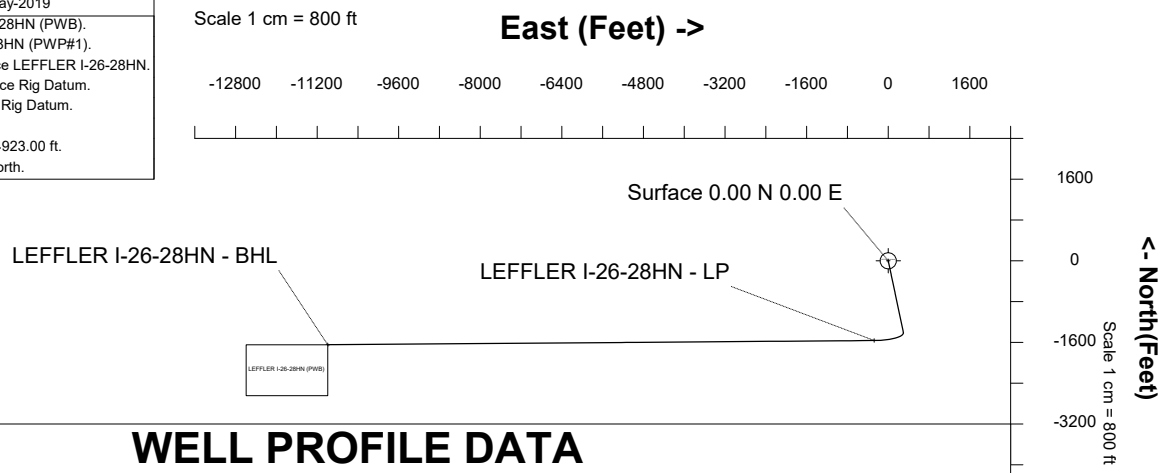
BAYSWATER E & P, LLC

Location	**Weld County, CO**	**Slot**	**LEFFLER I-26-28HN**
Field	**WATTENBERG**	**Well**	**LEFFLER I-26-28HN**
Installation	**Leffler Pad - Updates 05-20-2019**	**Wellbore**	**LEFFLER I-26-28HN (PWB)**

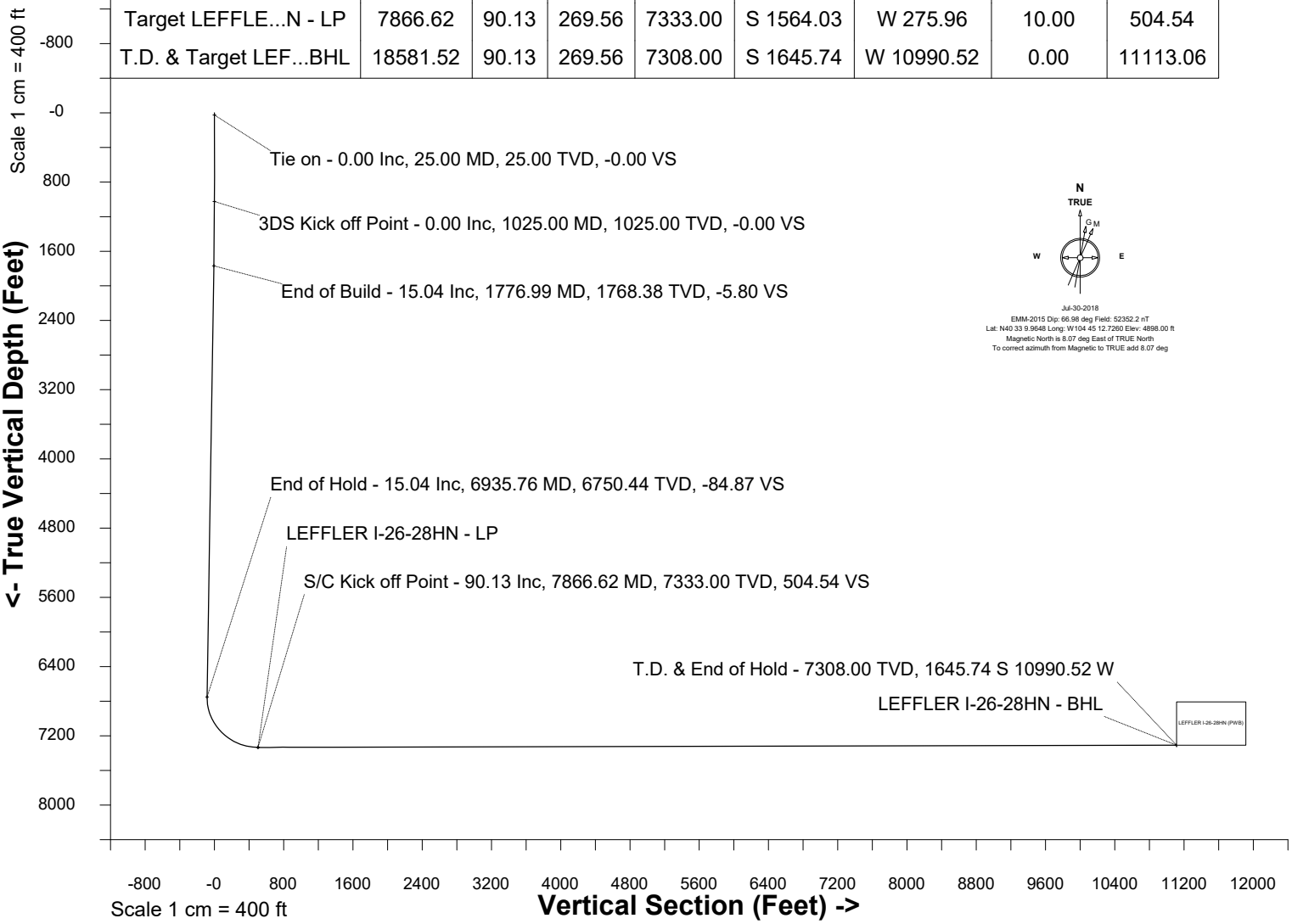
Created by sean.dolfinger
Date plotted 21-May-2019

Plot reference is LEFFLER I-26-28HN (PWB).
Ref wellpath is LEFFLER I-26-28HN (PWP#1).
Coordinates are in Feet reference LEFFLER I-26-28HN.
True Vertical Depths are reference Rig Datum.
Measured Depths are reference Rig Datum.
Rig Datum: Planned Datum #1
Rig Datum to Mean Sea Level: 4923.00 ft.
Plot North is aligned to TRUE North.



WELL PROFILE DATA

Point	MD	Inc	Azi	TVD	North	East	deg/100ft	V. Sect
Tie on	25.00	0.00	0.00	25.00	S 0.00	W 0.00		-0.00
KOP	1025.00	0.00	168.10	1025.00	S 0.00	W 0.00	0.00	-0.00
End of Build	1776.99	15.04	168.10	1768.38	S 96.02	E 20.24	2.00	-5.80
End of Hold	6935.76	15.04	168.10	6750.44	S 1405.89	E 296.33	0.00	-84.87
Target LEFFLE...N - LP	7866.62	90.13	269.56	7333.00	S 1564.03	W 275.96	10.00	504.54
T.D. & Target LEF...BHL	18581.52	90.13	269.56	7308.00	S 1645.74	W 10990.52	0.00	11113.06



SYSDRILL
Well Design Combined Report
Wellbore: LEFFLER I-26-28HN (PWB)

Wellhead Details

Name	Latitude	Longitude	Northing	Easting	North	East	Slot Elevation Above Ground
LEFFLER I-26-28HN	40.55268700	-104.75326400	1445058.4861	3207502.8406	29.51S	75.31E	0.00

Declination

Date	Source	Time
Jul-30-2018	EMM-2015	11:39

Installation Details

Name	Installation Position (Latitude)	Installation Position (Longitude)	Northing	Easting	Coord System Name	North Alignment
Leffler Pad - Updates 05-20-2019	40.55276800	-104.75353500	1445087.3602	3207427.2886	NAD83 Based Colorado State Planes, Northern Zone, US Feet	True

Summary Wellpath

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	Vertical Depth SS	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]
25.00	0.00	0.00	25.00	-4898.00	0.00N	0.00E		0.00
1025.00	0.00	168.10	1025.00	-3898.00	0.00N	0.00E	==>	0.00
1776.99	15.04	168.10	1768.38	-3154.62	96.02S	20.24E	2.00	-5.80
6935.76	15.04	168.10	6750.44	1827.44	1405.89S	296.33E	==>	-84.87
7866.62	90.13	269.56	7333.00	2410.00	1564.03S	275.96W	10.00	504.54
18581.52	90.13	269.56	7308.00	2385.00	1645.74S	10990.52W	==>	11113.06

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	40.55268700	-104.75326400
25.00	0.00	0.00	25.00	0.00N	0.00E	==>	0.00	40.55268700	-104.75326400
100.00	0.00	0.00	100.00	0.00N	0.00E	==>	0.00	40.55268700	-104.75326400
200.00	0.00	0.00	200.00	0.00N	0.00E	==>	0.00	40.55268700	-104.75326400
300.00	0.00	0.00	300.00	0.00N	0.00E	==>	0.00	40.55268700	-104.75326400
400.00	0.00	0.00	400.00	0.00N	0.00E	==>	0.00	40.55268700	-104.75326400
500.00	0.00	0.00	500.00	0.00N	0.00E	==>	0.00	40.55268700	-104.75326400
600.00	0.00	0.00	600.00	0.00N	0.00E	==>	0.00	40.55268700	-104.75326400
700.00	0.00	0.00	700.00	0.00N	0.00E	==>	0.00	40.55268700	-104.75326400
800.00	0.00	0.00	800.00	0.00N	0.00E	==>	0.00	40.55268700	-104.75326400
900.00	0.00	0.00	900.00	0.00N	0.00E	==>	0.00	40.55268700	-104.75326400
1000.00	0.00	0.00	1000.00	0.00N	0.00E	==>	0.00	40.55268700	-104.75326400
1025.00	0.00	168.10	1025.00	0.00N	0.00E	==>	0.00	40.55268700	-104.75326400
1125.00	2.00	168.10	1124.98	1.71S	0.36E	2.00	-0.10	40.55268231	-104.75326270
1225.00	4.00	168.10	1224.84	6.83S	1.44E	2.00	-0.41	40.55266826	-104.75325882
1325.00	6.00	168.10	1324.45	15.36S	3.24E	2.00	-0.93	40.55264485	-104.75325235
1425.00	8.00	168.10	1423.70	27.28S	5.75E	2.00	-1.65	40.55261212	-104.75324331
1525.00	10.00	168.10	1522.47	42.59S	8.98E	2.00	-2.57	40.55257011	-104.75323170
1625.00	12.00	168.10	1620.62	61.26S	12.91E	2.00	-3.70	40.55251886	-104.75321754
1725.00	14.00	168.10	1718.06	83.27S	17.55E	2.00	-5.03	40.55245845	-104.75320084
1776.99	15.04	168.10	1768.38	96.02S	20.24E	2.00	-5.80	40.55242344	-104.75319117
1825.00	15.04	168.10	1814.75	108.21S	22.81E	==>	-6.53	40.55238998	-104.75318192
1925.00	15.04	168.10	1911.32	133.60S	28.16E	==>	-8.07	40.55232028	-104.75316266
2025.00	15.04	168.10	2007.90	158.99S	33.51E	==>	-9.60	40.55225059	-104.75314340
2125.00	15.04	168.10	2104.47	184.38S	38.86E	==>	-11.13	40.55218090	-104.75312415
2225.00	15.04	168.10	2201.05	209.78S	44.22E	==>	-12.66	40.55211120	-104.75310489
2325.00	15.04	168.10	2297.62	235.17S	49.57E	==>	-14.20	40.55204151	-104.75308563
2425.00	15.04	168.10	2394.20	260.56S	54.92E	==>	-15.73	40.55197181	-104.75306637
2525.00	15.04	168.10	2490.77	285.95S	60.27E	==>	-17.26	40.55190212	-104.75304711
2625.00	15.04	168.10	2587.35	311.34S	65.62E	==>	-18.79	40.55183243	-104.75302785
2725.00	15.04	168.10	2683.92	336.73S	70.98E	==>	-20.33	40.55176273	-104.75300859
2825.00	15.04	168.10	2780.50	362.12S	76.33E	==>	-21.86	40.55169304	-104.75298933

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 4923.0ft above Mean Sea Level)
Vertical Section is from 0.00N 0.00E on azimuth 261.48 degrees
Bottom hole distance is 11113.06 Feet on azimuth 261.48 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 21-May-2019

SYSDRILL
Well Design Combined Report
Wellbore: LEFFLER I-26-28HN (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)
2925.00	15.04	168.10	2877.07	387.51S	81.68E	==>	-23.39	40.55162334	-104.75297008
3025.00	15.04	168.10	2973.64	412.90S	87.03E	==>	-24.93	40.55155365	-104.75295082
3125.00	15.04	168.10	3070.22	438.29S	92.38E	==>	-26.46	40.55148396	-104.75293156
3225.00	15.04	168.10	3166.79	463.69S	97.74E	==>	-27.99	40.55141426	-104.75291230
3325.00	15.04	168.10	3263.37	489.08S	103.09E	==>	-29.52	40.55134457	-104.75289304
3425.00	15.04	168.10	3359.94	514.47S	108.44E	==>	-31.06	40.55127487	-104.75287378
3525.00	15.04	168.10	3456.52	539.86S	113.79E	==>	-32.59	40.55120518	-104.75285453
3625.00	15.04	168.10	3553.09	565.25S	119.14E	==>	-34.12	40.55113549	-104.75283527
3725.00	15.04	168.10	3649.67	590.64S	124.50E	==>	-35.65	40.55106579	-104.75281601
3825.00	15.04	168.10	3746.24	616.03S	129.85E	==>	-37.19	40.55099610	-104.75279675
3925.00	15.04	168.10	3842.82	641.42S	135.20E	==>	-38.72	40.55092640	-104.75277749
4025.00	15.04	168.10	3939.39	666.81S	140.55E	==>	-40.25	40.55085671	-104.75275823
4125.00	15.04	168.10	4035.97	692.20S	145.90E	==>	-41.79	40.55078702	-104.75273898
4225.00	15.04	168.10	4132.54	717.60S	151.26E	==>	-43.32	40.55071732	-104.75271972
4325.00	15.04	168.10	4229.11	742.99S	156.61E	==>	-44.85	40.55064763	-104.75270046
4425.00	15.04	168.10	4325.69	768.38S	161.96E	==>	-46.38	40.55057793	-104.75268120
4525.00	15.04	168.10	4422.26	793.77S	167.31E	==>	-47.92	40.55050824	-104.75266194
4625.00	15.04	168.10	4518.84	819.16S	172.66E	==>	-49.45	40.55043855	-104.75264269
4725.00	15.04	168.10	4615.41	844.55S	178.02E	==>	-50.98	40.55036885	-104.75262343
4825.00	15.04	168.10	4711.99	869.94S	183.37E	==>	-52.52	40.55029916	-104.75260417
4925.00	15.04	168.10	4808.56	895.33S	188.72E	==>	-54.05	40.55022946	-104.75258491
5025.00	15.04	168.10	4905.14	920.72S	194.07E	==>	-55.58	40.55015977	-104.75256566
5125.00	15.04	168.10	5001.71	946.12S	199.42E	==>	-57.11	40.55009007	-104.75254640
5225.00	15.04	168.10	5098.29	971.51S	204.78E	==>	-58.65	40.55002038	-104.75252714
5325.00	15.04	168.10	5194.86	996.90S	210.13E	==>	-60.18	40.54995069	-104.75250788
5425.00	15.04	168.10	5291.43	1022.29S	215.48E	==>	-61.71	40.54988099	-104.75248863
5525.00	15.04	168.10	5388.01	1047.68S	220.83E	==>	-63.24	40.54981130	-104.75246937
5625.00	15.04	168.10	5484.58	1073.07S	226.18E	==>	-64.78	40.54974160	-104.75245011
5725.00	15.04	168.10	5581.16	1098.46S	231.54E	==>	-66.31	40.54967191	-104.75243085
5825.00	15.04	168.10	5677.73	1123.85S	236.89E	==>	-67.84	40.54960222	-104.75241160
5925.00	15.04	168.10	5774.31	1149.24S	242.24E	==>	-69.38	40.54953252	-104.75239234
6025.00	15.04	168.10	5870.88	1174.63S	247.59E	==>	-70.91	40.54946283	-104.75237308
6125.00	15.04	168.10	5967.46	1200.03S	252.94E	==>	-72.44	40.54939313	-104.75235382
6225.00	15.04	168.10	6064.03	1225.42S	258.29E	==>	-73.97	40.54932344	-104.75233457
6325.00	15.04	168.10	6160.61	1250.81S	263.65E	==>	-75.51	40.54925375	-104.75231531
6425.00	15.04	168.10	6257.18	1276.20S	269.00E	==>	-77.04	40.54918405	-104.75229605
6525.00	15.04	168.10	6353.76	1301.59S	274.35E	==>	-78.57	40.54911436	-104.75227679
6625.00	15.04	168.10	6450.33	1326.98S	279.70E	==>	-80.11	40.54904466	-104.75225754
6725.00	15.04	168.10	6546.90	1352.37S	285.05E	==>	-81.64	40.54897497	-104.75223828
6825.00	15.04	168.10	6643.48	1377.76S	290.41E	==>	-83.17	40.54890527	-104.75221902
6925.00	15.04	168.10	6740.05	1403.15S	295.76E	==>	-84.70	40.54883558	-104.75219977
6935.76	15.04	168.10	6750.44	1405.89S	296.33E	==>	-84.87	40.54882808	-104.75219769
7025.00	15.89	201.87	6836.63	1428.60S	294.17E	10.00	-79.36	40.54876573	-104.75220550
7125.00	21.62	227.87	6931.44	1453.73S	275.36E	10.00	-57.04	40.54869676	-104.75227318
7225.00	29.62	241.93	7021.62	1477.77S	239.80E	10.00	-18.31	40.54863077	-104.75240113
7325.00	38.50	250.19	7104.42	1500.00S	188.58E	10.00	35.64	40.54856975	-104.75258544
7425.00	47.78	255.70	7177.34	1519.74S	123.25E	10.00	103.17	40.54851556	-104.75282052
7525.00	57.24	259.77	7238.15	1536.40S	45.79E	10.00	182.24	40.54846985	-104.75309923
7625.00	66.82	263.05	7285.01	1549.46S	41.44W	10.00	270.44	40.54843400	-104.75341310
7725.00	76.45	265.89	7316.49	1558.53S	135.78W	10.00	365.09	40.54840911	-104.75375258
7825.00	86.11	268.50	7331.64	1563.33S	234.38W	10.00	463.31	40.54839593	-104.75410738
7866.62	90.13	269.56	7333.00	1564.03S	275.96W	10.00	504.54	40.54839400	-104.75425700
7925.00	90.13	269.56	7332.86	1564.48S	334.34W	==>	562.34	40.54839278	-104.75446707
8025.00	90.13	269.56	7332.63	1565.24S	434.34W	==>	661.35	40.54839068	-104.75482688
8125.00	90.13	269.56	7332.40	1566.00S	534.34W	==>	760.36	40.54838858	-104.75518670
8225.00	90.13	269.56	7332.16	1566.76S	634.33W	==>	859.36	40.54838648	-104.75554652
8325.00	90.13	269.56	7331.93	1567.53S	734.33W	==>	958.37	40.54838438	-104.75590634
8425.00	90.13	269.56	7331.70	1568.29S	834.33W	==>	1057.38	40.54838228	-104.75626616

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 4923.0ft above Mean Sea Level)
Vertical Section is from 0.00N 0.00E on azimuth 261.48 degrees
Bottom hole distance is 11113.06 Feet on azimuth 261.48 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 21-May-2019

SYSDRILL
Well Design Combined Report
Wellbore: LEFFLER I-26-28HN (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)
8525.00	90.13	269.56	7331.46	1569.05S	934.32W	==>	1156.38	40.54838017	-104.75662597
8625.00	90.13	269.56	7331.23	1569.81S	1034.32W	==>	1255.39	40.54837807	-104.75698579
8725.00	90.13	269.56	7331.00	1570.58S	1134.32W	==>	1354.40	40.54837597	-104.75734561
8825.00	90.13	269.56	7330.76	1571.34S	1234.32W	==>	1453.41	40.54837386	-104.75770543
8925.00	90.13	269.56	7330.53	1572.10S	1334.31W	==>	1552.41	40.54837175	-104.75806525
9025.00	90.13	269.56	7330.30	1572.86S	1434.31W	==>	1651.42	40.54836964	-104.75842506
9125.00	90.13	269.56	7330.06	1573.63S	1534.31W	==>	1750.43	40.54836753	-104.75878488
9225.00	90.13	269.56	7329.83	1574.39S	1634.30W	==>	1849.43	40.54836542	-104.75914470
9325.00	90.13	269.56	7329.60	1575.15S	1734.30W	==>	1948.44	40.54836331	-104.75950452
9425.00	90.13	269.56	7329.36	1575.91S	1834.30W	==>	2047.45	40.54836120	-104.75986433
9525.00	90.13	269.56	7329.13	1576.68S	1934.29W	==>	2146.46	40.54835908	-104.76022415
9625.00	90.13	269.56	7328.90	1577.44S	2034.29W	==>	2245.46	40.54835697	-104.76058397
9725.00	90.13	269.56	7328.66	1578.20S	2134.29W	==>	2344.47	40.54835485	-104.76094379
9825.00	90.13	269.56	7328.43	1578.96S	2234.28W	==>	2443.48	40.54835273	-104.76130360
9925.00	90.13	269.56	7328.20	1579.73S	2334.28W	==>	2542.48	40.54835062	-104.76166342
10025.00	90.13	269.56	7327.96	1580.49S	2434.28W	==>	2641.49	40.54834850	-104.76202324
10125.00	90.13	269.56	7327.73	1581.25S	2534.27W	==>	2740.50	40.54834638	-104.76238306
10225.00	90.13	269.56	7327.50	1582.02S	2634.27W	==>	2839.51	40.54834425	-104.76274288
10325.00	90.13	269.56	7327.26	1582.78S	2734.27W	==>	2938.51	40.54834213	-104.76310269
10425.00	90.13	269.56	7327.03	1583.54S	2834.26W	==>	3037.52	40.54834001	-104.76346251
10525.00	90.13	269.56	7326.80	1584.30S	2934.26W	==>	3136.53	40.54833788	-104.76382233
10625.00	90.13	269.56	7326.56	1585.07S	3034.26W	==>	3235.53	40.54833575	-104.76418214
10725.00	90.13	269.56	7326.33	1585.83S	3134.25W	==>	3334.54	40.54833363	-104.76454196
10825.00	90.13	269.56	7326.10	1586.59S	3234.25W	==>	3433.55	40.54833150	-104.76490178
10925.00	90.13	269.56	7325.86	1587.35S	3334.25W	==>	3532.56	40.54832937	-104.76526160
11025.00	90.13	269.56	7325.63	1588.12S	3434.25W	==>	3631.56	40.54832724	-104.76562141
11125.00	90.13	269.56	7325.40	1588.88S	3534.24W	==>	3730.57	40.54832511	-104.76598123
11225.00	90.13	269.56	7325.16	1589.64S	3634.24W	==>	3829.58	40.54832297	-104.76634105
11325.00	90.13	269.56	7324.93	1590.40S	3734.24W	==>	3928.58	40.54832084	-104.76670087
11425.00	90.13	269.56	7324.70	1591.17S	3834.23W	==>	4027.59	40.54831870	-104.76706068
11525.00	90.13	269.56	7324.46	1591.93S	3934.23W	==>	4126.60	40.54831657	-104.76742050
11625.00	90.13	269.56	7324.23	1592.69S	4034.23W	==>	4225.61	40.54831443	-104.76778032
11725.00	90.13	269.56	7324.00	1593.45S	4134.22W	==>	4324.61	40.54831229	-104.76814013
11825.00	90.13	269.56	7323.76	1594.22S	4234.22W	==>	4423.62	40.54831015	-104.76849995
11925.00	90.13	269.56	7323.53	1594.98S	4334.22W	==>	4522.63	40.54830801	-104.76885977
12025.00	90.13	269.56	7323.30	1595.74S	4434.21W	==>	4621.64	40.54830587	-104.76921959
12125.00	90.13	269.56	7323.06	1596.50S	4534.21W	==>	4720.64	40.54830373	-104.76957940
12225.00	90.13	269.56	7322.83	1597.27S	4634.21W	==>	4819.65	40.54830158	-104.76993922
12325.00	90.13	269.56	7322.60	1598.03S	4734.20W	==>	4918.66	40.54829944	-104.77029904
12425.00	90.13	269.56	7322.36	1598.79S	4834.20W	==>	5017.66	40.54829729	-104.77065885
12525.00	90.13	269.56	7322.13	1599.55S	4934.20W	==>	5116.67	40.54829514	-104.77101867
12625.00	90.13	269.56	7321.90	1600.32S	5034.19W	==>	5215.68	40.54829299	-104.77137849
12725.00	90.13	269.56	7321.66	1601.08S	5134.19W	==>	5314.69	40.54829084	-104.77173831
12825.00	90.13	269.56	7321.43	1601.84S	5234.19W	==>	5413.69	40.54828869	-104.77209812
12925.00	90.13	269.56	7321.20	1602.60S	5334.18W	==>	5512.70	40.54828654	-104.77245794
13025.00	90.13	269.56	7320.96	1603.37S	5434.18W	==>	5611.71	40.54828439	-104.77281776
13125.00	90.13	269.56	7320.73	1604.13S	5534.18W	==>	5710.71	40.54828223	-104.77317757
13225.00	90.13	269.56	7320.50	1604.89S	5634.18W	==>	5809.72	40.54828008	-104.77353739
13325.00	90.13	269.56	7320.26	1605.66S	5734.17W	==>	5908.73	40.54827792	-104.77389721
13425.00	90.13	269.56	7320.03	1606.42S	5834.17W	==>	6007.74	40.54827576	-104.77425702
13525.00	90.13	269.56	7319.80	1607.18S	5934.17W	==>	6106.74	40.54827361	-104.77461684
13625.00	90.13	269.56	7319.56	1607.94S	6034.16W	==>	6205.75	40.54827145	-104.77497666
13725.00	90.13	269.56	7319.33	1608.71S	6134.16W	==>	6304.76	40.54826928	-104.77533647
13825.00	90.13	269.56	7319.10	1609.47S	6234.16W	==>	6403.76	40.54826712	-104.77569629
13925.00	90.13	269.56	7318.86	1610.23S	6334.15W	==>	6502.77	40.54826496	-104.77605611
14025.00	90.13	269.56	7318.63	1610.99S	6434.15W	==>	6601.78	40.54826280	-104.77641592
14125.00	90.13	269.56	7318.40	1611.76S	6534.15W	==>	6700.79	40.54826063	-104.77677574
14225.00	90.13	269.56	7318.16	1612.52S	6634.14W	==>	6799.79	40.54825846	-104.77713556
14325.00	90.13	269.56	7317.93	1613.28S	6734.14W	==>	6898.80	40.54825630	-104.77749537

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Vertical Section is from 0.00N 0.00E on azimuth 261.48 degrees
Bottom hole distance is 11113.06 Feet on azimuth 261.48 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 21-May-2019

SYSDRILL
Well Design Combined Report
Wellbore: LEFFLER I-26-28HN (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)
14425.00	90.13	269.56	7317.70	1614.04S	6834.14W	==>	6997.81	40.54825413	-104.77785519
14525.00	90.13	269.56	7317.46	1614.81S	6934.13W	==>	7096.81	40.54825196	-104.77821501
14625.00	90.13	269.56	7317.23	1615.57S	7034.13W	==>	7195.82	40.54824979	-104.77857482
14725.00	90.13	269.56	7317.00	1616.33S	7134.13W	==>	7294.83	40.54824761	-104.77893464
14825.00	90.13	269.56	7316.76	1617.09S	7234.12W	==>	7393.84	40.54824544	-104.77929446
14925.00	90.13	269.56	7316.53	1617.86S	7334.12W	==>	7492.84	40.54824327	-104.77965427
15025.00	90.13	269.56	7316.30	1618.62S	7434.12W	==>	7591.85	40.54824109	-104.78001409
15125.00	90.13	269.56	7316.06	1619.38S	7534.11W	==>	7690.86	40.54823892	-104.78037390
15225.00	90.13	269.56	7315.83	1620.14S	7634.11W	==>	7789.86	40.54823674	-104.78073372
15325.00	90.13	269.56	7315.60	1620.91S	7734.11W	==>	7888.87	40.54823456	-104.78109354
15425.00	90.13	269.56	7315.36	1621.67S	7834.11W	==>	7987.88	40.54823238	-104.78145335
15525.00	90.13	269.56	7315.13	1622.43S	7934.10W	==>	8086.89	40.54823020	-104.78181317
15625.00	90.13	269.56	7314.90	1623.19S	8034.10W	==>	8185.89	40.54822802	-104.78217299
15725.00	90.13	269.56	7314.66	1623.96S	8134.10W	==>	8284.90	40.54822583	-104.78253280
15825.00	90.13	269.56	7314.43	1624.72S	8234.09W	==>	8383.91	40.54822365	-104.78289262
15925.00	90.13	269.56	7314.20	1625.48S	8334.09W	==>	8482.91	40.54822146	-104.78325243
16025.00	90.13	269.56	7313.96	1626.24S	8434.09W	==>	8581.92	40.54821928	-104.78361225
16125.00	90.13	269.56	7313.73	1627.01S	8534.08W	==>	8680.93	40.54821709	-104.78397207
16225.00	90.13	269.56	7313.50	1627.77S	8634.08W	==>	8779.94	40.54821490	-104.78433188
16325.00	90.13	269.56	7313.26	1628.53S	8734.08W	==>	8878.94	40.54821271	-104.78469170
16425.00	90.13	269.56	7313.03	1629.29S	8834.07W	==>	8977.95	40.54821052	-104.78505152
16525.00	90.13	269.56	7312.80	1630.06S	8934.07W	==>	9076.96	40.54820833	-104.78541133
16625.00	90.13	269.56	7312.56	1630.82S	9034.07W	==>	9175.96	40.54820613	-104.78577115
16725.00	90.13	269.56	7312.33	1631.58S	9134.06W	==>	9274.97	40.54820394	-104.78613096
16825.00	90.13	269.56	7312.10	1632.35S	9234.06W	==>	9373.98	40.54820174	-104.78649078
16925.00	90.13	269.56	7311.86	1633.11S	9334.06W	==>	9472.99	40.54819955	-104.78685060
17025.00	90.13	269.56	7311.63	1633.87S	9434.05W	==>	9571.99	40.54819735	-104.78721041
17125.00	90.13	269.56	7311.40	1634.63S	9534.05W	==>	9671.00	40.54819515	-104.78757023
17225.00	90.13	269.56	7311.17	1635.40S	9634.05W	==>	9770.01	40.54819295	-104.78793004
17325.00	90.13	269.56	7310.93	1636.16S	9734.04W	==>	9869.01	40.54819075	-104.78828986
17425.00	90.13	269.56	7310.70	1636.92S	9834.04W	==>	9968.02	40.54818855	-104.78864968
17525.00	90.13	269.56	7310.47	1637.68S	9934.04W	==>	10067.03	40.54818635	-104.78900949
17625.00	90.13	269.56	7310.23	1638.45S	10034.04W	==>	10166.04	40.54818414	-104.78936931
17725.00	90.13	269.56	7310.00	1639.21S	10134.03W	==>	10265.04	40.54818194	-104.78972912
17825.00	90.13	269.56	7309.77	1639.97S	10234.03W	==>	10364.05	40.54817973	-104.79008894
17925.00	90.13	269.56	7309.53	1640.73S	10334.03W	==>	10463.06	40.54817752	-104.79044875
18025.00	90.13	269.56	7309.30	1641.50S	10434.02W	==>	10562.06	40.54817531	-104.79080857
18125.00	90.13	269.56	7309.07	1642.26S	10534.02W	==>	10661.07	40.54817310	-104.79116839
18225.00	90.13	269.56	7308.83	1643.02S	10634.02W	==>	10760.08	40.54817089	-104.79152820
18325.00	90.13	269.56	7308.60	1643.78S	10734.01W	==>	10859.09	40.54816868	-104.79188802
18425.00	90.13	269.56	7308.37	1644.55S	10834.01W	==>	10958.09	40.54816647	-104.79224783
18525.00	90.13	269.56	7308.13	1645.31S	10934.01W	==>	11057.10	40.54816425	-104.79260765
18581.52	90.13	269.56	7308.00	1645.74S	10990.52W	==>	11113.06	40.54816300	-104.79281100

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Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 21-May-2019

SYSDRILL
Well Design Combined Report
Wellbore: LEFFLER I-26-28HN (PWB)

Targets

Name	North[ft]	East[ft]	TVD[ft]	Latitude	Longitude	Northing	Easting
LEFFLER I-26-28HN - LP	1564.03S	275.96W	7333.00	40.54839400	-104.75425700	1443492.24	3207240.07
LEFFLER I-26-28HN - BHL	1645.74S	10990.52W	7308.00	40.54816300	-104.79281100	1443320.31	3196526.91

Survey Tool Program

Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool	Error Model
836606	Planned	1025.00	1025.00	WdW Rate Gyro	Standard
836605	Planned	18581.52	7308.00	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 4923.0ft above Mean Sea Level)
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Calculation method uses Minimum Curvature method
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Date Printed: 21-May-2019

SYSDRILL
Closest Approach + Clearance Factor Summary Report
Wellbore: LEFFLER I-26-28HN (PWB)
Wellpath: LEFFLER I-26-28HN (PWP#1)
Ellipse separations are reported ONLY if BOTH wells have uncertainty data
Only Depth and Magnetic Reference Field error terms are correlated across tie points
Scan limit is calculated on CENTRE to CENTRE distance

Summary data uses Closest Approach clearance calculation for all minima
Hole size/Casings ARE included
Hole size/Casings are NOT subtracted from Centre-Centre distance
Confidence limit of 95.00% / 2.80 SD.
Errors on Ref start at Slot Permanent Datum (25.00)

Report uses Common: D/(E+Csg) Factor Calculation

Wellbore

Name	Created	Last Revised
LEFFLER I-26-28HN (PWB)	May-20-2019	May-21-2019

Well

Name	Government ID	Last Revised
LEFFLER I-26-28HN		May-20-2019

Slot

Name	Grid Northing	Grid Easting	Latitude	Longitude	North	East
LEFFLER I-26-28HN	1445058.4861	3207502.8406	40.55268700	-104.75326400	29.51S	75.31E

Installation

Name	Easting	Northing	Map Name	North Alignment
Leffler Pad - Updates 05-20-2019	3207427.2886	1445087.3602	NAD83 Based Colorado State Planes, Northern Zone, US Feet	True

Field

Name	Easting	Northing	Map Name	North Alignment
WATTENBERG	3230716.7970	1397094.8569	NAD83 Based Colorado State Planes, Northern Zone, US Feet	Grid

Clearance Summary

Offset WellName	Offset Wellbore	Offset Slot	Offset Structure	Separation [ft]	MD[ft]	Diverging From[ft]	Ellipse Separation [ft]	Ellipse MD[ft]	Clearance Factor	Clearance MD[ft]
W Thornton 21K-443	W Thornton 21K-443 (AWB)	Thornton 21K-443	Leffler Pad OFFSETS	88.79	17538.68	17538.68	-31.71	17486.88	0.76	17486.88
W Leffler 32-27	W Leffler 32-27 (AWB)	Leffler 32-27	Leffler Pad OFFSETS	392.65	10092.17	10092.17	280.33	10121.39	3.45	10154.20
W Leffler 42-27	W Leffler 42-27 (AWB)	Leffler 42-27	Leffler Pad OFFSETS	450.49	8441.75	8441.75	394.32	8464.57	7.48	8595.80
W Leffler 27C	W Leffler 27C (AWB)	Leffler 27C	Leffler Pad OFFSETS	482.01	9150.51	9150.51	403.90	9153.54	6.17	9153.54
W Leffler 41-27	W Leffler 41-27 (AWB)	Leffler 41-27	Leffler Pad OFFSETS	768.42	1870.08	8425.09	761.55	1968.50	21.06	8858.27
W Leffler 1-27	W Leffler 1-27 (AWB)	Leffler 1-27	Leffler Pad OFFSETS	1147.65	9813.20	9813.20	1045.86	9842.52	11.10	9973.75
W Leffler 31-27	W Leffler 31-27 (AWB)	Leffler 31-27	Leffler Pad OFFSETS	1261.39	10093.81	10093.81	1149.91	10121.39	11.13	10285.43

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Vertical Section is from 0.00N 0.00E on azimuth 261.48 degrees
Prepared by
Date Printed: 22-May-2019