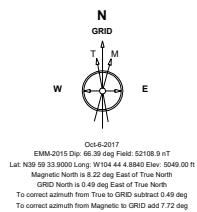
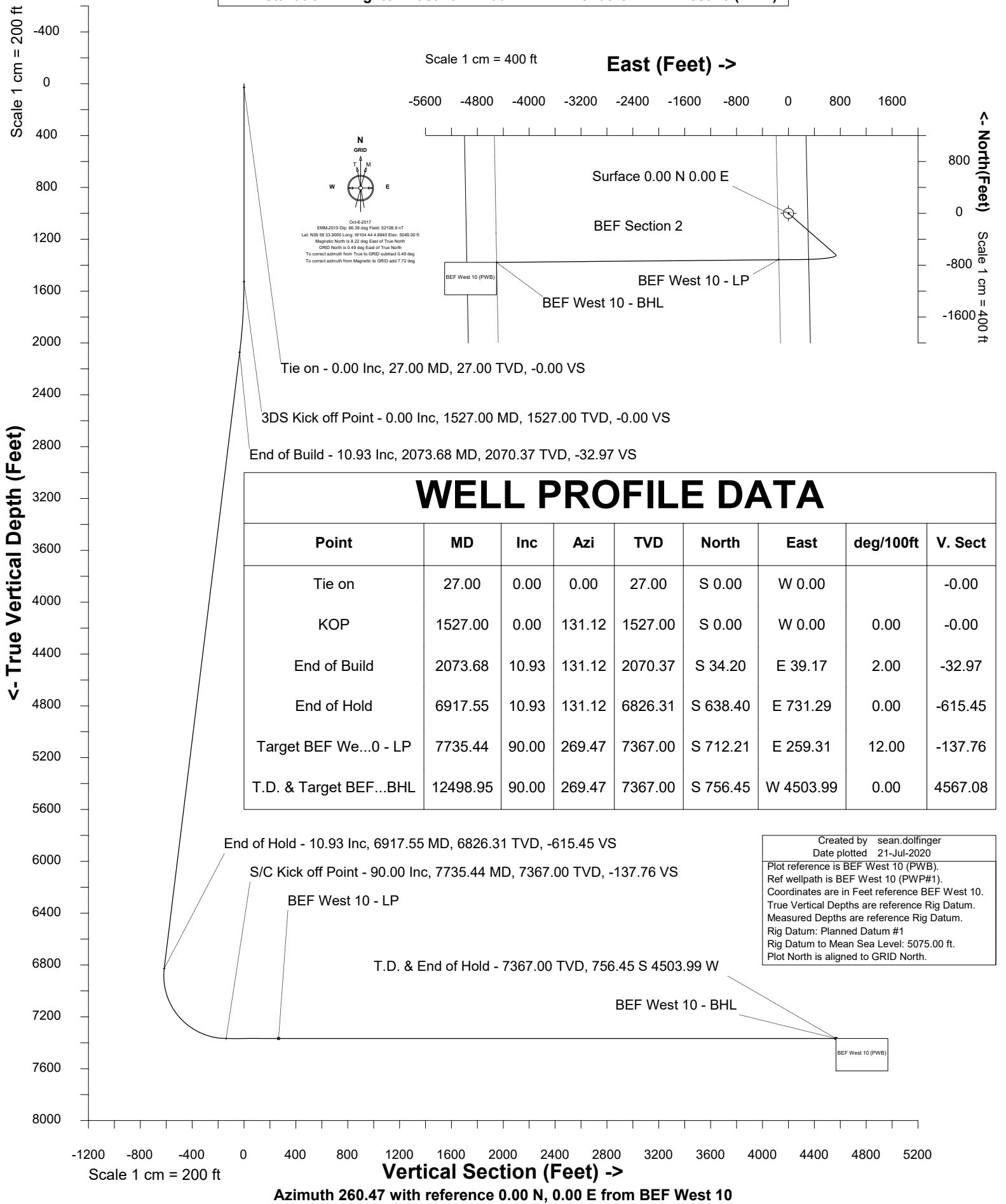


# Petro Operating Company

Location	Weld County, CO	Slot	BEF West 10
Field	Wattenberg	Well	BEF West 10
Installation	Brighton East Farm Pad	Wellbore	BEF West 10 (PWB)



WELL PROFILE DATA								
Point	MD	Inc	Azi	TVD	North	East	deg/100ft	V. Sect
Tie on	27.00	0.00	0.00	27.00	S 0.00	W 0.00		-0.00
KOP	1527.00	0.00	131.12	1527.00	S 0.00	W 0.00	0.00	-0.00
End of Build	2073.68	10.93	131.12	2070.37	S 34.20	E 39.17	2.00	-32.97
End of Hold	6917.55	10.93	131.12	6826.31	S 638.40	E 731.29	0.00	-615.45
Target BEF We...0 - LP	7735.44	90.00	269.47	7367.00	S 712.21	E 259.31	12.00	-137.76
T.D. & Target BEF...BHL	12498.95	90.00	269.47	7367.00	S 756.45	W 4503.99	0.00	4567.08

Created by sean.doffinger  
Date plotted 21-Jul-2020  
Plot reference is BEF West 10 (PWB).  
Ref wellpath is BEF West 10 (PWP#1).  
Coordinates are in Feet reference BEF West 10.  
True Vertical Depths are reference Rig Datum.  
Measured Depths are reference Rig Datum.  
Rig Datum: Planned Datum #1  
Rig Datum to Mean Sea Level: 5075.00 ft.  
Plot North is aligned to GRID North.



Wellhead Details							
Name	Latitude	Longitude	Northing	Easting	North	East	Slot Elevation Above Ground
BEF West 10	39.99489410	-104.73461140	1241912.3482	3214439.7560	781.23N	15.28E	0.00

Declination			
Date	Source	Time	
Jan-28-2019	EMM-2017	08:45	
Jan-28-2019	EMM-2017	09:44	
May-20-2019	EMM-2017	09:01	
May-20-2019	EMM-2017	09:28	
May-20-2019	EMM-2017	09:30	
May-20-2019	EMM-2017	09:33	
May-20-2019	EMM-2017	09:35	
Oct-6-2017	EMM-2015	14:35	
May-20-2019	EMM-2017	09:36	
May-20-2019	EMM-2017	09:36	
May-20-2019	EMM-2017	09:38	
May-20-2019	EMM-2017	09:38	

Installation Details						
Name	Installation Position (Latitude)	Installation Position (Longitude)	Northing	Easting	Coord System Name	North Alignment
Brighton East Farm Pad	39.99275000	-104.73469000	1241131.1481	3214424.4758	NAD83 Colorado State Planes, North Zone, US Foot	Grid

Summary Wellpath								
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	Vertical Depth SS	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]
27.00	0.00	0.00	27.00	-5048.00	0.00N	0.00E		0.00
1527.00	0.00	131.12	1527.00	-3548.00	0.00N	0.00E	==>	0.00
2073.68	10.93	131.12	2070.37	-3004.63	34.20S	39.17E	2.00	-32.97
6917.55	10.93	131.12	6826.31	1751.31	638.40S	731.29E	==>	-615.45
7735.44	90.00	269.47	7367.00	2292.00	712.21S	259.31E	12.00	-137.76
12498.95	90.00	269.47	7367.00	2292.00	756.45S	4503.99W	==>	4567.08

Interpolated Wellpath									
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Station Position (Latitude)	Station Position (Longitude)
0.00	0.00	0.00	0.00	0.00N	0.00E		0.00	39.99489410	-104.73461140
27.00	0.00	0.00	27.00	0.00N	0.00E	==>	0.00	39.99489410	-104.73461140
100.00	0.00	0.00	100.00	0.00N	0.00E	==>	0.00	39.99489410	-104.73461140
200.00	0.00	0.00	200.00	0.00N	0.00E	==>	0.00	39.99489410	-104.73461140
300.00	0.00	0.00	300.00	0.00N	0.00E	==>	0.00	39.99489410	-104.73461140
400.00	0.00	0.00	400.00	0.00N	0.00E	==>	0.00	39.99489410	-104.73461140
500.00	0.00	0.00	500.00	0.00N	0.00E	==>	0.00	39.99489410	-104.73461140
600.00	0.00	0.00	600.00	0.00N	0.00E	==>	0.00	39.99489410	-104.73461140
700.00	0.00	0.00	700.00	0.00N	0.00E	==>	0.00	39.99489410	-104.73461140
800.00	0.00	0.00	800.00	0.00N	0.00E	==>	0.00	39.99489410	-104.73461140
900.00	0.00	0.00	900.00	0.00N	0.00E	==>	0.00	39.99489410	-104.73461140
1000.00	0.00	0.00	1000.00	0.00N	0.00E	==>	0.00	39.99489410	-104.73461140
1100.00	0.00	0.00	1100.00	0.00N	0.00E	==>	0.00	39.99489410	-104.73461140
1200.00	0.00	0.00	1200.00	0.00N	0.00E	==>	0.00	39.99489410	-104.73461140
1300.00	0.00	0.00	1300.00	0.00N	0.00E	==>	0.00	39.99489410	-104.73461140
1400.00	0.00	0.00	1400.00	0.00N	0.00E	==>	0.00	39.99489410	-104.73461140
1500.00	0.00	0.00	1500.00	0.00N	0.00E	==>	0.00	39.99489410	-104.73461140
1527.00	0.00	131.12	1527.00	0.00N	0.00E	==>	0.00	39.99489410	-104.73461140
1627.00	2.00	131.12	1626.98	1.15S	1.31E	2.00	-1.11	39.99489092	-104.73460674
1727.00	4.00	131.12	1726.84	4.59S	5.26E	2.00	-4.42	39.99488138	-104.73459278
1827.00	6.00	131.12	1826.45	10.32S	11.82E	2.00	-9.95	39.99486549	-104.73456952
1927.00	8.00	131.12	1925.70	18.34S	21.00E	2.00	-17.68	39.99484327	-104.73453701
2027.00	10.00	131.12	2024.47	28.62S	32.79E	2.00	-27.59	39.99481475	-104.73449527

All data is in Feet unless otherwise stated  
Coordinates are from Slot MD's are from Rig and TVD's are from Rig ( Planned Datum #1 5075.0ft above Mean Sea Level )  
Vertical Section is from 0.00N 0.00E on azimuth 260.47 degrees  
Bottom hole distance is 4567.08 Feet on azimuth 260.47 degrees from Wellhead  
Calculation method uses Minimum Curvature method  
Prepared by  
Date Printed: 21-Jul-2020

SYSDRILL  
Well Design Combined Report  
Wellbore: BEF West 10 (PWB)



Interpolated Wellpath									
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Station Position (Latitude)	Station Position (Longitude)
2073.68	10.93	131.12	2070.37	34.20S	39.17E	2.00	-32.97	39.99479930	-104.73447264
2127.00	10.93	131.12	2122.72	40.85S	46.79E	==>	-39.38	39.99478086	-104.73444566
2227.00	10.93	131.12	2220.91	53.32S	61.08E	==>	-51.41	39.99474628	-104.73439505
2327.00	10.93	131.12	2319.09	65.80S	75.37E	==>	-63.43	39.99471170	-104.73434444
2427.00	10.93	131.12	2417.27	78.27S	89.66E	==>	-75.46	39.99467712	-104.73429383
2527.00	10.93	131.12	2515.46	90.74S	103.95E	==>	-87.48	39.99464254	-104.73424322
2627.00	10.93	131.12	2613.64	103.22S	118.24E	==>	-99.51	39.99460796	-104.73419261
2727.00	10.93	131.12	2711.83	115.69S	132.52E	==>	-111.53	39.99457339	-104.73414200
2827.00	10.93	131.12	2810.01	128.17S	146.81E	==>	-123.56	39.99453881	-104.73409139
2927.00	10.93	131.12	2908.20	140.64S	161.10E	==>	-135.58	39.99450423	-104.73404078
3027.00	10.93	131.12	3006.38	153.11S	175.39E	==>	-147.61	39.99446965	-104.73399017
3127.00	10.93	131.12	3104.57	165.59S	189.68E	==>	-159.63	39.99443507	-104.73393956
3227.00	10.93	131.12	3202.75	178.06S	203.97E	==>	-171.66	39.99440049	-104.73388895
3327.00	10.93	131.12	3300.94	190.53S	218.25E	==>	-183.68	39.99436591	-104.73383834
3427.00	10.93	131.12	3399.12	203.01S	232.54E	==>	-195.71	39.99433133	-104.73378773
3527.00	10.93	131.12	3497.31	215.48S	246.83E	==>	-207.73	39.99429676	-104.73373712
3627.00	10.93	131.12	3595.49	227.95S	261.12E	==>	-219.76	39.99426218	-104.73368651
3727.00	10.93	131.12	3693.68	240.43S	275.41E	==>	-231.78	39.99422760	-104.73363590
3827.00	10.93	131.12	3791.86	252.90S	289.70E	==>	-243.81	39.99419302	-104.73358529
3927.00	10.93	131.12	3890.05	265.38S	303.98E	==>	-255.83	39.99415844	-104.73353468
4027.00	10.93	131.12	3988.23	277.85S	318.27E	==>	-267.86	39.99412386	-104.73348407
4127.00	10.93	131.12	4086.42	290.32S	332.56E	==>	-279.88	39.99408928	-104.73343346
4227.00	10.93	131.12	4184.60	302.80S	346.85E	==>	-291.91	39.99405470	-104.73338285
4327.00	10.93	131.12	4282.79	315.27S	361.14E	==>	-303.93	39.99402012	-104.73333225
4427.00	10.93	131.12	4380.97	327.74S	375.43E	==>	-315.96	39.99398554	-104.73328164
4527.00	10.93	131.12	4479.15	340.22S	389.72E	==>	-327.98	39.99395097	-104.73323103
4627.00	10.93	131.12	4577.34	352.69S	404.00E	==>	-340.01	39.99391639	-104.73318042
4727.00	10.93	131.12	4675.52	365.16S	418.29E	==>	-352.03	39.99388181	-104.73312981
4827.00	10.93	131.12	4773.71	377.64S	432.58E	==>	-364.06	39.99384723	-104.73307920
4927.00	10.93	131.12	4871.89	390.11S	446.87E	==>	-376.08	39.99381265	-104.73302859
5027.00	10.93	131.12	4970.08	402.59S	461.16E	==>	-388.11	39.99377807	-104.73297798
5127.00	10.93	131.12	5068.26	415.06S	475.45E	==>	-400.13	39.99374349	-104.73292738
5227.00	10.93	131.12	5166.45	427.53S	489.73E	==>	-412.16	39.99370891	-104.73287677
5327.00	10.93	131.12	5264.63	440.01S	504.02E	==>	-424.18	39.99367433	-104.73282616
5427.00	10.93	131.12	5362.82	452.48S	518.31E	==>	-436.21	39.99363975	-104.73277555
5527.00	10.93	131.12	5461.00	464.95S	532.60E	==>	-448.23	39.99360517	-104.73272494
5627.00	10.93	131.12	5559.19	477.43S	546.89E	==>	-460.26	39.99357059	-104.73267433
5727.00	10.93	131.12	5657.37	489.90S	561.18E	==>	-472.28	39.99353601	-104.73262373
5827.00	10.93	131.12	5755.56	502.37S	575.46E	==>	-484.31	39.99350144	-104.73257312
5927.00	10.93	131.12	5853.74	514.85S	589.75E	==>	-496.33	39.99346686	-104.73252251
6027.00	10.93	131.12	5951.93	527.32S	604.04E	==>	-508.36	39.99343228	-104.73247190
6127.00	10.93	131.12	6050.11	539.80S	618.33E	==>	-520.38	39.99339770	-104.73242129
6227.00	10.93	131.12	6148.30	552.27S	632.62E	==>	-532.41	39.99336312	-104.73237069
6327.00	10.93	131.12	6246.48	564.74S	646.91E	==>	-544.43	39.99332854	-104.73232008
6427.00	10.93	131.12	6344.67	577.22S	661.19E	==>	-556.46	39.99329396	-104.73226947
6527.00	10.93	131.12	6442.85	589.69S	675.48E	==>	-568.48	39.99325938	-104.73221886
6627.00	10.93	131.12	6541.04	602.16S	689.77E	==>	-580.51	39.99322480	-104.73216825
6727.00	10.93	131.12	6639.22	614.64S	704.06E	==>	-592.53	39.99319022	-104.73211765
6827.00	10.93	131.12	6737.40	627.11S	718.35E	==>	-604.56	39.99315564	-104.73206704
6917.55	10.93	131.12	6826.31	638.40S	731.29E	==>	-615.45	39.99312106	-104.73201644
6927.00	10.12	135.46	6835.60	639.59S	732.54E	12.00	-616.49	39.99312106	-104.73201676
7027.00	8.85	213.89	6934.59	652.28S	734.43E	12.00	-616.24	39.99308617	-104.73201044
7127.00	18.45	246.84	7031.78	664.93S	715.52E	12.00	-595.50	39.99305189	-104.73207830
7227.00	29.82	256.52	7122.92	677.00S	676.65E	12.00	-555.17	39.99301970	-104.73221740
7327.00	41.52	261.13	7204.04	687.94S	619.51E	12.00	-497.01	39.99299101	-104.73242165
7427.00	53.34	263.98	7271.57	697.29S	546.61E	12.00	-423.57	39.99296708	-104.73268211
7527.00	65.20	266.07	7322.58	704.63S	461.13E	12.00	-338.05	39.99294895	-104.73298742
7627.00	77.09	267.78	7354.84	709.65S	366.80E	12.00	-244.19	39.99293742	-104.73332422

All data is in Feet unless otherwise stated  
Coordinates are from Slot MD's are from Rig and TVD's are from Rig ( Planned Datum #1 5075.0ft above Mean Sea Level )  
Vertical Section is from 0.00N 0.00E on azimuth 260.47 degrees  
Bottom hole distance is 4567.08 Feet on azimuth 260.47 degrees from Wellhead  
Calculation method uses Minimum Curvature method  
Prepared by  
Date Printed: 21-Jul-2020

SYSDRILL  
Well Design Combined Report  
Wellbore: BEF West 10 (PWB)



Interpolated Wellpath									
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Station Position (Latitude)	Station Position (Longitude)
7727.00	89.00	269.34	7366.93	712.12S	267.74E	12.00	-146.10	39.99293298	-104.73367780
7735.44	90.00	269.47	7367.00	712.21S	259.31E	12.00	-137.76	39.99293294	-104.73370792
7827.00	90.00	269.47	7367.00	713.06S	167.75E	==>	-47.33	39.99293278	-104.73403469
7927.00	90.00	269.47	7367.00	713.99S	67.75E	==>	51.44	39.99293260	-104.73439159
8027.00	90.00	269.47	7367.00	714.92S	32.24W	==>	150.21	39.99293242	-104.73474849
8127.00	90.00	269.47	7367.00	715.85S	132.24W	==>	248.98	39.99293224	-104.73510539
8227.00	90.00	269.47	7367.00	716.78S	232.23W	==>	347.75	39.99293206	-104.73546228
8327.00	90.00	269.47	7367.00	717.70S	332.23W	==>	446.51	39.99293188	-104.73581918
8427.00	90.00	269.47	7367.00	718.63S	432.22W	==>	545.28	39.99293169	-104.73617608
8527.00	90.00	269.47	7367.00	719.56S	532.22W	==>	644.05	39.99293151	-104.73653298
8627.00	90.00	269.47	7367.00	720.49S	632.22W	==>	742.82	39.99293132	-104.73688987
8727.00	90.00	269.47	7367.00	721.42S	732.21W	==>	841.59	39.99293113	-104.73724677
8827.00	90.00	269.47	7367.00	722.35S	832.21W	==>	940.36	39.99293094	-104.73760367
8927.00	90.00	269.47	7367.00	723.28S	932.20W	==>	1039.12	39.99293075	-104.73796056
9027.00	90.00	269.47	7367.00	724.21S	1032.20W	==>	1137.89	39.99293056	-104.73831746
9127.00	90.00	269.47	7367.00	725.13S	1132.19W	==>	1236.66	39.99293037	-104.73867436
9227.00	90.00	269.47	7367.00	726.06S	1232.19W	==>	1335.43	39.99293018	-104.73903126
9327.00	90.00	269.47	7367.00	726.99S	1332.19W	==>	1434.20	39.99292998	-104.73938815
9427.00	90.00	269.47	7367.00	727.92S	1432.18W	==>	1532.97	39.99292979	-104.73974505
9527.00	90.00	269.47	7367.00	728.85S	1532.18W	==>	1631.73	39.99292959	-104.74010195
9627.00	90.00	269.47	7367.00	729.78S	1632.17W	==>	1730.50	39.99292939	-104.74045885
9727.00	90.00	269.47	7367.00	730.71S	1732.17W	==>	1829.27	39.99292919	-104.74081574
9827.00	90.00	269.47	7367.00	731.63S	1832.16W	==>	1928.04	39.99292899	-104.74117264
9927.00	90.00	269.47	7367.00	732.56S	1932.16W	==>	2026.81	39.99292879	-104.74152954
10027.00	90.00	269.47	7367.00	733.49S	2032.16W	==>	2125.58	39.99292859	-104.74188644
10127.00	90.00	269.47	7367.00	734.42S	2132.15W	==>	2224.34	39.99292839	-104.74224333
10227.00	90.00	269.47	7367.00	735.35S	2232.15W	==>	2323.11	39.99292818	-104.74260023
10327.00	90.00	269.47	7367.00	736.28S	2332.14W	==>	2421.88	39.99292798	-104.74295713
10427.00	90.00	269.47	7367.00	737.21S	2432.14W	==>	2520.65	39.99292777	-104.74331403
10527.00	90.00	269.47	7367.00	738.14S	2532.13W	==>	2619.42	39.99292756	-104.74367092
10627.00	90.00	269.47	7367.00	739.06S	2632.13W	==>	2718.19	39.99292736	-104.74402782
10727.00	90.00	269.47	7367.00	739.99S	2732.13W	==>	2816.95	39.99292715	-104.74438472
10827.00	90.00	269.47	7367.00	740.92S	2832.12W	==>	2915.72	39.99292693	-104.74474161
10927.00	90.00	269.47	7367.00	741.85S	2932.12W	==>	3014.49	39.99292672	-104.74509851
11027.00	90.00	269.47	7367.00	742.78S	3032.11W	==>	3113.26	39.99292651	-104.74545541
11127.00	90.00	269.47	7367.00	743.71S	3132.11W	==>	3212.03	39.99292630	-104.74581231
11227.00	90.00	269.47	7367.00	744.64S	3232.10W	==>	3310.80	39.99292608	-104.74616920
11327.00	90.00	269.47	7367.00	745.57S	3332.10W	==>	3409.56	39.99292586	-104.74652610
11427.00	90.00	269.47	7367.00	746.49S	3432.09W	==>	3508.33	39.99292565	-104.74688300
11527.00	90.00	269.47	7367.00	747.42S	3532.09W	==>	3607.10	39.99292543	-104.74723990
11627.00	90.00	269.47	7367.00	748.35S	3632.09W	==>	3705.87	39.99292521	-104.74759679
11727.00	90.00	269.47	7367.00	749.28S	3732.08W	==>	3804.64	39.99292499	-104.74795369
11827.00	90.00	269.47	7367.00	750.21S	3832.08W	==>	3903.41	39.99292476	-104.74831059
11927.00	90.00	269.47	7367.00	751.14S	3932.07W	==>	4002.17	39.99292454	-104.74866749
12027.00	90.00	269.47	7367.00	752.07S	4032.07W	==>	4100.94	39.99292432	-104.74902438
12127.00	90.00	269.47	7367.00	753.00S	4132.06W	==>	4199.71	39.99292409	-104.74938128
12227.00	90.00	269.47	7367.00	753.92S	4232.06W	==>	4298.48	39.99292387	-104.74973818
12327.00	90.00	269.47	7367.00	754.85S	4332.06W	==>	4397.25	39.99292364	-104.75009508
12427.00	90.00	269.47	7367.00	755.78S	4432.05W	==>	4496.02	39.99292341	-104.75045197
12498.95	90.00	269.47	7367.00	756.45S	4503.99W	==>	4567.08	39.99292324	-104.75070874

All data is in Feet unless otherwise stated  
Coordinates are from Slot MD's are from Rig and TVD's are from Rig ( Planned Datum #1 5075.0ft above Mean Sea Level )  
Vertical Section is from 0.00N 0.00E on azimuth 260.47 degrees  
Bottom hole distance is 4567.08 Feet on azimuth 260.47 degrees from Wellhead  
Calculation method uses Minimum Curvature method  
Prepared by  
Date Printed: 21-Jul-2020



Targets							
Name	North[ft]	East[ft]	TVD[ft]	Latitude	Longitude	Northing	Easting
BEF West 10 - BHL	756.45S	4503.99W	7367.00	39.99292324	-104.75070874	1241155.92	3209935.92
BEF West 10 - LP	712.21S	150.69W	7367.00	39.99294266	-104.73517114	1241200.16	3214289.07

Formations						
Formation Name	Formation MD	Formation TVD	Wellpath Inc	Incidence Angle	North	East
sec2_d2e_20ft_Depth_01 _sec2_d2e_20ft_Tgrid						

Survey Tool Program						
Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool	Error Model	
992862	Planned	1527.00	1527.00	WdW Rate Gyro	Standard	
992863	Planned	12498.95	7367.00	ISCWSA MWD	Rev 4 + SAG + FLT	

Notes