



**Southwestern Energy**  
**Moffat County**  
**Sec02-T06N-R92W**  
**Welker 6-92 2-2H11**

WELL DETAILS: Welker 6-92 2-2H11

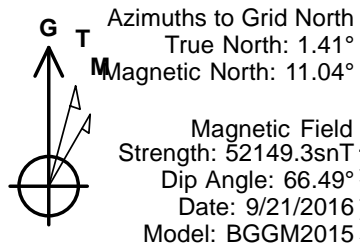
GL @ 6504.4usft  
+N/-S +E/-W Northing Easting Latitude Longitude  
0.0 0.0 1430396.94 2393710.40 40° 29' 39.771 N 107° 40' 48.562 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	6350.0	0.00	0.00	6350.0	0.0	0.0	0.00	0.00	0.0		
3	6593.6	24.36	104.80	6586.3	-13.0	49.3	10.00	104.80	5.4		
4	7253.3	24.36	104.80	7187.3	-82.5	312.4	0.00	0.00	34.0		
5	8153.0	90.00	194.73	7709.0	-696.7	395.1	10.00	89.94	628.4		
6	12921.7	90.00	194.73	7709.0	-5308.7	-817.3	0.00	0.00	5371.3	2-2H BHL	

DESIGN TARGET DETAILS

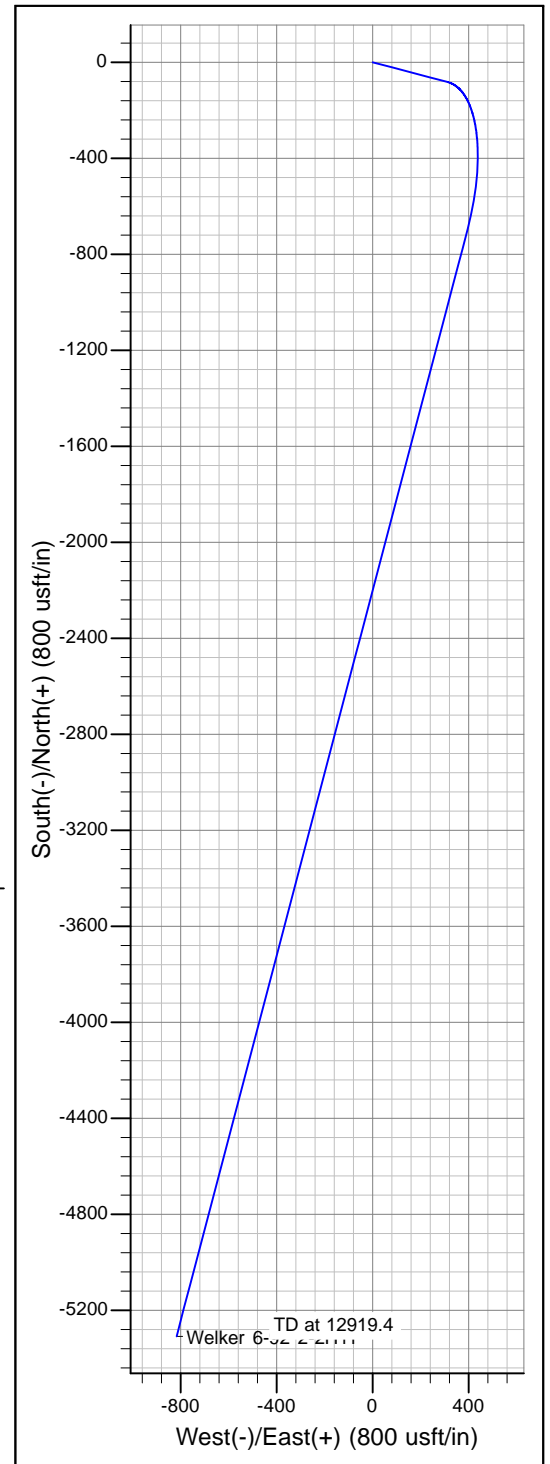
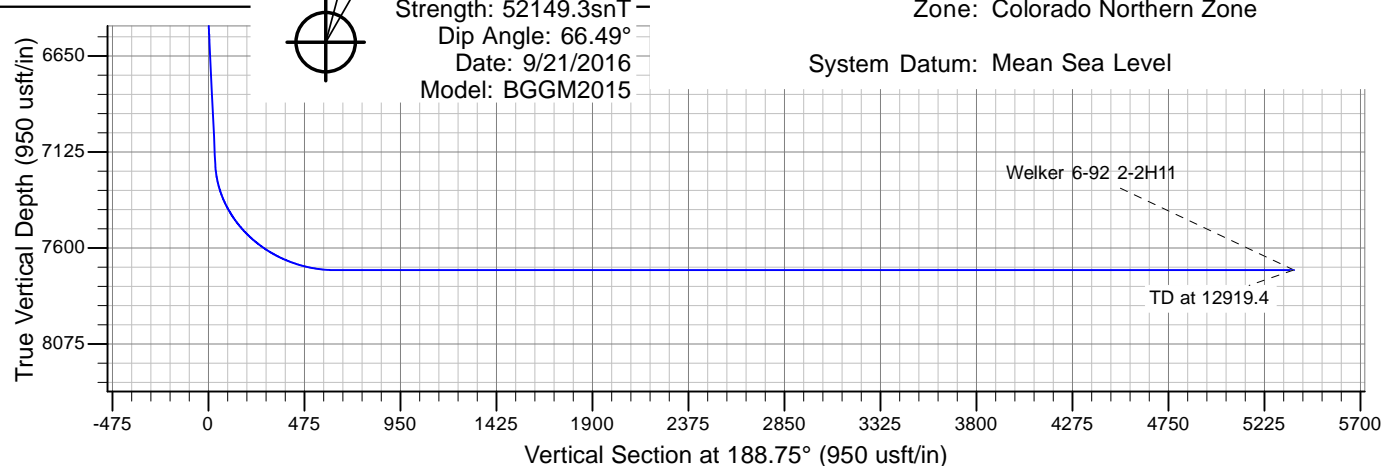
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
2-2H BHL	7709.0	-5306.6	-815.9	1425090.38	2392894.54	40° 28' 47.150 N	107° 40' 57.428 W
2-2H LP	7709.0	-697.0	395.0	1429699.94	2394105.40	40° 29' 32.982 N	107° 40' 43.229 W



PROJECT DETAILS: Moffat County

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone

System Datum: Mean Sea Level





## Plan Report

Report Date: 21-Sep-16  
Company: Southwestern Energy  
Rig Name:  
Field: Moffat County  
Site: Sec02-T06N-R92W  
Well: Welker 6-92 2-2H11  
Wellbore: Wellbore #1  
Name: Permit Plan  
UWI/API number:  
Geodetic system: US State Plane 1983  
Geodetic datum: North American Datum 1983  
Geodetic Zone: Colorado Northern Zone  
Latitude/Longitude: 40° 29' 39.771 N 107° 40' 48.562 W  
Northing/Easting (usft): 1430396.94 N 2393710.40 E  
Grid convergence (+E/W-).: -1.41 °  
All Depths Referenced to: Mean Sea Level

Survey Calc Method: Minimum Curvature  
Vertical Section Azimuth: 188.75°  
Vertical Section Origin: 0.00 N usft 0.00 E usft  
TVD Reference Datum: GL  
TVD Reference Elevation: 6504.40 usft Mean Sea Level  
Ground Level Elevation: 6504.40 usft Mean Sea Level  
KB Height: 6504.40 usft Mean Sea Level  
Magnetic Declination (+E/W-): 9.64 °  
Magnetic Field Strength: 52149.33 nT  
Magnetic Dip: 66.49 °  
Declination Date: 21-Sep-16  
Magnetic Model: BGGM2015  
North Reference: Grid  
Total Corr. Mag N. to Grid N.: 11.04 °

MD usft	Inc deg	Azi deg	TVD usft	TVDSS usft	VSEC usft	+N/S- usft	+E/W- usft	DLS °/100 ft	Build °/100 ft	Turn °/100 ft	Northing usft	Easting usft	Latitude deg	Longitude deg
0.00	0.00	0.00	0.00	-6504.40	0.00	0.00	0.00	0.00	0.00	0.00	1430396.94	2393710.40	40° 29' 39.7714	107° 40' 48.561
100.00	0.00	0.00	100.00	-6404.40	0.00	0.00	0.00	0.00	0.00	0.00	1430396.94	2393710.40	40° 29' 39.7714	107° 40' 48.561
200.00	0.00	0.00	200.00	-6304.40	0.00	0.00	0.00	0.00	0.00	0.00	1430396.94	2393710.40	40° 29' 39.7714	107° 40' 48.561
300.00	0.00	0.00	300.00	-6204.40	0.00	0.00	0.00	0.00	0.00	0.00	1430396.94	2393710.40	40° 29' 39.7714	107° 40' 48.561
400.00	0.00	0.00	400.00	-6104.40	0.00	0.00	0.00	0.00	0.00	0.00	1430396.94	2393710.40	40° 29' 39.7714	107° 40' 48.561
500.00	0.00	0.00	500.00	-6004.40	0.00	0.00	0.00	0.00	0.00	0.00	1430396.94	2393710.40	40° 29' 39.7714	107° 40' 48.561
600.00	0.00	0.00	600.00	-5904.40	0.00	0.00	0.00	0.00	0.00	0.00	1430396.94	2393710.40	40° 29' 39.7714	107° 40' 48.561
700.00	0.00	0.00	700.00	-5804.40	0.00	0.00	0.00	0.00	0.00	0.00	1430396.94	2393710.40	40° 29' 39.7714	107° 40' 48.561
800.00	0.00	0.00	800.00	-5704.40	0.00	0.00	0.00	0.00	0.00	0.00	1430396.94	2393710.40	40° 29' 39.7714	107° 40' 48.561
900.00	0.00	0.00	900.00	-5604.40	0.00	0.00	0.00	0.00	0.00	0.00	1430396.94	2393710.40	40° 29' 39.7714	107° 40' 48.561
1000.00	0.00	0.00	1000.00	-5504.40	0.00	0.00	0.00	0.00	0.00	0.00	1430396.94	2393710.40	40° 29' 39.7714	107° 40' 48.561
1100.00	0.00	0.00	1100.00	-5404.40	0.00	0.00	0.00	0.00	0.00	0.00	1430396.94	2393710.40	40° 29' 39.7714	107° 40' 48.561



MD usft	Inc deg	Azi deg	TVD usft	TVDSS usft	VSEC usft	+N/S- usft	+E/W- usft	DLS °/100 ft	Build °/100 ft	Turn °/100 ft	Northing usft	Easting usft	Latitude deg	Longitude deg
5299.99	0.00	0.00	5299.99	-1204.41	0.00	0.00	0.00	0.00	0.00	0.00	1430396.94	2393710.40	40° 29' 39.7714 107° 40' 48.561	
5399.99	0.00	0.00	5399.99	-1104.41	0.00	0.00	0.00	0.00	0.00	0.00	1430396.94	2393710.40	40° 29' 39.7714 107° 40' 48.561	
5499.99	0.00	0.00	5499.99	-1004.41	0.00	0.00	0.00	0.00	0.00	0.00	1430396.94	2393710.40	40° 29' 39.7714 107° 40' 48.561	
5599.99	0.00	0.00	5599.99	-904.41	0.00	0.00	0.00	0.00	0.00	0.00	1430396.94	2393710.40	40° 29' 39.7714 107° 40' 48.561	
5699.99	0.00	0.00	5699.99	-804.41	0.00	0.00	0.00	0.00	0.00	0.00	1430396.94	2393710.40	40° 29' 39.7714 107° 40' 48.561	
5799.99	0.00	0.00	5799.99	-704.41	0.00	0.00	0.00	0.00	0.00	0.00	1430396.94	2393710.40	40° 29' 39.7714 107° 40' 48.561	
5899.99	0.00	0.00	5899.99	-604.41	0.00	0.00	0.00	0.00	0.00	0.00	1430396.94	2393710.40	40° 29' 39.7714 107° 40' 48.561	
5999.99	0.00	0.00	5999.99	-504.41	0.00	0.00	0.00	0.00	0.00	0.00	1430396.94	2393710.40	40° 29' 39.7714 107° 40' 48.561	
6099.99	0.00	0.00	6099.99	-404.41	0.00	0.00	0.00	0.00	0.00	0.00	1430396.94	2393710.40	40° 29' 39.7714 107° 40' 48.561	
6199.99	0.00	0.00	6199.99	-304.41	0.00	0.00	0.00	0.00	0.00	0.00	1430396.94	2393710.40	40° 29' 39.7714 107° 40' 48.561	
6299.99	0.00	0.00	6299.99	-204.41	0.00	0.00	0.00	0.00	0.00	0.00	1430396.94	2393710.40	40° 29' 39.7714 107° 40' 48.561	
6399.99	5.00	104.80	6399.92	-104.48	0.23	-0.56	2.11	5.00	5.00	0.00	1430396.38	2393712.51	40° 29' 39.7664 107° 40' 48.534	
6499.99	15.00	104.80	6498.28	-6.12	2.06	-4.99	18.87	10.00	10.00	0.00	1430391.95	2393729.27	40° 29' 39.7267 107° 40' 48.315	
6599.99	24.36	104.80	6592.15	87.75	5.65	-13.70	51.86	9.36	9.36	0.00	1430383.23	2393762.27	40° 29' 39.6486 107° 40' 47.886	
6699.99	24.36	104.80	6683.25	178.85	10.00	-24.24	91.73	0.00	0.00	0.00	1430372.70	2393802.14	40° 29' 39.5542 107° 40' 47.366	
6799.99	24.36	104.80	6774.35	269.95	14.34	-34.77	131.61	0.00	0.00	0.00	1430362.16	2393842.01	40° 29' 39.4599 107° 40' 46.847	
6899.99	24.36	104.80	6865.45	361.05	18.68	-45.31	171.48	0.00	0.00	0.00	1430351.63	2393881.88	40° 29' 39.3655 107° 40' 46.328	
6999.99	24.36	104.80	6956.55	452.15	23.03	-55.84	211.35	0.00	0.00	0.00	1430341.10	2393921.75	40° 29' 39.2711 107° 40' 45.808	
7099.99	24.36	104.80	7047.65	543.25	27.37	-66.37	251.22	0.00	0.00	0.00	1430330.56	2393961.62	40° 29' 39.1767 107° 40' 45.289	
7199.99	24.36	104.80	7138.75	634.35	31.72	-76.91	291.09	0.00	0.00	0.00	1430320.03	2394001.49	40° 29' 39.0823 107° 40' 44.770	
7299.99	24.78	115.99	7229.80	725.40	37.95	-89.27	330.46	4.67	0.42	11.19	1430307.66	2394040.86	40° 29' 38.9697 107° 40' 44.257	
7399.99	28.21	137.18	7319.48	815.08	58.90	-115.86	365.45	10.00	3.44	21.19	1430281.07	2394075.85	40° 29' 38.7155 107° 40' 43.795	
7499.98	34.14	152.84	7405.15	900.75	96.42	-158.28	394.39	10.00	5.93	15.66	1430238.66	2394104.80	40° 29' 38.3036 107° 40' 43.407	
7599.98	41.49	163.95	7484.18	979.78	149.35	-215.22	416.42	10.00	7.36	11.10	1430181.71	2394126.82	40° 29' 37.7464 107° 40' 43.104	
7699.98	49.64	172.10	7554.19	1049.79	216.09	-284.97	430.85	10.00	8.15	8.15	1430111.96	2394141.25	40° 29' 37.0608 107° 40' 42.895	
7799.98	58.23	178.45	7613.04	1108.64	294.62	-365.41	437.25	10.00	8.59	6.35	1430031.53	2394147.65	40° 29' 36.2677 107° 40' 42.787	
7899.98	67.08	183.70	7658.95	1154.55	382.54	-454.09	435.43	10.00	8.85	5.25	1429942.85	2394145.83	40° 29' 35.3913 107° 40' 42.782	
7999.98	76.09	188.29	7690.53	1186.13	477.18	-548.31	425.44	10.00	9.00	4.59	1429848.63	2394135.84	40° 29' 34.4580 107° 40' 42.882	
8099.98	85.17	192.54	7706.80	1202.40	575.68	-645.21	407.58	10.00	9.08	4.25	1429751.72	2394117.98	40° 29' 33.4964 107° 40' 43.082	
8153.33	87.75	193.71	7710.10	1205.70	628.77	-697.07	395.49	5.30	4.83	2.20	1429699.87	2394105.89	40° 29' 32.9812 107° 40' 43.222	
8199.98	90.00	194.73	7709.00	1204.60	675.16	-742.11	383.14	5.30	4.83	2.19	1429654.83	2394093.54	40° 29' 32.5333 107° 40' 43.367	
8299.98	90.00	194.73	7709.00	1204.60	774.62	-838.82	357.71	0.00	0.00	0.00	1429558.11	2394068.11	40° 29' 31.5717 107° 40' 43.666	
8399.98	90.00	194.73	7709.00	1204.60	874.08	-935.54	332.29	0.00	0.00	0.00	1429461.40	2394042.69	40° 29' 30.6101 107° 40' 43.964	
8499.98	90.00	194.73	7709.00	1204.60	973.53	-1032.25	306.86	0.00	0.00	0.00	1429364.69	2394017.27	40° 29' 29.6485 107° 40' 44.262	
8599.98	90.00	194.73	7709.00	1204.60	1072.99	-1128.96	281.44	0.00	0.00	0.00	1429267.97	2393991.84	40° 29' 28.6869 107° 40' 44.560	
8699.98	90.00	194.73	7709.00	1204.60	1172.45	-1225.68	256.01	0.00	0.00	0.00	1429171.26	2393966.42	40° 29' 27.7253 107° 40' 44.858	
8799.98	90.00	194.73	7709.00	1204.60	1271.90	-1322.39	230.59	0.00	0.00	0.00	1429074.54	2393940.99	40° 29' 26.7637 107° 40' 45.157	
8899.98	90.00	194.73	7709.00	1204.60	1371.36	-1419.10	205.17	0.00	0.00	0.00	1428977.83	2393915.57	40° 29' 25.8021 107° 40' 45.455	
8999.98	90.00	194.73	7709.00	1204.60	1470.81	-1515.82	179.74	0.00	0.00	0.00	1428881.12	2393890.14	40° 29' 24.8405 107° 40' 45.753	
9099.98	90.00	194.73	7709.00	1204.60	1570.27	-1612.53	154.32	0.00	0.00	0.00	1428784.40	2393864.72	40° 29' 23.8789 107° 40' 46.051	
9199.98	90.00	194.73	7709.00	1204.60	1669.73	-1709.25	128.89	0.00	0.00	0.00	1428687.69	2393839.30	40° 29' 22.9173 107° 40' 46.349	

MD usft	Inc deg	Azi deg	TVD usft	TVDSS usft	VSEC usft	+N/S- usft	+E/W- usft	DLS °/100 ft	Build °/100 ft	Turn °/100 ft	Northing usft	Easting usft	Latitude deg	Longitude deg
9299.98	90.00	194.73	7709.00	1204.60	1769.18	-1805.96	103.47	0.00	0.00	0.00	1428590.98	2393813.87	40° 29' 21.9557	107° 40' 46.648
9399.98	90.00	194.73	7709.00	1204.60	1868.64	-1902.67	78.04	0.00	0.00	0.00	1428494.26	2393788.45	40° 29' 20.9941	107° 40' 46.946
9499.98	90.00	194.73	7709.00	1204.60	1968.10	-1999.39	52.62	0.00	0.00	0.00	1428397.55	2393763.02	40° 29' 20.0325	107° 40' 47.244
9599.98	90.00	194.73	7709.00	1204.60	2067.55	-2096.10	27.19	0.00	0.00	0.00	1428300.83	2393737.60	40° 29' 19.0709	107° 40' 47.542
9699.98	90.00	194.73	7709.00	1204.60	2167.01	-2192.82	1.77	0.00	0.00	0.00	1428204.12	2393712.17	40° 29' 18.1093	107° 40' 47.840
9799.98	90.00	194.73	7709.00	1204.60	2266.47	-2289.53	-23.65	0.00	0.00	0.00	1428107.41	2393686.75	40° 29' 17.1477	107° 40' 48.139
9899.98	90.00	194.73	7709.00	1204.60	2365.92	-2386.24	-49.08	0.00	0.00	0.00	1428010.69	2393661.32	40° 29' 16.1861	107° 40' 48.437
9999.98	90.00	194.73	7709.00	1204.60	2465.38	-2482.96	-74.50	0.00	0.00	0.00	1427913.98	2393635.90	40° 29' 15.2245	107° 40' 48.735
10099.98	90.00	194.73	7709.00	1204.60	2564.83	-2579.67	-99.93	0.00	0.00	0.00	1427817.27	2393610.48	40° 29' 14.2629	107° 40' 49.033
10199.98	90.00	194.73	7709.00	1204.60	2664.29	-2676.38	-125.35	0.00	0.00	0.00	1427720.55	2393585.05	40° 29' 13.3013	107° 40' 49.331
10299.98	90.00	194.73	7709.00	1204.60	2763.75	-2773.10	-150.78	0.00	0.00	0.00	1427623.84	2393559.63	40° 29' 12.3397	107° 40' 49.630
10399.98	90.00	194.73	7709.00	1204.60	2863.20	-2869.81	-176.20	0.00	0.00	0.00	1427527.12	2393534.20	40° 29' 11.3781	107° 40' 49.928
10499.98	90.00	194.73	7709.00	1204.60	2962.66	-2966.53	-201.63	0.00	0.00	0.00	1427430.41	2393508.78	40° 29' 10.4165	107° 40' 50.226
10599.98	90.00	194.73	7709.00	1204.60	3062.12	-3063.24	-227.05	0.00	0.00	0.00	1427333.70	2393483.35	40° 29' 9.45497	107° 40' 50.524
10699.98	90.00	194.73	7709.00	1204.60	3161.57	-3159.95	-252.47	0.00	0.00	0.00	1427236.98	2393457.93	40° 29' 8.49337	107° 40' 50.822
10799.98	90.00	194.73	7709.00	1204.60	3261.03	-3256.67	-277.90	0.00	0.00	0.00	1427140.27	2393432.50	40° 29' 7.53177	107° 40' 51.120
10899.98	90.00	194.73	7709.00	1204.60	3360.49	-3353.38	-303.32	0.00	0.00	0.00	1427043.55	2393407.08	40° 29' 6.57017	107° 40' 51.419
10999.98	90.00	194.73	7709.00	1204.60	3459.94	-3450.09	-328.75	0.00	0.00	0.00	1426946.84	2393381.66	40° 29' 5.60857	107° 40' 51.717
11099.98	90.00	194.73	7709.00	1204.60	3559.40	-3546.81	-354.17	0.00	0.00	0.00	1426850.13	2393356.23	40° 29' 4.64697	107° 40' 52.015
11199.98	90.00	194.73	7709.00	1204.60	3658.85	-3643.52	-379.60	0.00	0.00	0.00	1426753.41	2393330.81	40° 29' 3.68536	107° 40' 52.313
11299.98	90.00	194.73	7709.00	1204.60	3758.31	-3740.24	-405.02	0.00	0.00	0.00	1426656.70	2393305.38	40° 29' 2.72376	107° 40' 52.611
11399.98	90.00	194.73	7709.00	1204.60	3857.77	-3836.95	-430.45	0.00	0.00	0.00	1426559.99	2393279.96	40° 29' 1.76216	107° 40' 52.909
11499.98	90.00	194.73	7709.00	1204.60	3957.22	-3933.66	-455.87	0.00	0.00	0.00	1426463.27	2393254.53	40° 29' 0.80056	107° 40' 53.208
11599.98	90.00	194.73	7709.00	1204.60	4056.68	-4030.38	-481.29	0.00	0.00	0.00	1426366.56	2393229.11	40° 28' 59.8389	107° 40' 53.506
11699.98	90.00	194.73	7709.00	1204.60	4156.14	-4127.09	-506.72	0.00	0.00	0.00	1426269.84	2393203.68	40° 28' 58.8773	107° 40' 53.804
11799.98	90.00	194.73	7709.00	1204.60	4255.59	-4223.81	-532.14	0.00	0.00	0.00	1426173.13	2393178.26	40° 28' 57.9157	107° 40' 54.102
11899.98	90.00	194.73	7709.00	1204.60	4355.05	-4320.52	-557.57	0.00	0.00	0.00	1426076.42	2393152.84	40° 28' 56.9541	107° 40' 54.400
11999.98	90.00	194.73	7709.00	1204.60	4454.50	-4417.23	-582.99	0.00	0.00	0.00	1425979.70	2393127.41	40° 28' 55.9925	107° 40' 54.698
12099.98	90.00	194.73	7709.00	1204.60	4553.96	-4513.95	-608.42	0.00	0.00	0.00	1425882.99	2393101.99	40° 28' 55.0309	107° 40' 54.996
12199.98	90.00	194.73	7709.00	1204.60	4653.42	-4610.66	-633.84	0.00	0.00	0.00	1425786.28	2393076.56	40° 28' 54.0693	107° 40' 55.295
12299.98	90.00	194.73	7709.00	1204.60	4752.87	-4707.37	-659.26	0.00	0.00	0.00	1425689.56	2393051.14	40° 28' 53.1077	107° 40' 55.593
12399.98	90.00	194.73	7709.00	1204.60	4852.33	-4804.09	-684.69	0.00	0.00	0.00	1425592.85	2393025.71	40° 28' 52.1461	107° 40' 55.891
12499.97	90.00	194.73	7709.00	1204.60	4951.79	-4900.80	-710.11	0.00	0.00	0.00	1425496.13	2393000.29	40° 28' 51.1845	107° 40' 56.189
12599.97	90.00	194.73	7709.00	1204.60	5051.24	-4997.52	-735.54	0.00	0.00	0.00	1425399.42	2392974.86	40° 28' 50.2229	107° 40' 56.487
12699.97	90.00	194.73	7709.00	1204.60	5150.70	-5094.23	-760.96	0.00	0.00	0.00	1425302.71	2392949.44	40° 28' 49.2613	107° 40' 56.785
12799.97	90.00	194.73	7709.00	1204.60	5250.16	-5190.94	-786.39	0.00	0.00	0.00	1425205.99	2392924.02	40° 28' 48.2996	107° 40' 57.083
12899.97	90.00	194.73	7709.00	1204.60	5349.61	-5287.66	-811.81	0.00	0.00	0.00	1425109.28	2392898.59	40° 28' 47.3380	107° 40' 57.381
12919.29	90.00	194.73	7709.00	1204.60	5368.82	-5306.34	-816.72	0.00	0.00	0.00	1425090.60	2392893.68	40° 28' 47.1523	107° 40' 57.439
12921.74	90.00	194.73	7709.00	1204.60	5371.26	-5308.71	-817.35	0.00	0.00	0.00	1425088.23	2392893.06	40° 28' 47.1287	107° 40' 57.446