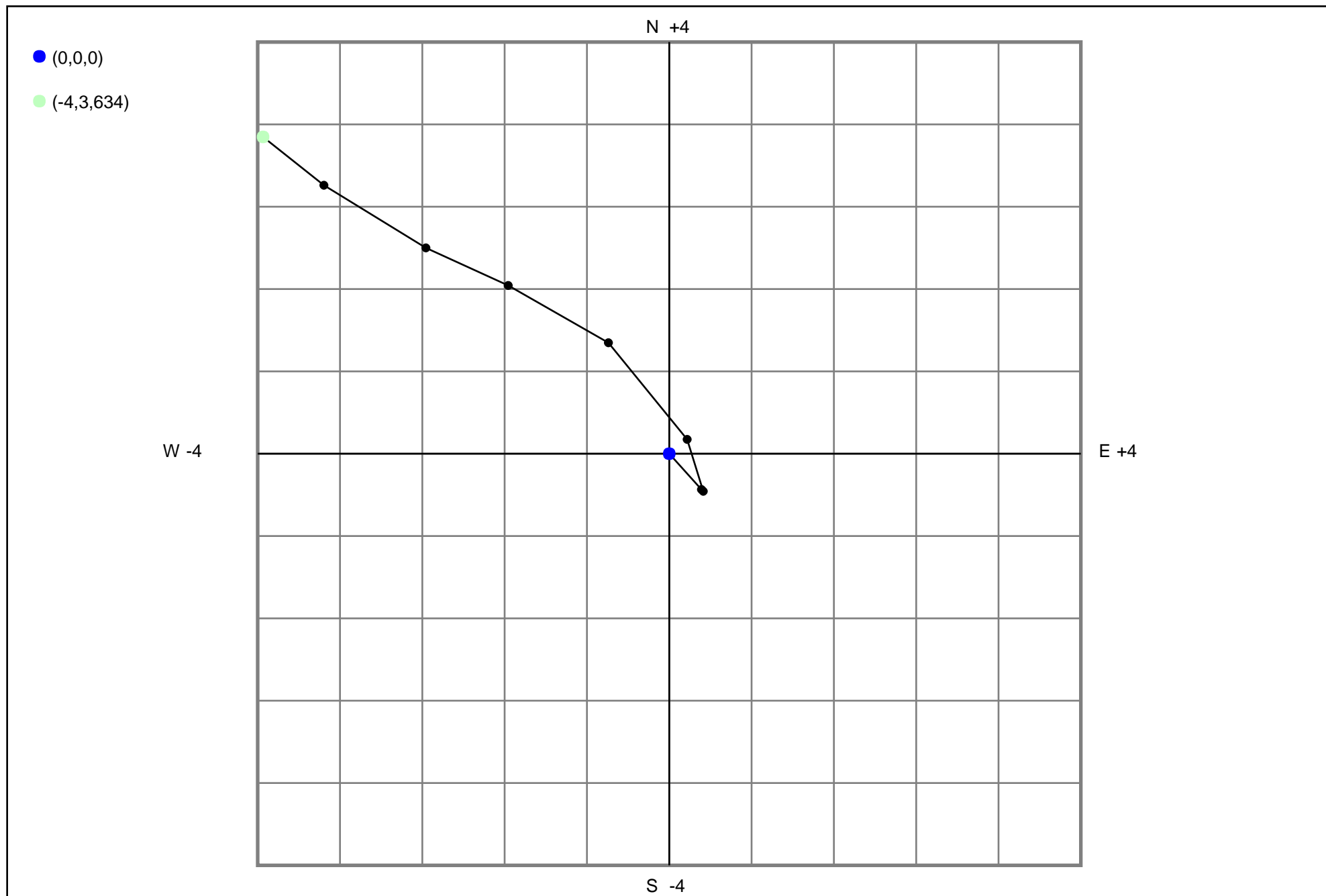


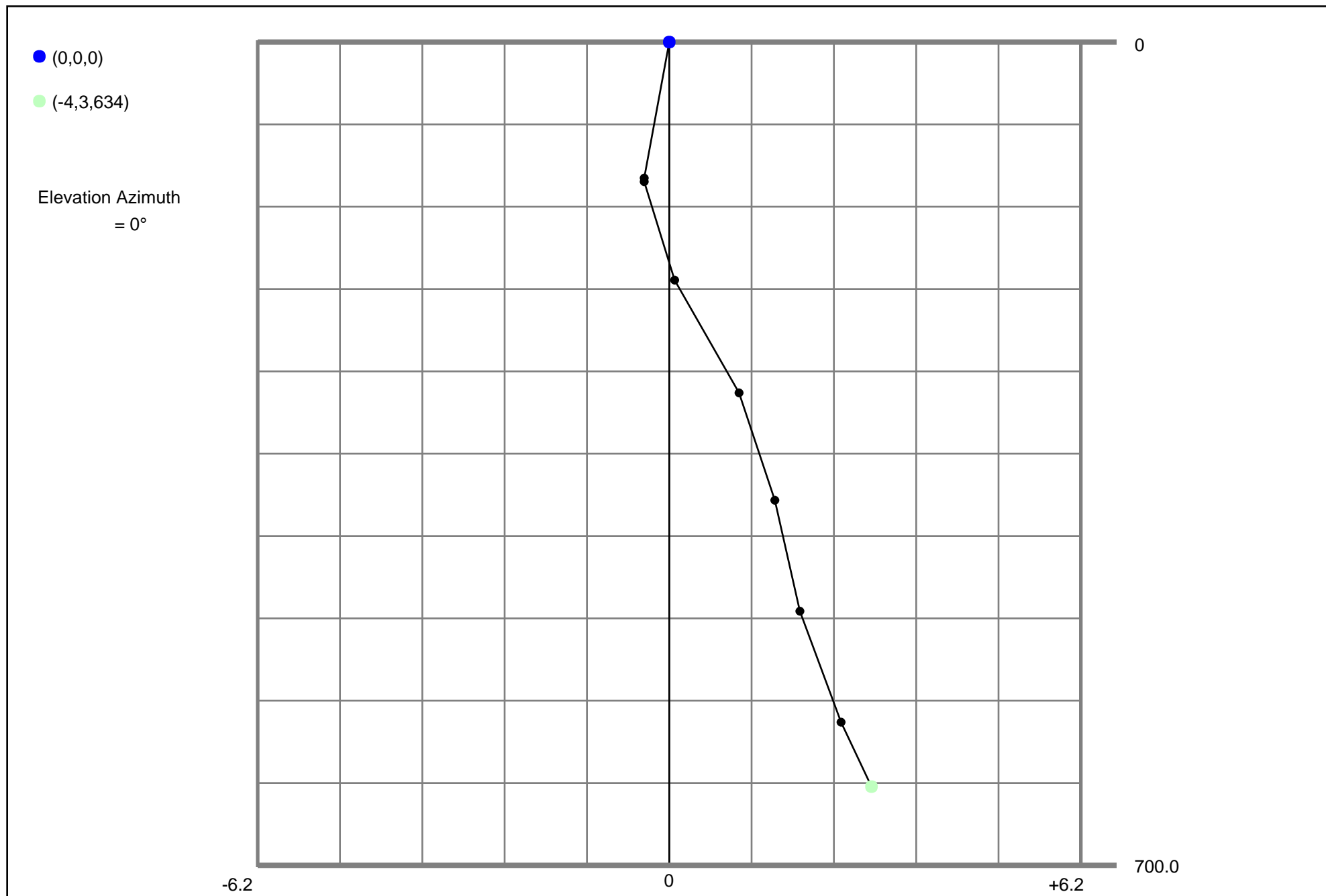
Job:	UTL 2635-17 No. 24H (Job #13971)
Declination:	6.59°, This value was ADDED to the magnetic azimuth values sent by the tool to arrive at the Survey Azimuth values shown below.
Job Notes:	Transcend Rig 4 UTL 2635-17 No. 24H Corrected to ground level and true north
Created On:	27 May 2019 at 07:23:04
File Contents:	9 Total Surveys in File. 9 are tagged as Accepted

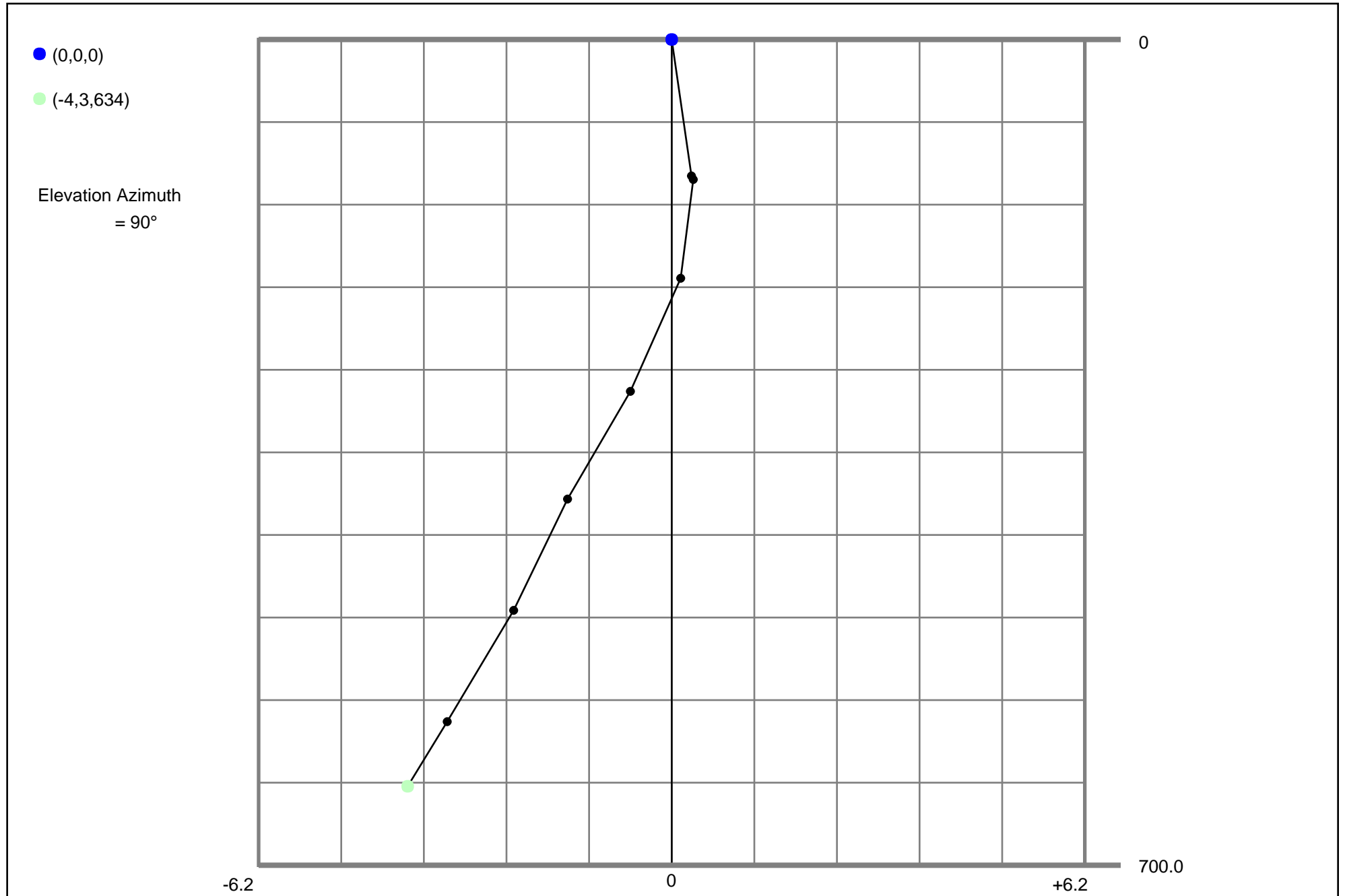
The Vertical Depth and Departure values below were calculated using the Minimum Curvature Model. This information is intended for reference purposes ONLY. It is NOT intended to replace professional oversight or sound judgement. For more detail on the data and algorithms used to compute this information, contact INVICTUS TOOLS.

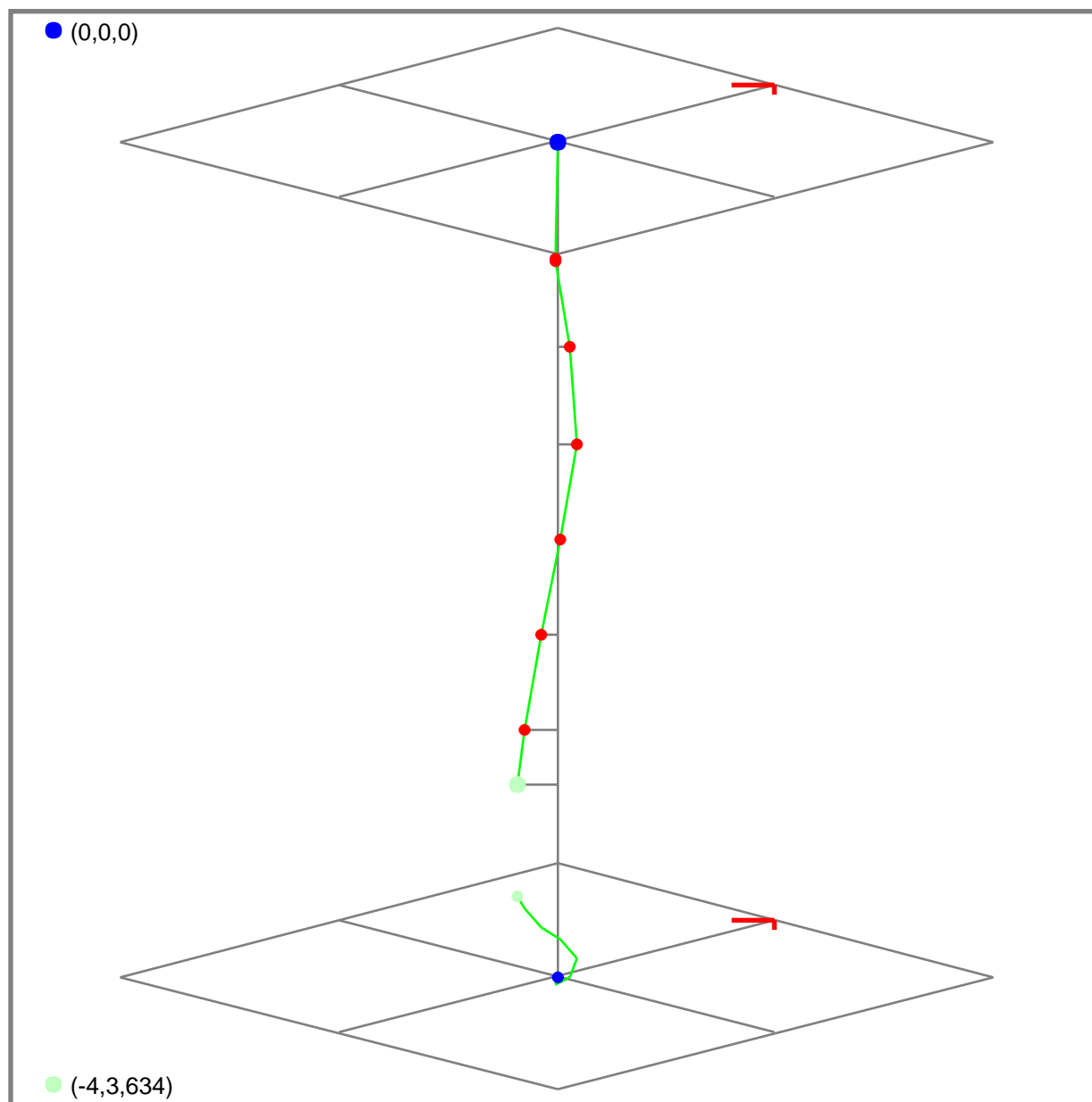
REPORT OF ALL ACCEPTED SURVEYS SORTED BY SURVEY DEPTH

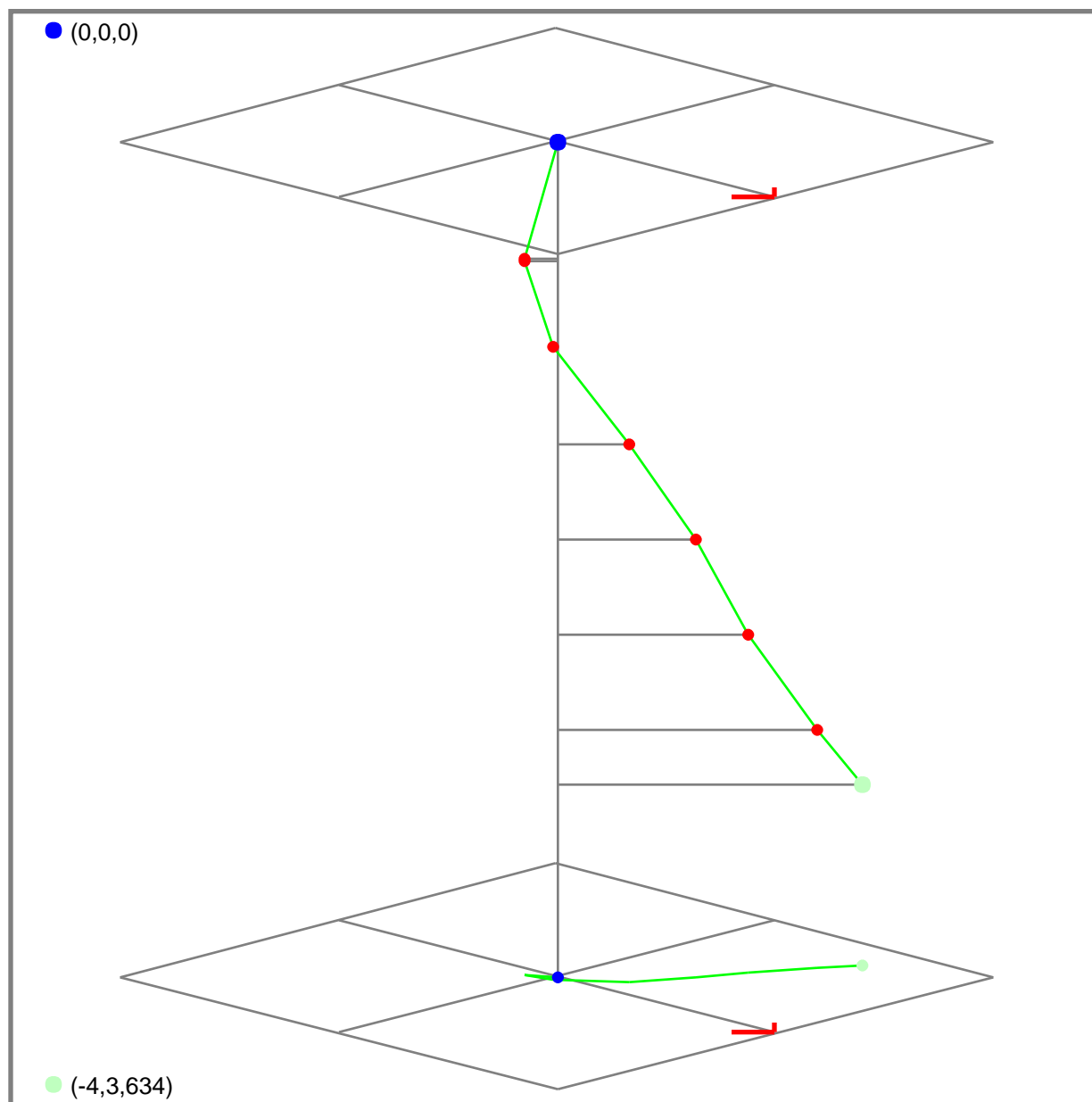
SURVEY DEPTH	SURVEY ANGLE	SURVEY AZIMUTH	VERT DEPTH	N-S DEPART	E-W DEPART	TGF	TMF	DIP ANGLE	SURVEY #	TYPE	SURVEY DATE & TIME
0.0	0.00	0.00	0.00	0.0	0.0	0.000	0.000	0.0	0	Tie-In	27 May 2019 07:23
116.0	0.50	138.59	116.00	-0.4	0.3	1.000	0.000	0.0	1	Manual	26 May 2019 00:00
118.0	0.10	60.59	118.00	-0.4	0.3	1.000	0.000	0.0	2	Manual	26 May 2019 00:00
203.0	0.70	334.59	203.00	0.1	0.2	1.000	0.000	0.0	3	Manual	26 May 2019 00:00
299.0	0.80	308.59	298.99	1.1	-0.6	1.000	0.000	0.0	4	Manual	26 May 2019 00:00
392.0	0.60	288.59	391.98	1.6	-1.6	1.000	0.000	0.0	8	Manual	26 May 2019 00:00
486.0	0.50	301.59	485.98	2.0	-2.4	1.000	0.000	0.0	5	Manual	26 May 2019 00:00
580.0	0.90	301.59	579.97	2.6	-3.4	1.000	0.000	0.0	6	Manual	26 May 2019 00:00
634.0	0.70	316.59	633.96	3.1	-3.9	1.000	0.000	0.0	7	Manual	26 May 2019 00:00

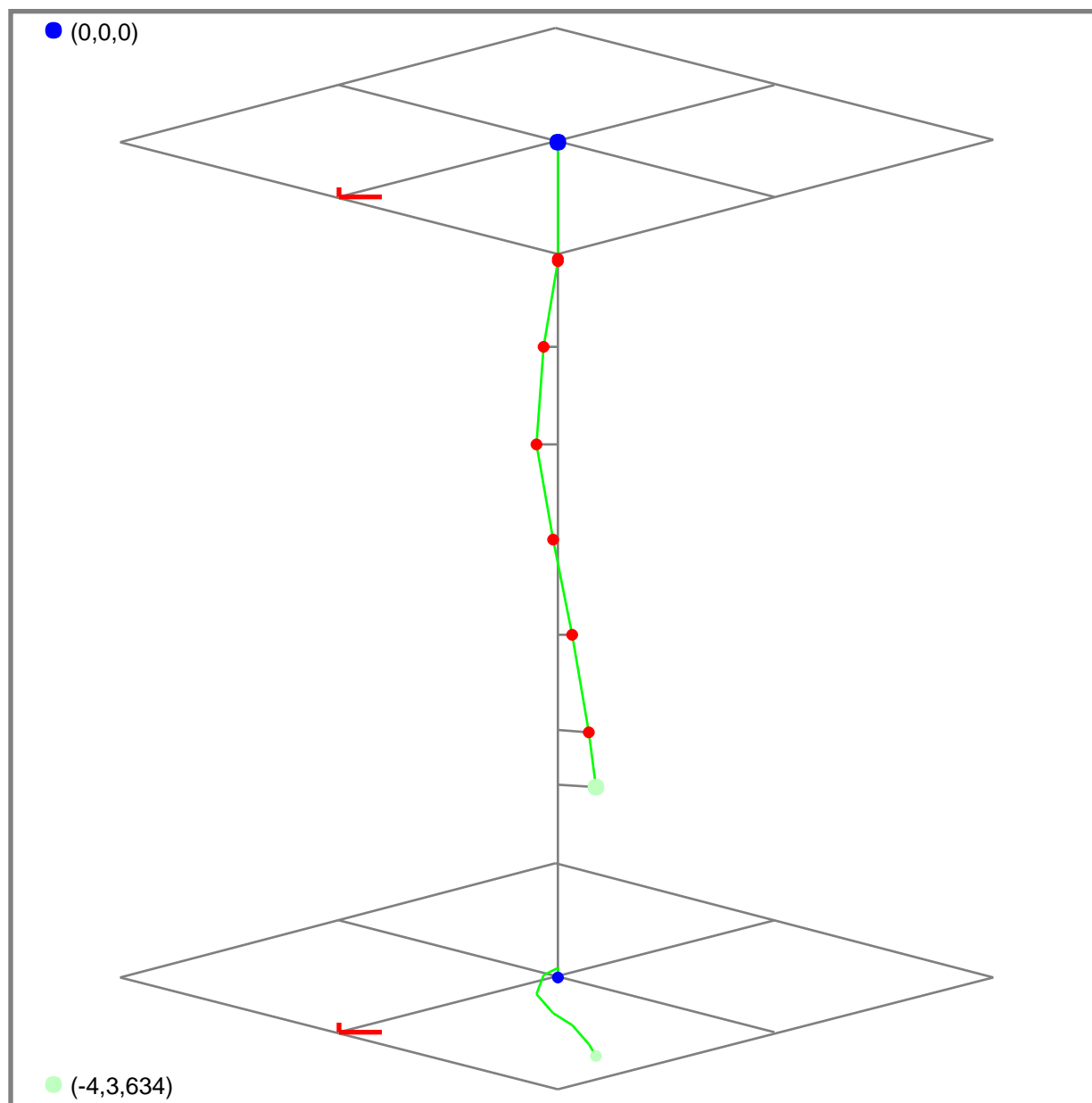


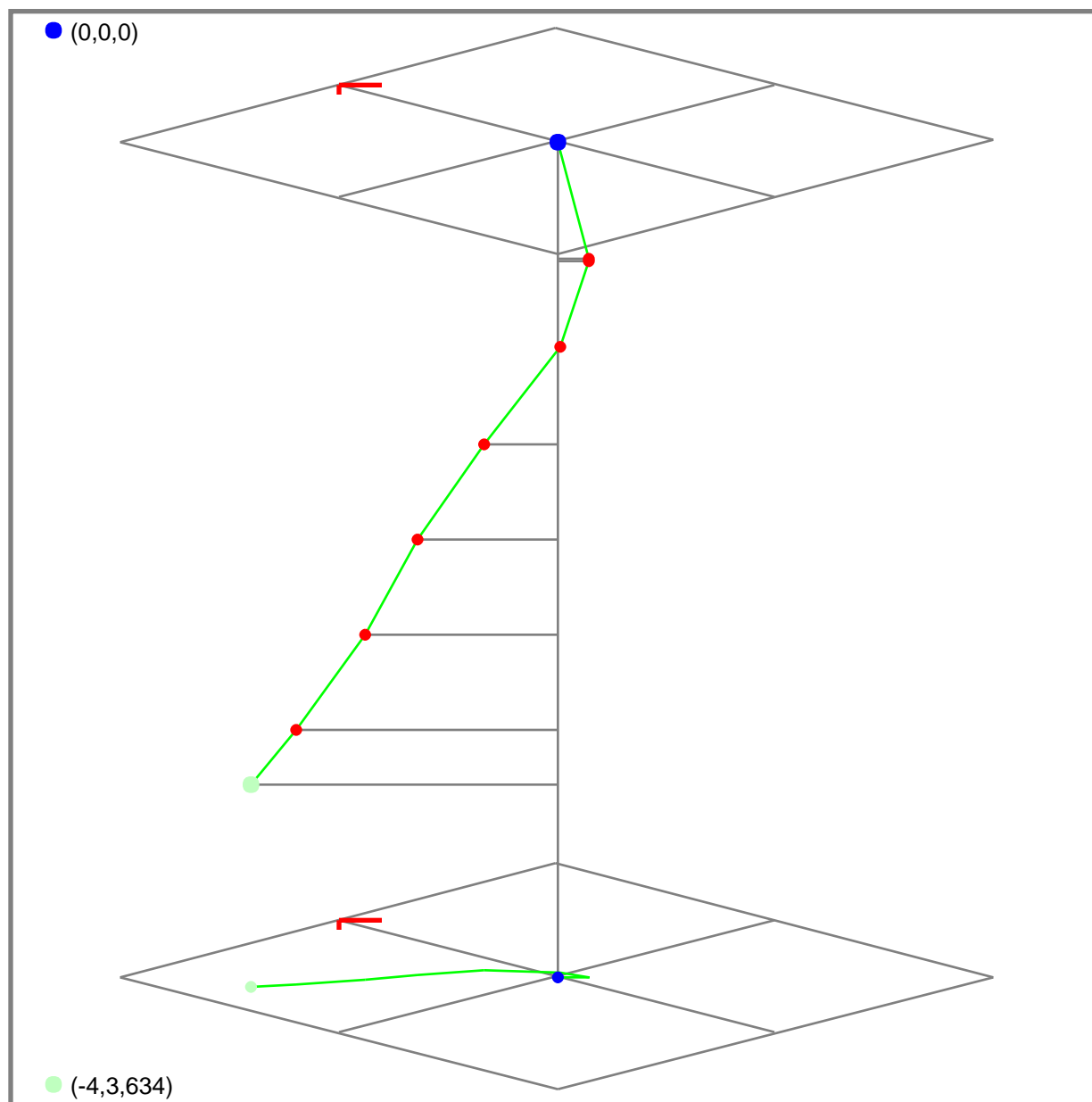













Sep 05, 2019

State of TX

Ward County, TX

I, BJ Weber, certify that: I represent Invictus Tools, LLC; that I did on the day(s) of 05/26/2019 through 05/26/2019 conduct or supervise the taking of MWD surveys from a depth of 116.0 feet measured depth to a depth of 634.0 feet measured depth; that the data is true, correct, complete, and within the limitations of the tool as set forth by Invictus Tools LLC; that I am authorized and qualified to make this report; that the survey was conducted at the request of Transcend Drilling for the UTL 2635-17 No. 24H Lease (API 42-475-37839), drilled by Transcend 4 in Ward County, Texas and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by Invictus Tools LLC.



BJ Weber

Invictus Tools LLC

	MD (usft)	Inc (°)	Azi (°)	TVD (usft)	N/S (usft)	E/W (usft)	Northing (L	Easting (usf
1	0	0	0	0	0	0	10555342	1408009
2	161	0.3	55.47	161	0.24	0.35	10555342	1408009
3	246	0.3	329.47	246	0.56	0.42	10555342	1408009
4	342	0.2	303.47	342	0.87	0.15	10555342	1408009
5	435	0.3	283.47	435	1.01	-0.22	10555343	1408009
6	529	0.2	296.47	529	1.14	-0.61	10555343	1408008
7	623	0.2	296.47	623	1.29	-0.9	10555343	1408008
8	677	0.1	311.47	677	1.36	-1.02	10555343	1408008
9	690	0.14	320.69	689.99	1.38	-1.04	10555343	1408008
10	783	2.26	299.8	782.97	2.38	-2.7	10555344	1408006
11	907	4.36	299.35	906.76	5.91	-8.93	10555347	1408000
12	968	4.85	294.68	967.56	8.12	-13.3	10555350	1407995
13	1061	6.09	293.93	1060.13	11.76	-21.38	10555353	1407987
14	1153	6.6	288.52	1151.57	15.42	-30.85	10555357	1407978
15	1246	6.55	288.2	1243.96	18.78	-40.96	10555360	1407968
16	1338	6.5	291.27	1335.36	22.3	-50.8	10555364	1407958
17	1431	7.2	288.3	1427.7	26.04	-61.24	10555368	1407947
18	1523	7.81	295.52	1518.91	30.55	-72.35	10555372	1407936
19	1616	8.51	299.7	1610.97	36.68	-84.03	10555378	1407925
20	1708	9.07	304.12	1701.89	44.12	-95.95	10555386	1407913
21	1801	8.99	306.9	1793.74	52.59	-107.83	10555394	1407901
22	1893	9.1	307.1	1884.6	61.3	-119.38	10555403	1407889
23	1988	8.93	313.94	1978.42	70.95	-130.68	10555413	1407878
24	2082	8.97	311.95	2071.28	80.91	-141.38	10555422	1407867
25	2177	9.35	305.73	2165.07	90.37	-153.16	10555432	1407856
26	2272	9.97	300.22	2258.73	99.01	-166.53	10555441	1407842
27	2366	9.48	304.55	2351.38	107.5	-179.94	10555449	1407829
28	2461	9.32	310.28	2445.1	116.91	-192.25	10555458	1407816
29	2556	9.05	312.44	2538.88	126.92	-203.63	10555468	1407805
30	2650	6.96	308.82	2631.96	135.48	-213.52	10555477	1407795
31	2745	4.95	313.04	2726.45	141.89	-221.01	10555483	1407788
32	2840	4.63	317.83	2821.11	147.53	-226.57	10555489	1407782
33	2935	3.2	317.57	2915.89	152.33	-230.94	10555494	1407778
34	3030	1.93	308.76	3010.79	155.29	-233.97	10555497	1407775
35	3124	0.34	56.06	3104.78	156.43	-234.98	10555498	1407774
36	3219	1.99	105.29	3199.75	156.16	-233.15	10555498	1407776
37	3314	1.44	108.76	3294.71	155.34	-230.43	10555497	1407778
38	3409	0.64	66.22	3389.7	155.17	-228.82	10555497	1407780
39	3504	0.98	53.97	3484.69	155.86	-227.67	10555497	1407781
40	3599	0.36	93.8	3579.68	156.32	-226.72	10555498	1407782
41	3693	0.66	34.19	3673.68	156.75	-226.12	10555498	1407783
42	3788	0.36	223.58	3768.68	156.98	-226.02	10555499	1407783
43	3883	1.02	195.82	3863.67	155.95	-226.45	10555498	1407782
44	3978	0.91	213.81	3958.66	154.51	-227.1	10555496	1407782
45	4073	1.32	161.69	4053.64	152.85	-227.18	10555494	1407782

46	4167	1.68	182.53	4147.61	150.44	-226.9	10555492	1407782
47	4262	0.46	156.94	4242.59	148.7	-226.81	10555490	1407782
48	4357	1.47	89.22	4337.58	148.36	-225.45	10555490	1407783
49	4452	1.18	53.45	4432.55	148.96	-223.44	10555491	1407785
50	4547	0.63	258.66	4527.55	149.44	-223.17	10555491	1407786
51	4641	0.29	108.22	4621.55	149.27	-223.45	10555491	1407785
52	4735	0.18	201.02	4715.55	149.06	-223.27	10555491	1407785
53	4830	1.08	299.61	4810.54	149.36	-224.11	10555491	1407785
54	4925	0.49	319.6	4905.53	150.11	-225.15	10555492	1407784
55	5020	0.59	247.58	5000.53	150.23	-225.86	10555492	1407783
56	5114	1.24	277.97	5094.52	150.19	-227.32	10555492	1407781
57	5209	1.98	263.86	5189.48	150.16	-229.97	10555492	1407779
58	5304	2.3	269.92	5284.41	149.98	-233.51	10555492	1407775
59	5399	1.18	261.45	5379.37	149.83	-236.38	10555491	1407772
60	5493	1.03	289.78	5473.35	149.97	-238.13	10555492	1407771
61	5588	1.1	263.38	5568.33	150.16	-239.84	10555492	1407769
62	5683	0.66	245.33	5663.32	149.82	-241.24	10555491	1407767
63	5778	0.42	249.05	5758.32	149.47	-242.07	10555491	1407767
64	5872	0.82	252.92	5852.31	149.15	-243.03	10555491	1407766
65	5967	0.66	247.35	5947.3	148.74	-244.19	10555490	1407765
66	6062	0.83	260.97	6042.3	148.42	-245.37	10555490	1407763
67	6157	0.29	280.57	6137.29	148.36	-246.29	10555490	1407762
68	6252	0.87	297.64	6232.29	148.73	-247.16	10555490	1407762
69	6347	0.85	299.84	6327.28	149.42	-248.41	10555491	1407760
70	6442	0.26	301.96	6422.27	149.88	-249.21	10555491	1407760
71	6536	0.81	299.46	6516.27	150.32	-249.97	10555492	1407759
72	6631	0.46	324.57	6611.26	150.97	-250.77	10555493	1407758
73	6726	0.55	234.61	6706.26	151.01	-251.36	10555493	1407757
74	6821	0.79	204.43	6801.25	150.15	-252.01	10555492	1407757
75	6916	0.44	239.62	6896.25	149.37	-252.59	10555491	1407756
76	7011	0.4	239.17	6991.24	149.02	-253.19	10555491	1407756
77	7105	0.3	287.37	7085.24	148.92	-253.71	10555490	1407755
78	7200	0.36	253.58	7180.24	148.91	-254.23	10555490	1407754
79	7295	0.41	142.5	7275.24	148.56	-254.31	10555490	1407754
80	7390	0.75	58.52	7370.24	148.61	-253.57	10555490	1407755
81	7485	0.93	55.58	7465.23	149.37	-252.41	10555491	1407756
82	7579	0.66	11.78	7559.22	150.33	-251.67	10555492	1407757
83	7674	1.07	43.34	7654.21	151.52	-250.95	10555493	1407758
84	7769	1.65	71.79	7749.18	152.59	-249.04	10555494	1407760
85	7864	1.83	54.54	7844.14	153.9	-246.5	10555495	1407762
86	7959	1.73	45.9	7939.09	155.77	-244.24	10555497	1407764
87	8053	1.72	47.61	8033.05	157.71	-242.18	10555499	1407767
88	8148	1.72	55.83	8128.01	159.47	-239.95	10555501	1407769
89	8243	1.27	53.2	8222.97	160.91	-237.92	10555502	1407771
90	8338	1.05	59.48	8317.95	161.98	-236.33	10555504	1407772
91	8433	0.74	44.91	8412.94	162.85	-235.15	10555504	1407774
92	8528	0.86	67.27	8507.93	163.56	-234.06	10555505	1407775

93	8623	0.51	56.2	8602.93	164.07	-233.05	10555506	1407776
94	8718	0.46	53.45	8697.92	164.54	-232.39	10555506	1407776
95	8813	1.31	343.16	8792.91	165.8	-232.4	10555507	1407776
96	8908	1.1	298.55	8887.89	167.28	-233.51	10555509	1407775
97	9003	1.04	303.72	8982.88	168.19	-235.03	10555510	1407774
98	9098	2.18	38.9	9077.85	170.08	-234.61	10555512	1407774
99	9193	3.7	41.49	9172.72	173.78	-231.45	10555515	1407777
100	9288	3.28	34.23	9267.55	178.32	-227.89	10555520	1407781
101	9383	2.29	26.96	9362.43	182.26	-225.5	10555524	1407783
102	9479	2.04	41.15	9458.37	185.26	-223.51	10555527	1407785
103	9574	1.38	164.68	9553.34	185.43	-222.09	10555527	1407787
104	9669	1.45	216.76	9648.32	183.36	-222.51	10555525	1407786
105	9764	1.25	224.27	9743.29	181.66	-223.95	10555523	1407785
106	9859	1.51	254.28	9838.27	180.58	-225.88	10555522	1407783
107	9954	0.9	293.4	9933.25	180.53	-227.77	10555522	1407781
108	10050	1.88	282.92	10029.22	181.19	-230	10555523	1407779
109	10145	2.36	293.15	10124.15	182.3	-233.31	10555524	1407775
110	10240	1.94	330.52	10219.09	184.47	-235.9	10555526	1407773
111	10335	1.14	5.58	10314.06	186.81	-236.6	10555528	1407772
112	10430	1.52	162.77	10409.05	186.55	-236.14	10555528	1407773
113	10525	2.58	182.41	10503.99	183.21	-235.85	10555525	1407773
114	10620	2.5	162.31	10598.89	179.1	-235.31	10555521	1407773
115	10715	2.6	196.2	10693.81	175.06	-235.29	10555517	1407773
116	10810	2.7	189.07	10788.7	170.78	-236.24	10555512	1407772
117	10905	2.24	181.2	10883.62	166.71	-236.63	10555508	1407772
118	10944	2.34	175.08	10922.58	165.16	-236.58	10555507	1407772
119	11083	3.61	207.36	11061.4	158.44	-238.35	10555500	1407770
120	11130	11.18	243.38	11108	155.08	-243.11	10555497	1407766
121	11178	18.58	248.78	11154.36	150.22	-254.41	10555492	1407754
122	11225	21.9	251.17	11198.45	144.68	-269.69	10555486	1407739
123	11273	23.69	250.75	11242.7	138.61	-287.27	10555480	1407721
124	11320	28.67	252.86	11284.86	132.17	-306.97	10555474	1407702
125	11368	32.5	254.96	11326.18	125.43	-330.44	10555467	1407678
126	11415	36.7	260.03	11364.87	119.72	-356.48	10555461	1407652
127	11463	40.31	259.38	11402.42	114.37	-385.88	10555456	1407623
128	11559	48.66	256.1	11470.86	99.96	-451.51	10555442	1407557
129	11654	55.26	252.95	11529.38	79.92	-523.53	10555421	1407485
130	11749	63.67	252.03	11577.6	55.3	-601.49	10555397	1407407
131	11844	69.57	251.51	11615.28	28.03	-684.27	10555370	1407324
132	11939	74.87	250.3	11644.28	-1.57	-769.72	10555340	1407239
133	12035	77.7	251.02	11667.04	-32.45	-857.71	10555309	1407151
134	12130	87.95	253.51	11678.89	-61.1	-947.37	10555280	1407061
135	12225	87.75	251.37	11682.46	-89.74	-1037.87	10555252	1406971
136	12320	88.27	254.29	11685.76	-117.76	-1128.57	10555224	1406880
137	12414	86.26	254.8	11690.24	-142.78	-1219.07	10555199	1406790
138	12509	89.25	257.07	11693.97	-165.84	-1311.13	10555176	1406698
139	12604	87.72	253.28	11696.48	-190.14	-1402.92	10555151	1406606

140	12699	84.62	252.37	11702.82	-218.12	-1493.47	10555123	1406515
141	12794	86.79	253.21	11709.94	-246.15	-1583.95	10555095	1406425
142	12889	86.74	253.77	11715.3	-273.1	-1674.89	10555068	1406334
143	12984	86.2	253.29	11721.15	-299.98	-1765.82	10555042	1406243
144	13079	87.26	254.84	11726.57	-326.02	-1857.02	10555016	1406152
145	13174	87.58	256	11730.84	-349.91	-1948.86	10554992	1406060
146	13269	88.45	256.97	11734.13	-372.1	-2041.17	10554969	1405968
147	13364	88.2	255.5	11736.91	-394.69	-2133.4	10554947	1405875
148	13459	89.2	254.42	11739.07	-419.34	-2225.12	10554922	1405784
149	13554	89.71	252.64	11739.97	-446.27	-2316.22	10554895	1405693
150	13650	90.25	251.9	11740	-475.5	-2407.66	10554866	1405601
151	13745	89.78	251.54	11739.98	-505.3	-2497.86	10554836	1405511
152	13840	89.57	251.78	11740.52	-535.19	-2588.04	10554806	1405421
153	13934	87.96	252.65	11742.54	-563.9	-2677.52	10554778	1405331
154	14029	87.59	252.24	11746.23	-592.53	-2768.03	10554749	1405241
155	14124	88.13	252.61	11749.78	-621.19	-2858.53	10554720	1405150
156	14219	86.2	252.58	11754.48	-649.57	-2949.06	10554692	1405060
157	14314	85.63	252.08	11761.25	-678.34	-3039.35	10554663	1404969
158	14409	87	253.58	11767.35	-706.32	-3129.92	10554635	1404879
159	14504	86.97	254.12	11772.35	-732.71	-3221.05	10554609	1404788
160	14599	86.88	254.03	11777.44	-758.74	-3312.27	10554583	1404696
161	14694	87.03	254.66	11782.49	-784.33	-3403.62	10554557	1404605
162	14789	89.24	254.68	11785.58	-809.44	-3495.18	10554532	1404514
163	14884	89.17	254.6	11786.9	-834.6	-3586.78	10554507	1404422
164	14978	86.92	254.29	11790.11	-859.79	-3677.28	10554482	1404331
165	15073	88.14	254.56	11794.2	-885.27	-3768.71	10554456	1404240
166	15168	88.96	255.21	11796.6	-910.03	-3860.39	10554432	1404148
167	15263	88.15	255.12	11799	-934.35	-3952.19	10554407	1404057
168	15358	88.42	255.68	11801.84	-958.28	-4044.08	10554383	1403965
169	15453	88.76	253.87	11804.18	-983.22	-4135.72	10554358	1403873
170	15548	89.7	253.81	11805.46	-1009.66	-4226.95	10554332	1403782
171	15643	87.96	253.83	11807.4	-1036.13	-4318.17	10554305	1403691
172	15737	86.69	253.66	11811.78	-1062.41	-4408.31	10554279	1403600
173	15832	85.59	253.04	11818.18	-1089.57	-4499.12	10554252	1403510
174	15927	85.33	253.18	11825.7	-1117.08	-4589.74	10554224	1403419
175	16022	85.73	253.55	11833.1	-1144.19	-4680.48	10554197	1403328
176	16117	88.49	255.58	11837.89	-1169.44	-4771.93	10554172	1403237
177	16212	89.56	254.11	11839.51	-1194.27	-4863.61	10554147	1403145
178	16307	88.83	254.09	11840.84	-1220.29	-4954.96	10554121	1403054
179	16402	86.82	253.49	11844.45	-1246.79	-5046.11	10554095	1402963
180	16497	86.53	252.84	11849.96	-1274.26	-5136.89	10554067	1402872
181	16592	85.81	252.44	11856.31	-1302.54	-5227.36	10554039	1402781
182	16686	86.92	253.35	11862.27	-1330.13	-5317.02	10554011	1402692
183	16781	85.88	252.65	11868.23	-1357.85	-5407.69	10553984	1402601
184	16876	87.24	252.91	11873.93	-1385.92	-5498.26	10553956	1402510
185	16971	88.8	253.47	11877.21	-1413.38	-5589.15	10553928	1402420
186	17066	90.13	253.55	11878.1	-1440.34	-5680.23	10553901	1402328

187	17161	90.29	253.17	11877.75	-1467.55	-5771.25	10553874	1402237
188	17255	90.55	253.7	11877.06	-1494.35	-5861.35	10553847	1402147
189	17351	90.34	253.49	11876.32	-1521.46	-5953.44	10553820	1402055
190	17446	90	253.21	11876.04	-1548.68	-6044.45	10553793	1401964
191	17541	90.82	253.24	11875.36	-1576.09	-6135.41	10553765	1401873
192	17624	91.09	253.38	11873.97	-1599.93	-6214.9	10553742	1401794
193	17719	90.9	254	11872.32	-1626.6	-6306.06	10553715	1401703
194	17814	90.87	254.09	11870.86	-1652.71	-6397.39	10553689	1401611
195	17909	91.53	254.1	11868.87	-1678.74	-6488.74	10553663	1401520
196	18004	92.34	255.33	11865.66	-1703.77	-6580.32	10553638	1401428
197	18099	90.95	254.99	11862.93	-1728.09	-6672.11	10553613	1401337
198	18195	89.26	254	11862.75	-1753.75	-6764.61	10553588	1401244
199	18289	89.53	254.47	11863.75	-1779.29	-6855.07	10553562	1401154
200	18384	89.71	254.23	11864.38	-1804.92	-6946.55	10553537	1401062
201	18479	89.59	254.14	11864.96	-1830.81	-7037.95	10553511	1400971
202	18574	89.31	253.88	11865.87	-1856.97	-7129.27	10553485	1400879
203	18669	89.15	253.62	11867.15	-1883.56	-7220.47	10553458	1400788
204	18764	89.34	253.92	11868.4	-1910.1	-7311.67	10553431	1400697
205	18858	90.17	254.63	11868.8	-1935.58	-7402.15	10553406	1400607
206	18953	89.19	254.49	11869.33	-1960.87	-7493.72	10553381	1400515
207	19048	88.57	254.73	11871.19	-1986.08	-7585.3	10553355	1400423
208	19143	88.21	254.11	11873.86	-2011.58	-7676.77	10553330	1400332
209	19238	89.51	252.87	11875.75	-2038.57	-7767.83	10553303	1400241
210	19333	90.48	252.67	11875.76	-2066.71	-7858.57	10553275	1400150
211	19427	90.38	252.78	11875.05	-2094.63	-7948.32	10553247	1400060
212	19522	89.72	252.77	11874.97	-2122.76	-8039.06	10553219	1399970
213	19617	90	252.68	11875.2	-2150.97	-8129.78	10553191	1399879
214	19712	90.13	252.91	11875.09	-2179.07	-8220.53	10553162	1399788
215	19807	89.78	253.09	11875.17	-2206.84	-8311.37	10553135	1399697
216	19902	90.94	253.04	11874.57	-2234.51	-8402.25	10553107	1399606
217	19996	91.83	254.1	11872.3	-2261.09	-8492.38	10553080	1399516
218	20091	91.49	254.43	11869.54	-2286.84	-8583.79	10553055	1399425
219	20186	90.48	253.45	11867.91	-2313.12	-8675.06	10553028	1399334
220	20281	90.55	253.58	11867.06	-2340.08	-8766.15	10553001	1399243
221	20376	90.27	253.7	11866.38	-2366.84	-8857.3	10552975	1399151
222	20470	90.39	254.03	11865.84	-2392.96	-8947.6	10552949	1399061
223	20565	90.27	254.31	11865.29	-2418.87	-9039	10552923	1398970
224	20660	90.23	254.95	11864.87	-2444.05	-9130.6	10552898	1398878
225	20755	89.97	255.1	11864.71	-2468.6	-9222.37	10552873	1398786
226	20850	89.66	255.4	11865.02	-2492.79	-9314.24	10552849	1398694
227	20945	89.16	254.03	11865.99	-2517.83	-9405.87	10552824	1398603
228	21040	88.65	254.02	11867.81	-2543.97	-9497.19	10552798	1398512
229	21134	89.11	253.84	11869.65	-2569.98	-9587.5	10552772	1398421
230	21229	89.54	253.65	11870.77	-2596.57	-9678.69	10552745	1398330
231	21324	89.66	253.96	11871.43	-2623.07	-9769.92	10552718	1398239
232	21419	89.79	254.43	11871.89	-2648.94	-9861.33	10552693	1398147
233	21514	89.24	254.25	11872.69	-2674.58	-9952.8	10552667	1398056

234	21609	88.84	254.41	11874.28	-2700.24	-10044.3	10552641	1397964
235	21704	88.82	254.88	11876.22	-2725.39	-10135.8	10552616	1397873
236	21799	88.42	254.59	11878.51	-2750.39	-10227.5	10552591	1397781
237	21894	88.05	254.59	11881.43	-2775.63	-10319	10552566	1397690
238	21918	87.74	254.41	11882.32	-2782.03	-10342.1	10552560	1397667
239								

V.Sec (usft) Dogleg (°/100usft) T.Face (°) Build (°/100usft) Turn (°/100usft)

0	0	0	0	0
-0.4	0.19	55.47	0.19	0
-0.56	0.48	-133	0	-101.18
-0.39	0.16	-143.9	-0.1	-27.08
-0.07	0.14	-51.4	0.11	-21.51
0.26	0.12	156.83	-0.11	13.83
0.5	0	0	0	0
0.6	0.2	165.95	-0.19	27.78
0.61	0.34	30.43	0.31	70.92
1.93	2.29	-22.23	2.28	-22.46
6.92	1.69	-0.93	1.69	-0.36
10.49	1.01	-39.77	0.8	-7.66
17.22	1.34	-3.67	1.33	-0.81
25.29	0.85	-52.25	0.55	-5.88
34.05	0.07	-143.92	-0.05	-0.34
42.5	0.38	99.68	-0.05	3.34
51.47	0.84	-28.32	0.75	-3.19
60.88	1.22	60.72	0.66	7.85
70.37	0.99	42.37	0.75	4.49
79.72	0.95	52.54	0.61	4.8
88.75	0.48	101.76	-0.09	2.99
97.39	0.12	16.05	0.12	0.22
105.53	1.14	102.38	-0.18	7.2
113.01	0.33	-83.62	0.04	-2.12
121.66	1.12	-72.09	0.4	-6.55
132.07	1.17	-58.89	0.65	-5.8
142.56	0.94	125.94	-0.52	4.61
151.74	1	102.52	-0.17	6.03
159.85	0.46	129.13	-0.28	2.27
166.95	2.29	-168.23	-2.22	-3.85
172.33	2.16	169.8	-2.12	4.44
176.1	0.54	131.03	-0.34	5.04
178.94	1.51	-179.42	-1.51	-0.27
181.02	1.4	-167.12	-1.34	-9.27
181.67	2.19	170.92	-1.69	114.15
179.99	1.88	57.51	1.74	51.82
177.61	0.59	171.04	-0.58	3.65
176.11	1.12	-155.92	-0.84	-44.78
174.81	0.4	-33.2	0.36	-12.89
173.77	0.78	161.85	-0.65	41.93
173.08	0.61	-92.63	0.32	-63.41
172.91	1.07	-176.69	-0.32	-179.59
173.62	0.76	-41.2	0.69	-29.22
174.65	0.34	118.8	-0.12	18.94
175.19	1.1	-95.45	0.43	-54.86

175.59	0.69	67.29	0.38	22.17
176	1.35	-171.07	-1.28	-26.94
174.78	1.44	-85.9	1.06	-71.28
172.69	0.9	-126.61	-0.31	-37.65
172.29	1.86	-171.28	-0.58	-162.94
172.61	0.95	-170.79	-0.36	-160.04
172.5	0.37	148.96	-0.12	98.72
173.22	1.18	107.72	0.95	103.78
174	0.68	164.87	-0.62	21.04
174.66	0.67	-118.75	0.11	-75.81
176.06	0.84	52.6	0.69	32.33
178.62	0.88	-35.35	0.78	-14.85
182.06	0.41	38.32	0.34	6.38
184.86	1.21	-171.28	-1.18	-8.92
186.51	0.6	119.22	-0.16	30.14
188.09	0.52	-95.22	0.07	-27.79
189.53	0.54	-156.6	-0.46	-19
190.42	0.26	173.55	-0.25	3.92
191.44	0.43	7.91	0.43	4.12
192.66	0.18	-158.56	-0.17	-5.86
193.89	0.26	53.12	0.18	14.34
194.79	0.59	170.09	-0.57	20.63
195.52	0.63	25.24	0.61	17.97
196.53	0.04	122.3	-0.02	2.32
197.16	0.62	179.07	-0.62	2.23
197.77	0.59	-3.68	0.59	-2.66
198.36	0.46	153.61	-0.37	26.43
198.91	0.75	-129.88	0.09	-94.69
199.77	0.44	-71.49	0.25	-31.77
200.55	0.53	149.5	-0.37	37.04
201.23	0.04	-175.51	-0.04	-0.47
201.75	0.32	131.81	-0.11	51.28
202.26	0.21	-90.23	0.06	-35.57
202.43	0.67	-142.99	0.05	-116.93
201.71	0.86	-113.95	0.36	-88.4
200.38	0.19	-14.94	0.19	-3.09
199.4	0.68	-134.8	-0.29	-46.6
198.37	0.65	65.79	0.43	33.22
196.24	0.92	64.15	0.61	29.95
193.44	0.58	-79.79	0.19	-18.16
190.74	0.3	-114.72	-0.11	-9.09
188.22	0.06	101.85	-0.01	1.82
185.58	0.26	94.11	0	8.65
183.24	0.48	-172.64	-0.47	-2.77
181.41	0.27	153.09	-0.23	6.61
180.03	0.4	-150.85	-0.33	-15.34
178.78	0.35	80.4	0.13	23.54

177.67	0.39	-164.76	-0.37	-11.65
176.91	0.06	-156.41	-0.05	-2.89
176.56	1.3	-90.84	0.89	-73.99
177.22	0.98	-124.29	-0.22	-46.96
178.42	0.12	124.43	-0.06	5.44
177.49	2.63	119.66	1.2	100.19
173.41	1.61	6.29	1.6	2.73
168.72	0.64	-137.13	-0.44	-7.64
165.32	1.1	-163.97	-1.04	-7.65
162.57	0.61	121.98	-0.26	14.78
161.16	3.19	157.67	-0.69	130.03
162.14	1.31	113.13	0.07	54.82
164.01	0.28	142.22	-0.21	7.91
166.16	0.8	85.64	0.27	31.59
167.99	1.04	145.02	-0.64	41.18
169.94	1.05	-19.82	1.02	-10.92
172.81	0.64	43.44	0.51	10.77
174.69	1.51	124.79	-0.44	39.34
174.7	1.26	146.96	-0.84	36.91
174.33	2.75	166.94	0.4	165.46
175	1.32	43.61	1.12	20.67
175.63	0.94	-105.12	-0.08	-21.16
176.74	1.57	103.25	0.11	35.67
178.85	0.36	-76.71	0.11	-7.51
180.37	0.6	-147.49	-0.48	-8.28
180.76	0.68	-70.84	0.26	-15.69
184.34	1.48	69.7	0.91	23.22
189.85	18.14	50.28	16.11	76.64
202.06	15.67	13.24	15.42	11.25
218.29	7.28	15.11	7.06	5.09
236.86	3.74	-5.39	3.73	-0.87
257.58	10.78	11.54	10.6	4.49
281.99	8.28	16.5	7.98	4.37
308.59	10.83	36.54	8.94	10.79
338.31	7.57	-6.65	7.52	-1.35
405.34	9.02	-16.58	8.7	-3.42
480.1	7.42	-21.59	6.95	-3.32
561.83	8.89	-5.62	8.85	-0.97
648.94	6.23	-4.73	6.21	-0.55
739.26	5.71	-12.45	5.58	-1.27
832.38	3.04	13.97	2.95	0.75
926.47	11.1	13.73	10.79	2.62
1021.38	2.26	-95.38	-0.21	-2.25
1116.3	3.12	79.95	0.55	3.07
1210.18	2.21	165.79	-2.14	0.54
1305.02	3.95	37.24	3.15	2.39
1399.93	4.3	-112.03	-1.61	-3.99

1494.69	3.4	-163.7	-3.26	-0.96
1589.41	2.45	21.14	2.28	0.88
1684.26	0.59	95.13	-0.05	0.59
1779.08	0.76	-138.43	-0.57	-0.51
1873.91	1.97	55.64	1.12	1.63
1968.77	1.27	74.59	0.34	1.22
2063.6	1.37	48.11	0.92	1.02
2158.47	1.57	-99.68	-0.26	-1.55
2253.42	1.55	-47.21	1.05	-1.14
2348.41	1.95	-74.02	0.54	-1.87
2444.38	0.95	-53.88	0.56	-0.77
2539.32	0.62	-142.55	-0.49	-0.38
2634.26	0.34	131.19	-0.22	0.25
2728.2	1.95	151.63	-1.71	0.93
2823.11	0.58	-132.09	-0.39	-0.43
2918.01	0.69	34.41	0.57	0.39
3012.88	2.03	-179.11	-2.03	-0.03
3107.61	0.8	-138.83	-0.6	-0.53
3202.39	2.14	47.58	1.44	1.58
3297.26	0.57	93.2	-0.03	0.57
3392.12	0.13	-135.04	-0.09	-0.09
3486.98	0.68	76.61	0.16	0.66
3581.91	2.33	0.52	2.33	0.02
3676.89	0.11	-131.19	-0.07	-0.08
3770.82	2.42	-172.16	-2.39	-0.33
3865.73	1.32	12.47	1.28	0.28
3960.67	1.1	38.4	0.86	0.68
4055.61	0.86	-173.66	-0.85	-0.09
4150.53	0.65	64.26	0.28	0.59
4245.48	1.94	-79.38	0.36	-1.91
4340.47	0.99	-3.65	0.99	-0.06
4435.45	1.83	179.34	-1.83	0.02
4529.34	1.36	-172.39	-1.35	-0.18
4624.12	1.33	-150.67	-1.16	-0.65
4718.82	0.31	151.78	-0.27	0.15
4813.53	0.57	42.7	0.42	0.39
4908.38	3.6	36.36	2.91	2.14
5003.34	1.91	-53.96	1.13	-1.55
5098.33	0.77	-178.43	-0.77	-0.02
5193.26	2.21	-163.4	-2.12	-0.63
5288.09	0.75	-114.1	-0.31	-0.68
5382.86	0.87	-151.01	-0.76	-0.42
5476.66	1.53	39.32	1.18	0.97
5571.47	1.32	-146.13	-1.09	-0.74
5666.28	1.46	10.81	1.43	0.27
5761.22	1.74	19.75	1.64	0.59
5856.21	1.4	3.44	1.4	0.08

5951.21	0.43	-67.17	0.17	-0.4
6045.2	0.63	63.87	0.28	0.56
6141.2	0.31	-135	-0.22	-0.22
6236.2	0.46	-140.53	-0.36	-0.29
6331.19	0.86	2.1	0.86	0.03
6414.18	0.37	27.4	0.33	0.17
6509.16	0.68	107.03	-0.2	0.65
6604.15	0.1	108.44	-0.03	0.09
6699.13	0.69	0.87	0.69	0.01
6794.05	1.55	56.6	0.85	1.29
6888.98	1.51	-166.26	-1.46	-0.36
6984.97	2.04	-149.64	-1.76	-1.03
7078.96	0.58	60.13	0.29	0.5
7173.95	0.32	-53.13	0.19	-0.25
7268.95	0.16	-143.13	-0.13	-0.09
7363.94	0.4	-137.12	-0.29	-0.27
7458.93	0.32	-121.61	-0.17	-0.27
7553.92	0.37	57.65	0.2	0.32
7647.92	1.16	40.55	0.88	0.76
7742.9	1.04	-171.87	-1.03	-0.15
7837.87	0.7	158.84	-0.65	0.25
7932.83	0.75	-120.16	-0.38	-0.65
8027.8	1.89	-43.66	1.37	-1.31
8122.79	1.04	-11.65	1.02	-0.21
8216.77	0.16	132.27	-0.11	0.12
8311.76	0.69	-179.13	-0.69	-0.01
8406.75	0.31	-17.82	0.29	-0.09
8501.73	0.28	60.52	0.14	0.24
8596.73	0.41	152.78	-0.37	0.19
8691.72	1.22	-2.47	1.22	-0.05
8785.69	1.47	49.96	0.95	1.13
8880.64	0.5	135.86	-0.36	0.35
8975.62	1.48	-135.86	-1.06	-1.03
9070.62	0.16	61.7	0.07	0.14
9165.62	0.32	156.8	-0.29	0.13
9259.62	0.37	70.02	0.13	0.35
9354.61	0.32	113.2	-0.13	0.29
9449.6	0.67	93.57	-0.04	0.67
9544.57	0.32	150.02	-0.27	0.16
9639.54	0.45	135.94	-0.33	0.32
9734.51	1.54	-110.06	-0.53	-1.44
9829.5	0.54	-178.88	-0.54	-0.01
9923.48	0.53	-21.37	0.49	-0.19
10018.47	0.49	-23.84	0.45	-0.2
10113.47	0.35	68.84	0.13	0.33
10208.46	0.51	74.54	0.14	0.49
10303.45	0.61	-161.88	-0.58	-0.19

10398.43	0.45	158.2	-0.42	0.17
10493.4	0.5	92.44	-0.02	0.49
10588.36	0.52	-144.07	-0.42	-0.31
10683.3	0.39	180	-0.39	0
10707.28	1.49	-149.88	-1.29	-0.75