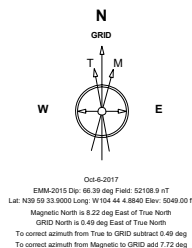


Petro Operating Company

Location Weld County, CO Slot BEF West 9
Field Wattenberg Well BEF West 9
Installation Brighton East Farm Pad Wellbore BEF West 9 (PWB)



Scale 1 cm = 400 ft

East (Feet) ->

-5600 -4800 -4000 -3200 -2400 -1600 -800 0 800 1600 2400

<- North(Feet) Scale 1 cm = 400 ft

800
0
-800
-1600

Surface 0.00 N 0.00 E

BEF West 9 - LP

BEF West 9 - BHL

BEF Section 2

Tie on - 0.00 Inc, 27.00 MD, 27.00 TVD, -0.00 VS

3DS Kick off Point - 0.00 Inc, 1527.00 MD, 1527.00 TVD, -0.00 VS

End of Build - 12.85 Inc, 2169.30 MD, 2163.93 TVD, -52.74 VS

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	122.99	1527.00	S 0.00	W 0.00	0.00	-0.00
End of Build	2169.30	12.85	122.99	2163.93	S 39.05	E 60.14	2.00	-52.74
End of Hold	7181.26	12.85	122.99	7050.45	S 645.86	E 994.74	0.00	-872.42
Target BEF West 9 - LP	8020.29	90.00	269.49	7612.00	S 720.71	E 526.20	12.00	-397.96
T.D. & Target BEF...BHL	13048.88	90.00	269.49	7612.00	S 765.38	W 4502.19	0.00	4566.79

End of Hold - 12.85 Inc, 7181.26 MD, 7050.45 TVD, -872.42 VS

S/C Kick off Point - 90.00 Inc, 8020.29 MD, 7612.00 TVD, -397.96 VS

BEF West 9 - LP

T.D. & End of Hold - 7612.00 TVD, 765.38 S 4502.19 W

BEF West 9 - BHL

BEF West 9 (PWB)

Created by sean.dolfinger
Date plotted 21-Jul-2020

Plot reference is BEF West 9 (PWB).
Ref wellpath is BEF West 9 (PWP#1).
Coordinates are in Feet reference BEF West 9.
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.

Scale 1 cm = 200 ft

Vertical Section (Feet) ->

Azimuth 260.35 with reference 0.00 N, 0.00 E from BEF West 9

SYSDRILL
Well Design Combined Report
Wellbore: BEF West 9 (PWB)



Wellhead Details

Name	Latitude	Longitude	Northing	Easting	North	East	Slot Elevation Above Ground
BEF West 9	39.99485020	-104.73461120	1241896.3577	3214439.9500	765.24N	15.47E	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	122.99	1527.00	-3548.00	0.00N	0.00E	==>	0.00
2169.30	12.85	122.99	2163.93	-2911.07	39.05S	60.14E	2.00	-52.74
7181.26	12.85	122.99	7050.45	1975.45	645.86S	994.74E	==>	-872.42
8020.29	90.00	269.49	7612.00	2537.00	720.71S	526.20E	12.00	-397.96
13048.88	90.00	269.49	7612.00	2537.00	765.38S	4502.19W	==>	4566.79

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	39.99485020	-104.73461120
27.00	0.00	0.00	27.00	0.00N	0.00E	==>	0.00	39.99485020	-104.73461120
100.00	0.00	0.00	100.00	0.00N	0.00E	==>	0.00	39.99485020	-104.73461120
200.00	0.00	0.00	200.00	0.00N	0.00E	==>	0.00	39.99485020	-104.73461120
300.00	0.00	0.00	300.00	0.00N	0.00E	==>	0.00	39.99485020	-104.73461120
400.00	0.00	0.00	400.00	0.00N	0.00E	==>	0.00	39.99485020	-104.73461120
500.00	0.00	0.00	500.00	0.00N	0.00E	==>	0.00	39.99485020	-104.73461120
600.00	0.00	0.00	600.00	0.00N	0.00E	==>	0.00	39.99485020	-104.73461120
700.00	0.00	0.00	700.00	0.00N	0.00E	==>	0.00	39.99485020	-104.73461120
800.00	0.00	0.00	800.00	0.00N	0.00E	==>	0.00	39.99485020	-104.73461120
900.00	0.00	0.00	900.00	0.00N	0.00E	==>	0.00	39.99485020	-104.73461120
1000.00	0.00	0.00	1000.00	0.00N	0.00E	==>	0.00	39.99485020	-104.73461120
1100.00	0.00	0.00	1100.00	0.00N	0.00E	==>	0.00	39.99485020	-104.73461120
1200.00	0.00	0.00	1200.00	0.00N	0.00E	==>	0.00	39.99485020	-104.73461120
1300.00	0.00	0.00	1300.00	0.00N	0.00E	==>	0.00	39.99485020	-104.73461120
1400.00	0.00	0.00	1400.00	0.00N	0.00E	==>	0.00	39.99485020	-104.73461120
1500.00	0.00	0.00	1500.00	0.00N	0.00E	==>	0.00	39.99485020	-104.73461120
1527.00	0.00	122.99	1527.00	0.00N	0.00E	==>	0.00	39.99485020	-104.73461120
1627.00	2.00	122.99	1626.98	0.95S	1.46E	2.00	-1.28	39.99484756	-104.73460601
1727.00	4.00	122.99	1726.84	3.80S	5.85E	2.00	-5.13	39.99483963	-104.73459043
1827.00	6.00	122.99	1826.45	8.55S	13.16E	2.00	-11.54	39.99482643	-104.73456449
1927.00	8.00	122.99	1925.70	15.18S	23.38E	2.00	-20.51	39.99480797	-104.73452821
2027.00	10.00	122.99	2024.47	23.70S	36.50E	2.00	-32.01	39.99478428	-104.73448165

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 260.35 degrees
Bottom hole distance is 4566.79 Feet on azimuth 260.35 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 21-Jul-2020

SYSDRILL
Well Design Combined Report
Wellbore: BEF West 9 (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)
2127.00	12.00	122.99	2122.62	34.09S	52.51E	2.00	-46.05	39.99475538	-104.73442486
2169.30	12.85	122.99	2163.93	39.05S	60.14E	2.00	-52.74	39.99474159	-104.73439777
2227.00	12.85	122.99	2220.19	46.03S	70.90E	==>	-62.18	39.99472216	-104.73435959
2327.00	12.85	122.99	2317.69	58.14S	89.55E	==>	-78.53	39.99468849	-104.73429341
2427.00	12.85	122.99	2415.18	70.25S	108.19E	==>	-94.89	39.99465481	-104.73422723
2527.00	12.85	122.99	2512.68	82.35S	126.84E	==>	-111.24	39.99462113	-104.73416105
2627.00	12.85	122.99	2610.18	94.46S	145.49E	==>	-127.60	39.99458746	-104.73409488
2727.00	12.85	122.99	2707.67	106.57S	164.13E	==>	-143.95	39.99455378	-104.73402870
2827.00	12.85	122.99	2805.17	118.68S	182.78E	==>	-160.31	39.99452010	-104.73396252
2927.00	12.85	122.99	2902.67	130.78S	201.43E	==>	-176.66	39.99448643	-104.73389634
3027.00	12.85	122.99	3000.17	142.89S	220.08E	==>	-193.02	39.99445275	-104.73383017
3127.00	12.85	122.99	3097.66	155.00S	238.72E	==>	-209.37	39.99441907	-104.73376399
3227.00	12.85	122.99	3195.16	167.11S	257.37E	==>	-225.72	39.99438540	-104.73369781
3327.00	12.85	122.99	3292.66	179.21S	276.02E	==>	-242.08	39.99435172	-104.73363163
3427.00	12.85	122.99	3390.15	191.32S	294.67E	==>	-258.43	39.99431804	-104.73356546
3527.00	12.85	122.99	3487.65	203.43S	313.31E	==>	-274.79	39.99428437	-104.73349928
3627.00	12.85	122.99	3585.15	215.53S	331.96E	==>	-291.14	39.99425069	-104.73343310
3727.00	12.85	122.99	3682.65	227.64S	350.61E	==>	-307.50	39.99421701	-104.73336692
3827.00	12.85	122.99	3780.14	239.75S	369.26E	==>	-323.85	39.99418333	-104.73330075
3927.00	12.85	122.99	3877.64	251.86S	387.90E	==>	-340.21	39.99414966	-104.73323457
4027.00	12.85	122.99	3975.14	263.96S	406.55E	==>	-356.56	39.99411598	-104.73316839
4127.00	12.85	122.99	4072.63	276.07S	425.20E	==>	-372.91	39.99408230	-104.73310222
4227.00	12.85	122.99	4170.13	288.18S	443.85E	==>	-389.27	39.99404863	-104.73303604
4327.00	12.85	122.99	4267.63	300.29S	462.49E	==>	-405.62	39.99401495	-104.73296986
4427.00	12.85	122.99	4365.12	312.39S	481.14E	==>	-421.98	39.99398127	-104.73290368
4527.00	12.85	122.99	4462.62	324.50S	499.79E	==>	-438.33	39.99394759	-104.73283751
4627.00	12.85	122.99	4560.12	336.61S	518.43E	==>	-454.69	39.99391392	-104.73277133
4727.00	12.85	122.99	4657.62	348.71S	537.08E	==>	-471.04	39.99388024	-104.73270516
4827.00	12.85	122.99	4755.11	360.82S	555.73E	==>	-487.40	39.99384656	-104.73263898
4927.00	12.85	122.99	4852.61	372.93S	574.38E	==>	-503.75	39.99381289	-104.73257280
5027.00	12.85	122.99	4950.11	385.04S	593.02E	==>	-520.11	39.99377921	-104.73250663
5127.00	12.85	122.99	5047.60	397.14S	611.67E	==>	-536.46	39.99374553	-104.73244045
5227.00	12.85	122.99	5145.10	409.25S	630.32E	==>	-552.81	39.99371185	-104.73237427
5327.00	12.85	122.99	5242.60	421.36S	648.97E	==>	-569.17	39.99367818	-104.73230810
5427.00	12.85	122.99	5340.10	433.47S	667.61E	==>	-585.52	39.99364450	-104.73224192
5527.00	12.85	122.99	5437.59	445.57S	686.26E	==>	-601.88	39.99361082	-104.73217574
5627.00	12.85	122.99	5535.09	457.68S	704.91E	==>	-618.23	39.99357714	-104.73210957
5727.00	12.85	122.99	5632.59	469.79S	723.56E	==>	-634.59	39.99354346	-104.73204339
5827.00	12.85	122.99	5730.08	481.90S	742.20E	==>	-650.94	39.99350979	-104.73197722
5927.00	12.85	122.99	5827.58	494.00S	760.85E	==>	-667.30	39.99347611	-104.73191104
6027.00	12.85	122.99	5925.08	506.11S	779.50E	==>	-683.65	39.99344243	-104.73184487
6127.00	12.85	122.99	6022.58	518.22S	798.15E	==>	-700.00	39.99340875	-104.73177869
6227.00	12.85	122.99	6120.07	530.32S	816.79E	==>	-716.36	39.99337508	-104.73171251
6327.00	12.85	122.99	6217.57	542.43S	835.44E	==>	-732.71	39.99334140	-104.73164634
6427.00	12.85	122.99	6315.07	554.54S	854.09E	==>	-749.07	39.99330772	-104.73158016
6527.00	12.85	122.99	6412.56	566.65S	872.73E	==>	-765.42	39.99327404	-104.73151399
6627.00	12.85	122.99	6510.06	578.75S	891.38E	==>	-781.78	39.99324036	-104.73144781
6727.00	12.85	122.99	6607.56	590.86S	910.03E	==>	-798.13	39.99320669	-104.73138164
6827.00	12.85	122.99	6705.06	602.97S	928.68E	==>	-814.49	39.99317301	-104.73131546
6927.00	12.85	122.99	6802.55	615.08S	947.32E	==>	-830.84	39.99313933	-104.73124929
7027.00	12.85	122.99	6900.05	627.18S	965.97E	==>	-847.19	39.99310565	-104.73118311
7127.00	12.85	122.99	6997.55	639.29S	984.62E	==>	-863.55	39.99307197	-104.73111694
7181.26	12.85	122.99	7050.45	645.86S	994.74E	==>	-872.42	39.99305370	-104.73108103
7227.00	8.85	143.44	7095.38	651.46S	1001.10E	12.00	-877.76	39.99303818	-104.73105849
7327.00	9.88	223.19	7194.40	663.94S	999.81E	12.00	-874.40	39.99300396	-104.73106348
7427.00	20.08	249.35	7290.98	676.29S	977.80E	12.00	-850.62	39.99297058	-104.73114243
7527.00	31.55	257.66	7380.88	687.98S	936.02E	12.00	-807.48	39.99293949	-104.73129187
7627.00	43.29	261.81	7460.17	698.49S	876.31E	12.00	-746.85	39.99291205	-104.73150529

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 260.35 degrees
Bottom hole distance is 4566.79 Feet on azimuth 260.35 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 21-Jul-2020

SYSDRILL
Well Design Combined Report
Wellbore: BEF West 9 (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	55.12	264.46	7525.40	707.37S	801.28E	12.00	-671.39	39.99288947	-104.73177335
7827.00	67.00	266.43	7573.71	714.22S	714.20E	12.00	-584.40	39.99287272	-104.73208433
7927.00	78.89	268.08	7602.99	718.75S	618.88E	12.00	-489.67	39.99286255	-104.73242465
8020.29	90.00	269.49	7612.00	720.71S	526.20E	12.00	-397.96	39.99285938	-104.73275550
8027.00	90.00	269.49	7612.00	720.77S	519.49E	==>	-391.34	39.99285937	-104.73277943
8127.00	90.00	269.49	7612.00	721.66S	419.49E	==>	-292.61	39.99285931	-104.73313633
8227.00	90.00	269.49	7612.00	722.55S	319.50E	==>	-193.88	39.99285924	-104.73349323
8327.00	90.00	269.49	7612.00	723.43S	219.50E	==>	-95.15	39.99285918	-104.73385013
8427.00	90.00	269.49	7612.00	724.32S	119.50E	==>	3.58	39.99285911	-104.73420702
8527.00	90.00	269.49	7612.00	725.21S	19.51E	==>	102.31	39.99285904	-104.73456392
8627.00	90.00	269.49	7612.00	726.10S	80.49W	==>	201.04	39.99285897	-104.73492082
8727.00	90.00	269.49	7612.00	726.99S	180.48W	==>	299.77	39.99285890	-104.73527771
8827.00	90.00	269.49	7612.00	727.88S	280.48W	==>	398.50	39.99285883	-104.73563461
8927.00	90.00	269.49	7612.00	728.76S	380.48W	==>	497.23	39.99285876	-104.73599151
9027.00	90.00	269.49	7612.00	729.65S	480.47W	==>	595.96	39.99285868	-104.73634841
9127.00	90.00	269.49	7612.00	730.54S	580.47W	==>	694.69	39.99285861	-104.73670530
9227.00	90.00	269.49	7612.00	731.43S	680.46W	==>	793.43	39.99285853	-104.73706220
9327.00	90.00	269.49	7612.00	732.32S	780.46W	==>	892.16	39.99285845	-104.73741910
9427.00	90.00	269.49	7612.00	733.21S	880.46W	==>	990.89	39.99285837	-104.73777599
9527.00	90.00	269.49	7612.00	734.09S	980.45W	==>	1089.62	39.99285830	-104.73813289
9627.00	90.00	269.49	7612.00	734.98S	1080.45W	==>	1188.35	39.99285821	-104.73848979
9727.00	90.00	269.49	7612.00	735.87S	1180.44W	==>	1287.08	39.99285813	-104.73884669
9827.00	90.00	269.49	7612.00	736.76S	1280.44W	==>	1385.81	39.99285805	-104.73920358
9927.00	90.00	269.49	7612.00	737.65S	1380.44W	==>	1484.54	39.99285797	-104.73956048
10027.00	90.00	269.49	7612.00	738.54S	1480.43W	==>	1583.27	39.99285788	-104.73991738
10127.00	90.00	269.49	7612.00	739.42S	1580.43W	==>	1682.00	39.99285779	-104.74027427
10227.00	90.00	269.49	7612.00	740.31S	1680.43W	==>	1780.73	39.99285771	-104.74063117
10327.00	90.00	269.49	7612.00	741.20S	1780.42W	==>	1879.46	39.99285762	-104.74098807
10427.00	90.00	269.49	7612.00	742.09S	1880.42W	==>	1978.19	39.99285753	-104.74134496
10527.00	90.00	269.49	7612.00	742.98S	1980.41W	==>	2076.92	39.99285744	-104.74170186
10627.00	90.00	269.49	7612.00	743.87S	2080.41W	==>	2175.65	39.99285735	-104.74205876
10727.00	90.00	269.49	7612.00	744.75S	2180.41W	==>	2274.38	39.99285725	-104.74241566
10827.00	90.00	269.49	7612.00	745.64S	2280.40W	==>	2373.11	39.99285716	-104.74277255
10927.00	90.00	269.49	7612.00	746.53S	2380.40W	==>	2471.84	39.99285707	-104.74312945
11027.00	90.00	269.49	7612.00	747.42S	2480.39W	==>	2570.58	39.99285697	-104.74348635
11127.00	90.00	269.49	7612.00	748.31S	2580.39W	==>	2669.31	39.99285687	-104.74384324
11227.00	90.00	269.49	7612.00	749.20S	2680.39W	==>	2768.04	39.99285677	-104.74420014
11327.00	90.00	269.49	7612.00	750.08S	2780.38W	==>	2866.77	39.99285668	-104.74455704
11427.00	90.00	269.49	7612.00	750.97S	2880.38W	==>	2965.50	39.99285657	-104.74491394
11527.00	90.00	269.49	7612.00	751.86S	2980.37W	==>	3064.23	39.99285647	-104.74527083
11627.00	90.00	269.49	7612.00	752.75S	3080.37W	==>	3162.96	39.99285637	-104.74562773
11727.00	90.00	269.49	7612.00	753.64S	3180.37W	==>	3261.69	39.99285627	-104.74598463
11827.00	90.00	269.49	7612.00	754.53S	3280.36W	==>	3360.42	39.99285616	-104.74634152
11927.00	90.00	269.49	7612.00	755.41S	3380.36W	==>	3459.15	39.99285606	-104.74669842
12027.00	90.00	269.49	7612.00	756.30S	3480.35W	==>	3557.88	39.99285595	-104.74705532
12127.00	90.00	269.49	7612.00	757.19S	3580.35W	==>	3656.61	39.99285584	-104.74741222
12227.00	90.00	269.49	7612.00	758.08S	3680.35W	==>	3755.34	39.99285573	-104.74776911
12327.00	90.00	269.49	7612.00	758.97S	3780.34W	==>	3854.07	39.99285562	-104.74812601
12427.00	90.00	269.49	7612.00	759.86S	3880.34W	==>	3952.80	39.99285551	-104.74848291
12527.00	90.00	269.49	7612.00	760.74S	3980.33W	==>	4051.53	39.99285540	-104.74883980
12627.00	90.00	269.49	7612.00	761.63S	4080.33W	==>	4150.26	39.99285528	-104.74919670
12727.00	90.00	269.49	7612.00	762.52S	4180.33W	==>	4248.99	39.99285517	-104.74955360
12827.00	90.00	269.49	7612.00	763.41S	4280.32W	==>	4347.73	39.99285505	-104.74991049
12927.00	90.00	269.49	7612.00	764.30S	4380.32W	==>	4446.46	39.99285493	-104.75026739
13027.00	90.00	269.49	7612.00	765.19S	4480.31W	==>	4545.19	39.99285482	-104.75062429
13048.88	90.00	269.49	7612.00	765.38S	4502.19W	==>	4566.79	39.99285479	-104.75070238

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 260.35 degrees
Bottom hole distance is 4566.79 Feet on azimuth 260.35 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 21-Jul-2020

SYS DRILL
Well Design Combined Report
Wellbore: BEF West 9 (PWB)



Targets

Name	North[ft]	East[ft]	TVD[ft]	Latitude	Longitude	Northing	Easting
BEF West 9 - BHL	765.38S	4502.19W	7612.00	39.99285479	-104.75070238	1241131.00	3209937.91
BEF West 9 - LP	720.71S	148.80W	7612.00	39.99287538	-104.73516446	1241175.67	3214291.15

Survey Tool Program

Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool	Error Model
992887	Planned	1527.00	1527.00	WdW Rate Gyro	Standard
992886	Planned	13048.88	7612.00	ISCWSA MWD	Rev 4 + SAG + FLT

Notes

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 260.35 degrees
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