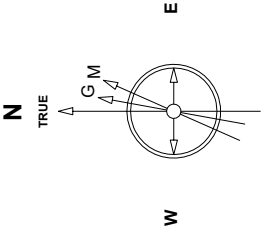


Great Western Operating Company, LLC

Location	Colorado	Slot	Slot 09 - Schneider HD 11-102HNX
Field	Wattenburg	Well	Schneider HD 11-102HNX
Installation	Schneider North	Wellbore	Schneider HD 11-102HNX (AWB)

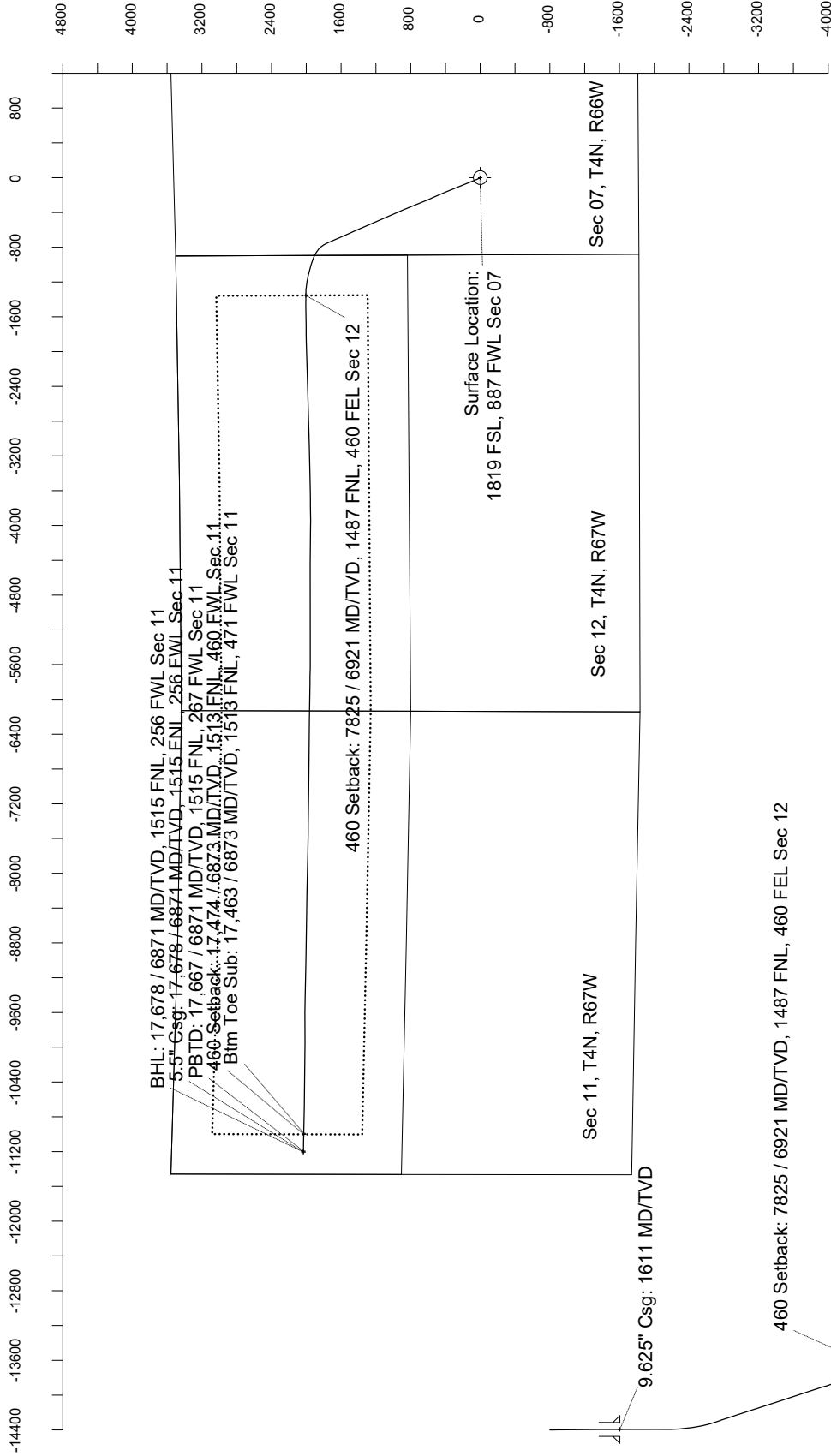
Created by	mmount
Date plotted	4-Nov-2019
Plot reference is Schneider HD 11-102HNX (AWB).	
Ref wellpath is Schneider HD 11-102HNX (AWP#1).	
Coordinates are in Feet reference Slot 09 - Schneider HD 11-102HNX.	
True Vertical Depths are reference Rig Datum.	
Measured Depths are reference Rig Datum.	
Rig 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 mT
Lat: N40 19 27.8766 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 = 400 ft

East (Feet) ->



Btm Toe Sub: 17,463 / 6873 MD/TVD, 1513 FNL, 471 FWL Sec 11
460 Setback: 17,474 / 6873 MD/TV, 1513 FNL, 460 FWL Sec 11
PBTD: 17,667 / 6871 MD/TV, 1515 FNL, 267 FWL Sec 11
5.5" Csg: 17,678 / 6871 MD/TV, 1515 FNL, 256 FWL Sec 11
BHL: 17,678 / 6871 MD/TV, 1515 FNL, 256 FWL Sec 11

Scale 1 cm = 800 ft

Vertical Section (Feet) ->

Azimuth 280.29 with reference 0.00 N, 0.00 E from Slot 09 - Schneider HD 11-102HNX

Great Western Operating Co, LLC
Directional Survey Report
Wellpath: Schneider HD 11-102HNX
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-3-2019	Nov-3-2019	05-123-46417	20.00	Schneider HD 11-102HNX

Slot Coordinates

Latitude	Longitude
40.32420800	-104.82655400

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	40.32420800	-104.82655400
14.00	0.00	0.00	14.00	0.00	0.00	0.00	0.00	40.32420800	-104.82655400
96.00	0.26	10.81	96.00	0.18	0.03	0.32	0.00	40.32420850	-104.82655387
185.00	0.44	314.65	185.00	0.62	-0.17	0.41	0.28	40.32420971	-104.82655461
273.00	0.35	297.51	273.00	0.98	-0.65	0.17	0.81	40.32421070	-104.82655633
365.00	0.66	327.48	364.99	1.56	-1.18	0.43	1.44	40.32421228	-104.82655824
455.00	0.79	297.51	454.99	2.28	-2.01	0.44	2.39	40.32421427	-104.82656122
545.00	0.92	322.47	544.98	3.14	-3.00	0.43	3.52	40.32421663	-104.82656477
635.00	0.92	311.75	634.96	4.20	-3.98	0.19	4.67	40.32421952	-104.82656828
725.00	1.41	325.72	724.95	5.59	-5.14	0.63	6.06	40.32422335	-104.82657245
815.00	1.14	19.16	814.93	7.35	-5.47	1.30	6.70	40.32422819	-104.82657363
905.00	0.31	349.37	904.92	8.44	-5.23	0.98	6.65	40.32423116	-104.82657274
995.00	0.22	352.88	994.92	8.85	-5.29	0.10	6.79	40.32423229	-104.82657298
1085.00	0.53	318.43	1084.92	9.33	-5.59	0.41	7.17	40.32423362	-104.82657405
1175.00	1.10	313.42	1174.91	10.24	-6.49	0.64	8.22	40.32423610	-104.82657729
1265.00	0.44	354.82	1264.90	11.18	-7.15	0.91	9.03	40.32423868	-104.82657965
1355.00	0.53	316.67	1354.90	11.82	-7.47	0.36	9.46	40.32424045	-104.82658079
1445.00	0.57	307.44	1444.89	12.40	-8.11	0.11	10.19	40.32424203	-104.82658308
1535.00	0.75	35.86	1534.89	13.15	-8.12	1.03	10.34	40.32424409	-104.82658312
1562.00	0.26	324.58	1561.89	13.34	-8.05	2.63	10.31	40.32424462	-104.82658288
1626.00	0.28	58.67	1625.89	13.54	-8.00	0.62	10.29	40.32424517	-104.82658270
1716.00	0.13	91.48	1715.88	13.65	-7.71	0.21	10.03	40.32424547	-104.82658166
1806.00	0.08	219.31	1805.88	13.60	-7.65	0.21	9.96	40.32424533	-104.82658144
1896.00	0.06	29.77	1895.88	13.59	-7.67	0.16	9.97	40.32424531	-104.82658150
1985.00	0.07	13.63	1984.88	13.69	-7.63	0.02	9.95	40.32424557	-104.82658137
2075.00	0.11	252.24	2074.88	13.71	-7.70	0.18	10.03	40.32424564	-104.82658162
2165.00	0.09	179.02	2164.88	13.62	-7.78	0.13	10.09	40.32424537	-104.82658191
2254.00	0.06	207.00	2253.88	13.50	-7.80	0.05	10.09	40.32424507	-104.82658198
2344.00	0.03	16.76	2343.88	13.48	-7.82	0.10	10.10	40.32424502	-104.82658203
2434.00	0.09	192.97	2433.88	13.44	-7.82	0.13	10.10	40.32424489	-104.82658206
2524.00	0.11	73.56	2523.88	13.39	-7.76	0.19	10.03	40.32424477	-104.82658182
2613.00	0.06	280.49	2612.88	13.43	-7.72	0.19	10.00	40.32424486	-104.82658169
2703.00	0.05	44.16	2702.88	13.46	-7.74	0.11	10.02	40.32424496	-104.82658176
2793.00	2.50	335.11	2792.86	15.27	-8.54	2.76	11.13	40.32424992	-104.82658463
2882.00	5.66	333.00	2881.62	20.95	-11.35	3.55	14.91	40.32426549	-104.82659470
2972.00	8.02	330.15	2970.97	30.35	-16.49	2.65	21.64	40.32429130	-104.82661314
3062.00	9.30	333.37	3059.94	42.29	-22.88	1.52	30.06	40.32432409	-104.82663604
3151.00	11.09	339.91	3147.54	56.76	-29.04	2.39	38.71	40.32436381	-104.82665815
3241.00	14.18	338.27	3235.35	75.14	-36.10	3.46	48.93	40.32441424	-104.82668345
3331.00	16.04	336.68	3322.23	96.80	-45.10	2.12	61.66	40.32447370	-104.82671575
3420.00	19.20	339.69	3407.05	121.82	-55.05	3.69	75.92	40.32454239	-104.82675143
3510.00	22.13	339.16	3491.25	151.55	-66.22	3.26	92.22	40.32462399	-104.82679149
3600.00	24.64	340.30	3573.85	185.06	-78.58	2.83	110.36	40.32471597	-104.82683581
3690.00	27.48	340.98	3654.69	222.36	-91.67	3.17	129.91	40.32481837	-104.82688277
3779.00	31.28	336.26	3732.24	262.94	-107.67	5.00	152.90	40.32492977	-104.82694016
3869.00	31.34	335.85	3809.14	305.69	-126.66	0.25	179.21	40.32504710	-104.82700824
3959.00	31.19	337.21	3886.07	348.53	-145.26	0.80	205.17	40.32516470	-104.82707496
4048.00	30.98	336.50	3962.29	390.78	-163.32	0.47	230.48	40.32528068	-104.82713973
4138.00	31.08	336.96	4039.41	433.40	-181.65	0.29	256.13	40.32539766	-104.82720546
4228.00	31.05	336.23	4116.50	476.02	-200.09	0.42	281.89	40.32551465	-104.82727162
4318.00	31.35	336.12	4193.48	518.67	-218.93	0.34	308.04	40.32563172	-104.82733917
4407.00	30.64	337.25	4269.78	560.76	-237.07	1.03	333.41	40.32574724	-104.82740424
4497.00	31.06	337.18	4347.04	603.31	-254.94	0.47	358.59	40.32586404	-104.82746834
4587.00	31.06	338.17	4424.14	646.26	-272.58	0.57	383.62	40.32598194	-104.82753160
4676.00	31.13	337.06	4500.35	688.76	-290.09	0.65	408.43	40.32609859	-104.82759438
4766.00	30.94	337.86	4577.47	731.61	-307.87	0.50	433.58	40.32621623	-104.82765818
4856.00	31.02	336.62	4654.63	774.33	-325.80	0.71	458.85	40.32633348	-104.82772246
4946.00	30.16	340.43	4732.11	816.92	-342.57	2.36	482.96	40.32645040	-104.82778263
5035.00	30.56	336.45	4808.91	858.74	-359.10	2.30	506.69	40.32656517	-104.82784192
5125.00	30.57	337.53	4886.41	900.86	-376.99	0.61	531.82	40.32668079	-104.82790608
5215.00	30.46	336.44	4963.94	942.92	-394.86	0.63	556.91	40.32679624	-104.82797016
5304.00	30.65	336.32	5040.59	984.37	-412.99	0.22	582.15	40.32691003	-104.82803518
5394.00	30.63	336.21	5118.02	1026.36	-431.45	0.07	607.81	40.32702529	-104.82810139
5484.00	30.71	337.15	5195.43	1068.52	-449.62	0.54	633.22	40.32714100	-104.82816657
5574.00	30.59	336.55	5272.86	1110.71	-467.66	0.37	658.50	40.32725680	-104.82823127
5663.00	30.69	336.33	5349.43	1152.28	-485.79	0.17	683.77	40.32737093	-104.82829629
5753.00	30.51	336.14	5426.90	1194.21	-504.25	0.23	709.42	40.32748602	-104.82836251

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	DLS [deg/100ft]	Vertical Section[ft]	Lat - NAD 83	Long - NAD 83
5843.00	30.48	335.84	5504.45	1235.93	-522.83	0.17	735.16	40.32760054	-104.82842916
5932.00	30.58	336.33	5581.11	1277.26	-541.16	0.30	760.57	40.32771398	-104.82849490
6022.00	30.55	336.33	5658.61	1319.18	-559.53	0.03	786.13	40.32782904	-104.82856080
6112.00	30.56	336.40	5736.11	1361.09	-577.88	0.04	811.67	40.32794409	-104.82862659
6202.00	30.45	336.82	5813.65	1403.02	-596.01	0.27	837.00	40.32805918	-104.82869164
6291.00	30.61	336.57	5890.31	1444.54	-613.90	0.23	862.02	40.32817316	-104.82875580
6381.00	30.61	335.92	5967.77	1486.49	-632.36	0.37	887.67	40.32828829	-104.82882201
6471.00	30.30	336.04	6045.36	1528.16	-650.93	0.35	913.38	40.32840266	-104.82888862
6560.00	30.38	336.53	6122.17	1569.32	-669.01	0.29	938.52	40.32851564	-104.82895347
6650.00	30.40	337.19	6199.80	1611.18	-686.90	0.37	963.60	40.32863056	-104.82901764
6740.00	30.23	336.40	6277.49	1652.93	-704.80	0.48	988.67	40.32874517	-104.82908184
6830.00	30.55	336.46	6355.13	1694.67	-723.01	0.36	1014.04	40.32885972	-104.82914714
6919.00	30.26	336.63	6431.89	1735.99	-740.94	0.34	1039.06	40.32897314	-104.82921145
7009.00	30.17	334.39	6509.66	1777.20	-759.71	1.26	1064.89	40.32908626	-104.82927878
7098.00	33.94	322.70	6585.15	1817.18	-784.46	8.14	1096.39	40.32919601	-104.82936757
7188.00	40.77	310.71	6656.75	1856.43	-822.06	11.06	1140.39	40.32930375	-104.82950242
7278.00	47.72	300.69	6721.26	1892.68	-873.09	10.94	1197.07	40.32940325	-104.82968545
7368.00	55.31	292.10	6777.29	1923.68	-936.17	11.25	1264.67	40.32948832	-104.82991170
7457.00	61.37	284.94	6824.03	1947.56	-1007.94	9.65	1339.56	40.32955386	-104.83016913
7547.00	68.39	283.50	6862.21	1967.53	-1086.89	7.93	1420.80	40.32960868	-104.83045228
7637.00	74.86	281.75	6890.57	1986.17	-1170.19	7.42	1506.09	40.32965982	-104.83075107
7726.00	81.07	276.83	6909.13	2000.16	-1256.03	8.83	1593.05	40.32969823	-104.83105894
7816.00	84.32	271.25	6920.58	2006.43	-1345.03	7.13	1681.74	40.32971543	-104.83137816
7906.00	89.66	268.51	6925.31	2006.24	-1434.86	6.67	1770.10	40.32971488	-104.83170036
7995.00	91.15	268.61	6924.68	2004.00	-1523.83	1.68	1857.23	40.32970873	-104.83201946
8085.00	90.63	269.96	6923.28	2002.88	-1613.81	1.61	1945.57	40.32970563	-104.83234218
8175.00	90.55	269.38	6922.35	2002.36	-1703.80	0.65	2034.02	40.32970419	-104.83266496
8264.00	90.13	269.55	6921.82	2001.53	-1792.80	0.51	2121.44	40.32970189	-104.83298415
8354.00	90.05	269.04	6921.68	2000.42	-1882.79	0.57	2209.78	40.32969884	-104.83330692
8444.00	90.07	268.26	6921.59	1998.30	-1972.77	0.87	2297.93	40.32969300	-104.83362963
8534.00	90.38	267.82	6921.23	1995.23	-2062.71	0.60	2385.88	40.32968453	-104.83395223
8623.00	90.67	268.35	6920.42	1992.25	-2151.66	0.68	2472.87	40.32967634	-104.83427125
8713.00	90.39	268.90	6919.59	1990.09	-2241.63	0.69	2561.01	40.32967039	-104.83459394
8803.00	90.67	268.11	6918.75	1987.74	-2331.59	0.93	2649.10	40.32966393	-104.83491661
8892.00	90.66	267.60	6917.72	1984.41	-2420.52	0.57	2736.01	40.32965476	-104.83523557
8982.00	90.53	267.98	6916.79	1980.94	-2510.45	0.45	2823.87	40.32964521	-104.83555811
9072.00	90.61	268.27	6915.89	1978.00	-2600.40	0.33	2911.85	40.32963710	-104.83588072
9162.00	90.65	268.64	6914.90	1975.57	-2690.36	0.41	2999.93	40.32963041	-104.83620338
9251.00	90.04	268.87	6914.37	1973.64	-2779.34	0.73	3087.13	40.32962508	-104.83652251
9341.00	90.22	268.51	6914.16	1971.58	-2869.31	0.45	3175.29	40.32961940	-104.83684522
9431.00	89.83	268.66	6914.12	1969.36	-2959.29	0.46	3263.42	40.32961327	-104.83716792
9520.00	90.16	268.36	6914.13	1967.04	-3048.26	0.50	3350.55	40.32960689	-104.83748702
9610.00	89.86	268.96	6914.11	1964.94	-3138.23	0.75	3438.70	40.32960108	-104.83780973
9700.00	90.29	269.12	6914.00	1963.43	-3228.22	0.51	3526.97	40.32959691	-104.83813248
9790.00	90.32	268.60	6913.52	1961.64	-3318.20	0.58	3615.19	40.32959196	-104.83845521
9879.00	90.32	268.19	6913.02	1959.15	-3407.16	0.46	3702.28	40.32958509	-104.83877429
9969.00	90.31	268.98	6912.53	1956.93	-3497.13	0.88	3790.40	40.32957895	-104.83909698
10059.00	90.25	268.45	6912.09	1954.91	-3587.11	0.59	3878.57	40.32957338	-104.83941969
10149.00	90.46	269.68	6911.53	1953.44	-3677.09	1.39	3966.85	40.32956931	-104.83974243
10238.00	90.66	269.34	6910.66	1952.68	-3766.09	0.44	4054.27	40.32956718	-104.84006161
10328.00	90.48	269.15	6909.76	1951.49	-3856.07	0.29	4142.60	40.32956389	-104.84038437
10418.00	90.49	269.91	6909.00	1950.75	-3946.07	0.84	4231.02	40.32956183	-104.84070714
10507.00	90.50	270.86	6908.23	1951.35	-4035.06	1.07	4318.69	40.32956343	-104.84102633
10597.00	90.37	269.88	6907.55	1951.93	-4125.05	1.10	4407.34	40.32956498	-104.84134911
10687.00	90.26	270.29	6907.05	1952.07	-4215.05	0.47	4495.91	40.32956531	-104.84167190
10777.00	90.57	271.82	6906.40	1953.72	-4305.03	1.73	4584.74	40.32956981	-104.84199463
10866.00	90.60	270.47	6905.49	1955.50	-4394.01	1.52	4672.60	40.32957465	-104.84231375
10956.00	90.72	269.97	6904.46	1955.85	-4484.00	0.57	4761.21	40.32957556	-104.84263652
11046.00	90.25	270.00	6903.69	1955.82	-4574.00	0.52	4849.76	40.32957545	-104.84295931
11136.00	90.89	270.62	6902.80	1956.31	-4663.99	0.99	4938.39	40.32957674	-104.84328208
11225.00	90.37	269.76	6901.82	1956.61	-4752.98	1.13	5026.01	40.32957750	-104.84360127
11315.00	90.37	269.49	6901.24	1956.02	-4842.98	0.30	5114.45	40.32957583	-104.84392405
11405.00	90.48	269.65	6900.57	1955.34	-4932.97	0.22	5202.88	40.32957393	-104.84424683
11495.00	90.30	269.67	6899.96	1954.81	-5022.97	0.20	5291.33	40.32957242	-104.84456962
11584.00	90.50	269.93	6899.34	1954.50	-5111.97	0.37	5378.84	40.32957151	-104.84488882
11674.00	90.45	269.99	6898.59	1954.43	-5201.97	0.09	5467.38	40.32957129	-104.84521161
11764.00	90.06	270.09	6898.19	1954.50	-5291.96	0.45	5555.94	40.32957141	-104.84553440
11853.00	90.82	269.72	6897.51	1954.35	-5380.96	0.95	5643.48	40.32957095	-104.84585360
11943.00	90.69	269.99	6896.32	1954.12	-5470.95	0.33	5731.99	40.32957027	-104.84617637
12033.00	90.23	269.81	6895.60	1953.96	-5560.95	0.55	5820.51	40.32956979	-104.84649915
12122.00	90.58	271.70	6894.97	1955.14	-5649.94	2.16	5908.27	40.32957295	-104.84681831
12212.00	90.66	270.96	6894.00	1957.23	-5739.90	0.83	5997.17	40.32957863	-104.84714101
12302.00	90.44	270.42	6893.13	1958.31	-5829.89	0.65	6085.91	40.32958154	-104.84746377
12391.00	90.71	270.78	6892.24	1959.24	-5918.88	0.51	6173.63	40.32958404	-104.84778294
12481.00	90.37	271.09	6891.39	1960.71	-6008.87	0.51	6262.43	40.32958801	-104.84810569
12571.00	90.77	271.10	6890.50	1962.43	-6098.85	0.44	6351.27	40.32959268	-104.84842841
12661.00	90.24	270.59	6889.70	1963.76	-6188.83	0.82	6440.05	40.32959626	-104.84875116
12750.00	89.91	270.80	6889.59	1964.84	-6277.83	0.44	6527.80	40.32959916	-104.84907035
12840.00	90.15	269.90	6889.54	1965.39	-6367.82	1.03	6616.45	40.32960060	-104.84939314
12930.00	90.22	271.05	6889.25	1966.13	-6457.82	1.28	6705.13	40.32960259	-104.84971592
13019.00	89.90	271.37	6889.15	1968.01	-6546.80	0.51	6793.02	40.32960768	-104.85003506
13109.00	90.27	270.28	6889.02	1969.31	-6636.79	1.28	6881.79	40.32961117	-104.85035782
13199.00	90.00	270.91	6888.81	1970.24	-6726.78	0.76	6970.51	40.32961367	-104.85068060
13288.00	90.22	270.59	6888.64	1971.41	-6815.77	0.44	7058.28	40.32961680	-104.85099978
13378.00	90.23	270.51	6888.28	1972.27	-6905.77	0.09	7146.98	40.32961911	-104.85132256
13468.00	90.14	269.81	6887.99	1972.52	-6995.77	0.78	7235.58	40.32961973	-104.85164536
13558.00	90.12	269.96	6887.79	1972.34	-7085.77	0.17	7324.10	40.32961916	-104.85196815
13647.00	90.22	271.76	6887.53	1973.68	-7174.75	2.03	7411.89	40.32962276	-104.85228732
13737.00	90.32	271.12	6887.10	1975.94	-7264.72	0.72	7500.82	40.32962889	-104.85261001
13827.00	90.19	270.72	6886.70	1977.38	-7354.71	0.47	7589.62	40.32963279	-104.85293276

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	DLS [deg/100ft]	Vertical Section[ft]	Lat - NAD 83	Long - NAD 83
13916.00	90.27	270.04	6886.34	1977.97	-7443.71	0.77	7677.29	40.32963433	-104.85325196
14006.00	90.01	270.86	6886.12	1978.68	-7533.70	0.96	7765.96	40.32963620	-104.85357475
14096.00	90.30	271.07	6885.88	1980.20	-7623.69	0.40	7854.77	40.32964028	-104.85389750
14185.00	90.10	270.87	6885.57	1981.70	-7712.68	0.32	7942.60	40.32964434	-104.85421667
14275.00	90.39	271.23	6885.19	1983.35	-7802.66	0.51	8031.43	40.32964879	-104.85453941
14365.00	90.34	270.29	6884.61	1984.55	-7892.65	1.05	8120.19	40.32965199	-104.85486217
14454.00	89.65	271.26	6884.62	1985.75	-7981.64	1.34	8207.96	40.32965522	-104.85518135
14544.00	90.16	271.54	6884.77	1987.95	-8071.61	0.65	8296.88	40.32966117	-104.85550405
14634.00	89.95	270.93	6884.68	1989.89	-8161.59	0.72	8385.76	40.32966642	-104.85582678
14723.00	90.55	271.93	6884.29	1992.11	-8250.56	1.31	8473.69	40.32967243	-104.85614588
14813.00	90.07	272.10	6883.81	1995.27	-8340.50	0.57	8562.76	40.32968104	-104.85646848
14903.00	90.15	269.97	6883.63	1996.90	-8430.48	2.37	8651.58	40.32968541	-104.85679121
14992.00	90.38	271.10	6883.22	1997.73	-8519.48	1.30	8739.29	40.32968761	-104.85711040
15082.00	90.14	270.68	6882.81	1999.13	-8609.47	0.54	8828.08	40.32969136	-104.85743316
15172.00	90.18	270.41	6882.56	1999.99	-8699.46	0.30	8916.78	40.32969363	-104.85775594
15261.00	90.21	271.30	6882.26	2001.31	-8788.45	1.00	9004.58	40.32969718	-104.85807511
15351.00	89.99	270.63	6882.10	2002.83	-8878.44	0.78	9093.39	40.32970126	-104.85839787
15441.00	89.96	270.49	6882.14	2003.71	-8968.43	0.16	9182.09	40.32970358	-104.85872065
15531.00	90.06	271.37	6882.13	2005.17	-9058.42	0.98	9270.90	40.32970750	-104.85904340
15620.00	90.51	270.78	6881.68	2006.84	-9147.40	0.83	9358.75	40.32971200	-104.85936256
15710.00	90.18	271.26	6881.14	2008.44	-9237.39	0.65	9447.57	40.32971630	-104.85968530
15800.00	90.30	271.48	6880.76	2010.59	-9327.36	0.28	9536.48	40.32972212	-104.86000800
15889.00	90.28	271.06	6880.31	2012.57	-9416.34	0.47	9624.38	40.32972744	-104.86032714
15979.00	90.23	271.09	6879.91	2014.25	-9506.32	0.06	9713.22	40.32973198	-104.86064988
16069.00	90.39	271.46	6879.43	2016.26	-9596.30	0.45	9802.11	40.32973738	-104.86097259
16159.00	90.37	270.90	6878.83	2018.11	-9686.27	0.62	9890.97	40.32974237	-104.86129532
16248.00	90.09	268.52	6878.47	2017.66	-9775.27	2.69	9978.45	40.32974104	-104.86161450
16338.00	90.44	269.22	6878.06	2015.88	-9865.25	0.87	10066.67	40.32973607	-104.86193723
16428.00	90.19	270.13	6877.56	2015.37	-9955.24	1.05	10155.12	40.32973457	-104.86226001
16517.00	90.07	269.64	6877.36	2015.20	-10044.24	0.57	10242.66	40.32973398	-104.86257922
16607.00	90.33	270.10	6877.05	2014.99	-10134.24	0.59	10331.18	40.32973332	-104.86290202
16697.00	90.52	271.26	6876.38	2016.06	-10224.23	1.31	10419.91	40.32973615	-104.86322478
16787.00	90.67	271.15	6875.44	2017.95	-10314.21	0.21	10508.78	40.32974124	-104.86354749
16876.00	89.96	271.78	6874.95	2020.23	-10403.17	1.07	10596.72	40.32974738	-104.86386660
16966.00	90.49	269.94	6874.60	2021.58	-10493.16	2.13	10685.50	40.32975099	-104.86418934
17056.00	90.27	270.23	6874.00	2021.71	-10583.16	0.40	10774.08	40.32975125	-104.86451213
17146.00	90.03	271.70	6873.77	2023.23	-10673.14	1.65	10862.88	40.32975530	-104.86483488
17235.00	90.63	270.97	6873.26	2025.30	-10762.11	1.06	10950.80	40.32976089	-104.86515400
17325.00	90.13	272.04	6872.66	2027.66	-10852.08	1.31	11039.74	40.32976727	-104.86547668
17415.00	89.89	269.75	6872.64	2029.07	-10942.06	2.56	11128.53	40.32977102	-104.86579942
17505.00	90.05	271.44	6872.69	2030.00	-11032.05	1.89	11217.24	40.32977347	-104.86612219
17594.00	90.64	270.24	6872.15	2031.31	-11121.04	1.50	11305.03	40.32977694	-104.86644136
17655.00	90.81	272.56	6871.38	2032.80	-11182.01	3.81	11365.29	40.32978096	-104.86666005
17678.00	90.81	272.56	6871.06	2033.83	-11204.99	0.00	11388.07	40.32978375	-104.86674245

Comments

MD[ft]	TVD[ft]	North[ft]	East[ft]	Lat - NAD 83	Long - NAD 83	Comment
0.00	0.00	0.00	0.00	40.32420800	-104.82655400	Surface Location: 1819 FSL, 887 FWL Sec 07
1611.00	1610.89	13.50	-8.05	40.32424506	-104.82658288	9.625" Csg: 1611 MD/TVD
7825.42	6921.47	2006.61	-1354.41	40.32971592	-104.83141179	460 Setback: 7825 / 6921 MD/TVD, 1487 FNL, 460 FEL Sec 12
17462.80	6872.70	2029.24	-10989.86	40.32977141	-104.86597086	Btm Toe Sub: 17,463 / 6873 MD/TVD, 1513 FNL, 471 FWL Sec 11
17474.05	6872.70	2029.38	-11001.11	40.32977181	-104.86601120	460 Setback: 17,474 / 6873 MD/TVD, 1513 FNL, 460 FWL Sec 11
17667.21	6871.21	2033.34	-11194.21	40.32978244	-104.86670379	PBTD: 17,667 / 6871 MD/TVD, 1515 FNL, 267 FWL Sec 11
17678.00	6871.06	2033.83	-11204.99	40.32978375	-104.86674245	5.5" Csg: 17,678 / 6871 MD/TVD, 1515 FNL, 256 FWL Sec 11
17678.00	6871.06	2033.83	-11204.99	40.32978375	-104.86674245	BHL: 17,678 / 6871 MD/TVD, 1515 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	1611.00	1610.89	13.50	-8.05
8.500	1611.00	1610.89	13.50	-8.05	17678.00	6871.06	2033.83	-11204.99

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	1611.00	1610.89	13.50	-8.05
5 1/2in Casing	0.00	0.00	0.00	0.00	17678.00	6871.06	2033.83	-11204.99

Survey Tool Program

Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool
649937	As Drilled - 20191103	17678.00	6871.06	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 280.29 degrees
Bottom hole distance is 11388.07 Feet on azimuth 280.29 degrees from Wellhead
Survey calculation uses Minimum Curvature method