

Great Western Operating Company, LLC

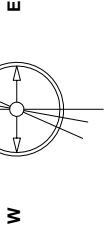
Location	Colorado	Slot	Slot 16 - Schneider HD 11-219HNX
Field	Wattenburg	Well	Schneider HD 11-219HNX
Installation	Schneider North	Wellbore	Schneider HD 11-219HNX (AWB)

Created by	rmcount
Date plotted	8-Oct-2019

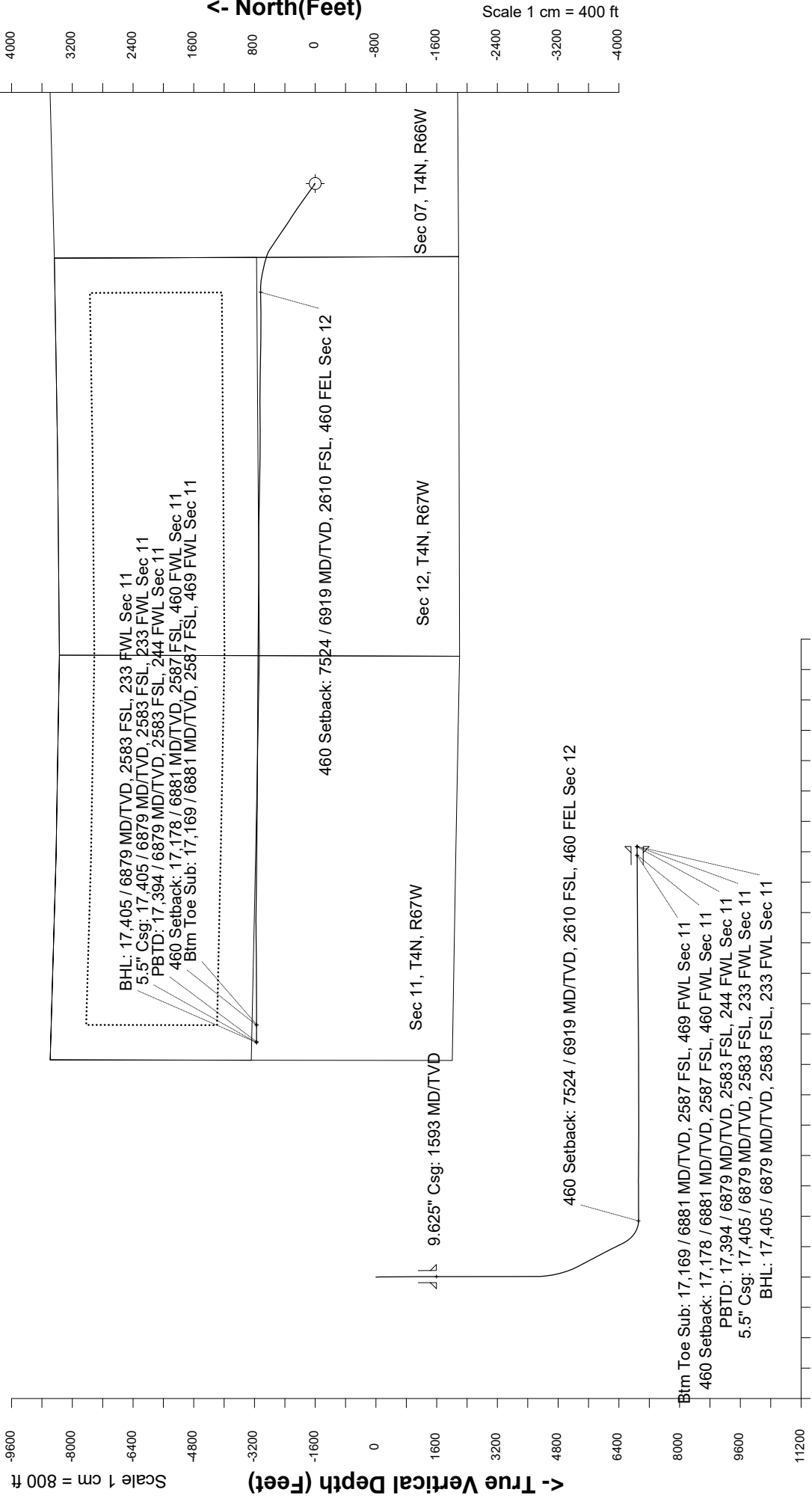
Plot reference is Schneider HD 11-219HNX (AWB).
Ref wellpath is Schneider HD 11-219HNX (AWPH1).
Coordinates are in Feet reference Slot 16 - Schneider HD 11-219HNX.
True Vertical Depths are reference Rig Datum.
Measured Depths are reference Rig Datum.
Rig Datum: Actual Datum #1
Rig Datum to Mean Sea Level: 4755.00 ft.
Plot North is aligned to TRUE North.

Scale 1 cm = 400 ft

East (Feet) ->



EMM-2015.Dwg: 08/7.dwg Filed: 5/20/09 n/T
Lat: N40 19 27.8796 Long: W 104 40 34.3884 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 = 800 ft

Vertical Section (Feet) ->

Azimuth 273.91 with reference 0.00 N, 0.00 E from Slot 16 - Schneider HD 11-219HNX

Great Western Operating Co, LLC
Directional Survey Report
Wellpath: Schneider HD 11-219HNX
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
Oct-4-2019	Oct-8-2019	05-123-46412	20.00	Schneider HD 11-219HNX

Slot Coordinates

Latitude	Longitude
40.32438500	-104.82626000

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	40.32438500	-104.82626000
14.00	0.00	0.00	14.00	0.00	0.00	0.00	0.00	40.32438600	-104.82626100
96.00	0.40	313.33	96.00	0.20	-0.21	0.49	0.22	40.32438654	-104.82626175
186.00	0.66	306.56	186.00	0.72	-0.85	0.30	0.90	40.32438798	-104.82626406
273.00	0.70	301.12	272.99	1.29	-1.71	0.09	1.79	40.32438955	-104.82626713
366.00	1.01	325.99	365.98	2.27	-2.66	0.51	2.80	40.32439222	-104.82627052
455.00	0.75	332.14	454.97	3.43	-3.37	0.31	3.59	40.32439542	-104.82627307
545.00	0.62	349.28	544.96	4.43	-3.73	0.27	4.03	40.32439816	-104.82627438
635.00	0.62	352.71	634.96	5.39	-3.88	0.04	4.24	40.32440080	-104.82627493
725.00	0.57	323.00	724.95	6.23	-4.22	0.34	4.63	40.32440311	-104.82627612
815.00	0.75	351.04	814.95	7.17	-4.58	0.40	5.06	40.32440569	-104.82627741
905.00	0.62	320.98	904.94	8.13	-4.98	0.42	5.52	40.32440832	-104.82627884
995.00	0.53	306.21	994.94	8.76	-5.62	0.19	6.20	40.32441004	-104.82628115
1085.00	0.57	299.45	1084.93	9.22	-6.34	0.08	6.96	40.32441132	-104.82628375
1175.00	0.79	300.68	1174.93	9.76	-7.27	0.24	7.92	40.32441279	-104.82628706
1265.00	0.75	309.73	1264.92	10.45	-8.25	0.14	8.95	40.32441469	-104.82629060
1355.00	0.70	323.18	1354.91	11.27	-9.04	0.20	9.78	40.32441693	-104.82629341
1445.00	0.26	270.62	1444.91	11.71	-9.57	0.64	10.35	40.32441815	-104.82629532
1544.00	0.00	278.00	1543.91	11.71	-9.79	0.26	10.57	40.32441815	-104.82629613
1626.00	0.16	287.28	1625.91	11.75	-9.90	0.20	10.68	40.32441825	-104.82629652
1716.00	0.09	76.05	1715.91	11.80	-9.95	0.27	10.74	40.32441840	-104.82629670
1806.00	0.27	235.46	1805.91	11.70	-10.06	0.40	10.84	40.32441811	-104.82629708
1895.00	0.23	231.83	1894.91	11.47	-10.37	0.05	11.13	40.32441748	-104.82629821
1985.00	0.17	351.06	1984.91	11.49	-10.54	0.38	11.30	40.32441754	-104.82629879
2075.00	0.21	78.82	2074.90	11.65	-10.40	0.29	11.17	40.32441799	-104.82629828
2165.00	0.26	246.45	2164.90	11.60	-10.42	0.52	11.19	40.32441785	-104.82629837
2254.00	0.15	0.26	2253.90	11.64	-10.61	0.39	11.38	40.32441795	-104.82629904
2344.00	0.14	171.06	2343.90	11.65	-10.59	0.32	11.36	40.32441798	-104.82629897
2434.00	0.20	234.32	2433.90	11.45	-10.70	0.21	11.45	40.32441743	-104.82629937
2524.00	0.17	99.37	2523.90	11.34	-10.69	0.38	11.44	40.32441712	-104.82629935
2613.00	0.10	22.75	2612.90	11.39	-10.53	0.20	11.29	40.32441725	-104.82629878
2703.00	0.08	22.81	2702.90	11.52	-10.48	0.02	11.24	40.32441761	-104.82629858
2793.00	0.13	315.58	2792.90	11.65	-10.53	0.14	11.30	40.32441797	-104.82629875
2882.00	0.25	269.38	2881.90	11.72	-10.79	0.21	11.57	40.32441816	-104.82629970
2972.00	0.14	272.19	2971.90	11.72	-11.10	0.12	11.87	40.32441817	-104.82630080
3062.00	0.20	276.82	3061.90	11.74	-11.36	0.07	12.14	40.32441823	-104.82630175
3151.00	0.11	22.90	3150.90	11.84	-11.48	0.28	12.27	40.32441850	-104.82630219
3241.00	0.10	19.62	3240.90	11.99	-11.42	0.00	12.22	40.32441892	-104.82630197
3331.00	0.24	237.10	3330.90	11.96	-11.56	0.36	12.35	40.32441884	-104.82630245
3420.00	0.18	9.74	3419.90	12.00	-11.69	0.43	12.48	40.32441894	-104.82630292
3510.00	0.26	44.85	3509.90	12.29	-11.52	0.17	12.33	40.32441972	-104.82630232
3600.00	0.12	74.47	3599.90	12.46	-11.29	0.19	12.11	40.32442019	-104.82630148
3689.00	0.21	22.82	3688.90	12.63	-11.13	0.19	11.97	40.32442067	-104.82630093
3779.00	0.16	353.94	3778.90	12.91	-11.08	0.12	11.94	40.32442143	-104.82630075
3869.00	0.13	234.67	3868.90	12.97	-11.18	0.28	12.04	40.32442161	-104.82630109
3959.00	0.22	288.18	3958.90	12.97	-11.43	0.20	12.28	40.32442160	-104.82630198
4048.00	0.12	163.99	4047.90	12.93	-11.56	0.34	12.42	40.32442150	-104.82630247
4138.00	0.16	258.74	4137.90	12.82	-11.66	0.23	12.51	40.32442118	-104.82630282
4228.00	0.29	263.21	4227.90	12.77	-12.01	0.15	12.85	40.32442104	-104.82630407
4317.00	2.93	292.54	4316.85	13.61	-14.33	3.01	15.23	40.32442336	-104.82631241
4407.00	5.52	296.97	4406.60	16.46	-20.32	2.90	21.39	40.32443117	-104.82633387
4497.00	7.46	303.72	4496.02	21.66	-29.04	2.31	30.45	40.32444546	-104.82636514
4586.00	9.76	303.23	4584.01	29.01	-40.15	2.59	42.04	40.32446562	-104.82640501
4676.00	12.25	304.61	4672.35	38.61	-54.40	2.78	56.90	40.32449198	-104.82645608
4766.00	15.75	307.81	4759.67	51.53	-71.91	3.98	75.26	40.32452744	-104.82651890
4856.00	17.62	307.00	4845.87	67.21	-92.44	2.09	96.81	40.32457050	-104.82659253
4945.00	19.24	306.37	4930.31	84.02	-115.01	1.83	120.47	40.32461662	-104.82667346
5035.00	20.90	306.14	5014.84	102.28	-139.91	1.85	146.57	40.32466675	-104.82676279
5125.00	23.36	306.21	5098.20	122.29	-167.28	2.73	175.23	40.32472168	-104.82686093
5215.00	26.90	306.12	5179.67	144.84	-198.13	3.93	207.55	40.32478357	-104.82697158
5304.00	29.65	306.63	5258.04	169.85	-232.07	3.10	243.12	40.32485222	-104.82709329
5394.00	31.49	304.88	5335.53	196.57	-269.22	2.27	282.00	40.32492558	-104.82722653
5484.00	31.33	303.04	5412.35	222.77	-308.12	1.08	322.60	40.32499750	-104.82736604
5573.00	31.42	303.76	5488.33	248.28	-346.80	0.43	362.93	40.32506751	-104.82750477

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	DLS [deg/100ft]	Vertical Section[ft]	Lat - NAD 83	Long - NAD 83
5663.00	31.40	303.69	5565.14	274.32	-385.81	0.05	403.63	40.32513899	-104.82764468
5753.00	31.43	303.41	5641.95	300.25	-424.91	0.17	444.40	40.32521015	-104.82778490
5843.00	31.52	303.33	5718.71	326.10	-464.15	0.11	485.32	40.32528110	-104.82792564
5932.00	31.24	302.71	5794.69	351.35	-503.01	0.48	525.81	40.32535042	-104.82806500
6022.00	31.31	303.27	5871.61	376.79	-542.20	0.33	566.64	40.32542025	-104.82820556
6112.00	31.23	305.06	5948.54	403.02	-580.85	1.04	606.99	40.32549225	-104.82834418
6201.00	31.02	304.05	6024.73	429.12	-618.74	0.63	646.57	40.32556388	-104.82848006
6291.00	30.49	304.38	6102.07	454.99	-656.79	0.62	686.31	40.32563491	-104.82861655
6381.00	30.39	303.93	6179.67	480.59	-694.53	0.28	725.70	40.32570517	-104.82875188
6471.00	30.13	304.34	6257.40	506.04	-732.07	0.37	764.89	40.32577503	-104.82888652
6560.00	30.34	303.91	6334.30	531.18	-769.17	0.34	803.62	40.32584403	-104.82901957
6650.00	30.30	303.96	6411.99	556.55	-806.86	0.05	842.95	40.32591365	-104.82915477
6740.00	30.13	303.50	6489.76	581.70	-844.53	0.32	882.25	40.32598269	-104.82928987
6830.00	30.35	303.64	6567.51	606.76	-882.30	0.26	921.64	40.32605148	-104.82942532
6919.00	38.67	291.13	6640.88	629.31	-927.09	12.24	967.86	40.32611337	-104.82958596
7009.00	44.55	285.28	6708.17	647.79	-983.84	7.82	1025.74	40.32616408	-104.82978950
7099.00	51.92	284.54	6768.07	665.02	-1048.67	8.21	1091.60	40.32621139	-104.83002201
7188.00	56.26	283.91	6820.26	682.72	-1118.53	4.91	1162.50	40.32625996	-104.83027256
7278.00	65.55	280.85	6863.98	699.47	-1195.26	10.74	1240.20	40.32630592	-104.83054778
7367.00	73.71	277.05	6894.95	712.36	-1277.61	10.00	1323.23	40.32634130	-104.83084310
7457.00	82.64	271.89	6913.38	719.15	-1365.31	11.40	1411.20	40.32635993	-104.83115766
7547.00	89.08	268.35	6919.88	719.33	-1455.01	8.16	1500.70	40.32636040	-104.83147938
7636.00	90.49	268.92	6920.21	717.21	-1543.99	1.71	1589.32	40.32635457	-104.83179847
7726.00	90.32	270.06	6919.58	716.41	-1633.98	1.28	1679.05	40.32635235	-104.83212123
7816.00	90.22	267.12	6919.15	714.20	-1723.94	3.27	1768.65	40.32634626	-104.83244387
7905.00	89.69	271.63	6919.22	713.23	-1812.91	5.10	1857.35	40.32634357	-104.83276297
7995.00	90.28	270.35	6919.24	714.78	-1902.90	1.57	1947.23	40.32634782	-104.83308569
8085.00	90.37	271.26	6918.73	716.04	-1992.89	1.02	2037.10	40.32635128	-104.83340843
8175.00	90.00	271.17	6918.44	717.95	-2082.86	0.42	2127.00	40.32635649	-104.83373114
8264.00	90.55	270.59	6918.02	719.32	-2171.85	0.90	2215.87	40.32636022	-104.83405030
8354.00	90.54	271.00	6917.16	720.57	-2261.84	0.46	2305.73	40.32636363	-104.83437303
8444.00	90.24	270.42	6916.55	721.68	-2351.83	0.73	2395.59	40.32636667	-104.83469578
8533.00	90.42	271.21	6916.04	722.95	-2440.82	0.91	2484.46	40.32637012	-104.83501494
8623.00	89.72	271.20	6915.93	724.84	-2530.80	0.78	2574.36	40.32637529	-104.83533765
8713.00	89.40	270.60	6916.62	726.26	-2620.78	0.76	2664.23	40.32637914	-104.83566038
8802.00	90.05	270.70	6917.04	727.27	-2709.78	0.74	2753.08	40.32638189	-104.83597955
8892.00	89.85	270.16	6917.12	727.94	-2799.77	0.64	2842.92	40.32638372	-104.83630232
8982.00	89.97	270.00	6917.26	728.07	-2889.77	0.22	2932.71	40.32638403	-104.83662511
9072.00	89.72	269.69	6917.51	727.82	-2979.77	0.44	3022.49	40.32638333	-104.83694789
9161.00	89.49	269.72	6918.12	727.37	-3068.77	0.26	3111.24	40.32638205	-104.83726707
9251.00	89.56	269.56	6918.87	726.80	-3158.76	0.19	3200.99	40.32638046	-104.83758984
9341.00	89.44	269.40	6919.65	725.98	-3248.76	0.22	3290.72	40.32637819	-104.83791259
9431.00	89.58	270.25	6920.42	725.71	-3338.75	0.96	3380.49	40.32637740	-104.83823536
9520.00	89.72	269.88	6920.97	725.81	-3427.75	0.44	3469.28	40.32637765	-104.83855455
9610.00	89.78	268.97	6921.36	724.91	-3517.74	1.01	3559.01	40.32637513	-104.83887731
9700.00	90.33	271.54	6921.27	725.31	-3607.74	2.92	3648.81	40.32637620	-104.83920006
9789.00	90.32	270.96	6920.77	727.25	-3696.71	0.65	3737.72	40.32638149	-104.83951917
9879.00	90.48	271.70	6920.14	729.34	-3786.69	0.84	3827.62	40.32638719	-104.83984186
9969.00	90.07	271.18	6919.71	731.60	-3876.66	0.74	3917.54	40.32639336	-104.84016454
10058.00	89.91	271.49	6919.72	733.67	-3965.63	0.39	4006.45	40.32639901	-104.84048365
10148.00	89.82	271.17	6919.93	735.76	-4055.61	0.37	4096.36	40.32640470	-104.84080634
10238.00	89.88	270.78	6920.17	737.29	-4145.59	0.44	4186.24	40.32640887	-104.84112908
10328.00	89.82	271.09	6920.41	738.76	-4235.58	0.35	4276.11	40.32641285	-104.84145182
10417.00	89.51	270.77	6920.93	740.21	-4324.57	0.50	4364.99	40.32641678	-104.84177097
10507.00	89.54	270.63	6921.67	741.31	-4414.56	0.16	4454.85	40.32641975	-104.84209372
10597.00	89.69	270.57	6922.28	742.25	-4504.55	0.18	4544.70	40.32642229	-104.84241648
10686.00	89.52	270.28	6922.89	742.91	-4593.55	0.38	4633.53	40.32642406	-104.84273566
10776.00	89.64	270.06	6923.55	743.17	-4683.54	0.28	4723.33	40.32642475	-104.84305843
10866.00	89.61	270.13	6924.14	743.32	-4773.54	0.08	4813.13	40.32642511	-104.84338120
10956.00	89.81	269.70	6924.59	743.19	-4863.54	0.53	4902.91	40.32642470	-104.84370398
11046.00	90.38	270.28	6924.45	743.17	-4953.54	0.90	4992.70	40.32642460	-104.84402676
11135.00	90.32	271.09	6923.90	744.24	-5042.53	0.91	5081.56	40.32642747	-104.84434593
11225.00	90.16	269.92	6923.52	745.03	-5132.52	1.31	5171.40	40.32642960	-104.84466869
11315.00	89.98	269.95	6923.41	744.93	-5222.52	0.20	5261.18	40.32642927	-104.84499147
11404.00	90.32	270.41	6923.18	745.21	-5311.52	0.64	5349.99	40.32642998	-104.84531067
11494.00	90.27	270.76	6922.72	746.13	-5401.52	0.39	5439.84	40.32643245	-104.84563343
11584.00	89.95	270.46	6922.55	747.09	-5491.51	0.49	5529.69	40.32643503	-104.84595619
11674.00	89.90	269.84	6922.66	747.32	-5581.51	0.69	5619.49	40.32643562	-104.84627897
11763.00	90.13	270.87	6922.64	747.87	-5670.51	1.19	5708.32	40.32643708	-104.84659816
11853.00	90.44	270.43	6922.19	748.89	-5760.50	0.60	5798.17	40.32643982	-104.84692092
11943.00	90.35	269.90	6921.57	749.15	-5850.50	0.60	5887.98	40.32644048	-104.84724369
12033.00	90.09	270.95	6921.23	749.82	-5940.49	1.20	5977.81	40.32644225	-104.84756646
12122.00	90.17	270.31	6921.02	750.80	-6029.49	0.72	6066.66	40.32644488	-104.84788563
12212.00	90.12	270.69	6920.80	751.59	-6119.48	0.43	6156.50	40.32644697	-104.84820840
12302.00	90.69	270.07	6920.16	752.18	-6209.48	0.94	6246.33	40.32644855	-104.84853117
12391.00	90.47	270.05	6919.26	752.28	-6298.47	0.25	6335.12	40.32644874	-104.84885035
12481.00	91.01	270.92	6918.10	753.04	-6388.46	1.14	6424.95	40.32645077	-104.84917309
12571.00	90.59	270.60	6916.84	754.23	-6478.44	0.59	6514.81	40.32645398	-104.84949582
12660.00	90.57	270.12	6915.94	754.79	-6567.44	0.54	6603.63	40.32645545	-104.84981499
12750.00	90.37	270.03	6915.20	754.91	-6657.43	0.24	6693.43	40.32645571	-104.85013776
12840.00	90.60	269.82	6914.44	754.79	-6747.43	0.35	6783.21	40.32645532	-104.85046053
12929.00	90.41	270.98	6913.66	755.41	-6836.42	1.32	6872.03	40.32645696	-104.85077970
13019.00	90.68	270.86	6912.80	756.86	-6926.41	0.33	6961.91	40.32646086	-104.85110243
13109.00	90.43	270.56	6911.93	757.97	-7016.40	0.43	7051.76	40.32646385	-104.85142518
13199.00	90.56	269.84	6911.15	758.29	-7106.39	0.81	7141.57	40.32646464	-104.85174794
13288.00	90.46	269.70	6910.36	757.93	-7195.39	0.19	7230.33	40.32646359	-104.85206712
13378.00	90.70	270.86	6909.45	758.37	-7285.38	1.32	7320.15	40.32646472	-104.85238988

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	DLS [deg/100ft]	Vertical Section[ft]	Lat - NAD 83	Long - NAD 83
13468.00	90.70	270.96	6908.35	759.80	-7375.36	0.11	7410.02	40.32646857	-104.85271260
13557.00	90.31	270.39	6907.56	760.85	-7464.35	0.78	7498.87	40.32647138	-104.85303176
13647.00	90.79	269.95	6906.70	761.11	-7554.35	0.72	7588.67	40.32647204	-104.85335453
13737.00	90.83	270.41	6905.43	761.40	-7644.34	0.51	7678.47	40.32647274	-104.85367728
13827.00	90.65	270.05	6904.26	761.76	-7734.33	0.45	7768.28	40.32647365	-104.85400003
13916.00	90.69	270.76	6903.22	762.39	-7823.32	0.80	7857.11	40.32647530	-104.85431920
14006.00	90.83	270.16	6902.03	763.11	-7913.31	0.68	7946.93	40.32647721	-104.85464194
14096.00	90.53	269.94	6900.96	763.19	-8003.30	0.41	8036.72	40.32647734	-104.85496470
14185.00	90.72	270.10	6899.99	763.22	-8092.30	0.28	8125.51	40.32647735	-104.85528388
14275.00	90.92	270.97	6898.70	764.06	-8182.28	0.99	8215.35	40.32647957	-104.85560661
14365.00	90.68	271.03	6897.45	765.63	-8272.26	0.27	8305.22	40.32648380	-104.85592932
14454.00	90.39	270.51	6896.61	766.82	-8361.25	0.67	8394.08	40.32648700	-104.85624847
14544.00	90.49	269.63	6895.92	766.93	-8451.24	0.98	8483.88	40.32648722	-104.85657124
14634.00	90.53	270.81	6895.12	767.28	-8541.24	1.31	8573.69	40.32648808	-104.85689400
14723.00	90.59	270.97	6894.25	768.66	-8630.22	0.19	8662.56	40.32649179	-104.85721315
14813.00	90.73	271.28	6893.22	770.43	-8720.20	0.38	8752.44	40.32649656	-104.85753585
14903.00	90.09	270.08	6892.57	771.50	-8810.19	1.51	8842.30	40.32649940	-104.85785860
14992.00	90.34	270.21	6892.24	771.72	-8899.19	0.32	8931.10	40.32649993	-104.85817779
15082.00	90.10	270.88	6891.89	772.58	-8989.18	0.79	9020.95	40.32650219	-104.85850056
15172.00	90.47	270.77	6891.44	773.87	-9079.17	0.43	9110.82	40.32650566	-104.85882330
15261.00	90.18	269.90	6890.94	774.39	-9168.17	1.03	9199.64	40.32650700	-104.85914249
15351.00	90.32	270.01	6890.55	774.32	-9258.17	0.20	9289.42	40.32650671	-104.85946527
15441.00	90.05	270.70	6890.26	774.88	-9348.16	0.82	9379.25	40.32650815	-104.85978804
15530.00	90.06	271.08	6890.17	776.26	-9437.15	0.43	9468.13	40.32651185	-104.86010720
15620.00	90.47	271.16	6889.75	778.02	-9527.14	0.46	9558.02	40.32651658	-104.86042992
15710.00	90.56	271.27	6888.95	779.93	-9617.11	0.16	9647.91	40.32652173	-104.86075262
15800.00	90.25	269.79	6888.31	780.76	-9707.10	1.68	9737.75	40.32652392	-104.86107538
15889.00	90.39	268.94	6887.81	779.78	-9796.10	0.97	9826.47	40.32652111	-104.86139454
15979.00	90.39	270.02	6887.20	778.96	-9886.09	1.20	9916.20	40.32651877	-104.86171730
16069.00	90.47	269.07	6886.52	778.25	-9976.08	1.06	10005.93	40.32651671	-104.86204006
16158.00	90.40	269.22	6885.85	776.92	-10065.07	0.19	10094.62	40.32651297	-104.86235921
16248.00	90.32	270.29	6885.28	776.53	-10155.07	1.19	10184.38	40.32651181	-104.86268198
16338.00	89.95	268.94	6885.07	775.93	-10245.06	1.56	10274.13	40.32651005	-104.86300475
16428.00	90.46	270.29	6884.75	775.32	-10335.06	1.60	10363.87	40.32650828	-104.86332751
16517.00	90.12	269.03	6884.30	774.80	-10424.05	1.47	10452.62	40.32650673	-104.86364669
16607.00	90.49	269.32	6883.82	773.50	-10514.04	0.52	10542.31	40.32650307	-104.86396943
16697.00	90.30	269.03	6883.20	772.20	-10604.03	0.39	10632.00	40.32649941	-104.86429217
16786.00	90.38	270.38	6882.67	771.75	-10693.02	1.52	10720.76	40.32649804	-104.86461135
16876.00	90.46	270.63	6882.01	772.54	-10783.02	0.29	10810.60	40.32650011	-104.86493411
16966.00	90.26	270.97	6881.45	773.80	-10873.01	0.44	10900.46	40.32650346	-104.86525686
17056.00	90.26	269.54	6881.04	774.20	-10963.00	1.59	10990.28	40.32650445	-104.86557963
17145.00	90.19	269.68	6880.69	773.59	-11052.00	0.18	11079.03	40.32650267	-104.86589882
17235.00	90.39	269.63	6880.23	773.05	-11142.00	0.23	11168.78	40.32650108	-104.86622159
17325.00	90.47	270.39	6879.56	773.06	-11231.99	0.85	11258.57	40.32650101	-104.86654436
17382.00	90.23	270.37	6879.21	773.44	-11288.99	0.42	11315.46	40.32650197	-104.86674878
17405.00	90.23	270.37	6879.12	773.59	-11311.99	0.00	11338.41	40.32650235	-104.86683127

Comments

MD[ft]	TVD[ft]	North[ft]	East[ft]	Lat - NAD 83	Long - NAD 83	Comment
1593.00	1592.91	11.73	-9.83	40.32441819	-104.82629627	9.625" Csg: 1593 MD/TVD
7523.73	6919.17	719.82	-1431.76	40.32636174	-104.83139598	460 Setback: 7524 / 6919 MD/TVD, 2610 FSL, 460 FEL Sec 12
17168.62	6880.60	773.46	-11075.62	40.32650228	-104.86598353	Btm Toe Sub: 17,169 / 6881 MD/TVD, 2587 FSL, 469 FWL Sec 11
17178.07	6880.56	773.40	-11085.07	40.32650211	-104.86601742	460 Setback: 17,178 / 6881 MD/TVD, 2587 FSL, 460 FWL Sec 11
17394.20	6879.16	773.52	-11301.19	40.32650218	-104.86679254	PBTD: 17,394 / 6879 MD/TVD, 2583 FSL, 244 FWL Sec 11
17405.00	6879.12	773.59	-11311.99	40.32650235	-104.86683127	5.5" Csg: 17,405 / 6879 MD/TVD, 2583 FSL, 233 FWL Sec 11
17405.00	6879.12	773.59	-11311.99	40.32650235	-104.86683127	BHL: 17,405 / 6879 MD/TVD, 2583 FSL, 233 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	1593.00	1592.91	11.73	-9.83
8.500	1593.00	1592.91	11.73	-9.83	17405.00	6879.12	773.59	-11311.99

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	1593.00	1592.91	11.73	-9.83
5 1/2in Casing	0.00	0.00	0.00	0.00	17405.00	6879.12	773.59	-11311.99

Survey Tool Program

Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool
630853	As Drilled - 20191004	17405.00	6879.12	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 273.91 degrees

Bottom hole distance is 11338.41 Feet on azimuth 273.91 degrees from Wellhead

Survey calculation uses Minimum Curvature method