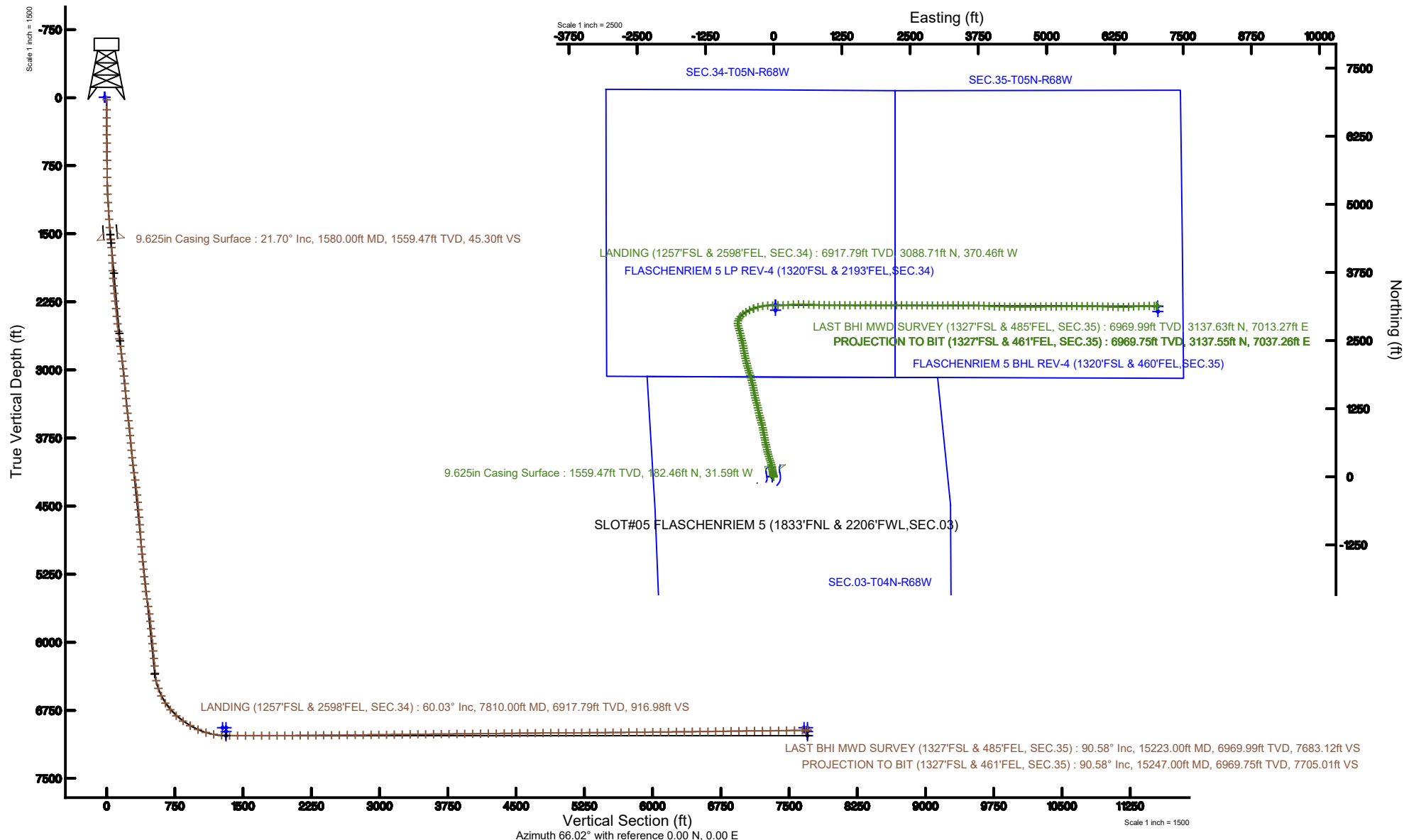
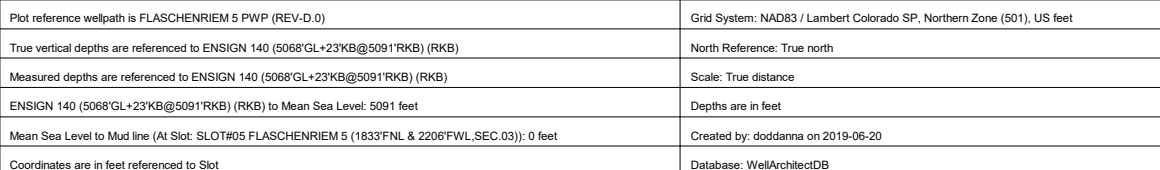


Location:	COLORADO	Slot:	SLOT#05 FLASCHENRIEM 5 (1833'FNL & 2206'FWL, SEC.03)
Field:	WELD COUNTY (NAD83/TRUE NORTH)	Well:	FLASCHENRIEM 5
Facility:	SEC.03-T04N-R68W	Wellbore:	FLASCHENRIEM 5 PWB



Actual Wellpath Report

FLASCHENRIEM 5 AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	PETRO OPERATING CO, LLC	Slot	SLOT#05 FLASCHENRIEM 5 (1833'FNL & 2206'FWL,SEC.03)
Area	COLORADO	Well	FLASCHENRIEM 5
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	FLASCHENRIEM 5 AWP
Facility	SEC.03-T04N-R68W		

REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 5.1
North Reference	True	User	Doddanna
Scale	0.999958	Report Generated	6/20/2019 at 1:34:28 PM
Convergence at slot	0.33° East	Database/Source file	WellArchitectDB/FLASCHENRIEM_5_AWP.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.33	25.00	3141751.56	1368630.70	40°20'39.036"N	104°59'29.229"W
Facility Reference Pt			3141726.57	1368630.22	40°20'39.033"N	104°59'29.552"W
Field Reference Pt			3141727.20	1368631.79	40°20'39.048"N	104°59'29.544"W

WELLPATH DATUM

Calculation method	Minimum curvature	ENSIGN 140 (5068'GL+23'KB@5091'RKB) (RKB) to Facility Vertical Datum	5091.00ft
Horizontal Reference Pt	Slot	ENSIGN 140 (5068'GL+23'KB@5091'RKB) (RKB) to Mean Sea Level	5091.00ft
Vertical Reference Pt	ENSIGN 140 (5068'GL+23'KB@5091'RKB) (RKB)	ENSIGN 140 (5068'GL+23'KB@5091'RKB) (RKB) to Mud Line at Slot (SLOT#05 FLASCHENRIEM 5 (1833'FNL & 2206'FWL,SEC.03))	5091.00ft
MD Reference Pt	ENSIGN 140 (5068'GL+23'KB@5091'RKB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	66.02°

Actual Wellpath Report

FLASCHENRIEM 5 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	PETRO OPERATING CO, LLC	Slot	SLOT#05 FLASCHENRIEM 5 (1833'FNL & 2206'FWL,SEC.03)
Area	COLORADO	Well	FLASCHENRIEM 5
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	FLASCHENRIEM 5 AWB
Facility	SEC.03-T04N-R68W		

WELLPATH DATA (166 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00†	0.000	48.980	0.00	0.00	0.00	0.00	40°20'39.036"N	104°59'29.229"W	0.00	
23.00	0.000	48.980	23.00	0.00	0.00	0.00	40°20'39.036"N	104°59'29.229"W	0.00	
134.00	0.260	48.980	134.00	0.24	0.17	0.19	40°20'39.037"N	104°59'29.227"W	0.23	
223.00	0.500	342.080	223.00	0.47	0.67	0.22	40°20'39.042"N	104°59'29.227"W	0.52	
313.00	0.830	22.400	312.99	0.99	1.64	0.35	40°20'39.052"N	104°59'29.225"W	0.61	
408.00	0.880	5.150	407.98	1.84	3.01	0.68	40°20'39.066"N	104°59'29.221"W	0.27	
502.00	1.240	4.600	501.97	2.68	4.74	0.82	40°20'39.083"N	104°59'29.219"W	0.38	
597.00	2.940	348.620	596.90	3.70	8.15	0.43	40°20'39.116"N	104°59'29.224"W	1.87	
691.00	3.400	341.830	690.76	4.51	13.16	-0.92	40°20'39.166"N	104°59'29.241"W	0.63	
785.00	5.310	341.940	784.48	5.24	19.95	-3.14	40°20'39.233"N	104°59'29.270"W	2.03	
879.00	6.550	342.260	877.98	6.27	29.19	-6.12	40°20'39.324"N	104°59'29.308"W	1.32	
973.00	8.170	342.460	971.20	7.61	40.67	-9.77	40°20'39.438"N	104°59'29.356"W	1.72	
1068.00	9.770	355.140	1065.04	11.01	55.14	-12.48	40°20'39.581"N	104°59'29.391"W	2.67	
1162.00	10.900	355.790	1157.52	16.63	71.95	-13.81	40°20'39.747"N	104°59'29.408"W	1.21	
1256.00	12.360	349.780	1249.59	22.03	90.71	-16.25	40°20'39.932"N	104°59'29.439"W	2.02	
1350.00	14.250	351.340	1341.06	27.48	112.05	-19.78	40°20'40.143"N	104°59'29.485"W	2.05	
1445.00	16.840	349.470	1432.58	33.77	137.15	-24.05	40°20'40.391"N	104°59'29.540"W	2.78	
1525.00	20.980	350.900	1508.24	40.15	162.69	-28.44	40°20'40.643"N	104°59'29.597"W	5.21	
1585.00	21.770	350.980	1564.12	45.78	184.29	-31.88	40°20'40.857"N	104°59'29.641"W	1.32	
1679.00	22.820	345.240	1651.10	53.20	219.13	-39.26	40°20'41.201"N	104°59'29.736"W	2.57	
1772.00	24.880	342.750	1736.15	58.39	255.26	-49.66	40°20'41.558"N	104°59'29.871"W	2.47	
1867.00	24.970	341.440	1822.31	62.63	293.36	-61.96	40°20'41.935"N	104°59'30.030"W	0.59	
1961.00	26.430	341.630	1907.01	66.55	332.02	-74.87	40°20'42.317"N	104°59'30.196"W	1.56	
2056.00	27.800	343.500	1991.56	71.50	373.33	-87.83	40°20'42.725"N	104°59'30.364"W	1.70	
2150.00	27.770	344.790	2074.73	77.70	415.48	-99.80	40°20'43.141"N	104°59'30.518"W	0.64	
2244.00	27.660	346.880	2157.94	85.15	457.86	-110.50	40°20'43.560"N	104°59'30.656"W	1.04	
2338.00	27.790	348.310	2241.15	93.93	500.57	-119.89	40°20'43.982"N	104°59'30.778"W	0.72	
2432.00	27.850	347.770	2324.29	103.06	543.49	-128.98	40°20'44.406"N	104°59'30.895"W	0.28	
2527.00	27.750	346.040	2408.33	111.43	586.64	-139.02	40°20'44.833"N	104°59'31.025"W	0.86	
2621.00	27.770	346.420	2491.51	119.20	629.16	-149.44	40°20'45.253"N	104°59'31.159"W	0.19	

Actual Wellpath Report

FLASCHENRIEM 5 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	PETRO OPERATING CO, LLC	Slot	SLOT#05 FLASCHENRIEM 5 (1833'FNL & 2206'FWL,SEC.03)
Area	COLORADO	Well	FLASCHENRIEM 5
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	FLASCHENRIEM 5 AWB
Facility	SEC.03-T04N-R68W		

WELLPATH DATA (166 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
2716.00	27.700	349.270	2575.60	128.25	672.37	-158.75	40°20'45.680"N	104°59'31.280"W	1.40	
2810.00	30.000	350.600	2657.92	139.18	717.03	-166.65	40°20'46.121"N	104°59'31.382"W	2.54	
2905.00	30.020	349.910	2740.19	150.87	763.85	-174.70	40°20'46.584"N	104°59'31.486"W	0.36	
2999.00	29.990	348.580	2821.59	161.62	810.03	-183.47	40°20'47.040"N	104°59'31.599"W	0.71	
3094.00	28.800	349.200	2904.36	172.01	855.78	-192.46	40°20'47.492"N	104°59'31.715"W	1.29	
3188.00	30.110	349.120	2986.21	182.52	901.18	-201.15	40°20'47.941"N	104°59'31.827"W	1.39	
3282.00	30.030	346.270	3067.56	192.05	947.19	-211.18	40°20'48.396"N	104°59'31.957"W	1.52	
3376.00	30.110	345.700	3148.91	200.20	992.88	-222.59	40°20'48.847"N	104°59'32.104"W	0.32	
3471.00	27.710	343.790	3232.07	207.20	1037.19	-234.64	40°20'49.285"N	104°59'32.260"W	2.71	
3566.00	30.090	344.100	3315.23	213.54	1081.31	-247.34	40°20'49.721"N	104°59'32.424"W	2.51	
3660.00	29.060	345.860	3396.98	220.75	1126.11	-259.37	40°20'50.164"N	104°59'32.579"W	1.43	
3754.00	30.300	348.970	3478.65	229.97	1171.53	-269.48	40°20'50.613"N	104°59'32.710"W	2.10	
3849.00	30.690	349.140	3560.51	240.85	1218.86	-278.64	40°20'51.080"N	104°59'32.828"W	0.42	
3943.00	30.830	346.570	3641.29	250.71	1265.85	-288.75	40°20'51.545"N	104°59'32.959"W	1.41	
4038.00	30.860	344.870	3722.86	258.91	1313.05	-300.77	40°20'52.011"N	104°59'33.114"W	0.92	
4132.00	30.050	344.160	3803.89	265.96	1358.97	-313.48	40°20'52.465"N	104°59'33.278"W	0.94	
4226.00	29.480	344.840	3885.49	272.84	1403.93	-325.96	40°20'52.909"N	104°59'33.439"W	0.70	
4321.00	29.450	346.870	3968.20	280.82	1449.24	-337.37	40°20'53.357"N	104°59'33.587"W	1.05	
4415.00	29.810	349.600	4049.91	290.66	1494.73	-346.84	40°20'53.806"N	104°59'33.709"W	1.49	
4510.00	29.870	350.850	4132.32	302.26	1541.31	-354.87	40°20'54.267"N	104°59'33.813"W	0.66	
4604.00	30.050	350.880	4213.76	314.29	1587.66	-362.32	40°20'54.725"N	104°59'33.909"W	0.19	
4698.00	30.040	347.960	4295.13	325.20	1633.91	-370.96	40°20'55.182"N	104°59'34.021"W	1.56	
4792.00	29.880	347.260	4376.57	334.63	1679.76	-381.03	40°20'55.635"N	104°59'34.151"W	0.41	
4886.00	29.980	346.020	4458.03	343.28	1725.39	-391.87	40°20'56.086"N	104°59'34.291"W	0.67	
4981.00	29.810	345.730	4540.39	351.39	1771.30	-403.42	40°20'56.539"N	104°59'34.440"W	0.23	
5076.00	30.110	343.780	4622.70	358.59	1817.07	-415.90	40°20'56.992"N	104°59'34.601"W	1.07	
5170.00	29.510	342.280	4704.26	364.30	1861.76	-429.53	40°20'57.433"N	104°59'34.777"W	1.02	
5264.00	29.510	341.980	4786.07	369.23	1905.83	-443.74	40°20'57.869"N	104°59'34.961"W	0.16	
5357.00	29.700	342.580	4866.93	374.24	1949.59	-457.72	40°20'58.301"N	104°59'35.141"W	0.38	
5451.00	28.890	344.170	4948.91	380.13	1993.66	-470.89	40°20'58.737"N	104°59'35.311"W	1.19	

Actual Wellpath Report

FLASCHENRIEM 5 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	PETRO OPERATING CO, LLC	Slot	SLOT#05 FLASCHENRIEM 5 (1833'FNL & 2206'FWL, SEC.03)
Area	COLORADO	Well	FLASCHENRIEM 5
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	FLASCHENRIEM 5 AWP
Facility	SEC.03-T04N-R68W		

WELLPATH DATA (166 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
5545.00	29.550	346.040	5030.95	387.38	2038.00	-482.67	40°20'59.175"N	104°59'35.464"W	1.20	
5640.00	29.230	347.020	5113.72	395.88	2083.34	-493.54	40°20'59.623"N	104°59'35.604"W	0.61	
5734.00	29.940	347.230	5195.47	404.83	2128.58	-503.88	40°21'00.070"N	104°59'35.737"W	0.76	
5828.00	29.890	346.440	5276.94	413.63	2174.23	-514.55	40°21'00.521"N	104°59'35.875"W	0.42	
5922.00	28.900	347.230	5358.84	422.28	2219.15	-525.06	40°21'00.965"N	104°59'36.011"W	1.13	
6017.00	29.870	347.640	5441.62	431.51	2264.65	-535.20	40°21'01.414"N	104°59'36.142"W	1.04	
6112.00	29.920	353.260	5523.99	443.30	2311.29	-543.05	40°21'01.875"N	104°59'36.243"W	2.95	
6207.00	30.260	353.600	5606.19	457.56	2358.61	-548.50	40°21'02.343"N	104°59'36.314"W	0.40	
6301.00	30.170	349.770	5687.43	470.33	2405.40	-555.33	40°21'02.805"N	104°59'36.402"W	2.05	
6396.00	30.220	346.020	5769.54	480.16	2452.09	-565.35	40°21'03.267"N	104°59'36.531"W	1.99	
6490.00	30.160	343.890	5850.80	487.50	2497.74	-577.62	40°21'03.718"N	104°59'36.690"W	1.14	
6584.00	29.410	346.790	5932.38	495.05	2542.89	-589.44	40°21'04.164"N	104°59'36.843"W	1.73	
6679.00	30.340	347.750	6014.76	504.29	2589.05	-599.87	40°21'04.620"N	104°59'36.977"W	1.10	
6773.00	30.230	345.640	6095.93	513.07	2635.18	-610.77	40°21'05.076"N	104°59'37.118"W	1.14	
6868.00	29.670	344.940	6178.25	520.72	2681.05	-622.81	40°21'05.529"N	104°59'37.274"W	0.69	
6963.00	30.160	342.610	6260.59	527.11	2726.53	-636.06	40°21'05.979"N	104°59'37.445"W	1.33	
7057.00	30.000	342.730	6341.93	532.56	2771.51	-650.09	40°21'06.423"N	104°59'37.626"W	0.18	
7152.00	30.310	359.680	6424.23	544.98	2818.24	-657.29	40°21'06.885"N	104°59'37.719"W	8.94	
7246.00	25.700	21.200	6507.41	569.04	2861.10	-650.03	40°21'07.308"N	104°59'37.625"W	11.74	
7340.00	28.630	28.290	6591.05	601.32	2899.95	-631.97	40°21'07.692"N	104°59'37.392"W	4.64	
7435.00	37.490	35.490	6670.62	644.33	2943.63	-604.34	40°21'08.124"N	104°59'37.035"W	10.19	
7529.00	41.700	51.350	6743.23	699.38	2986.58	-563.19	40°21'08.548"N	104°59'36.504"W	11.62	
7624.00	48.820	62.310	6810.16	765.82	3023.03	-506.70	40°21'08.909"N	104°59'35.774"W	11.09	
7719.00	54.880	62.870	6868.81	840.35	3057.39	-440.40	40°21'09.248"N	104°59'34.918"W	6.40	
7810.00†	60.026	68.718	6917.79	916.98	3088.71	-370.46	40°21'09.558"N	104°59'34.014"W	7.83	LANDING (1257'FSL & 2598'FEL, SEC.34)
7813.00	60.200	68.900	6919.28	919.58	3089.65	-368.04	40°21'09.567"N	104°59'33.983"W	7.83	
7908.00	65.940	76.340	6962.34	1003.58	3114.78	-287.28	40°21'09.815"N	104°59'32.940"W	9.23	
8003.00	74.070	79.810	6994.80	1090.78	3133.14	-200.00	40°21'09.997"N	104°59'31.813"W	9.22	
8096.00	81.040	86.660	7014.85	1177.40	3143.75	-109.93	40°21'10.102"N	104°59'30.649"W	10.38	
8191.00	85.870	89.150	7025.68	1264.94	3147.19	-15.65	40°21'10.135"N	104°59'29.431"W	5.71	

Actual Wellpath Report

FLASCHENRIEM 5 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	PETRO OPERATING CO, LLC	Slot	SLOT#05 FLASCHENRIEM 5 (1833'FNL & 2206'FWL,SEC.03)
Area	COLORADO	Well	FLASCHENRIEM 5
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	FLASCHENRIEM 5 AWP
Facility	SEC.03-T04N-R68W		

WELLPATH DATA (166 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8285.00	90.060	90.390	7029.02	1350.90	3147.57	78.27	40°21'10.139"N	104°59'28.218"W	4.65	
8380.00	90.030	87.390	7028.94	1438.42	3149.41	173.24	40°21'10.157"N	104°59'26.992"W	3.16	
8474.00	90.060	85.300	7028.87	1526.56	3155.40	267.05	40°21'10.217"N	104°59'25.780"W	2.22	
8568.00	90.180	86.360	7028.67	1614.99	3162.24	360.80	40°21'10.284"N	104°59'24.569"W	1.13	
8663.00	90.150	87.840	7028.40	1703.63	3167.04	455.67	40°21'10.332"N	104°59'23.344"W	1.56	
8757.00	90.060	92.160	7028.23	1789.50	3167.04	549.65	40°21'10.332"N	104°59'22.130"W	4.60	
8851.00	90.150	93.560	7028.05	1873.36	3162.35	643.53	40°21'10.285"N	104°59'20.917"W	1.49	
8946.00	89.820	93.140	7028.08	1957.76	3156.80	738.37	40°21'10.230"N	104°59'19.692"W	0.56	
9041.00	90.400	91.610	7027.90	2042.88	3152.86	833.28	40°21'10.191"N	104°59'18.466"W	1.72	
9135.00	90.620	89.920	7027.06	2128.24	3151.61	927.27	40°21'10.179"N	104°59'17.252"W	1.81	
9229.00	90.550	90.750	7026.10	2213.89	3151.06	1021.26	40°21'10.173"N	104°59'16.038"W	0.89	
9324.00	90.430	90.970	7025.29	2300.10	3149.63	1116.24	40°21'10.159"N	104°59'14.812"W	0.26	
9418.00	90.430	90.510	7024.58	2385.48	3148.42	1210.23	40°21'10.147"N	104°59'13.598"W	0.49	
9513.00	90.430	90.120	7023.87	2472.06	3147.90	1305.23	40°21'10.142"N	104°59'12.371"W	0.41	
9607.00	90.520	89.700	7023.09	2558.00	3148.05	1399.23	40°21'10.144"N	104°59'11.156"W	0.46	
9701.00	90.650	88.780	7022.13	2644.38	3149.29	1493.21	40°21'10.156"N	104°59'09.943"W	0.99	
9796.00	90.400	89.120	7021.26	2731.87	3151.03	1588.19	40°21'10.173"N	104°59'08.716"W	0.44	
9891.00	90.460	89.390	7020.55	2819.16	3152.27	1683.18	40°21'10.185"N	104°59'07.489"W	0.29	
9986.00	90.400	90.270	7019.83	2906.07	3152.55	1778.18	40°21'10.188"N	104°59'06.262"W	0.93	
10080.00	90.580	90.320	7019.03	2991.75	3152.07	1872.17	40°21'10.183"N	104°59'05.048"W	0.20	
10174.00	90.520	92.320	7018.13	3076.73	3149.90	1966.14	40°21'10.161"N	104°59'03.834"W	2.13	
10268.00	90.400	89.340	7017.37	3162.03	3148.54	2060.11	40°21'10.148"N	104°59'02.620"W	3.17	
10363.00	90.830	89.120	7016.35	3249.34	3149.82	2155.10	40°21'10.160"N	104°59'01.393"W	0.51	
10458.00	90.710	90.860	7015.08	3336.13	3149.83	2250.09	40°21'10.161"N	104°59'00.166"W	1.84	
10552.00	90.580	90.770	7014.02	3421.46	3148.50	2344.07	40°21'10.147"N	104°58'58.953"W	0.17	
10646.00	90.400	90.410	7013.21	3506.94	3147.53	2438.06	40°21'10.138"N	104°58'57.739"W	0.43	
10740.00	90.580	90.520	7012.41	3592.51	3146.76	2532.06	40°21'10.130"N	104°58'56.524"W	0.22	
10834.00	90.490	90.050	7011.53	3678.20	3146.30	2626.05	40°21'10.125"N	104°58'55.310"W	0.51	
10928.00	90.550	90.000	7010.68	3764.06	3146.26	2720.05	40°21'10.125"N	104°58'54.096"W	0.08	
11023.00	90.400	90.380	7009.89	3850.73	3145.94	2815.04	40°21'10.122"N	104°58'52.869"W	0.43	

Actual Wellpath Report

FLASCHENRIEM 5 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	PETRO OPERATING CO, LLC	Slot	SLOT#05 FLASCHENRIEM 5 (1833'FNL & 2206'FWL,SEC.03)
Area	COLORADO	Well	FLASCHENRIEM 5
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	FLASCHENRIEM 5 AWP
Facility	SEC.03-T04N-R68W		

WELLPATH DATA (166 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11117.00	90.460	90.550	7009.19	3936.30	3145.18	2909.04	40°21'10.114"N	104°58'51.655"W	0.19	
11211.00	90.460	89.840	7008.43	4022.05	3144.86	3003.03	40°21'10.111"N	104°58'50.441"W	0.76	
11306.00	90.620	88.700	7007.54	4109.33	3146.07	3098.02	40°21'10.122"N	104°58'49.214"W	1.21	
11400.00	90.550	89.190	7006.58	4195.90	3147.80	3192.00	40°21'10.139"N	104°58'48.000"W	0.53	
11495.00	90.800	90.220	7005.46	4282.89	3148.29	3286.99	40°21'10.144"N	104°58'46.773"W	1.12	
11589.00	90.740	90.620	7004.19	4368.48	3147.60	3380.98	40°21'10.137"N	104°58'45.559"W	0.43	
11684.00	90.580	90.400	7003.10	4454.93	3146.75	3475.97	40°21'10.129"N	104°58'44.333"W	0.29	
11778.00	90.400	90.060	7002.30	4540.65	3146.38	3569.96	40°21'10.125"N	104°58'43.118"W	0.41	
11873.00	90.580	90.970	7001.48	4627.10	3145.52	3664.96	40°21'10.116"N	104°58'41.892"W	0.98	
11967.00	90.430	91.940	7000.66	4711.98	3143.14	3758.92	40°21'10.093"N	104°58'40.678"W	1.04	
12062.00	90.710	92.590	6999.71	4797.18	3139.38	3853.84	40°21'10.055"N	104°58'39.452"W	0.74	
12157.00	90.490	93.250	6998.72	4881.89	3134.54	3948.71	40°21'10.007"N	104°58'38.226"W	0.73	
12251.00	90.030	92.990	6998.29	4965.57	3129.43	4042.57	40°21'09.957"N	104°58'37.014"W	0.56	
12345.00	90.030	91.940	6998.24	5049.73	3125.38	4136.48	40°21'09.917"N	104°58'35.801"W	1.12	
12440.00	89.970	90.640	6998.24	5135.63	3123.24	4231.46	40°21'09.895"N	104°58'34.574"W	1.37	
12534.00	90.460	90.550	6997.89	5221.12	3122.27	4325.45	40°21'09.885"N	104°58'33.360"W	0.53	
12629.00	90.550	90.490	6997.05	5307.56	3121.41	4420.44	40°21'09.877"N	104°58'32.133"W	0.11	
12724.00	90.550	90.310	6996.14	5394.08	3120.74	4515.44	40°21'09.870"N	104°58'30.906"W	0.19	
12819.00	90.520	90.650	6995.25	5480.55	3119.95	4610.43	40°21'09.862"N	104°58'29.680"W	0.36	
12913.00	90.680	89.750	6994.27	5566.29	3119.62	4704.42	40°21'09.859"N	104°58'28.465"W	0.97	
13008.00	90.580	88.940	6993.22	5653.52	3120.71	4799.41	40°21'09.869"N	104°58'27.239"W	0.86	
13102.00	90.430	88.890	6992.39	5740.11	3122.49	4893.39	40°21'09.887"N	104°58'26.025"W	0.17	
13197.00	90.550	89.160	6991.58	5827.55	3124.10	4988.37	40°21'09.902"N	104°58'24.798"W	0.31	
13291.00	90.520	89.270	6990.70	5913.94	3125.39	5082.36	40°21'09.915"N	104°58'23.584"W	0.12	
13386.00	90.520	89.160	6989.84	6001.26	3126.69	5177.35	40°21'09.928"N	104°58'22.357"W	0.12	
13480.00	90.650	88.550	6988.88	6087.89	3128.57	5271.32	40°21'09.946"N	104°58'21.143"W	0.66	
13575.00	90.490	88.250	6987.94	6175.72	3131.22	5366.28	40°21'09.972"N	104°58'19.917"W	0.36	
13670.00	90.620	89.790	6987.02	6263.16	3132.85	5461.26	40°21'09.988"N	104°58'18.690"W	1.63	
13764.00	90.490	90.710	6986.11	6348.87	3132.44	5555.25	40°21'09.984"N	104°58'17.476"W	0.99	
13859.00	90.550	89.850	6985.24	6435.48	3131.97	5650.25	40°21'09.979"N	104°58'16.249"W	0.91	

Actual Wellpath Report

FLASCHENRIEM 5 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	PETRO OPERATING CO, LLC	Slot	SLOT#05 FLASCHENRIEM 5 (1833'FNL & 2206'FWL, SEC.03)
Area	COLORADO	Well	FLASCHENRIEM 5
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	FLASCHENRIEM 5 AWB
Facility	SEC.03-T04N-R68W		

WELLPATH DATA (166 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
13953.00	90.490	90.270	6984.39	6521.32	3131.87	5744.24	40°21'09.978"N	104°58'15.035"W	0.45	
14048.00	90.680	90.560	6983.42	6607.83	3131.19	5839.23	40°21'09.970"N	104°58'13.808"W	0.36	
14143.00	90.580	91.930	6982.38	6693.76	3129.12	5934.20	40°21'09.950"N	104°58'12.581"W	1.45	
14238.00	90.890	92.340	6981.16	6779.05	3125.58	6029.13	40°21'09.915"N	104°58'11.355"W	0.54	
14333.00	90.680	91.480	6979.85	6864.51	3122.42	6124.07	40°21'09.883"N	104°58'10.129"W	0.93	
14427.00	90.770	91.890	6978.67	6949.23	3119.65	6218.02	40°21'09.856"N	104°58'08.915"W	0.45	
14521.00	90.800	91.770	6977.38	7033.84	3116.65	6311.96	40°21'09.826"N	104°58'07.702"W	0.13	
14616.00	90.280	90.880	6976.48	7119.72	3114.45	6406.93	40°21'09.804"N	104°58'06.475"W	1.08	
14711.00	90.250	84.230	6976.04	7208.03	3118.51	6501.79	40°21'09.844"N	104°58'05.250"W	7.00	
14805.00	90.740	87.080	6975.23	7296.55	3125.63	6595.51	40°21'09.914"N	104°58'04.040"W	3.08	
14900.00	90.740	87.820	6974.00	7384.97	3129.85	6690.40	40°21'09.955"N	104°58'02.814"W	0.78	
14995.00	90.890	88.410	6972.65	7472.99	3132.98	6785.34	40°21'09.986"N	104°58'01.588"W	0.64	
15090.00	90.680	88.160	6971.35	7560.89	3135.82	6880.29	40°21'10.014"N	104°58'00.361"W	0.34	
15184.00	90.520	89.680	6970.37	7647.47	3137.59	6974.27	40°21'10.031"N	104°57'59.147"W	1.63	
15223.00	90.580	90.200	6969.99	7683.12	3137.63	7013.27	40°21'10.031"N	104°57'58.644"W	1.34	LAST BHI MWD SURVEY (1327'FSL & 485'FEL, SEC.35)
15247.00	90.580	90.200	6969.75	7705.01	3137.55	7037.26	40°21'10.030"N	104°57'58.334"W	0.00	PROJECTION TO BIT (1327'FSL & 461'FEL, SEC.35)

HOLE & CASING SECTIONS - Ref Wellbore: FLASCHENRIEM 5 AWB Ref Wellpath: FLASCHENRIEM 5 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	23.00	1580.00	1557.00	23.00	1559.47	0.00	0.00	182.46	-31.59

Actual Wellpath Report

FLASCHENRIEM 5 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	PETRO OPERATING CO, LLC	Slot	SLOT#05 FLASCHENRIEM 5 (1833'FNL & 2206'FWL,SEC.03)
Area	COLORADO	Well	FLASCHENRIEM 5
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	FLASCHENRIEM 5 AWB
Facility	SEC.03-T04N-R68W		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.03-T04N-R68W	-5.00	1.23	-24.36	3141727.20	1368631.79	40°20'39.048"N	104°59'29.544"W	polygon
SEC.34-T05N-R68W	-5.00	1.23	-24.36	3141727.20	1368631.79	40°20'39.048"N	104°59'29.544"W	polygon
SEC.35-T05N-R68W	-5.00	1.23	-24.36	3141727.20	1368631.79	40°20'39.048"N	104°59'29.544"W	polygon
FLASCHENRIEM 5 BHL ON PLAT (1224'FSL & 460'FEL,SEC.35)	6941.00	3035.18	7038.54	3148772.28	1371706.06	40°21'09.019"N	104°57'58.317"W	point
FLASCHENRIEM 5 BHL REV-2 (1320'FSL & 460'FEL,SEC.35)	6941.00	3130.92	7037.74	3148770.92	1371801.79	40°21'09.965"N	104°57'58.328"W	point
FLASCHENRIEM 5 LP ON PLAT (1224'FSL & 2193'FEL,SEC.34)	6941.00	3056.44	34.79	3141768.82	1371687.15	40°21'09.239"N	104°59'28.780"W	point
FLASCHENRIEM 5 LP REV-2 (1320'FSL & 2193'FEL,SEC.34)	6941.00	3152.18	34.37	3141767.85	1371782.88	40°21'10.185"N	104°59'28.785"W	point
FLASCHENRIEM 5 BHL REV-3 (1320'FSL & 460'FEL,SEC.35)	6985.00	3130.92	7037.74	3148770.92	1371801.79	40°21'09.965"N	104°57'58.328"W	point
FLASCHENRIEM 5 LP REV-3 (1320'FSL & 2193'FEL,SEC.34)	6985.00	3152.18	34.37	3141767.85	1371782.88	40°21'10.185"N	104°59'28.785"W	point
FLASCHENRIEM 5 BHL REV-4 (1320'FSL & 460'FEL,SEC.35)	7029.00	3130.92	7037.74	3148770.92	1371801.79	40°21'09.965"N	104°57'58.328"W	point
FLASCHENRIEM 5 LP REV-4 (1320'FSL & 2193'FEL,SEC.34)	7029.00	3152.18	34.37	3141767.85	1371782.88	40°21'10.185"N	104°59'28.785"W	point

Actual Wellpath Report

FLASCHENRIEM 5 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	PETRO OPERATING CO, LLC	Slot	SLOT#05 FLASCHENRIEM 5 (1833'FNL & 2206'FWL,SEC.03)
Area	COLORADO	Well	FLASCHENRIEM 5
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	FLASCHENRIEM 5 AWB
Facility	SEC.03-T04N-R68W		

WELLPATH COMPOSITION - Ref Wellbore: FLASCHENRIEM 5 AWB Ref Wellpath: FLASCHENRIEM 5 AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
23.00	1525.00	BHI NaviTrak (Rotating+Axial Corr)	BHI NAVITRAK 13.5" (ROTATING & AXIAL)<134-1525>	FLASCHENRIEM 5 AWB
1525.00	15223.00	BHI AutoTrak Curve (Short)	BHI ATC 8.5" (SHORT)<1585-15223>	FLASCHENRIEM 5 AWB
15223.00	15247.00	Blind Drilling (std)	Projection to bit	FLASCHENRIEM 5 AWB

Actual Wellpath Report

FLASCHENRIEM 5 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	PETRO OPERATING CO, LLC	Slot	SLOT#05 FLASCHENRIEM 5 (1833'FNL & 2206'FWL,SEC.03)
Area	COLORADO	Well	FLASCHENRIEM 5
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	FLASCHENRIEM 5 AWB
Facility	SEC.03-T04N-R68W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
7810.00	60.026	68.718	6917.79	LANDING (1257'FSL & 2598'FEL, SEC.34)
15223.00	90.580	90.200	6969.99	LAST BHI MWD SURVEY (1327'FSL & 485'FEL, SEC.35)
15247.00	90.580	90.200	6969.75	PROJECTION TO BIT (1327'FSL & 461'FEL, SEC.35)