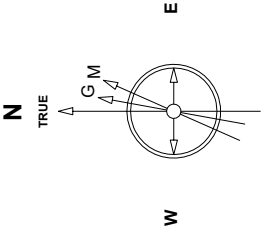


Great Western Operating Company, LLC

Location	Colorado	Slot	Slot 06 - Schneider HD 11-059HN
Field	Wattenburg	Well	Schneider HD 11-059HN
Installation	Schneider North	Wellbore	Schneider HD 11-059HN (AWB)

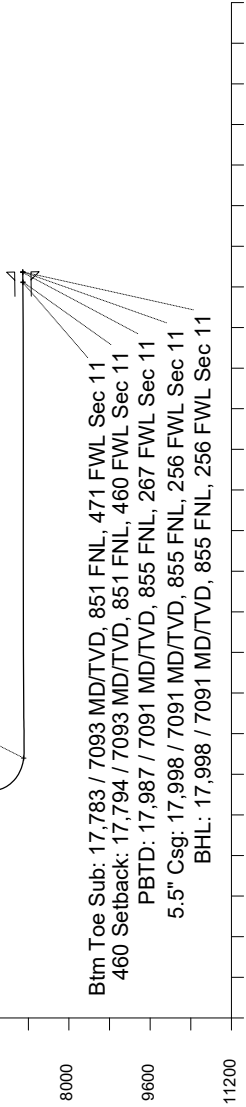
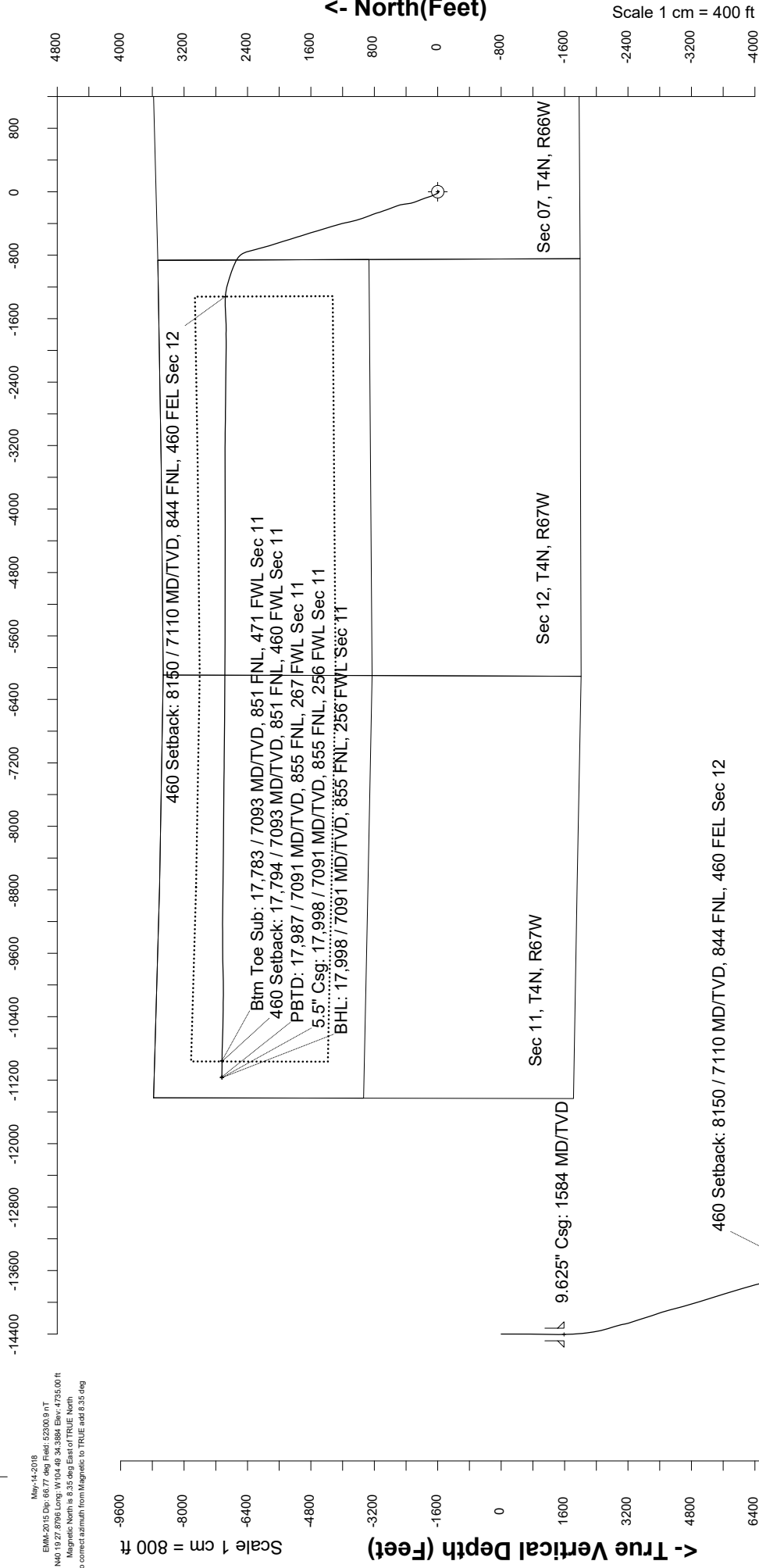
Created by	mmount
Date plotted	18-Nov-2019
Plot reference is	Schneider HD 11-059HN (AWB).
Ref wellpath is	Schneider HD 11-059HN (AWP#1).
Coordinates are in	Feet reference Slot 06 - Schneider HD 11-059HN.
True Vertical Depths are	reference Rig Datum.
Measured Depths are	reference Rig Datum.
Rig Datum	Actual Datum #1
Rig Datum to Mean Sea Level:	4755.00 ft.
Plot North is	aligned to TRUE North.



EMM-2015.Dwg: 08/7 deg Field: 52300.9 nT
Lat: N40 19 27.876 Long: W 104 40 34.384 Elev: 4735.00 ft
Magnetic North is 8.35 deg East of TRUE North
To correct azimuth from Magnetic to TRUE add 8.35 deg

Scale 1 cm = 400 ft

East (Feet) ->



Scale 1 cm = 800 ft
Azimuth 283.70 with reference 0.00 N, 0.00 E from Slot 06 - Schneider HD 11-059HN

Great Western Operating Co, LLC
Directional Survey Report
Wellpath: Schneider HD 11-059HN
MDs and TVDs are from Rig Floor 4755.0ft above Mean Sea Level

Wellbore Information

Date Created	Date Revised	API #	RKB above GL	Well Name
Nov-18-2019	Nov-18-2019	05-123-46415	20.00	Schneider HD 11-059HN

Slot Coordinates

Latitude	Longitude
40.32412800	-104.82668200

Pad Information

Pad Name	Ground Elev.
Schneider North	4735.00

Field

Name
Wattenburg

Wellpath Report

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	DLS [deg/100ft]	Vertical Section[ft]	Lat - NAD 83	Long - NAD 83
0.00	0.00	0.00	0.00	0.00	0.00		0.00	40.32412800	-104.82668200
14.00	0.00	0.00	14.00	0.00	0.00	0.00	0.00	40.32412800	-104.82668200
96.00	0.04	209.27	96.00	-0.02	-0.01	0.00	0.01	40.32412793	-104.82668205
185.00	0.18	98.00	185.00	-0.07	0.11	0.00	-0.12	40.32412780	-104.82668161
273.00	0.22	6.24	273.00	0.08	0.26	0.00	-0.24	40.32412821	-104.82668105
365.00	0.66	100.55	365.00	0.16	0.80	0.00	-0.74	40.32412843	-104.82667911
455.00	0.88	158.82	454.99	-0.58	1.56	0.00	-1.66	40.32412640	-104.82667639
545.00	0.79	141.15	544.98	-1.71	2.20	0.00	-2.55	40.32412330	-104.82667410
635.00	0.44	162.07	634.98	-2.52	2.70	0.00	-3.22	40.32412107	-104.82667232
725.00	0.53	157.77	724.97	-3.24	2.96	0.00	-3.64	40.32411911	-104.82667138
815.00	0.66	139.31	814.97	-4.02	3.46	0.00	-4.31	40.32411698	-104.82666960
905.00	0.79	148.98	904.96	-4.94	4.12	0.00	-5.17	40.32411444	-104.82666724
995.00	1.23	145.81	994.95	-6.27	4.98	0.00	-6.32	40.32411079	-104.82666415
1085.00	1.27	126.04	1084.93	-7.66	6.33	0.00	-7.96	40.32410698	-104.82665931
1175.00	1.27	133.77	1174.90	-8.93	7.85	0.00	-9.75	40.32410348	-104.82665383
1265.00	1.01	140.80	1264.89	-10.24	9.08	0.00	-11.24	40.32409990	-104.82664945
1355.00	0.92	145.72	1354.87	-11.45	9.98	0.00	-12.41	40.32409657	-104.82664619
1445.00	0.66	243.02	1444.87	-12.28	9.93	0.00	-12.56	40.32409429	-104.82664639
1535.00	0.62	227.29	1534.86	-12.85	9.11	0.00	-11.89	40.32409273	-104.82664933
1661.00	0.48	103.89	1660.86	-13.44	9.12	0.00	-12.04	40.32409112	-104.82664929
1711.00	0.90	251.66	1710.86	-13.61	8.95	0.00	-11.92	40.32409064	-104.82664990
1801.00	5.18	276.81	1800.71	-13.35	4.24	0.00	-7.29	40.32409135	-104.82666678
1891.00	8.76	287.62	1890.04	-10.79	-6.33	0.00	3.59	40.32409837	-104.82670469
1980.00	3.94	340.71	1978.53	-5.85	-13.81	0.00	12.03	40.32411194	-104.82673151
2070.00	8.07	336.79	2068.01	2.88	-17.32	0.00	17.51	40.32413590	-104.82674411
2160.00	10.59	326.80	2156.82	15.61	-24.34	0.00	27.34	40.32417084	-104.82676928
2250.00	12.75	334.07	2244.96	31.46	-33.21	0.00	39.72	40.32421436	-104.82680110
2339.00	15.46	335.34	2331.27	51.08	-42.46	0.00	53.35	40.32426820	-104.82683426
2429.00	17.97	335.30	2417.46	74.60	-53.26	0.00	69.42	40.32433276	-104.82687302
2519.00	24.06	347.04	2501.47	105.13	-63.19	0.00	86.30	40.32441658	-104.82690863
2608.00	24.02	340.92	2582.76	139.93	-73.18	0.00	104.25	40.32451211	-104.82694447
2698.00	26.73	339.08	2664.07	176.16	-86.40	0.00	125.67	40.32461155	-104.82699187
2788.00	27.91	339.47	2744.03	214.79	-101.02	0.00	149.02	40.32471759	-104.82704429
2877.00	30.08	337.07	2821.88	254.85	-117.01	0.00	174.05	40.32482754	-104.82710166
2967.00	30.59	341.24	2899.56	297.31	-133.17	0.00	199.81	40.32494409	-104.82715959
3057.00	29.96	347.94	2977.31	340.98	-145.23	0.00	221.87	40.32506397	-104.82720286
3146.00	30.01	353.53	3054.41	384.84	-152.38	0.00	239.21	40.32518435	-104.82722851
3236.00	30.37	352.64	3132.21	429.77	-157.84	0.00	255.15	40.32530768	-104.82724806
3326.00	30.47	345.33	3209.84	474.42	-166.53	0.00	274.18	40.32543025	-104.82727925
3416.00	30.15	341.07	3287.55	517.88	-179.64	0.00	297.21	40.32554954	-104.82732628
3505.00	29.76	337.22	3364.67	559.39	-195.45	0.00	322.40	40.32566349	-104.82738297
3595.00	30.43	339.33	3442.54	601.31	-212.14	0.00	348.55	40.32577856	-104.82744284
3685.00	30.19	340.97	3520.24	644.03	-227.57	0.00	373.65	40.32589582	-104.82749816
3774.00	29.52	340.46	3597.43	685.85	-242.20	0.00	397.77	40.32601061	-104.82755063
3864.00	31.50	343.10	3674.96	729.25	-256.45	0.00	421.90	40.32612973	-104.82760175
3954.00	31.49	343.05	3751.71	774.23	-270.14	0.00	445.85	40.32625320	-104.82765085
4043.00	31.31	340.04	3827.68	818.20	-284.81	0.00	470.53	40.32637391	-104.82770347
4133.00	31.39	337.78	3904.54	861.88	-301.66	0.00	497.24	40.32649381	-104.82776389
4223.00	30.02	338.36	3981.92	904.51	-318.82	0.00	524.02	40.32661081	-104.82782546
4313.00	30.17	339.80	4059.79	946.66	-334.94	0.00	549.65	40.32672652	-104.82788325
4402.00	29.70	342.89	4136.92	988.73	-349.15	0.00	573.42	40.32684198	-104.82793421
4492.00	30.27	346.89	4214.88	1032.13	-360.85	0.00	595.08	40.32696113	-104.82797620
4582.00	30.35	346.24	4292.58	1076.31	-371.41	0.00	615.80	40.32708239	-104.82801405
4671.00	30.45	347.05	4369.34	1120.13	-381.81	0.00	636.28	40.32720267	-104.82805136
4761.00	27.88	348.87	4447.93	1163.01	-390.98	0.00	655.35	40.32732037	-104.82808427
4851.00	30.46	344.23	4526.52	1205.62	-401.25	0.00	675.42	40.32743734	-104.82812109
4941.00	30.64	345.46	4604.03	1249.77	-413.21	0.00	697.50	40.32755854	-104.82816398
5030.00	30.41	344.80	4680.69	1293.46	-424.80	0.00	719.12	40.32767846	-104.82820558
5120.00	29.54	341.97	4758.66	1336.55	-437.64	0.00	741.80	40.32779672	-104.82825164
5210.00	30.46	344.23	4836.60	1379.60	-450.71	0.00	764.69	40.32791490	-104.82829851
5300.00	29.35	341.95	4914.62	1422.53	-463.75	0.00	787.52	40.32803273	-104.82834526
5389.00	31.61	343.21	4991.31	1465.60	-477.24	0.00	810.84	40.32815096	-104.82839367
5479.00	32.17	343.87	5067.73	1511.20	-490.71	0.00	834.73	40.32827612	-104.82844198
5569.00	32.03	343.22	5143.97	1557.06	-504.26	0.00	858.75	40.32840202	-104.82849057
5659.00	31.68	343.58	5220.42	1602.58	-517.83	0.00	882.72	40.32852697	-104.82853925
5748.00	30.74	342.38	5296.54	1646.68	-531.32	0.00	906.28	40.32864801	-104.82858764
5838.00	30.69	342.19	5373.91	1690.47	-545.31	0.00	930.24	40.32876821	-104.82863781

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	DLS [deg/100ft]	Vertical Section[ft]	Lat - NAD 83	Long - NAD 83
5928.00	31.15	342.45	5451.12	1734.53	-559.36	0.00	954.32	40.32888915	-104.82868819
6017.00	30.77	342.57	5527.44	1778.20	-573.12	0.00	978.03	40.32900902	-104.82873755
6107.00	30.64	343.13	5604.82	1822.11	-586.67	0.00	1001.60	40.32912955	-104.82878615
6197.00	30.91	343.18	5682.15	1866.18	-600.01	0.00	1025.01	40.32925053	-104.82883402
6287.00	30.26	342.33	5759.63	1909.92	-613.58	0.00	1048.55	40.32937058	-104.82888270
6376.00	30.92	343.26	5836.24	1953.18	-626.98	0.00	1071.81	40.32948934	-104.82893074
6466.00	30.05	342.62	5913.80	1996.83	-640.37	0.00	1095.16	40.32960915	-104.82897877
6556.00	30.47	342.97	5991.54	2040.16	-653.78	0.00	1118.46	40.32972807	-104.82902689
6645.00	29.57	341.48	6068.60	2082.56	-667.37	0.00	1141.70	40.32984446	-104.82907562
6735.00	30.22	343.86	6146.62	2125.37	-680.72	0.00	1164.81	40.32996198	-104.82912351
6825.00	30.23	344.76	6224.39	2168.99	-692.97	0.00	1187.05	40.33008170	-104.82916745
6914.00	29.32	345.11	6301.64	2211.67	-704.46	0.00	1208.32	40.33019885	-104.82920867
7004.00	30.16	345.07	6379.78	2254.81	-715.95	0.00	1229.70	40.33031727	-104.82924987
7094.00	29.64	344.58	6457.81	2298.11	-727.69	0.00	1251.37	40.33043612	-104.82929199
7183.00	29.77	344.70	6535.11	2340.63	-739.37	0.00	1272.79	40.33055286	-104.82933390
7273.00	29.27	345.04	6613.43	2383.44	-750.95	0.00	1294.18	40.33067036	-104.82937542
7363.00	33.00	341.38	6690.45	2427.94	-764.46	0.00	1317.84	40.33079251	-104.82942388
7452.00	38.58	326.22	6762.76	2474.11	-787.69	0.00	1351.35	40.33091922	-104.82950722
7542.00	42.20	307.11	6831.57	2515.84	-827.56	0.00	1399.98	40.33103378	-104.82965025
7632.00	46.48	296.60	6896.01	2548.75	-880.95	0.00	1459.64	40.33112411	-104.82984171
7721.00	50.66	292.33	6954.90	2576.30	-941.68	0.00	1525.16	40.33119971	-104.83005954
7811.00	60.02	289.03	7006.04	2602.29	-1010.89	0.00	1598.56	40.33127106	-104.83030778
7901.00	69.13	287.04	7044.64	2627.38	-1088.10	0.00	1679.52	40.33133991	-104.83058475
7990.00	72.07	286.67	7074.20	2651.71	-1168.44	0.00	1763.33	40.33140670	-104.83087288
8080.00	77.14	279.14	7098.12	2671.00	-1252.93	0.00	1850.00	40.33145963	-104.83117596
8170.00	85.31	273.15	7111.85	2680.46	-1341.26	0.00	1938.05	40.33148558	-104.83149275
8260.00	89.10	266.83	7116.24	2680.44	-1431.09	0.00	2025.31	40.33148550	-104.83181495
8349.00	90.37	267.37	7116.65	2675.93	-1519.97	0.00	2110.60	40.33147313	-104.83213375
8439.00	90.09	268.22	7116.29	2672.47	-1609.90	0.00	2197.15	40.33146361	-104.83245632
8529.00	90.08	269.77	7116.16	2670.89	-1699.89	0.00	2284.20	40.33145926	-104.83277906
8618.00	90.44	268.79	7115.75	2669.77	-1788.88	0.00	2370.39	40.33145617	-104.83309825
8708.00	90.62	270.02	7114.92	2668.84	-1878.87	0.00	2457.60	40.33145359	-104.83342102
8798.00	90.63	270.75	7113.94	2669.44	-1968.86	0.00	2545.17	40.33145523	-104.83374380
8888.00	90.86	270.74	7112.77	2670.61	-2058.84	0.00	2632.88	40.33145842	-104.83406655
8977.00	91.07	270.71	7111.27	2671.74	-2147.82	0.00	2719.59	40.33146149	-104.83438570
9067.00	90.16	270.29	7110.30	2672.52	-2237.81	0.00	2807.20	40.33146362	-104.83470847
9157.00	90.66	270.20	7109.66	2672.91	-2327.81	0.00	2894.73	40.33146466	-104.83503127
9246.00	91.00	270.94	7108.37	2673.80	-2416.80	0.00	2981.39	40.33146706	-104.83535044
9336.00	90.30	270.03	7107.35	2674.56	-2506.79	0.00	3069.00	40.33146913	-104.83567321
9426.00	90.72	270.71	7106.55	2675.14	-2596.78	0.00	3156.57	40.33147070	-104.83599599
9515.00	90.93	270.97	7105.27	2676.44	-2685.76	0.00	3243.33	40.33147426	-104.83631514
9605.00	90.97	270.62	7103.77	2677.69	-2775.74	0.00	3331.04	40.33147766	-104.83663788
9695.00	90.51	270.40	7102.61	2678.49	-2865.73	0.00	3418.66	40.33147983	-104.83696064
9785.00	90.65	270.98	7101.70	2679.58	-2955.72	0.00	3506.34	40.33148277	-104.83728341
9874.00	90.22	270.32	7101.02	2680.59	-3044.71	0.00	3593.04	40.33148551	-104.83760260
9964.00	90.38	271.31	7100.55	2681.87	-3134.70	0.00	3680.77	40.33148900	-104.83792536
10054.00	90.16	270.56	7100.13	2683.33	-3224.68	0.00	3768.54	40.33149300	-104.83824812
10144.00	89.53	270.39	7100.37	2684.08	-3314.68	0.00	3856.16	40.33149501	-104.83857092
10233.00	89.51	270.43	7101.12	2684.72	-3403.67	0.00	3942.77	40.33149673	-104.83889012
10323.00	89.76	269.37	7101.69	2684.56	-3493.67	0.00	4030.17	40.33149626	-104.83921291
10413.00	89.69	269.56	7102.12	2683.72	-3583.67	0.00	4117.40	40.33149392	-104.83953570
10502.00	89.85	269.35	7102.48	2682.87	-3672.66	0.00	4203.66	40.33149156	-104.83985490
10592.00	89.24	268.89	7103.20	2681.49	-3762.65	0.00	4290.76	40.33148773	-104.84017766
10682.00	89.86	269.45	7103.90	2680.19	-3852.63	0.00	4377.88	40.33148411	-104.84050042
10772.00	90.00	270.82	7104.01	2680.40	-3942.63	0.00	4465.36	40.33148465	-104.84082322
10861.00	90.02	269.65	7104.00	2680.76	-4031.63	0.00	4551.91	40.33148562	-104.84114243
10951.00	89.96	270.06	7104.01	2680.54	-4121.63	0.00	4639.30	40.33148495	-104.84146524
11041.00	89.90	270.12	7104.12	2680.68	-4211.63	0.00	4726.77	40.33148530	-104.84178804
11131.00	89.92	269.83	7104.26	2680.64	-4301.63	0.00	4814.20	40.33148515	-104.84211085
11220.00	90.00	270.31	7104.33	2680.75	-4390.63	0.00	4900.69	40.33148540	-104.84243007
11310.00	90.19	270.50	7104.18	2681.38	-4480.62	0.00	4988.28	40.33148710	-104.84275287
11400.00	89.88	269.60	7104.12	2681.46	-4570.62	0.00	5075.73	40.33148728	-104.84307567
11490.00	89.79	269.48	7104.38	2680.74	-4660.62	0.00	5163.00	40.33148525	-104.84339847
11579.00	89.99	269.74	7104.55	2680.13	-4749.62	0.00	5249.32	40.33148354	-104.84371768
11669.00	89.98	270.23	7104.58	2680.11	-4839.62	0.00	5336.75	40.33148342	-104.84404048
11759.00	90.01	270.31	7104.58	2680.53	-4929.62	0.00	5424.29	40.33148454	-104.84436329
11848.00	89.99	270.38	7104.58	2681.07	-5018.62	0.00	5510.88	40.33148596	-104.84468250
11938.00	90.31	271.07	7104.35	2682.21	-5108.61	0.00	5598.58	40.33148904	-104.84500528
12028.00	90.18	270.28	7103.96	2683.27	-5198.60	0.00	5686.26	40.33149190	-104.84532806
12117.00	90.13	269.74	7103.72	2683.28	-5287.60	0.00	5772.73	40.33149189	-104.84564728
12207.00	90.06	269.70	7103.57	2682.85	-5377.60	0.00	5860.07	40.33149063	-104.84597008
12297.00	89.98	269.98	7103.54	2682.59	-5467.60	0.00	5947.44	40.33148988	-104.84629289
12386.00	89.97	269.37	7103.58	2682.09	-5556.60	0.00	6033.79	40.33148844	-104.84661210
12476.00	90.63	270.20	7103.11	2681.75	-5646.59	0.00	6121.15	40.33148746	-104.84693490
12566.00	90.57	270.70	7102.17	2682.46	-5736.58	0.00	6208.74	40.33148934	-104.84725767
12656.00	90.29	269.73	7101.49	2682.80	-5826.58	0.00	6296.26	40.33149021	-104.84758047
12745.00	90.17	269.34	7101.13	2682.07	-5915.58	0.00	6382.55	40.33148817	-104.84789967
12835.00	90.38	270.87	7100.70	2682.24	-6005.57	0.00	6470.02	40.33148856	-104.84822247
12925.00	90.33	270.15	7100.14	2683.04	-6095.57	0.00	6557.65	40.33149070	-104.84854525
13014.00	90.64	270.90	7099.39	2683.85	-6184.56	0.00	6644.30	40.33149288	-104.84886445
13104.00	90.61	271.41	7098.41	2685.67	-6274.53	0.00	6732.14	40.33149780	-104.84918717
13194.00	90.45	271.29	7097.58	2687.79	-6364.51	0.00	6820.06	40.33150355	-104.84950988
13284.00	90.16	269.61	7097.10	2688.50	-6454.50	0.00	6907.65	40.33150543	-104.84983266
13373.00	90.36	271.22	7096.69	2689.14	-6543.49	0.00	6994.27	40.33150713	-104.85015186
13463.00	90.17	269.76	7096.28	2689.91	-6633.49	0.00	7081.88	40.33150918	-104.85047464
13553.00	89.88	270.09	7096.24	2689.79	-6723.48	0.00	7169.29	40.33150879	-104.85079745
13642.00	90.09	270.55	7096.26	2690.29	-6812.48	0.00	7255.87	40.33151009	-104.85111666
13732.00	89.77	270.19	7096.37	2690.87	-6902.48	0.00	7343.45	40.33151162	-104.85143946
13822.00	89.69	271.14	7096.80	2691.92	-6992.47	0.00	7431.13	40.33151441	-104.85176224
13911.00	89.50	270.43	7097.42	2693.13	-7081.46	0.00	7517.87	40.33151769	-104.85208142

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	DLS [deg/100ft]	Vertical Section[ft]	Lat - NAD 83	Long - NAD 83
14001.00	89.78	270.47	7097.99	2693.84	-7171.46	0.00	7605.47	40.33151956	-104.85240421
14091.00	89.33	270.40	7098.69	2694.52	-7261.45	0.00	7693.07	40.33152136	-104.85272700
14180.00	89.48	270.63	7099.61	2695.32	-7350.44	0.00	7779.72	40.33152349	-104.85304619
14270.00	89.41	270.58	7100.48	2696.27	-7440.43	0.00	7867.37	40.33152602	-104.85336897
14360.00	89.44	270.92	7101.39	2697.45	-7530.42	0.00	7955.08	40.33152918	-104.85369173
14449.00	89.43	270.71	7102.27	2698.72	-7619.41	0.00	8041.83	40.33153258	-104.85401091
14539.00	89.92	270.49	7102.78	2699.66	-7709.40	0.00	8129.48	40.33153509	-104.85433369
14629.00	89.94	270.85	7102.89	2700.71	-7799.39	0.00	8217.17	40.33153790	-104.85465648
14718.00	89.94	269.96	7102.98	2701.34	-7888.39	0.00	8303.78	40.33153955	-104.85497569
14808.00	90.31	269.66	7102.78	2701.04	-7978.39	0.00	8391.15	40.33153865	-104.85529849
14898.00	90.01	270.66	7102.53	2701.30	-8068.39	0.00	8478.64	40.33153926	-104.85562129
14988.00	90.19	270.90	7102.37	2702.52	-8158.38	0.00	8566.36	40.33154254	-104.85594407
15077.00	90.25	270.45	7102.03	2703.57	-8247.37	0.00	8653.07	40.33154534	-104.85626327
15167.00	89.77	269.97	7102.02	2703.90	-8337.37	0.00	8740.59	40.33154616	-104.85658607
15257.00	90.09	270.24	7102.13	2704.06	-8427.37	0.00	8828.06	40.33154653	-104.85690888
15346.00	89.90	271.30	7102.13	2705.26	-8516.36	0.00	8914.80	40.33154973	-104.85722806
15436.00	90.71	271.86	7101.66	2707.74	-8606.33	0.00	9002.79	40.33155646	-104.85755074
15526.00	90.32	270.31	7100.85	2709.45	-8696.30	0.00	9090.61	40.33156105	-104.85787347
15615.00	90.36	269.96	7100.32	2709.66	-8785.30	0.00	9177.13	40.33156154	-104.85819269
15705.00	90.53	270.62	7099.62	2710.11	-8875.30	0.00	9264.67	40.33156270	-104.85851548
15795.00	90.24	271.20	7099.01	2711.54	-8965.28	0.00	9352.43	40.33156653	-104.85883824
15884.00	89.84	270.71	7098.95	2713.02	-9054.27	0.00	9439.24	40.33157052	-104.85915741
15974.00	89.68	269.98	7099.33	2713.57	-9144.27	0.00	9526.80	40.33157191	-104.85948021
16064.00	89.90	270.11	7099.66	2713.64	-9234.27	0.00	9614.26	40.33157202	-104.85980302
16154.00	90.19	269.00	7099.59	2712.94	-9324.26	0.00	9701.53	40.33157000	-104.86012581
16243.00	90.34	270.31	7099.18	2712.40	-9413.26	0.00	9787.86	40.33156844	-104.86044501
16333.00	89.70	270.26	7099.15	2712.85	-9503.26	0.00	9875.40	40.33156958	-104.86076781
16423.00	90.05	268.87	7099.34	2712.17	-9593.25	0.00	9962.68	40.33156760	-104.86109060
16513.00	89.75	269.24	7099.50	2710.68	-9683.24	0.00	10049.75	40.33156343	-104.86141336
16602.00	89.91	268.91	7099.76	2709.24	-9772.23	0.00	10135.87	40.33155939	-104.86173254
16692.00	90.01	268.60	7099.83	2707.29	-9862.20	0.00	10222.82	40.33155393	-104.86205527
16782.00	89.57	268.63	7100.16	2705.11	-9952.18	0.00	10309.72	40.33154786	-104.86237797
16871.00	90.11	269.98	7100.40	2704.03	-10041.17	0.00	10395.92	40.33154480	-104.86269716
16961.00	90.37	271.35	7100.03	2705.08	-10131.16	0.00	10483.60	40.33154756	-104.86301994
17051.00	90.39	270.43	7099.43	2706.48	-10221.15	0.00	10571.35	40.33155130	-104.86334270
17141.00	90.22	270.10	7098.95	2706.89	-10311.14	0.00	10658.89	40.33155234	-104.86366550
17230.00	90.54	271.39	7098.36	2708.05	-10400.13	0.00	10745.62	40.33155541	-104.86398468
17320.00	90.56	270.55	7097.50	2709.57	-10490.11	0.00	10833.40	40.33155949	-104.86430742
17410.00	90.67	271.65	7096.53	2711.30	-10580.09	0.00	10921.22	40.33156413	-104.86463015
17500.00	90.35	271.86	7095.73	2714.06	-10670.04	0.00	11009.27	40.33157159	-104.86495280
17589.00	90.78	271.90	7094.85	2716.98	-10758.99	0.00	11096.38	40.33157949	-104.86527183
17679.00	90.23	270.42	7094.06	2718.80	-10848.97	0.00	11184.22	40.33158439	-104.86559456
17769.00	90.69	271.18	7093.34	2720.06	-10938.95	0.00	11271.95	40.33158773	-104.86591732
17858.00	90.31	270.09	7092.56	2721.04	-11027.94	0.00	11358.64	40.33159033	-104.86623651
17948.00	90.68	270.66	7091.78	2721.63	-11117.94	0.00	11446.21	40.33159183	-104.86655929
17975.00	90.72	271.95	7091.45	2722.25	-11144.93	0.00	11472.58	40.33159349	-104.86665610
17998.00	90.72	271.95	7091.16	2723.03	-11167.91	0.00	11495.09	40.33159561	-104.86673854

Comments

MD[ft]	TVD[ft]	North[ft]	East[ft]	Lat - NAD 83	Long - NAD 83	Comment
0.00	0.00	0.00	0.00	40.32412800	-104.82668200	Surface Location
1584.00	1583.86	-13.16	8.87	40.32409189	-104.82665018	9.625" Csg: 1584 MD/TVD
8149.78	7109.87	2679.12	-1321.18	40.33148191	-104.83142074	460 Setback: 8150 / 7110 MD/TVD, 844 FNL, 460 FEL Sec 12
17783.22	7093.17	2720.33	-10953.17	40.33158845	-104.86596831	Btm Toe Sub: 17,783 / 7093 MD/TVD, 851 FNL, 471 FWL Sec 11
17794.19	7093.06	2720.51	-10964.14	40.33158893	-104.86600765	460 Setback: 17,794 / 7093 MD/TVD, 851 FNL, 460 FWL Sec 11
17987.14	7091.30	2722.66	-11157.06	40.33159461	-104.86669962	PBTD: 17,987 / 7091 MD/TVD, 855 FNL, 267 FWL Sec 11
17998.00	7091.16	2723.03	-11167.91	40.33159561	-104.86673854	5.5" Csg: 17,998 / 7091 MD/TVD, 855 FNL, 256 FWL Sec 11
17998.00	7091.16	2723.03	-11167.91	40.33159561	-104.86673854	BHL: 17,998 / 7091 MD/TVD, 855 FNL, 256 FWL Sec 11

Hole Sections

Diameter [in]	Start MD[ft]	Start TVD[ft]	Start North[ft]	Start East[ft]	End MD[ft]	End TVD[ft]	End North[ft]	End East[ft]
13.500	0.00	0.00	0.00	0.00	1584.00	1583.86	-13.16	8.87
8.500	1584.00	1583.86	-13.16	8.87	17998.00	7091.16	2723.03	-11167.91

Casings

Name	Top MD[ft]	Top TVD[ft]	Top North[ft]	Top East[ft]	Shoe MD[ft]	Shoe TVD[ft]	Shoe North[ft]	Shoe East[ft]
9 5/8in Casing	0.00	0.00	0.00	0.00	1584.00	1583.86	-13.16	8.87
5 1/2in Casing	0.00	0.00	0.00	0.00	17998.00	7091.16	2723.03	-11167.91

Survey Tool Program

Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool
653923	As Drilled - 20191118	17998.00	7091.16	MWD

Coordinates are from Slot
MD's and TVD's are from Rig Floor 4755.0ft above Mean Sea Level
Vertical Section is from Wellhead on azimuth 283.70 degrees
Bottom hole distance is 11495.09 Feet on azimuth 283.70 degrees from Wellhead
Survey calculation uses Minimum Curvature method