104°44'13.470"W	polygon	
SEC.23-T2N-R66W	0.00	-1.82	-180.08	1713909.05	14574259.96	40°07'48.781"N	104°44'13.470"W	polygon	
SEC.24-T2N-R66W	0.00	-1.82	-180.08	1713909.05	14574259.96	40°07'48.781"N	104°44'13.470"W	polygon	
HENDU 23-13HZ BHL REV-1 (195'FNL & 21'FEL, SEC.24)	7528.00	140.89	5713.65	1719800.00	14574420.09	40°07'50.185"N	104°42'57.593"W	point	
HENDU 23-13HZ HEEL REV-1 (204'FNL & 35'FWL, SEC.24)	7551.00	92.88	469.20	1714557.79	14574356.55	40°07'49.717"N	104°44'05.111"W	point	
HENDU 23-13HZ LANDOX	7551.00	0.00	0.00	1714089.05	14574262.32	40°07'48.799"N	104°44'11.152"W	polygon	
HENDU 23-13HZ RADIUS 1	7551.00	336.52	5733.44	1719819.20	14574615.70	40°07'52.118"N	104°42'57.338"W	polygon	
HENDU 23-13HZ RADIUS 2	7551.00	296.91	435.40	1714523.40	14574560.40	40°07'51.733"N	104°44'05.546"W	polygon	
HENDU 23-13HZ INT TARGET @ 4000'VS	7553.00	125.21	3999.02	1718086.10	14574399.33	40°07'50.033"N	104°43'19.667"W	point	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#51 HENDU 23-13HZ (293'FNL & 434'FEL, SEC.23)
Area	COLORADO	Well	HENDU 23-13HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	HENDU 23-13HZ AWB
Facility	SEC.23-T2N-R66W		

WELLPATH COMPOSITION - Ref Wellbore: HENDU 23-13HZ AWB Ref Wellpath: HENDU 23-13HZ AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
21.00	1798.00	Custom APC ISCWSA REV 2 MWD+IFR1 (approximation)	Custom APC ISCWSA Rev-2 MWD+IFR1 <129 - 1798>	HENDU 23-13HZ AWB
1798.00	13148.00	Custom APC ISCWSA REV 2 MWD+IFR1+MSA (approximation)	BHGE Custom APC ISCWSA Rev-2 MWD+IFR1+MSA <1907 - 13148>	HENDU 23-13HZ AWB
13148.00	13212.00	Blind Drilling (std)	Projection to bit	HENDU 23-13HZ AWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#51 HENDU 23-13HZ (293'FNL & 434'FEL, SEC.23)
Area	COLORADO	Well	HENDU 23-13HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	HENDU 23-13HZ AWB
Facility	SEC.23-T2N-R66W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
129.00	0.400	288.070	129.00	FIRST SURFACE MWD+IFR1 SURVEY
1798.00	12.130	297.390	1793.69	LAST SURFACE MWD+IFR1 SURVEY
1907.00	12.530	298.840	1900.18	FIRST BHGE MWD+IFR1+MSA SURVEY
6827.00	0.538	93.593	6803.07	KOP
8006.00	90.740	85.840	7523.64	LANDING (177'FNL & 71'FWL,SEC.24) 40.1305405 -104.7346263
8364.00	89.986	90.292	7519.58	EXIT RADIUS HEEL (169'FNL & 428'FWL,SEC.24) 40.1305632 -104.7333471
12829.00	89.680	92.442	7481.54	ENTER RADIUS TOE (214'FNL & 409'FEL,SEC.24) 40.1305571 -104.7173848
13148.00	87.660	93.800	7488.50	LAST BHGE MWD+IFR1+MSA SURVEY
13212.00	87.660	93.800	7491.12	PTB (234'FNL & 27'FEL,SEC.24) 40.1305003 -104.7160177