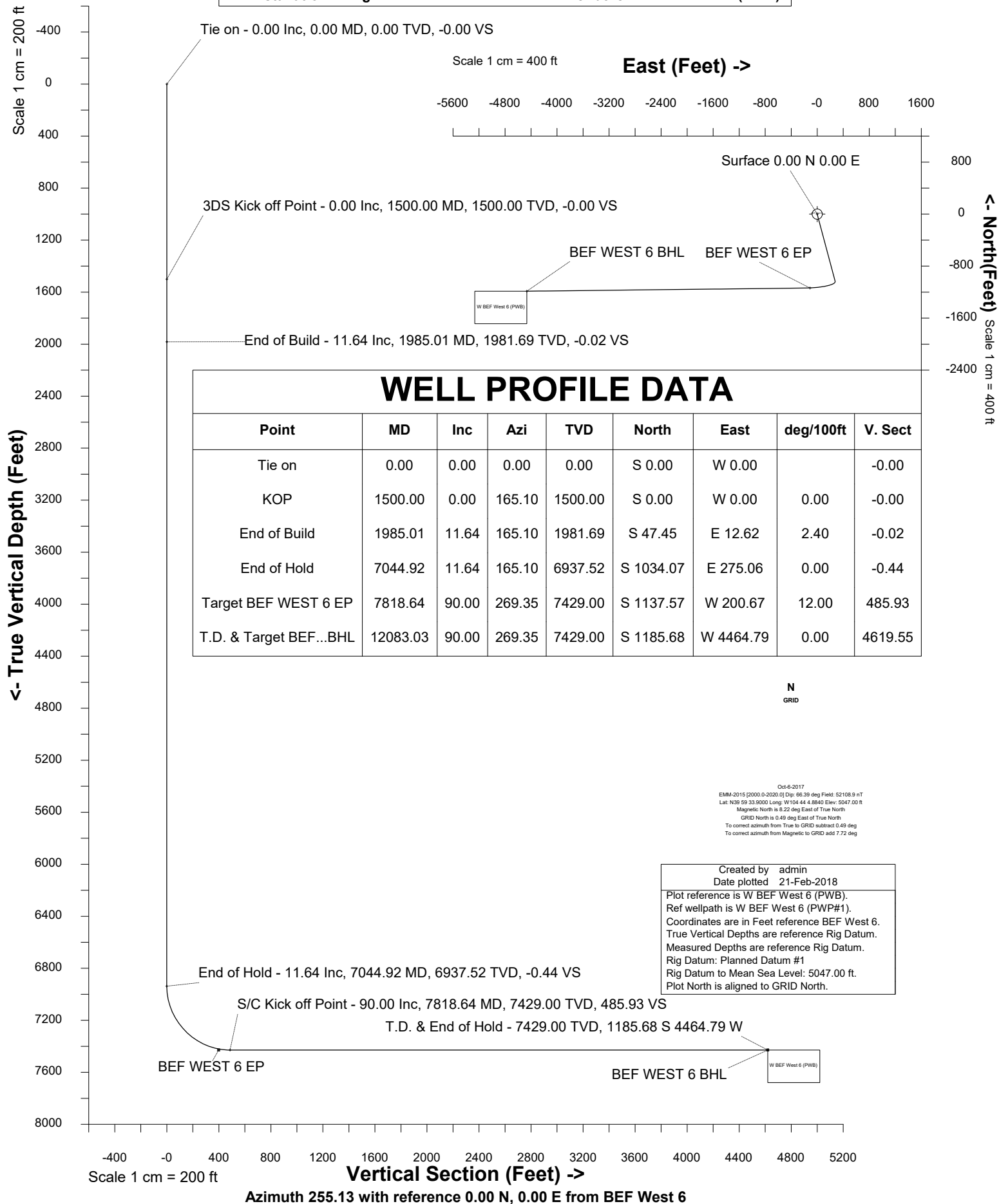


# Petro Operating Company

Location Weld County, CO Slot BEF West 6  
Field Wattenberg Well W BEF West 6  
Installation Brighton East Farm Pad Wellbore W BEF West 6 (PWB)





SYSDRILL  
Well Design Combined Report  
Wellbore: W BEF West 6 (PWB)



Wellhead Details							
Name	Latitude	Longitude	Northing	Easting	North	East	Slot Elevation Above Ground
BEF West 6	39.99323000	-104.73469000	1241305.9929	3214422.9667	174.85N	1.51W	0.00

Declination		
Date	Source	Time
Oct-6-2017	EMM-2015 [2000.0-2020.0]	14:35

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	CO83-NF on NORTH AMERICAN DATUM 1983 datum	Grid

Summary Wellpath								
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	Vertical Depth SS	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]
0.00	0.00	0.000	0.00	-5047.00	0.00N	0.00E		0.00
1500.00	0.00	165.100	1500.00	-3547.00	0.00N	0.00E	==>	0.00
1985.01	11.64	165.100	1981.69	-3065.31	47.45S	12.62E	2.40	-0.02
7044.92	11.64	165.100	6937.52	1890.52	1034.07S	275.06E	==>	-0.44
7818.64	90.00	269.350	7429.00	2382.00	1137.57S	200.67W	12.00	485.93
12083.03	90.00	269.350	7429.00	2382.00	1185.68S	4464.79W	==>	4619.55

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	0.000	0.00	0.00N	0.00E		0.00	39.99323000	-104.73469000
100.00	0.00	0.000	100.00	0.00N	0.00E	==>	0.00	39.99323000	-104.73469000
200.00	0.00	0.000	200.00	0.00N	0.00E	==>	0.00	39.99323000	-104.73469000
300.00	0.00	0.000	300.00	0.00N	0.00E	==>	0.00	39.99323000	-104.73469000
400.00	0.00	0.000	400.00	0.00N	0.00E	==>	0.00	39.99323000	-104.73469000
500.00	0.00	0.000	500.00	0.00N	0.00E	==>	0.00	39.99323000	-104.73469000
600.00	0.00	0.000	600.00	0.00N	0.00E	==>	0.00	39.99323000	-104.73469000
700.00	0.00	0.000	700.00	0.00N	0.00E	==>	0.00	39.99323000	-104.73469000
800.00	0.00	0.000	800.00	0.00N	0.00E	==>	0.00	39.99323000	-104.73469000
900.00	0.00	0.000	900.00	0.00N	0.00E	==>	0.00	39.99323000	-104.73469000
1000.00	0.00	0.000	1000.00	0.00N	0.00E	==>	0.00	39.99323000	-104.73469000
1100.00	0.00	0.000	1100.00	0.00N	0.00E	==>	0.00	39.99323000	-104.73469000
1200.00	0.00	0.000	1200.00	0.00N	0.00E	==>	0.00	39.99323000	-104.73469000
1300.00	0.00	0.000	1300.00	0.00N	0.00E	==>	0.00	39.99323000	-104.73469000
1400.00	0.00	0.000	1400.00	0.00N	0.00E	==>	0.00	39.99323000	-104.73469000
1500.00	0.00	165.100	1500.00	0.00N	0.00E	==>	0.00	39.99323000	-104.73469000
1600.00	2.40	165.100	1599.97	2.02S	0.54E	2.40	0.00	39.99322443	-104.73468814
1700.00	4.80	165.100	1699.77	8.09S	2.15E	2.40	-0.00	39.99320774	-104.73468257
1800.00	7.20	165.100	1799.21	18.19S	4.84E	2.40	-0.01	39.99317995	-104.73467329
1900.00	9.60	165.100	1898.13	32.31S	8.59E	2.40	-0.01	39.99314111	-104.73466032
2000.00	11.64	165.100	1996.36	50.37S	13.40E	==>	-0.02	39.99309141	-104.73464373
2100.00	11.64	165.100	2094.31	69.87S	18.59E	==>	-0.03	39.99303777	-104.73462582
2200.00	11.64	165.100	2192.25	89.37S	23.77E	==>	-0.04	39.99298412	-104.73460791
2300.00	11.64	165.100	2290.19	108.87S	28.96E	==>	-0.05	39.99293047	-104.73459000
2400.00	11.64	165.100	2388.14	128.37S	34.15E	==>	-0.05	39.99287683	-104.73457209
2500.00	11.64	165.100	2486.08	147.86S	39.33E	==>	-0.06	39.99282318	-104.73455418
2600.00	11.64	165.100	2584.02	167.36S	44.52E	==>	-0.07	39.99276953	-104.73453627
2700.00	11.64	165.100	2681.97	186.86S	49.71E	==>	-0.08	39.99271589	-104.73451836
2800.00	11.64	165.100	2779.91	206.36S	54.89E	==>	-0.09	39.99266224	-104.73450045
2900.00	11.64	165.100	2877.85	225.86S	60.08E	==>	-0.10	39.99260859	-104.73448254
3000.00	11.64	165.100	2975.80	245.36S	65.27E	==>	-0.10	39.99255495	-104.73446463
3100.00	11.64	165.100	3073.74	264.86S	70.45E	==>	-0.11	39.99250130	-104.73444673
3200.00	11.64	165.100	3171.68	284.36S	75.64E	==>	-0.12	39.99244765	-104.73442882
3300.00	11.64	165.100	3269.63	303.85S	80.83E	==>	-0.13	39.99239401	-104.73441091

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 5047.0ft above Mean Sea Level )  
Vertical Section is from 0.00N 0.00E on azimuth 255.130 degrees  
Bottom hole distance is 4619.55 Feet on azimuth 255.13 degrees from Wellhead  
Calculation method uses Minimum Curvature method  
Prepared by IPT  
Date Printed: 21-Feb-2018

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)
3400.00	11.64	165.100	3367.57	323.35S	86.01E	==>	-0.14	39.99234036	-104.73439300
3500.00	11.64	165.100	3465.51	342.85S	91.20E	==>	-0.15	39.99228671	-104.73437509
3600.00	11.64	165.100	3563.46	362.35S	96.39E	==>	-0.15	39.99223307	-104.73435718
3700.00	11.64	165.100	3661.40	381.85S	101.57E	==>	-0.16	39.99217942	-104.73433927
3800.00	11.64	165.100	3759.34	401.35S	106.76E	==>	-0.17	39.99212577	-104.73432136
3900.00	11.64	165.100	3857.29	420.85S	111.95E	==>	-0.18	39.99207213	-104.73430345
4000.00	11.64	165.100	3955.23	440.35S	117.13E	==>	-0.19	39.99201848	-104.73428554
4100.00	11.64	165.100	4053.17	459.84S	122.32E	==>	-0.20	39.99196483	-104.73426763
4200.00	11.64	165.100	4151.12	479.34S	127.51E	==>	-0.20	39.99191119	-104.73424972
4300.00	11.64	165.100	4249.06	498.84S	132.69E	==>	-0.21	39.99185754	-104.73423181
4400.00	11.64	165.100	4347.00	518.34S	137.88E	==>	-0.22	39.99180389	-104.73421390
4500.00	11.64	165.100	4444.95	537.84S	143.07E	==>	-0.23	39.99175025	-104.73419599
4600.00	11.64	165.100	4542.89	557.34S	148.25E	==>	-0.24	39.99169660	-104.73417808
4700.00	11.64	165.100	4640.83	576.84S	153.44E	==>	-0.25	39.99164295	-104.73416017
4800.00	11.64	165.100	4738.78	596.34S	158.63E	==>	-0.25	39.99158931	-104.73414226
4900.00	11.64	165.100	4836.72	615.83S	163.81E	==>	-0.26	39.99153566	-104.73412436
5000.00	11.64	165.100	4934.66	635.33S	169.00E	==>	-0.27	39.99148201	-104.73410645
5100.00	11.64	165.100	5032.61	654.83S	174.19E	==>	-0.28	39.99142836	-104.73408854
5200.00	11.64	165.100	5130.55	674.33S	179.37E	==>	-0.29	39.99137472	-104.73407063
5300.00	11.64	165.100	5228.49	693.83S	184.56E	==>	-0.30	39.99132107	-104.73405272
5400.00	11.64	165.100	5326.44	713.33S	189.75E	==>	-0.30	39.99126742	-104.73403481
5500.00	11.64	165.100	5424.38	732.83S	194.93E	==>	-0.31	39.99121378	-104.73401690
5600.00	11.64	165.100	5522.32	752.33S	200.12E	==>	-0.32	39.99116013	-104.73399899
5700.00	11.64	165.100	5620.27	771.82S	205.31E	==>	-0.33	39.99110648	-104.73398108
5800.00	11.64	165.100	5718.21	791.32S	210.49E	==>	-0.34	39.99105284	-104.73396317
5900.00	11.64	165.100	5816.15	810.82S	215.68E	==>	-0.35	39.99099919	-104.73394527
6000.00	11.64	165.100	5914.10	830.32S	220.87E	==>	-0.35	39.99094554	-104.73392736
6100.00	11.64	165.100	6012.04	849.82S	226.05E	==>	-0.36	39.99089190	-104.73390945
6200.00	11.64	165.100	6109.98	869.32S	231.24E	==>	-0.37	39.99083825	-104.73389154
6300.00	11.64	165.100	6207.93	888.82S	236.43E	==>	-0.38	39.99078460	-104.73387363
6400.00	11.64	165.100	6305.87	908.32S	241.61E	==>	-0.39	39.99073096	-104.73385572
6500.00	11.64	165.100	6403.81	927.81S	246.80E	==>	-0.40	39.99067731	-104.73383781
6600.00	11.64	165.100	6501.76	947.31S	251.99E	==>	-0.40	39.99062366	-104.73381990
6700.00	11.64	165.100	6599.70	966.81S	257.17E	==>	-0.41	39.99057002	-104.73380200
6800.00	11.64	165.100	6697.64	986.31S	262.36E	==>	-0.42	39.99051637	-104.73378409
6900.00	11.64	165.100	6795.59	1005.81S	267.55E	==>	-0.43	39.99046272	-104.73376618
7000.00	11.64	165.100	6893.53	1025.31S	272.73E	==>	-0.44	39.99040907	-104.73374827
7100.00	11.89	197.920	6991.51	1044.85S	274.75E	12.00	2.63	39.99035539	-104.73374170
7200.00	19.31	234.610	7087.98	1064.30S	258.04E	12.00	23.78	39.99030239	-104.73380192
7300.00	29.80	248.950	7178.88	1082.87S	221.24E	12.00	64.11	39.99025229	-104.73393383
7400.00	41.08	256.110	7260.26	1099.74S	165.95E	12.00	121.88	39.99020729	-104.73413166
7500.00	52.63	260.580	7328.55	1114.18S	94.59E	12.00	194.55	39.99016934	-104.73438675
7600.00	64.31	263.840	7380.76	1125.56S	10.28E	12.00	278.95	39.99014011	-104.73468797
7700.00	76.04	266.510	7414.62	1133.37S	83.29W	12.00	371.40	39.99012087	-104.73502215
7800.00	87.81	268.920	7428.64	1137.29S	182.04W	12.00	467.84	39.99011246	-104.73537467
7900.00	90.00	269.350	7429.00	1138.49S	282.03W	==>	564.79	39.99011154	-104.73573154
8000.00	90.00	269.350	7429.00	1139.62S	382.02W	==>	661.72	39.99011081	-104.73608842
8100.00	90.00	269.350	7429.00	1140.74S	482.02W	==>	758.66	39.99011007	-104.73644530
8200.00	90.00	269.350	7429.00	1141.87S	582.01W	==>	855.59	39.99010934	-104.73680218
8300.00	90.00	269.350	7429.00	1143.00S	682.00W	==>	952.52	39.99010860	-104.73715906
8400.00	90.00	269.350	7429.00	1144.13S	782.00W	==>	1049.46	39.99010787	-104.73751595
8500.00	90.00	269.350	7429.00	1145.26S	881.99W	==>	1146.39	39.99010713	-104.73787283
8600.00	90.00	269.350	7429.00	1146.39S	981.98W	==>	1243.32	39.99010639	-104.73822971
8700.00	90.00	269.350	7429.00	1147.51S	1081.98W	==>	1340.26	39.99010565	-104.73858659
8800.00	90.00	269.350	7429.00	1148.64S	1181.97W	==>	1437.19	39.99010491	-104.73894347
8900.00	90.00	269.350	7429.00	1149.77S	1281.96W	==>	1534.12	39.99010417	-104.73930035
9000.00	90.00	269.350	7429.00	1150.90S	1381.96W	==>	1631.06	39.99010343	-104.73965723
9100.00	90.00	269.350	7429.00	1152.03S	1481.95W	==>	1727.99	39.99010269	-104.74001412

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Coordinates are from Slot MD's are from Rig and TVD's are from Rig ( Planned Datum #1 5047.0ft above Mean Sea Level )  
Vertical Section is from 0.00N 0.00E on azimuth 255.130 degrees  
Bottom hole distance is 4619.55 Feet on azimuth 255.13 degrees from Wellhead  
Calculation method uses Minimum Curvature method  
Prepared by IPT  
Date Printed: 21-Feb-2018



SYSDRILL  
Well Design Combined Report  
Wellbore: W BEF West 6 (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)
9200.00	90.00	269.350	7429.00	1153.15S	1581.95W	==>	1824.93	39.99010194	-104.74037100
9300.00	90.00	269.350	7429.00	1154.28S	1681.94W	==>	1921.86	39.99010120	-104.74072788
9400.00	90.00	269.350	7429.00	1155.41S	1781.93W	==>	2018.79	39.99010045	-104.74108476
9500.00	90.00	269.350	7429.00	1156.54S	1881.93W	==>	2115.73	39.99009970	-104.74144164
9600.00	90.00	269.350	7429.00	1157.67S	1981.92W	==>	2212.66	39.99009895	-104.74179852
9700.00	90.00	269.350	7429.00	1158.79S	2081.91W	==>	2309.59	39.99009820	-104.74215540
9800.00	90.00	269.350	7429.00	1159.92S	2181.91W	==>	2406.53	39.99009745	-104.74251229
9900.00	90.00	269.350	7429.00	1161.05S	2281.90W	==>	2503.46	39.99009670	-104.74286917
10000.00	90.00	269.350	7429.00	1162.18S	2381.89W	==>	2600.39	39.99009595	-104.74322605
10100.00	90.00	269.350	7429.00	1163.31S	2481.89W	==>	2697.33	39.99009519	-104.74358293
10200.00	90.00	269.350	7429.00	1164.43S	2581.88W	==>	2794.26	39.99009444	-104.74393981
10300.00	90.00	269.350	7429.00	1165.56S	2681.88W	==>	2891.19	39.99009368	-104.74429669
10400.00	90.00	269.350	7429.00	1166.69S	2781.87W	==>	2988.13	39.99009292	-104.74465357
10500.00	90.00	269.350	7429.00	1167.82S	2881.86W	==>	3085.06	39.99009216	-104.74501046
10600.00	90.00	269.350	7429.00	1168.95S	2981.86W	==>	3181.99	39.99009140	-104.74536734
10700.00	90.00	269.350	7429.00	1170.07S	3081.85W	==>	3278.93	39.99009064	-104.74572422
10800.00	90.00	269.350	7429.00	1171.20S	3181.84W	==>	3375.86	39.99008988	-104.74608110
10900.00	90.00	269.350	7429.00	1172.33S	3281.84W	==>	3472.79	39.99008912	-104.74643798
11000.00	90.00	269.350	7429.00	1173.46S	3381.83W	==>	3569.73	39.99008835	-104.74679486
11100.00	90.00	269.350	7429.00	1174.59S	3481.82W	==>	3666.66	39.99008758	-104.74715174
11200.00	90.00	269.350	7429.00	1175.72S	3581.82W	==>	3763.59	39.99008682	-104.74750862
11300.00	90.00	269.350	7429.00	1176.84S	3681.81W	==>	3860.53	39.99008605	-104.74786551
11400.00	90.00	269.350	7429.00	1177.97S	3781.81W	==>	3957.46	39.99008528	-104.74822239
11500.00	90.00	269.350	7429.00	1179.10S	3881.80W	==>	4054.39	39.99008451	-104.74857927
11600.00	90.00	269.350	7429.00	1180.23S	3981.79W	==>	4151.33	39.99008374	-104.74893615
11700.00	90.00	269.350	7429.00	1181.36S	4081.79W	==>	4248.26	39.99008297	-104.74929303
11800.00	90.00	269.350	7429.00	1182.48S	4181.78W	==>	4345.19	39.99008219	-104.74964991
11900.00	90.00	269.350	7429.00	1183.61S	4281.77W	==>	4442.13	39.99008142	-104.75000679
12000.00	90.00	269.350	7429.00	1184.74S	4381.77W	==>	4539.06	39.99008064	-104.75036367
12083.03	90.00	269.350	7429.00	1185.68S	4464.79W	==>	4619.55	39.99008000	-104.75066000

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Vertical Section is from 0.00N 0.00E on azimuth 255.130 degrees  
Bottom hole distance is 4619.55 Feet on azimuth 255.13 degrees from Wellhead  
Calculation method uses Minimum Curvature method  
Prepared by IPT  
Date Printed: 21-Feb-2018



SYSDRILL  
Well Design Combined Report  
Wellbore: W BEF West 6 (PWB)



Targets							
Name	North[ft]	East[ft]	TVD[ft]	Latitude	Longitude	Northing	Easting
BEF WEST 6 BHL	1185.68S	4464.79W	7429.00	39.99008000	-104.75066000	1240120.36	3209958.33
BEF WEST 6 EP	1137.57S	110.67W	7429.00	39.99011000	-104.73512000	1240168.46	3214312.30

Survey Tool Program						
Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool	Error Model	
577591	Planned	2000.00	1996.36	WdW Rate Gyro	Standard	
577590	Planned	12083.03	7429.00	ISCWSA MWD	Rev 4 + SAG + FLT	

Notes