Ground Control Survey Report





UNITED STATES GEOLOGICAL SURVEY
AK YUKON KOSKOKWIM QL2 LIDAR

TASK ORDER NUMBER: G16PD00650

Contractor: Woolpert, Inc.
Woolpert Project # 76769

March 2017

Ground Control Survey Report

UNITED STATES GEOLOGICAL SURVEY –AK YUKON KOSKOKWIM QL2 LIDAR

Task Order G16PD00650

Woolpert
4454 Idea Center Boulevard
Dayton, Ohio 45430.1500
Phone: 937.461.5660

Table of Contents

Section 1: Survey Report 1-1

Section 2: Ground Control / Geodetic Control Coordinate Listings 2-1

Section 3: Ground Control / Photos 3-1

Section 4: Survey Control Stations 4-1

Section 5: GPS Control Diagram 5-1

Section 1: Survey Report

TASK ORDER NAME: UNITED STATES GEOLOGICAL SURVEY AK YUKON KOSKOKWIM QL2 LIDAR

Task Order: #G16PD00650

This report contains a comprehensive outline of the Ground Control Survey that supported the Yukon Koskokwim airborne LiDAR collection. All surveys were performed in such a way as to achieve ground control accuracies that meet or exceed the National Mapping Accuracy Standards.

Project Area

The project consists of 1,667 square miles located within the Yukon-Kuskokwim River delta between the communities of Chevak and Newtok in Western Alaska.

Purpose

The purpose of this survey was to provide ground truth points and quality control for the West Coast Alaska lidar. Checkpoint sites were chosen to represent various land cover types found within the project area. The two primary land cover types in this region are Vegetated & Non-Vegetated. Typical vegetated areas consist of tundra, grasses, and alder & willow brush. The non-vegetated areas were gravel/dirt roads, gravel runways, and asphalt.

Date of Survey

Multiple ground control field missions took place during the month of November, 2016.

Monumentation

Prior to aerial acquisition, Kodiak Mapping, Inc. (KMI) field crews performed a field reconnaissance to verify the existence and suitability of pre-selected existing National Geodetic Survey (NGS) CORS stations. These existing CORS control stations were utilized as checks to ensure that quality x, y, and z coordinate values were computed for each of the newly established LiDAR control stations. This survey was tied into the existing control network of Lidar base stations in Newtok, Chevak, Emmonak, & Mekoryuk. New control points were established in Scammon Bay, Alakanuk, & Hooper Bay. New control was then processed with the NGS CORS stations at Mekoryuk & Bethel.

Accuracy Standards

The data collected under this task order shall meet ASPRS Positional Accuracy Standards for Digital Geospatial Data (Edition 1, Version 1.0) Guidelines. These standards specify that vertical accuracy be reported at the 95 percent confidence level for data tested by an independent source of higher accuracy. For example the metadata statement shall read, “Tested (meters, feet) vertical accuracy at 95 percent confidence level.”

The accuracy (ACCz) for the derived DEM shall be calculated in four ways, and reported in the metadata accordingly.

- The RMSEZ (Non-Vegetated) is required to meet ≤10.0 cm
- The Non-Vegetated Vertical Accuracy (NVA) is required to meet ≤19.6 cm at a 95% confidence level, derived according to NSSDA, i.e., based on RMSEZ of 10.0 cm in the "open terrain" and/or "urban" land cover categories
- The Vegetated Vertical Accuracy (VVA) is required to meet ≤29.4 cm at a 95th percentile level, derived according to ASPRS Guidelines, Vertical Accuracy Reporting for lidar Data, i.e., based on the 95th percentile error in Vegetated land cover categories combined (Tall Grass, Brush, Forested Areas)
- The relative accuracy of the lidar data will be ≤ 8 cm RMSEZ between adjacent swaths with a maximum difference of ± 16 cm. A detailed report of this assessment will be included in the metadata and project report GPS Equipment

Methodology

KMI used Trimble R6, R8, & R10 Carrier Phase Receivers for the field GPS survey. Each checkpoint was positioned with real time kinematic (RTK) GPS methods. Redundant RTK observations were obtained at each position to ensure adequate GPS closure and as a quality control check.

In Scammon Bay & Hooper Bay ground transportation was available to assist the surveyors in acquiring coverage throughout the community. In the remaining communities, the surveyors walked the gravel runways, airport aprons, and access roads to the airports.

Geotagged photos were taken at each checkpoint to verify the cover type. Photos were taken looking northerly & westerly with the survey instrument set up on the checkpoint.

Following survey activities subsets of the points surveyed in each community were selected to calculate vertical adjustments of the data, while the remainder were held back for QA/QC purposes.

Real-Time Kinematic (RTK) & Fast-Static GPS

Control points were collected using a combination of Fast-Static Global Navigation Satellite System (GNSS) observations and Real Time Kinematic (RTK) methods. Published National Geodetic Survey (CORS) control was used were possible, and the Online Positioning User Service (OPUS) was used to verify results.

GPS Data Analysis and Processing

The GPS data was processed in Trimble Business Center, Version 3.70 Software. The baseline processing report, Loop Closure report, and Network Adjustment reports, were generated & reviewed to ensure final coordinate accuracy. Final coordinate values were exported to text files (PENZD and PLLHD format) in UTM zone 3 north, NAD83 (Alaska), meter. Vertical values are NAVD88 GEOID12B, meters.

The positions for sca-1 (Scammon Bay), 2021 (Alakanuk), & 2201 (Hooper Bay) were calculated from minimally constrained networks using CORS data from Mekoryuk_AK2008 CORS ARP, and Bethel WAAS CORS ARP. All baselines were fixed. Published values for Mekoryuk_AK2008 CORS ARP were then used in the networks to position the three communities' local base points and the resultant checkpoint survey.

Datum Reference and Final Coordinates

The processing datum for the GNSS control survey was the 2011 readjustment of North American Datum of 1983 (NAD83-2011) Epoch 2010.0 with ellipsoid heights reported in meters. All times were referenced to Universal Time Coordinated (UTC). Horizontal coordinates were projected to Universal Transverse Mercator (UTM) Zone 3 North and elevations have also been given as North American Vertical Datum of 1988 (NAVD88) orthometric heights using the GEOID12B separation values.

Quality Assurance

The land cover checkpoint locations selected will be an accurate representation of the two terrain types suitable for quality control of the LiDAR product. From all points surveyed, subsets were selected for use as control and for verification of the LiDAR data. Redundant survey methods & checkpoint locations add to the confidence of the horizontal & vertical components. Survey vectors were computed at the 95% confidence level and precisions are listed in the vector list tables for each community.

Section 2: Ground Control / Geodetic Control Coordinate Listings

- Coordinate System: Grid
- Horizontal Datum: NAD83 2011 UTM 3 North
- Vertical Datum: NAVD88
- Geoid Model: GEOID12B
- Units: Meter

Point ID	UTM Zone 3 North		Elevation (m)	Feature Code
	Easting (m)	Northing (m)		
1101	469429.493	6856996.501	3.557	NVA
1102	469429.492	6856996.502	3.554	NVA
1103	469675.972	6857030.965	3.599	NVA
1104	469675.972	6857030.965	3.596	NVA
1105	469682.003	6857005.204	3.022	VVA
1106	469682.001	6857005.204	3.022	VVA
1107	469878.119	6856940.501	3.664	NVA
1108	469878.120	6856940.499	3.663	NVA
1109	469989.639	6856890.773	3.765	NVA
1110	469989.640	6856890.776	3.768	NVA
1111	470099.774	6856841.926	4.496	NVA
1112	470099.774	6856841.924	4.499	NVA
1113	470104.549	6856753.977	4.716	NVA
1114	470104.548	6856753.975	4.717	NVA
1115	470289.884	6856773.299	5.311	NVA
1116	470289.885	6856773.301	5.311	NVA
1117	470275.865	6856755.253	3.714	VVA
1118	470275.864	6856755.251	3.715	VVA
1119	470112.938	6856875.120	4.401	VVA
1120	470112.936	6856875.122	4.405	VVA
1121	469942.259	6856949.372	3.646	NVA
1122	469942.259	6856949.373	3.647	NVA
1123	469769.654	6857026.208	3.566	NVA
1124	469769.653	6857026.207	3.561	NVA
1125	469649.231	6857080.510	3.642	NVA
1126	469649.232	6857080.509	3.640	NVA

Point ID	UTM Zone 3 North		Elevation (m)	Feature Code
	Easting (m)	Northing (m)		
1127	469517.144	6857138.371	3.613	NVA
1128	469517.143	6857138.371	3.617	NVA
1129	469319.225	6857203.516	3.457	NVA
1130	469319.224	6857203.515	3.457	NVA
1131	469424.004	6857141.037	3.578	NVA
1132	469424.002	6857141.038	3.573	NVA
1133	469498.217	6857107.249	3.563	NVA
1134	469498.217	6857107.252	3.566	NVA
1135	469545.606	6856747.970	7.545	NVA
1136	469545.606	6856747.968	7.543	NVA
1137	469565.489	6856748.700	5.090	VVA
1138	469565.489	6856748.700	5.087	VVA
1139	469774.815	6856560.879	11.722	NVA
1140	469774.815	6856560.880	11.723	NVA
1141	469918.189	6856548.736	17.182	NVA
1142	469918.189	6856548.737	17.185	NVA
1143	470063.991	6856527.942	24.805	NVA
1144	470063.993	6856527.943	24.804	NVA
1145	470102.645	6856494.589	27.751	VVA
1146	470102.646	6856494.589	27.745	VVA
1147	470210.031	6856405.277	38.508	NVA
1148	470210.033	6856405.277	38.507	NVA
1149	470176.184	6856319.893	42.904	NVA
1150	470176.183	6856319.890	42.903	NVA
1151	470124.325	6856392.450	40.844	NVA
1152	470124.326	6856392.452	40.847	NVA
1153	470043.090	6856437.457	38.493	NVA
1154	470043.090	6856437.457	38.490	NVA
1155	470038.789	6856423.012	40.039	NVA
1156	470038.791	6856423.013	40.042	NVA
1157	470058.426	6856471.463	38.748	NVA
1158	470058.426	6856471.463	38.749	NVA
1159	470153.212	6856422.295	38.459	NVA
1160	470153.212	6856422.297	38.463	NVA
2202	439594.836	6821143.633	4.211	NVA
2203	439594.838	6821143.634	4.210	NVA
2204	439456.418	6821160.445	3.298	NVA
2205	439456.418	6821160.446	3.299	NVA

Point ID	UTM Zone 3 North		Elevation (m)	Feature Code
	Easting (m)	Northing (m)		
2206	439383.109	6821255.558	4.218	NVA
2207	439383.110	6821255.557	4.221	NVA
2208	441172.848	6821986.733	7.021	NVA
2209	441172.848	6821986.736	7.021	NVA
2210	441218.573	6821920.820	7.737	NVA
2211	441218.571	6821920.821	7.736	NVA
2212	441242.021	6821908.899	7.396	VVA
2213	441242.020	6821908.901	7.401	VVA
2214	441282.093	6821860.175	6.661	NVA
2215	441282.093	6821860.178	6.663	NVA
2216	441319.822	6821803.881	5.969	NVA
2217	441319.822	6821803.881	5.967	NVA
2218	441353.424	6821747.189	5.280	NVA
2219	441353.423	6821747.189	5.283	NVA
2220	441397.878	6821672.867	5.027	NVA
2221	441397.880	6821672.867	5.028	NVA
2222	441435.716	6821612.265	5.529	NVA
2223	441435.715	6821612.263	5.526	NVA
2224	441457.734	6821602.032	5.544	VVA
2225	441457.733	6821602.030	5.538	VVA
2226	441503.707	6821617.174	6.027	NVA
2227	441503.707	6821617.172	6.027	NVA
2228	441576.369	6821623.532	6.356	NVA
2229	441576.371	6821623.531	6.357	NVA
2230	441631.382	6821629.547	8.816	NVA
2231	441631.382	6821629.547	8.817	NVA
2232	441069.294	6822086.504	8.815	NVA
2233	441069.292	6822086.503	8.816	NVA
2234	441005.212	6822049.380	9.628	NVA
2235	441005.212	6822049.379	9.626	NVA
2236	440903.052	6821984.630	7.316	NVA
2237	440903.055	6821984.629	7.320	NVA
2238	440786.253	6821915.703	5.024	NVA
2239	440786.257	6821915.705	5.026	NVA
2240	439373.645	6821289.215	4.095	NVA
2241	439373.645	6821289.213	4.094	NVA
2242	439351.605	6821309.439	4.206	NVA
2243	439351.607	6821309.439	4.202	NVA

Point ID	UTM Zone 3 North		Elevation (m)	Feature Code
	Easting (m)	Northing (m)		
2244	439336.330	6821302.932	4.292	NVA
2245	439336.331	6821302.931	4.291	NVA
2246	439351.398	6821277.997	4.270	NVA
2247	439351.400	6821277.997	4.269	NVA
2248	439367.495	6821249.757	4.282	NVA
2249	439367.495	6821249.756	4.283	NVA
2250	439341.669	6821231.852	4.389	NVA
2251	439341.670	6821231.850	4.389	NVA
2252	439326.261	6821258.166	4.408	NVA
2253	439326.260	6821258.165	4.409	NVA
2254	439318.520	6821281.156	4.438	NVA
2255	439318.521	6821281.155	4.439	NVA
2256	439231.324	6821368.828	4.803	VVA
2257	439231.326	6821368.829	4.804	VVA
2258	439160.468	6821348.239	5.081	VVA
2259	439160.469	6821348.241	5.087	VVA
2260	439216.398	6821270.174	4.277	NVA
2261	439216.401	6821270.174	4.275	NVA
2262	439243.633	6821220.163	4.092	VVA
2263	439243.635	6821220.164	4.097	VVA
2301	467994.106	6822778.941	13.525	NVA
2302	467994.106	6822778.940	13.529	NVA
2303	467994.107	6822778.940	13.530	NVA
2304	467899.524	6822913.151	14.965	NVA
2305	467899.524	6822913.150	14.962	NVA
2306	467960.642	6823003.577	15.528	NVA
2307	467960.643	6823003.578	15.529	NVA
2308	467993.030	6823055.313	16.151	NVA
2309	467993.031	6823055.314	16.155	NVA
2310	468025.062	6823103.361	16.353	NVA
2311	468025.062	6823103.362	16.352	NVA
2312	468050.558	6823122.447	14.591	VVA
2313	468050.558	6823122.447	14.588	VVA
2314	468056.469	6823150.046	16.929	NVA
2315	468056.468	6823150.046	16.932	NVA
2316	468087.598	6823197.770	17.292	NVA
2317	468087.597	6823197.771	17.292	NVA
2318	468041.312	6823234.207	15.954	VVA

Point ID	UTM Zone 3 North		Elevation (m)	Feature Code
	Easting (m)	Northing (m)		
2319	468041.310	6823234.207	15.953	VVA
2320	468027.121	6823169.770	17.048	NVA
2321	468027.122	6823169.769	17.048	NVA
2322	467995.072	6823122.419	16.549	NVA
2323	467995.071	6823122.420	16.549	NVA
2324	467964.853	6823074.156	16.280	NVA
2325	467964.853	6823074.156	16.280	NVA
2326	467933.717	6823026.671	15.796	NVA
2327	467933.718	6823026.670	15.797	NVA
2328	467901.732	6822979.592	15.420	NVA
2329	467901.731	6822979.594	15.423	NVA
2330	467869.958	6822931.796	15.012	NVA
2331	467869.959	6822931.797	15.013	NVA
2332	467829.484	6822898.626	15.215	vasi
2333	467829.483	6822898.627	15.217	vasi
2334	467825.521	6822879.395	13.712	VVA
2335	467825.521	6822879.397	13.713	VVA
2336	467858.953	6822833.764	14.494	NVA
2337	467858.954	6822833.765	14.492	NVA
2338	467914.210	6822829.022	14.481	NVA
2339	467914.212	6822829.024	14.480	NVA
2401	467988.235	6822719.309	13.241	NVA
2402	467988.234	6822719.308	13.244	NVA
2403	467994.644	6822639.782	10.474	NVA
2404	467994.643	6822639.782	10.473	NVA
2405	468009.726	6822553.647	9.857	NVA
2406	468009.725	6822553.646	9.856	NVA
2407	468021.322	6822490.667	10.519	NVA
2408	468021.323	6822490.666	10.517	NVA
2409	468037.704	6822466.252	10.267	VVA
2410	468037.702	6822466.251	10.269	VVA
2411	468031.305	6822434.044	12.317	NVA
2412	468031.306	6822434.042	12.318	NVA
2413	468041.711	6822375.569	14.934	NVA
2414	468041.711	6822375.567	14.930	NVA
2415	468053.943	6822304.207	16.424	NVA
2416	468053.943	6822304.209	16.428	NVA
2417	468067.217	6822230.638	17.641	NVA

Point ID	UTM Zone 3 North		Elevation (m)	Feature Code
	Easting (m)	Northing (m)		
2418	468067.219	6822230.632	17.638	NVA
2419	468060.849	6822158.319	19.613	VVA
2420	468060.849	6822158.318	19.610	VVA
2421	468085.960	6822085.231	20.295	NVA
2422	468085.960	6822085.232	20.294	NVA
2423	468099.871	6822008.931	20.380	NVA
2424	468099.870	6822008.933	20.381	NVA
2425	468116.378	6821925.506	20.482	NVA
2426	468116.376	6821925.504	20.480	NVA
2427	468115.437	6821871.504	19.073	VVA
2428	468115.437	6821871.504	19.071	VVA
2429	468175.808	6821824.936	17.753	NVA
2430	468175.808	6821824.935	17.751	NVA
2501	519669.952	6755814.650	7.687	NVA
2502	519669.952	6755814.648	7.684	NVA
2503	519675.589	6755793.289	7.357	NVA
2504	519675.589	6755793.289	7.356	NVA
2505	519657.469	6755790.496	7.338	NVA
2506	519657.470	6755790.496	7.338	NVA
2507	519645.279	6755807.912	7.721	NVA
2508	519645.279	6755807.911	7.719	NVA
2509	519609.152	6755783.728	7.508	NVA
2510	519609.153	6755783.729	7.508	NVA
2511	519627.144	6755739.749	7.600	NVA
2512	519627.144	6755739.749	7.601	NVA
2513	519616.507	6755733.158	7.425	NVA
2514	519616.507	6755733.159	7.426	NVA
2515	519619.913	6755716.610	6.516	VVA
2516	519619.912	6755716.609	6.517	VVA
2517	519634.179	6755747.512	7.047	VVA
2518	519634.179	6755747.514	7.047	VVA
2519	519584.237	6755771.628	6.224	VVA
2520	519584.236	6755771.628	6.224	VVA
2521	519593.877	6755779.306	7.379	VVA
2522	519593.877	6755779.306	7.377	VVA
2523	519582.865	6755798.535	7.350	NVA
2524	519582.864	6755798.535	7.351	NVA
2525	519591.907	6755806.458	7.279	NVA

Point ID	UTM Zone 3 North		Elevation (m)	Feature Code
	Easting (m)	Northing (m)		
2526	519591.906	6755806.460	7.279	NVA
2527	519578.971	6755826.895	7.397	NVA
2528	519578.973	6755826.895	7.395	NVA
2529	519569.266	6755821.433	7.267	NVA
2530	519569.265	6755821.433	7.267	NVA
2531	519552.643	6755853.510	7.251	NVA
2532	519552.643	6755853.510	7.252	NVA
2533	519560.793	6755859.792	7.200	NVA
2534	519560.793	6755859.792	7.199	NVA
2535	519538.130	6755881.080	7.118	NVA
2536	519538.129	6755881.080	7.116	NVA
2537	519521.476	6755877.993	5.456	VVA
2538	519521.477	6755877.991	5.450	VVA
2539	519508.894	6755912.165	5.606	VVA
2540	519508.892	6755912.165	5.609	VVA
2541	519505.169	6755939.073	6.711	NVA
2542	519505.169	6755939.072	6.704	NVA
2543	519483.062	6755978.106	6.437	NVA
2544	519483.062	6755978.104	6.440	NVA
2601	519546.944	6755885.460	7.058	NVA
2602	519546.943	6755885.458	7.058	NVA
2603	519525.883	6755922.716	6.835	NVA
2604	519525.884	6755922.716	6.832	NVA
2605	519497.609	6755973.150	6.526	NVA
2606	519497.608	6755973.151	6.522	NVA
2607	519471.402	6756020.006	6.341	NVA
2608	519471.402	6756020.006	6.341	NVA
2609	519452.947	6756071.915	5.274	VVA
2610	519452.946	6756071.916	5.273	VVA
2611	519420.592	6756111.798	5.803	NVA
2612	519420.594	6756111.798	5.800	NVA
2613	519398.065	6756152.327	5.554	NVA
2614	519398.065	6756152.327	5.554	NVA
2615	519373.990	6756195.671	5.449	NVA
2616	519373.990	6756195.672	5.452	NVA
2617	519355.719	6756243.083	4.547	VVA
2618	519355.721	6756243.083	4.547	VVA
2619	519339.459	6756234.579	4.862	NVA

Point ID	UTM Zone 3 North		Elevation (m)	Feature Code
	Easting (m)	Northing (m)		
2620	519339.457	6756234.581	4.869	NVA
2621	519361.708	6756194.681	5.283	NVA
2622	519361.708	6756194.684	5.287	NVA
2623	519385.059	6756154.159	5.389	NVA
2624	519385.060	6756154.161	5.392	NVA
2625	519399.783	6756100.315	4.070	VVA
2626	519399.783	6756100.312	4.068	VVA
2627	519434.883	6756064.997	6.066	NVA
2628	519434.882	6756064.997	6.067	NVA
2629	519452.711	6756034.132	6.207	NVA
2630	519452.711	6756034.131	6.205	NVA
2631	519468.088	6756006.914	6.289	NVA
2632	519468.088	6756006.914	6.292	NVA
2700	525746.231	6961049.176	5.786	NVA
2701	525746.231	6961049.176	5.787	NVA
2702	525795.834	6961051.272	6.253	NVA
2703	525795.835	6961051.272	6.253	NVA
2704	525793.373	6960961.464	5.858	NVA
2705	525793.375	6960961.464	5.857	NVA
2706	525868.373	6960935.077	5.639	NVA
2707	525868.373	6960935.078	5.641	NVA
2708	525871.904	6960872.134	5.378	NVA
2709	525871.905	6960872.134	5.377	NVA
2710	525880.051	6960822.696	4.720	VVA
2711	525880.052	6960822.695	4.722	VVA
2712	525843.666	6960815.198	5.764	NVA
2713	525843.665	6960815.198	5.760	NVA
2714	525800.281	6960814.612	6.112	NVA
2715	525800.280	6960814.610	6.112	NVA
2716	525831.525	6960718.617	6.179	NVA
2717	525831.525	6960718.617	6.179	NVA
2718	525724.762	6960908.005	5.832	NVA
2719	525724.762	6960908.004	5.830	NVA
2720	525731.845	6961003.120	5.521	NVA
2721	525731.847	6961003.120	5.520	NVA
2722	525735.353	6960953.712	5.905	NVA
2723	525735.352	6960953.712	5.903	NVA
2724	525721.361	6960900.272	5.040	VVA

Point ID	UTM Zone 3 North		Elevation (m)	Feature Code
	Easting (m)	Northing (m)		
2725	525721.360	6960900.272	5.041	VVA
2801	525867.864	6961044.539	5.642	NVA
2802	525867.864	6961044.537	5.644	NVA
2803	525916.854	6961094.139	5.875	NVA
2804	525916.853	6961094.138	5.877	NVA
2805	525952.751	6961146.620	5.840	NVA
2806	525952.750	6961146.620	5.839	NVA
2807	525998.172	6961210.491	5.975	NVA
2808	525998.172	6961210.491	5.975	NVA
2809	525980.307	6961283.969	4.676	VVA
2810	525980.308	6961283.970	4.676	VVA
2811	525996.268	6961355.926	5.730	NVA
2812	525996.268	6961355.925	5.737	NVA
2813	525991.021	6961416.918	5.694	NVA
2814	525991.021	6961416.917	5.693	NVA
2815	525979.721	6961462.812	4.539	VVA
2816	525979.721	6961462.812	4.541	VVA
2817	525985.721	6961526.543	5.757	NVA
2818	525985.722	6961526.543	5.755	NVA
2819	526026.863	6961527.530	5.698	NVA
2820	526026.864	6961527.531	5.698	NVA
2821	526031.393	6961464.224	5.617	NVA
2822	526031.392	6961464.223	5.618	NVA
2823	526036.188	6961401.718	5.652	NVA
2824	526036.189	6961401.719	5.650	NVA
2825	526038.912	6961343.183	5.737	NVA
2826	526038.913	6961343.184	5.732	NVA
2827	526043.034	6961280.396	5.732	NVA
2828	526043.035	6961280.396	5.731	NVA
2829	526051.861	6961198.242	5.579	NVA
2830	526051.861	6961198.242	5.576	NVA
2831	526099.132	6961185.690	4.267	VVA
2832	526099.131	6961185.690	4.270	VVA
2833	526049.036	6961127.140	5.789	NVA
2834	526049.036	6961127.140	5.789	NVA
2835	526059.685	6961083.312	5.255	VVA
2836	526059.684	6961083.315	5.257	VVA
2837	526017.808	6961112.894	5.855	NVA

Point ID	UTM Zone 3 North		Elevation (m)	Feature Code
	Easting (m)	Northing (m)		
2838	526017.806	6961112.892	5.857	NVA
2839	525737.593	6960780.013	5.927	NVA
2840	525737.592	6960780.013	5.926	NVA
2841	525740.515	6960727.686	6.216	NVA
2842	525740.511	6960727.685	6.219	NVA
2843	525740.516	6960727.686	5.915	NVA
2844	525740.517	6960727.685	5.911	NVA
2845	525747.609	6960673.585	5.608	NVA
2846	525747.609	6960673.586	5.610	NVA
2847	525753.354	6960629.697	4.342	VVA
2848	525753.352	6960629.698	4.345	VVA
2900	514495.753	6950573.859	6.567	NVA
2901	514495.754	6950573.859	6.570	NVA
2902	514504.781	6950651.430	6.808	NVA
2903	514504.782	6950651.432	6.807	NVA
2904	514438.189	6950656.772	6.090	NVA
2905	514438.189	6950656.772	6.089	NVA
2906	514337.301	6950624.238	4.518	VVA
2907	514337.302	6950624.238	4.518	VVA
2908	514242.828	6950636.915	6.068	NVA
2909	514242.827	6950636.917	6.067	NVA
2910	514243.330	6950752.586	6.033	NVA
2911	514243.329	6950752.587	6.035	NVA
2912	514252.170	6950800.606	4.546	VVA
2913	514252.170	6950800.605	4.540	VVA
2914	514246.630	6950863.868	5.912	NVA
2915	514246.629	6950863.867	5.912	NVA
2916	514203.784	6950864.351	6.015	NVA
2917	514203.785	6950864.349	6.018	NVA
2918	514203.148	6950808.560	6.012	NVA
2919	514203.147	6950808.561	6.011	NVA
2920	514201.993	6950752.781	5.894	NVA
2921	514201.994	6950752.781	5.895	NVA
2922	514202.161	6950696.614	5.910	NVA
2923	514202.160	6950696.613	5.912	NVA
2924	514202.378	6950641.959	5.936	NVA
2925	514202.379	6950641.960	5.939	NVA
2926	514202.201	6950603.332	5.923	NVA

Point ID	UTM Zone 3 North		Elevation (m)	Feature Code
	Easting (m)	Northing (m)		
2927	514202.201	6950603.333	5.925	NVA
2928	514195.440	6950582.131	4.650	VVA
2929	514195.439	6950582.130	4.646	VVA
2930	514201.856	6950565.244	5.973	NVA
2931	514201.856	6950565.244	5.976	NVA
2932	514302.516	6950578.768	4.370	VVA
2933	514302.516	6950578.767	4.369	VVA
2934	514326.634	6950585.264	5.324	NVA
2935	514326.635	6950585.263	5.325	NVA
2936	514400.649	6950584.393	5.371	NVA
2937	514400.648	6950584.392	5.371	NVA
2938	514415.057	6950578.994	4.639	VVA
2939	514415.057	6950578.996	4.641	VVA
2940	514541.362	6950546.334	6.644	NVA
2941	514541.362	6950546.336	6.643	NVA
3000	514248.500	6950578.285	5.874	NVA
3001	514248.501	6950578.286	5.879	NVA
3002	514243.517	6950515.729	5.997	NVA
3003	514243.517	6950515.730	5.995	NVA
3004	514244.623	6950449.250	5.907	NVA
3005	514244.624	6950449.251	5.906	NVA
3006	514244.158	6950391.079	5.955	NVA
3007	514244.157	6950391.082	5.954	NVA
3008	514243.691	6950332.993	5.966	NVA
3009	514243.693	6950332.993	5.969	NVA
3010	514259.299	6950283.418	3.191	VVA
3011	514259.298	6950283.418	3.192	VVA
3012	514243.531	6950217.239	5.973	NVA
3013	514243.531	6950217.238	5.968	NVA
3014	514243.385	6950159.163	5.932	NVA
3015	514243.383	6950159.162	5.932	NVA
3016	514243.696	6950100.886	5.949	NVA
3017	514243.697	6950100.887	5.953	NVA
3018	514203.690	6950041.856	5.996	NVA
3019	514203.691	6950041.853	5.997	NVA
3020	514204.040	6950100.614	5.997	NVA
3021	514204.040	6950100.614	5.998	NVA
3022	514163.076	6950094.572	3.113	VVA

Point ID	UTM Zone 3 North		Elevation (m)	Feature Code
	Easting (m)	Northing (m)		
3023	514163.075	6950094.573	3.118	VVA
3024	514203.471	6950159.103	5.936	NVA
3025	514203.472	6950159.104	5.937	NVA
3026	514203.157	6950217.151	5.945	NVA
3027	514203.158	6950217.152	5.944	NVA
3028	514203.716	6950275.101	5.953	NVA
3029	514203.716	6950275.102	5.953	NVA
3030	514204.252	6950332.967	5.942	NVA
3031	514204.250	6950332.966	5.939	NVA
3032	514193.653	6950361.440	4.238	VVA
3033	514193.652	6950361.440	4.242	VVA
3034	514203.944	6950391.035	5.991	NVA
3035	514203.943	6950391.035	5.993	NVA
3036	514203.996	6950449.323	6.026	NVA
3037	514203.995	6950449.325	6.028	NVA
3038	514194.035	6950480.516	4.477	VVA
3039	514194.034	6950480.517	4.477	VVA
3040	514203.539	6950507.451	5.930	NVA
3041	514203.540	6950507.450	5.931	NVA
3042	514202.984	6950565.106	5.999	NVA
3043	514202.983	6950565.105	5.997	NVA
3102	430347.867	6693832.532	15.930	NVA
3103	430347.867	6693832.533	15.931	NVA
3104	430327.740	6693867.171	16.104	NVA
3105	430327.741	6693867.171	16.105	NVA
3106	430253.025	6693853.933	16.077	NVA
3107	430253.025	6693853.934	16.076	NVA
3108	430276.211	6693797.707	15.712	NVA
3109	430276.211	6693797.709	15.713	NVA
3110	430304.423	6693744.213	15.307	NVA
3111	430304.423	6693744.212	15.305	NVA
3112	430258.339	6693718.321	15.388	NVA
3113	430258.338	6693718.321	15.388	NVA
3114	430106.632	6693664.029	15.119	NVA
3115	430106.632	6693664.029	15.117	NVA
3116	430114.452	6693611.156	15.469	NVA
3117	430114.453	6693611.157	15.471	NVA
3118	430133.514	6693612.692	14.796	VVA

Point ID	UTM Zone 3 North		Elevation (m)	Feature Code
	Easting (m)	Northing (m)		
3119	430133.515	6693612.692	14.791	VVA
3120	430191.204	6693637.714	14.678	VVA
3121	430191.204	6693637.714	14.676	VVA
3122	430222.675	6693657.492	15.432	NVA
3123	430222.676	6693657.492	15.431	NVA
3124	430275.598	6693681.350	15.388	NVA
3125	430275.599	6693681.352	15.386	NVA
3126	430312.458	6693690.773	14.644	VVA
3127	430312.458	6693690.772	14.645	VVA
3128	430379.122	6693730.010	15.432	NVA
3129	430379.122	6693730.011	15.431	NVA
3130	430452.192	6693759.006	15.289	NVA
3131	430452.192	6693759.004	15.285	NVA
3132	430469.202	6693748.668	15.212	VVA
3133	430469.198	6693748.670	15.209	VVA
3134	430443.724	6693798.014	15.264	NVA
3135	430443.725	6693798.015	15.263	NVA
3136	430401.083	6693795.639	15.110	VVA
3137	430401.079	6693795.640	15.108	VVA
3138	430396.432	6693770.490	15.605	NVA
3139	430396.432	6693770.491	15.603	NVA
3140	430341.852	6693754.279	15.565	NVA
3141	430341.852	6693754.280	15.565	NVA
3201	430344.480	6693890.172	15.631	NVA
3202	430344.480	6693890.172	15.634	NVA
3203	430402.917	6693898.471	15.229	NVA
3204	430402.917	6693898.471	15.227	NVA
3205	430461.046	6693903.855	15.554	NVA
3206	430461.046	6693903.856	15.555	NVA
3207	430519.666	6693909.432	15.211	NVA
3208	430519.666	6693909.432	15.214	NVA
3209	430577.305	6693915.424	14.983	NVA
3210	430577.305	6693915.422	14.980	NVA
3211	430638.428	6693915.060	14.140	VVA
3212	430638.430	6693915.059	14.137	VVA
3213	430699.374	6693943.603	14.703	NVA
3214	430699.374	6693943.604	14.703	NVA
3215	430758.671	6693960.654	14.805	NVA

Point ID	UTM Zone 3 North		Elevation (m)	Feature Code
	Easting (m)	Northing (m)		
3216	430758.672	6693960.654	14.806	NVA
3217	430815.814	6693972.470	14.946	NVA
3218	430815.816	6693972.470	14.946	NVA
3219	430874.190	6693965.169	15.292	NVA
3220	430874.192	6693965.171	15.294	NVA
3221	430907.245	6693945.447	14.522	VVA
3222	430907.245	6693945.448	14.523	VVA
3223	430855.085	6693974.275	15.366	NVA
3224	430855.084	6693974.277	15.373	NVA
3225	430796.028	6693975.207	15.045	NVA
3226	430796.028	6693975.210	15.045	NVA
3227	430738.486	6693958.826	14.767	NVA
3228	430738.488	6693958.827	14.764	NVA
3229	430678.570	6693952.592	14.741	VVA
3230	430678.571	6693952.593	14.740	VVA
3231	430620.362	6693926.610	14.809	NVA
3232	430620.361	6693926.612	14.809	NVA
3233	430561.188	6693919.752	15.086	NVA
3234	430561.188	6693919.752	15.087	NVA
3235	430503.603	6693912.570	15.457	NVA
3236	430503.604	6693912.570	15.456	NVA
3237	430504.101	6693939.604	15.178	VVA
3238	430504.100	6693939.607	15.179	VVA
3239	430443.571	6693907.278	15.541	NVA
3240	430443.570	6693907.280	15.544	NVA
3241	430386.194	6693901.765	15.280	NVA
3242	430386.193	6693901.767	15.285	NVA
3243	430329.498	6693891.102	15.916	NVA
3244	430329.498	6693891.102	15.915	NVA

- Coordinate System: Geodetic
- Horizontal Datum: NAD83 (2011) Epoch 2010.00
- Vertical Datum: NAVD88
- Units: Meter

Point ID	NAD83 2011 Epoch 2010.00		Ellipsoid Height (m)	Feature Code
	(N) Latitude	(W) Longitude		
1101	61°50'40.27823"	-165°34'50.54900"	11.336	NVA
1102	61°50'40.27826"	-165°34'50.54907"	11.334	NVA
1103	61°50'41.46282"	-165°34'33.71557"	11.378	NVA
1104	61°50'41.46284"	-165°34'33.71557"	11.375	NVA
1105	61°50'40.63210"	-165°34'33.28758"	10.801	VVA
1106	61°50'40.63210"	-165°34'33.28765"	10.802	VVA
1107	61°50'38.59721"	-165°34'19.83807"	11.446	NVA
1108	61°50'38.59715"	-165°34'19.83800"	11.445	NVA
1109	61°50'37.02192"	-165°34'12.18255"	11.548	NVA
1110	61°50'37.02203"	-165°34'12.18246"	11.551	NVA
1111	61°50'35.47460"	-165°34'04.62249"	12.281	NVA
1112	61°50'35.47455"	-165°34'04.62250"	12.284	NVA
1113	61°50'32.63391"	-165°34'04.24344"	12.503	NVA
1114	61°50'32.63384"	-165°34'04.24348"	12.505	NVA
1115	61°50'33.31047"	-165°33'51.58247"	13.098	NVA
1116	61°50'33.31051"	-165°33'51.58241"	13.098	NVA
1117	61°50'32.72335"	-165°33'52.53032"	11.502	VVA
1118	61°50'32.72330"	-165°33'52.53037"	11.503	VVA
1119	61°50'36.55099"	-165°34'03.74218"	12.185	VVA
1120	61°50'36.55103"	-165°34'03.74233"	12.189	VVA
1121	61°50'38.90210"	-165°34'15.45751"	11.428	NVA
1122	61°50'38.90214"	-165°34'15.45750"	11.428	NVA
1123	61°50'41.33590"	-165°34'27.30662"	11.346	NVA
1124	61°50'41.33585"	-165°34'27.30667"	11.340	NVA
1125	61°50'43.05619"	-165°34'35.57422"	11.419	NVA
1126	61°50'43.05615"	-165°34'35.57417"	11.417	NVA
1127	61°50'44.88800"	-165°34'44.64187"	11.388	NVA
1128	61°50'44.88801"	-165°34'44.64189"	11.393	NVA
1129	61°50'46.93597"	-165°34'58.21615"	11.230	NVA
1130	61°50'46.93594"	-165°34'58.21622"	11.230	NVA
1131	61°50'44.94729"	-165°34'51.01271"	11.353	NVA

Point ID	NAD83 2011 Epoch 2010.00		Ellipsoid Height (m)	Feature Code
	(N) Latitude	(W) Longitude		
1132	61°50'44.94732"	-165°34'51.01285"	11.349	NVA
1133	61°50'43.87685"	-165°34'45.91713"	11.339	NVA
1134	61°50'43.87694"	-165°34'45.91714"	11.342	NVA
1135	61°50'32.28047"	-165°34'42.45788"	15.333	NVA
1136	61°50'32.28042"	-165°34'42.45790"	15.330	NVA
1137	61°50'32.30979"	-165°34'41.09884"	12.878	VVA
1138	61°50'32.30979"	-165°34'41.09880"	12.874	VVA
1139	61°50'26.30034"	-165°34'26.67257"	19.518	NVA
1140	61°50'26.30037"	-165°34'26.67263"	19.519	NVA
1141	61°50'25.94877"	-165°34'16.86257"	24.979	NVA
1142	61°50'25.94881"	-165°34'16.86256"	24.982	NVA
1143	61°50'25.31815"	-165°34'06.88139"	32.603	NVA
1144	61°50'25.31817"	-165°34'06.88127"	32.601	NVA
1145	61°50'24.25128"	-165°34'04.21862"	35.549	VVA
1146	61°50'24.25127"	-165°34'04.21858"	35.544	VVA
1147	61°50'21.39544"	-165°33'56.82347"	46.309	NVA
1148	61°50'21.39544"	-165°33'56.82333"	46.308	NVA
1149	61°50'18.62674"	-165°33'59.08661"	50.707	NVA
1150	61°50'18.62665"	-165°33'59.08670"	50.707	NVA
1151	61°50'20.95679"	-165°34'02.67541"	48.645	NVA
1152	61°50'20.95684"	-165°34'02.67534"	48.648	NVA
1153	61°50'22.38824"	-165°34'08.25626"	46.293	NVA
1154	61°50'22.38822"	-165°34'08.25624"	46.290	NVA
1155	61°50'21.92024"	-165°34'08.54165"	47.840	NVA
1156	61°50'21.92027"	-165°34'08.54152"	47.843	NVA
1157	61°50'23.49148"	-165°34'07.22806"	46.547	NVA
1158	61°50'23.49147"	-165°34'07.22811"	46.548	NVA
1159	61°50'21.92937"	-165°34'00.71826"	46.259	NVA
1160	61°50'21.92943"	-165°34'00.71823"	46.263	NVA
2202	61°31'09.02529"	-166°08'07.64774"	12.377	NVA
2203	61°31'09.02531"	-166°08'07.64757"	12.376	NVA
2204	61°31'09.49051"	-166°08'17.03222"	11.462	NVA
2205	61°31'09.49052"	-166°08'17.03222"	11.463	NVA
2206	61°31'12.52237"	-166°08'22.10445"	12.381	NVA
2207	61°31'12.52234"	-166°08'22.10437"	12.384	NVA
2208	61°31'37.14415"	-166°06'21.85469"	15.188	NVA
2209	61°31'37.14426"	-166°06'21.85474"	15.188	NVA
2210	61°31'35.03944"	-166°06'18.68477"	15.905	NVA

Point ID	NAD83 2011 Epoch 2010.00		Ellipsoid Height (m)	Feature Code
	(N) Latitude	(W) Longitude		
2211	61°31'35.03949"	-166°06'18.68490"	15.904	NVA
2212	61°31'34.66712"	-166°06'17.08430"	15.564	VVA
2213	61°31'34.66716"	-166°06'17.08442"	15.569	VVA
2214	61°31'33.11469"	-166°06'14.31679"	14.830	NVA
2215	61°31'33.11477"	-166°06'14.31675"	14.832	NVA
2216	61°31'31.31637"	-166°06'11.69912"	14.138	NVA
2217	61°31'31.31635"	-166°06'11.69915"	14.137	NVA
2218	61°31'29.50291"	-166°06'09.36043"	13.450	NVA
2219	61°31'29.50291"	-166°06'09.36047"	13.453	NVA
2220	61°31'27.12572"	-166°06'06.26730"	13.198	NVA
2221	61°31'27.12572"	-166°06'06.26716"	13.199	NVA
2222	61°31'25.18819"	-166°06'03.63764"	13.701	NVA
2223	61°31'25.18813"	-166°06'03.63774"	13.698	NVA
2224	61°31'24.86957"	-166°06'02.13612"	13.716	VVA
2225	61°31'24.86950"	-166°06'02.13616"	13.710	VVA
2226	61°31'25.38389"	-166°05'59.04266"	14.199	NVA
2227	61°31'25.38385"	-166°05'59.04262"	14.199	NVA
2228	61°31'25.62894"	-166°05'54.13315"	14.529	NVA
2229	61°31'25.62892"	-166°05'54.13303"	14.530	NVA
2230	61°31'25.85322"	-166°05'50.41752"	16.988	NVA
2231	61°31'25.85323"	-166°05'50.41750"	16.989	NVA
2232	61°31'40.31112"	-166°06'28.97725"	16.980	NVA
2233	61°31'40.31108"	-166°06'28.97740"	16.982	NVA
2234	61°31'39.07633"	-166°06'33.27117"	17.794	NVA
2235	61°31'39.07631"	-166°06'33.27118"	17.791	NVA
2236	61°31'36.92793"	-166°06'40.11000"	15.481	NVA
2237	61°31'36.92789"	-166°06'40.10981"	15.485	NVA
2238	61°31'34.63635"	-166°06'47.93436"	13.189	NVA
2239	61°31'34.63642"	-166°06'47.93409"	13.192	NVA
2240	61°31'13.60453"	-166°08'22.78456"	12.258	NVA
2241	61°31'13.60446"	-166°08'22.78457"	12.257	NVA
2242	61°31'14.24555"	-166°08'24.29965"	12.369	NVA
2243	61°31'14.24556"	-166°08'24.29955"	12.365	NVA
2244	61°31'14.02666"	-166°08'25.32541"	12.455	NVA
2245	61°31'14.02665"	-166°08'25.32539"	12.454	NVA
2246	61°31'13.22948"	-166°08'24.27647"	12.432	NVA
2247	61°31'13.22949"	-166°08'24.27633"	12.432	NVA
2248	61°31'12.32613"	-166°08'23.15397"	12.445	NVA

Point ID	NAD83 2011 Epoch 2010.00		Ellipsoid Height (m)	Feature Code
	(N) Latitude	(W) Longitude		
2249	61°31'12.32606"	-166°08'23.15393"	12.447	NVA
2250	61°31'11.73298"	-166°08'24.88007"	12.552	NVA
2251	61°31'11.73290"	-166°08'24.88003"	12.552	NVA
2252	61°31'12.57451"	-166°08'25.95369"	12.571	NVA
2253	61°31'12.57449"	-166°08'25.95371"	12.572	NVA
2254	61°31'13.31298"	-166°08'26.50466"	12.601	NVA
2255	61°31'13.31295"	-166°08'26.50457"	12.602	NVA
2256	61°31'16.09645"	-166°08'32.50803"	12.964	VVA
2257	61°31'16.09648"	-166°08'32.50789"	12.965	VVA
2258	61°31'15.39102"	-166°08'37.27761"	13.242	VVA
2259	61°31'15.39109"	-166°08'37.27754"	13.248	VVA
2260	61°31'12.90032"	-166°08'33.40090"	12.439	NVA
2261	61°31'12.90033"	-166°08'33.40072"	12.437	NVA
2262	61°31'11.29981"	-166°08'31.49895"	12.254	VVA
2263	61°31'11.29985"	-166°08'31.49886"	12.260	VVA
2301	61°32'14.10150"	-165°36'07.05779"	21.824	NVA
2302	61°32'14.10144"	-165°36'07.05781"	21.828	NVA
2303	61°32'14.10146"	-165°36'07.05774"	21.829	NVA
2304	61°32'18.41036"	-165°36'13.54552"	23.262	NVA
2305	61°32'18.41034"	-165°36'13.54552"	23.258	NVA
2306	61°32'21.35084"	-165°36'09.46405"	23.825	NVA
2307	61°32'21.35087"	-165°36'09.46399"	23.825	NVA
2308	61°32'23.03244"	-165°36'07.30351"	24.447	NVA
2309	61°32'23.03247"	-165°36'07.30345"	24.451	NVA
2310	61°32'24.59472"	-165°36'05.16467"	24.649	NVA
2311	61°32'24.59476"	-165°36'05.16467"	24.648	NVA
2312	61°32'25.21909"	-165°36'03.45020"	22.887	VVA
2313	61°32'25.21910"	-165°36'03.45021"	22.883	VVA
2314	61°32'26.11275"	-165°36'03.06720"	25.225	NVA
2315	61°32'26.11275"	-165°36'03.06730"	25.228	NVA
2316	61°32'27.66428"	-165°36'00.98924"	25.588	NVA
2317	61°32'27.66430"	-165°36'00.98927"	25.587	NVA
2318	61°32'28.82798"	-165°36'04.14610"	24.248	VVA
2319	61°32'28.82797"	-165°36'04.14619"	24.248	VVA
2320	61°32'26.74141"	-165°36'05.06671"	25.343	NVA
2321	61°32'26.74138"	-165°36'05.06667"	25.343	NVA
2322	61°32'25.20165"	-165°36'07.20719"	24.845	NVA
2323	61°32'25.20166"	-165°36'07.20726"	24.844	NVA

Point ID	NAD83 2011 Epoch 2010.00		Ellipsoid Height (m)	Feature Code
	(N) Latitude	(W) Longitude		
2324	61°32'23.63295"	-165°36'09.22310"	24.576	NVA
2325	61°32'23.63295"	-165°36'09.22311"	24.576	NVA
2326	61°32'22.08909"	-165°36'11.30158"	24.091	NVA
2327	61°32'22.08906"	-165°36'11.30149"	24.093	NVA
2328	61°32'20.55814"	-165°36'13.43771"	23.716	NVA
2329	61°32'20.55820"	-165°36'13.43772"	23.718	NVA
2330	61°32'19.00402"	-165°36'15.55901"	23.308	NVA
2331	61°32'19.00405"	-165°36'15.55894"	23.309	NVA
2332	61°32'17.91996"	-165°36'18.27855"	23.511	vasi
2333	61°32'17.92000"	-165°36'18.27860"	23.513	vasi
2334	61°32'17.29730"	-165°36'18.53473"	22.008	VVA
2335	61°32'17.29737"	-165°36'18.53474"	22.009	VVA
2336	61°32'15.83272"	-165°36'16.24254"	22.791	NVA
2337	61°32'15.83274"	-165°36'16.24250"	22.789	NVA
2338	61°32'15.69604"	-165°36'12.49841"	22.779	NVA
2339	61°32'15.69608"	-165°36'12.49828"	22.777	NVA
2401	61°32'12.17266"	-165°36'07.41798"	21.541	NVA
2402	61°32'12.17264"	-165°36'07.41805"	21.544	NVA
2403	61°32'09.60457"	-165°36'06.93435"	18.774	NVA
2404	61°32'09.60458"	-165°36'06.93441"	18.773	NVA
2405	61°32'06.82554"	-165°36'05.85945"	18.159	NVA
2406	61°32'06.82550"	-165°36'05.85953"	18.158	NVA
2407	61°32'04.79372"	-165°36'05.03505"	18.821	NVA
2408	61°32'04.79369"	-165°36'05.03499"	18.819	NVA
2409	61°32'04.00959"	-165°36'03.91075"	18.569	VVA
2410	61°32'04.00955"	-165°36'03.91089"	18.572	VVA
2411	61°32'02.96685"	-165°36'04.32385"	20.620	NVA
2412	61°32'02.96678"	-165°36'04.32380"	20.621	NVA
2413	61°32'01.08027"	-165°36'03.58288"	23.237	NVA
2414	61°32'01.08021"	-165°36'03.58290"	23.233	NVA
2415	61°31'58.77778"	-165°36'02.71033"	24.729	NVA
2416	61°31'58.77783"	-165°36'02.71033"	24.733	NVA
2417	61°31'56.40425"	-165°36'01.76585"	25.947	NVA
2418	61°31'56.40408"	-165°36'01.76573"	25.943	NVA
2419	61°31'54.06529"	-165°36'02.15178"	27.918	VVA
2420	61°31'54.06524"	-165°36'02.15182"	27.916	VVA
2421	61°31'51.71084"	-165°36'00.40647"	28.602	NVA
2422	61°31'51.71087"	-165°36'00.40649"	28.601	NVA

Point ID	NAD83 2011 Epoch 2010.00		Ellipsoid Height (m)	Feature Code
	(N) Latitude	(W) Longitude		
2423	61°31'49.24927"	-165°35'59.41729"	28.688	NVA
2424	61°31'49.24933"	-165°35'59.41736"	28.689	NVA
2425	61°31'46.55818"	-165°35'58.24797"	28.791	NVA
2426	61°31'46.55814"	-165°35'58.24813"	28.789	NVA
2427	61°31'44.81278"	-165°35'58.27808"	27.382	VVA
2428	61°31'44.81279"	-165°35'58.27806"	27.380	VVA
2429	61°31'43.32579"	-165°35'54.16286"	26.063	NVA
2430	61°31'43.32576"	-165°35'54.16285"	26.061	NVA
2501	60°56'12.87790"	-164°38'13.33709"	17.008	NVA
2502	60°56'12.87785"	-164°38'13.33712"	17.004	NVA
2503	60°56'12.18651"	-164°38'12.97051"	16.678	NVA
2504	60°56'12.18650"	-164°38'12.97051"	16.677	NVA
2505	60°56'12.09946"	-164°38'14.17519"	16.659	NVA
2506	60°56'12.09949"	-164°38'14.17515"	16.659	NVA
2507	60°56'12.66453"	-164°38'14.97854"	17.042	NVA
2508	60°56'12.66450"	-164°38'14.97856"	17.040	NVA
2509	60°56'11.88937"	-164°38'17.38727"	16.829	NVA
2510	60°56'11.88938"	-164°38'17.38720"	16.829	NVA
2511	60°56'10.46476"	-164°38'16.20822"	16.922	NVA
2512	60°56'10.46475"	-164°38'16.20825"	16.923	NVA
2513	60°56'10.25361"	-164°38'16.91725"	16.747	NVA
2514	60°56'10.25364"	-164°38'16.91722"	16.747	NVA
2515	60°56'09.71818"	-164°38'16.69706"	15.839	VVA
2516	60°56'09.71815"	-164°38'16.69712"	15.840	VVA
2517	60°56'10.71439"	-164°38'15.73804"	16.369	VVA
2518	60°56'10.71444"	-164°38'15.73804"	16.369	VVA
2519	60°56'11.50271"	-164°38'19.04673"	15.545	VVA
2520	60°56'11.50271"	-164°38'19.04678"	15.545	VVA
2521	60°56'11.74915"	-164°38'18.40355"	16.700	VVA
2522	60°56'11.74917"	-164°38'18.40356"	16.698	VVA
2523	60°56'12.37262"	-164°38'19.12802"	16.671	NVA
2524	60°56'12.37262"	-164°38'19.12804"	16.672	NVA
2525	60°56'12.62707"	-164°38'18.52448"	16.599	NVA
2526	60°56'12.62714"	-164°38'18.52452"	16.600	NVA
2527	60°56'13.28990"	-164°38'19.37625"	16.717	NVA
2528	60°56'13.28989"	-164°38'19.37616"	16.715	NVA
2529	60°56'13.11510"	-164°38'20.02298"	16.587	NVA
2530	60°56'13.11508"	-164°38'20.02304"	16.587	NVA

Point ID	NAD83 2011 Epoch 2010.00		Ellipsoid Height (m)	Feature Code
	(N) Latitude	(W) Longitude		
2531	60°56'14.15478"	-164°38'21.11548"	16.570	NVA
2532	60°56'14.15478"	-164°38'21.11549"	16.571	NVA
2533	60°56'14.35638"	-164°38'20.57180"	16.519	NVA
2534	60°56'14.35639"	-164°38'20.57174"	16.518	NVA
2535	60°56'15.04845"	-164°38'22.06948"	16.437	NVA
2536	60°56'15.04844"	-164°38'22.06950"	16.434	NVA
2537	60°56'14.95164"	-164°38'23.17690"	14.774	VVA
2538	60°56'14.95156"	-164°38'23.17684"	14.769	VVA
2539	60°56'16.05830"	-164°38'24.00026"	14.924	VVA
2540	60°56'16.05830"	-164°38'24.00036"	14.927	VVA
2541	60°56'16.92862"	-164°38'24.23785"	16.028	NVA
2542	60°56'16.92859"	-164°38'24.23786"	16.021	NVA
2543	60°56'18.19409"	-164°38'25.69225"	15.754	NVA
2544	60°56'18.19406"	-164°38'25.69226"	15.757	NVA
2601	60°56'15.18842"	-164°38'21.48238"	16.376	NVA
2602	60°56'15.18838"	-164°38'21.48243"	16.377	NVA
2603	60°56'16.39630"	-164°38'22.86780"	16.153	NVA
2604	60°56'16.39630"	-164°38'22.86779"	16.149	NVA
2605	60°56'18.03134"	-164°38'24.72765"	15.842	NVA
2606	60°56'18.03138"	-164°38'24.72771"	15.838	NVA
2607	60°56'19.55039"	-164°38'26.45154"	15.657	NVA
2608	60°56'19.55039"	-164°38'26.45159"	15.656	NVA
2609	60°56'21.23135"	-164°38'27.65869"	14.588	VVA
2610	60°56'21.23141"	-164°38'27.65872"	14.587	VVA
2611	60°56'22.52611"	-164°38'29.79360"	15.116	NVA
2612	60°56'22.52609"	-164°38'29.79349"	15.113	NVA
2613	60°56'23.84000"	-164°38'31.27548"	14.866	NVA
2614	60°56'23.84000"	-164°38'31.27546"	14.866	NVA
2615	60°56'25.24510"	-164°38'32.85913"	14.761	NVA
2616	60°56'25.24514"	-164°38'32.85914"	14.763	NVA
2617	60°56'26.78070"	-164°38'34.05579"	13.857	VVA
2618	60°56'26.78071"	-164°38'34.05570"	13.857	VVA
2619	60°56'26.50872"	-164°38'35.13912"	14.172	NVA
2620	60°56'26.50878"	-164°38'35.13925"	14.179	NVA
2621	60°56'25.21530"	-164°38'33.67544"	14.594	NVA
2622	60°56'25.21540"	-164°38'33.67548"	14.598	NVA
2623	60°56'23.90150"	-164°38'32.13885"	14.701	NVA
2624	60°56'23.90157"	-164°38'32.13878"	14.704	NVA

Point ID	NAD83 2011 Epoch 2010.00		Ellipsoid Height (m)	Feature Code
	(N) Latitude	(W) Longitude		
2625	60°56'22.15863"	-164°38'31.18018"	13.383	VVA
2626	60°56'22.15856"	-164°38'31.18017"	13.381	VVA
2627	60°56'21.01096"	-164°38'28.86120"	15.380	NVA
2628	60°56'21.01096"	-164°38'28.86128"	15.381	NVA
2629	60°56'20.01025"	-164°38'27.68809"	15.521	NVA
2630	60°56'20.01020"	-164°38'27.68807"	15.520	NVA
2631	60°56'19.12785"	-164°38'26.67650"	15.604	NVA
2632	60°56'19.12783"	-164°38'26.67645"	15.608	NVA
2700	62°46'43.81683"	-164°29'43.86473"	12.888	NVA
2701	62°46'43.81684"	-164°29'43.86474"	12.888	NVA
2702	62°46'43.87200"	-164°29'40.36478"	13.355	NVA
2703	62°46'43.87199"	-164°29'40.36471"	13.355	NVA
2704	62°46'40.97085"	-164°29'40.58804"	12.962	NVA
2705	62°46'40.97084"	-164°29'40.58792"	12.961	NVA
2706	62°46'40.09925"	-164°29'35.31262"	12.745	NVA
2707	62°46'40.09927"	-164°29'35.31262"	12.746	NVA
2708	62°46'38.06460"	-164°29'35.09847"	12.485	NVA
2709	62°46'38.06458"	-164°29'35.09842"	12.484	NVA
2710	62°46'36.46513"	-164°29'34.55125"	11.828	VVA
2711	62°46'36.46511"	-164°29'34.55125"	11.830	VVA
2712	62°46'36.23213"	-164°29'37.12174"	12.872	NVA
2713	62°46'36.23212"	-164°29'37.12181"	12.867	NVA
2714	62°46'36.22419"	-164°29'40.18209"	13.219	NVA
2715	62°46'36.22412"	-164°29'40.18216"	13.219	NVA
2716	62°46'33.11460"	-164°29'38.03157"	13.288	NVA
2717	62°46'33.11460"	-164°29'38.03155"	13.288	NVA
2718	62°46'39.26093"	-164°29'45.45700"	12.936	NVA
2719	62°46'39.26087"	-164°29'45.45704"	12.934	NVA
2720	62°46'42.33238"	-164°29'44.90489"	12.623	NVA
2721	62°46'42.33237"	-164°29'44.90482"	12.622	NVA
2722	62°46'40.73507"	-164°29'44.68479"	13.008	NVA
2723	62°46'40.73506"	-164°29'44.68485"	13.006	NVA
2724	62°46'39.01191"	-164°29'45.70116"	12.144	VVA
2725	62°46'39.01191"	-164°29'45.70125"	12.145	VVA
2801	62°46'43.63615"	-164°29'35.28777"	12.746	NVA
2802	62°46'43.63611"	-164°29'35.28778"	12.747	NVA
2803	62°46'45.22632"	-164°29'31.80459"	12.979	NVA
2804	62°46'45.22630"	-164°29'31.80466"	12.980	NVA

Point ID	NAD83 2011 Epoch 2010.00		Ellipsoid Height (m)	Feature Code
	(N) Latitude	(W) Longitude		
2805	62°46'46.91287"	-164°29'29.24331"	12.943	NVA
2806	62°46'46.91288"	-164°29'29.24338"	12.942	NVA
2807	62°46'48.96499"	-164°29'26.00372"	13.077	NVA
2808	62°46'48.96500"	-164°29'26.00377"	13.078	NVA
2809	62°46'51.34369"	-164°29'27.22297"	11.776	VVA
2810	62°46'51.34373"	-164°29'27.22288"	11.776	VVA
2811	62°46'53.66459"	-164°29'26.05692"	12.829	NVA
2812	62°46'53.66458"	-164°29'26.05697"	12.836	NVA
2813	62°46'55.63664"	-164°29'26.39309"	12.792	NVA
2814	62°46'55.63661"	-164°29'26.39306"	12.792	NVA
2815	62°46'57.12240"	-164°29'27.16462"	11.637	VVA
2816	62°46'57.12240"	-164°29'27.16466"	11.638	VVA
2817	62°46'59.18006"	-164°29'26.70582"	12.854	NVA
2818	62°46'59.18004"	-164°29'26.70573"	12.851	NVA
2819	62°46'59.20144"	-164°29'23.80283"	12.795	NVA
2820	62°46'59.20147"	-164°29'23.80277"	12.795	NVA
2821	62°46'57.15482"	-164°29'23.51859"	12.715	NVA
2822	62°46'57.15477"	-164°29'23.51869"	12.716	NVA
2823	62°46'55.13395"	-164°29'23.21529"	12.751	NVA
2824	62°46'55.13399"	-164°29'23.21524"	12.750	NVA
2825	62°46'53.24195"	-164°29'23.05581"	12.837	NVA
2826	62°46'53.24200"	-164°29'23.05578"	12.833	NVA
2827	62°46'51.21220"	-164°29'22.80015"	12.834	NVA
2828	62°46'51.21222"	-164°29'22.80008"	12.833	NVA
2829	62°46'48.55549"	-164°29'22.22334"	12.682	NVA
2830	62°46'48.55550"	-164°29'22.22337"	12.679	NVA
2831	62°46'48.13783"	-164°29'18.89594"	11.372	VVA
2832	62°46'48.13781"	-164°29'18.89601"	11.374	VVA
2833	62°46'46.25885"	-164°29'22.46240"	12.894	NVA
2834	62°46'46.25884"	-164°29'22.46240"	12.893	NVA
2835	62°46'44.84001"	-164°29'21.73571"	12.360	VVA
2836	62°46'44.84012"	-164°29'21.73583"	12.362	VVA
2837	62°46'45.80654"	-164°29'24.67313"	12.960	NVA
2838	62°46'45.80648"	-164°29'24.67322"	12.962	NVA
2839	62°46'35.12214"	-164°29'44.62268"	13.033	NVA
2840	62°46'35.12215"	-164°29'44.62273"	13.033	NVA
2841	62°46'33.43068"	-164°29'44.44542"	13.324	NVA
2842	62°46'33.43066"	-164°29'44.44570"	13.327	NVA

Point ID	NAD83 2011 Epoch 2010.00		Ellipsoid Height (m)	Feature Code
	(N) Latitude	(W) Longitude		
2843	62°46'33.43068"	-164°29'44.44539"	13.023	NVA
2844	62°46'33.43063"	-164°29'44.44534"	13.019	NVA
2845	62°46'31.68084"	-164°29'43.97502"	12.717	NVA
2846	62°46'31.68086"	-164°29'43.97497"	12.719	NVA
2847	62°46'30.26132"	-164°29'43.59406"	11.451	VVA
2848	62°46'30.26136"	-164°29'43.59416"	11.454	VVA
2900	62°41'07.56420"	-164°43'00.70140"	13.732	NVA
2901	62°41'07.56420"	-164°43'00.70138"	13.735	NVA
2902	62°41'10.06941"	-164°43'00.04265"	13.971	NVA
2903	62°41'10.06946"	-164°43'00.04259"	13.970	NVA
2904	62°41'10.25145"	-164°43'04.72363"	13.252	NVA
2905	62°41'10.25146"	-164°43'04.72361"	13.251	NVA
2906	62°41'09.21442"	-164°43'11.82774"	11.681	VVA
2907	62°41'09.21441"	-164°43'11.82768"	11.681	VVA
2908	62°41'09.63726"	-164°43'18.46700"	13.229	NVA
2909	62°41'09.63733"	-164°43'18.46708"	13.229	NVA
2910	62°41'13.37476"	-164°43'18.39658"	13.192	NVA
2911	62°41'13.37478"	-164°43'18.39667"	13.195	NVA
2912	62°41'14.92515"	-164°43'17.76041"	11.705	VVA
2913	62°41'14.92511"	-164°43'17.76038"	11.698	VVA
2914	62°41'16.97003"	-164°43'18.13079"	13.070	NVA
2915	62°41'16.97002"	-164°43'18.13087"	13.069	NVA
2916	62°41'16.99163"	-164°43'21.14366"	13.173	NVA
2917	62°41'16.99157"	-164°43'21.14355"	13.175	NVA
2918	62°41'15.18899"	-164°43'21.20528"	13.171	NVA
2919	62°41'15.18902"	-164°43'21.20534"	13.170	NVA
2920	62°41'13.38681"	-164°43'21.30333"	13.054	NVA
2921	62°41'13.38682"	-164°43'21.30331"	13.055	NVA
2922	62°41'11.57190"	-164°43'21.30854"	13.071	NVA
2923	62°41'11.57190"	-164°43'21.30858"	13.073	NVA
2924	62°41'09.80588"	-164°43'21.30978"	13.098	NVA
2925	62°41'09.80589"	-164°43'21.30970"	13.100	NVA
2926	62°41'08.55776"	-164°43'21.33396"	13.085	NVA
2927	62°41'08.55781"	-164°43'21.33395"	13.087	NVA
2928	62°41'07.87366"	-164°43'21.81578"	11.813	VVA
2929	62°41'07.87362"	-164°43'21.81583"	11.809	VVA
2930	62°41'07.32712"	-164°43'21.36973"	13.135	NVA
2931	62°41'07.32712"	-164°43'21.36970"	13.139	NVA

Point ID	NAD83 2011 Epoch 2010.00		Ellipsoid Height (m)	Feature Code
	(N) Latitude	(W) Longitude		
2932	62°41'07.75006"	-164°43'14.28758"	11.534	VVA
2933	62°41'07.75003"	-164°43'14.28761"	11.532	VVA
2934	62°41'07.95657"	-164°43'12.58973"	12.487	NVA
2935	62°41'07.95655"	-164°43'12.58967"	12.489	NVA
2936	62°41'07.91802"	-164°43'07.38551"	12.535	NVA
2937	62°41'07.91801"	-164°43'07.38559"	12.535	NVA
2938	62°41'07.74156"	-164°43'06.37406"	11.803	VVA
2939	62°41'07.74160"	-164°43'06.37405"	11.805	VVA
2940	62°41'06.66834"	-164°42'57.50292"	13.810	NVA
2941	62°41'06.66839"	-164°42'57.50287"	13.808	NVA
3000	62°41'07.74199"	-164°43'18.08592"	13.037	NVA
3001	62°41'07.74204"	-164°43'18.08587"	13.042	NVA
3002	62°41'05.72139"	-164°43'18.45531"	13.161	NVA
3003	62°41'05.72140"	-164°43'18.45532"	13.159	NVA
3004	62°41'03.57316"	-164°43'18.39773"	13.072	NVA
3005	62°41'03.57319"	-164°43'18.39762"	13.071	NVA
3006	62°41'01.69360"	-164°43'18.44801"	13.121	NVA
3007	62°41'01.69369"	-164°43'18.44814"	13.120	NVA
3008	62°40'59.81677"	-164°43'18.49850"	13.133	NVA
3009	62°40'59.81677"	-164°43'18.49839"	13.136	NVA
3010	62°40'58.21273"	-164°43'17.41612"	10.359	VVA
3011	62°40'58.21271"	-164°43'17.41618"	10.360	VVA
3012	62°40'56.07655"	-164°43'18.54488"	13.142	NVA
3013	62°40'56.07650"	-164°43'18.54486"	13.137	NVA
3014	62°40'54.20001"	-164°43'18.57274"	13.102	NVA
3015	62°40'54.19996"	-164°43'18.57286"	13.102	NVA
3016	62°40'52.31690"	-164°43'18.56854"	13.120	NVA
3017	62°40'52.31694"	-164°43'18.56846"	13.124	NVA
3018	62°40'50.41508"	-164°43'21.39903"	13.168	NVA
3019	62°40'50.41500"	-164°43'21.39901"	13.169	NVA
3020	62°40'52.31364"	-164°43'21.35669"	13.168	NVA
3021	62°40'52.31365"	-164°43'21.35666"	13.168	NVA
3022	62°40'52.12411"	-164°43'24.23854"	10.284	VVA
3023	62°40'52.12414"	-164°43'24.23856"	10.288	VVA
3024	62°40'54.20362"	-164°43'21.37898"	13.106	NVA
3025	62°40'54.20367"	-164°43'21.37890"	13.106	NVA
3026	62°40'56.07931"	-164°43'21.38352"	13.114	NVA
3027	62°40'56.07934"	-164°43'21.38344"	13.113	NVA

Point ID	NAD83 2011 Epoch 2010.00		Ellipsoid Height (m)	Feature Code
	(N) Latitude	(W) Longitude		
3028	62°40'57.95174"	-164°43'21.32670"	13.121	NVA
3029	62°40'57.95176"	-164°43'21.32672"	13.121	NVA
3030	62°40'59.82143"	-164°43'21.27151"	13.109	NVA
3031	62°40'59.82138"	-164°43'21.27164"	13.106	NVA
3032	62°41'00.74293"	-164°43'22.00814"	11.404	VVA
3033	62°41'00.74293"	-164°43'22.00816"	11.408	VVA
3034	62°41'01.69777"	-164°43'21.27561"	13.156	NVA
3035	62°41'01.69778"	-164°43'21.27566"	13.159	NVA
3036	62°41'03.58118"	-164°43'21.25431"	13.191	NVA
3037	62°41'03.58122"	-164°43'21.25437"	13.193	NVA
3038	62°41'04.59046"	-164°43'21.94528"	11.642	VVA
3039	62°41'04.59050"	-164°43'21.94531"	11.641	VVA
3040	62°41'05.45946"	-164°43'21.26883"	13.094	NVA
3041	62°41'05.45943"	-164°43'21.26879"	13.095	NVA
3042	62°41'07.32249"	-164°43'21.29042"	13.162	NVA
3043	62°41'07.32248"	-164°43'21.29053"	13.160	NVA
3102	60°22'29.67087"	-166°15'47.21752"	25.712	NVA
3103	60°22'29.67088"	-166°15'47.21755"	25.713	NVA
3104	60°22'30.77777"	-166°15'48.57450"	25.885	NVA
3105	60°22'30.77779"	-166°15'48.57445"	25.886	NVA
3106	60°22'30.30368"	-166°15'53.43433"	25.857	NVA
3107	60°22'30.30369"	-166°15'53.43431"	25.857	NVA
3108	60°22'28.50107"	-166°15'51.85061"	25.493	NVA
3109	60°22'28.50113"	-166°15'51.85067"	25.495	NVA
3110	60°22'26.78987"	-166°15'49.94240"	25.090	NVA
3111	60°22'26.78983"	-166°15'49.94240"	25.088	NVA
3112	60°22'25.92456"	-166°15'52.91762"	25.172	NVA
3113	60°22'25.92456"	-166°15'52.91767"	25.171	NVA
3114	60°22'24.07590"	-166°16'02.75046"	24.903	NVA
3115	60°22'24.07590"	-166°16'02.75047"	24.901	NVA
3116	60°22'22.37215"	-166°16'02.17377"	25.254	NVA
3117	60°22'22.37217"	-166°16'02.17372"	25.256	NVA
3118	60°22'22.43362"	-166°16'00.93166"	24.581	VVA
3119	60°22'22.43363"	-166°16'00.93162"	24.576	VVA
3120	60°22'23.27806"	-166°15'57.19810"	24.463	VVA
3121	60°22'23.27804"	-166°15'57.19807"	24.460	VVA
3122	60°22'23.93672"	-166°15'55.16895"	25.217	NVA
3123	60°22'23.93671"	-166°15'55.16890"	25.216	NVA

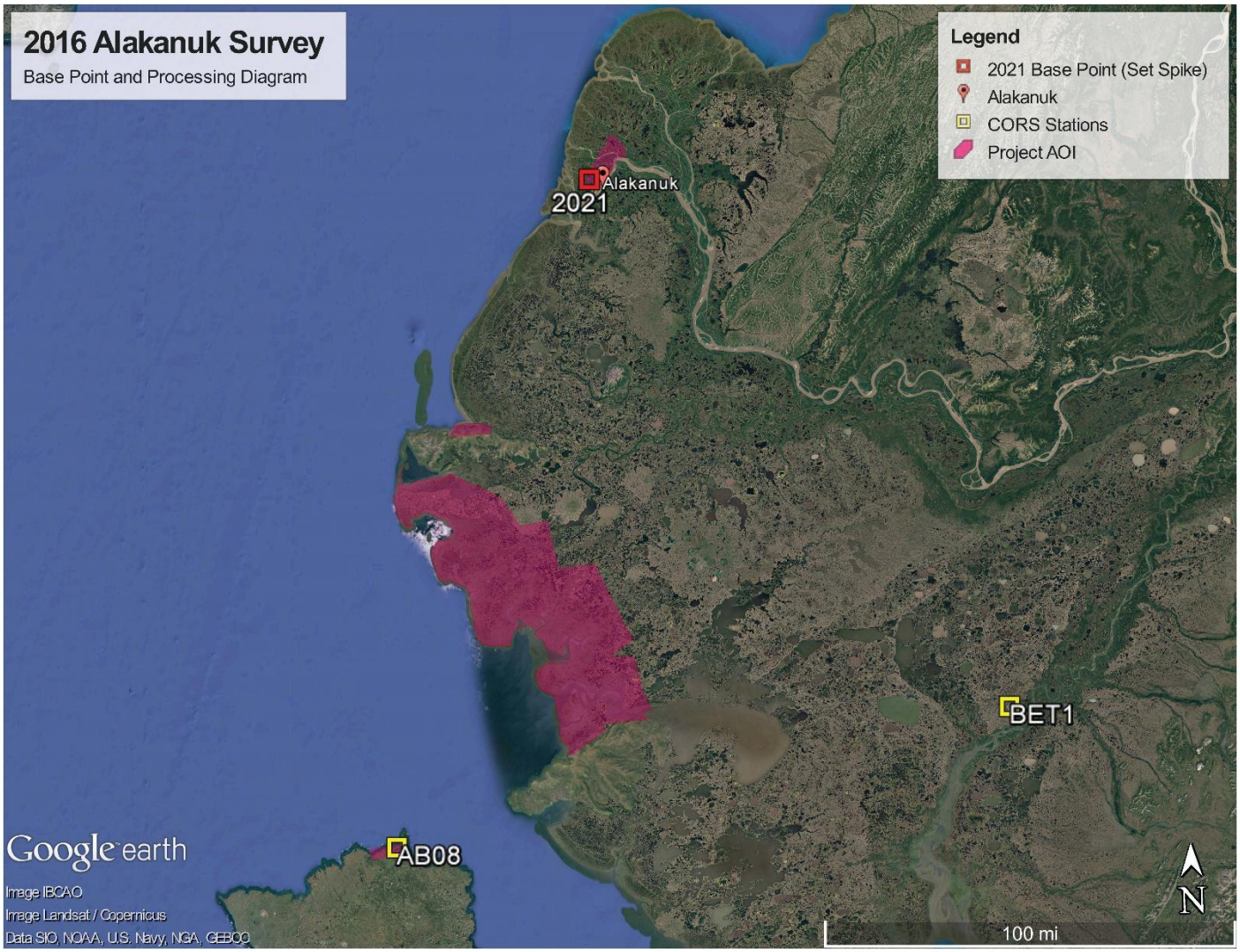
Point ID	NAD83 2011 Epoch 2010.00		Ellipsoid Height (m)	Feature Code
	(N) Latitude	(W) Longitude		
3124	60°22'24.74054"	-166°15'51.74496"	25.172	NVA
3125	60°22'24.74059"	-166°15'51.74489"	25.171	NVA
3126	60°22'25.06788"	-166°15'49.35113"	24.429	VVA
3127	60°22'25.06785"	-166°15'49.35115"	24.429	VVA
3128	60°22'26.37714"	-166°15'45.04948"	25.215	NVA
3129	60°22'26.37718"	-166°15'45.04949"	25.215	NVA
3130	60°22'27.35938"	-166°15'40.31684"	25.072	NVA
3131	60°22'27.35932"	-166°15'40.31683"	25.069	NVA
3132	60°22'27.03584"	-166°15'39.19375"	24.996	VVA
3133	60°22'27.03589"	-166°15'39.19402"	24.993	VVA
3134	60°22'28.61472"	-166°15'40.91818"	25.046	NVA
3135	60°22'28.61476"	-166°15'40.91817"	25.045	NVA
3136	60°22'28.51160"	-166°15'43.69825"	24.893	VVA
3137	60°22'28.51161"	-166°15'43.69846"	24.891	VVA
3138	60°22'27.69599"	-166°15'43.97032"	25.388	NVA
3139	60°22'27.69602"	-166°15'43.97031"	25.386	NVA
3140	60°22'27.13835"	-166°15'47.51221"	25.348	NVA
3141	60°22'27.13836"	-166°15'47.51220"	25.348	NVA
3201	60°22'31.53142"	-166°15'47.51071"	25.412	NVA
3202	60°22'31.53142"	-166°15'47.51072"	25.415	NVA
3203	60°22'31.83580"	-166°15'43.70708"	25.009	NVA
3204	60°22'31.83581"	-166°15'43.70704"	25.008	NVA
3205	60°22'32.04574"	-166°15'39.91986"	25.334	NVA
3206	60°22'32.04578"	-166°15'39.91989"	25.335	NVA
3207	60°22'32.26221"	-166°15'36.10083"	24.992	NVA
3208	60°22'32.26221"	-166°15'36.10082"	24.995	NVA
3209	60°22'32.49144"	-166°15'32.34637"	24.764	NVA
3210	60°22'32.49140"	-166°15'32.34634"	24.761	NVA
3211	60°22'32.51741"	-166°15'28.35651"	23.921	VVA
3212	60°22'32.51738"	-166°15'28.35641"	23.918	VVA
3213	60°22'33.47736"	-166°15'24.41422"	24.483	NVA
3214	60°22'33.47739"	-166°15'24.41423"	24.484	NVA
3215	60°22'34.06490"	-166°15'20.56522"	24.586	NVA
3216	60°22'34.06492"	-166°15'20.56516"	24.586	NVA
3217	60°22'34.48192"	-166°15'16.85025"	24.727	NVA
3218	60°22'34.48192"	-166°15'16.85015"	24.726	NVA
3219	60°22'34.28190"	-166°15'13.03107"	25.073	NVA
3220	60°22'34.28194"	-166°15'13.03095"	25.076	NVA

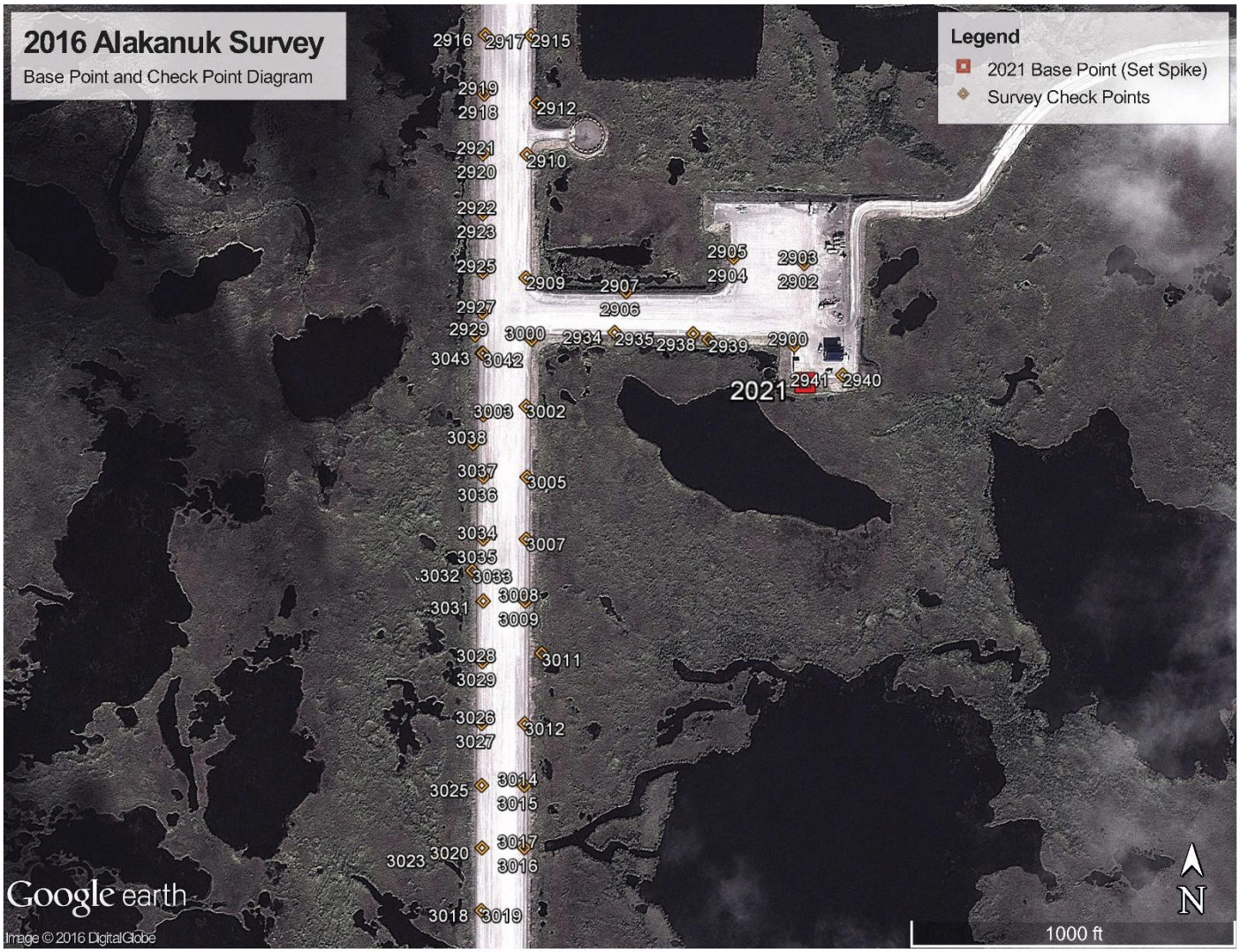
Point ID	NAD83 2011 Epoch 2010.00		Ellipsoid Height (m)	Feature Code
	(N) Latitude	(W) Longitude		
3221	60°22'33.66488"	-166°15'10.84909"	24.304	VVA
3222	60°22'33.66489"	-166°15'10.84912"	24.305	VVA
3223	60°22'34.56443"	-166°15'14.28935"	25.147	NVA
3224	60°22'34.56447"	-166°15'14.28939"	25.154	NVA
3225	60°22'34.55820"	-166°15'18.14510"	24.826	NVA
3226	60°22'34.55829"	-166°15'18.14509"	24.825	NVA
3227	60°22'33.99340"	-166°15'21.88043"	24.547	NVA
3228	60°22'33.99343"	-166°15'21.88030"	24.545	NVA
3229	60°22'33.75505"	-166°15'25.78330"	24.521	VVA
3230	60°22'33.75506"	-166°15'25.78322"	24.520	VVA
3231	60°22'32.87951"	-166°15'29.55002"	24.590	NVA
3232	60°22'32.87956"	-166°15'29.55009"	24.590	NVA
3233	60°22'32.62136"	-166°15'33.40366"	24.867	NVA
3234	60°22'32.62136"	-166°15'33.40368"	24.868	NVA
3235	60°22'32.35368"	-166°15'37.15316"	25.237	NVA
3236	60°22'32.35368"	-166°15'37.15311"	25.237	NVA
3237	60°22'33.22763"	-166°15'37.15439"	24.958	VVA
3238	60°22'33.22772"	-166°15'37.15445"	24.959	VVA
3239	60°22'32.14558"	-166°15'41.06468"	25.321	NVA
3240	60°22'32.14563"	-166°15'41.06477"	25.324	NVA
3241	60°22'31.93189"	-166°15'44.80267"	25.061	NVA
3242	60°22'31.93198"	-166°15'44.80269"	25.065	NVA
3243	60°22'31.55222"	-166°15'48.48968"	25.697	NVA
3244	60°22'31.55222"	-166°15'48.48969"	25.696	NVA

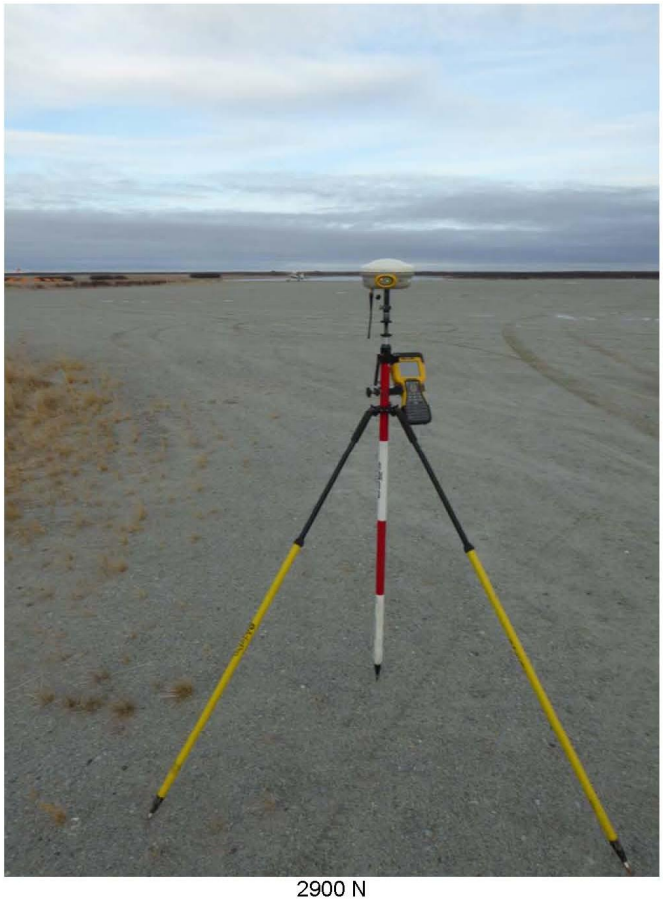
Section 3: Ground / Geodetic Control Photos

This section contains the station recovery information sheets and photographs regarding the ground control positions established for the project.

The data is assembled on the following pages.


2016 Alakanuk Survey
Base Point and Processing Diagram
Legend
2021 Base Point (Set Spike)
Alakanuk
CORS Stations
Project AOI
Alakanuk
2021
BET1
AB08
Google earth
Image IBCAO
Image Landsat / Copernicus
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
N
100 mi


2016 Alakanuk Survey
Base Point and Check Point Diagram
Legend
2021 Base Point (Set Spike)
Survey Check Points
2916
2917
2915
2919
2918
2912
2921
2910
2920
2922
2923
2905
2903
2925
2904
2902
2909
2907
2927
2906
2929
3000
2934
2935
2938
2939
2900
3043
3042
2941
2940
2021
3003
3002
3038
3037
3005
3036
3034
3007
3035
3032
3033
3008
3031
3009
3028
3011
3029
3026
3012
3027
3025
3014
3015
3017
3023
3020
3016
3018
3019
Google earth
Image © 2016 DigitalGlobe
N
1000 ft



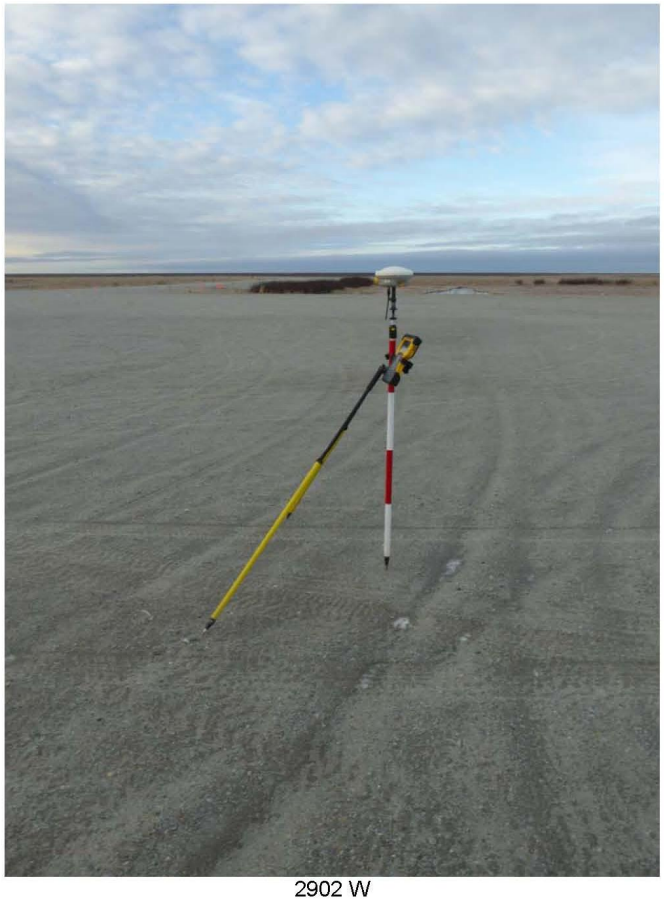
2900 N



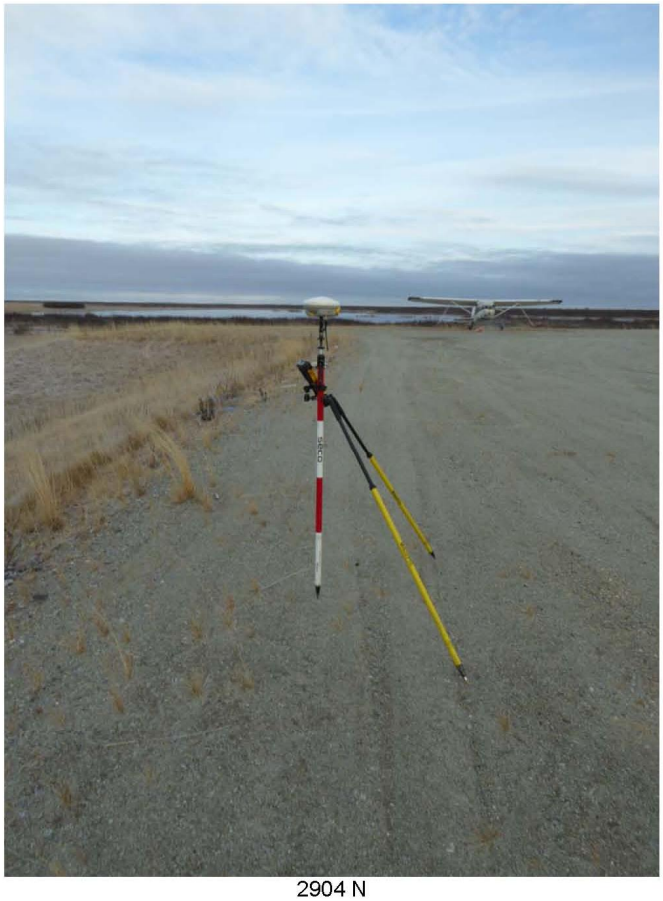
2900 W



2902 N



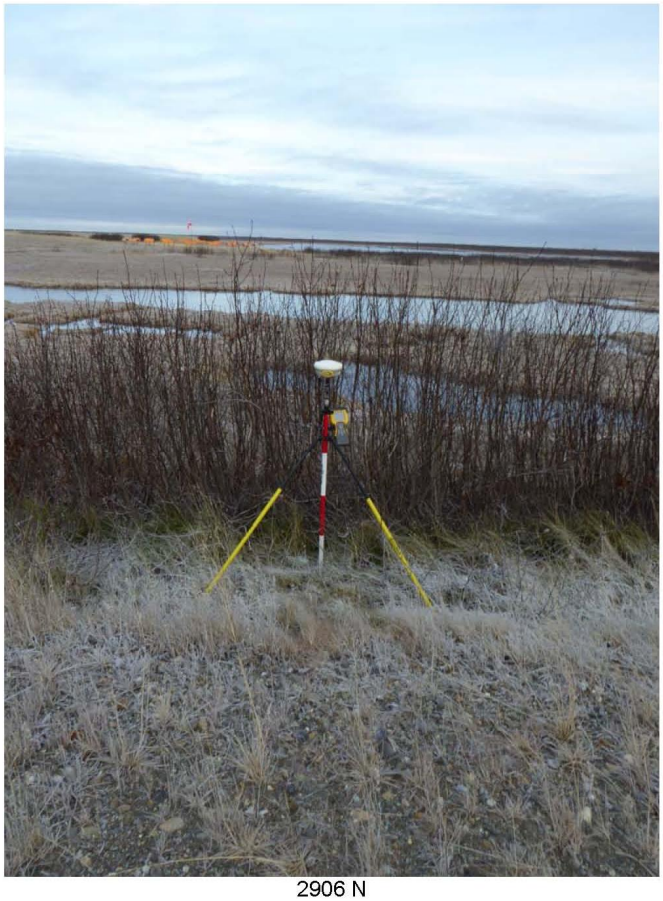
2902 W



2904 N



2904 W



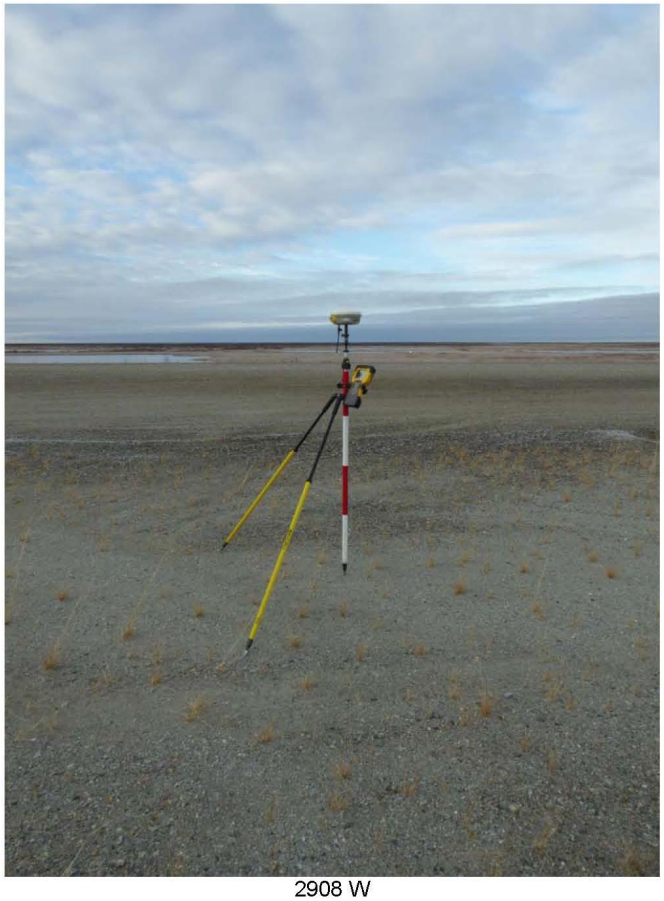
2906 N



2906 W



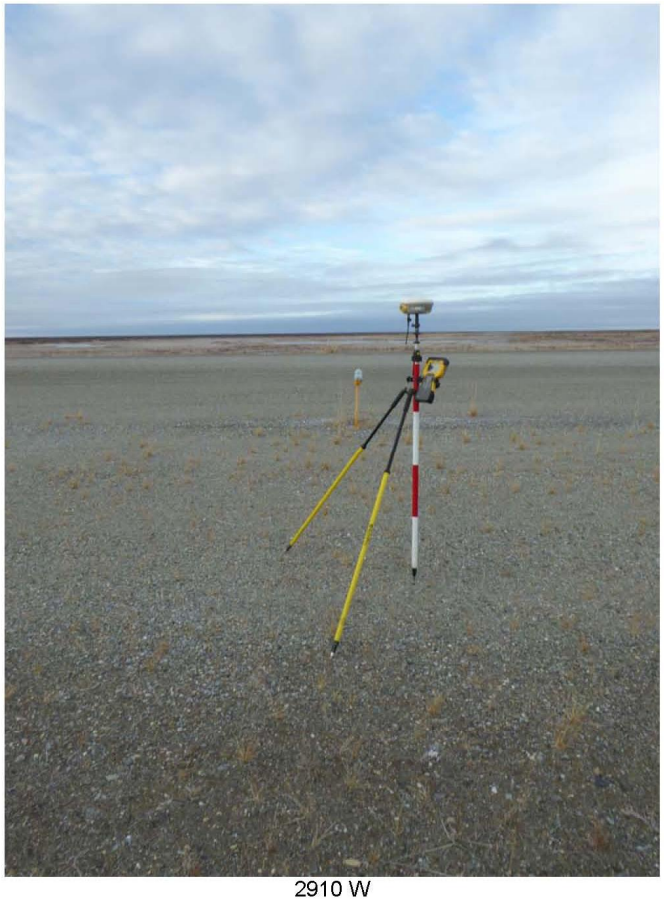
2908 N



2908 W



2910 N



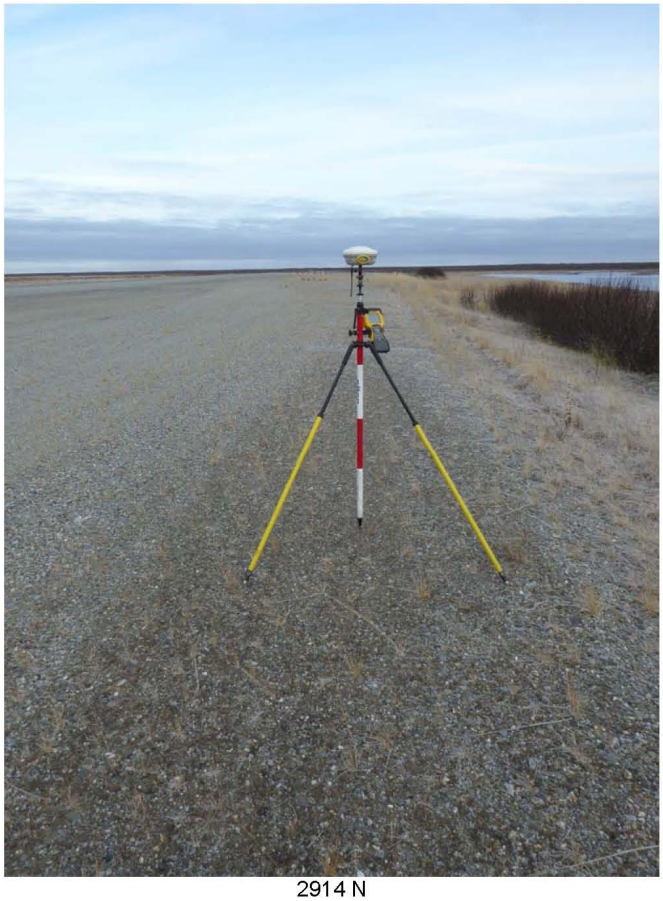
2910 W



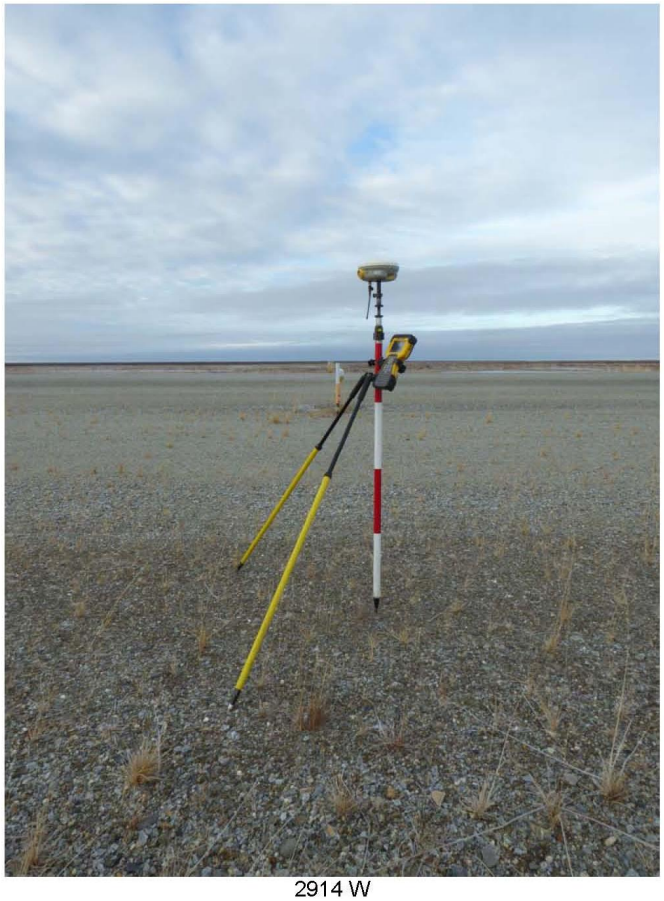
2912 N



2912 W



2914 N



2914 W



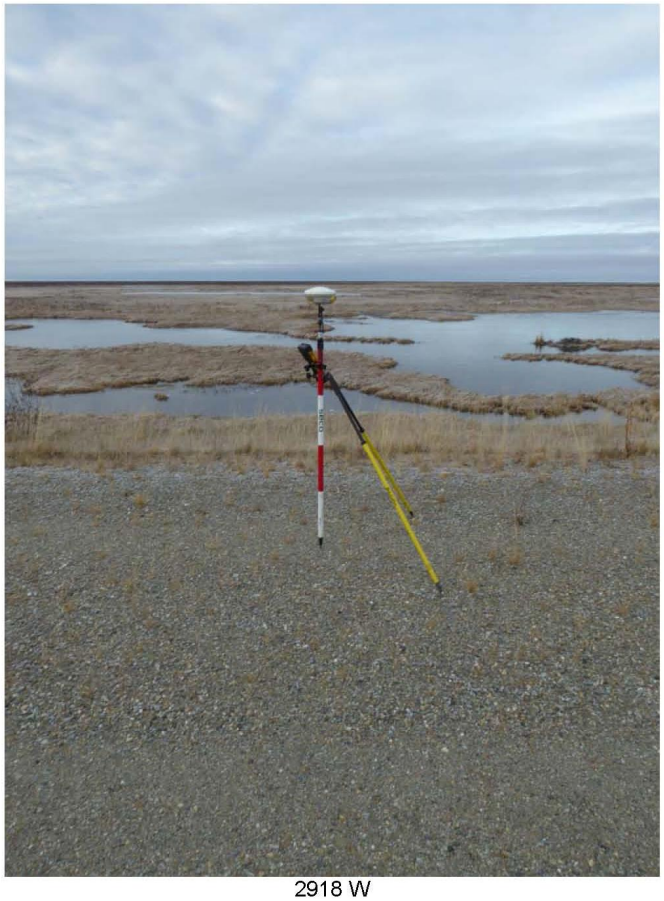
2916 N



2916 W



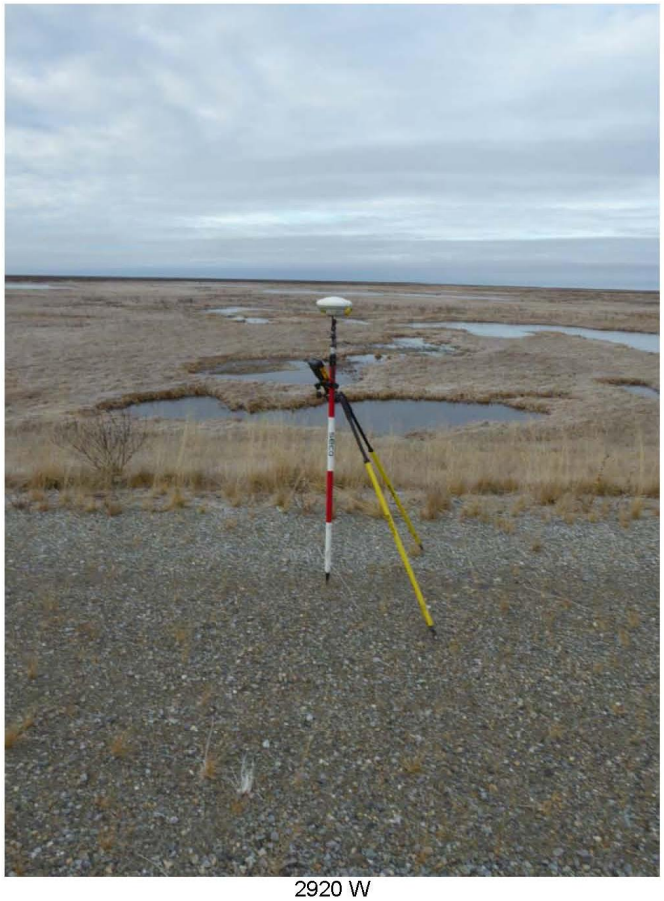
2918 N



2918 W



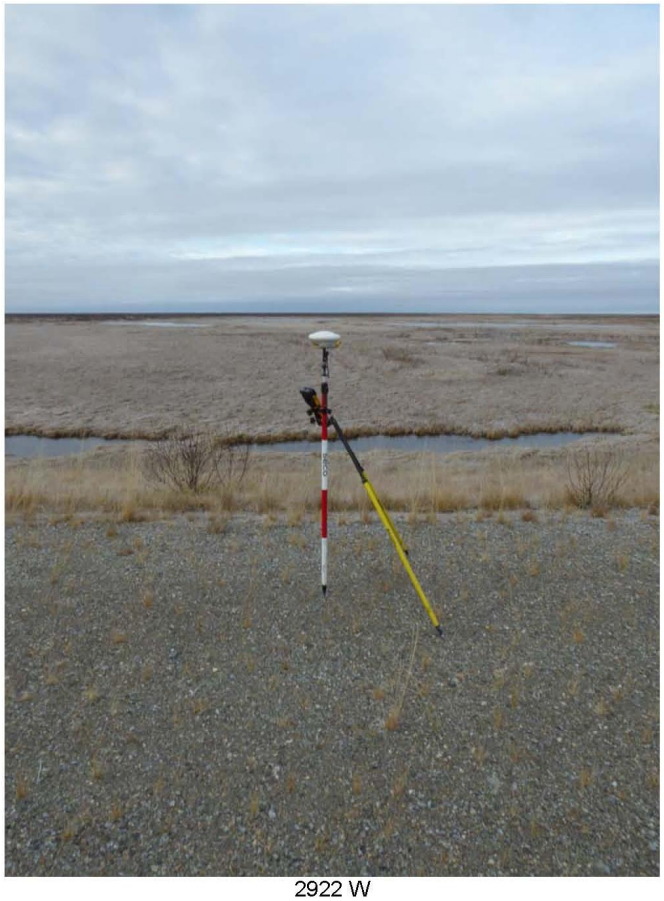
2920 N



2920 W



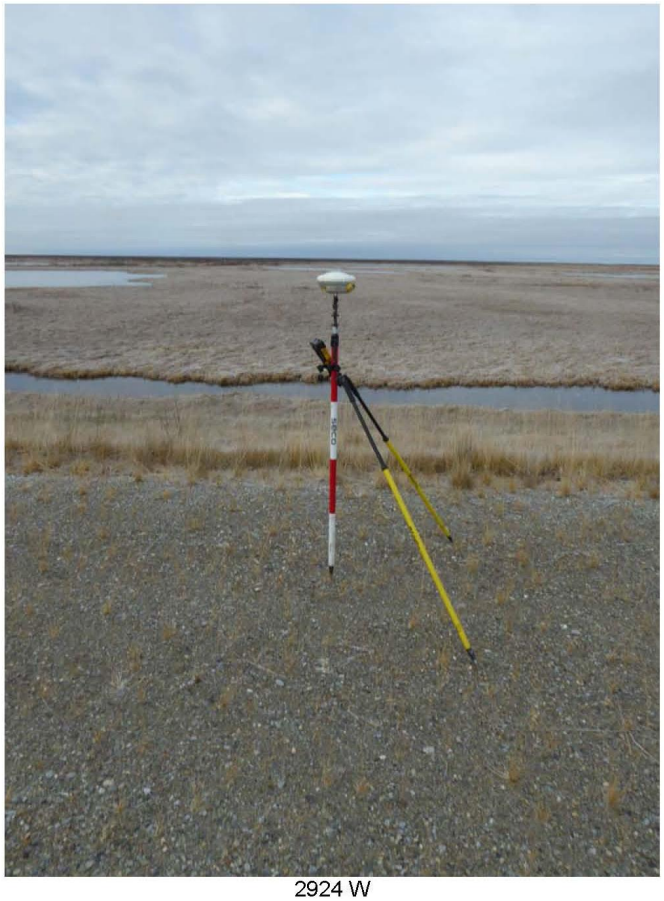
2922 N



2922 W



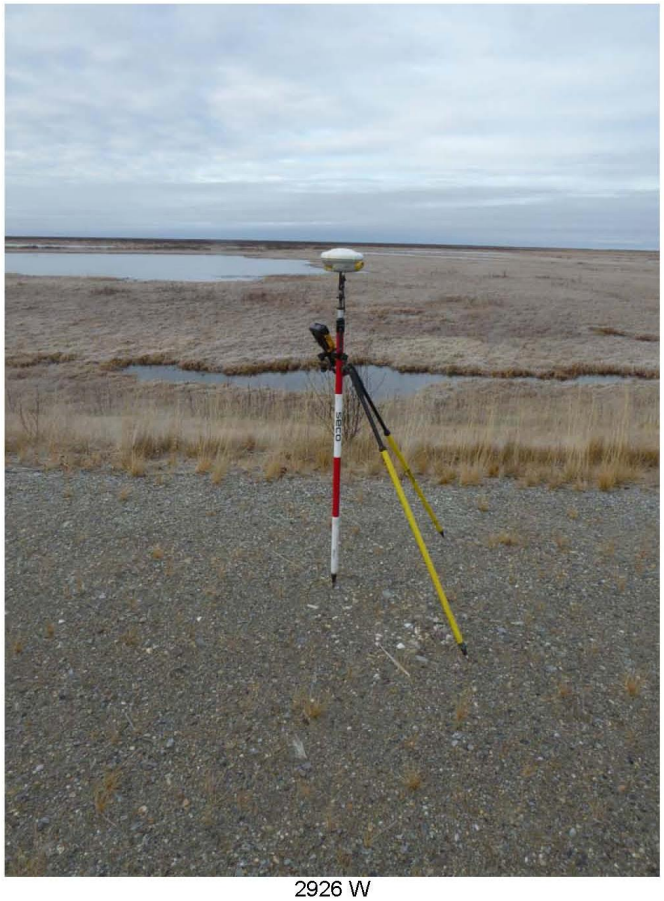
2924 N



2924 W



2926 N



2926 W



2928 N



2928 W



2930 N



2930 W



2932 N



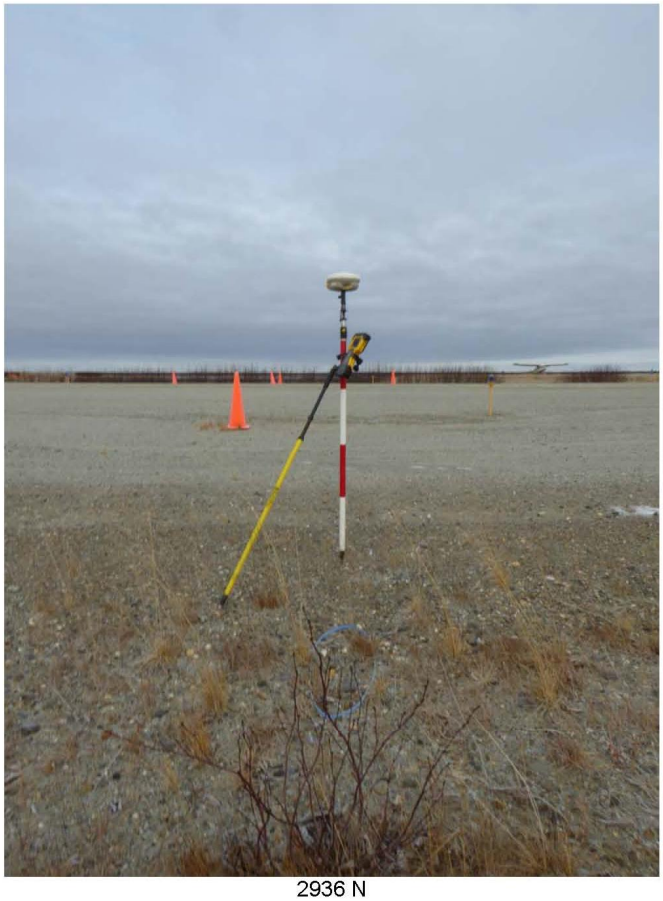
2932 W



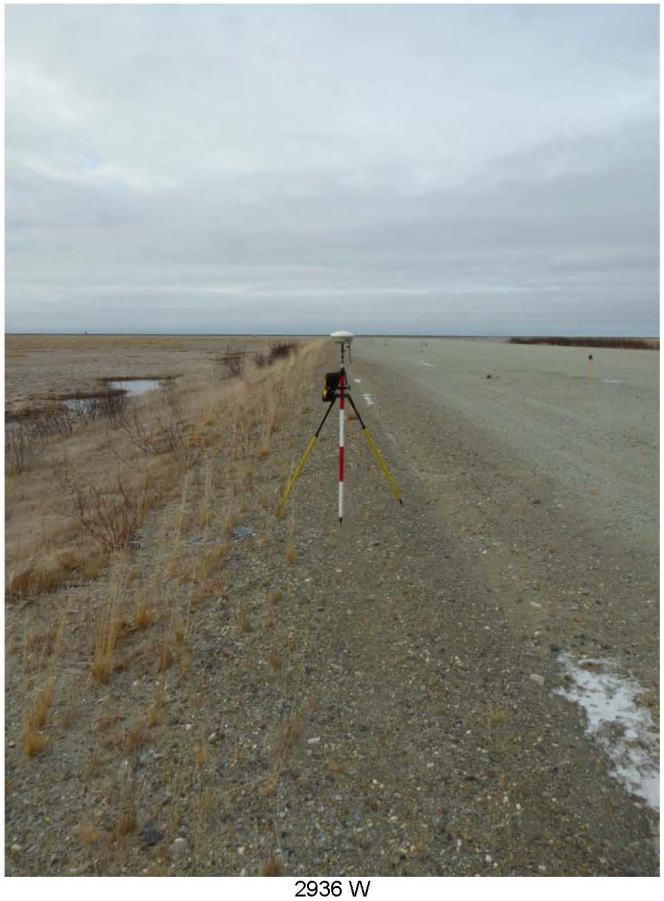
2934 N



2934 W



2936 N



2936 W



2938 N



2938 W



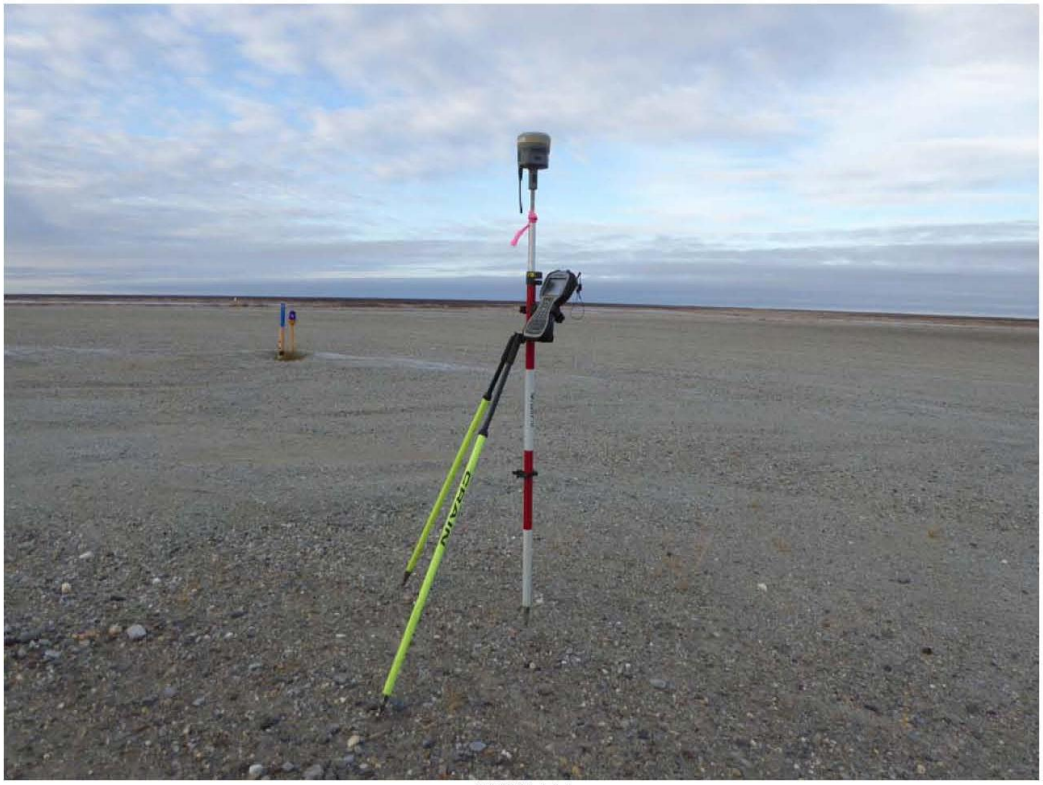
2940 N



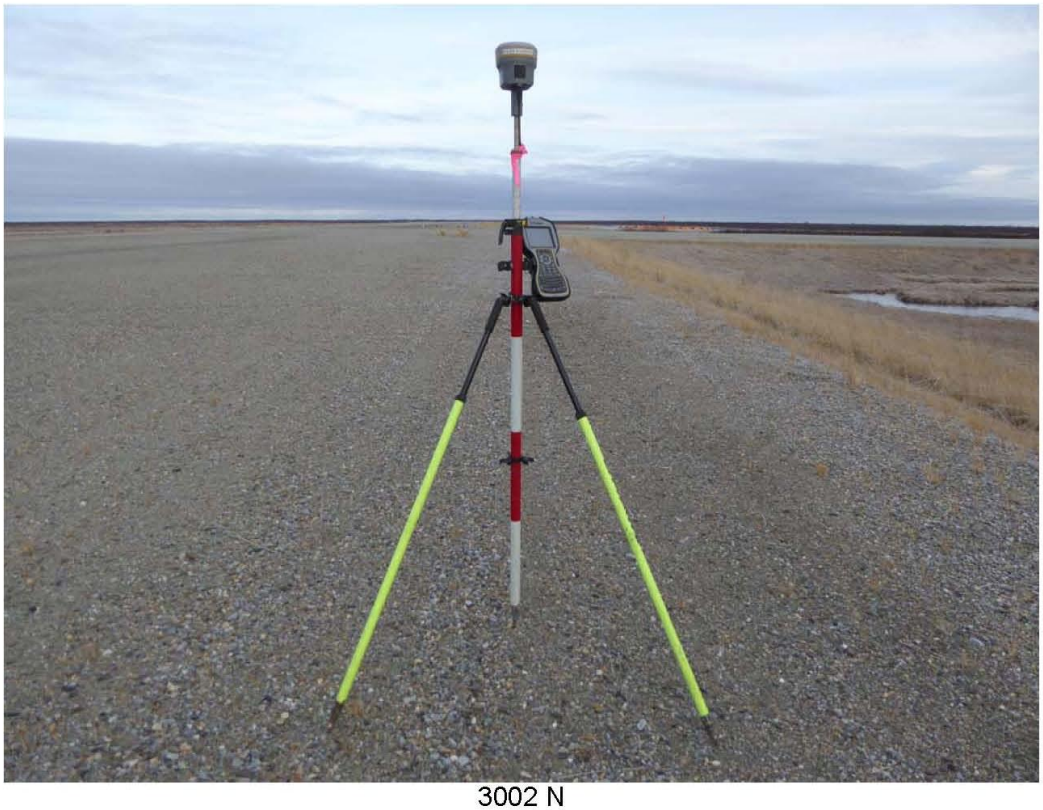
2940 W



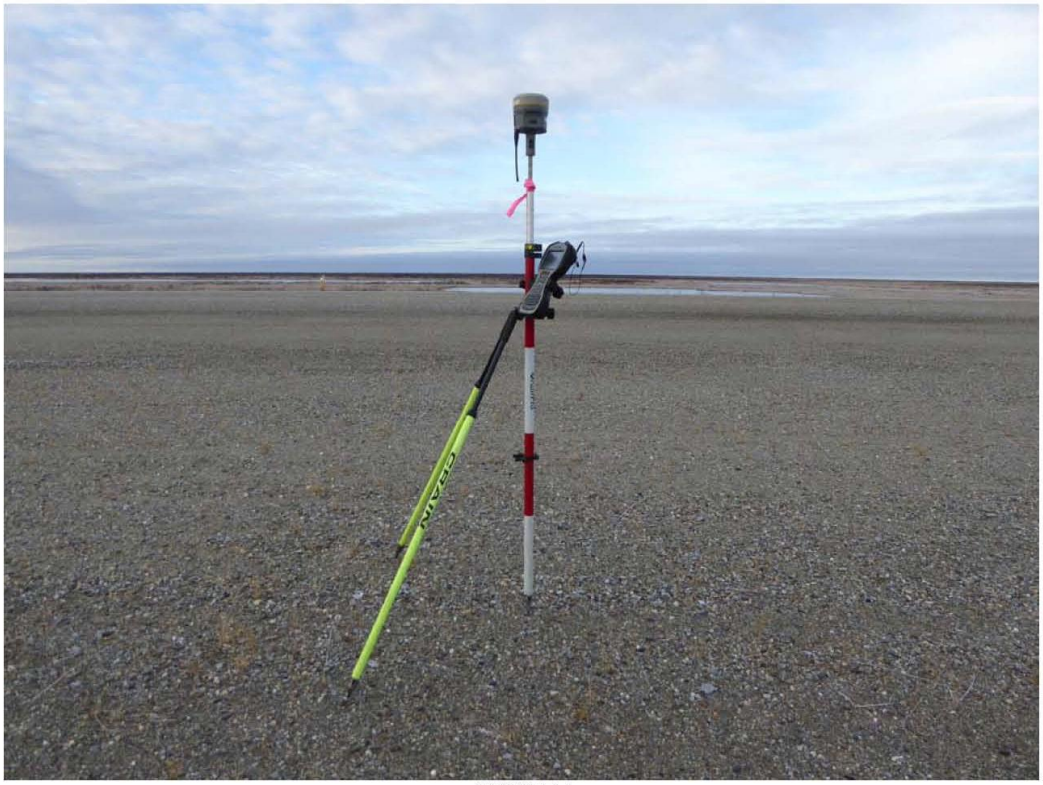
3000 N



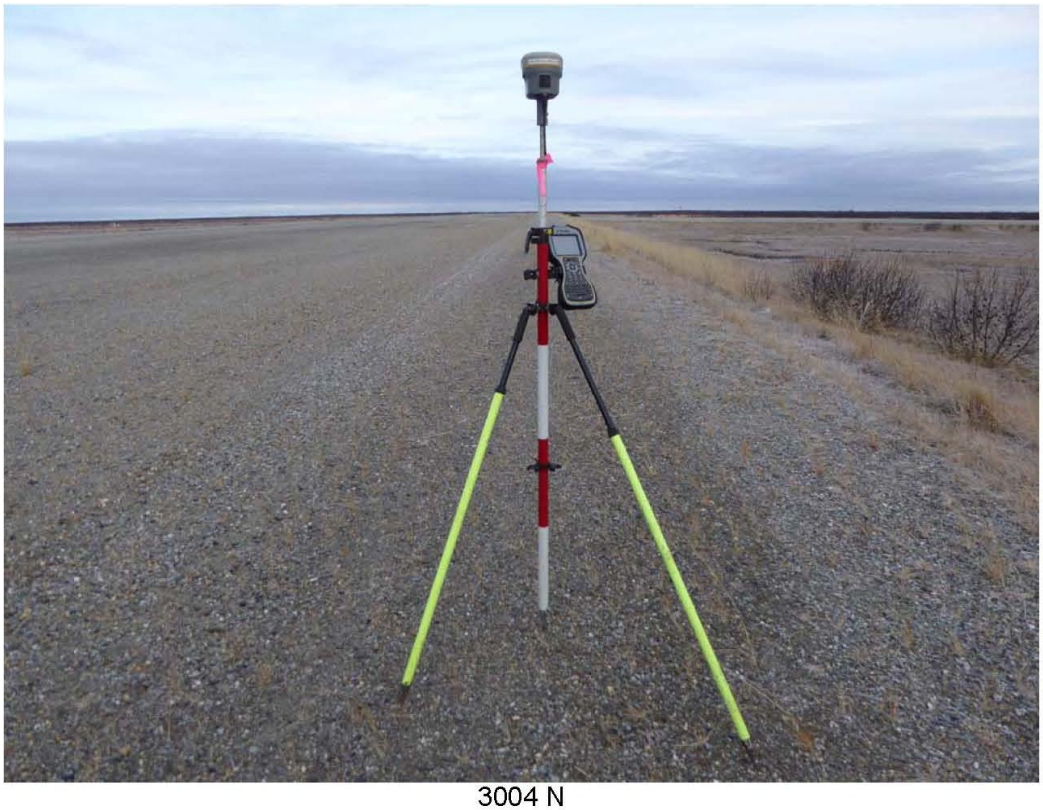
3000 W



3002 N



3002 W



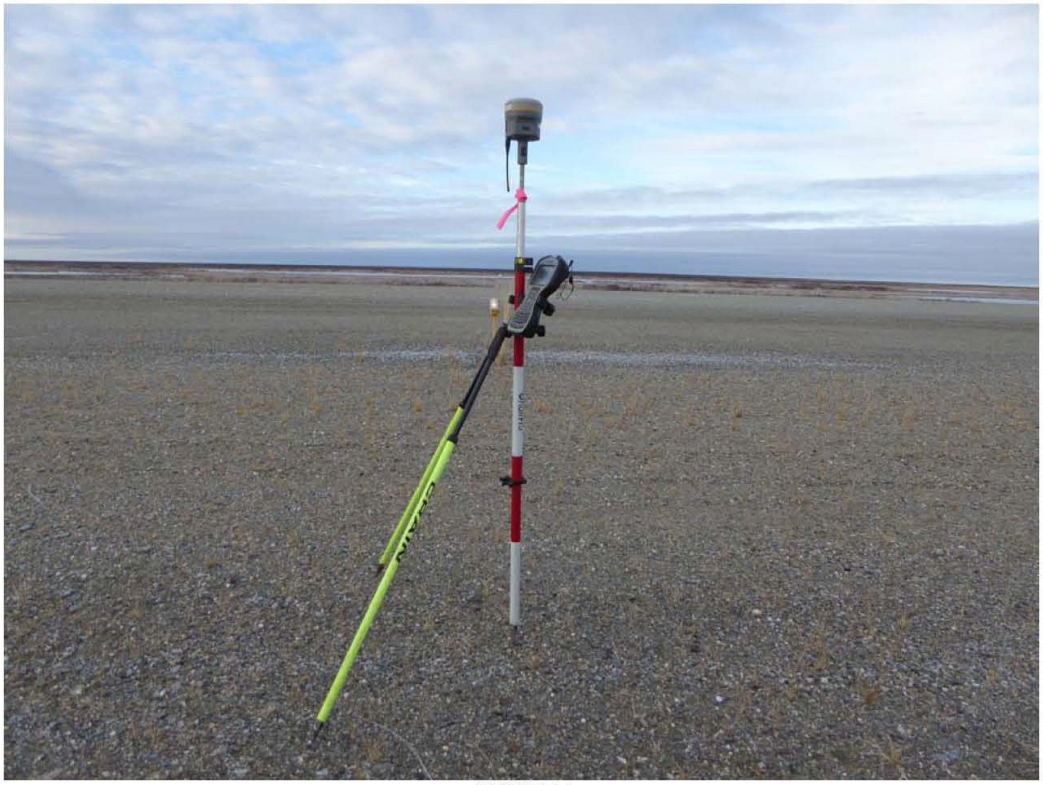
3004 N



3004 W



3006 N



3006 W



3008 N



3008 W



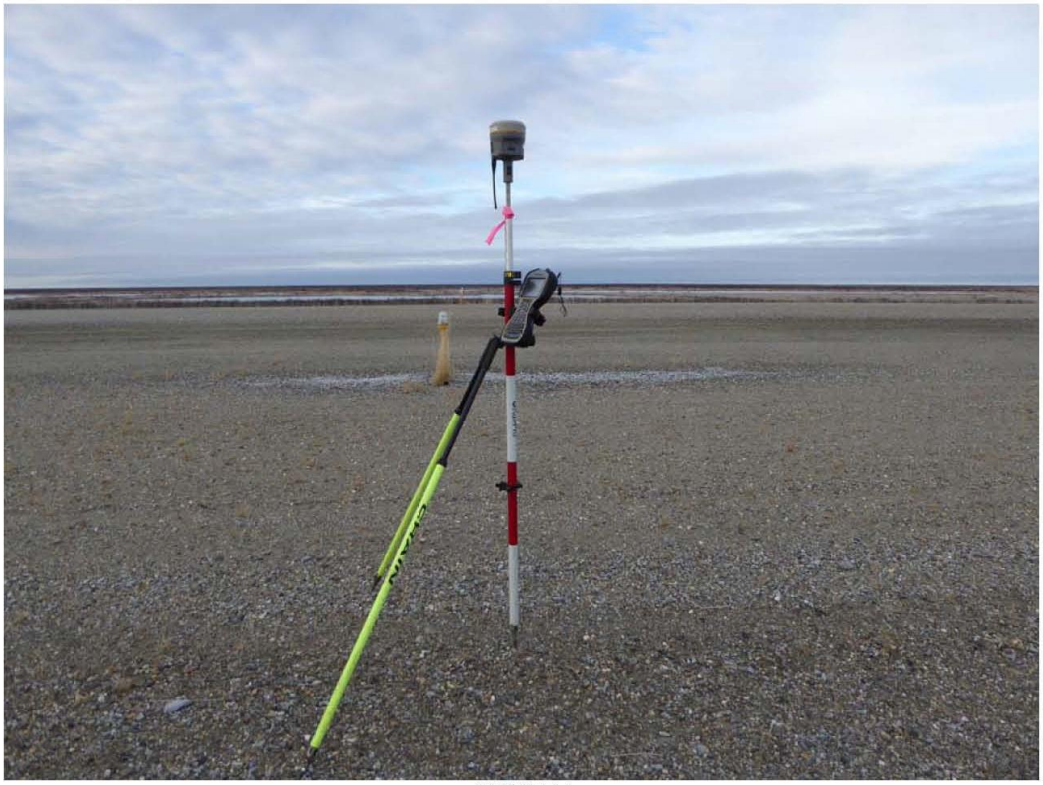
3010 N



3010 W



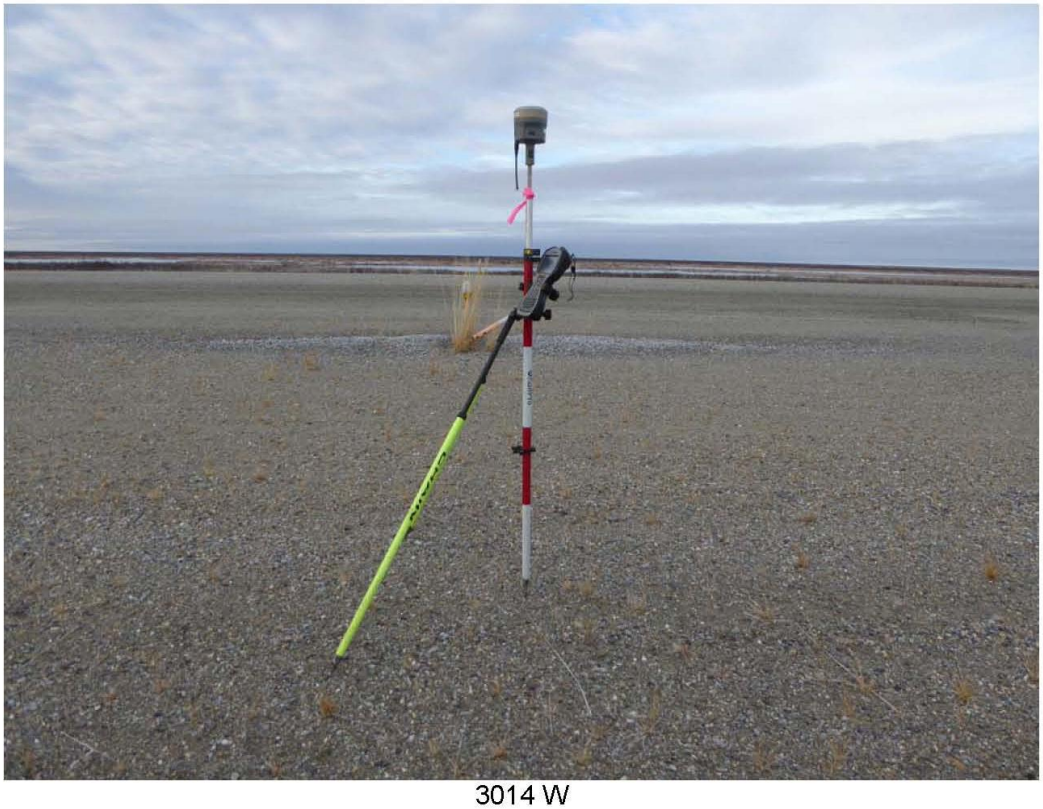
3012 N



3012 W



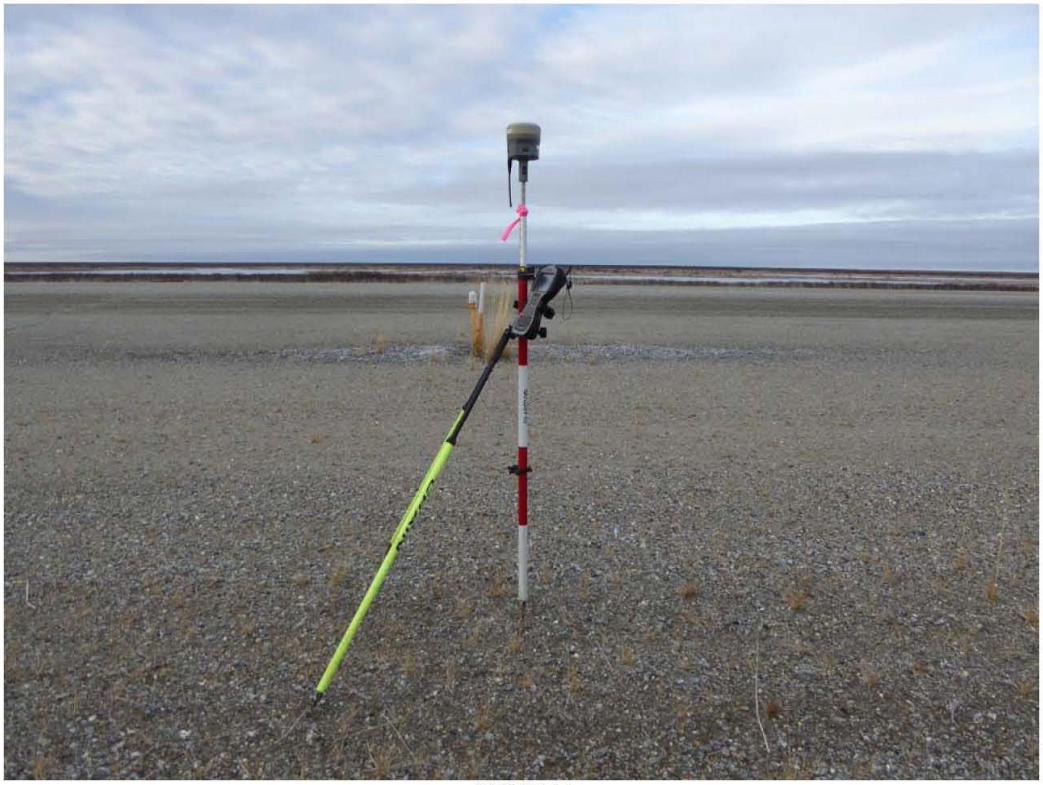
3014 N



3014 W



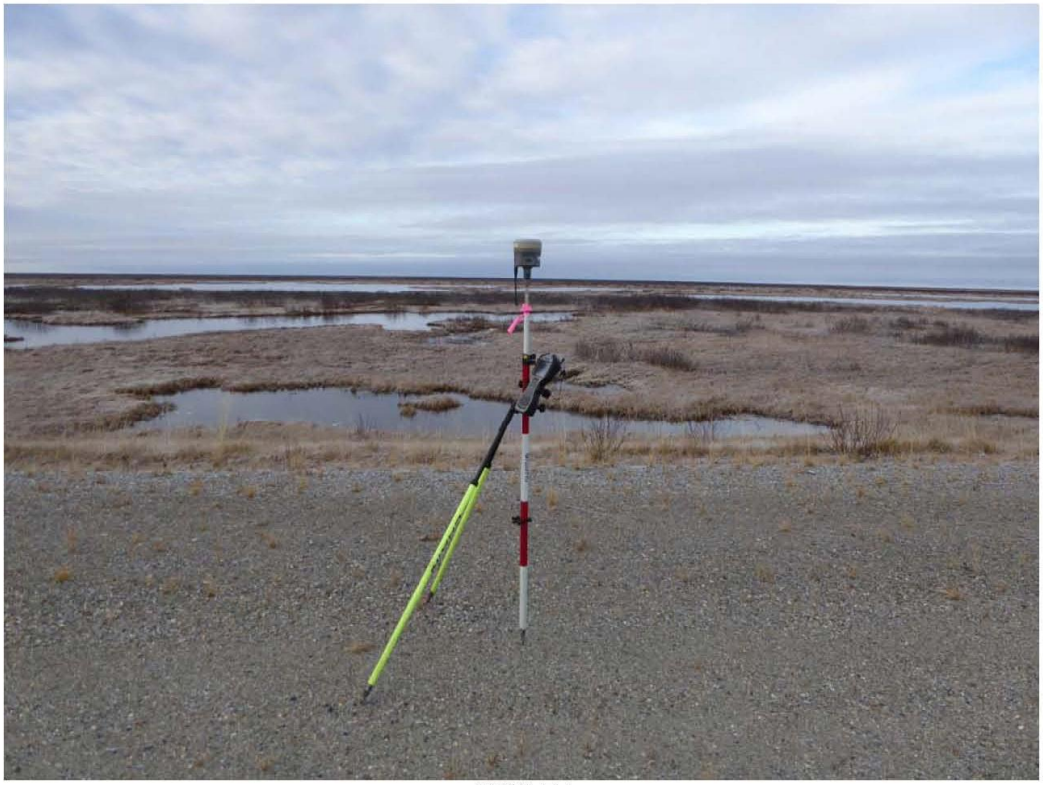
3016 N



3016 W



3018 N



3018 W



3020 N



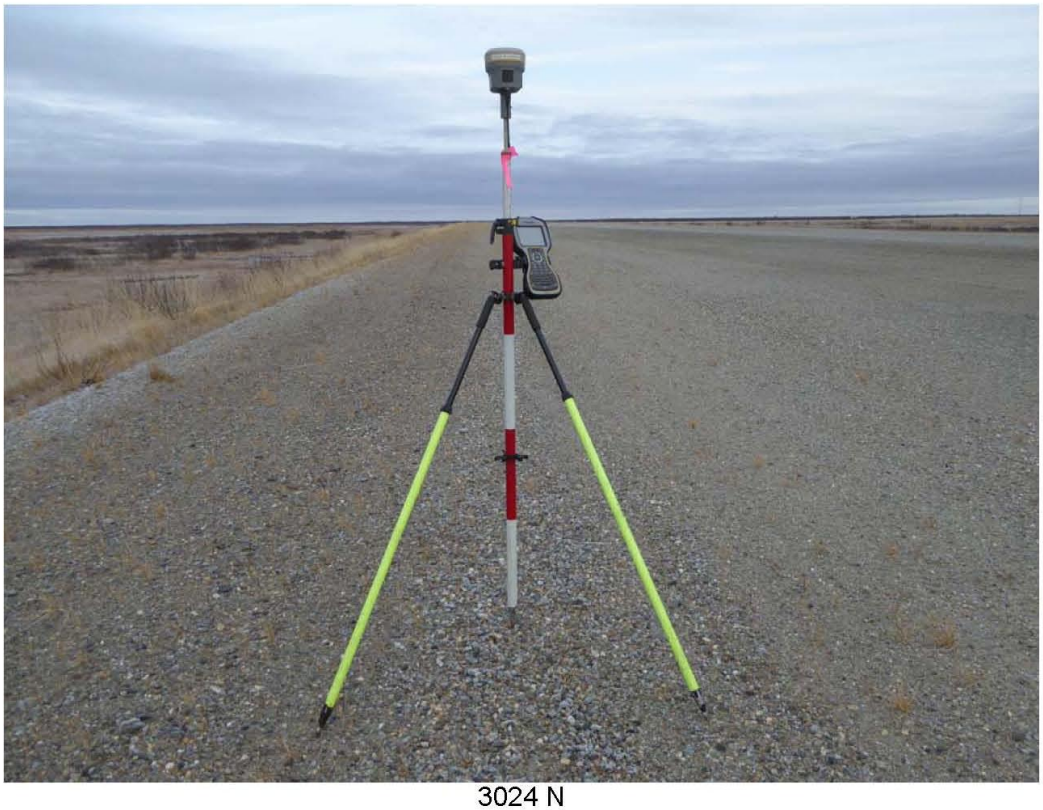
3020 W



3022 N



3022 W



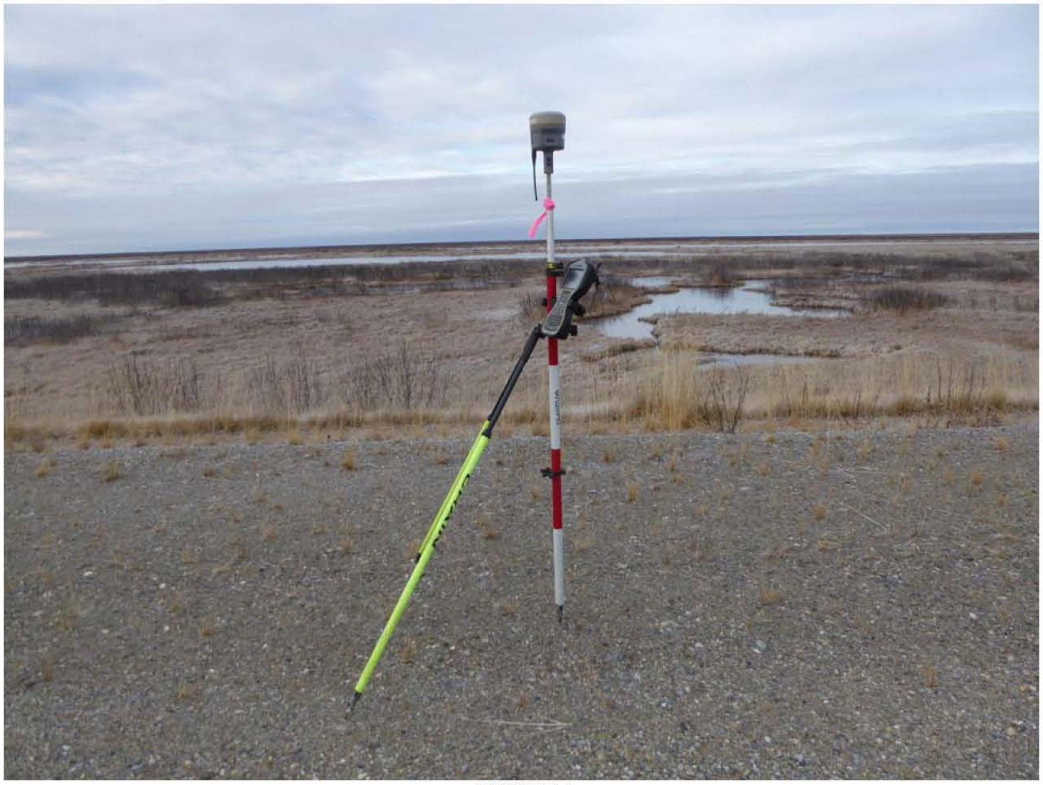
3024 N



3024 W



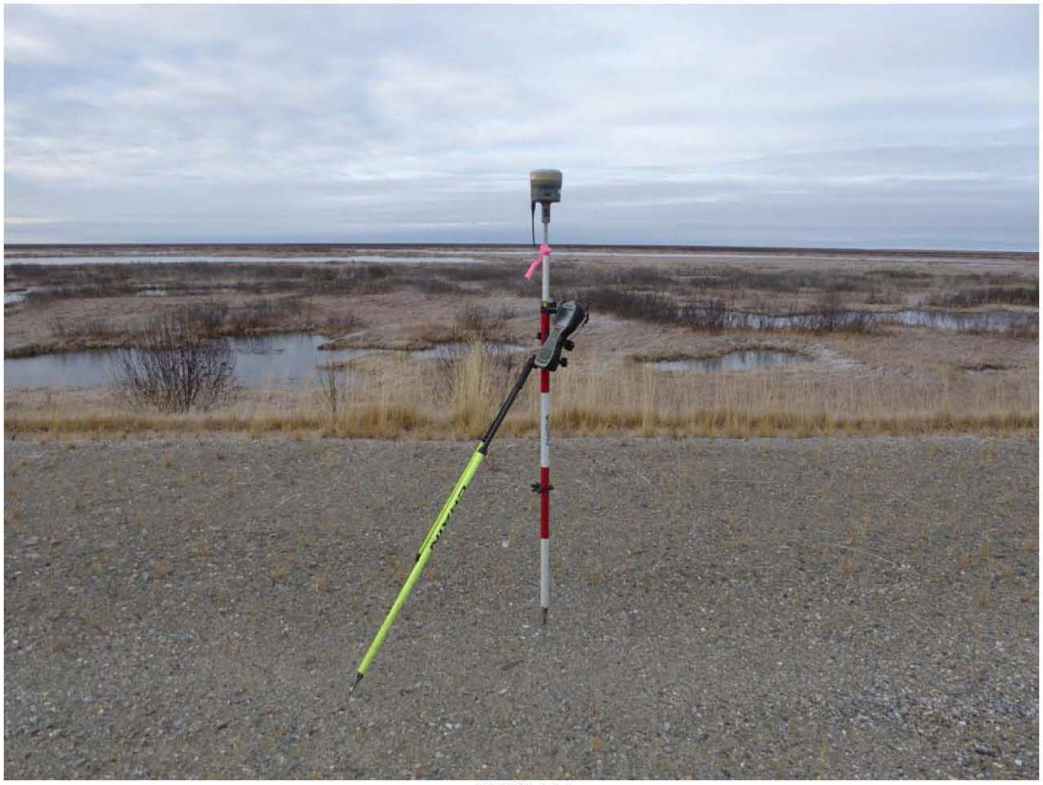
3026 N



3026 W



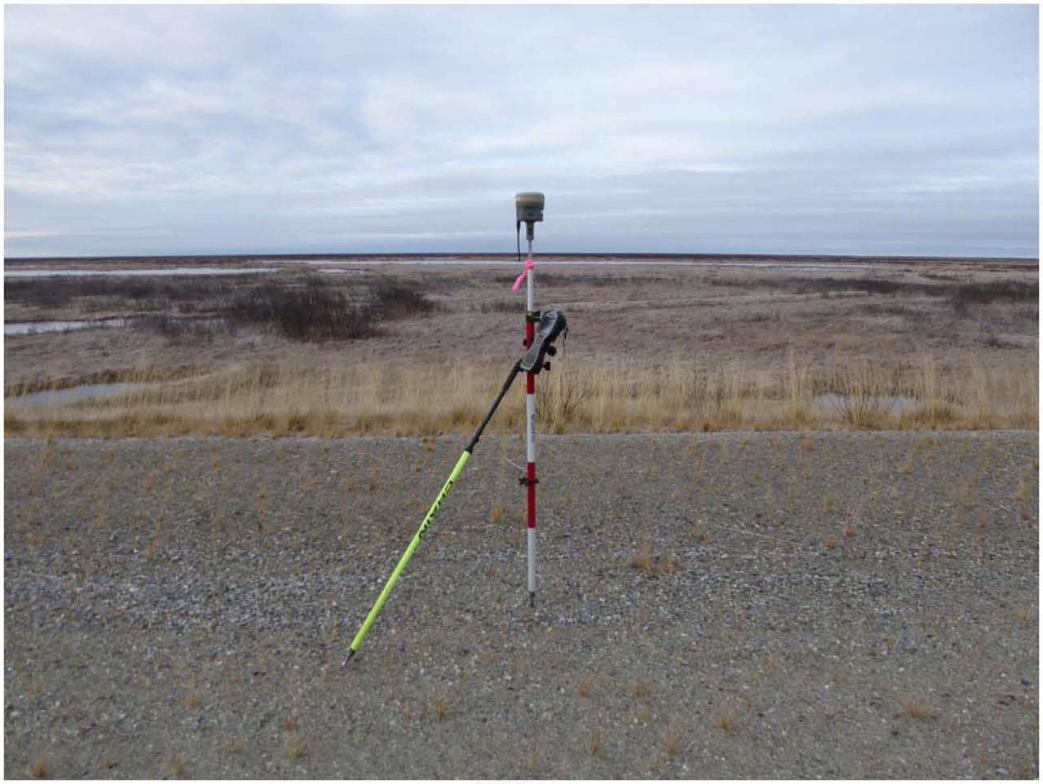
3028 N



3028 W



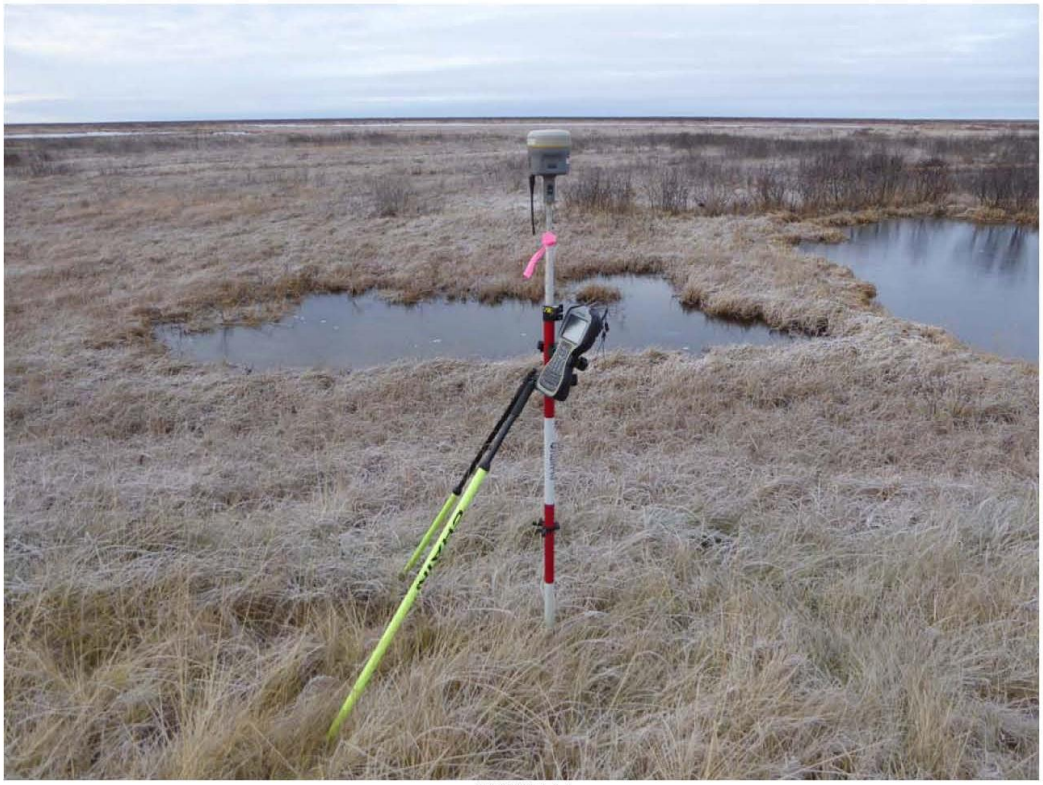
3030 N



3030 W



3032 N



3032 W



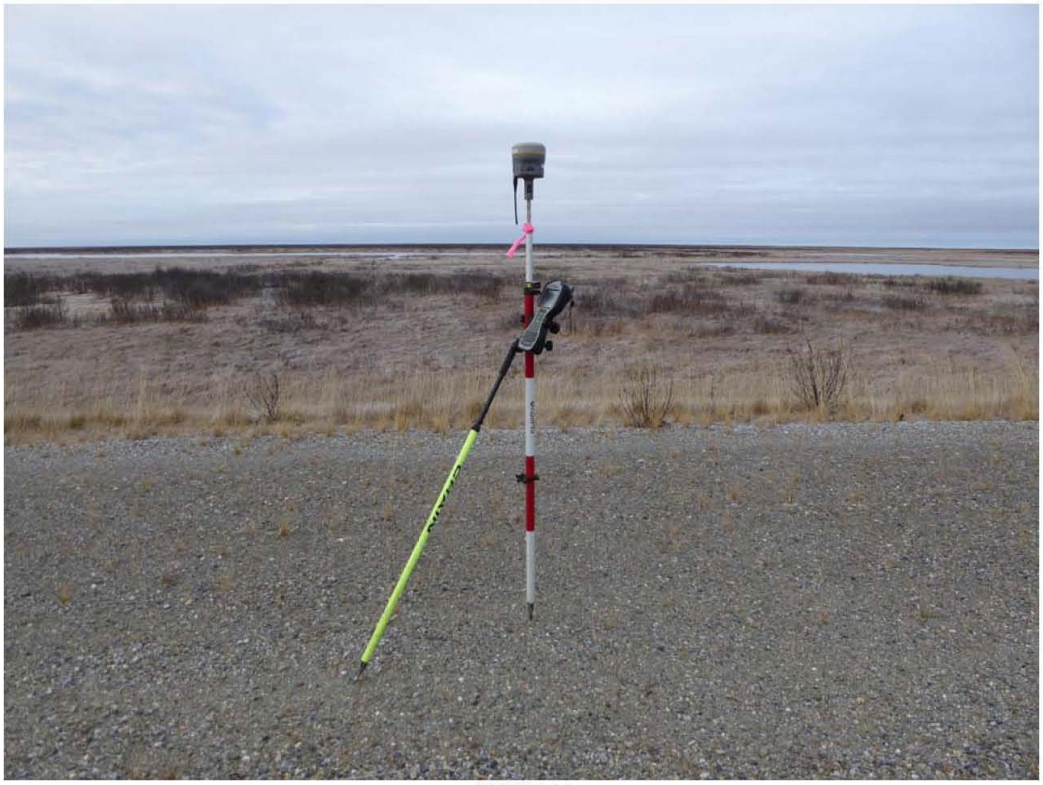
3034 N



3034 W



3036 N



3036 W



3038 N



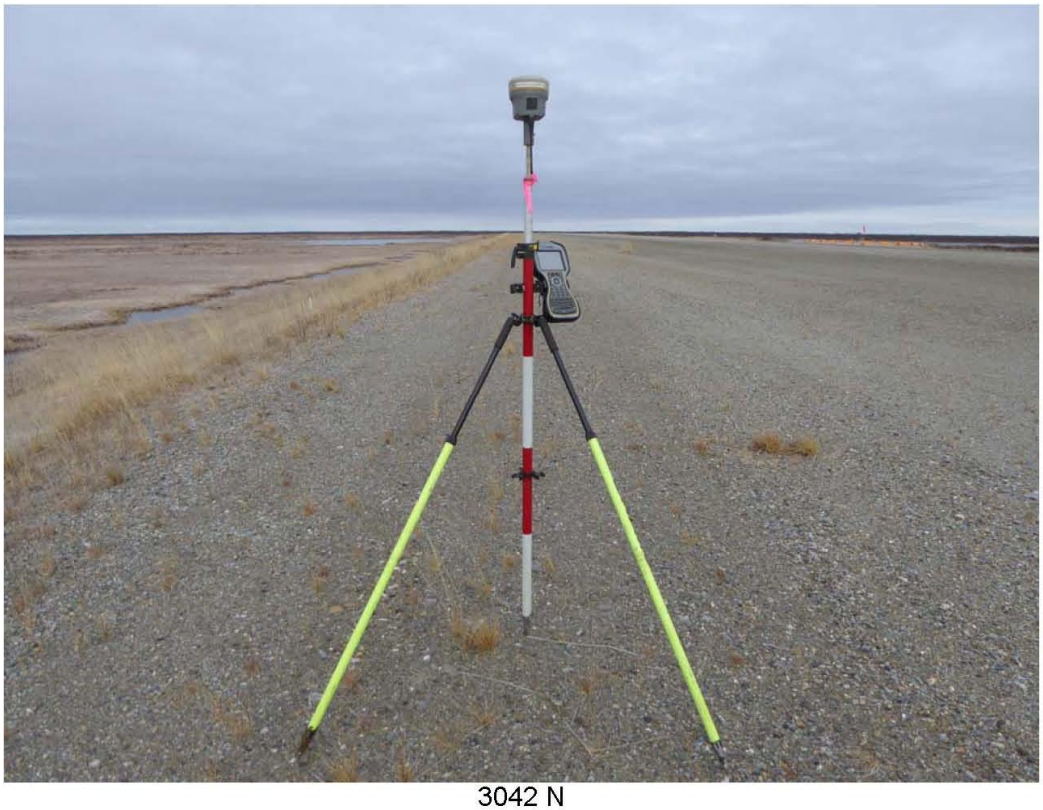
3038 W



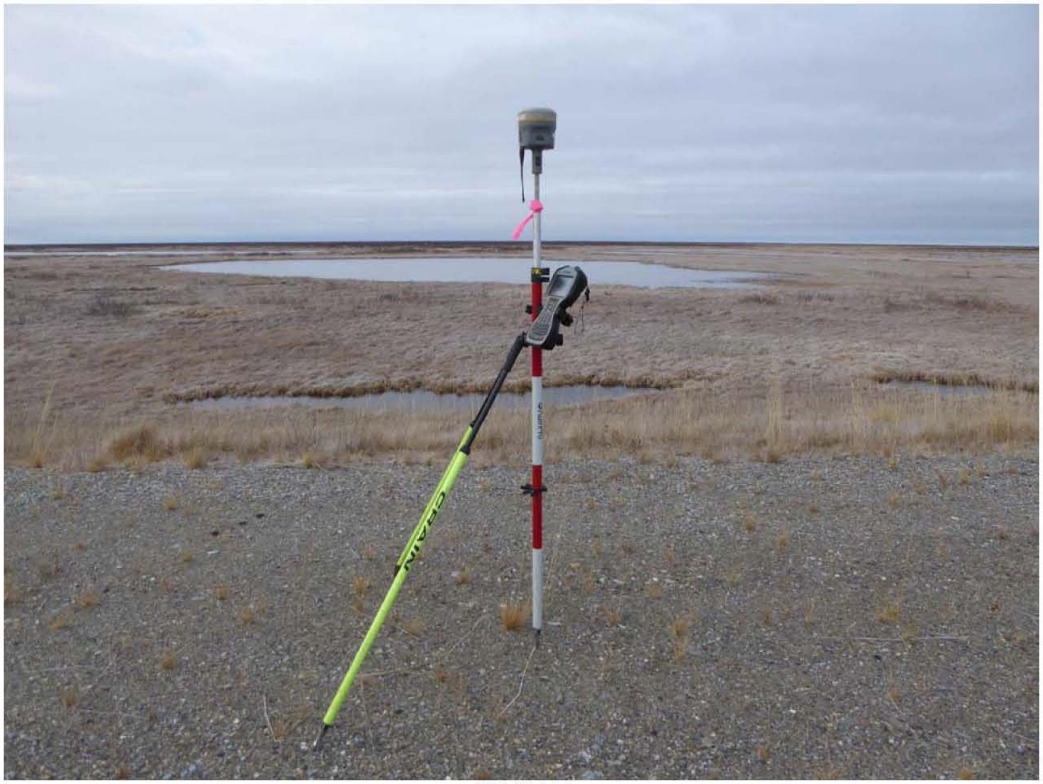
3040 N



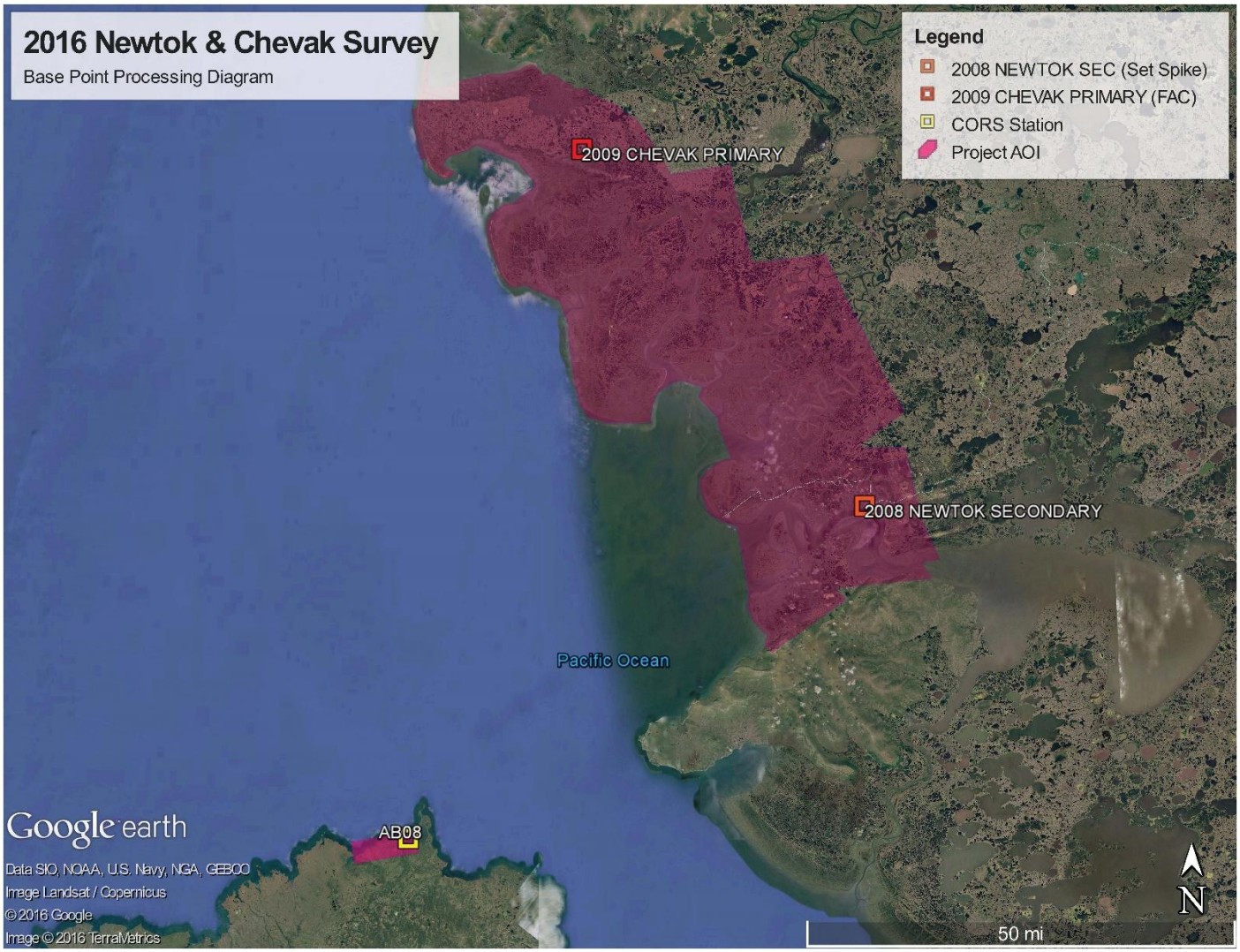
3040 W

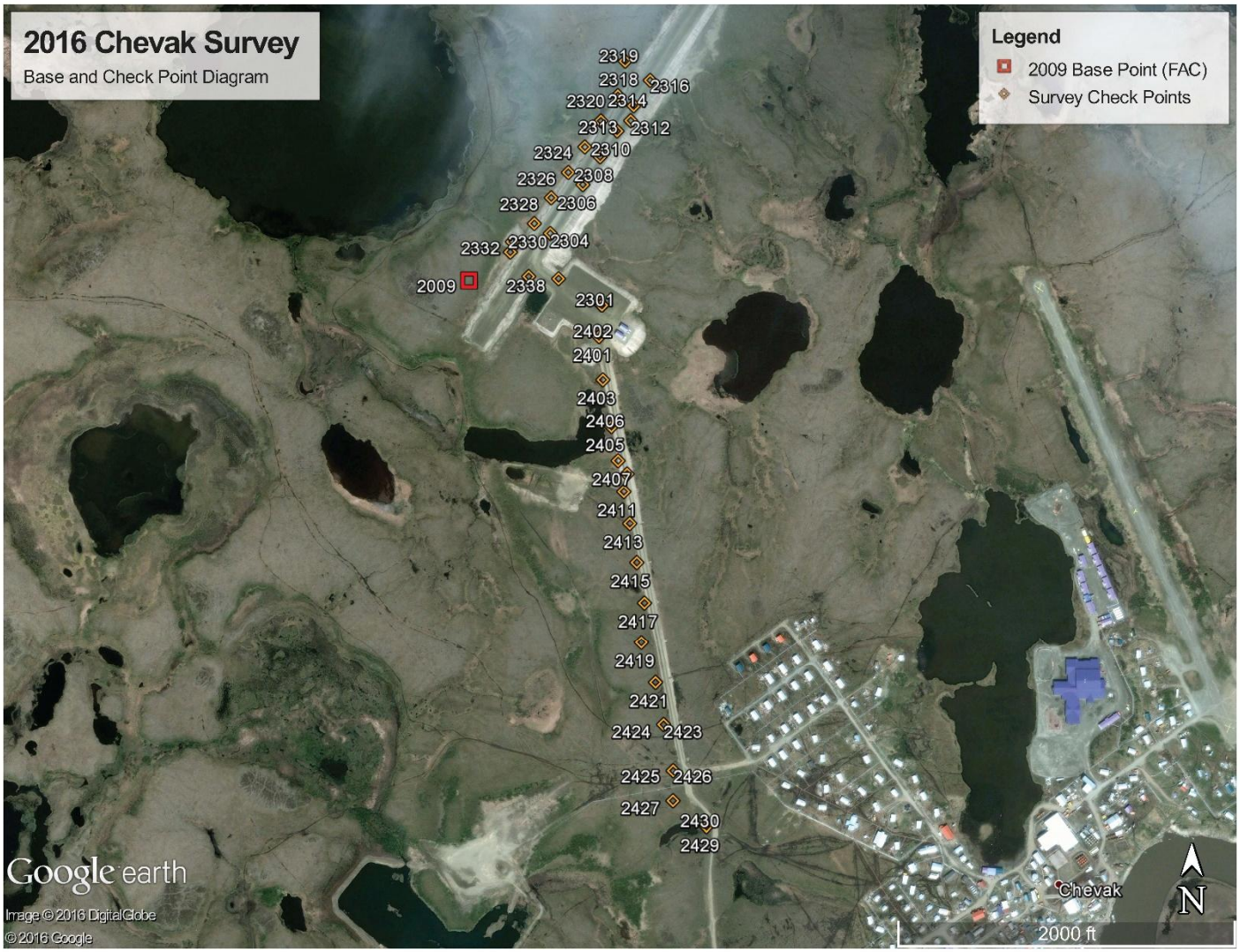


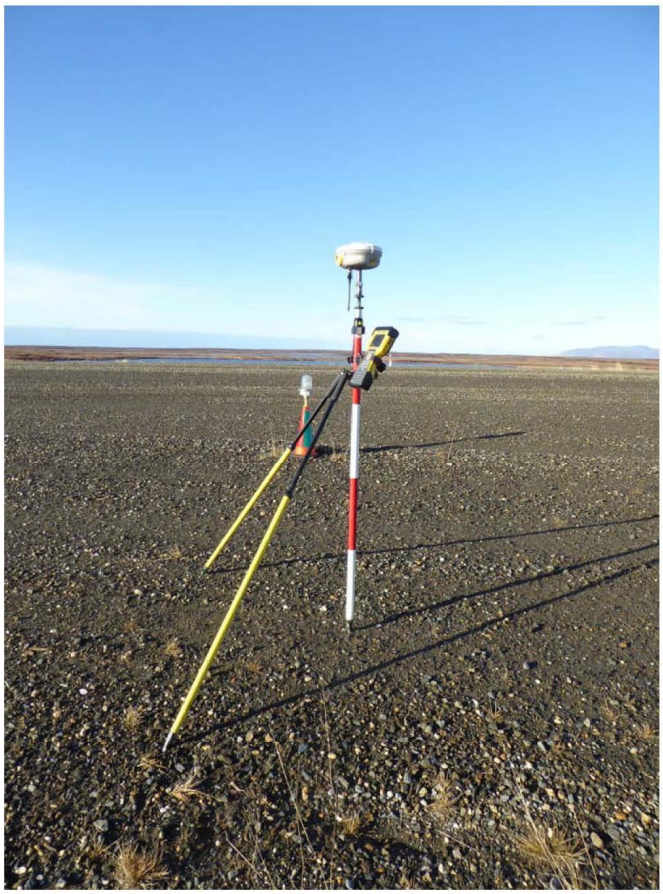
3042 N



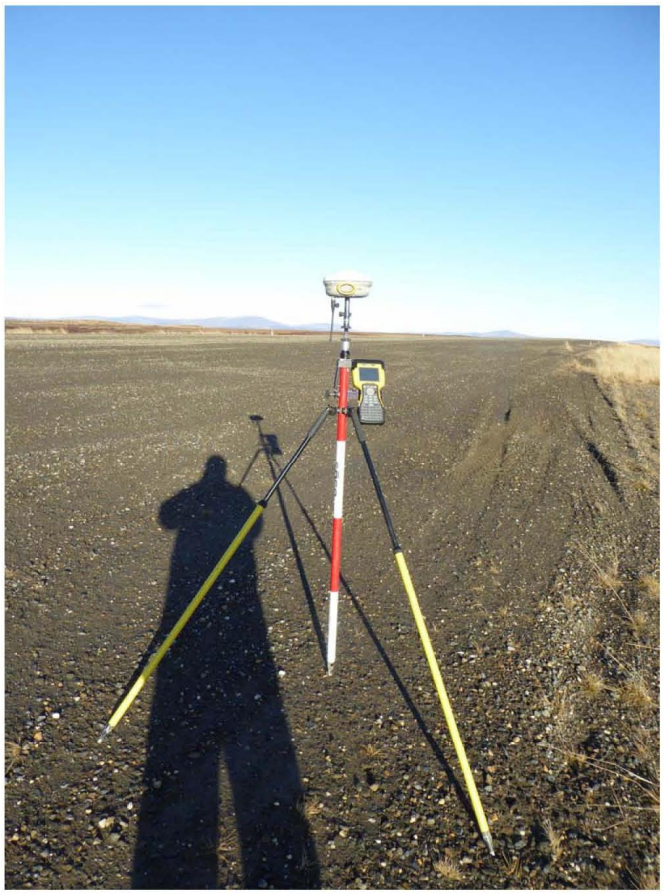
3042 W


2016 Newtok & Chevak Survey
Base Point Processing Diagram
Legend
2008 NEWTOK SEC (Set Spike)
2009 CHEVAK PRIMARY (FAC)
CORS Station
Project AOI
2009 CHEVAK PRIMARY
2008 NEWTOK SECONDARY
Pacific Ocean
AB08
Google earth
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image Landsat / Copernicus
© 2016 Google
Image © 2016 TerraMetrics
N
50 mi

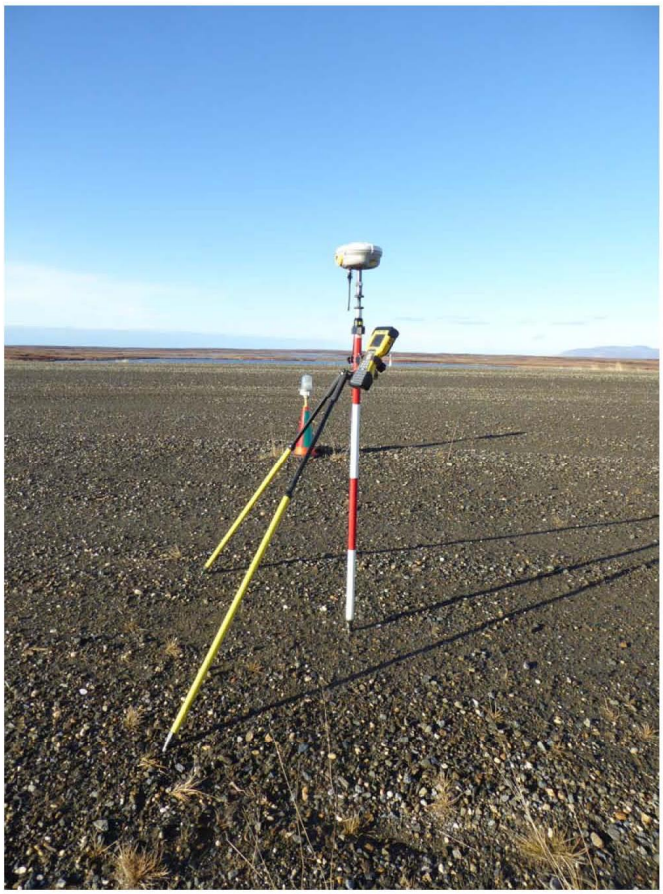

2016 Chevak Survey
Base and Check Point Diagram
Legend
2009 Base Point (FAC)
Survey Check Points
2319
2318
2316
2320
2314
2313
2312
2324
2310
2326
2308
2328
2306
2332
2330
2304
2009
2338
2301
2402
2401
2403
2406
2405
2407
2411
2413
2415
2417
2419
2421
2424
2423
2425
2426
2427
2430
2429
Google earth
Image © 2016 DigitalGlobe
© 2016 Google
Chevak
N
2000 ft



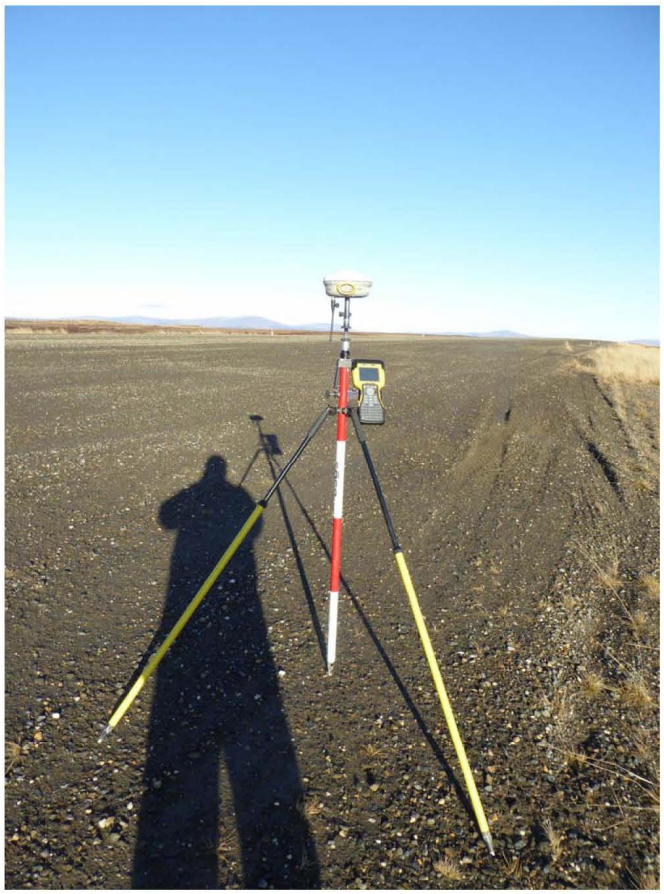
2302 W



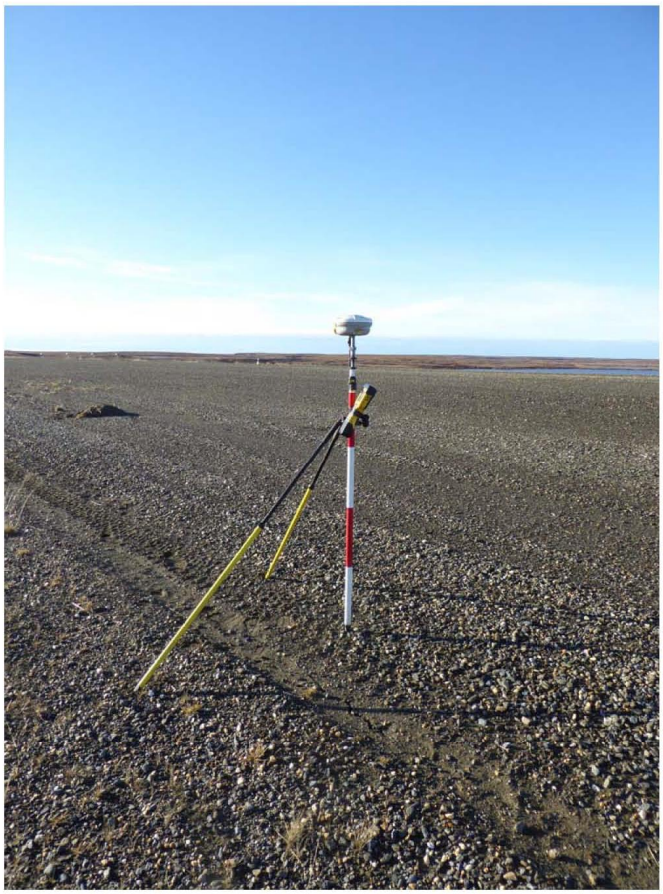
2302 N



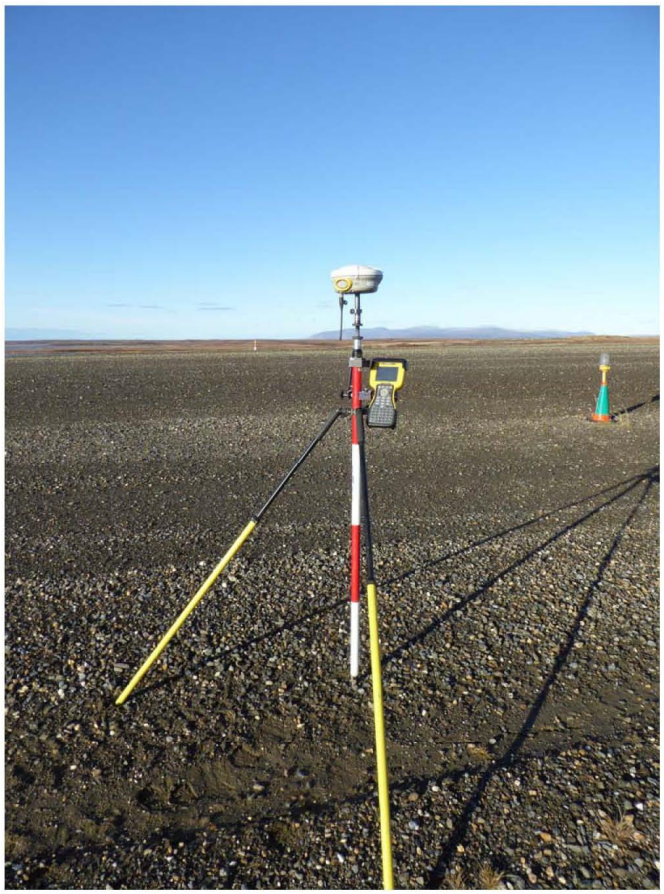
2304 W



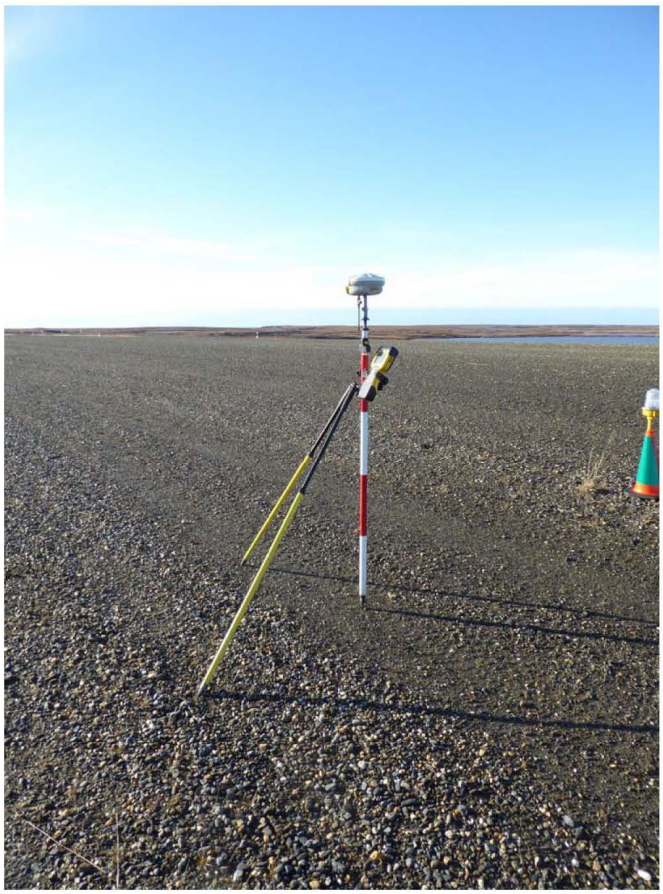
2304 N



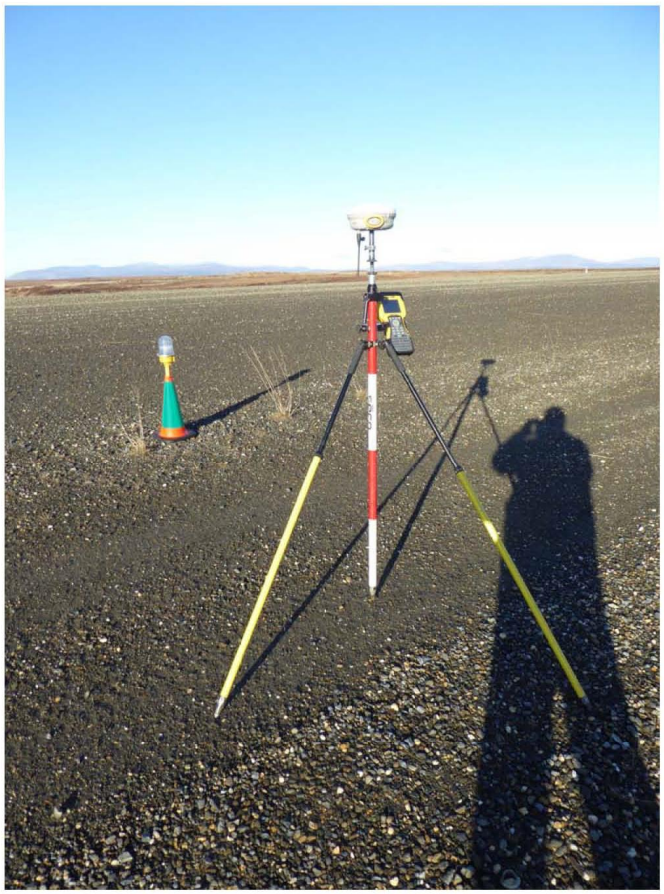
2306 W



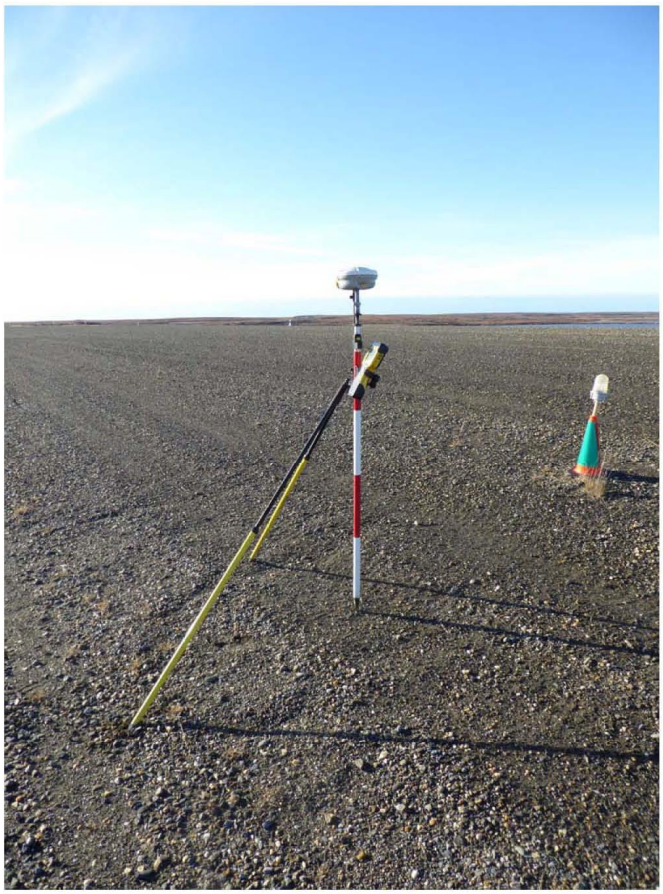
2306 N



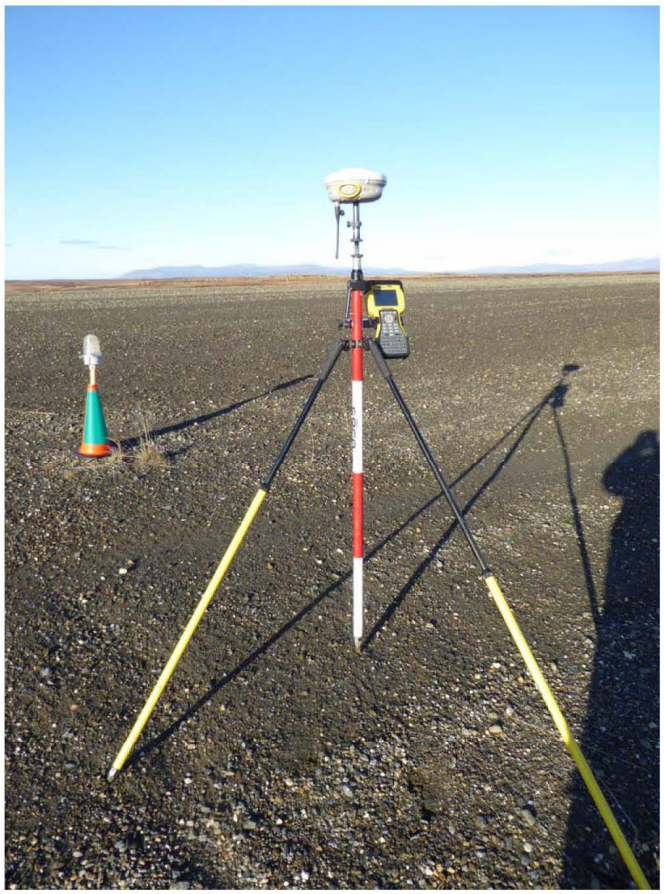
2308 W



2308 N



2310 W



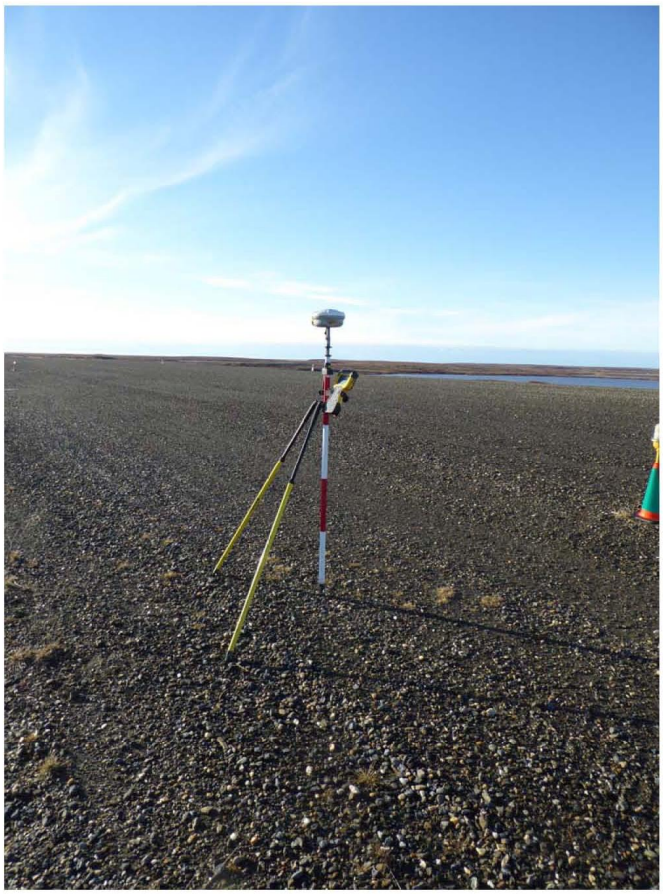
2310 N



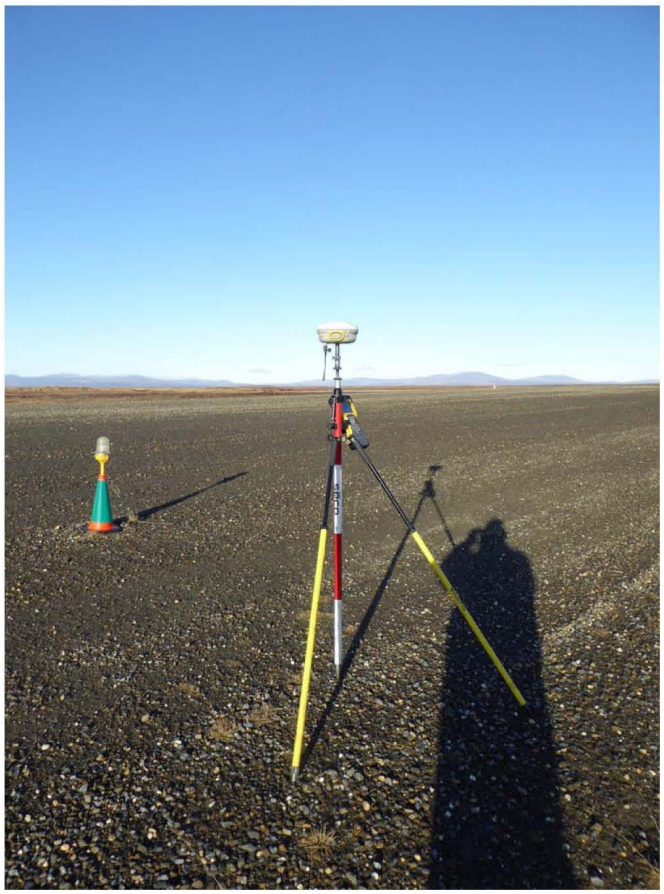
2312 W



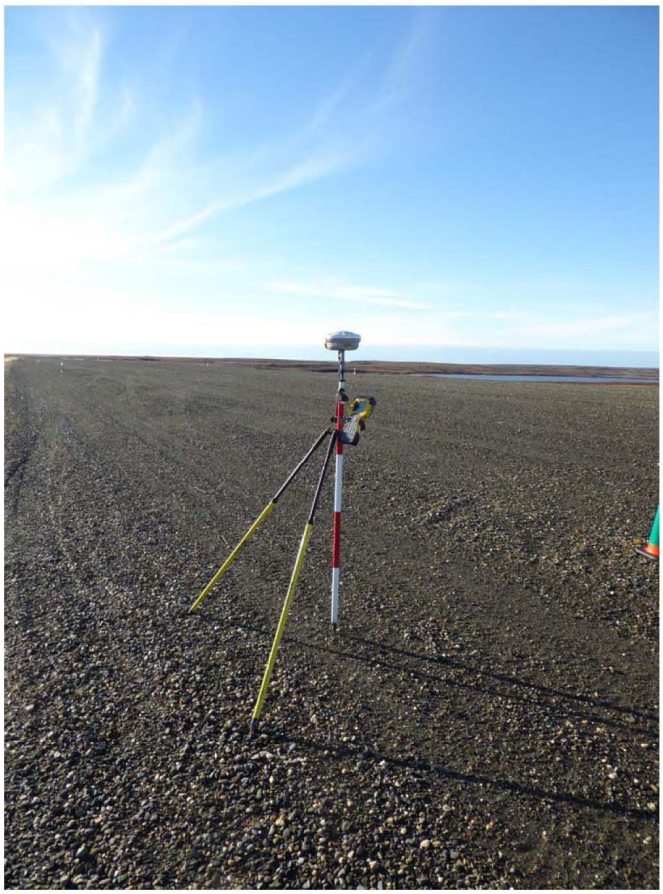
2312 N



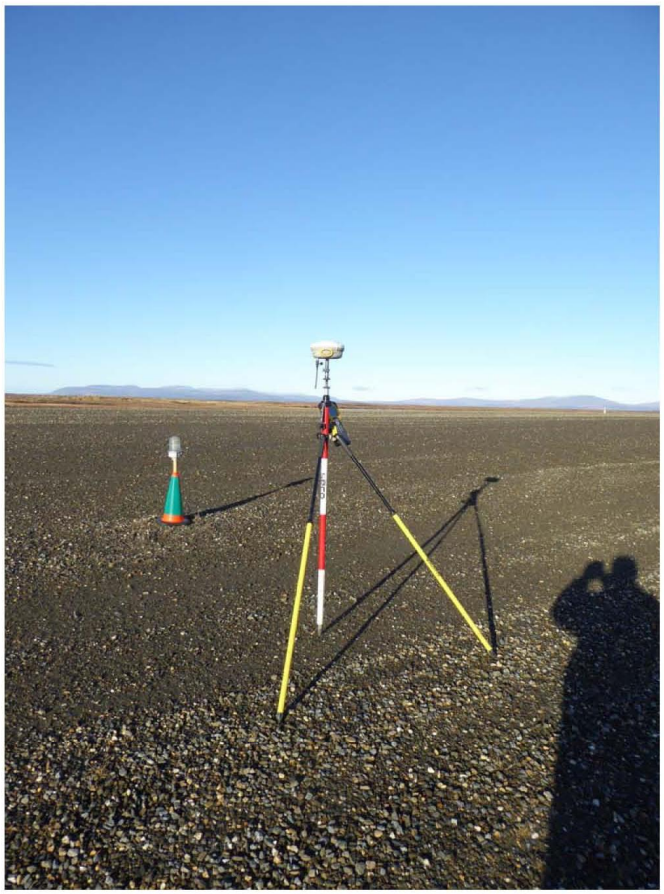
2314 W



2314 N



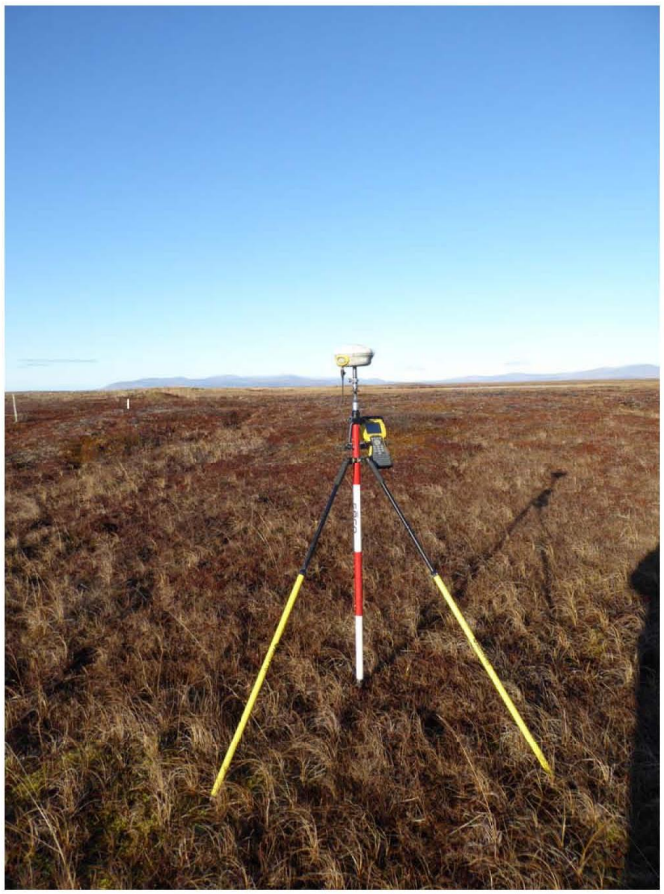
2316 W



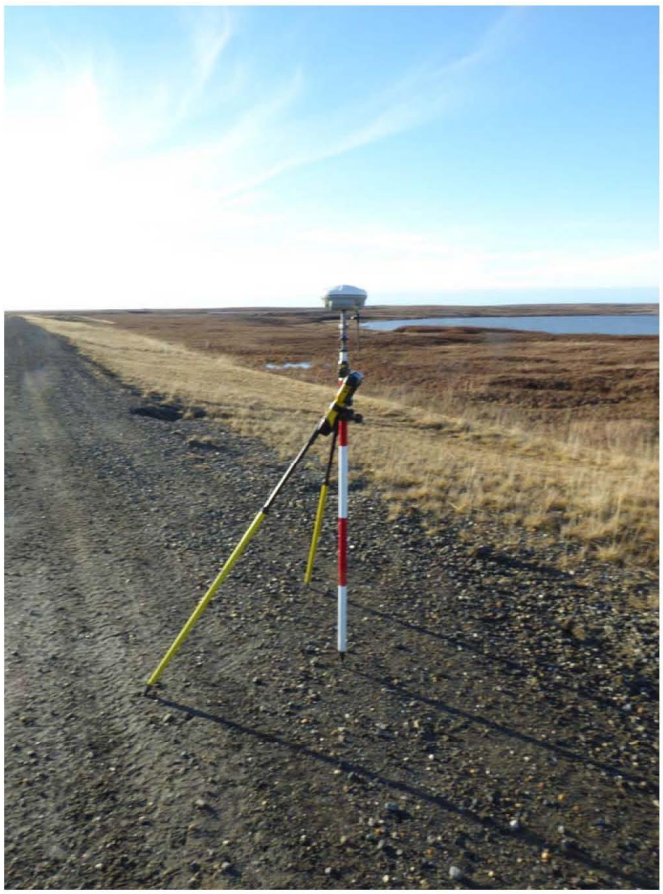
2316 N



2318 W



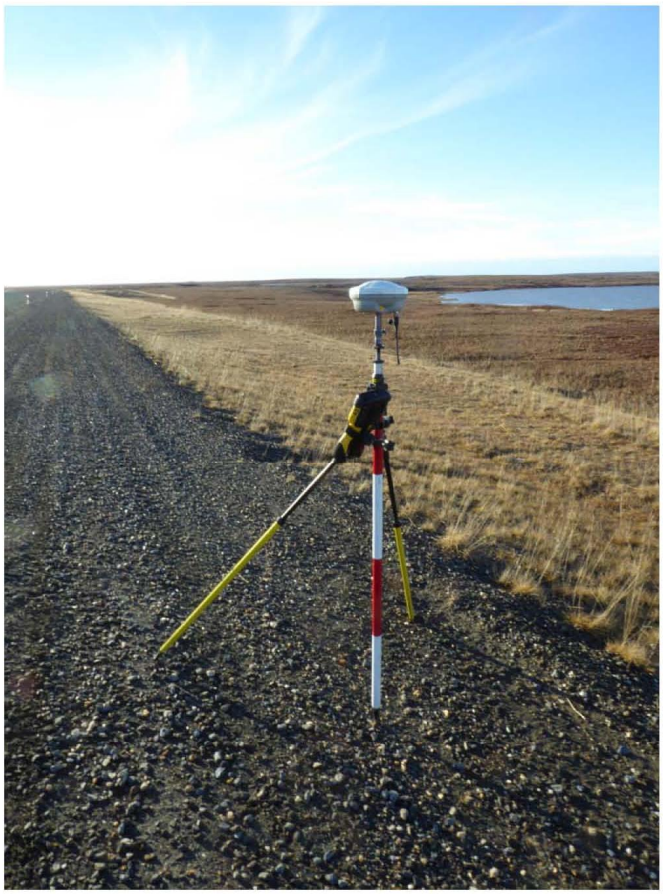
2318 N



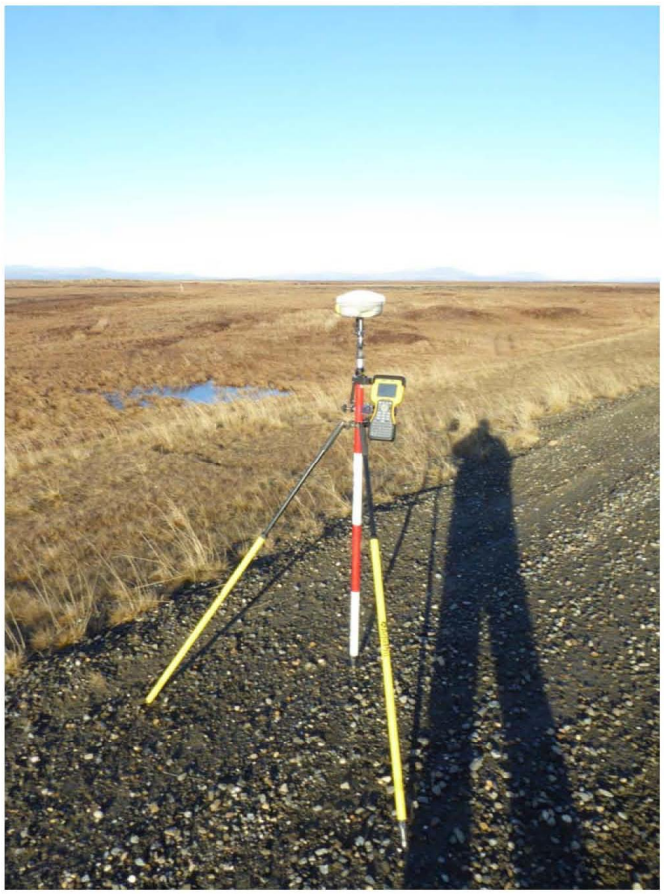
2320 W



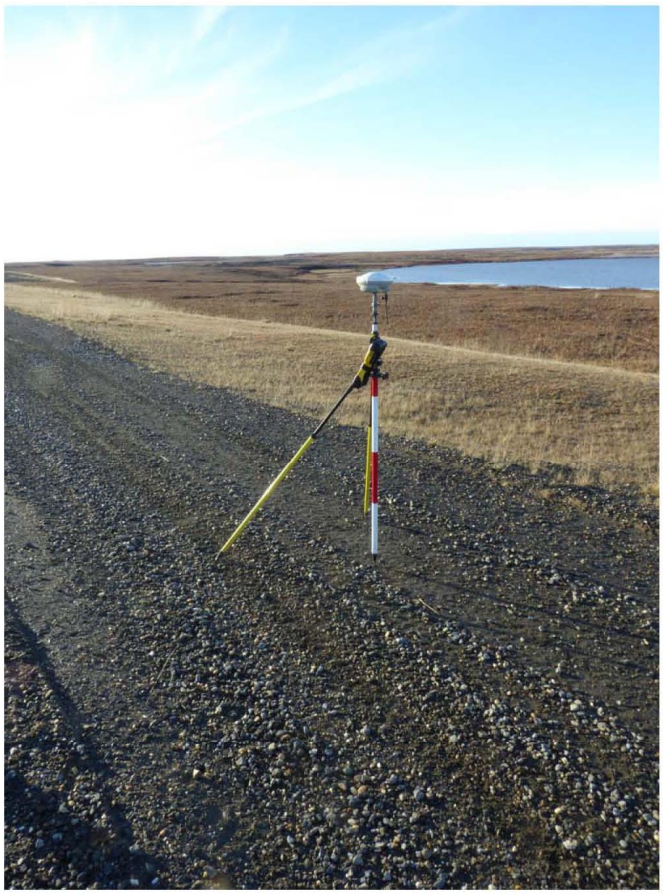
2320 N



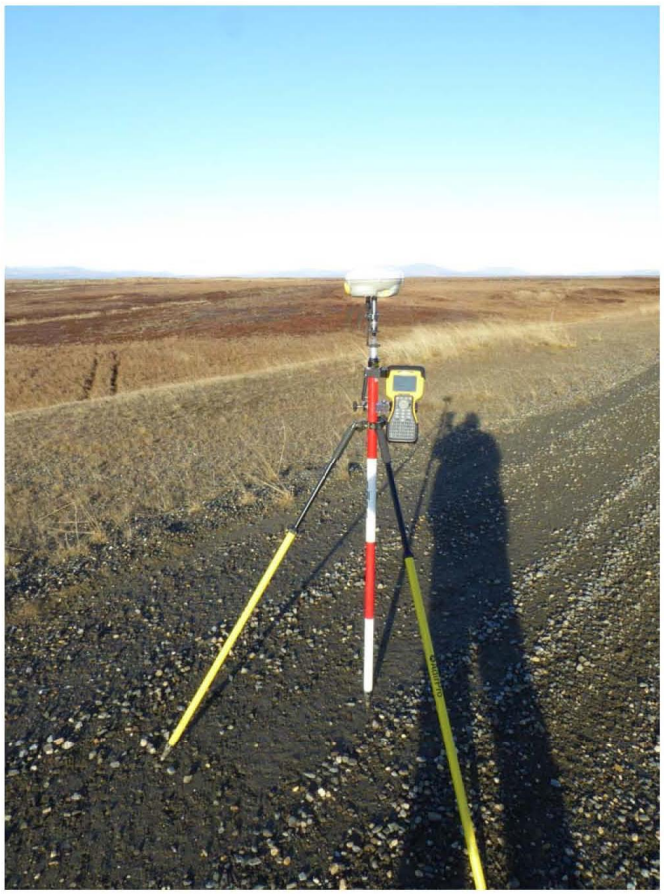
2322 W



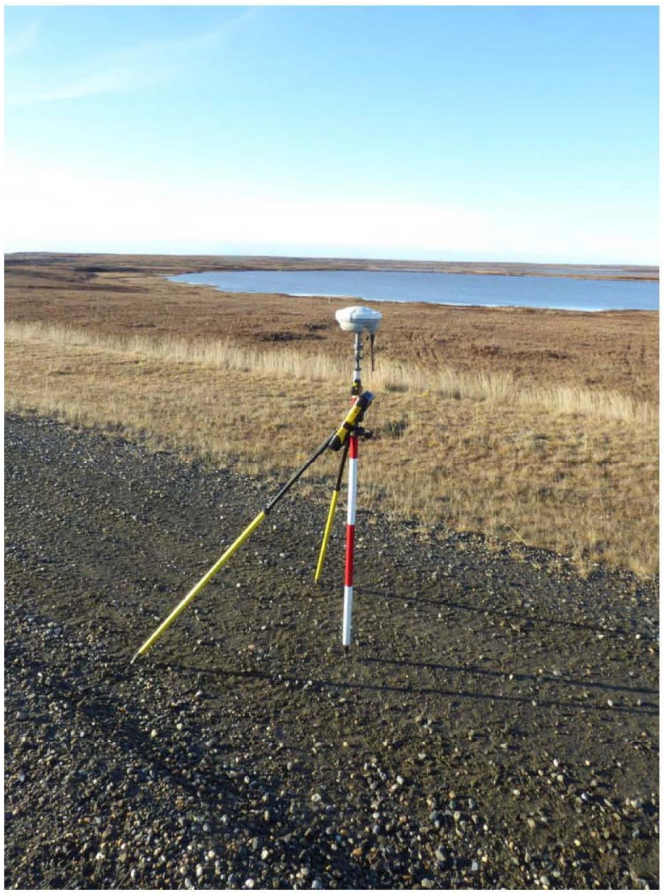
2322 N



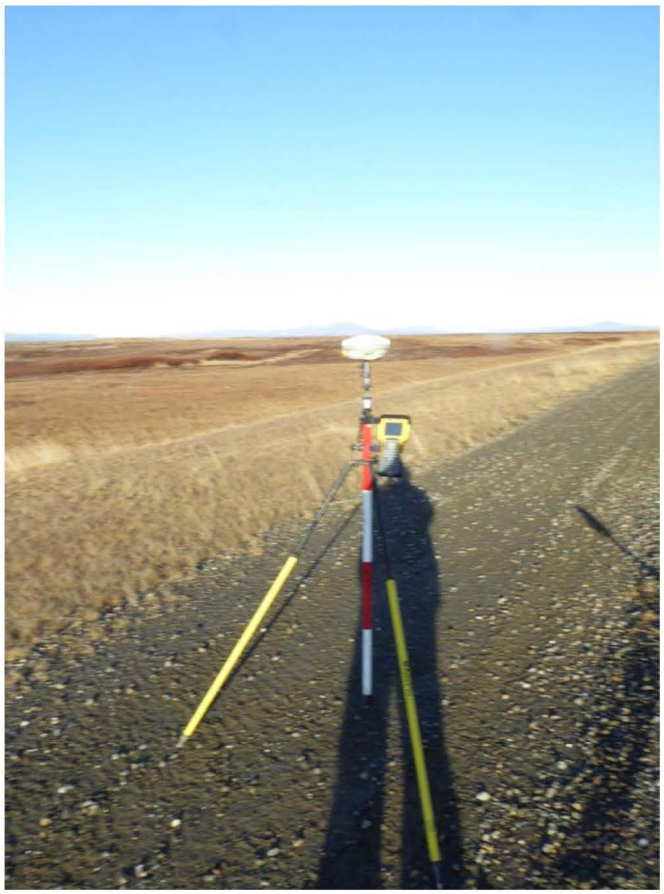
2324 W



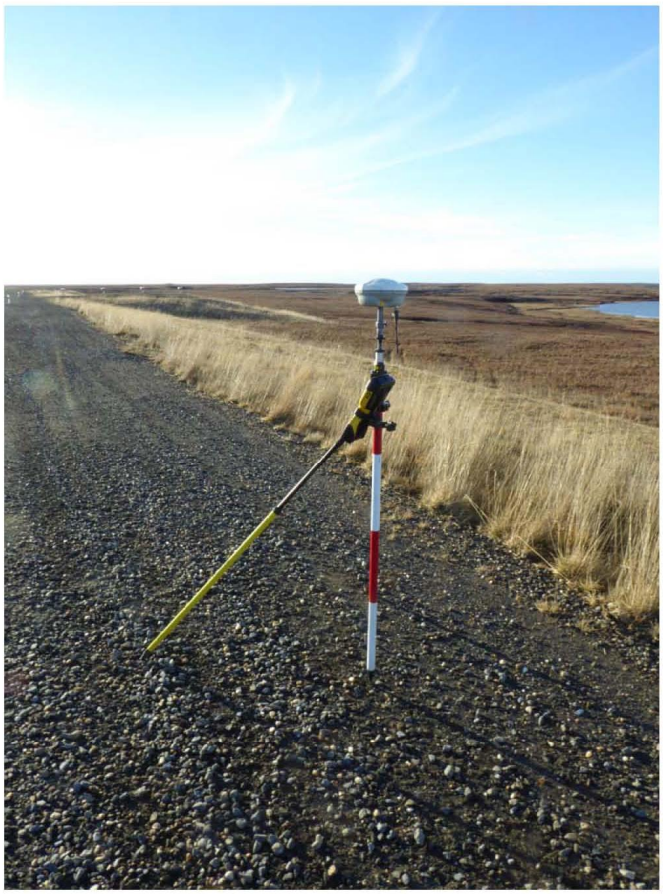
2324 N



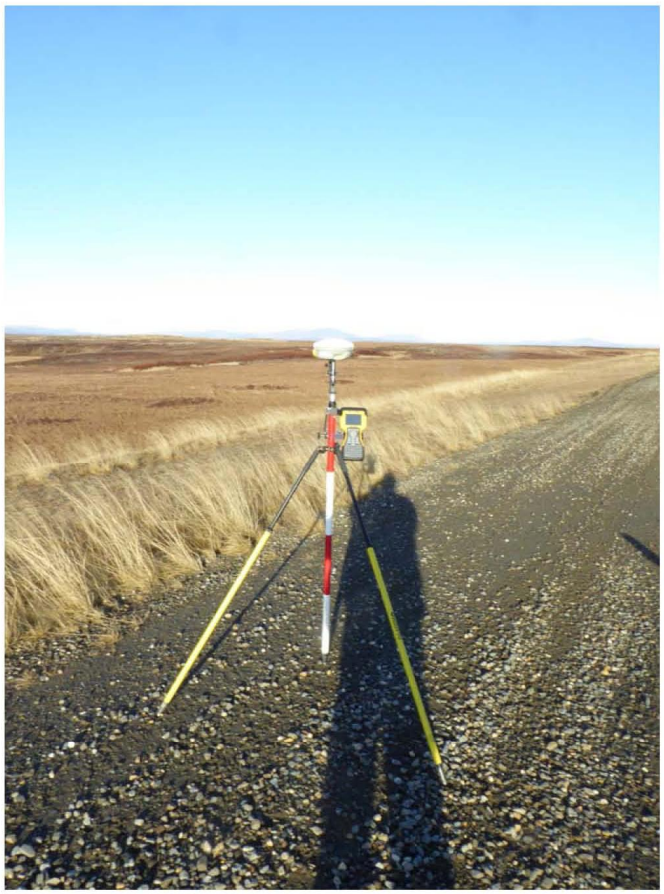
2326 W



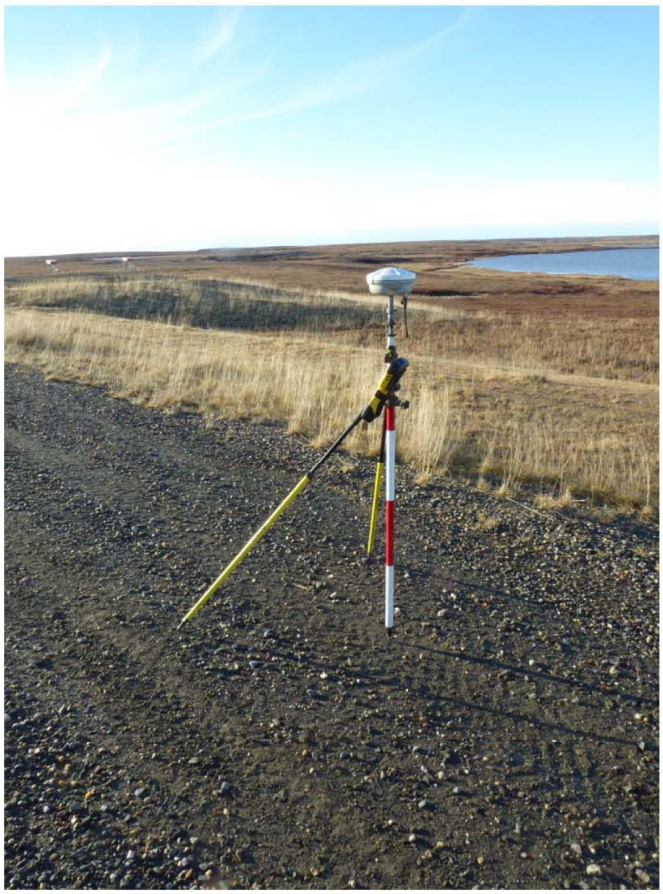
2326 N



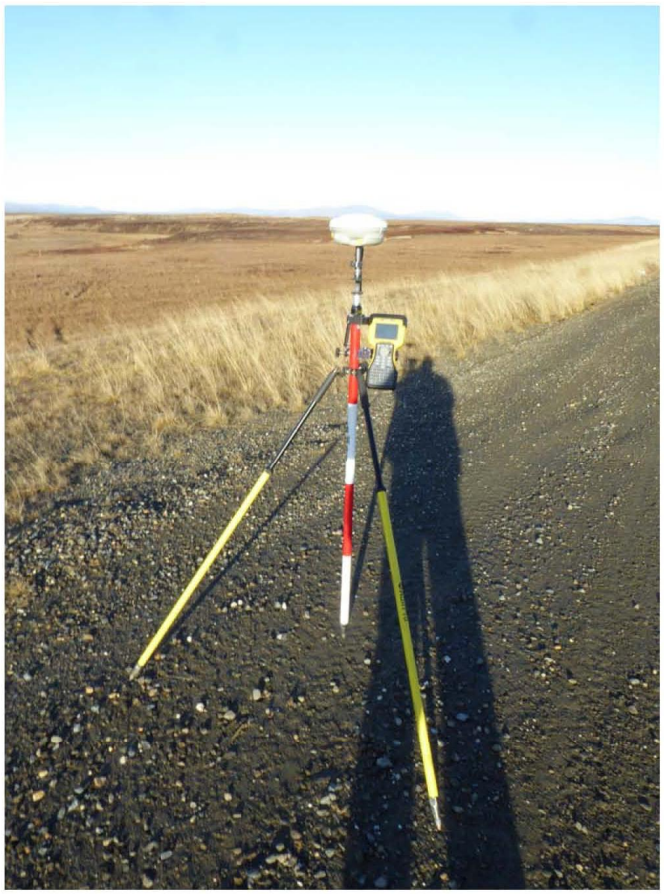
2328 W



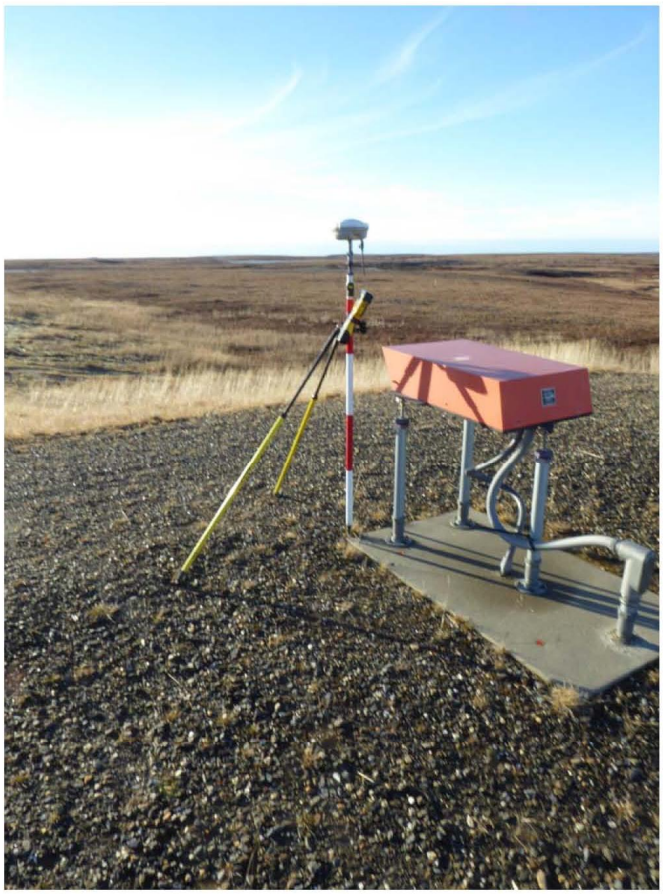
2328 N



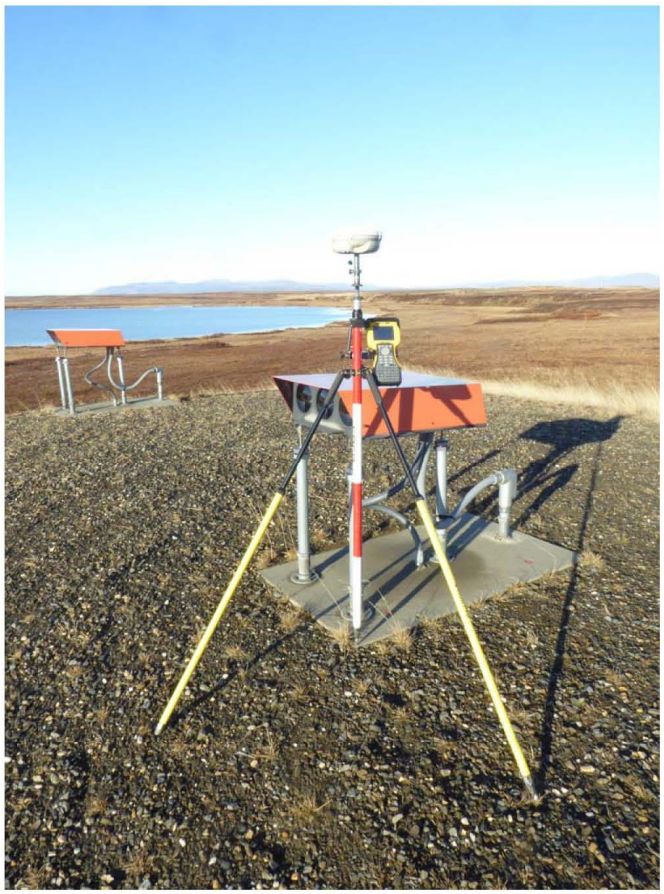
2330 W



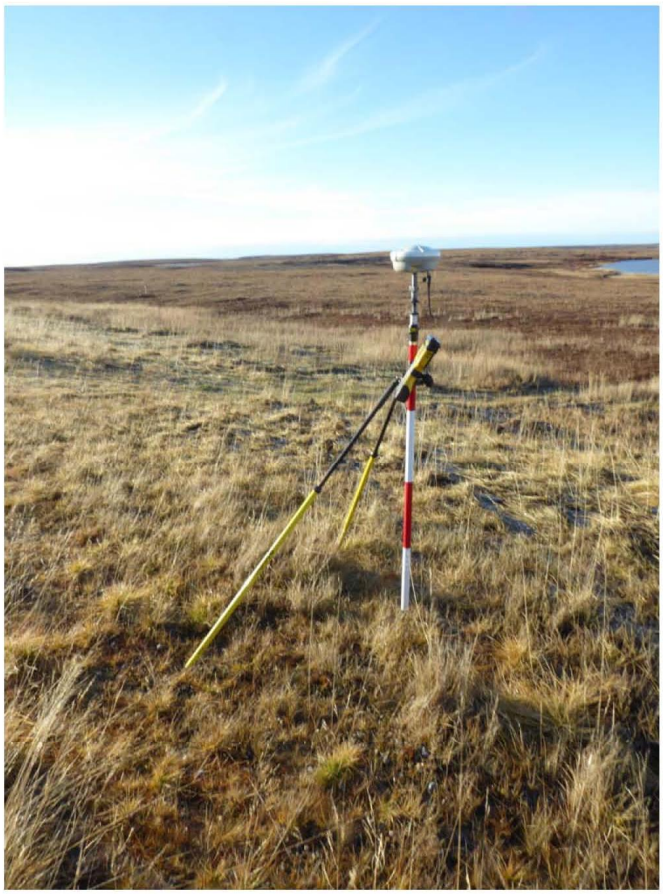
2330 N



2332 W



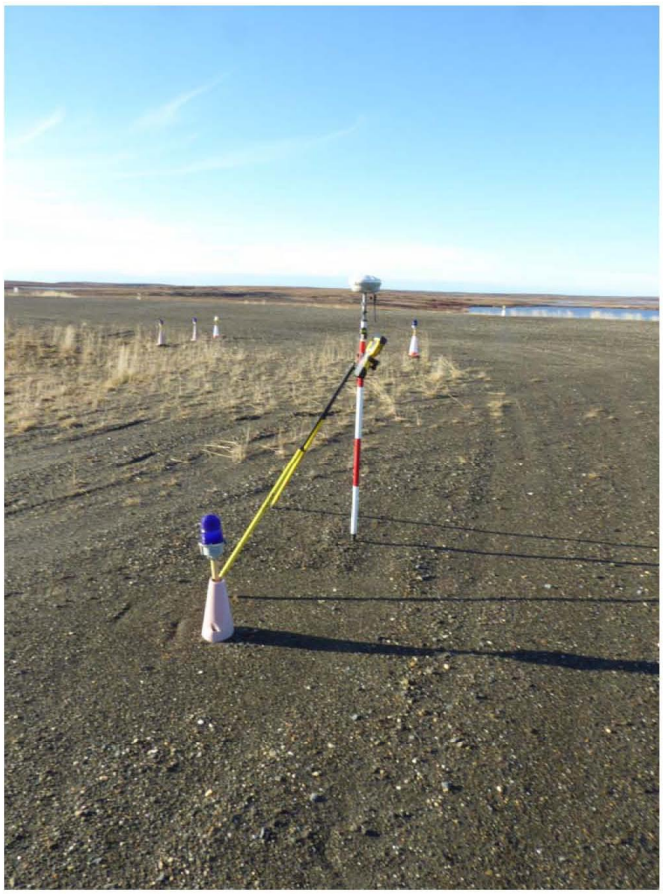
2332 N



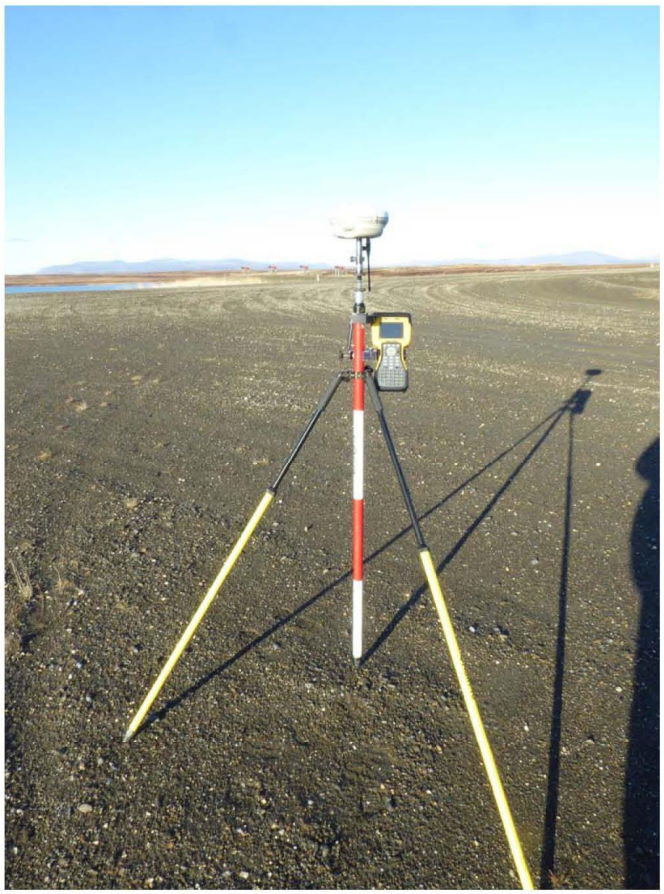
2334 W



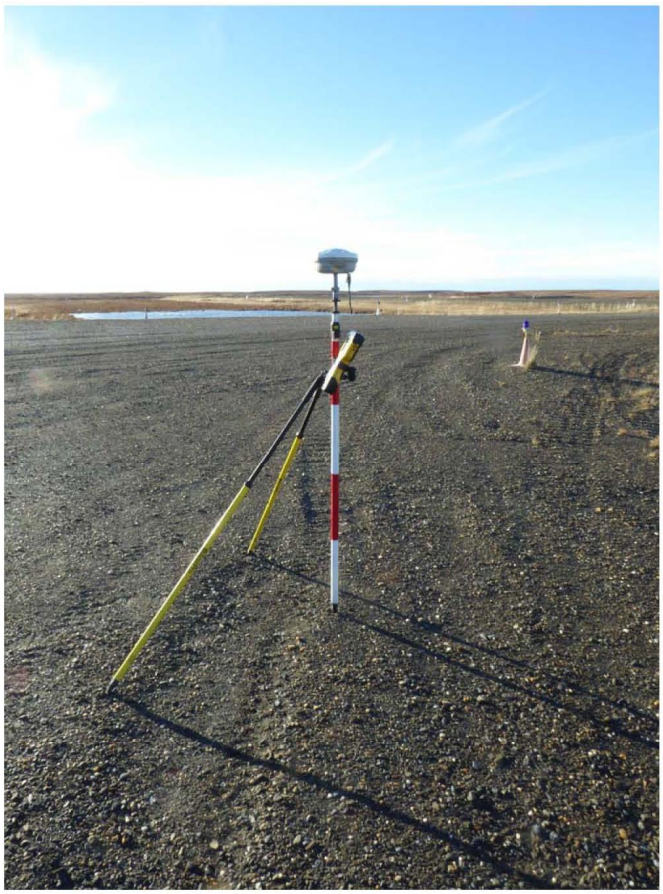
2334 N



2336 W



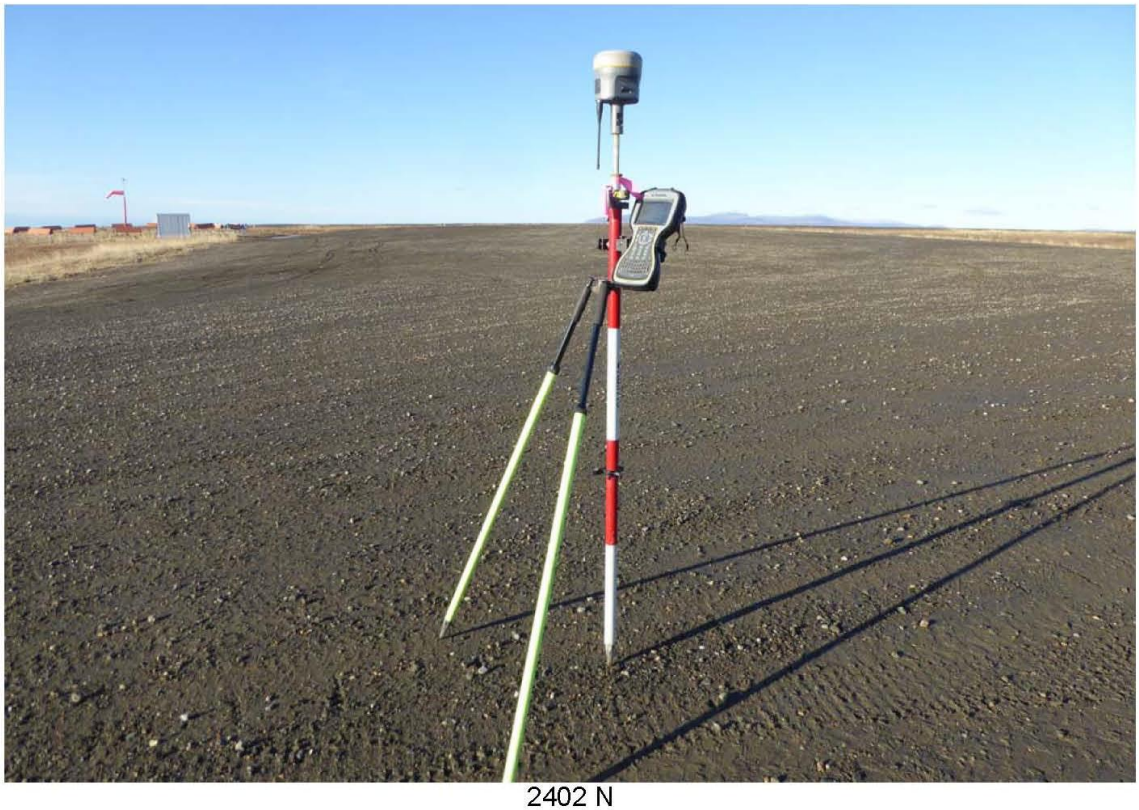
2336 N



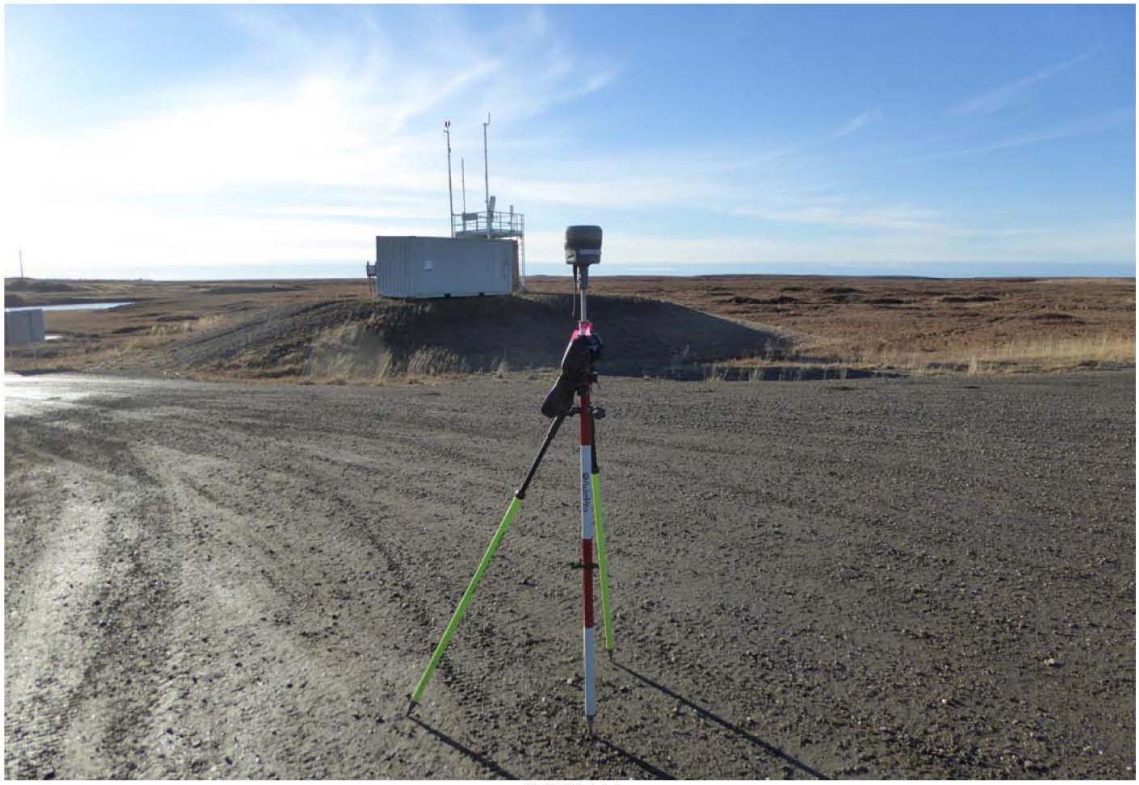
2338 W



2338 N



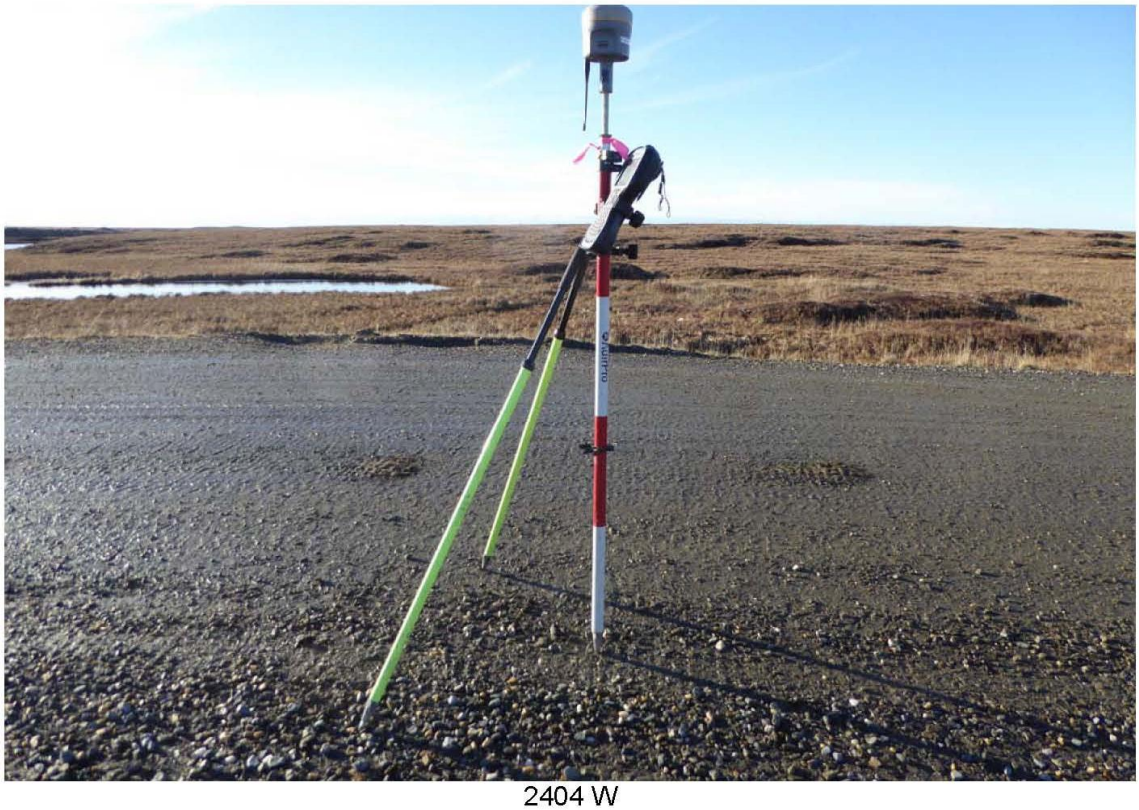
2402 N



2402 W



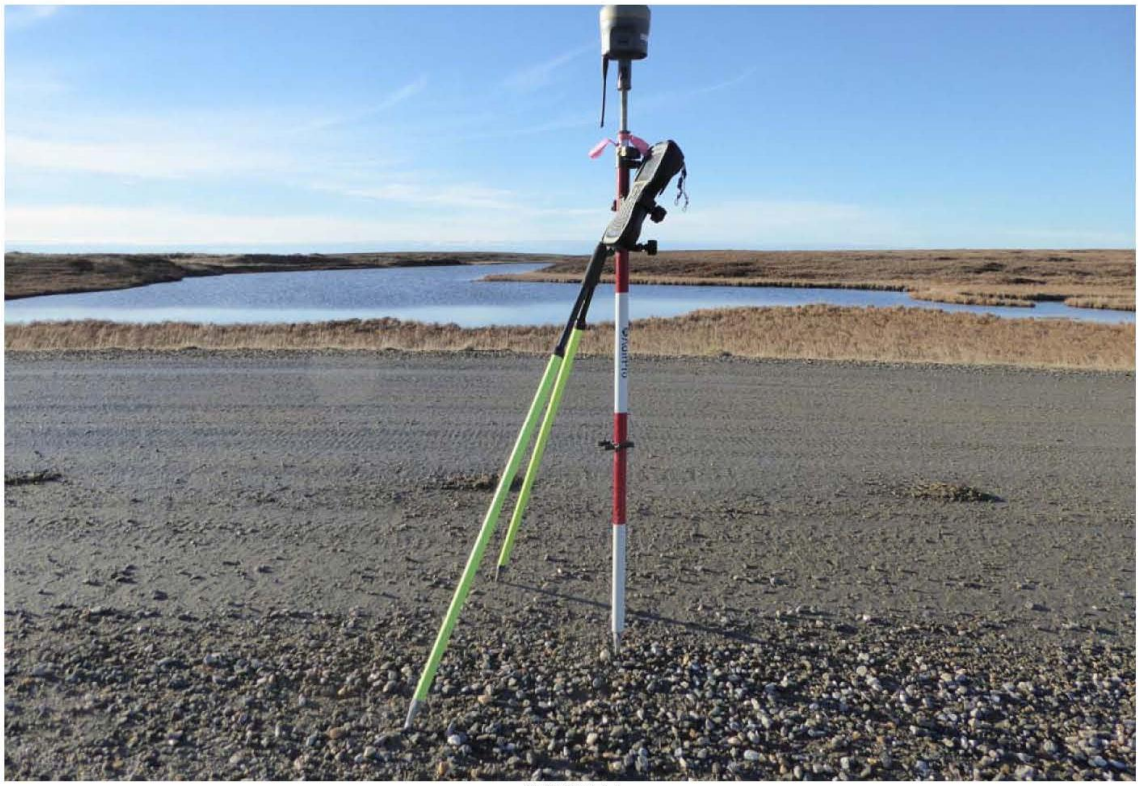
2404 N



2404 W



2406 N



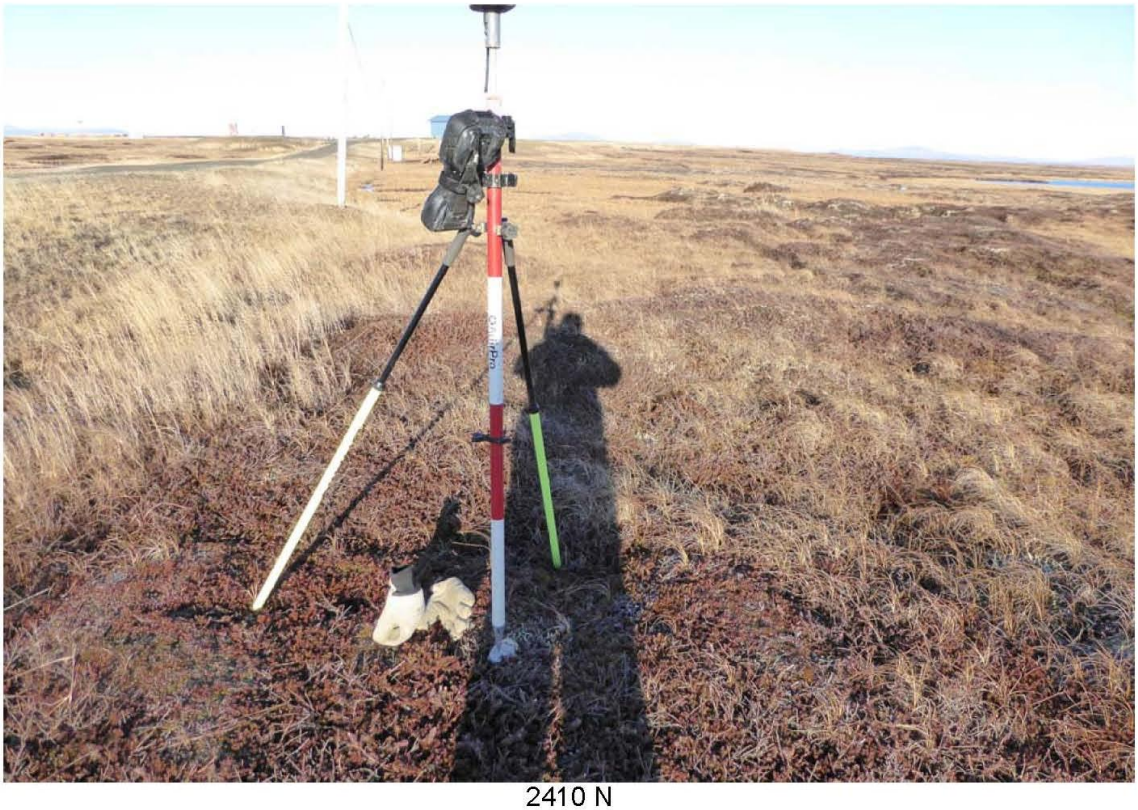
2406 W



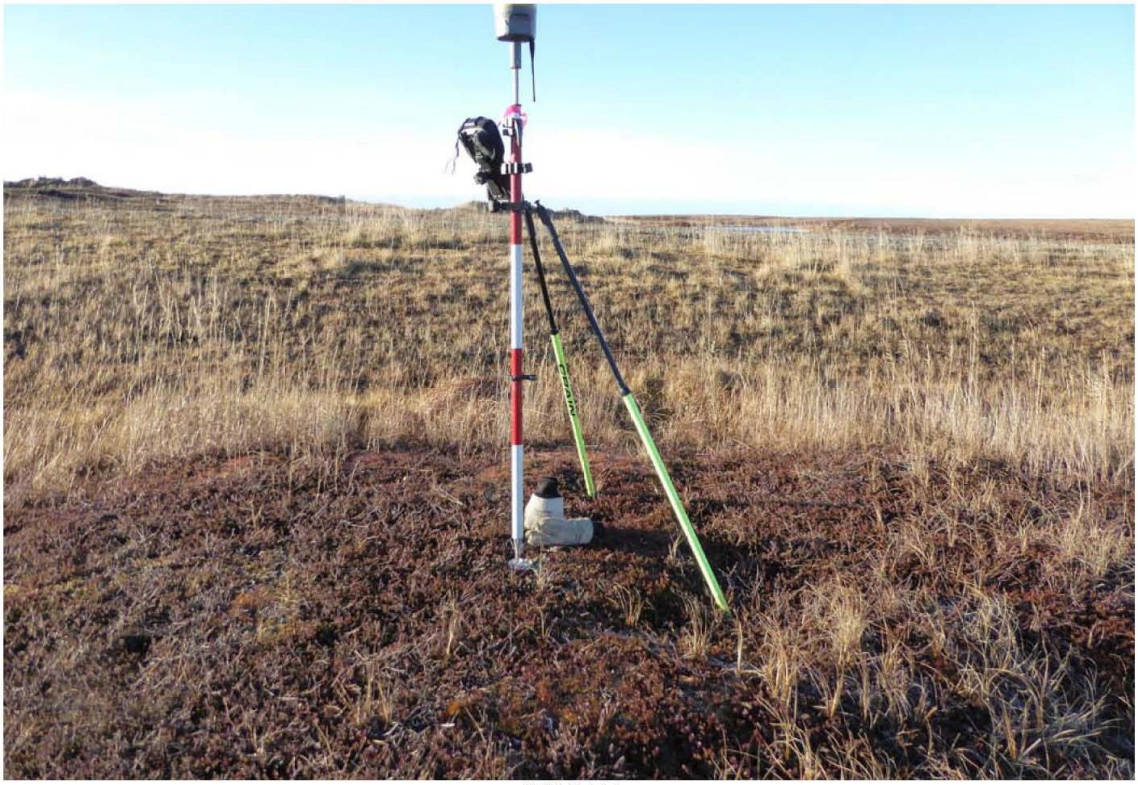
2408 N



2408 W



2410 N



2410 W



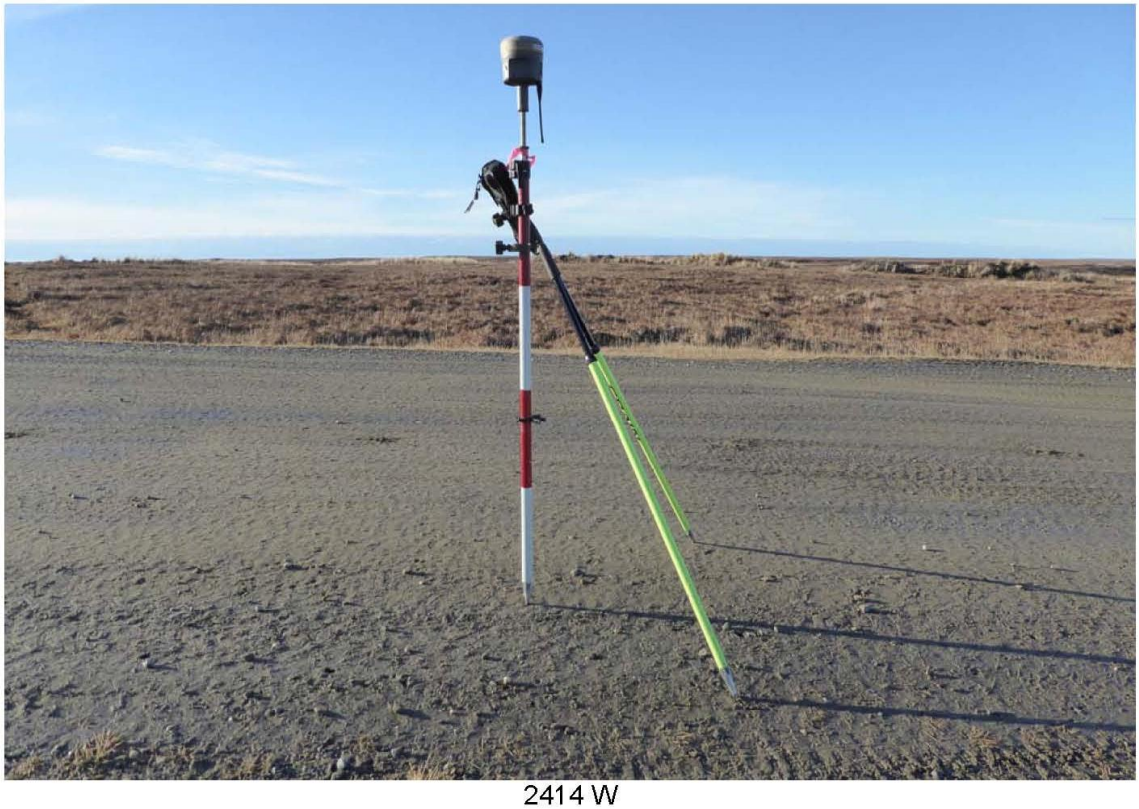
2412 N



2412 W



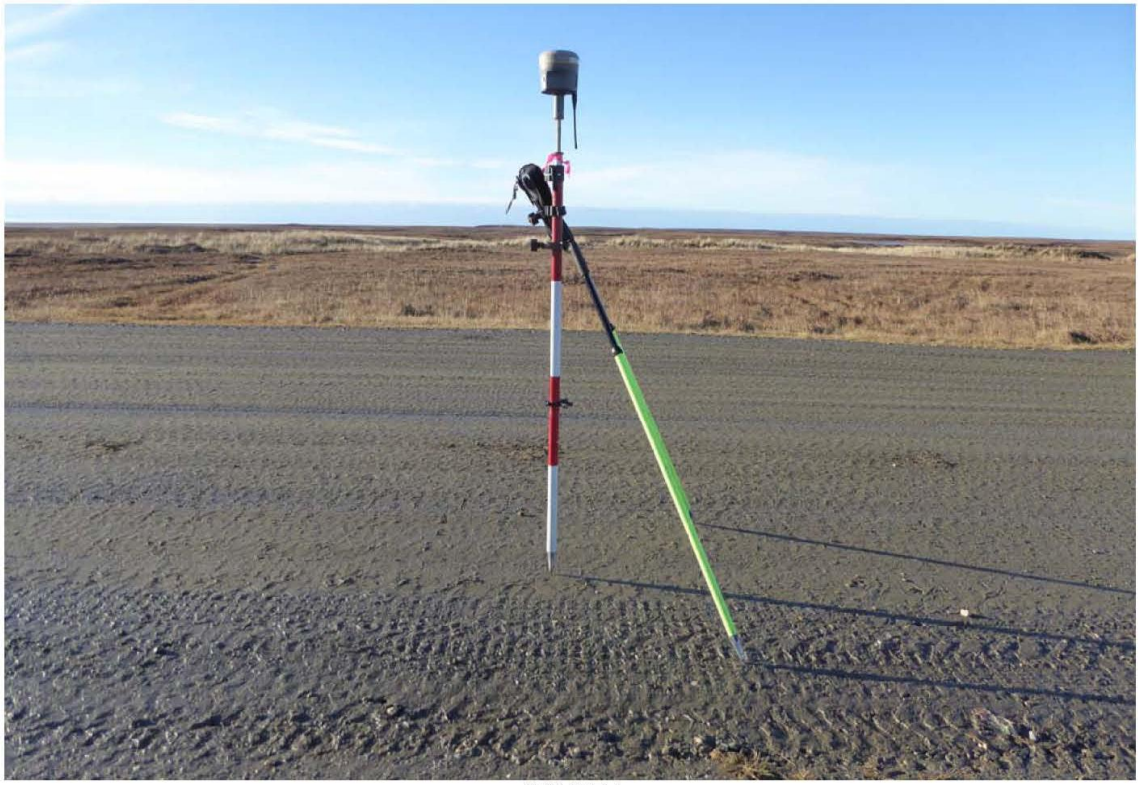
2414 N



2414 W



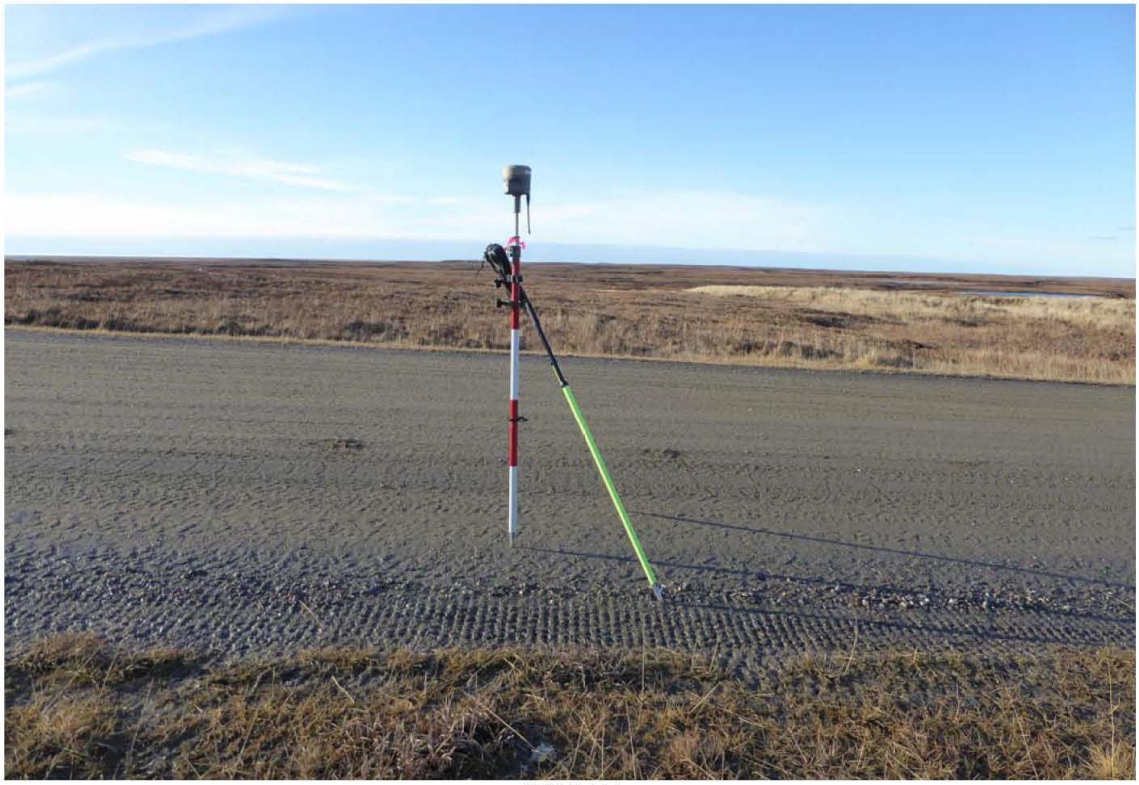
2416 N



2416 W



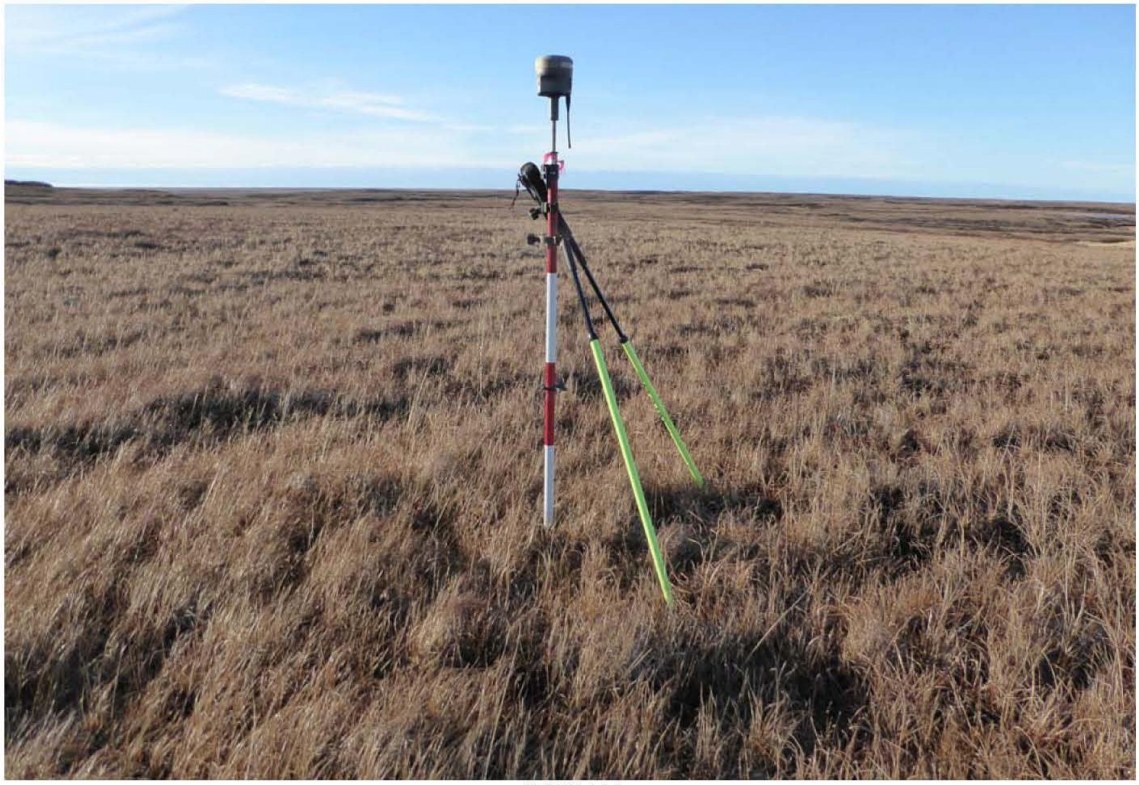
2418 N



2418 W



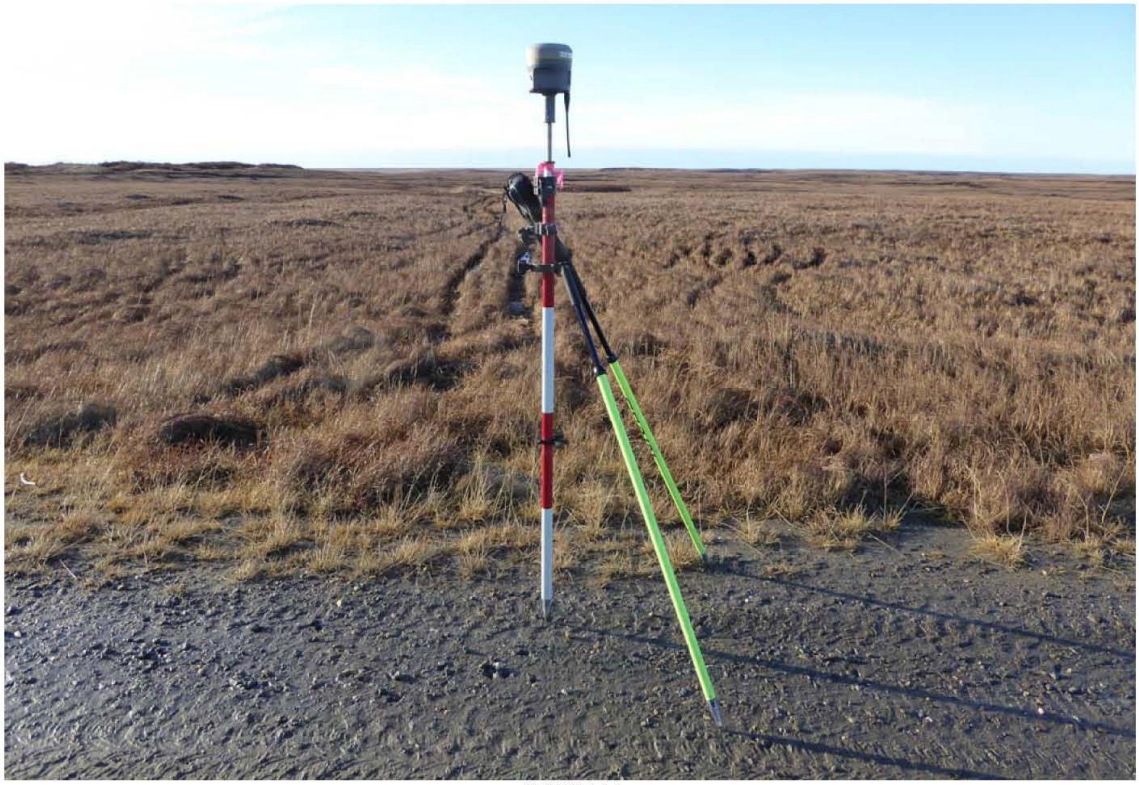
2420 N



2420 W



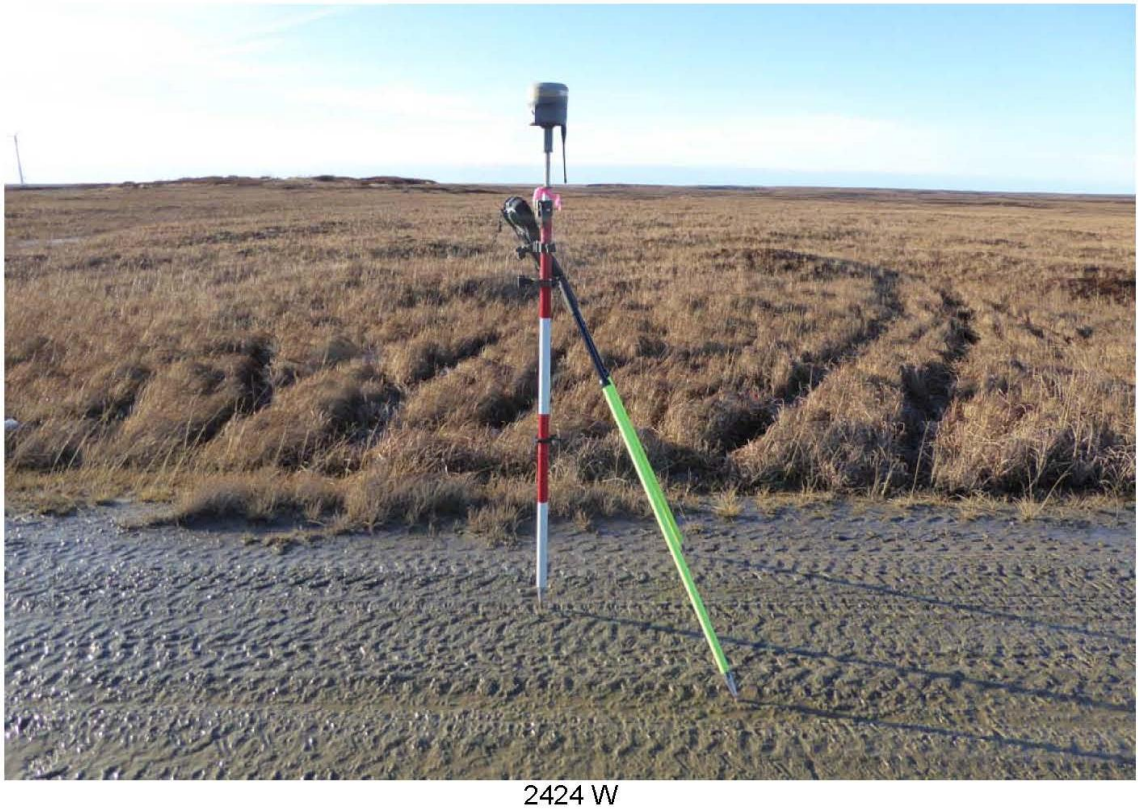
2422 N



2422 W



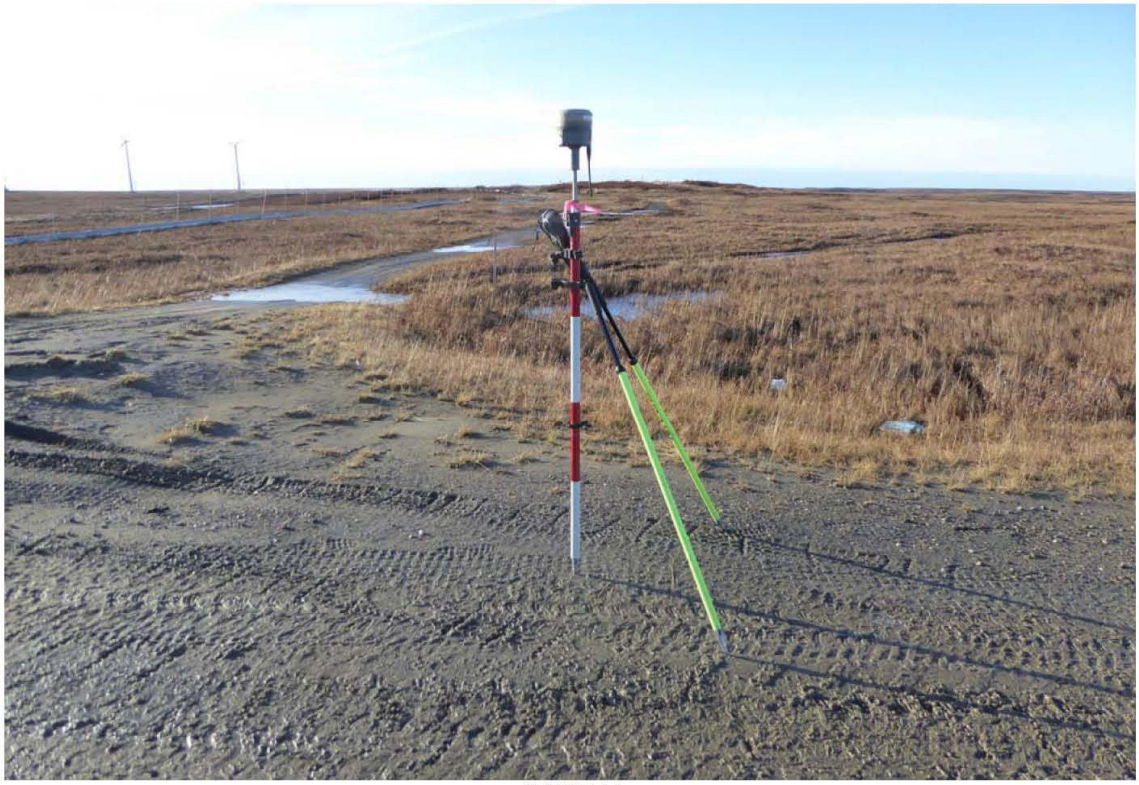
2424 N



2424 W



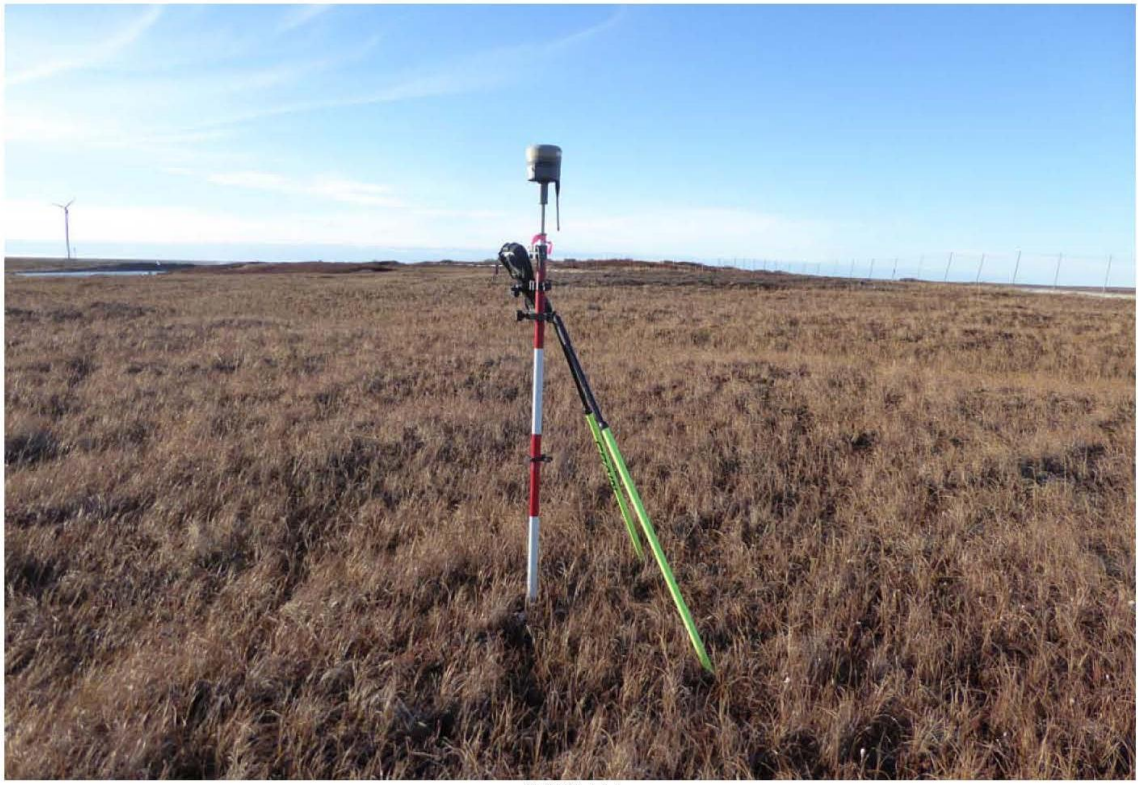
2426 N



2426 W



2428 N



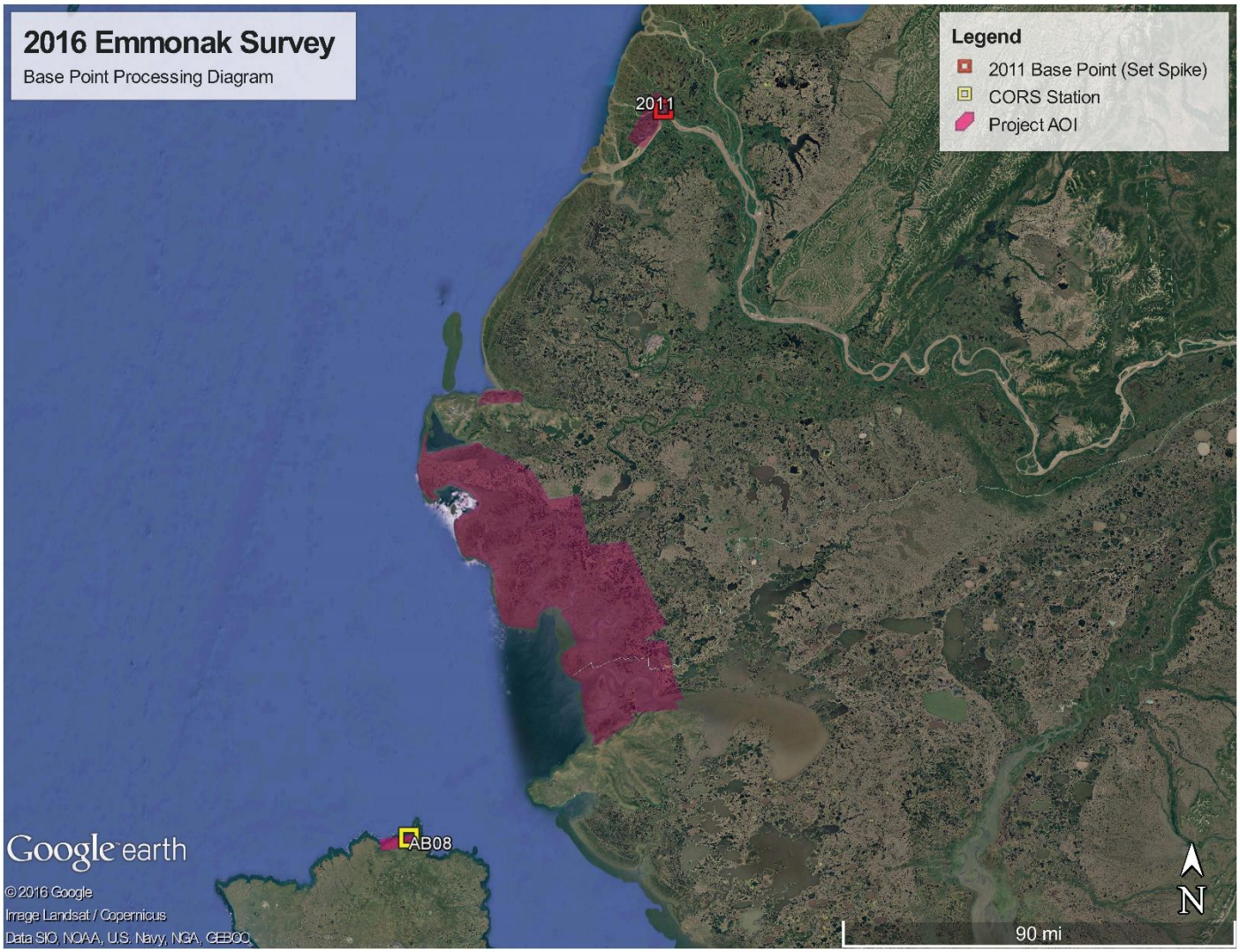
2428 W



2430 N



2430 W


2016 Emmonak Survey
Base Point Processing Diagram
Legend
2011 Base Point (Set Spike)
CORS Station
Project AOI
2011
AB08
Google earth
© 2016 Google
Image Landsat / Copernicus
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
N
90 mi


2016 Emmonak Survey
Base and Check Point Diagram
Legend
2011 Base Point (SET SPIKE)
Survey Check Point
2818
2817
2820
2815
2816
2822
2813
2823
2824
2811
2825
2826
2810
2809
2827
2828
2808
2830
2831
2832
2806
2805
2837
2834
2803
2838
2804
2835
2836
2011
2701
2703
2700
2702
2801
2802
2721
2720
2704
2722
2705
2723
2706
2707
2724
2725
2708
2709
2715
2714
2713
2711
2839
2840
2841
2844
2716
2717
2845
2846
2848
2847
Google earth
Image © 2016 DigitalGlobe
N
1000 ft



2700 N



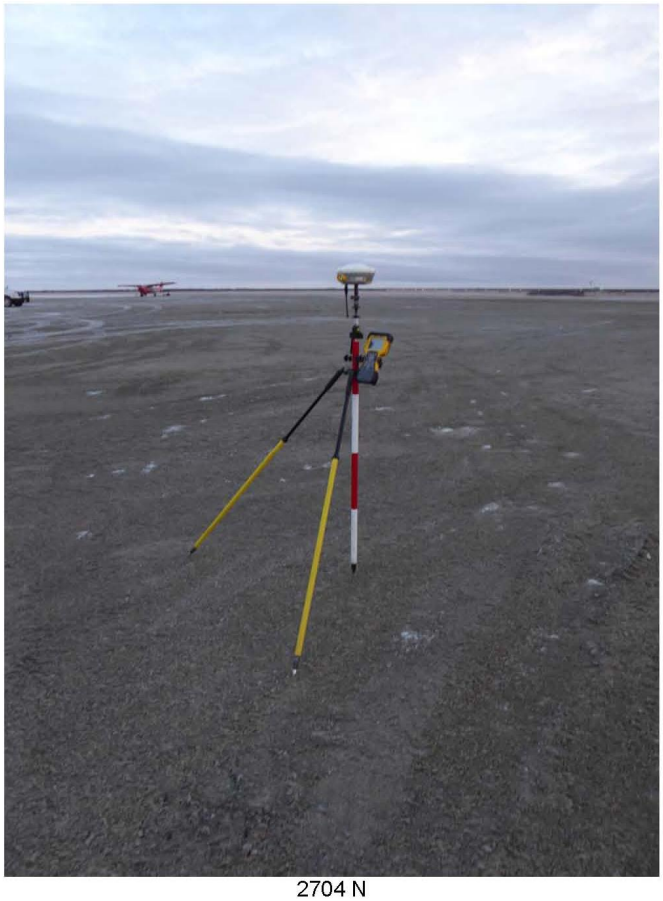
2700 W



2702 N



2702 W



2704 N



2704 W



2706 N



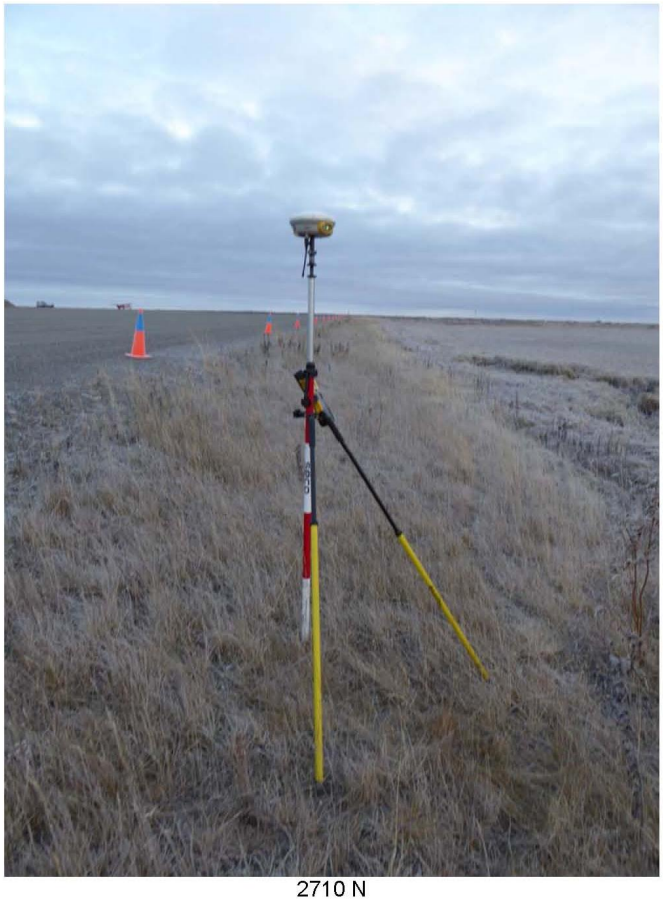
2706 W



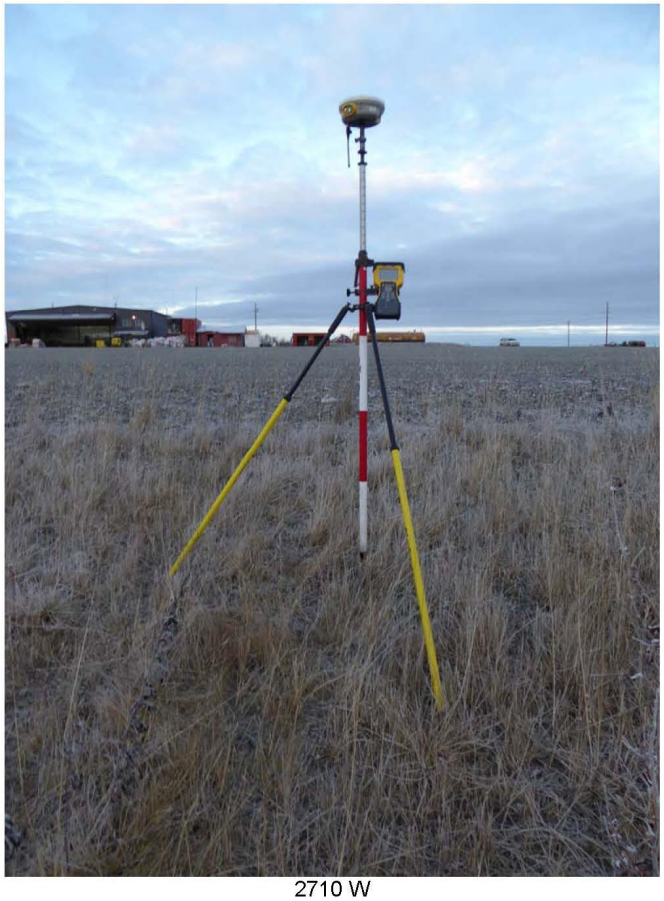
2708 N



2708 W



2710 N



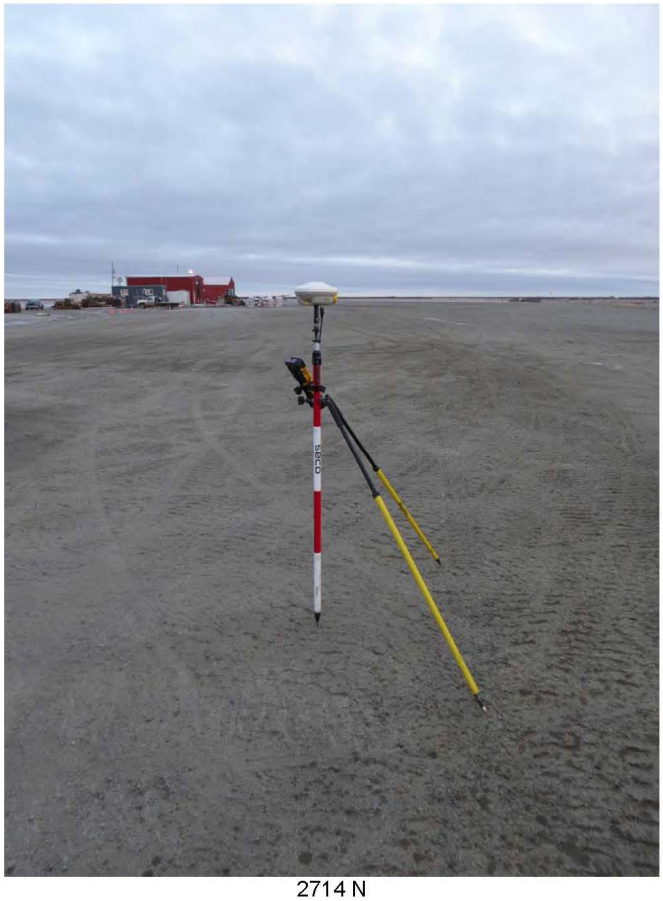
2710 W



2712 N



2712 W



2714 N



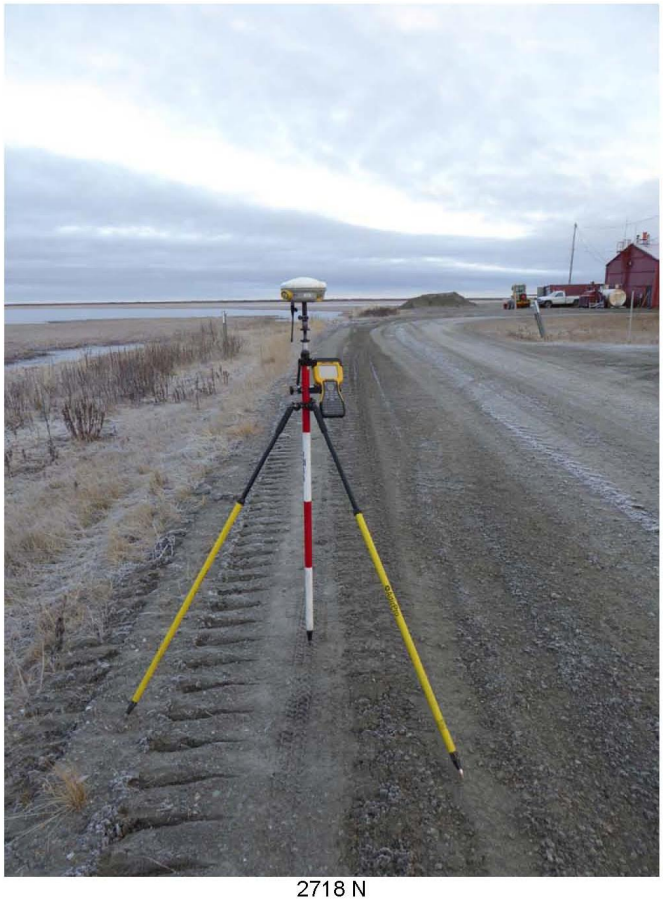
2714 W



2716 N



2716 W



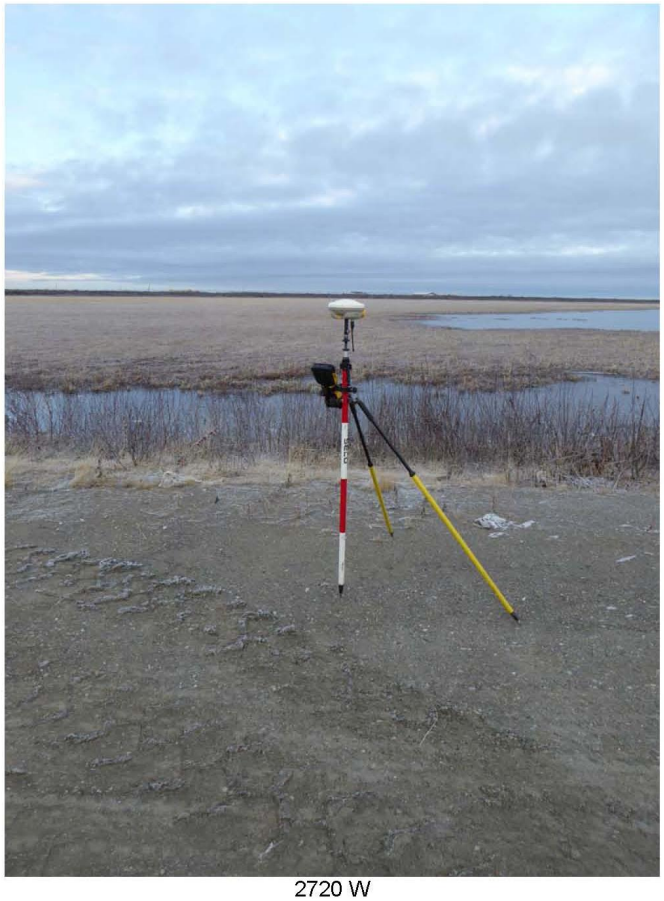
2718 N



2718 W



2720 N



2720 W



2722 N



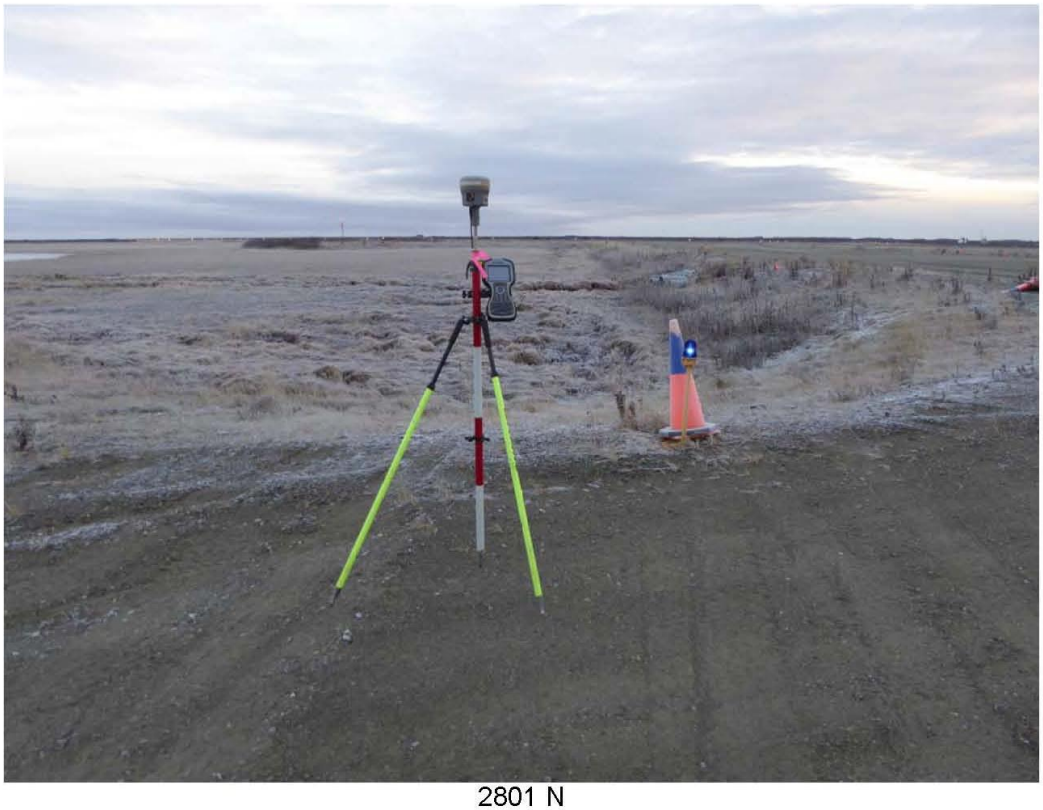
2722 W



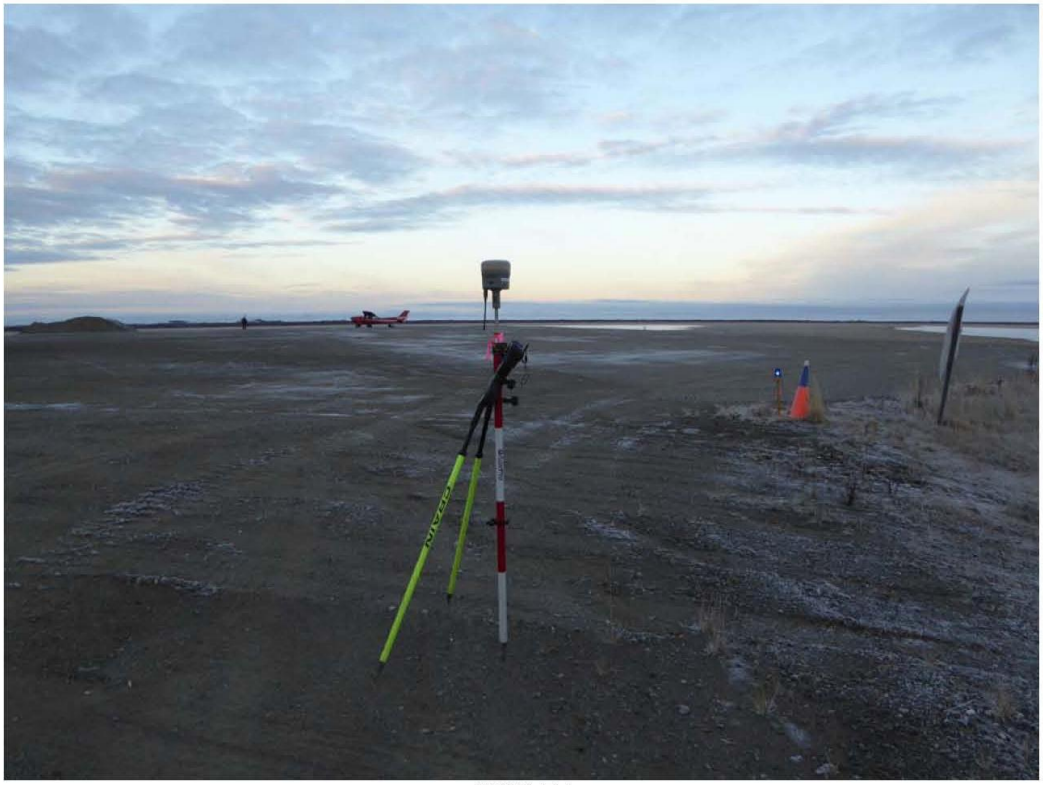
2724 N



2724 W



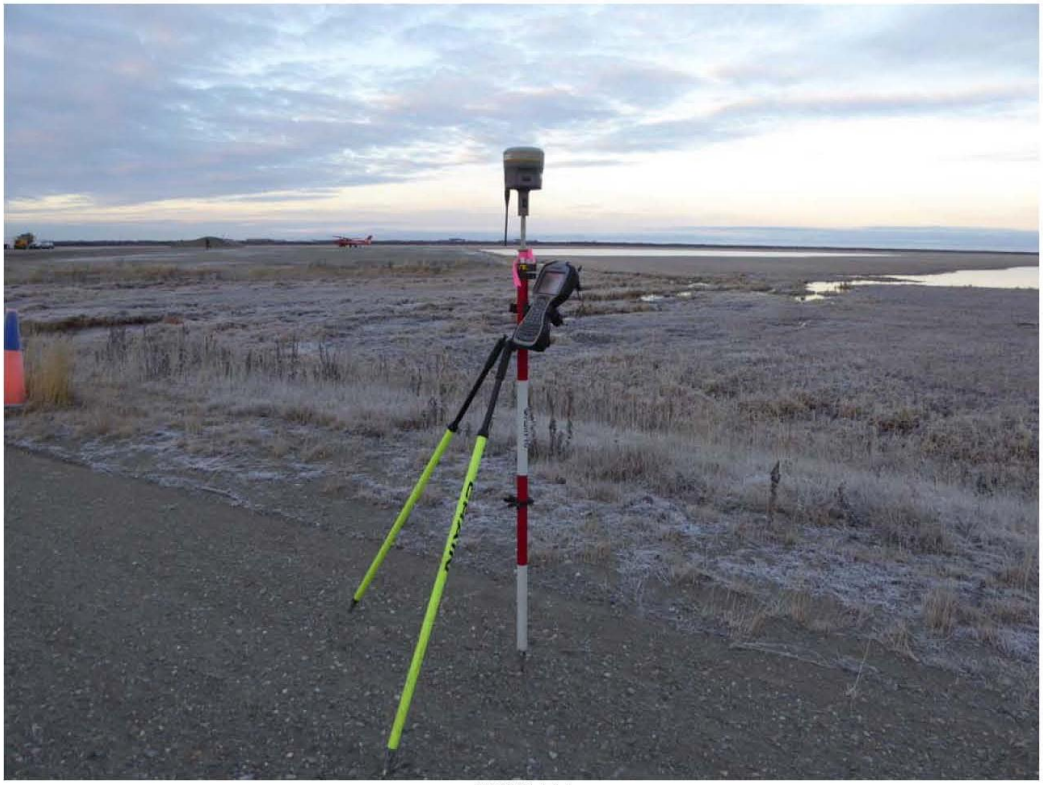
2801 N



2801 W



2803 N



2803 W



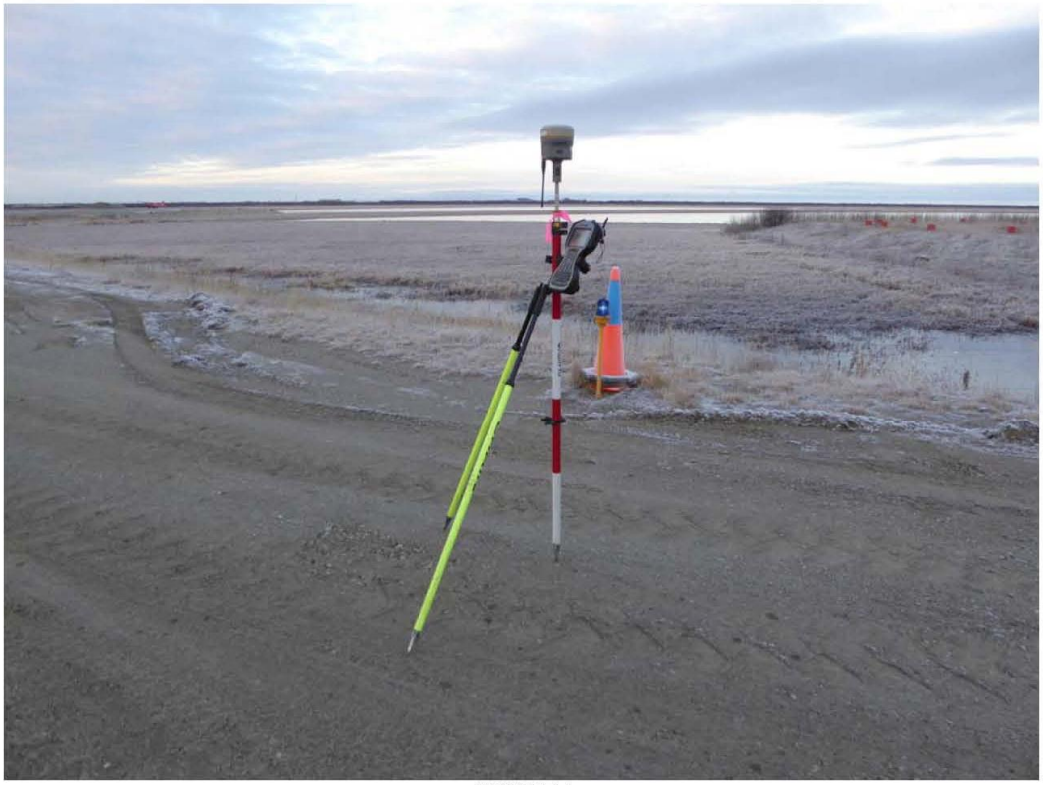
2805 N



2805 W



2807 N



2807 W



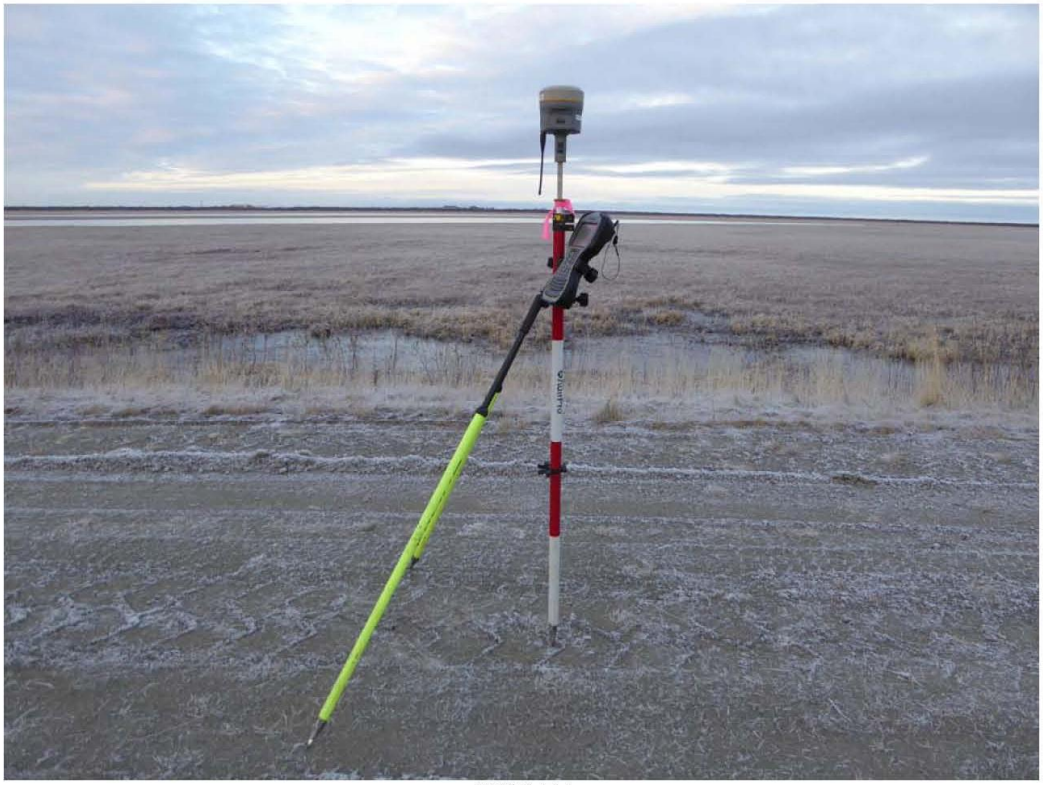
2809 N



2809 W



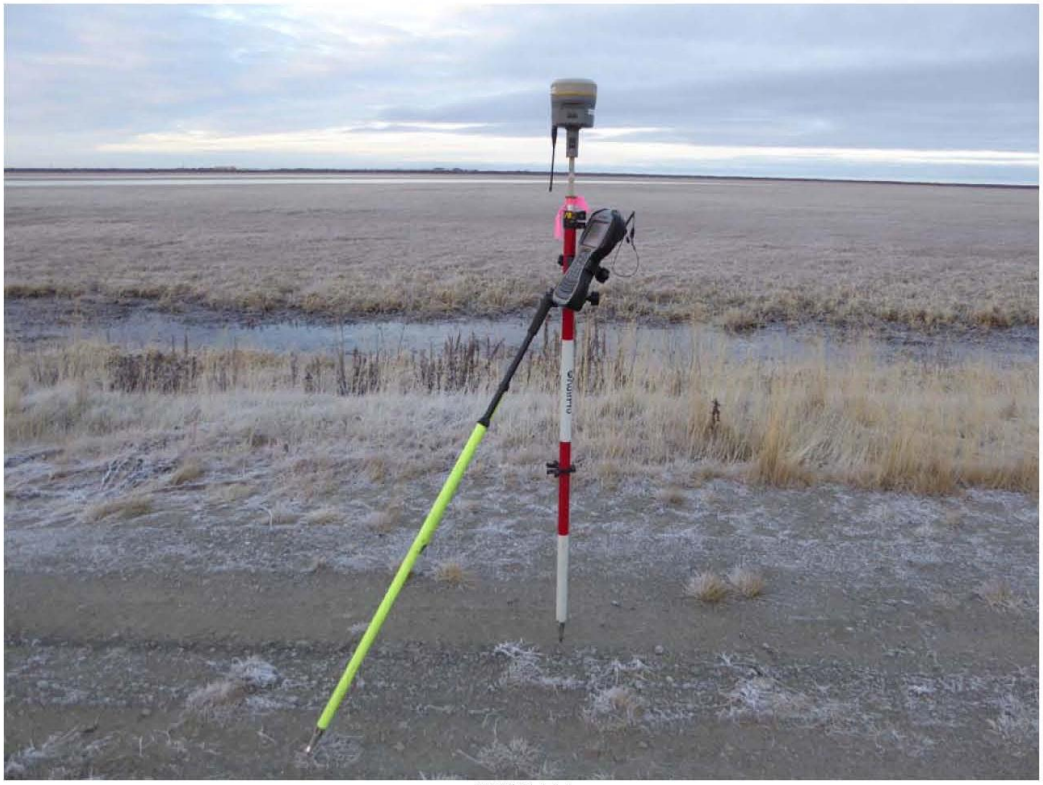
2811 N



2811 W



2813 N



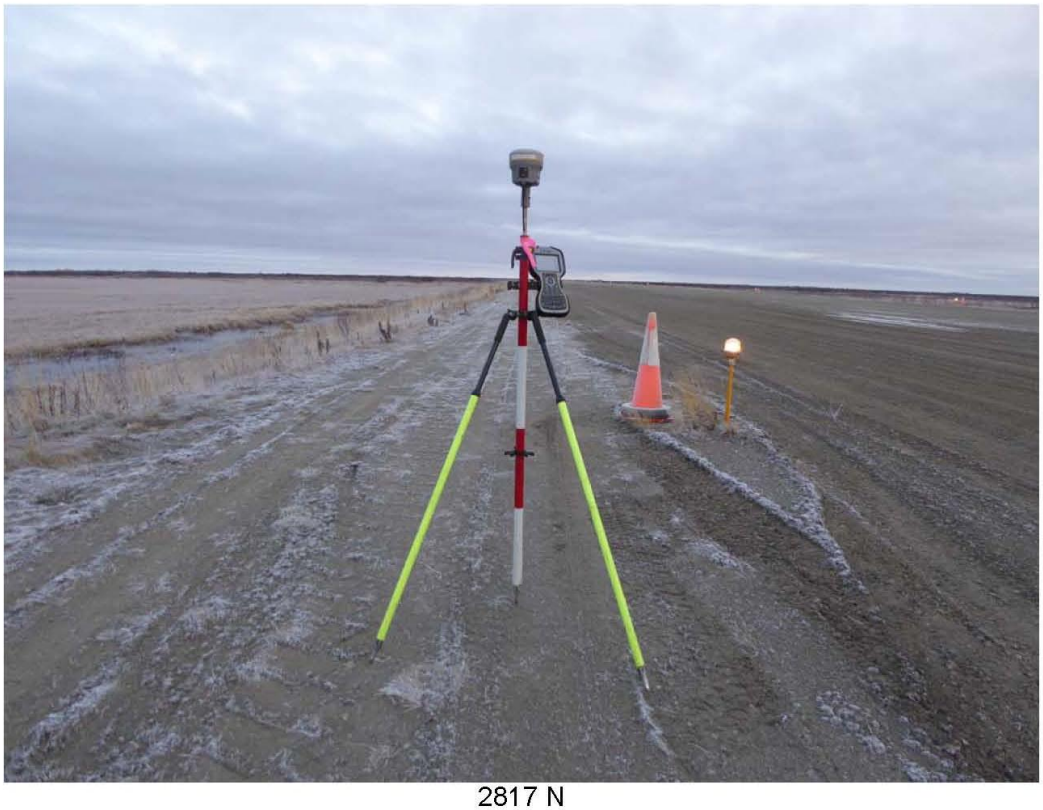
2813 W



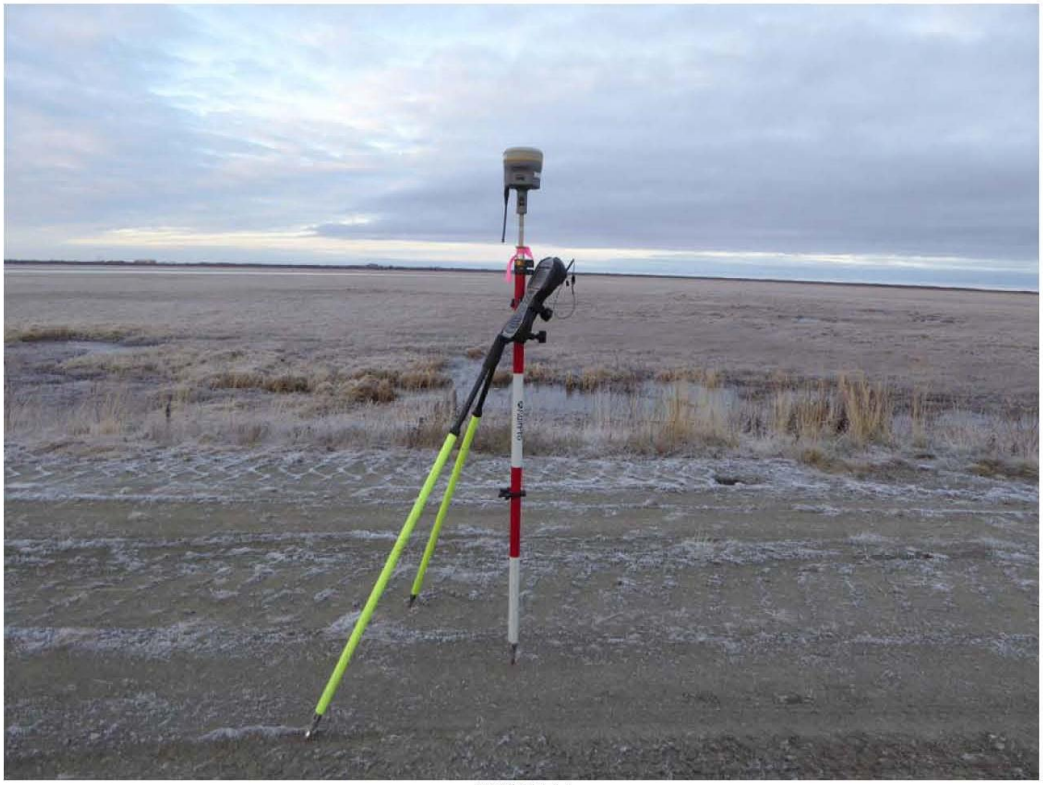
2815 N



2815 W



2817 N



2817 W



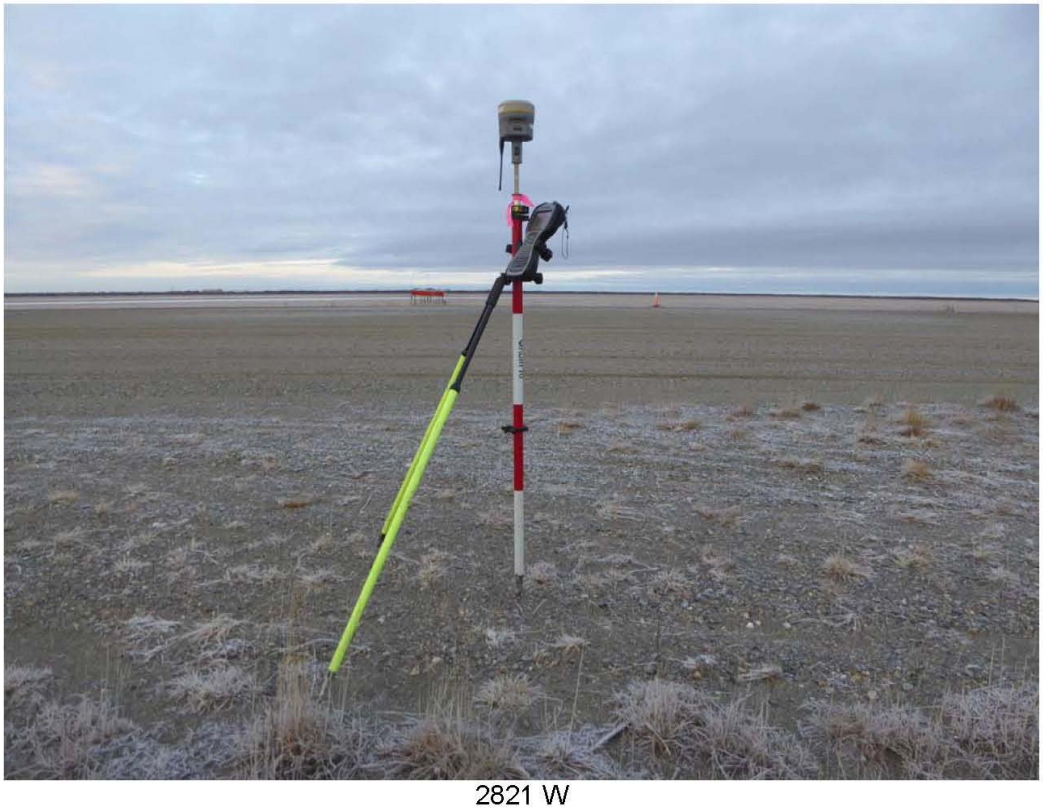
2819 N



2819 W



2821 N



2821 W



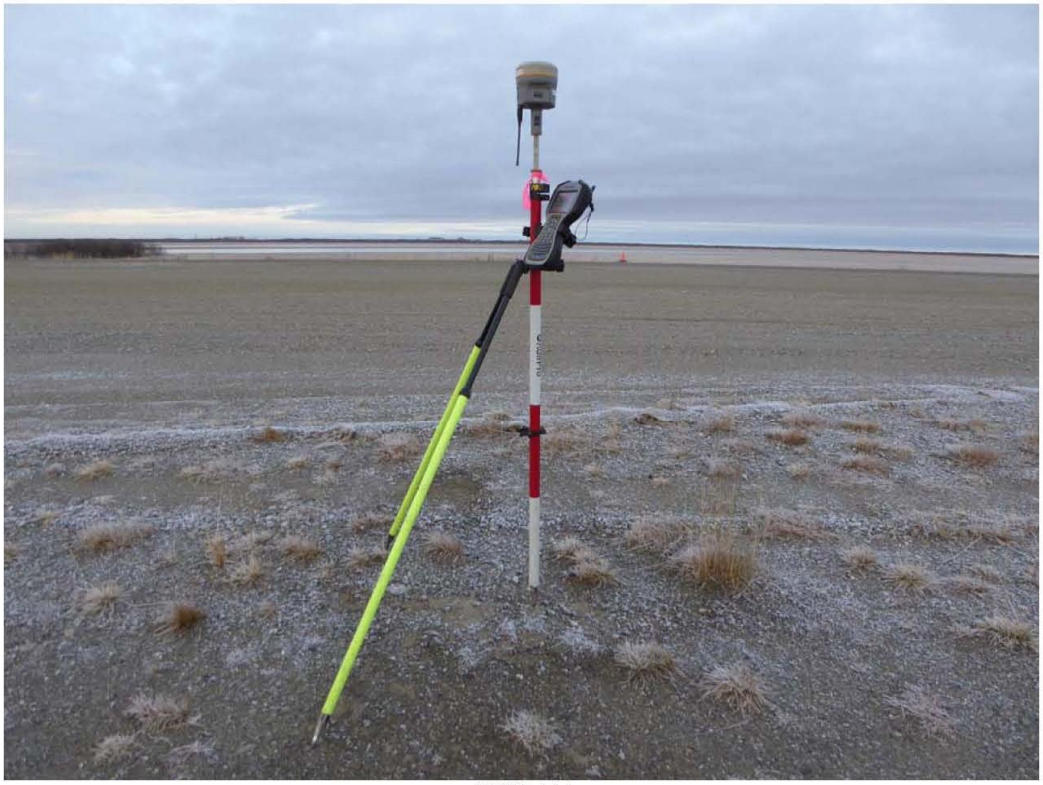
2823 N



2823 W



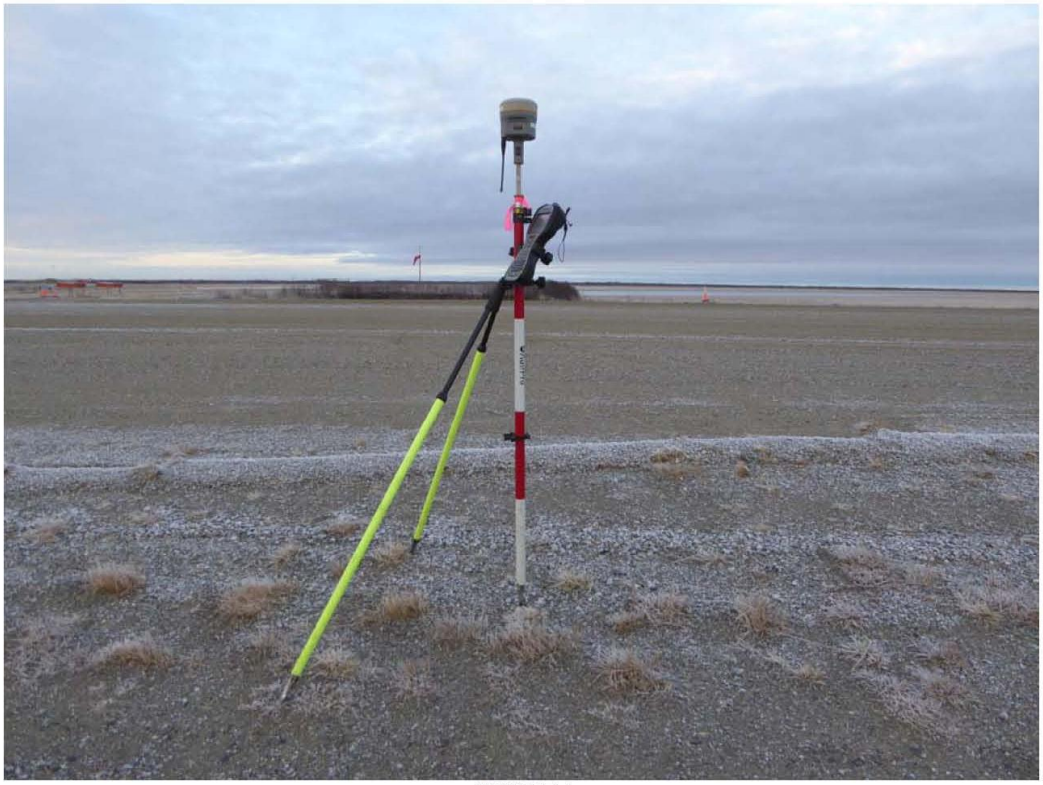
2825 N



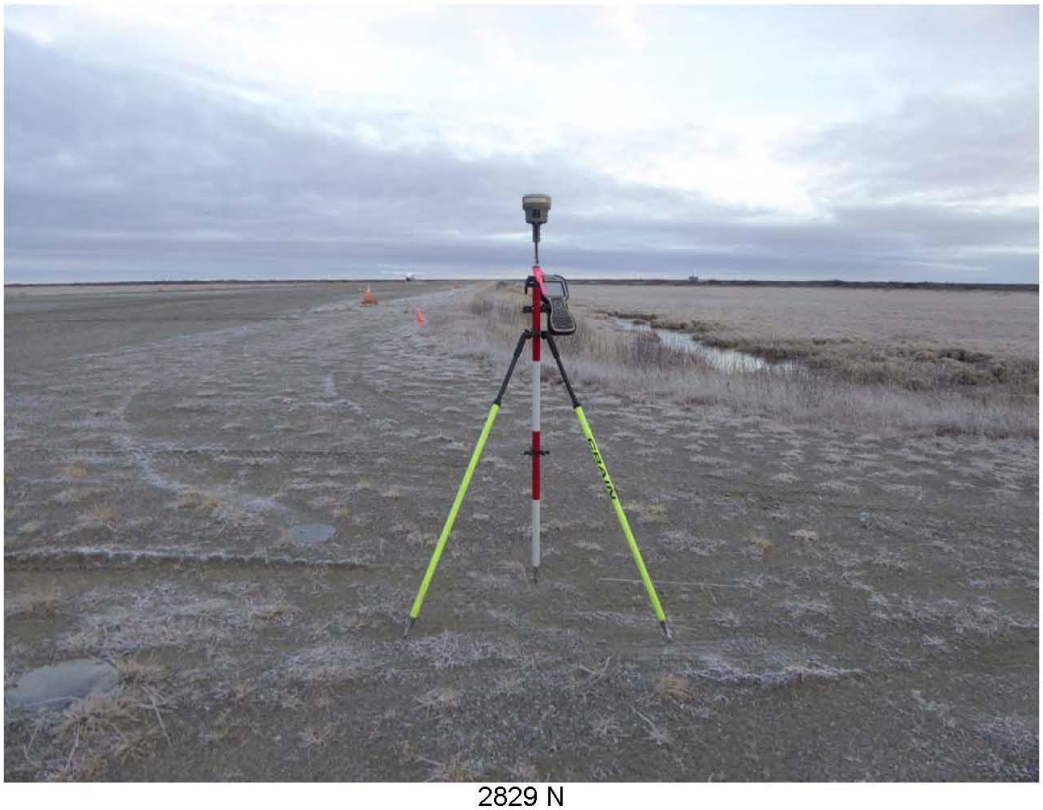
2825 W



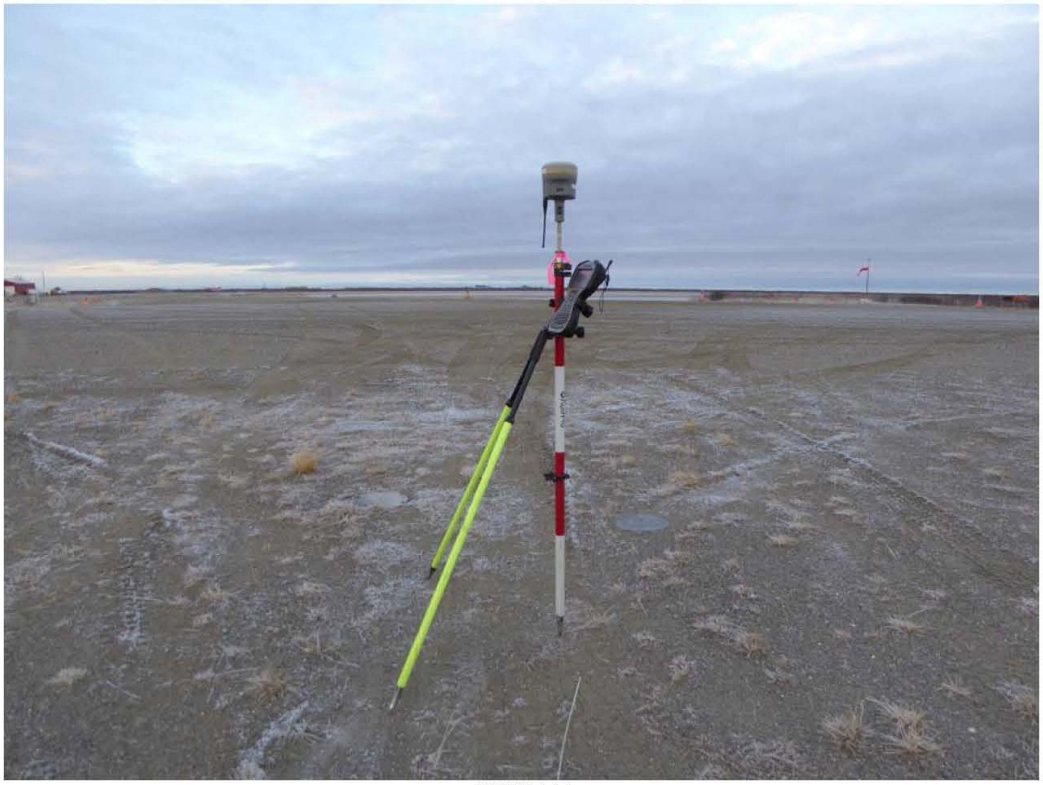
2827 N



2827 W



2829 N



2829 W



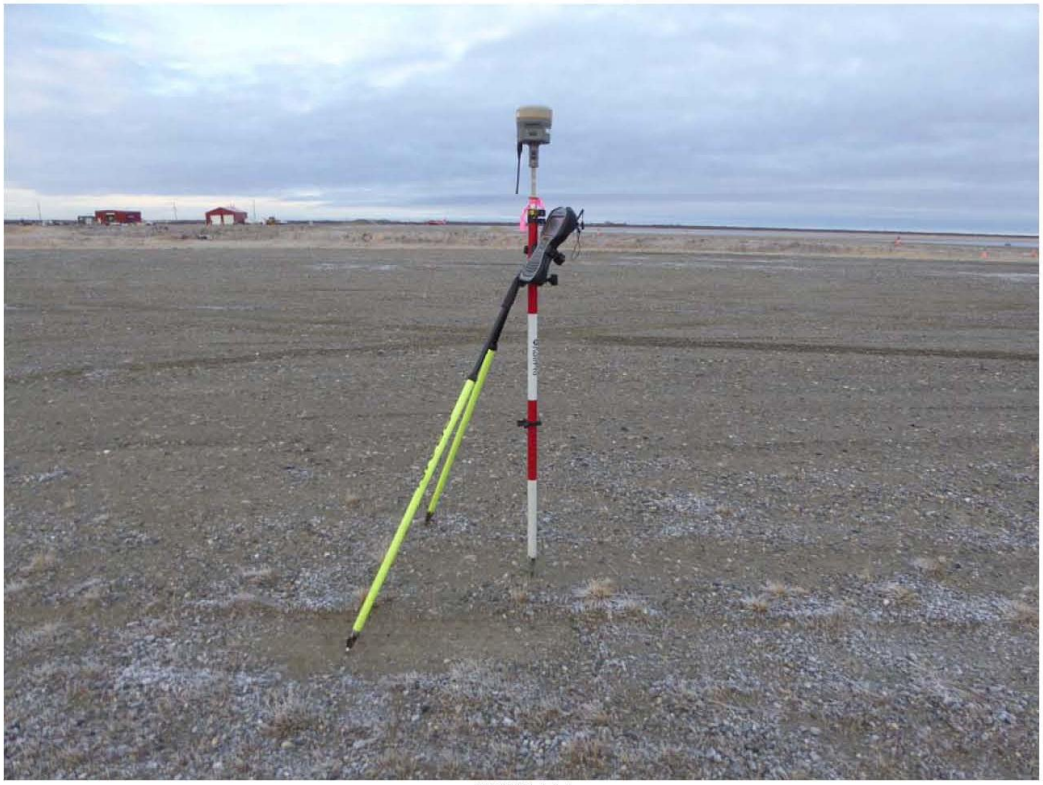
2831 N



2831 W



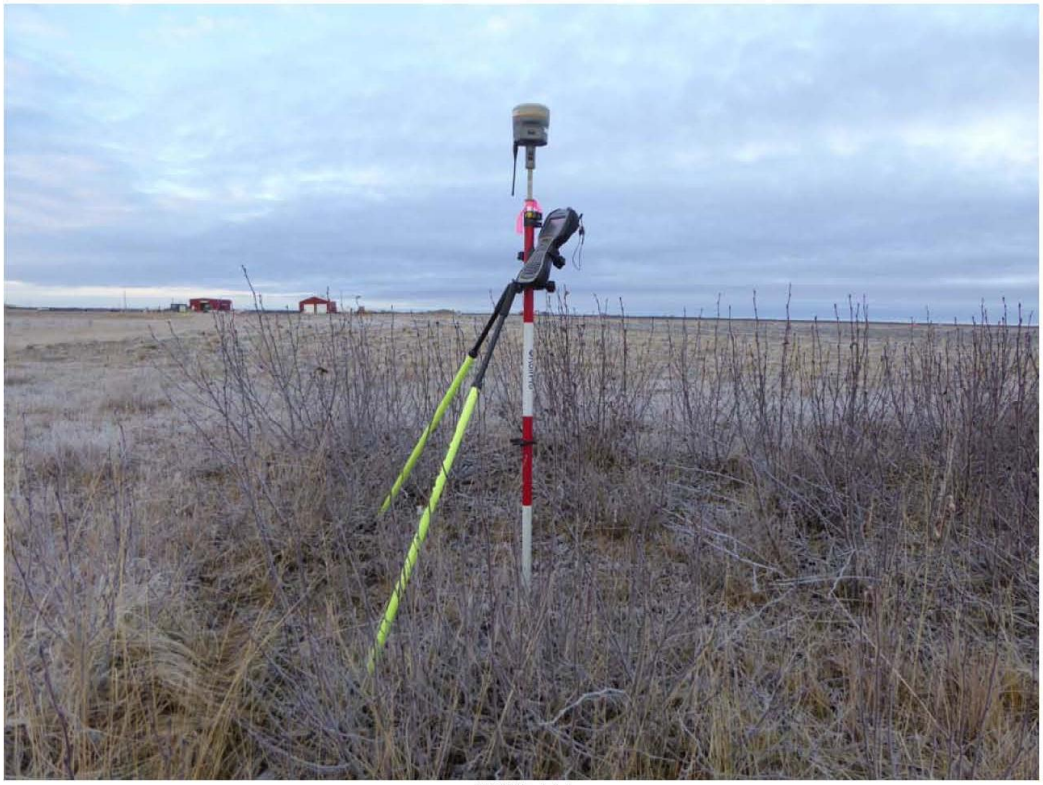
2833 N



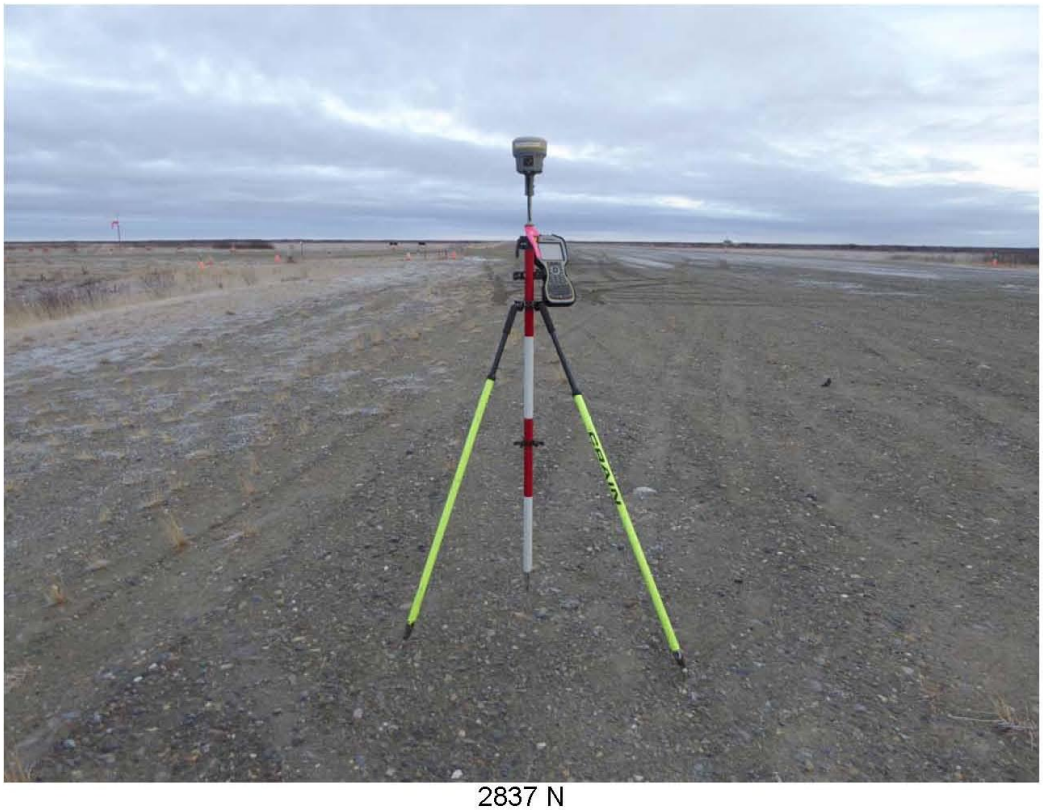
2833 W



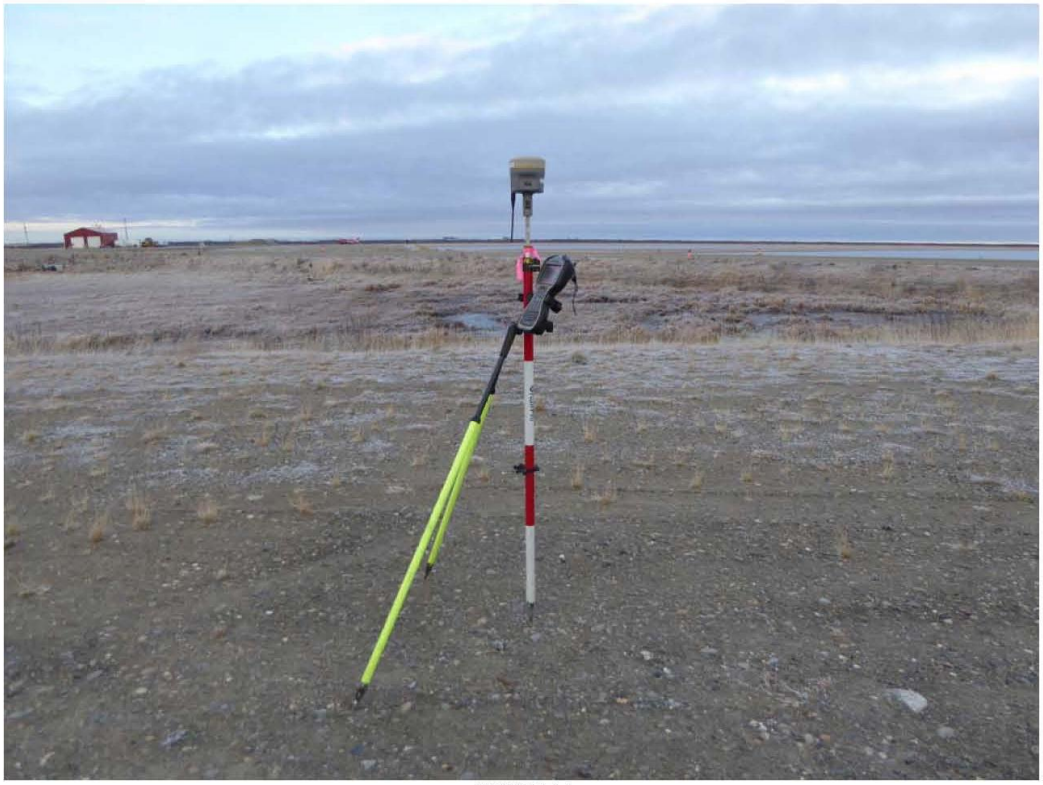
2835 N



2835 W



2837 N



2837 W



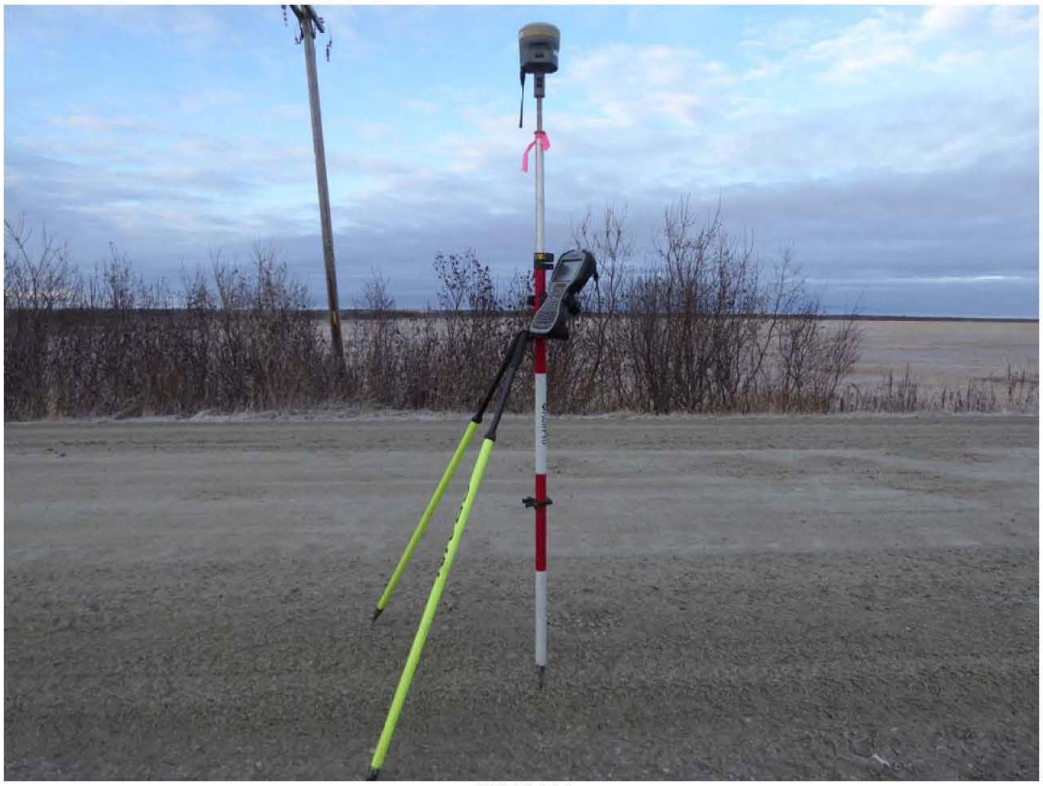
2839 N



2839 W



2841 N



2841 W



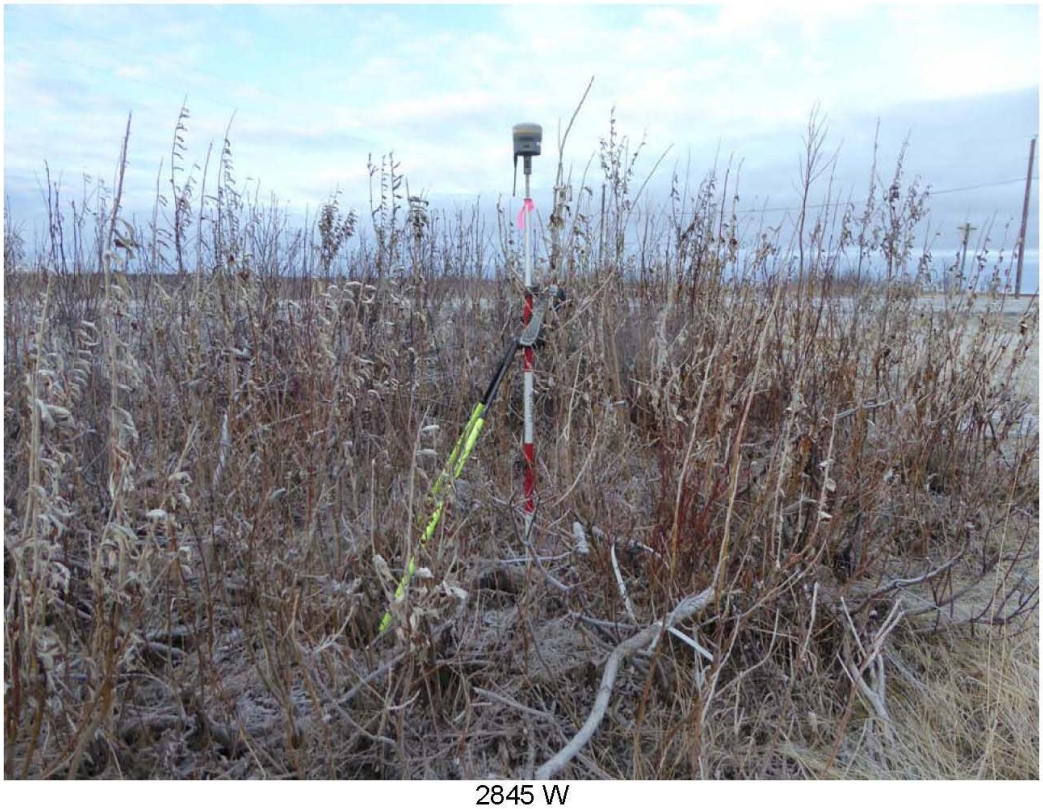
2843 N



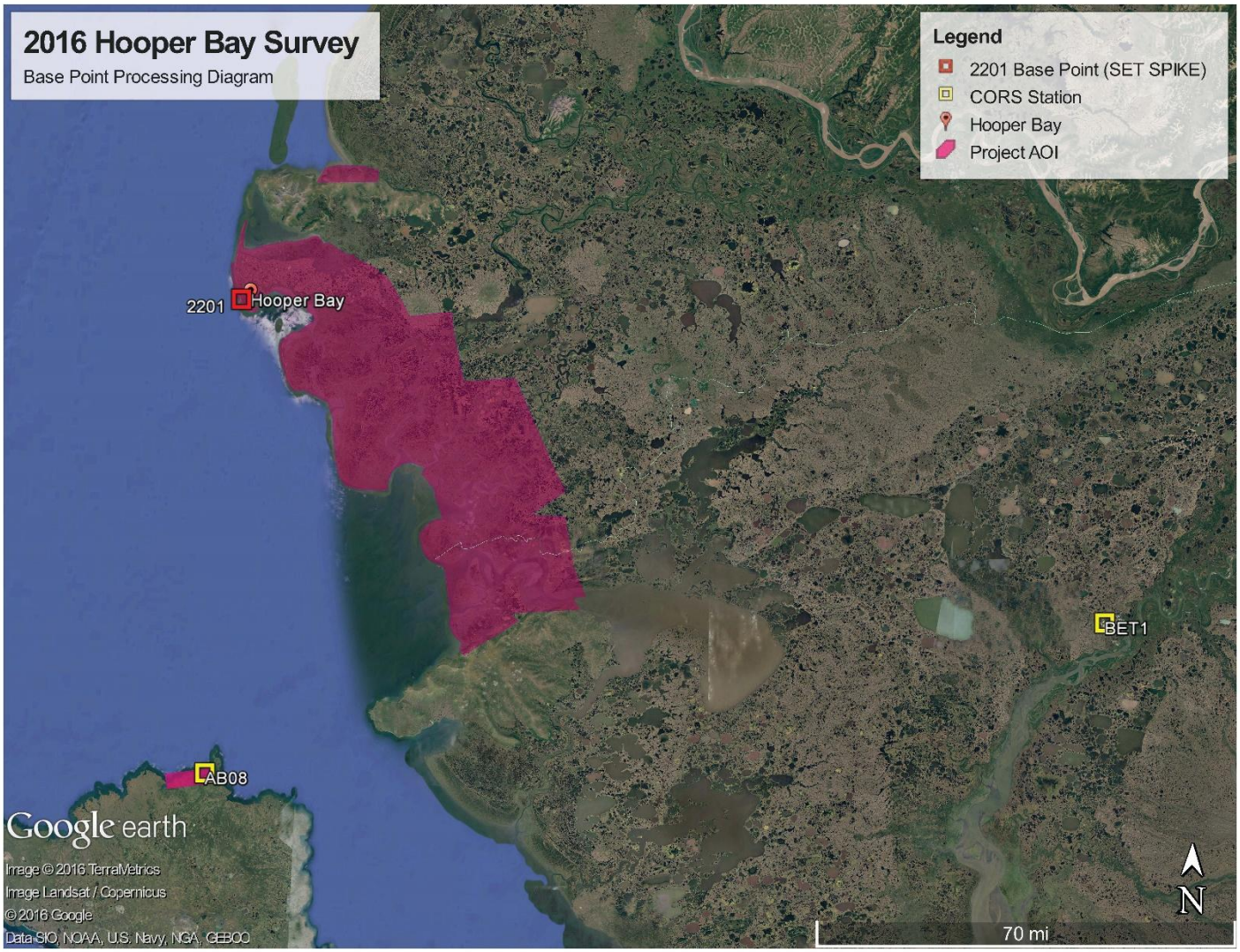
2843 W

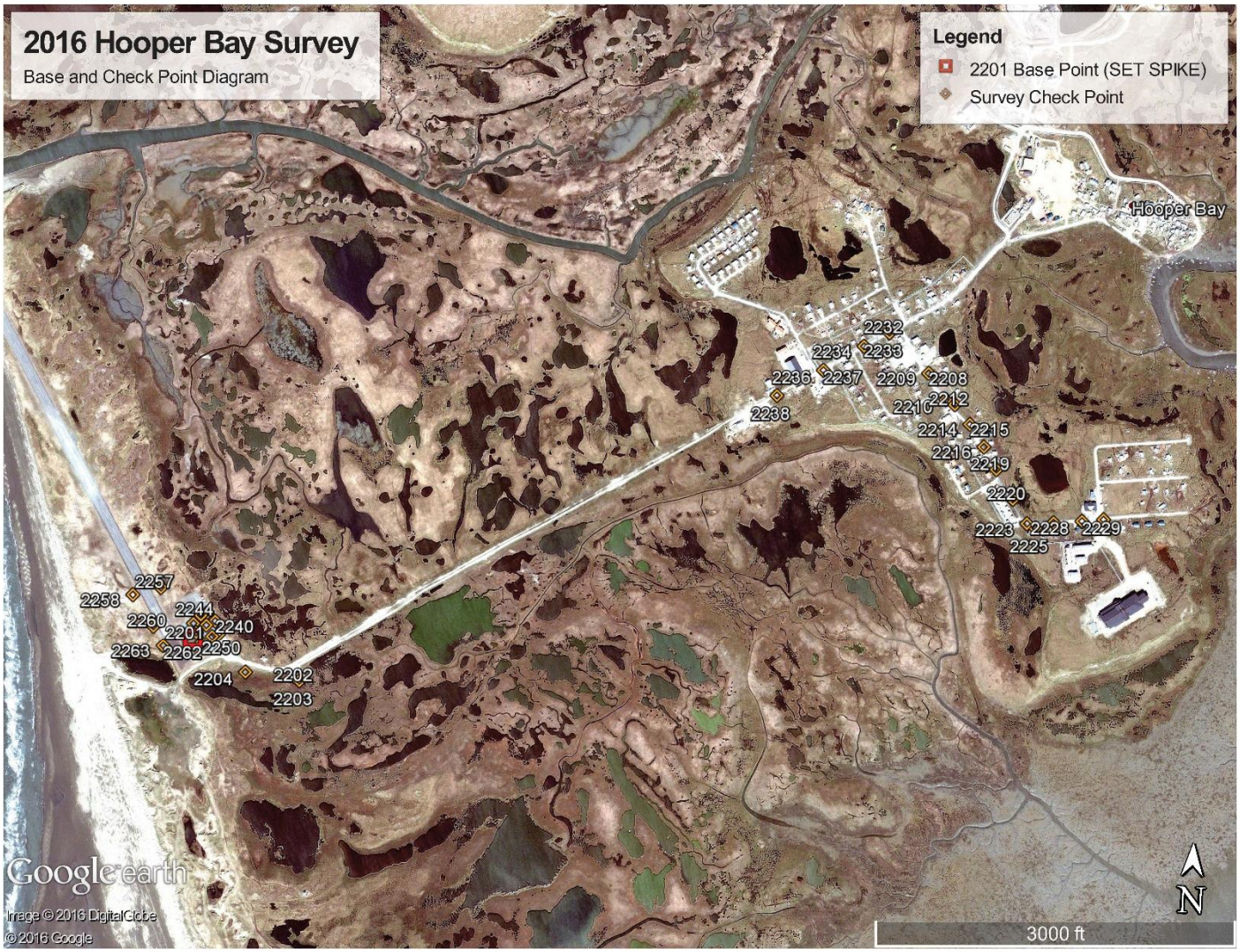


2845 N



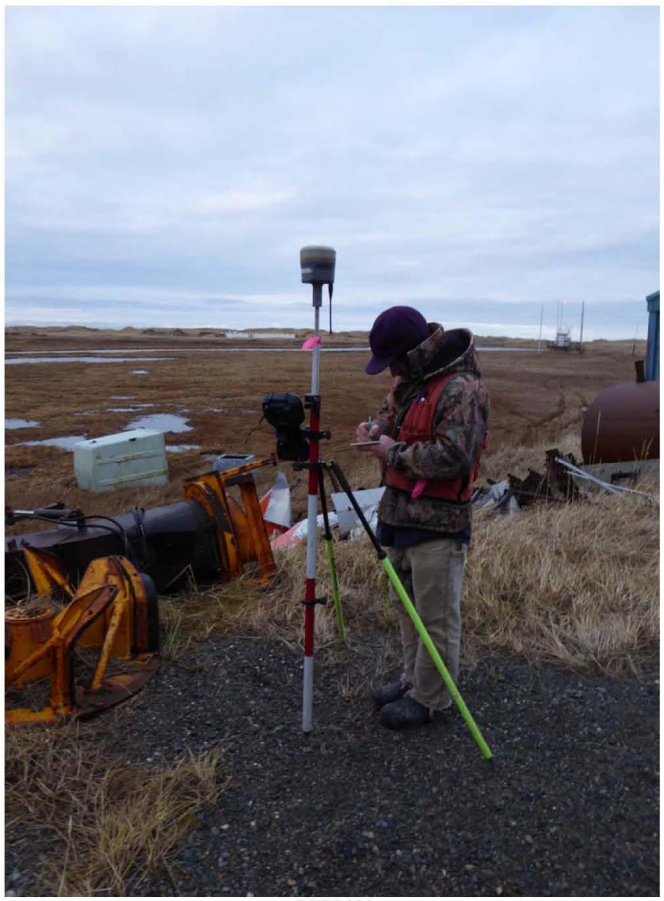
2845 W


2016 Hooper Bay Survey
Base Point Processing Diagram
Legend
2201 Base Point (SET SPIKE)
CORS Station
Hooper Bay
Project AOI
2201
Hooper Bay
BET1
AB08
Google earth
Image © 2016 TerraMetrics
Image Landsat / Copernicus
© 2016 Google
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
N
70 mi

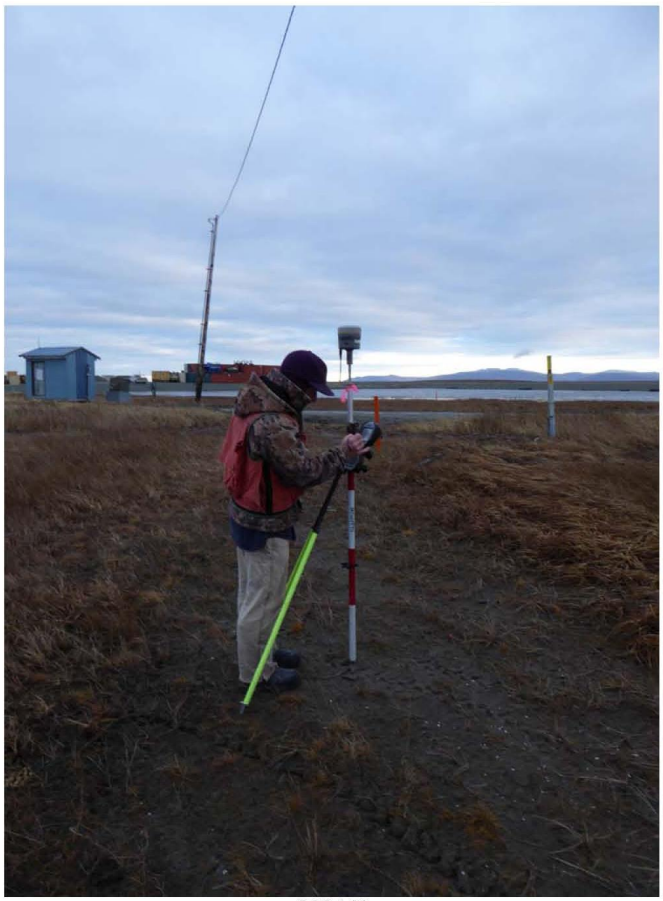

2016 Hooper Bay Survey
Base and Check Point Diagram
Legend
2201 Base Point (SET SPIKE)
Survey Check Point
Hooper Bay
2232
2234
2233
2236
2237
2209
2208
2212
2210
2238
2214
2215
2216
2219
2220
2223
2228
2229
2225
2257
2258
2244
2260
2201
2240
2263
2262
2250
2204
2202
2203
Google earth
Image © 2016 DigitalGlobe
© 2016 Google
N
3000 ft



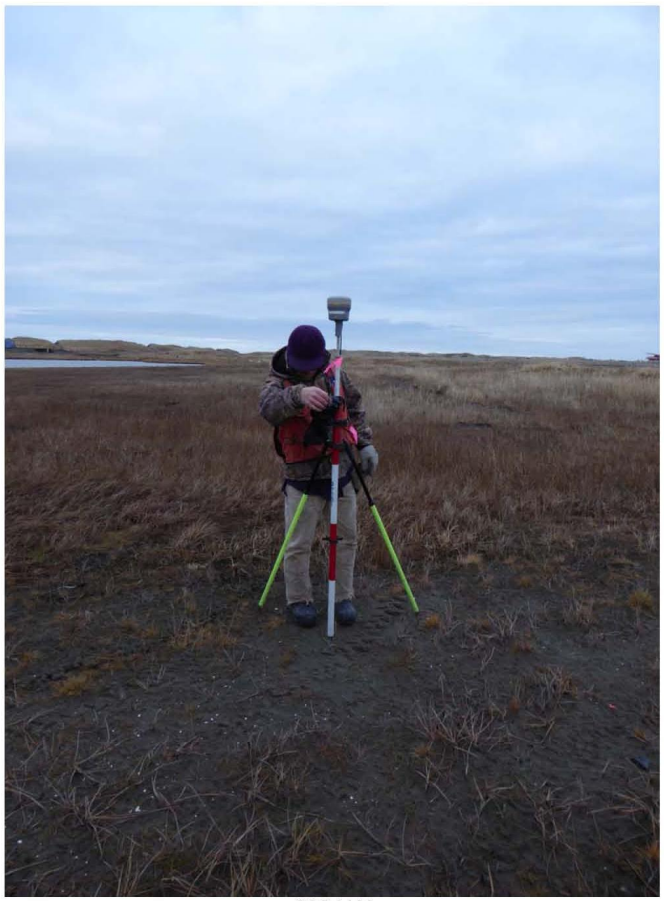
2202 N



2202 W



2204 N



2204 W



2206 N



2206 W



2208 N



2208 W



2210 N



2210 W



2212 N



2212 W



2214 N



2214 W



2216 N



2216 W



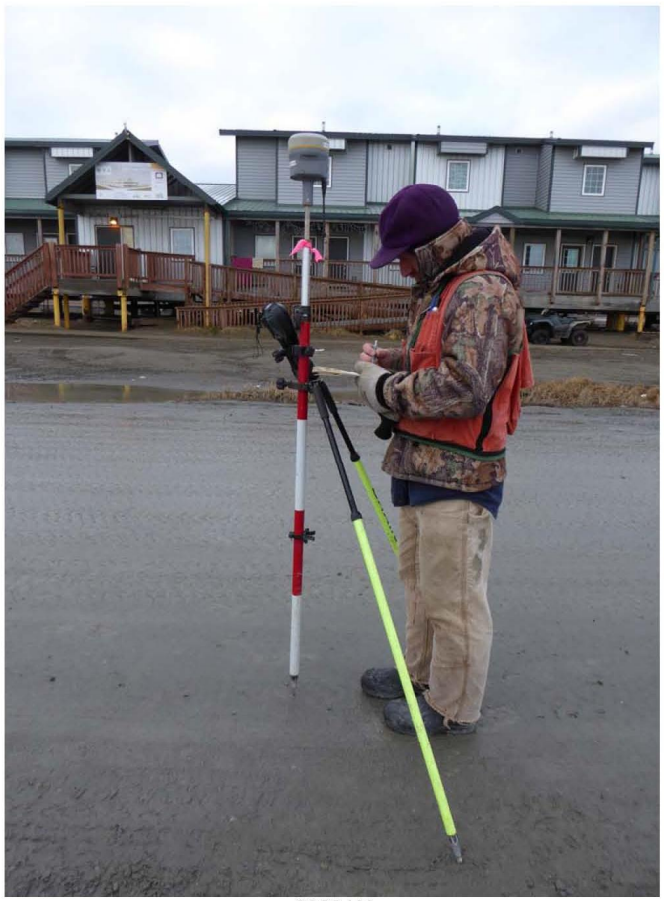
2218 N



2218 W



2220 N



2220 W



2222 N



2222 W



2224 N



2224 W



2226 N



2226 W



2228 N



2228 W



2230 N



2230 W



2232 N



2232 W



2234 N



2234 W



2236 N



2236 W



2238 N



2238 W



2240 N



2240 W



2242 N



2242 W



2244 N



2244 W



2246 N



2246 W



2248 N



2248 W



2250 N



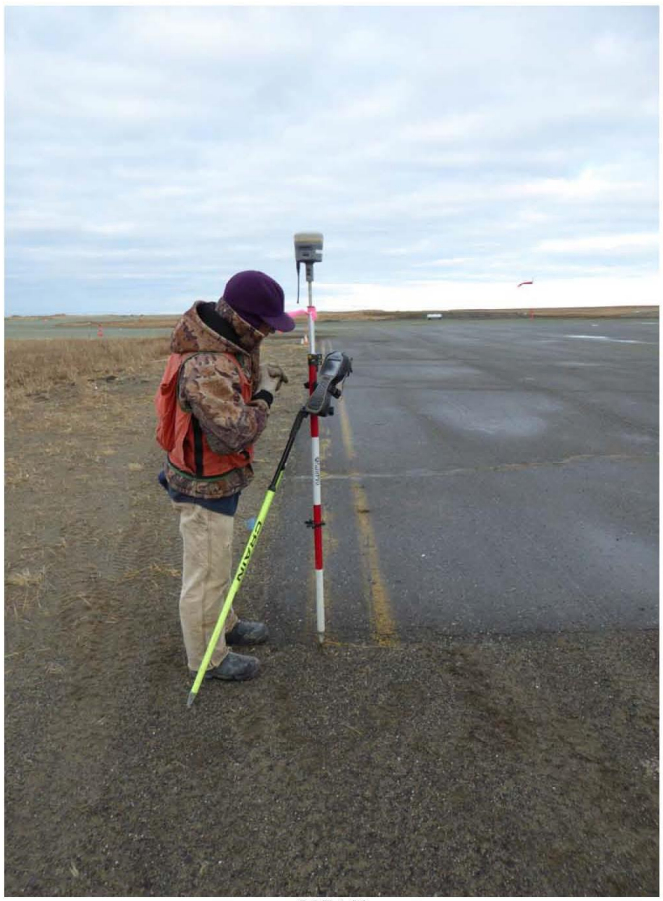
2250 W



2252 N



2252 W



2254 N



2254 W



2256 N



2256 W



2258 N



2258 W



2260 N



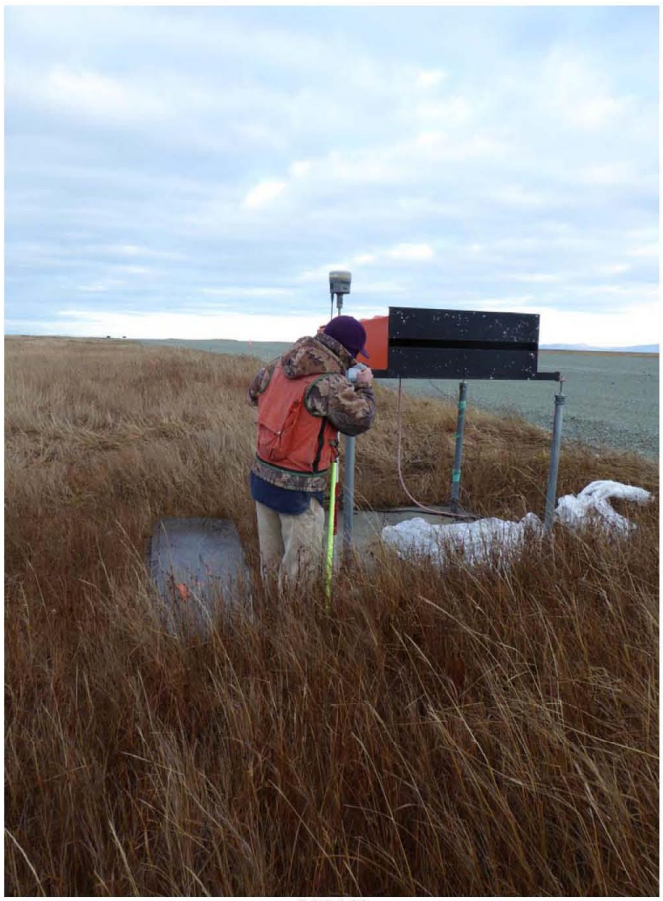
2260 W



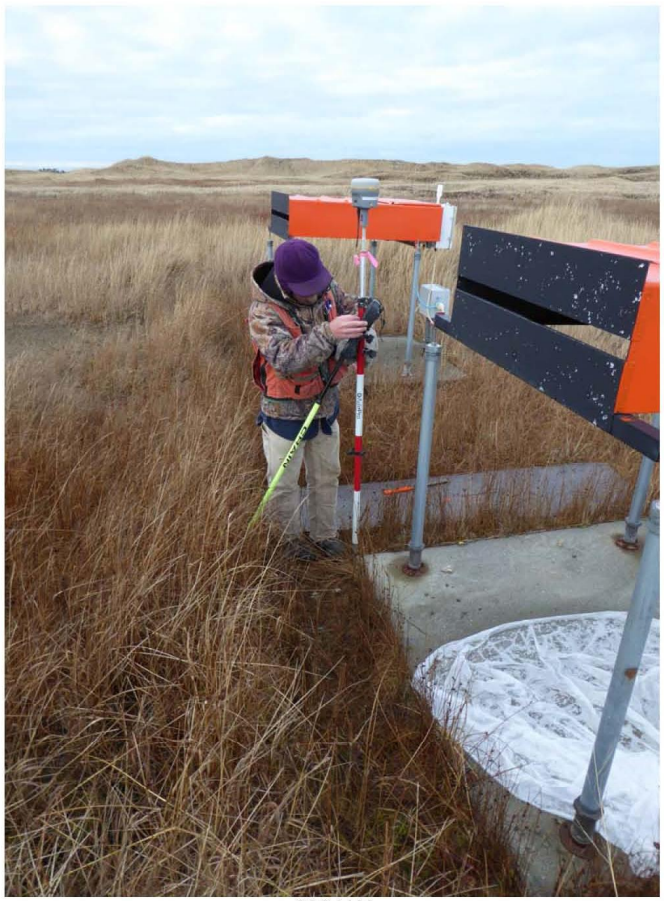
2262 N



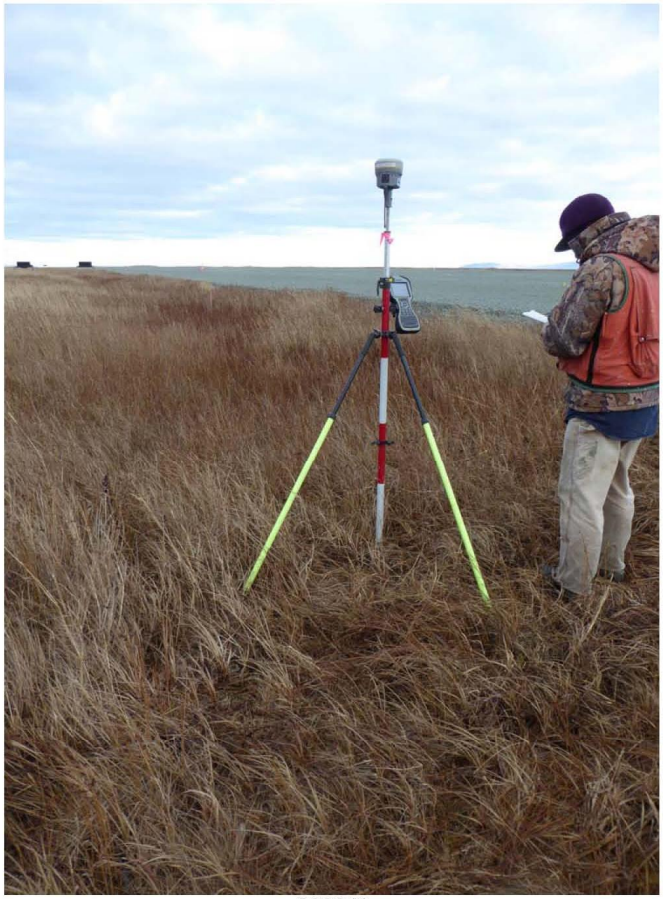
2262 W



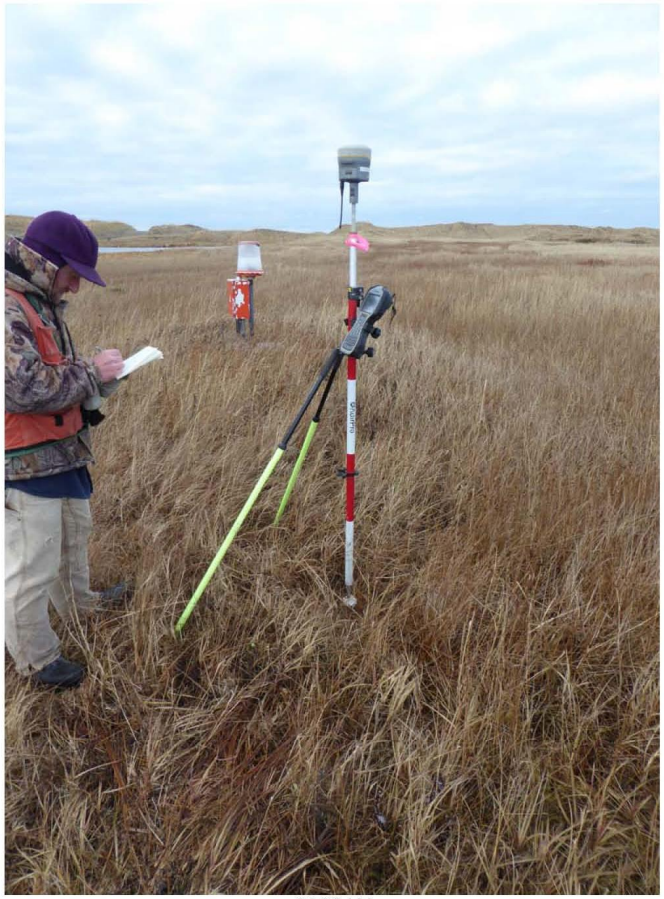
2264 N



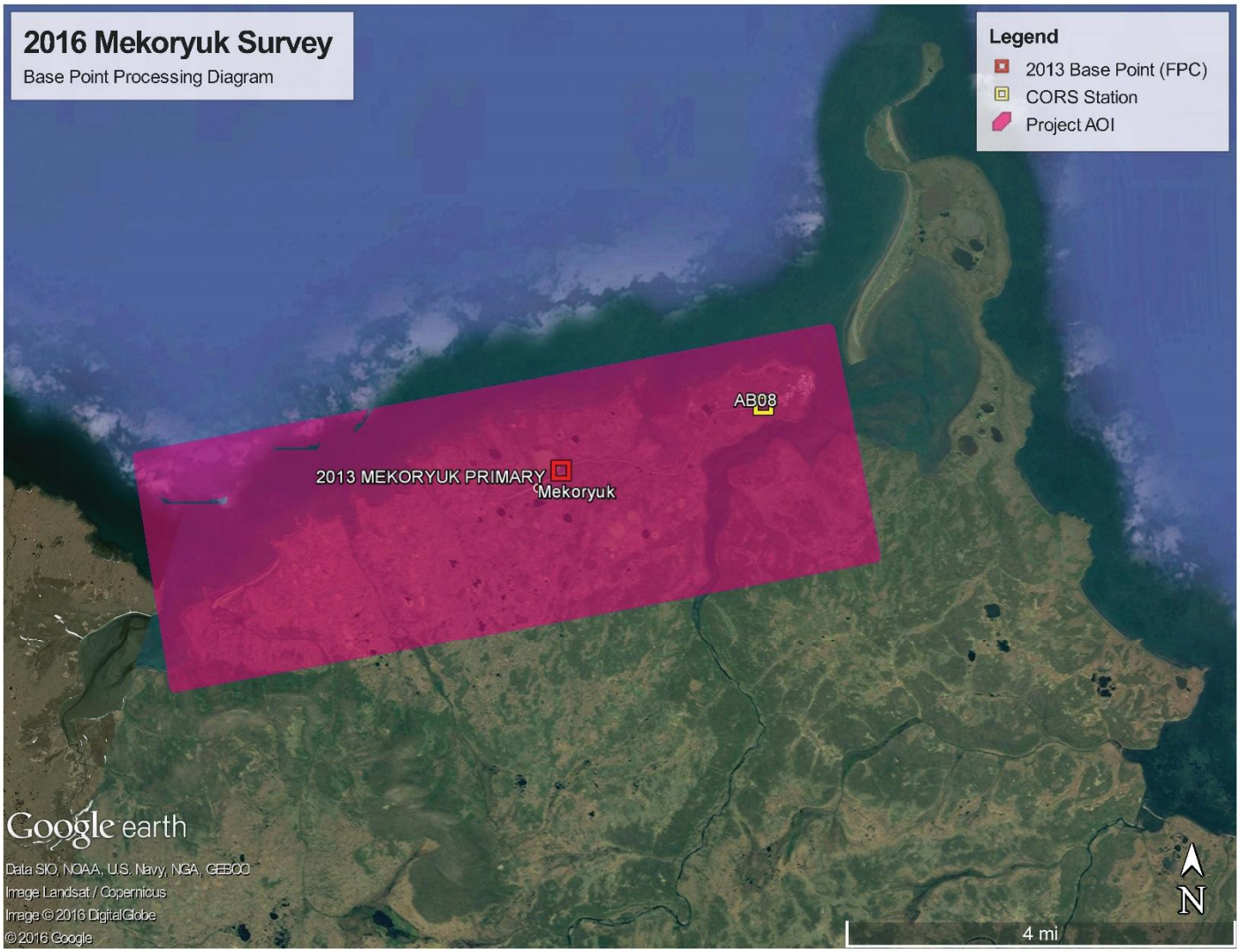
2264 W

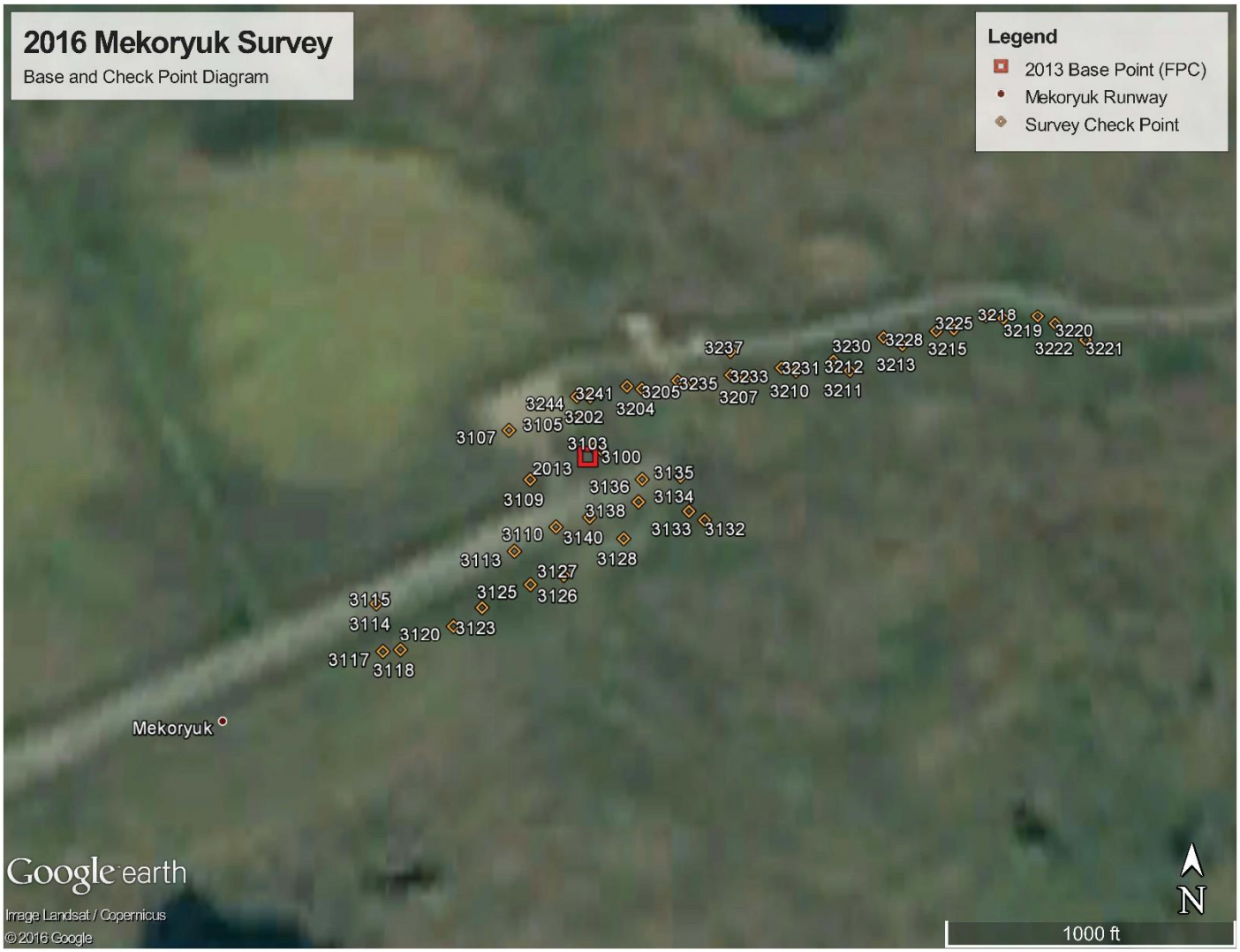


2266 N



2266 W


2016 Mekoryuk Survey
Base Point Processing Diagram
Legend
2013 Base Point (FPC)
CORS Station
Project AOI
AB08
2013 MEKORYUK PRIMARY
Mekoryuk
Google earth
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image Landsat / Copernicus
Image © 2016 DigitalGlobe
© 2016 Google
4 mi
N

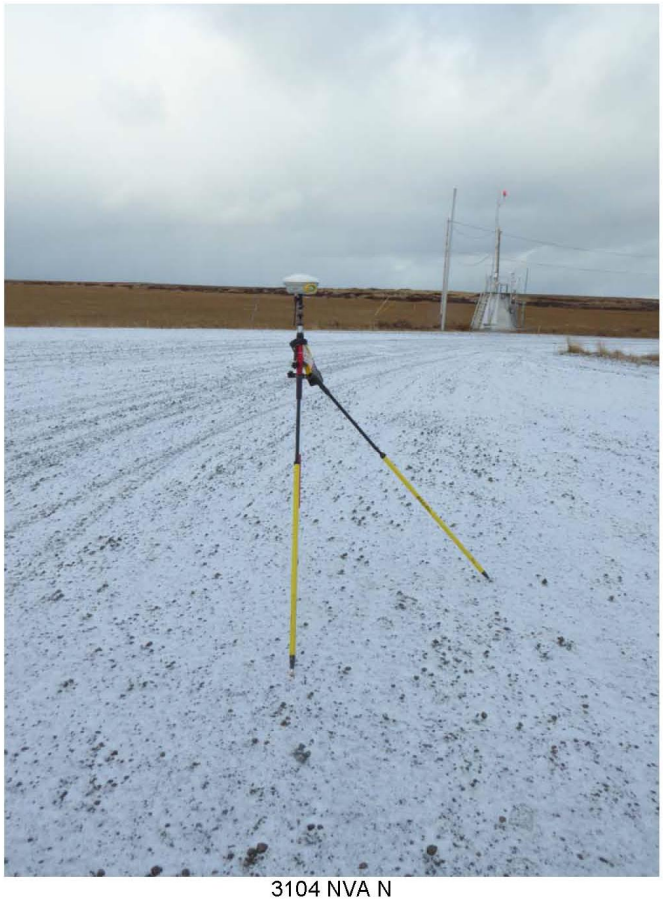

2016 Mekoryuk Survey
Base and Check Point Diagram
Legend
2013 Base Point (FPC)
Mekoryuk Runway
Survey Check Point
3237
3230
3228
3225
3218
3219
3220
3222
3221
3215
3213
3231
3212
3233
3235
3241
3205
3207
3210
3211
3244
3202
3204
3107
3105
3103
3100
2013
3135
3136
3109
3134
3138
3133
3132
3110
3140
3128
3113
3127
3125
3126
3115
3114
3120
3123
3117
3118
Mekoryuk
Google earth
Image Landsat / Copernicus
© 2016 Google
N
1000 ft



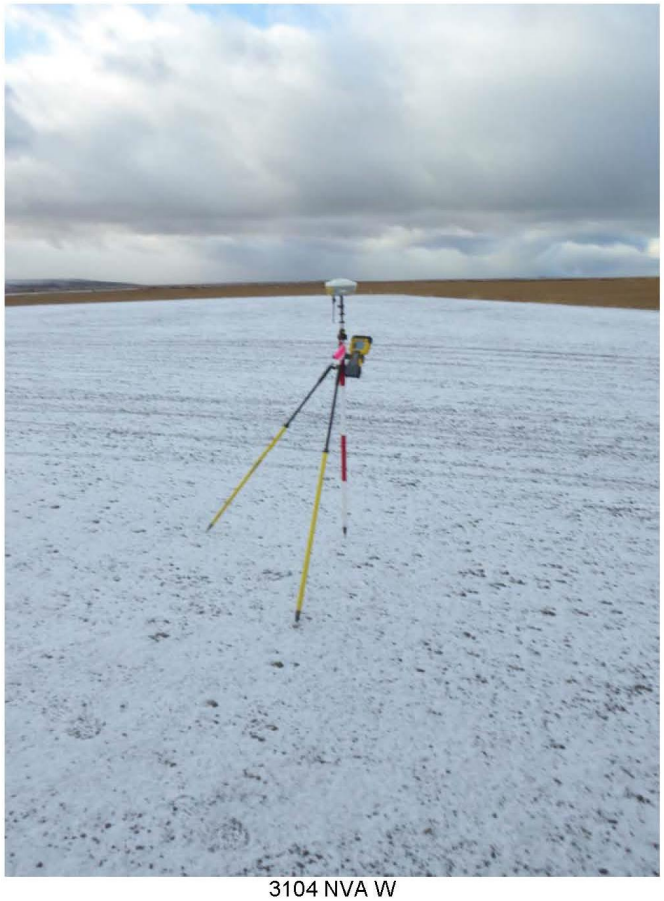
3102 NVA N



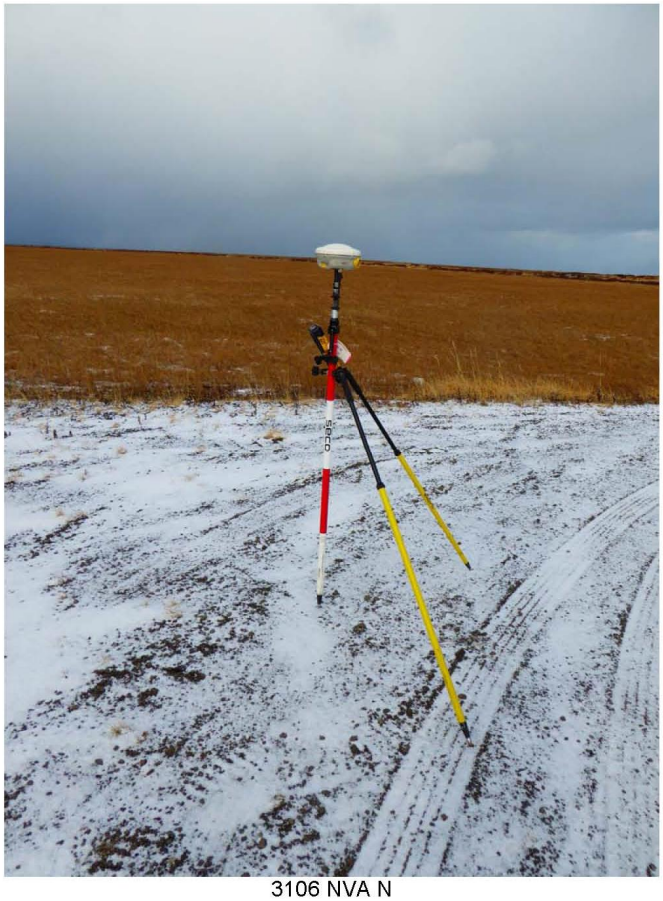
3102 NVA W



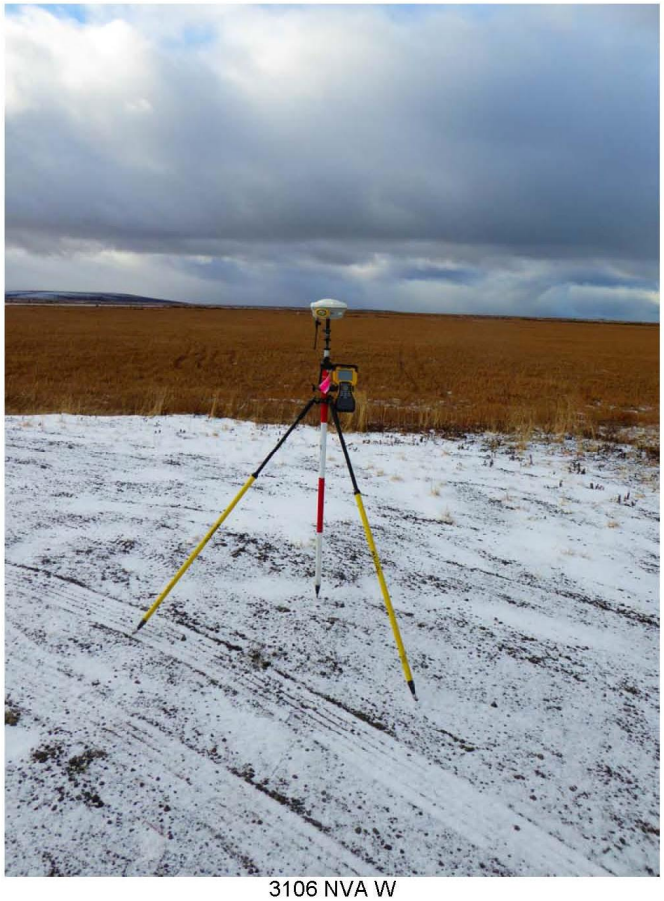
3104 NVA N



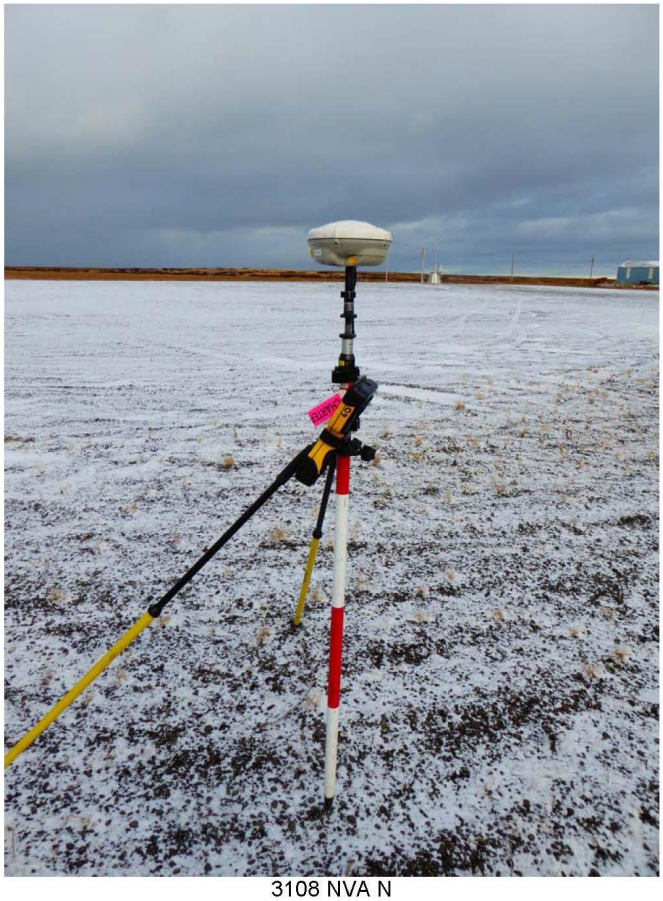
3104 NVA W



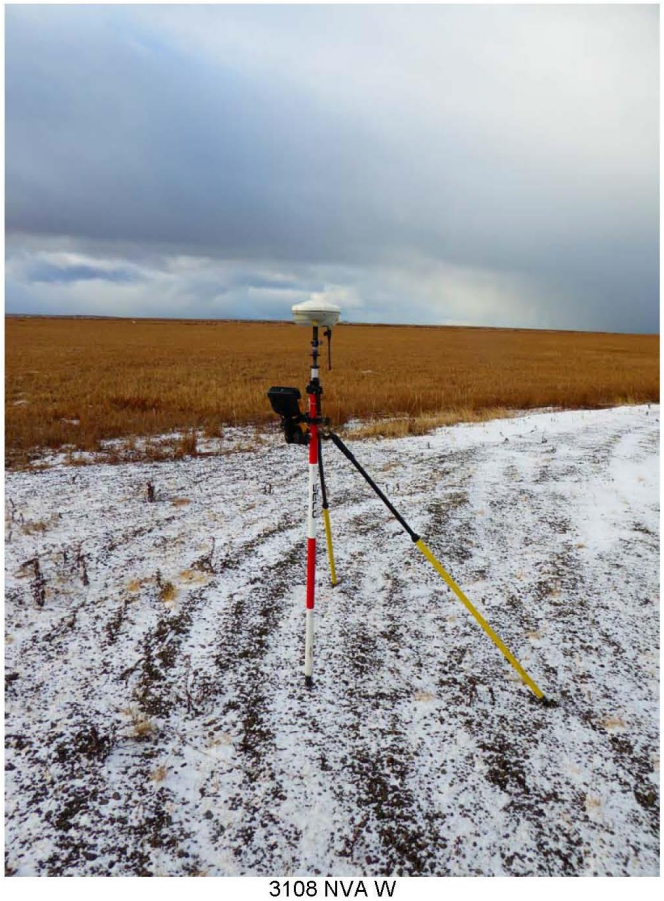
3106 NVA N



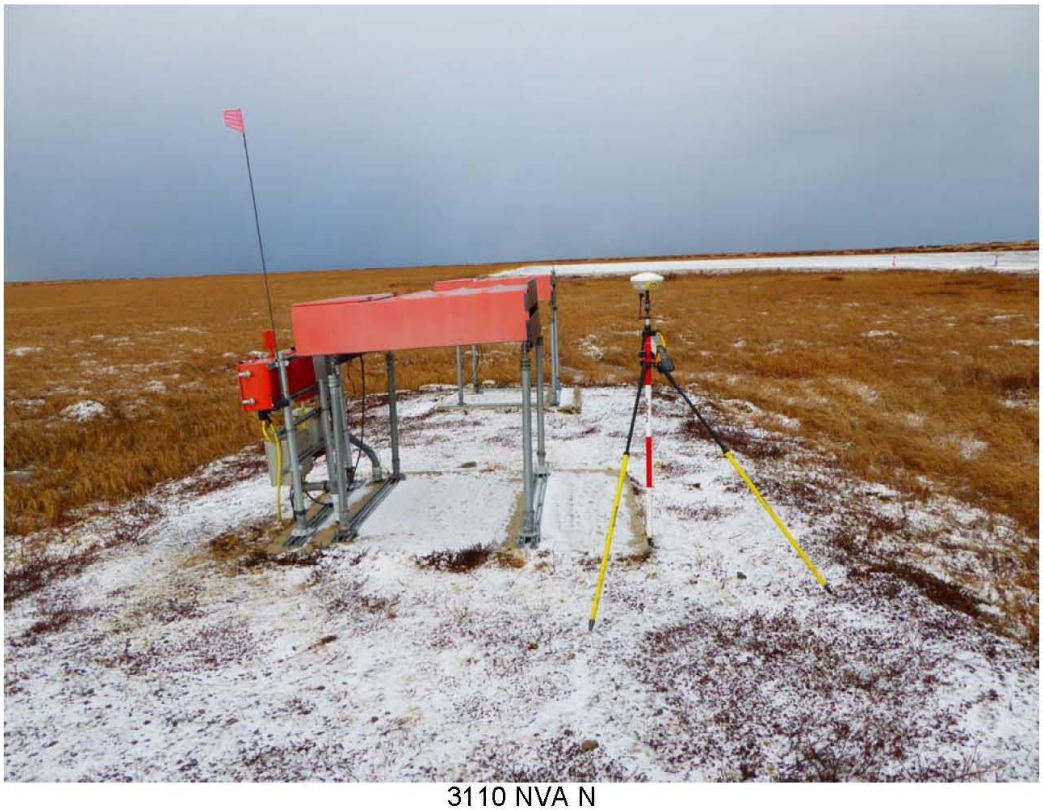
3106 NVA W



3108 NVA N



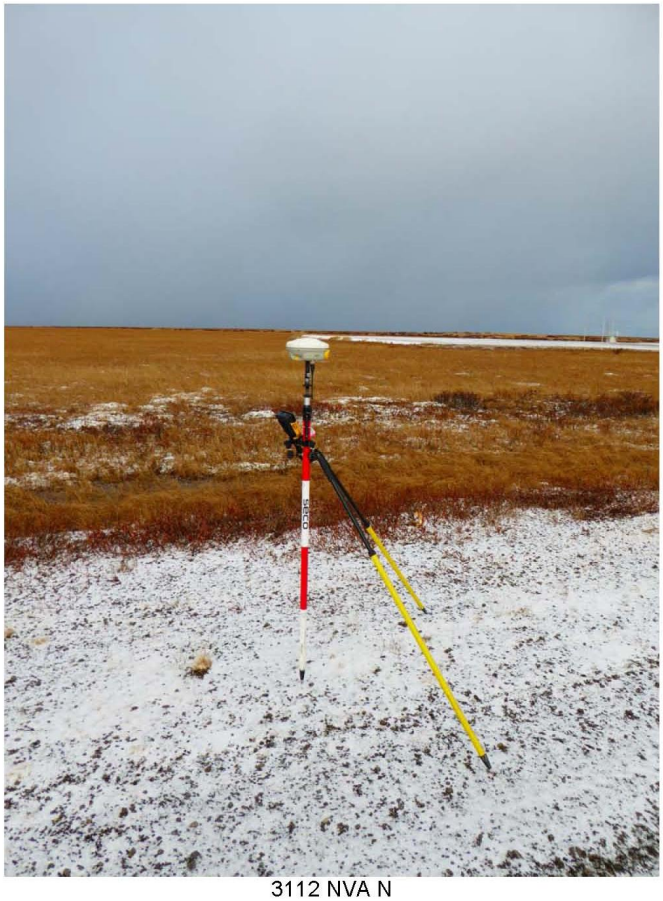
3108 NVA W



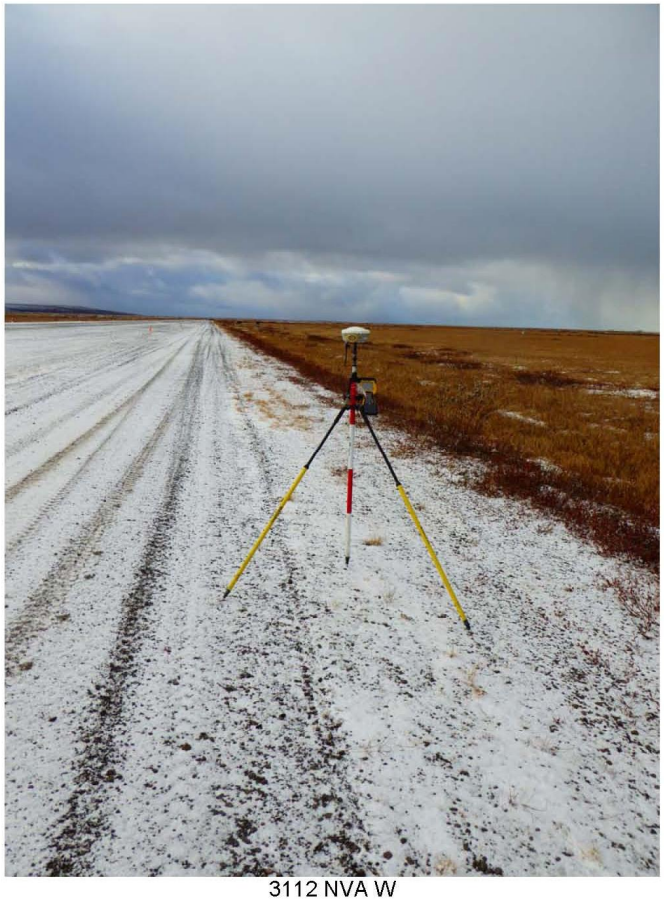
3110 NVA N



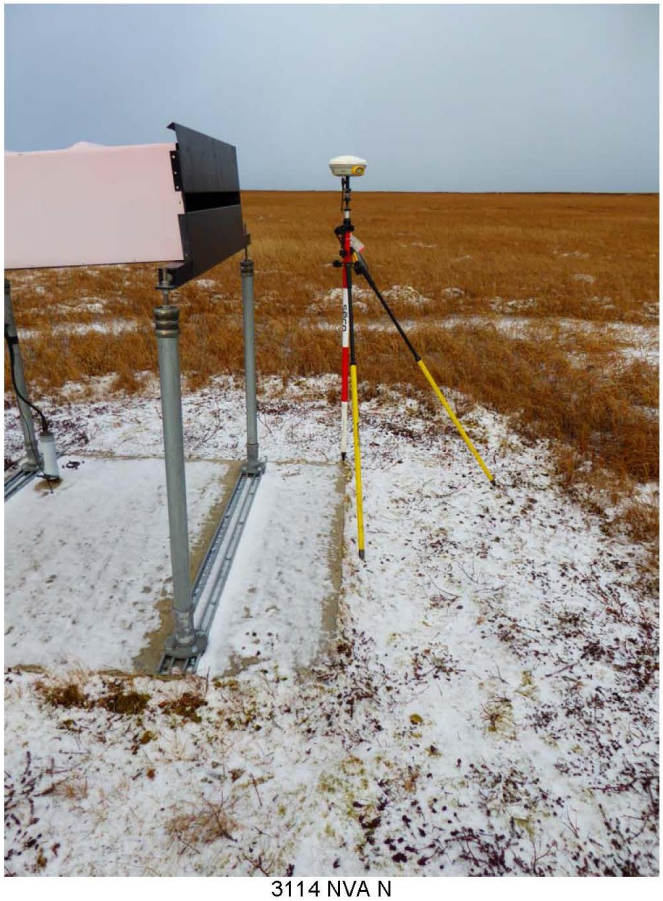
3110 NVA W



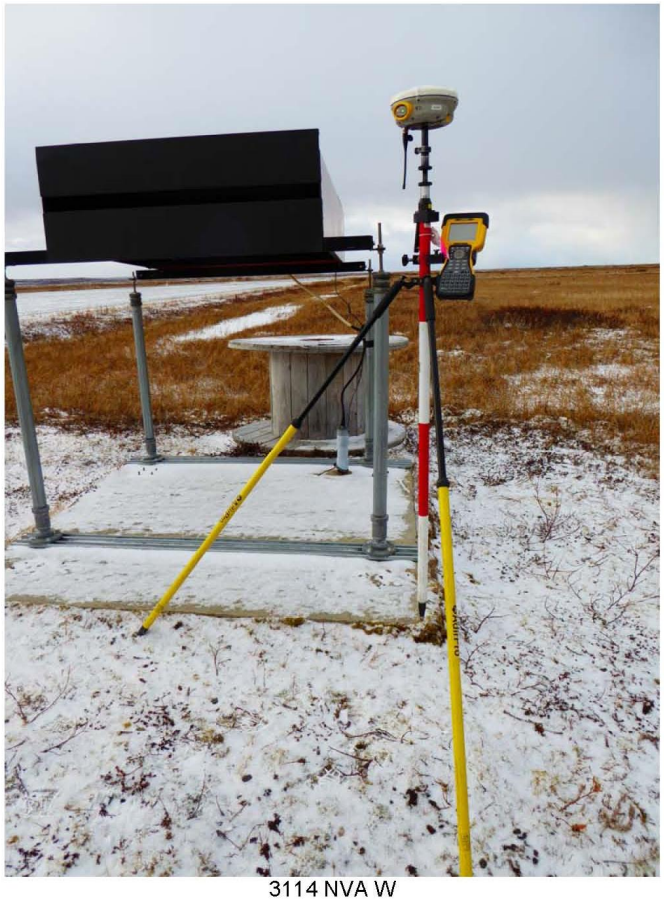
3112 NVA N



3112 NVA W



3114 NVA N



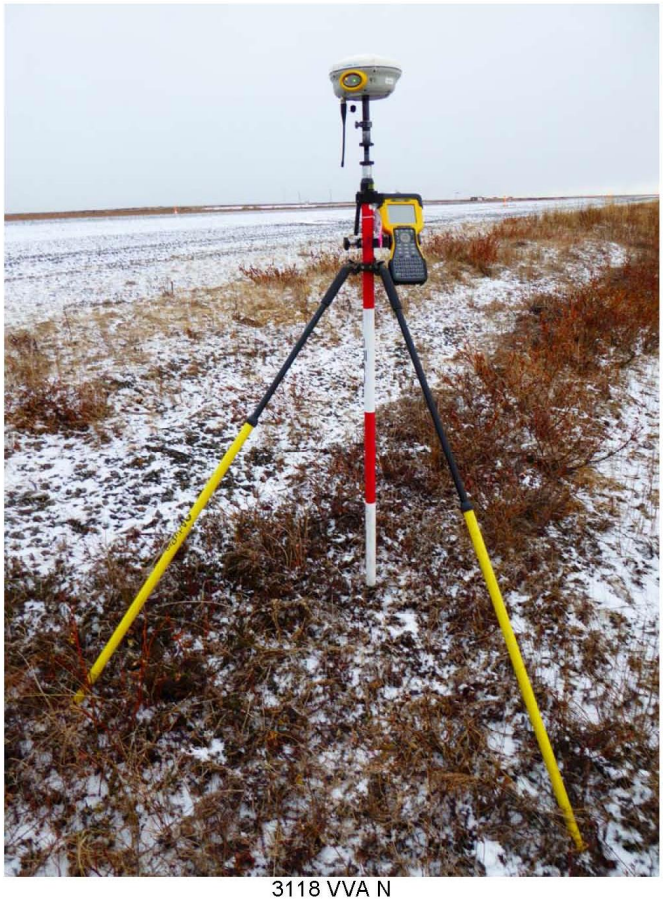
3114 NVA W



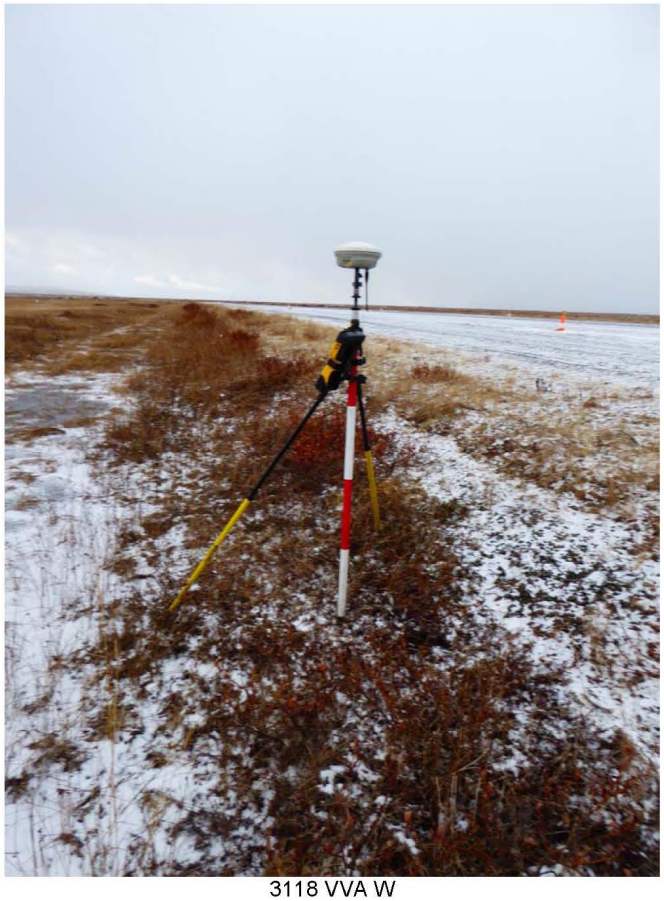
3116 NVA N



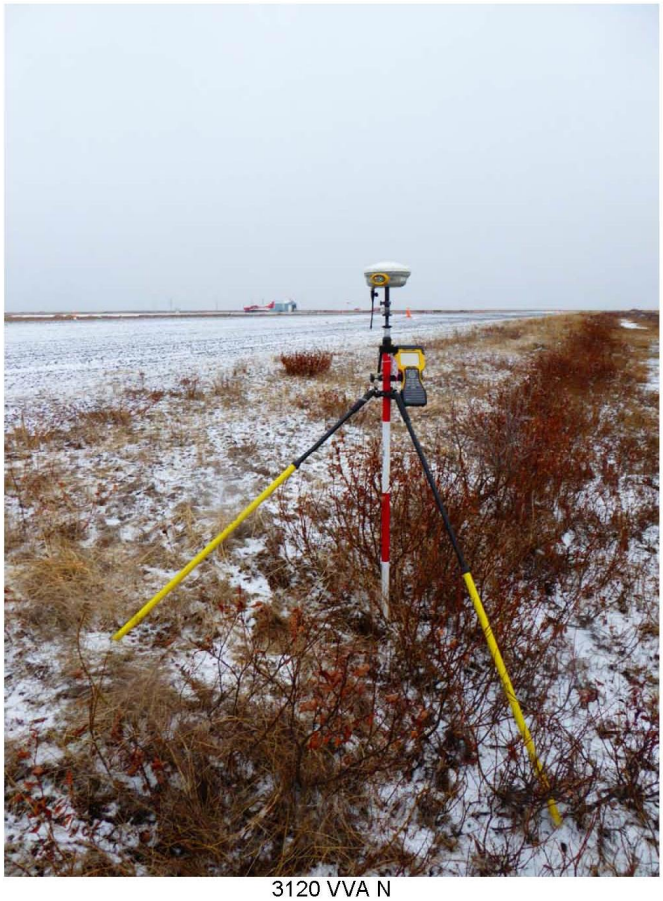
3116 NVA W



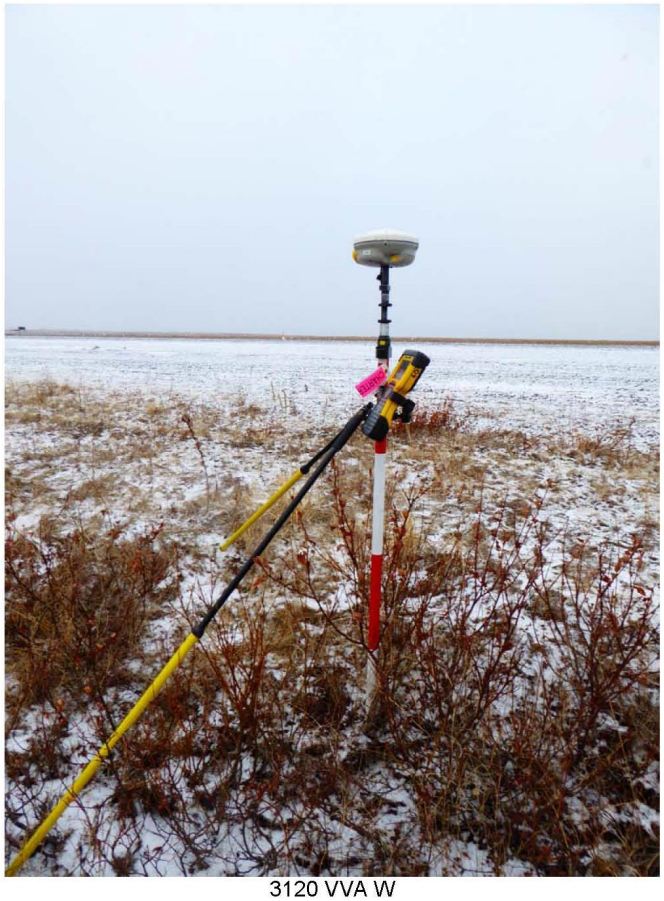
3118 VVA N



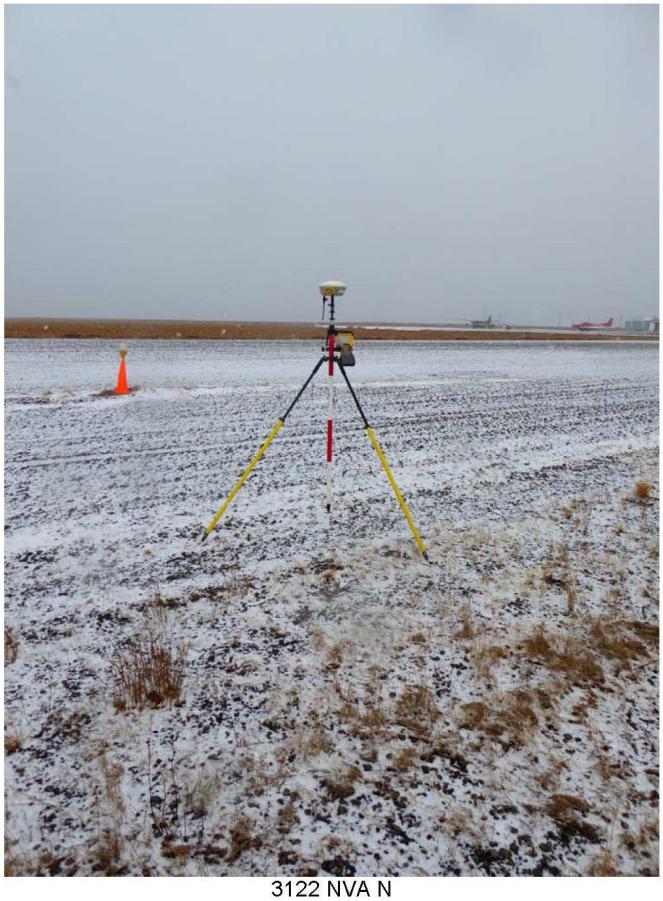
3118 VVA W



3120 VVA N



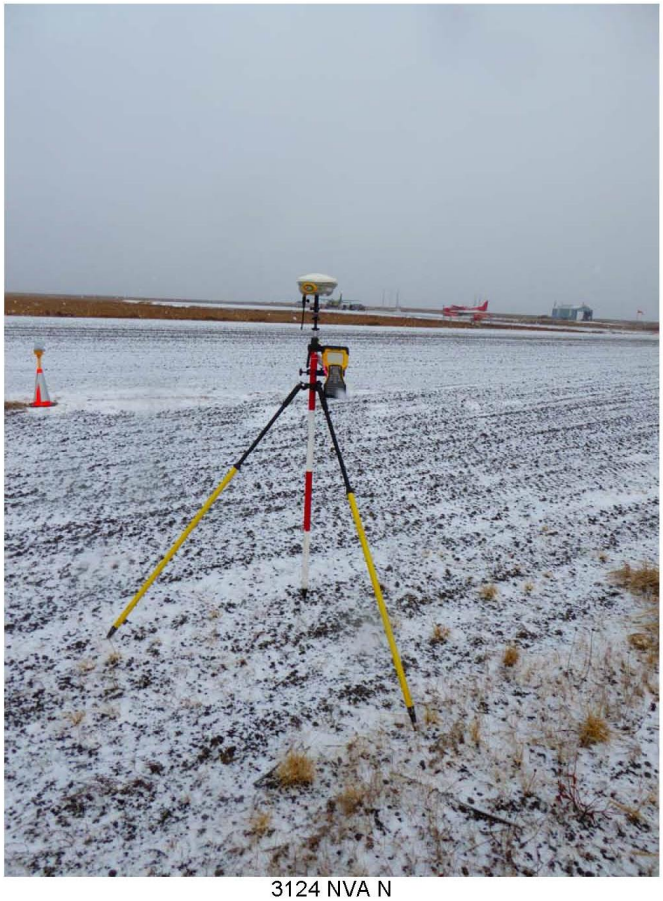
3120 VVA W



3122 NVA N



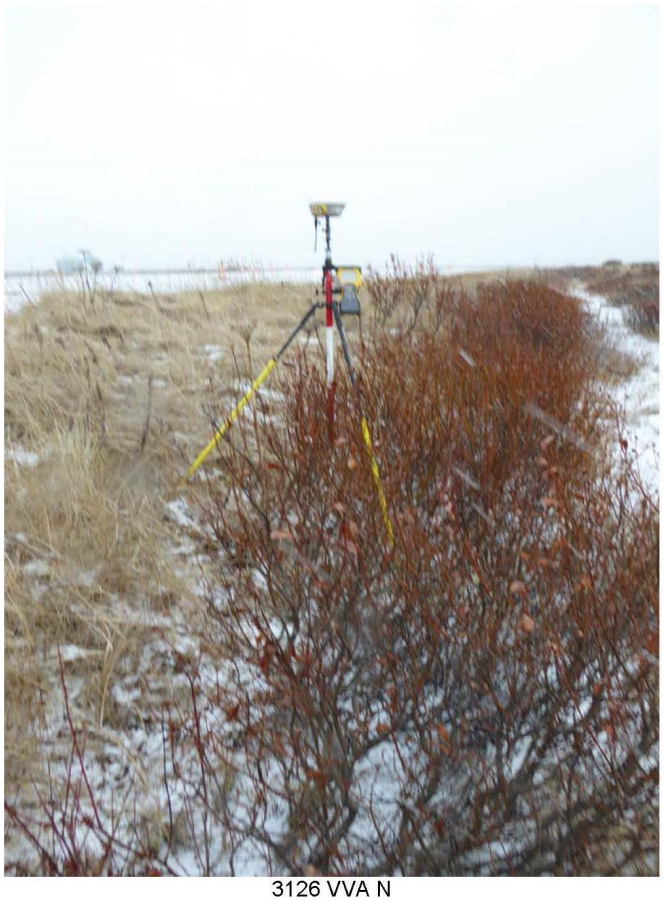
3122 NVA W



3124 NVA N



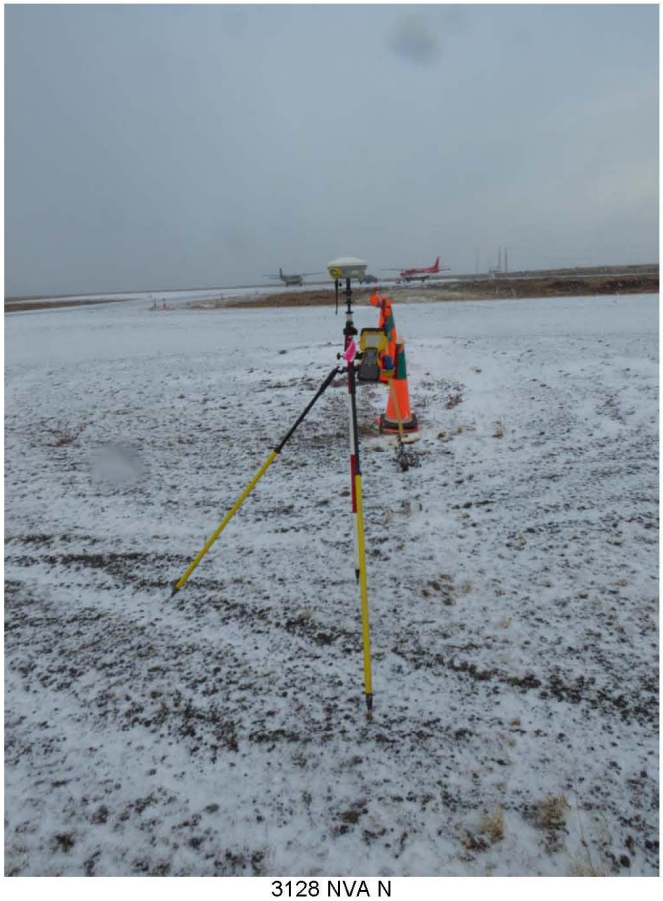
3124 NVA W



3126 VVA N



3126 VVA W



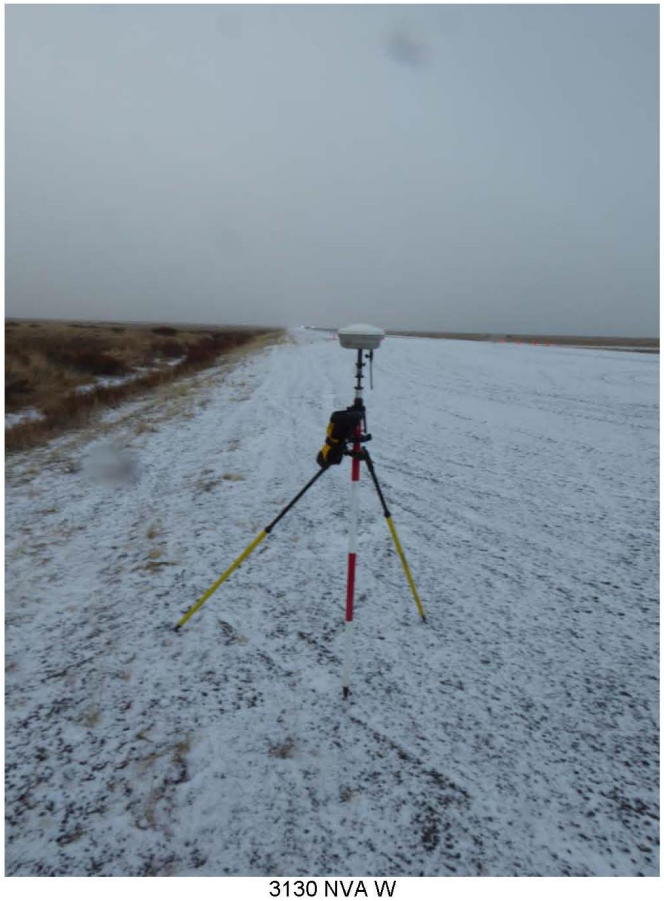
3128 NVA N



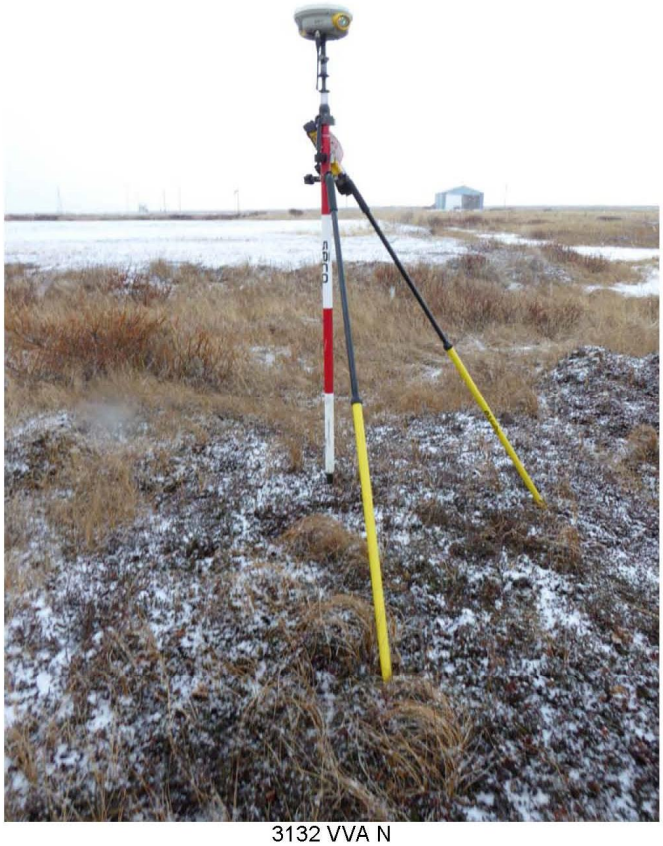
3128 NVA W



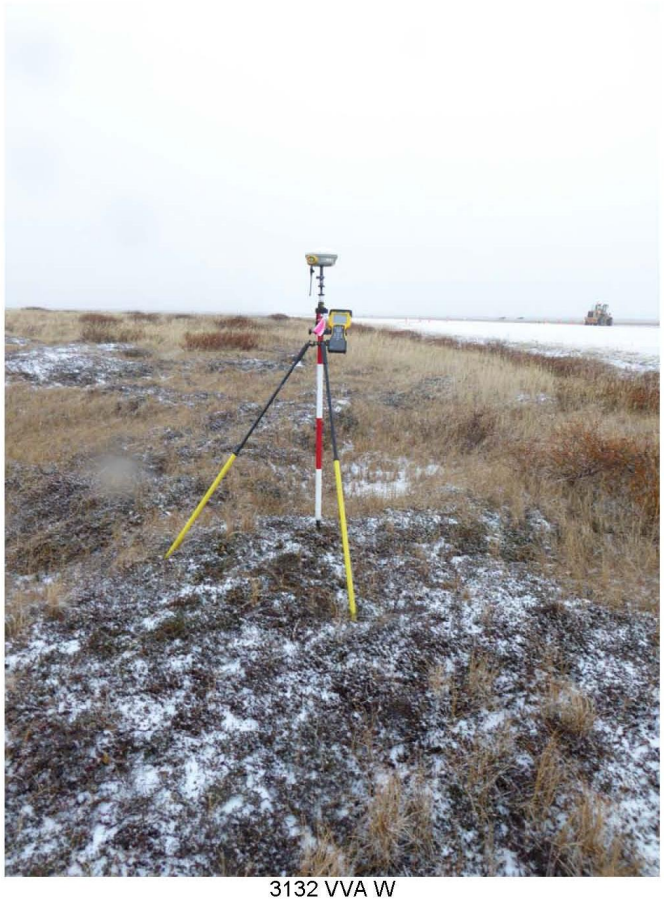
3130 NVA N



3130 NVA W



3132 VVA N



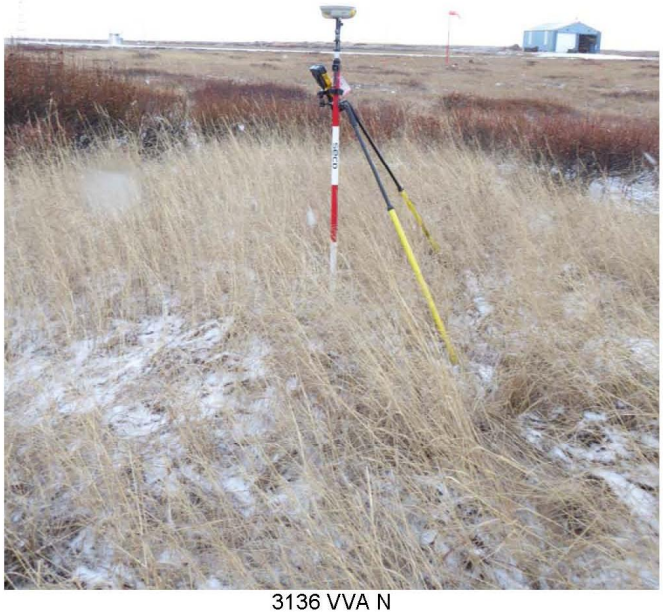
3132 VVA W



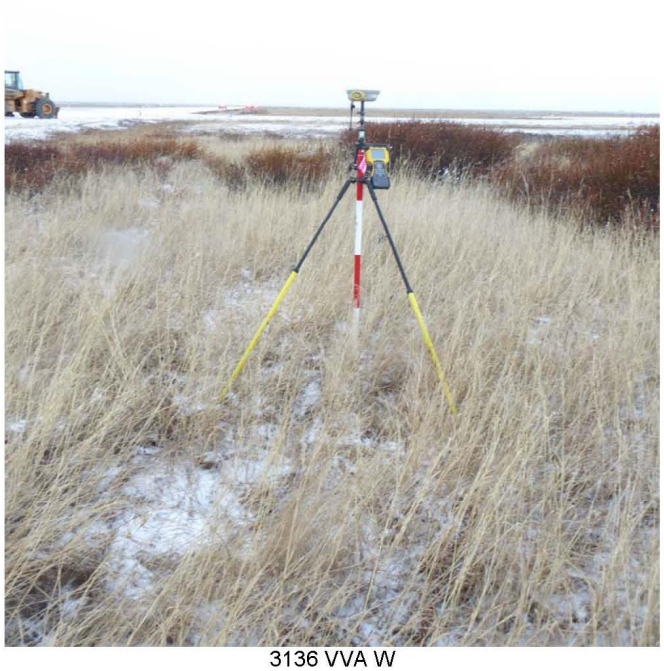
3134 NVA N



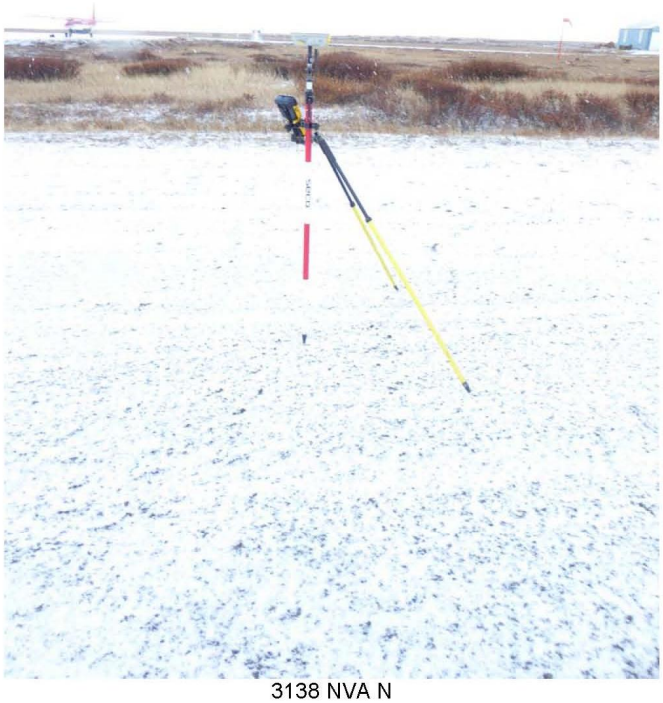
3134 NVA W



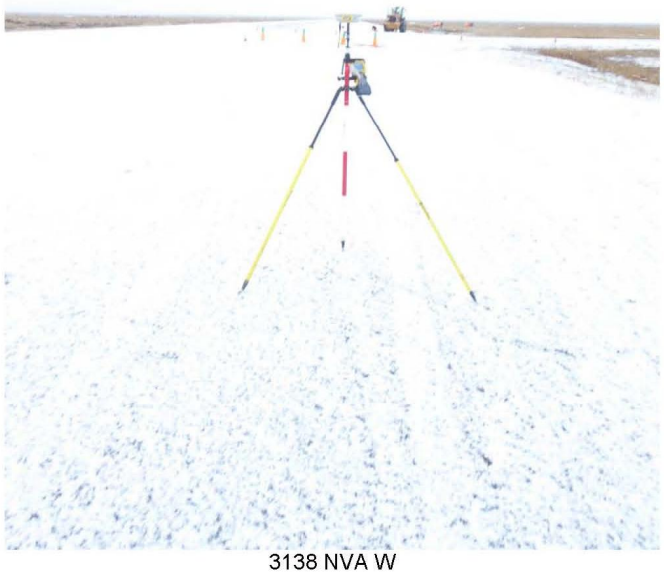
3136 VVA N



3136 VVA W



3138 NVA N



3138 NVA W



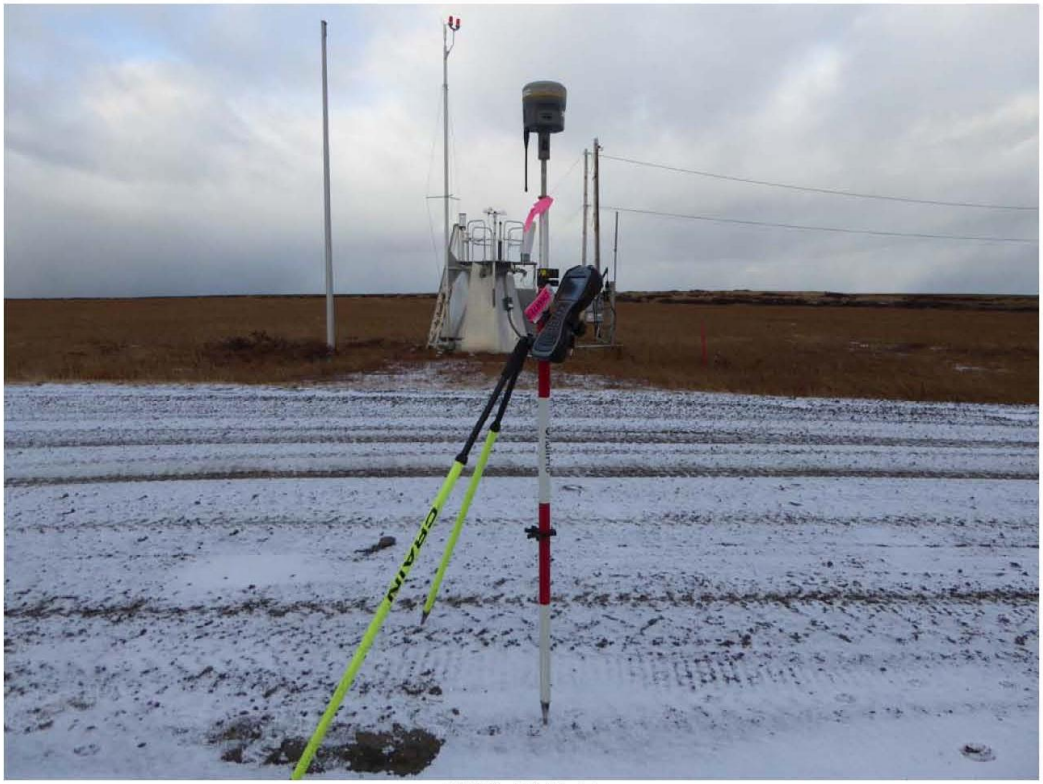
3140 NVA N



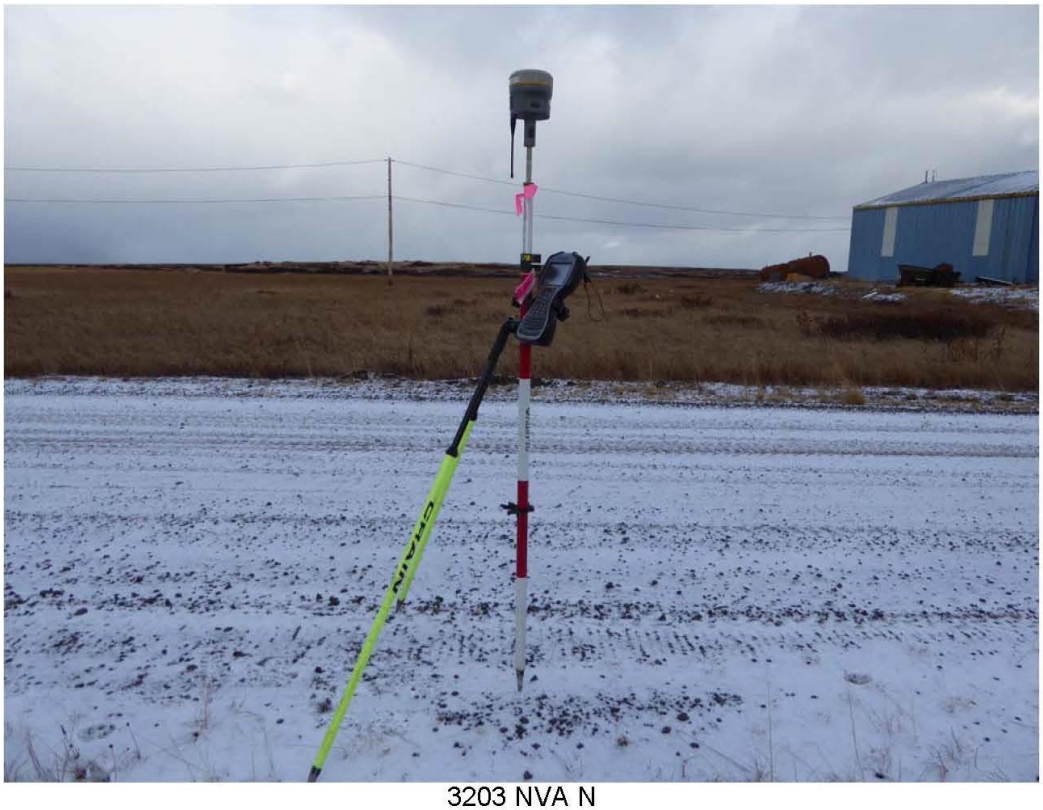
3140 NVA W



3201 NVA E



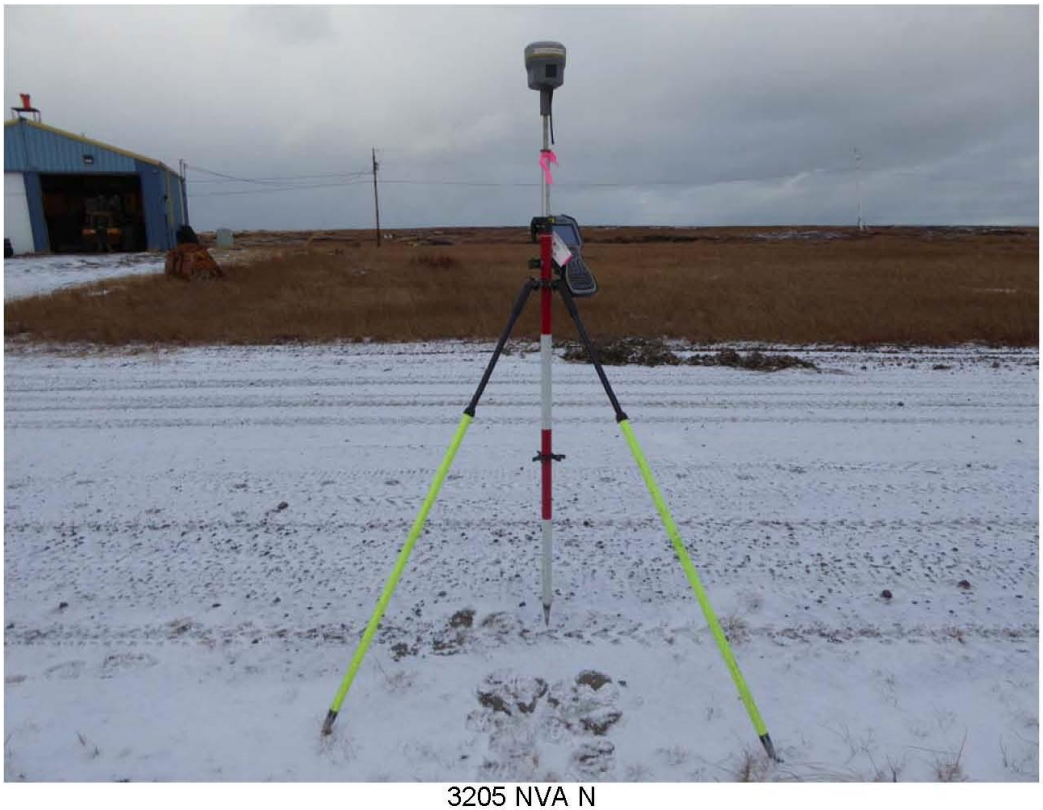
3201 NVA N



3203 NVA N



3203 NVA W



3205 NVA N



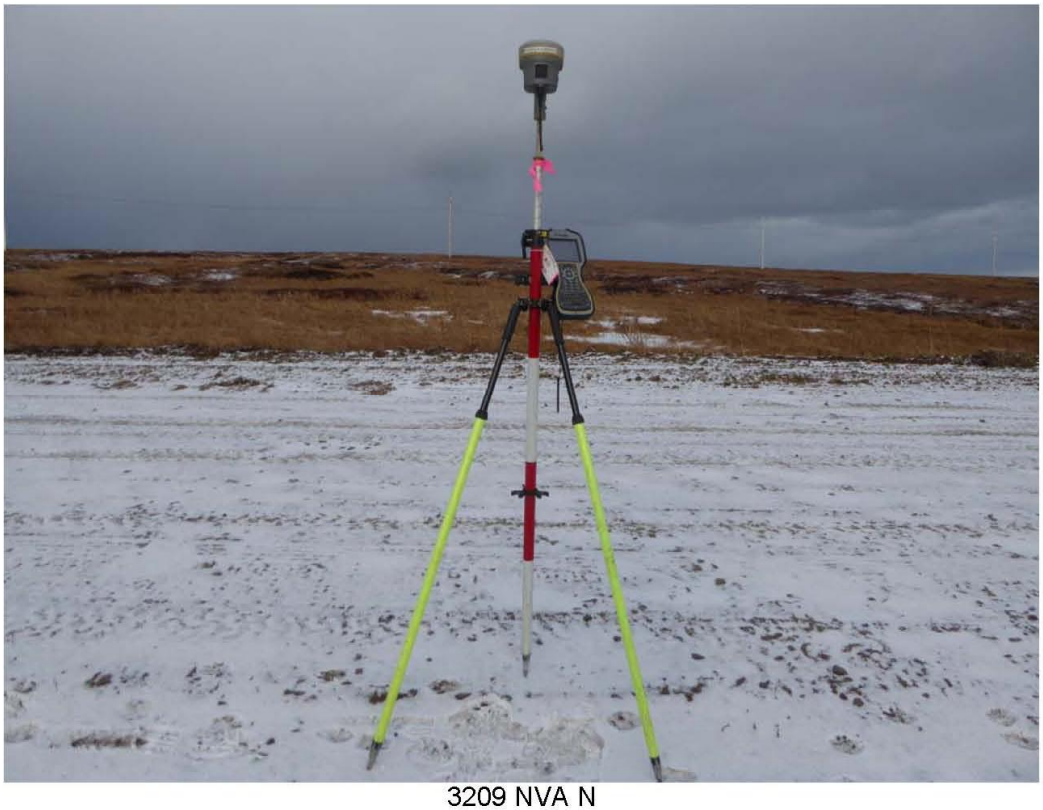
3205 NVA W



3207 NVA N



3207 NVA W



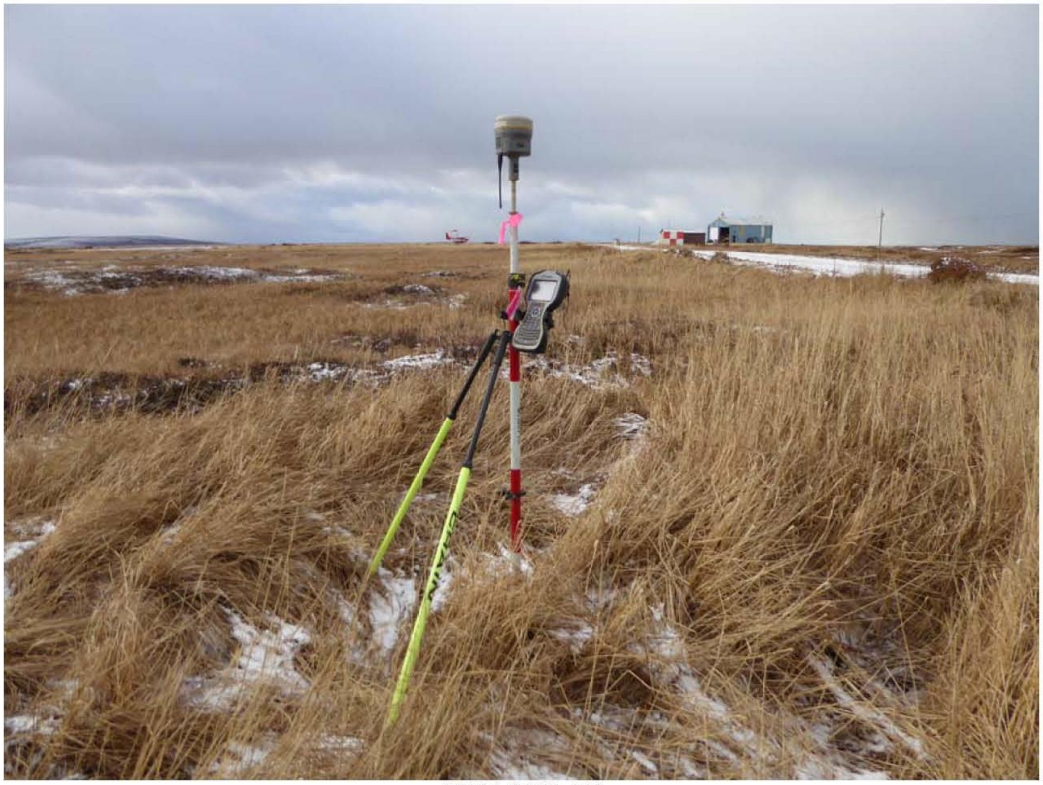
3209 NVA N



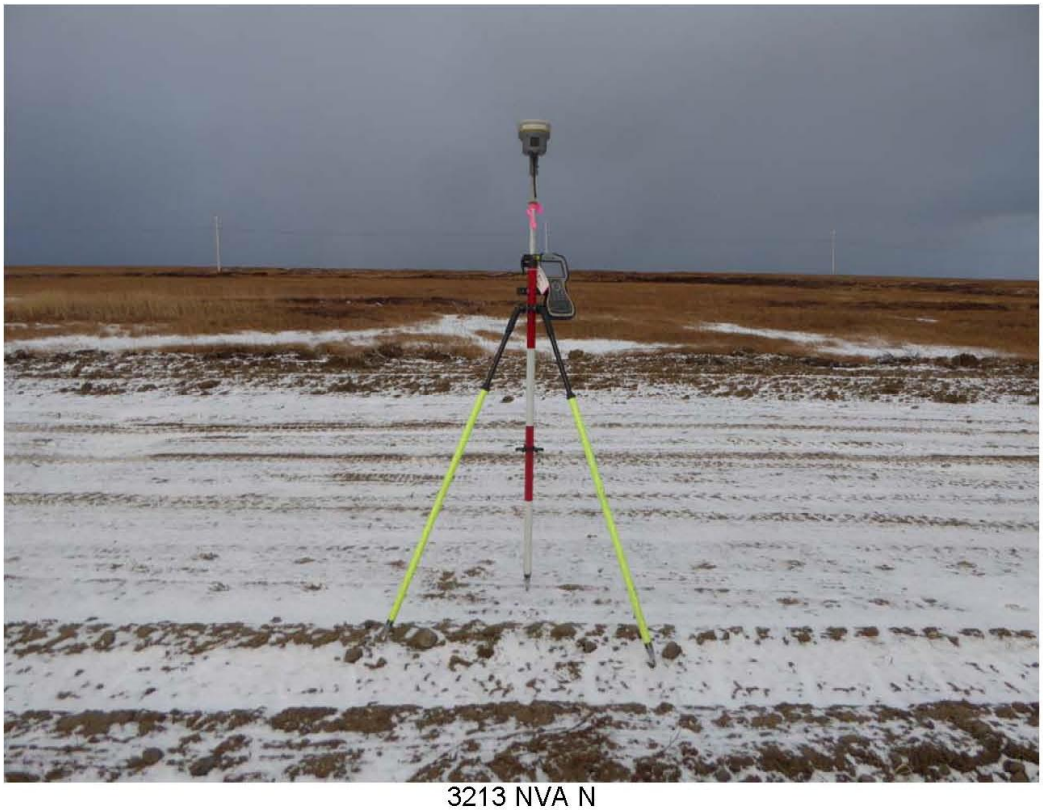
3209 NVA W



3211 VVA N



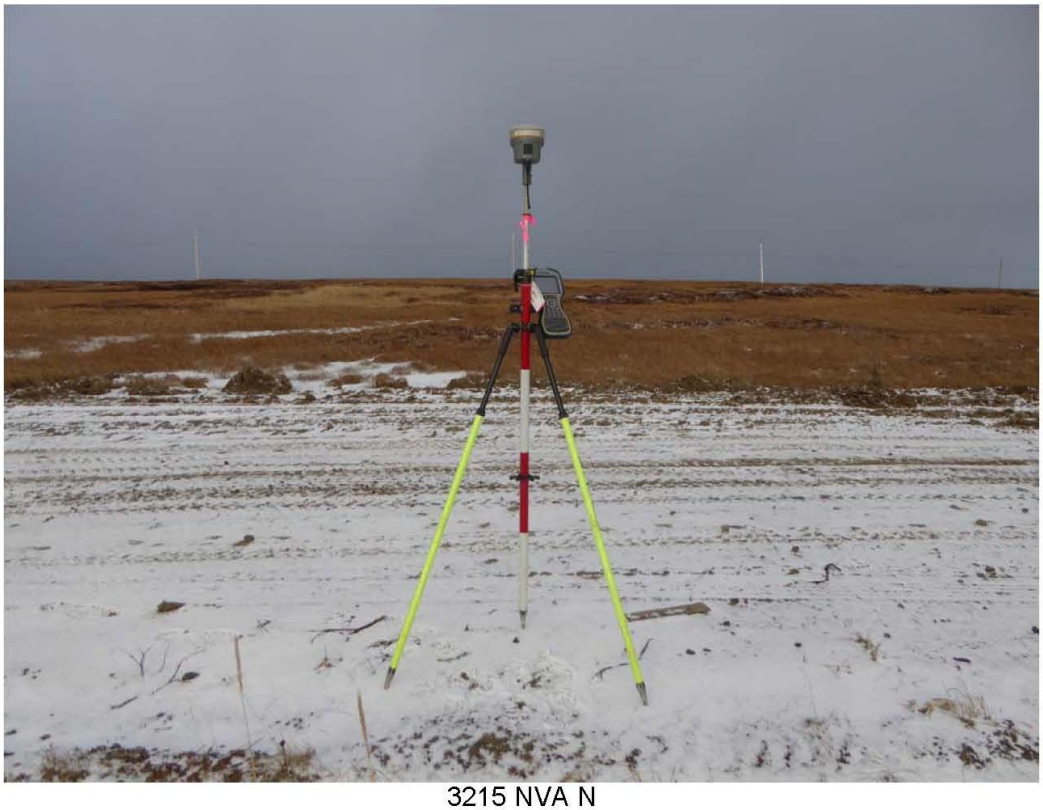
3211 VVA W



3213 NVA N



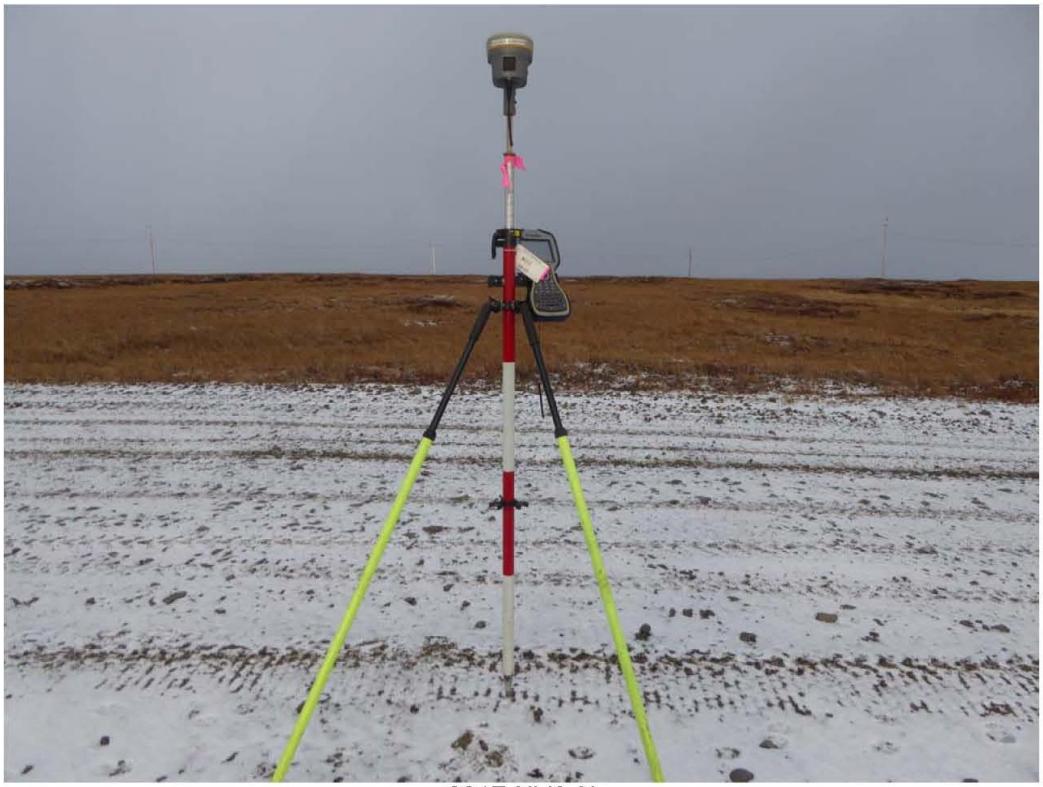
3213 NVA W



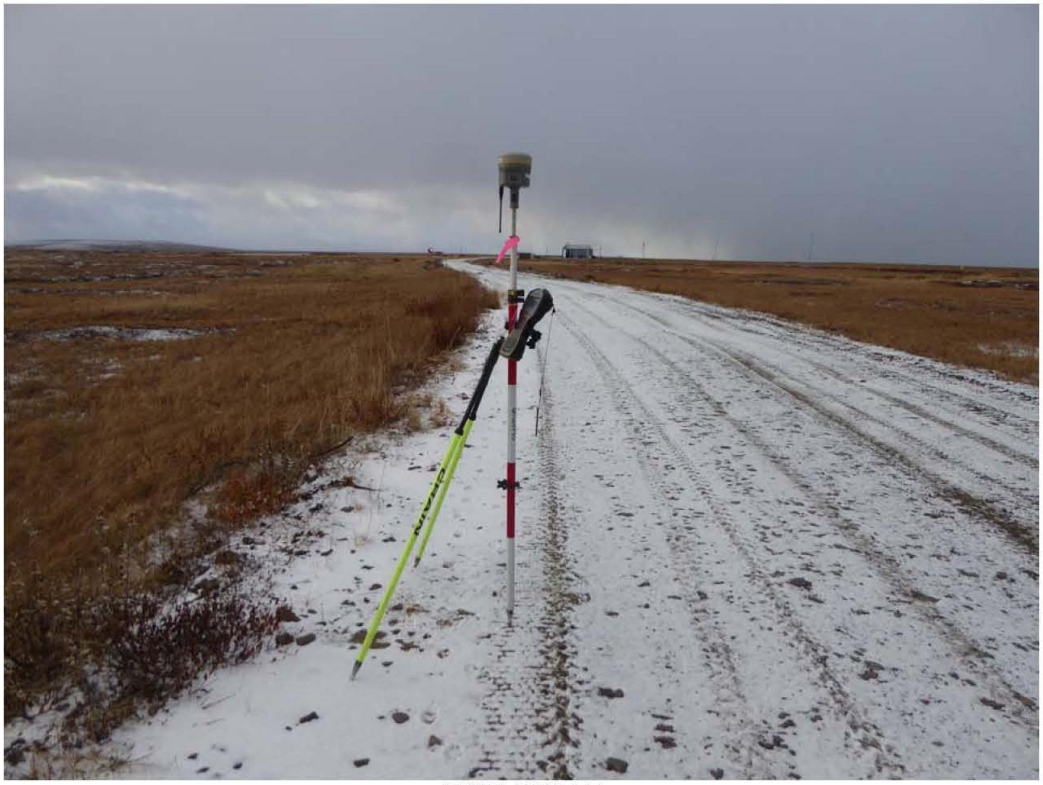
3215 NVA N



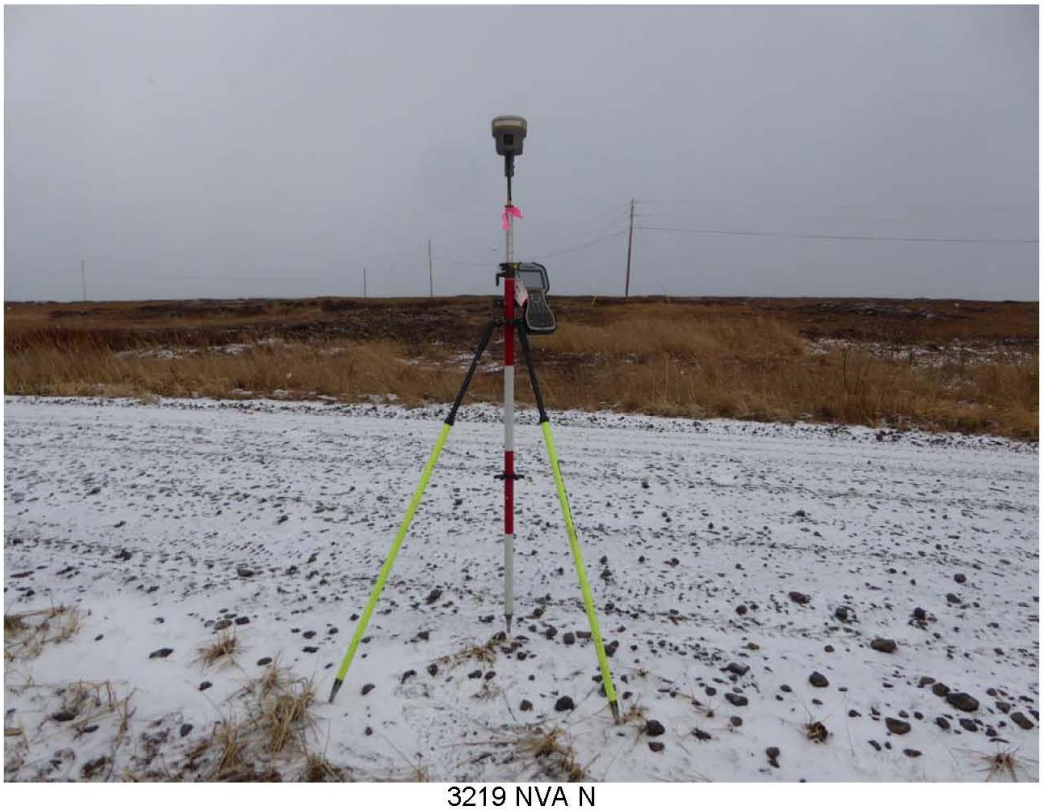
3215 NVA W



3217 NVA N



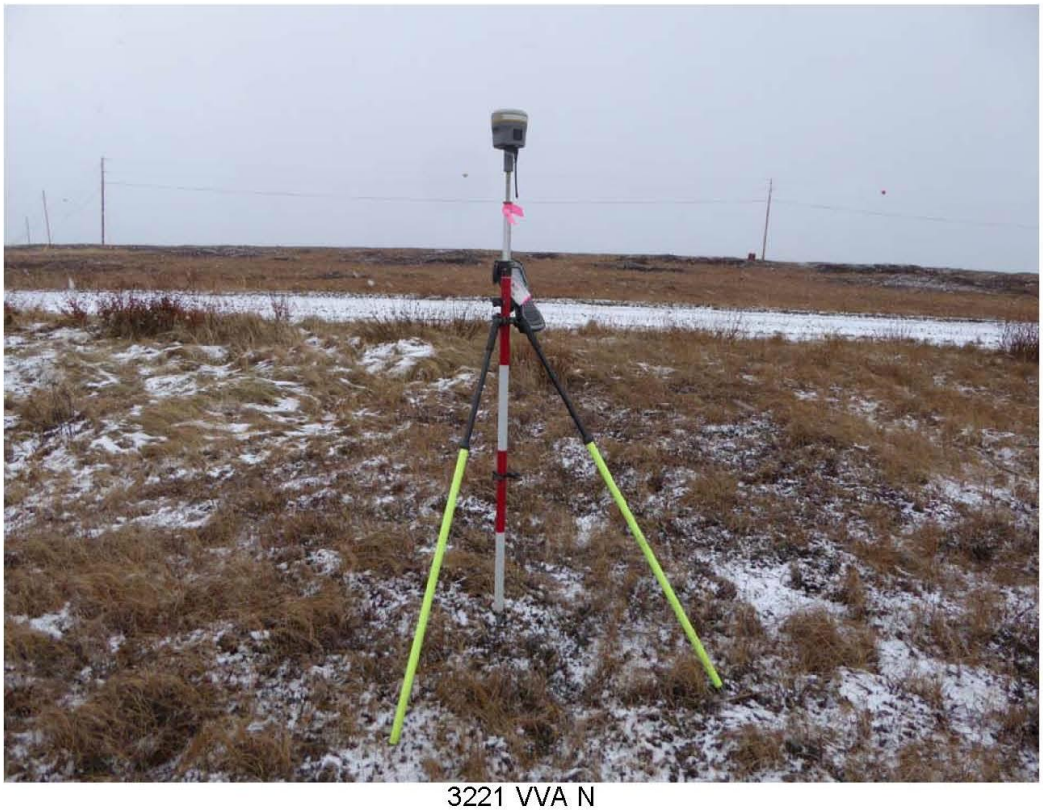
3217 NVA W



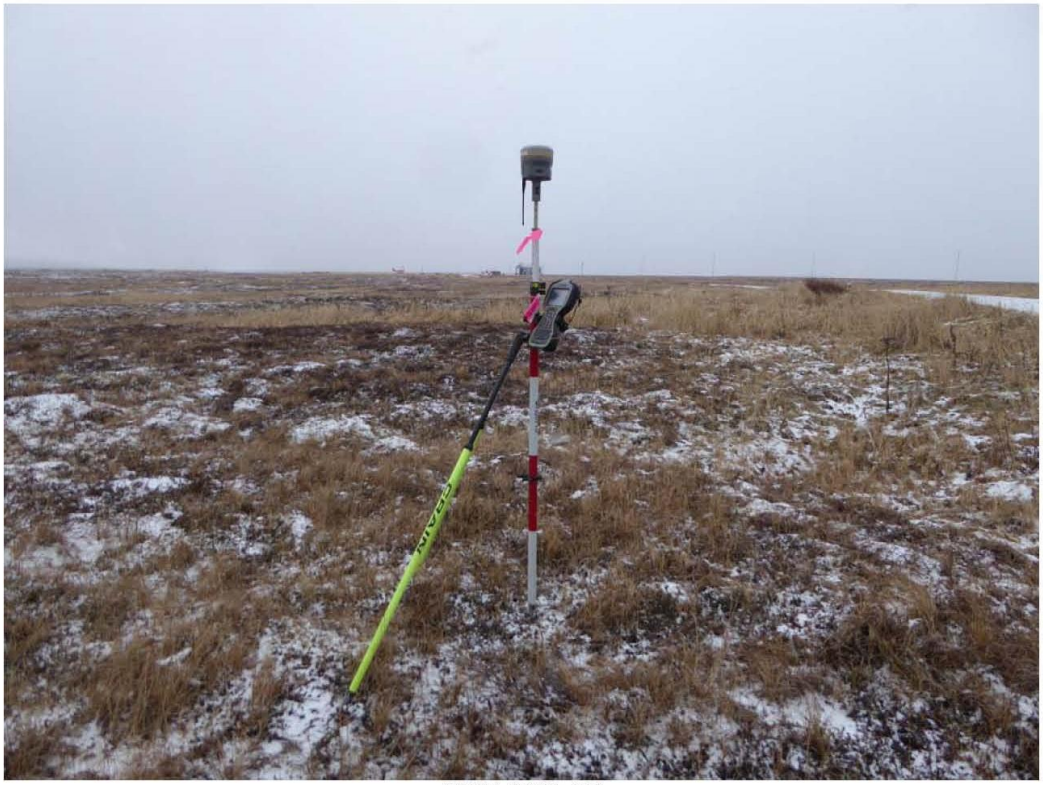
3219 NVA N



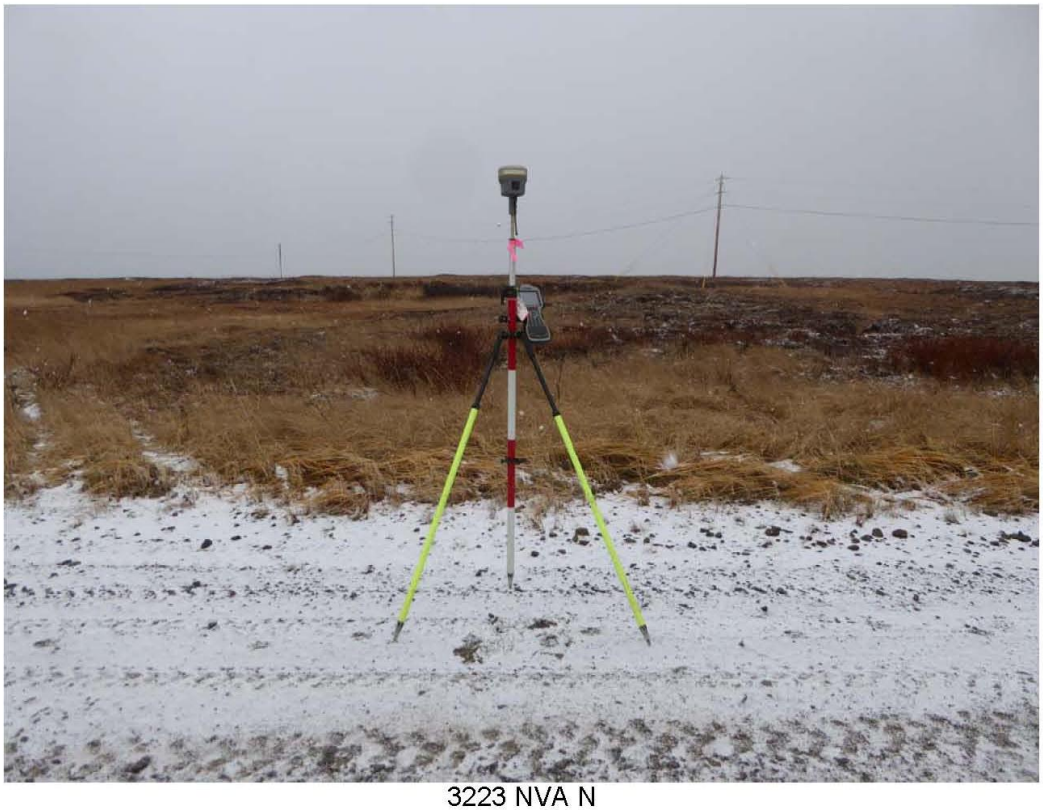
3219 NVA W



3221 VVA N



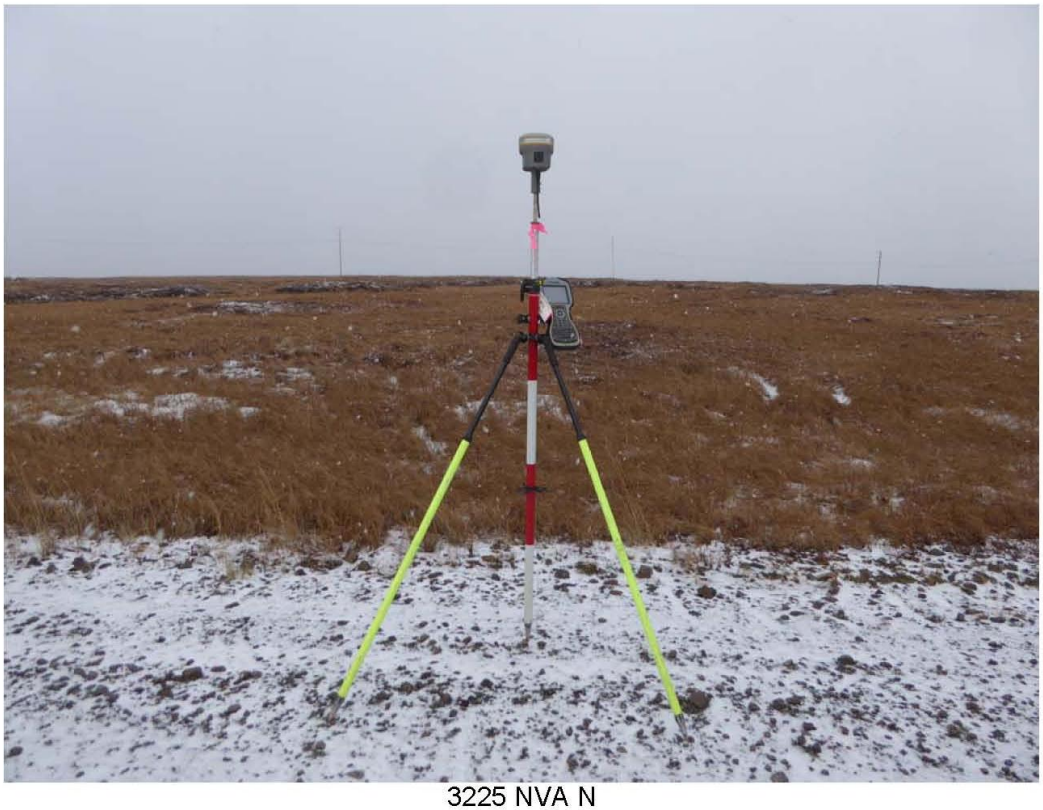
3221 VVA W



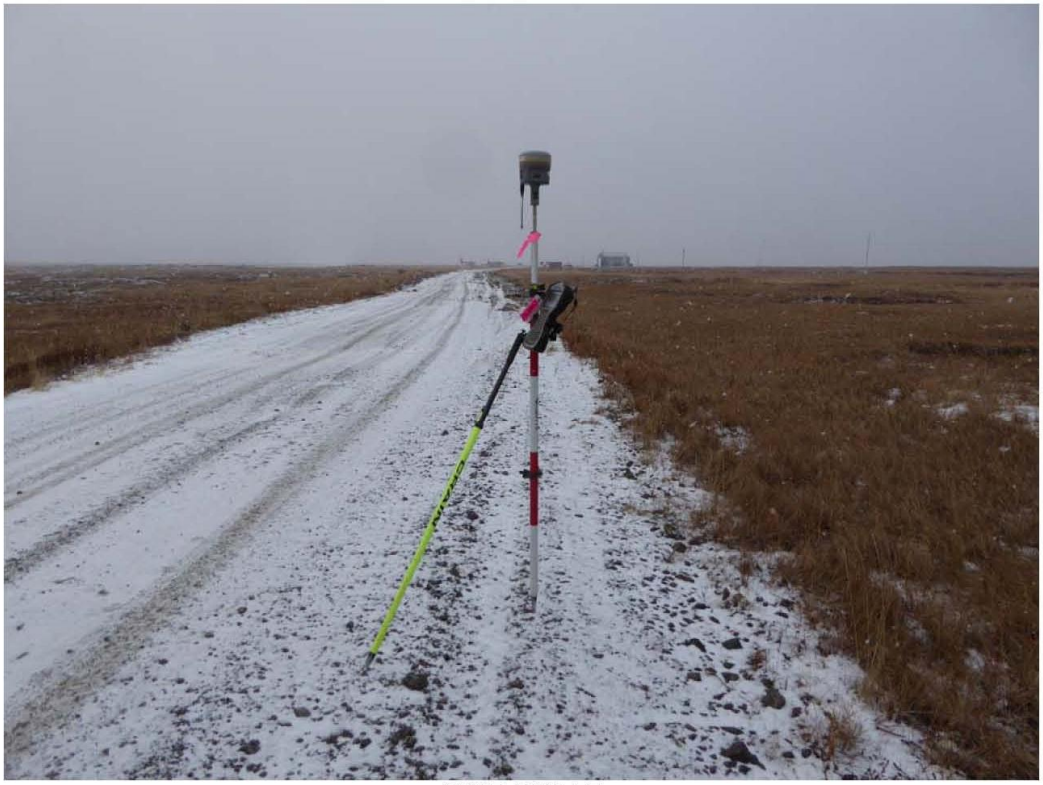
3223 NVA N



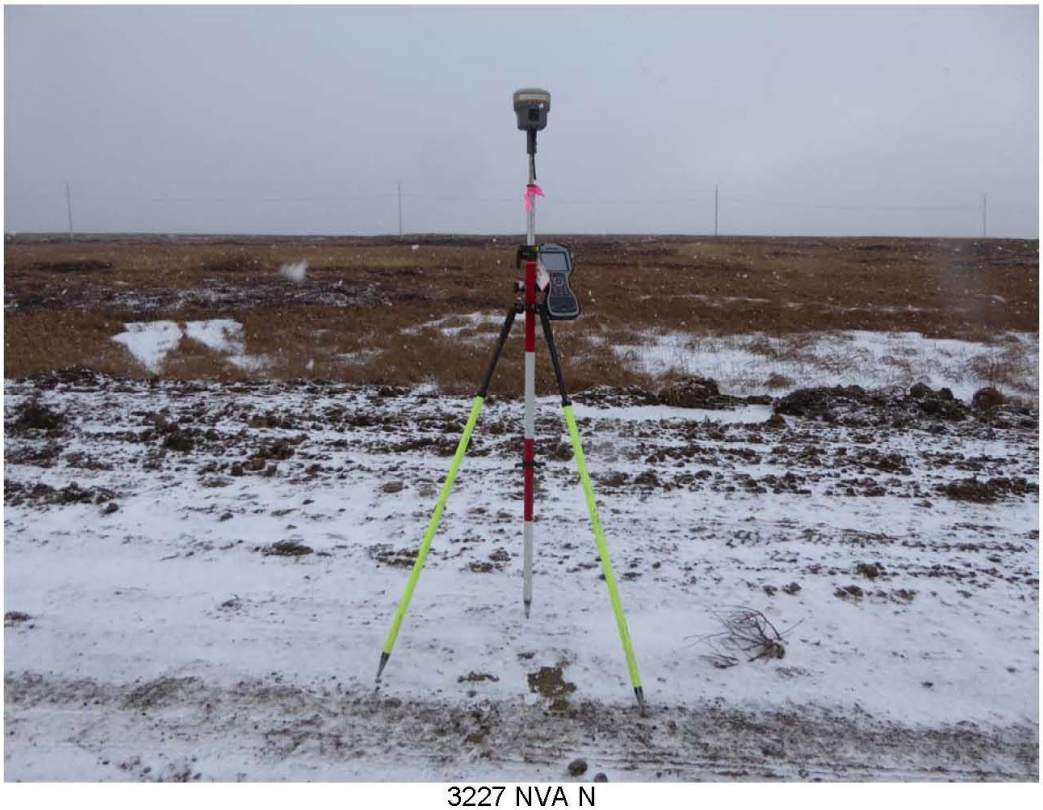
3223 NVA W



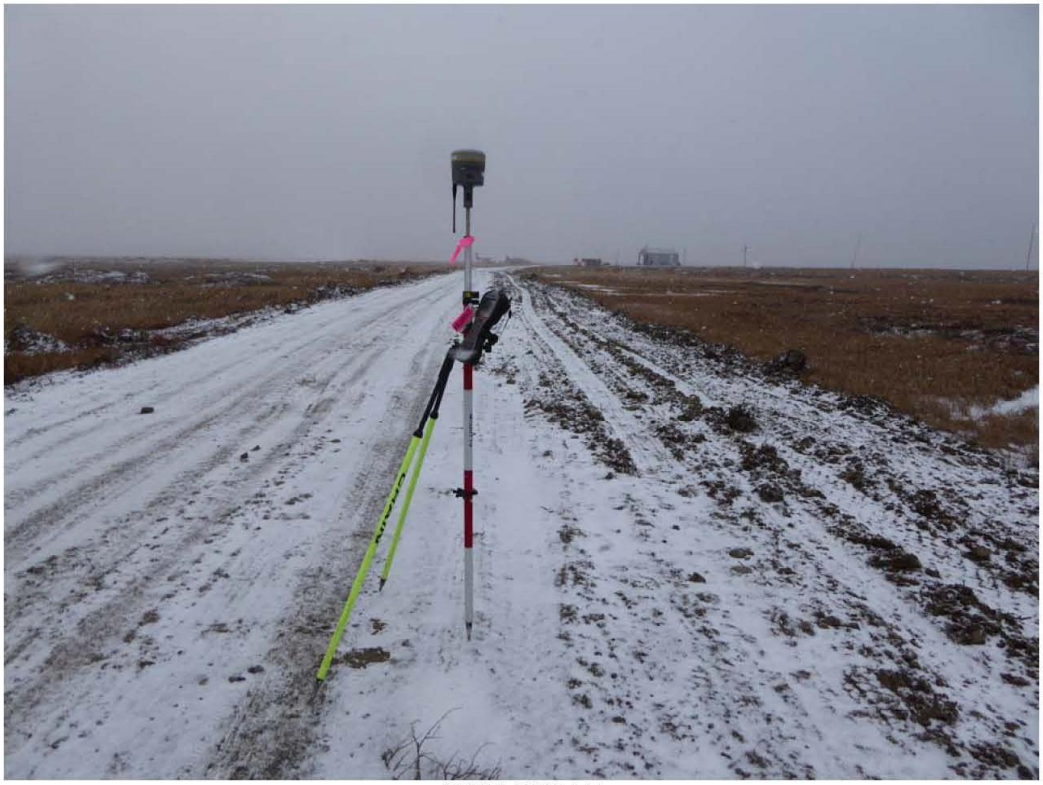
3225 NVA N



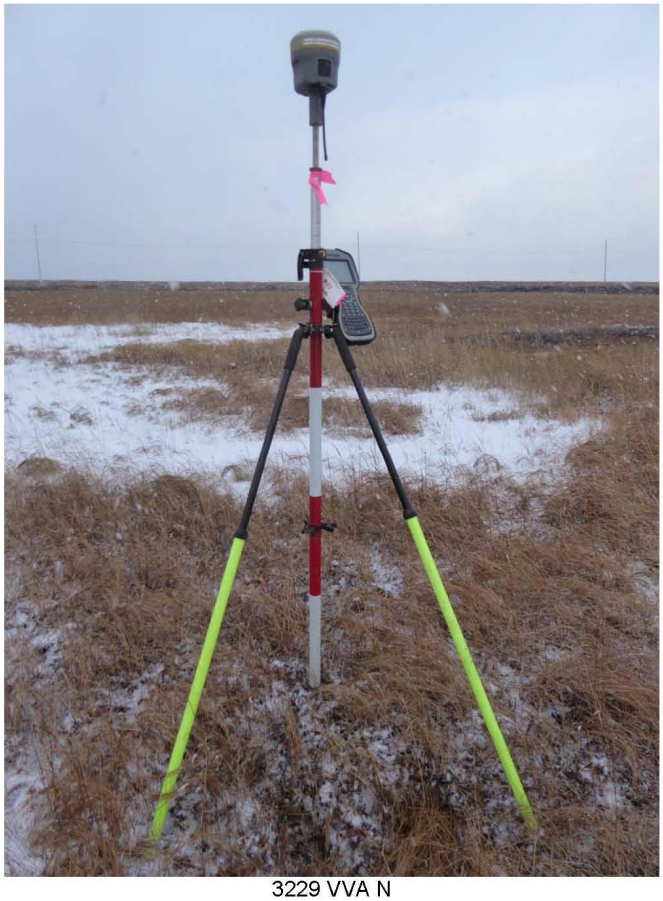
3225 NVA W



3227 NVA N



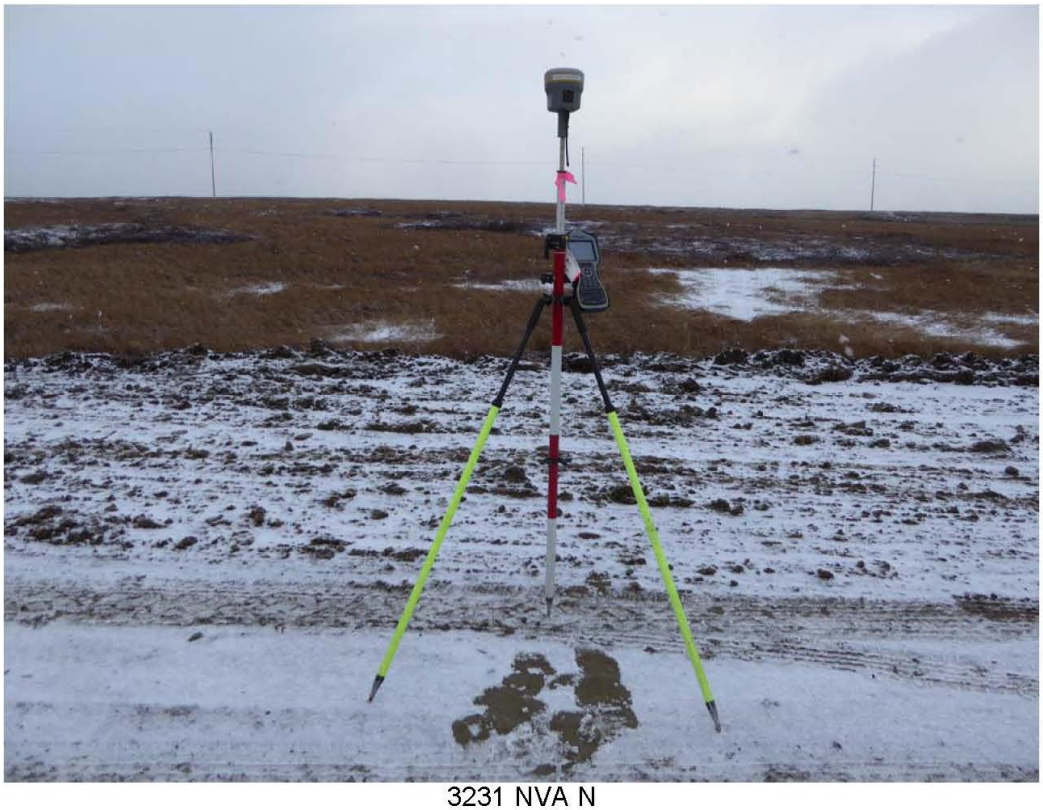
3227 NVA W



3229 VVA N



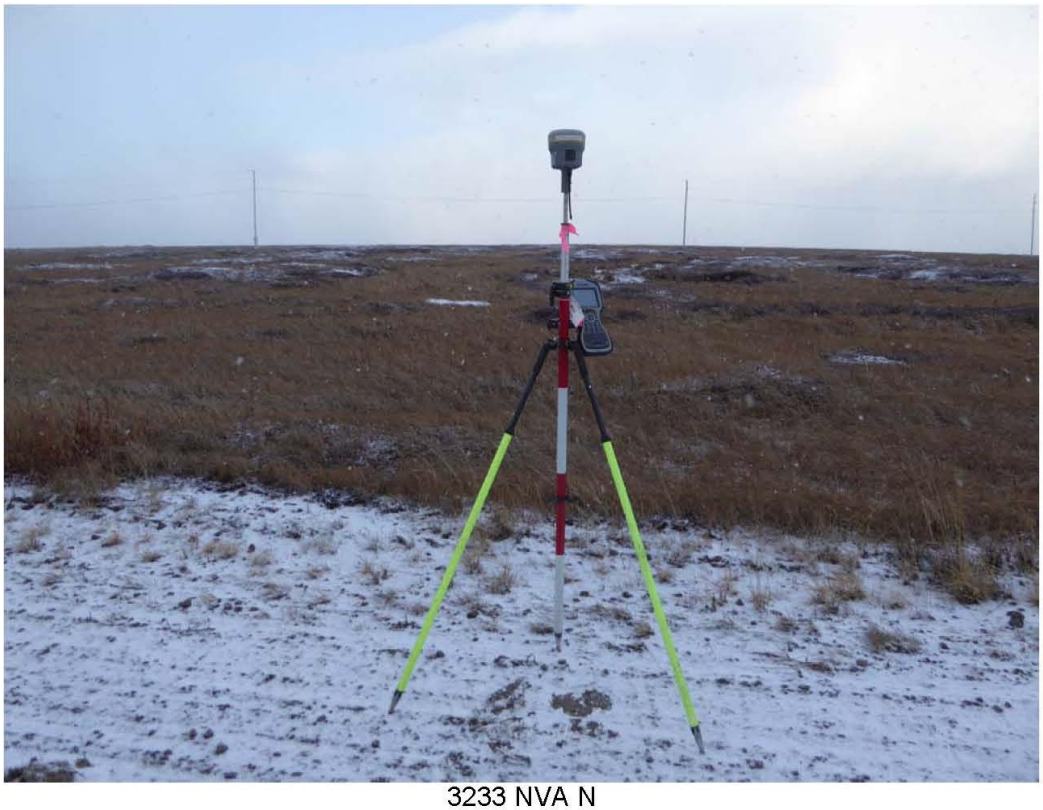
3229 VVA W



3231 NVA N



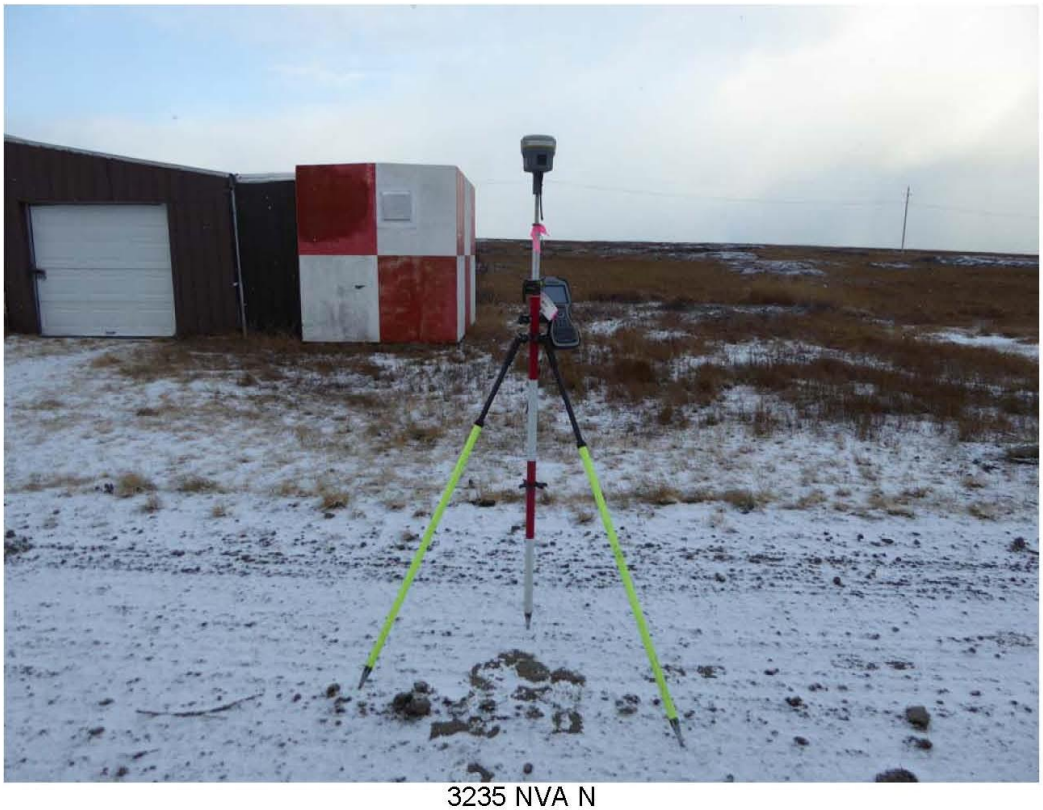
3231 NVA W



3233 NVA N



3233 NVA W



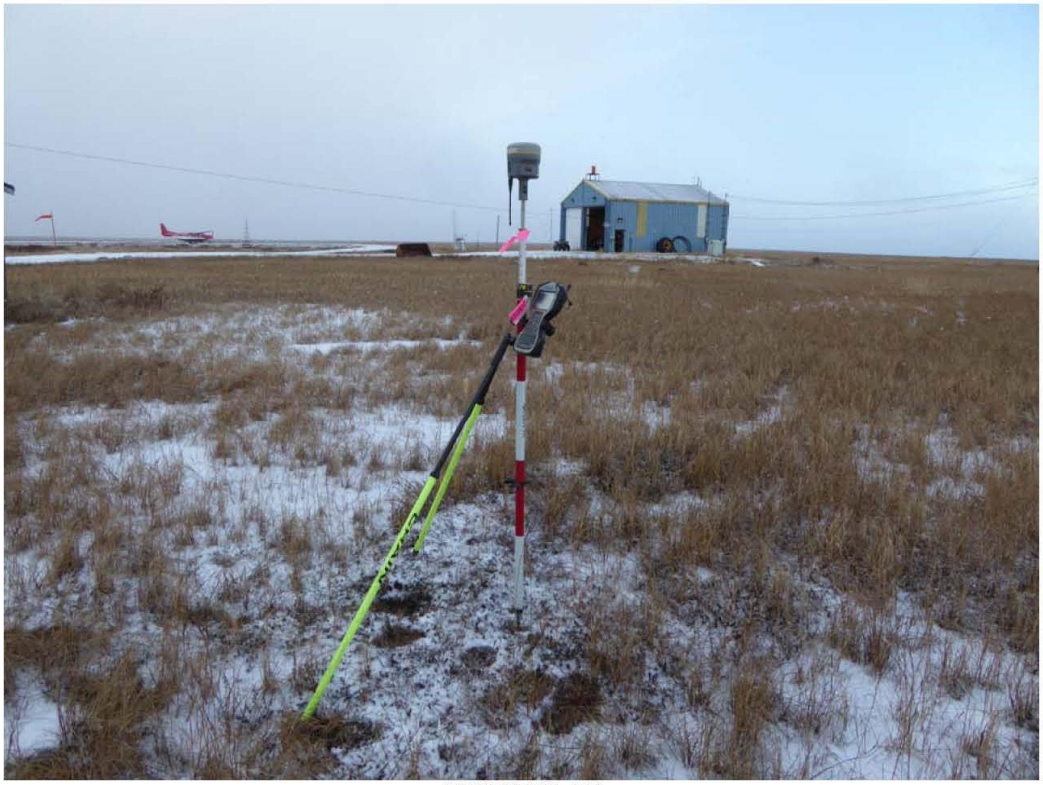
3235 NVA N



3235 NVA W



3237 VVA N



3237 VVA W



3239 NVA N



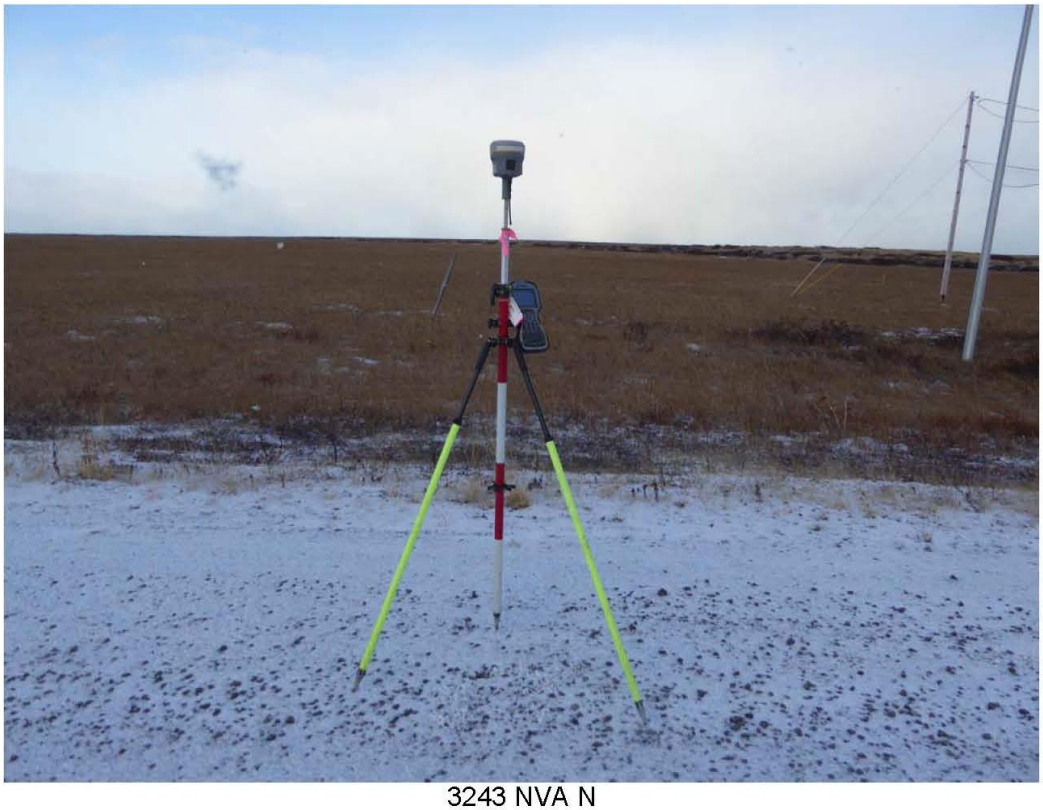
3239 NVA W



3241 NVA N



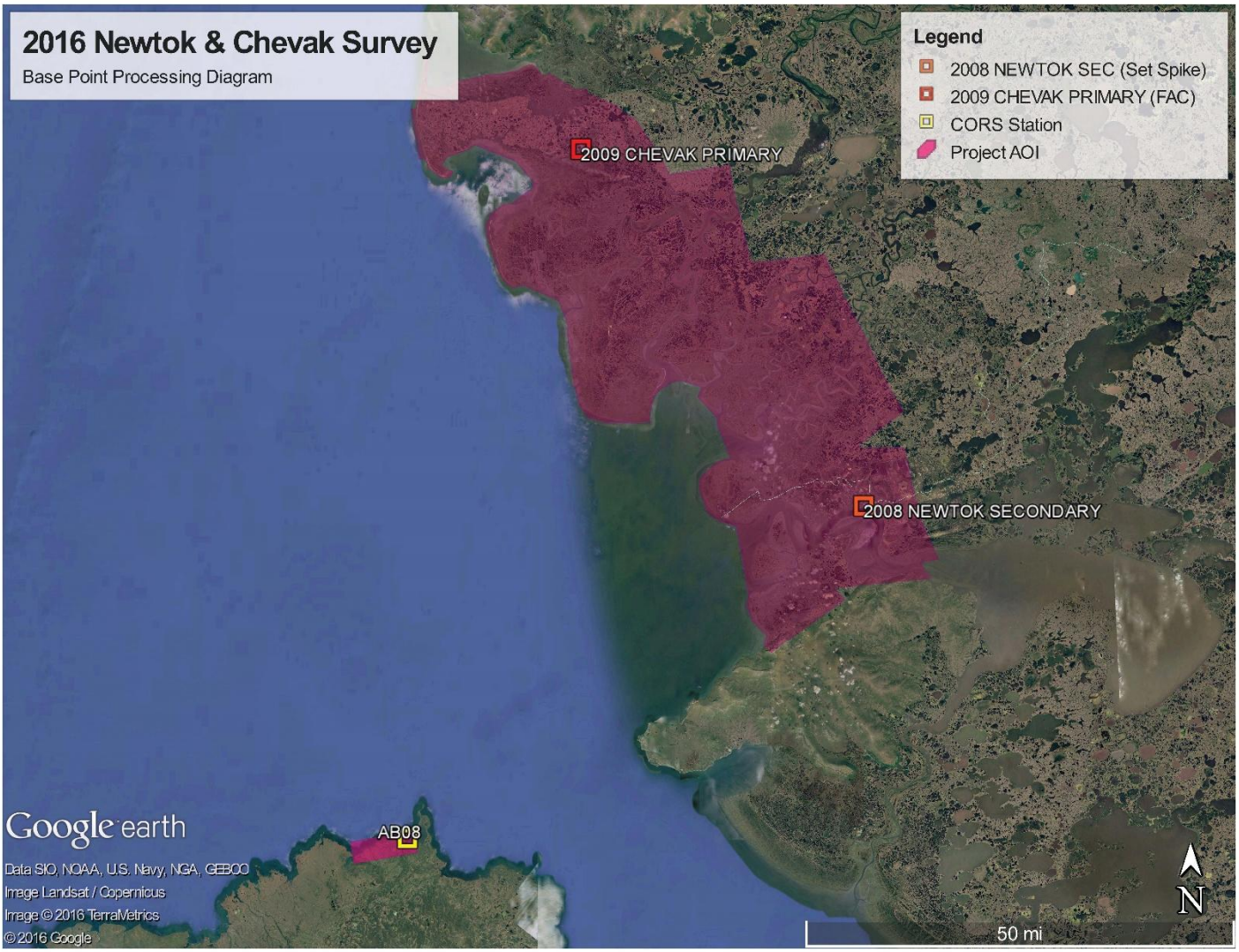
3241 NVA W

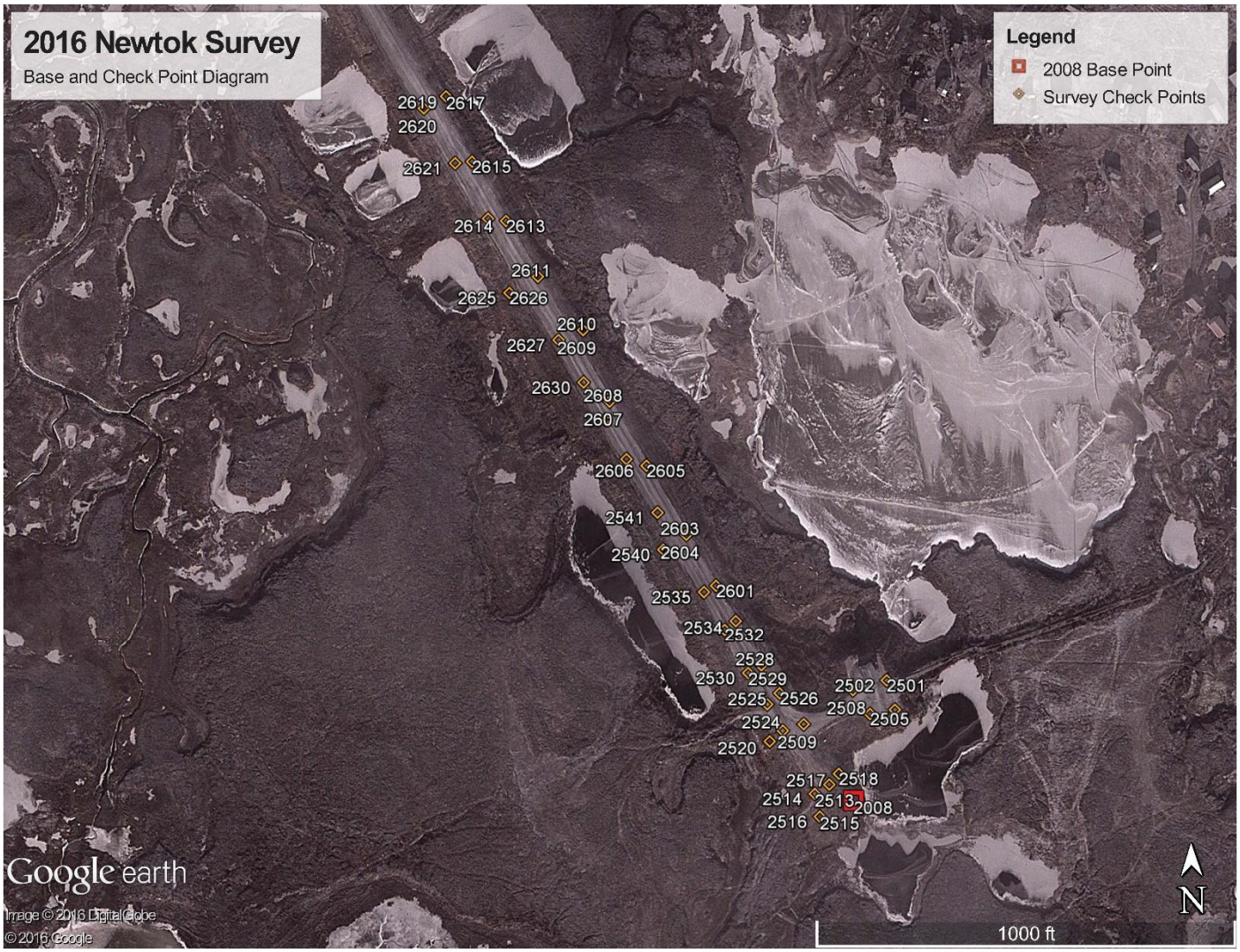


3243 NVA N



3243 NVA W


2016 Newtok & Chevak Survey
Base Point Processing Diagram
Legend
2008 NEWTOK SEC (Set Spike)
2009 CHEVAK PRIMARY (FAC)
CORS Station
Project AOI
2009 CHEVAK PRIMARY
2008 NEWTOK SECONDARY
AB08
Google earth
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image Landsat / Copernicus
Image © 2016 TerraMetrics
© 2016 Google
N
50 mi


2016 Newtok Survey
Base and Check Point Diagram
Legend
2008 Base Point
Survey Check Points
2619
2617
2620
2621
2615
2614
2613
2611
2625
2626
2610
2627
2609
2630
2608
2607
2606
2605
2541
2603
2540
2604
2535
2601
2534
2532
2528
2530
2529
2502
2501
2525
2526
2508
2505
2524
2520
2509
2517
2518
2514
2513
2008
2516
2515
Google earth
Image © 2016 DigitalGlobe
© 2016 Google
1000 ft
N



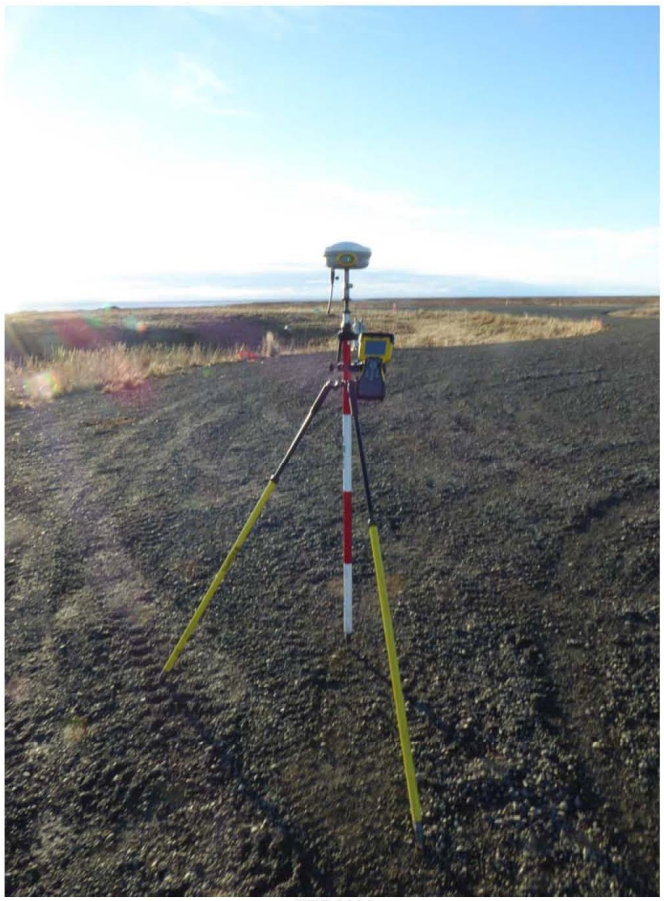
2502 N



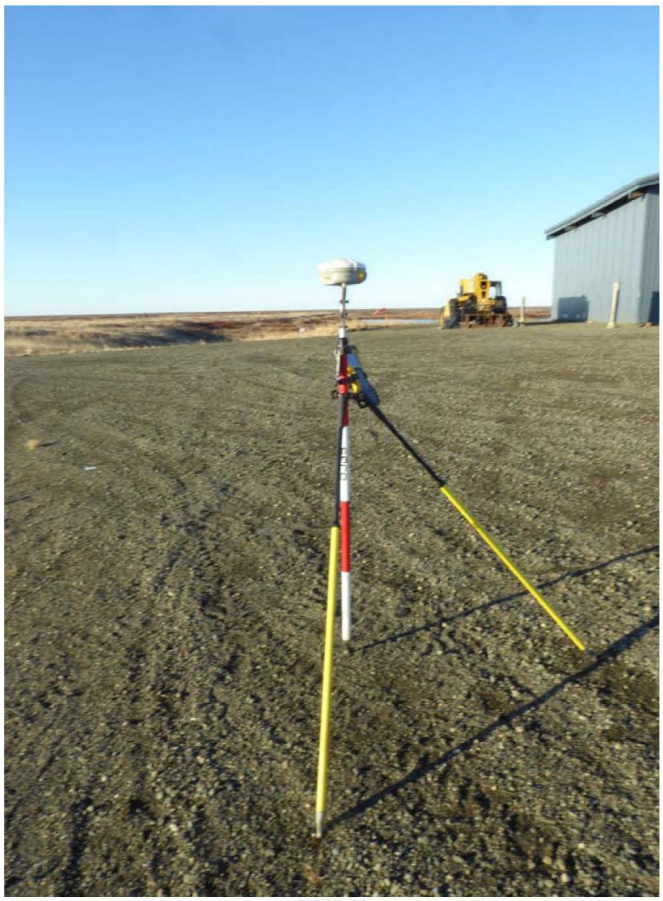
2502 W



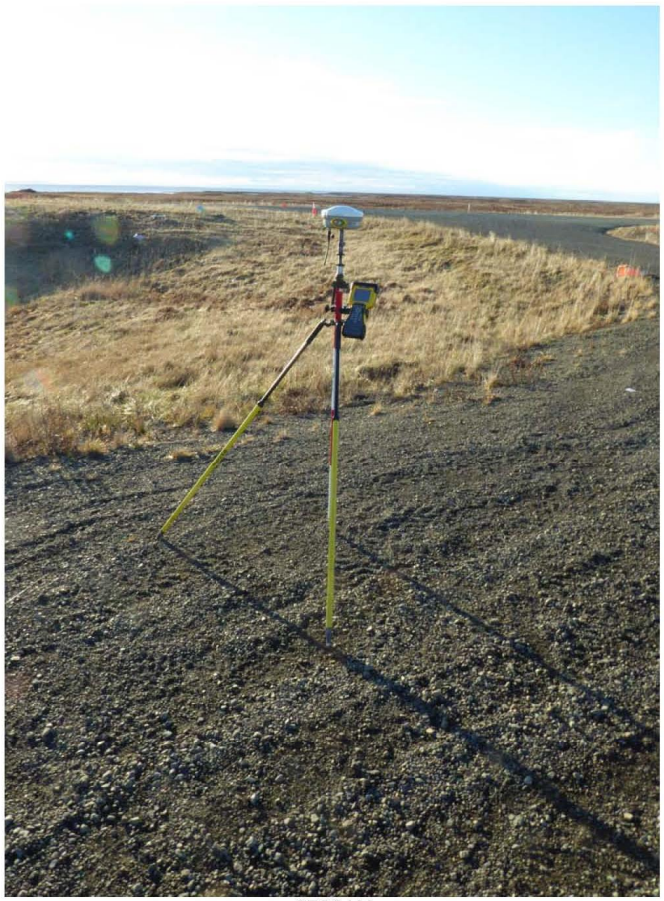
2504 N



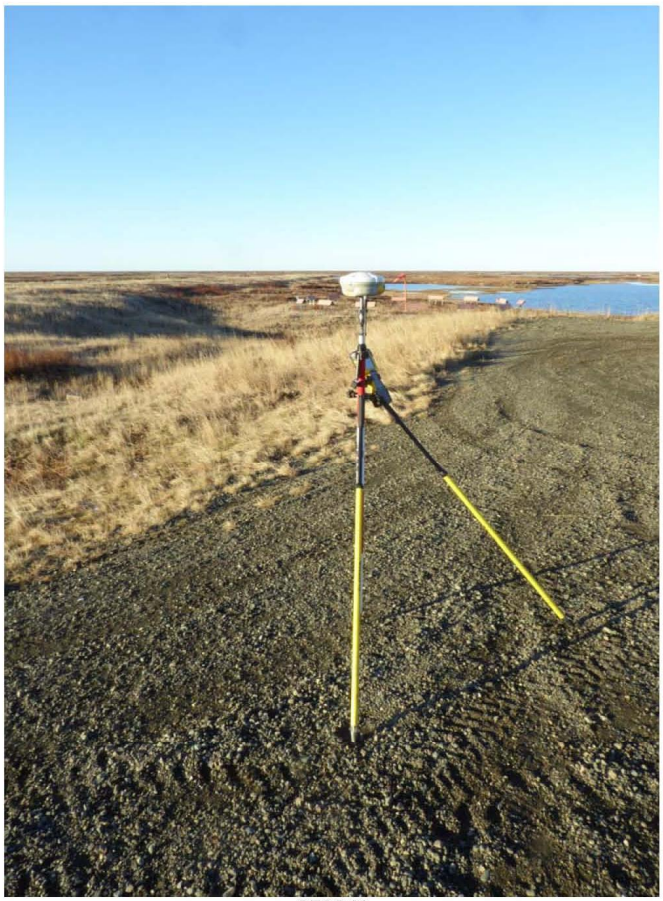
2504 W



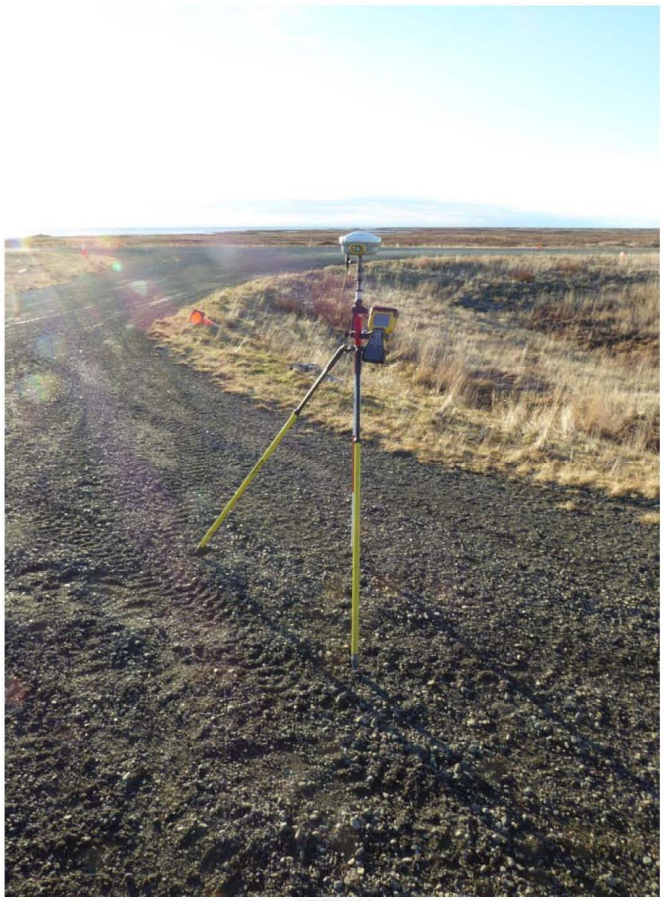
2506 N



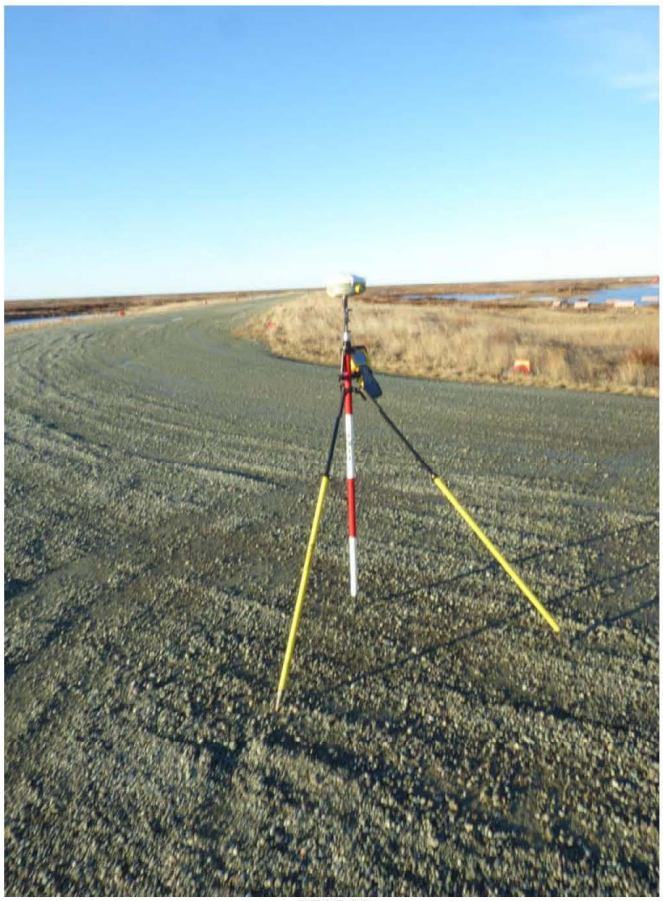
2506 W



2508 N



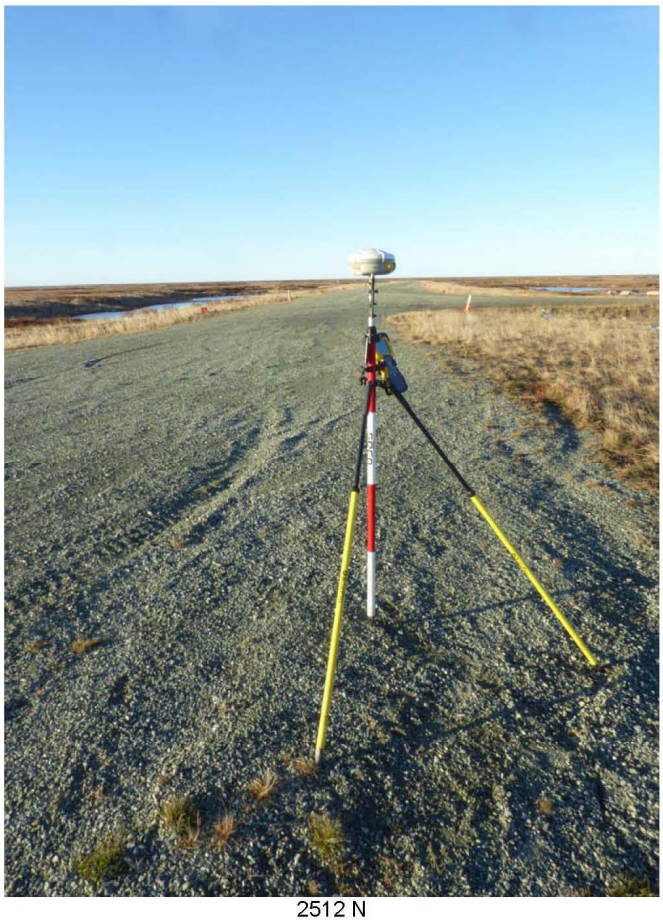
2508 W



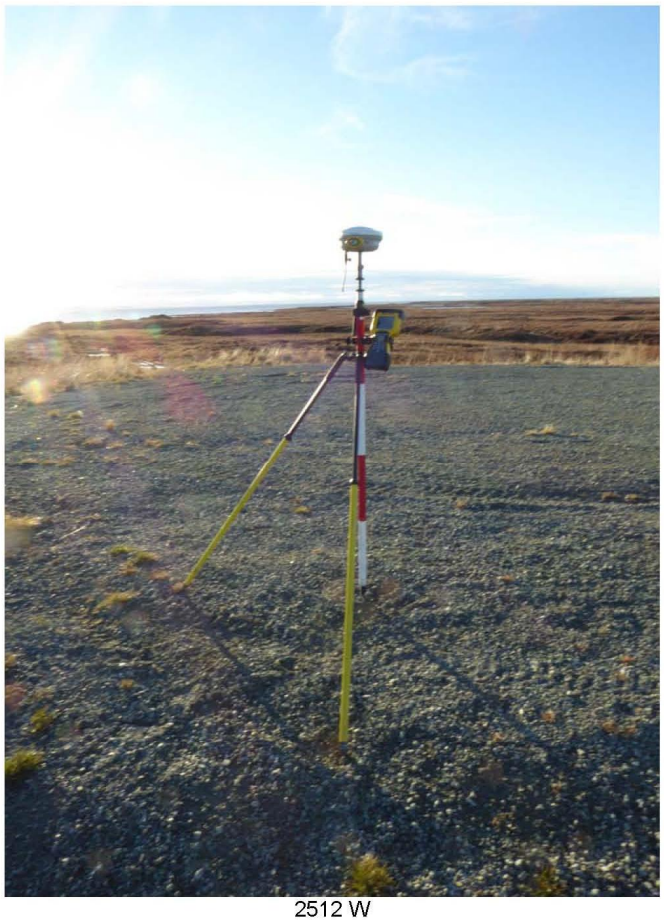
2510 N



2510 W



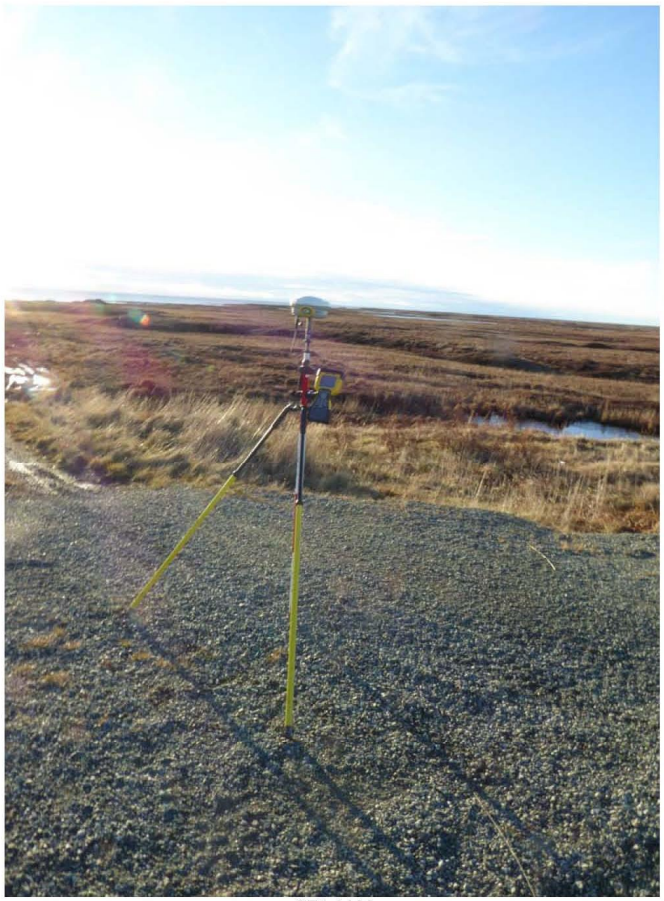
2512 N



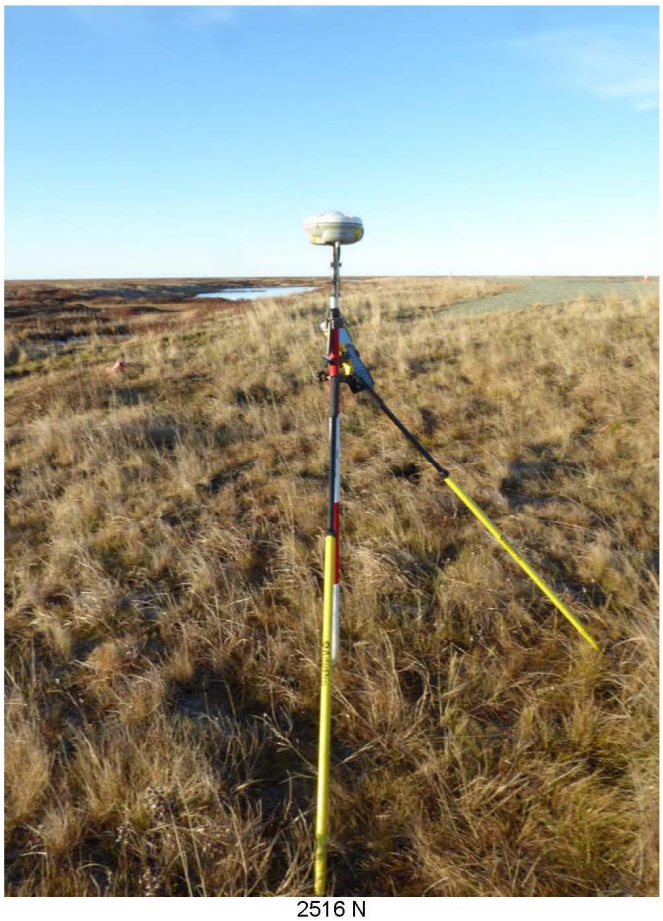
2512 W



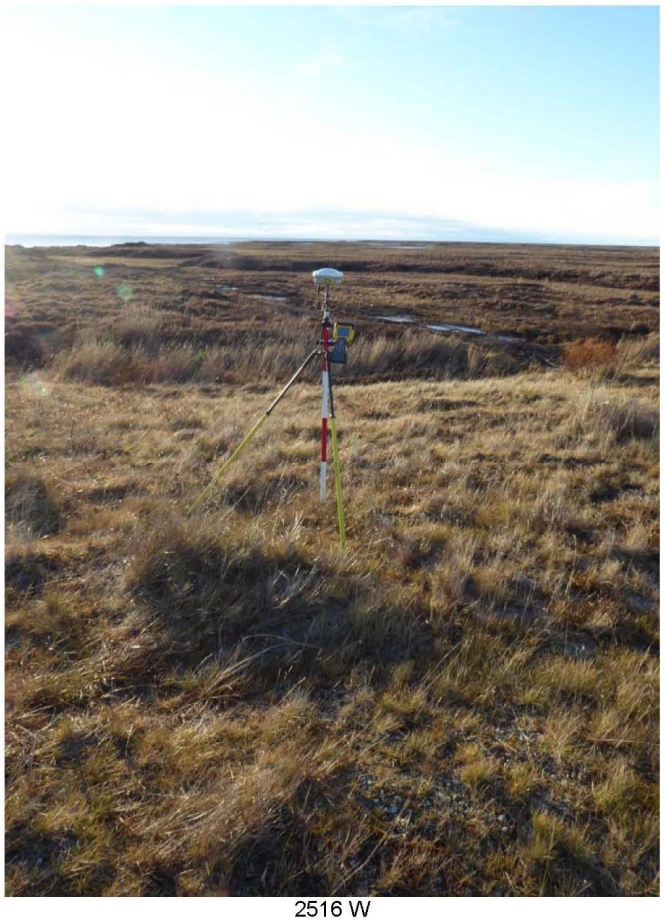
2514 N



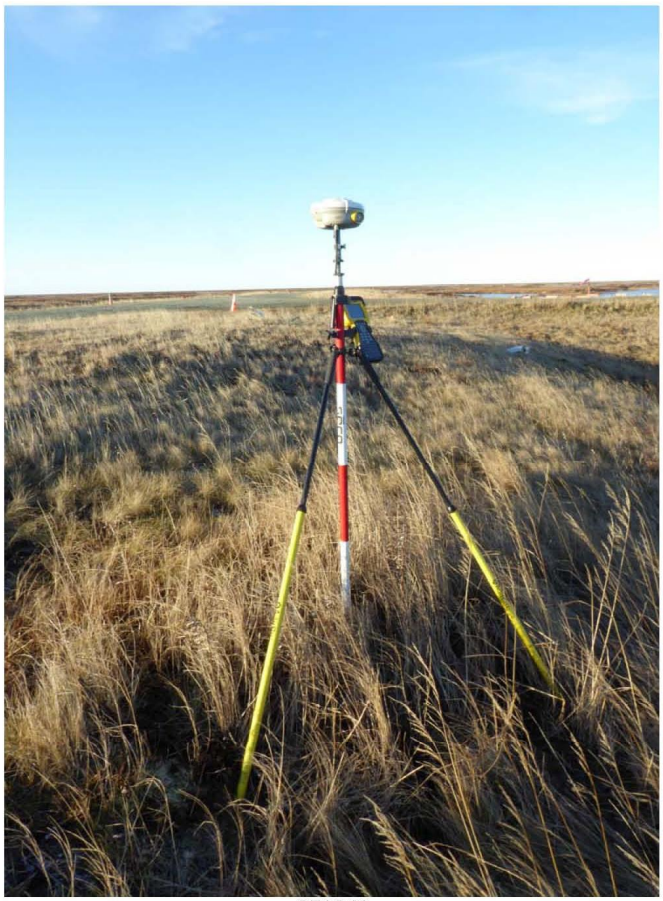
2514 W



2516 N



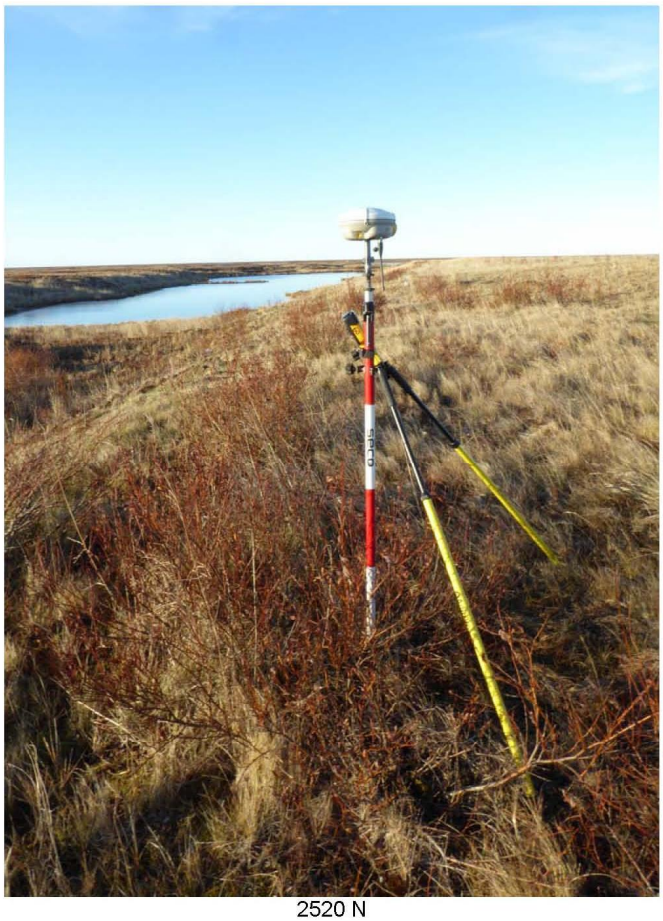
2516 W



2518 N



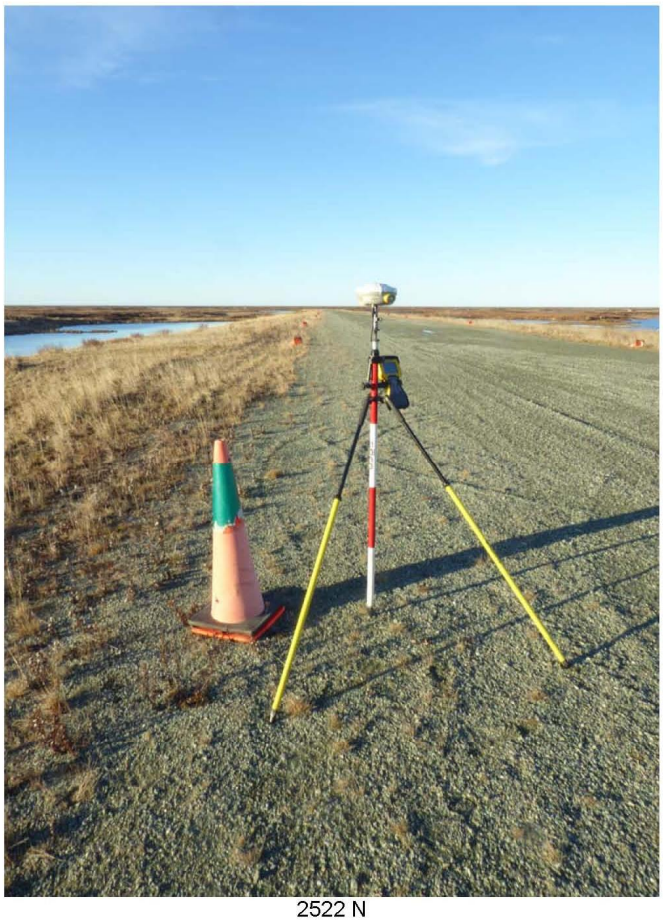
2518 W



2520 N



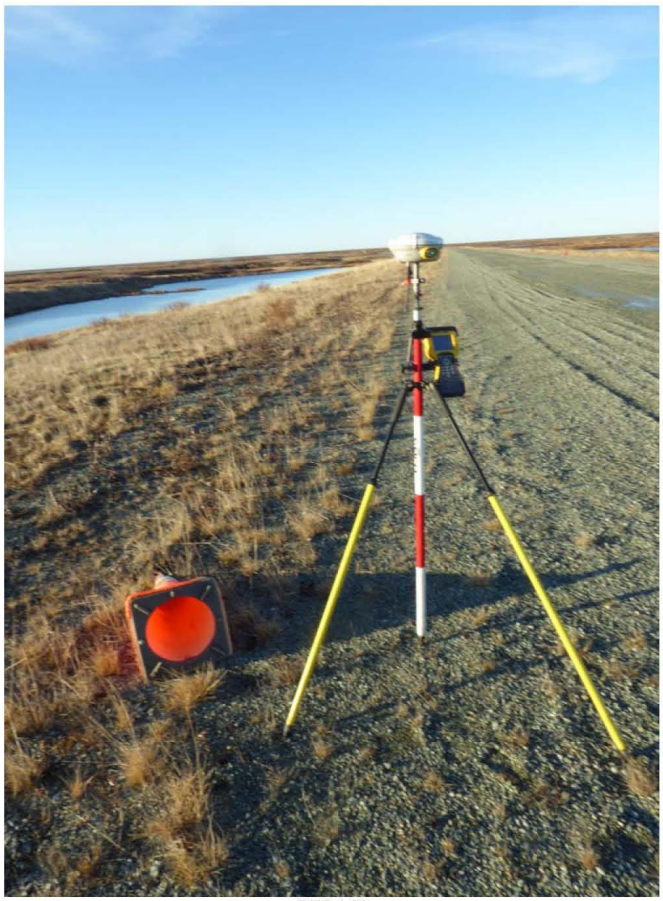
2520 W



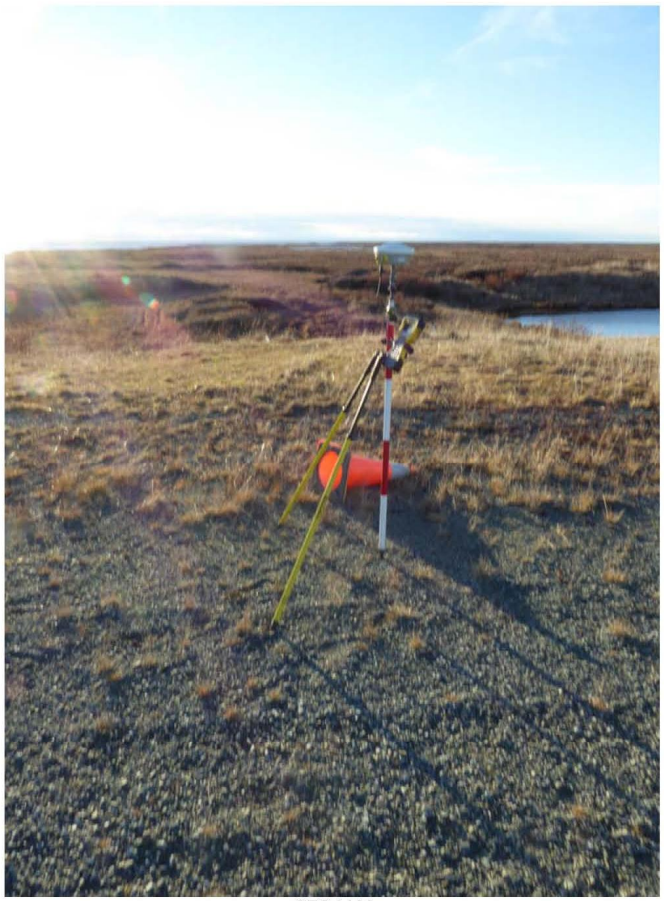
2522 N



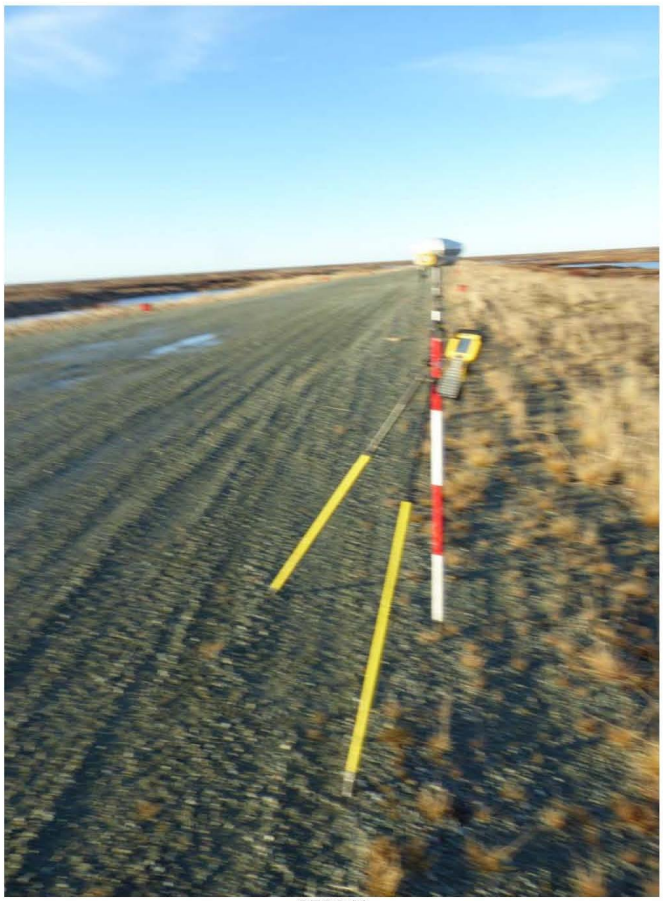
2522 W



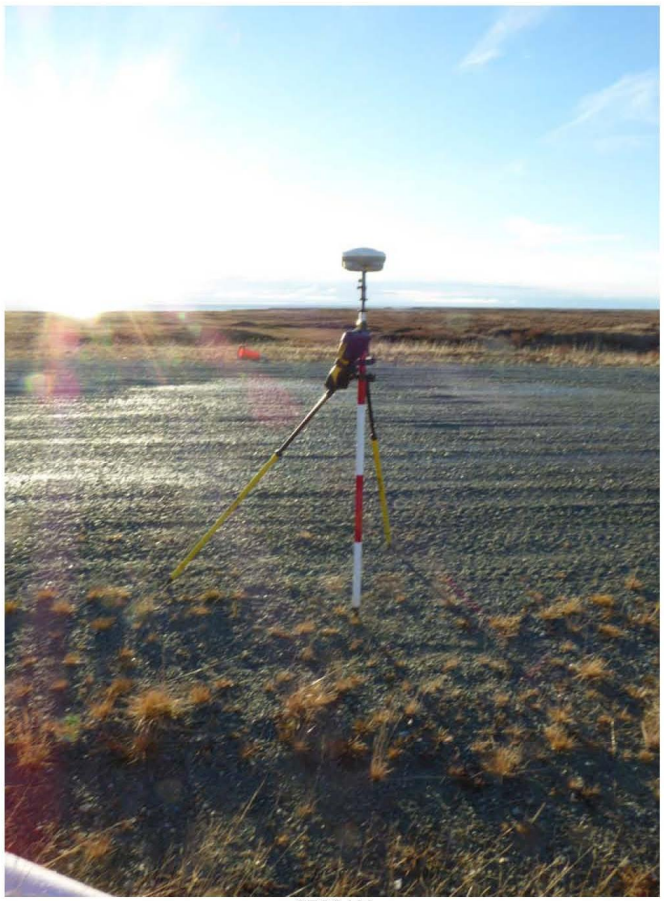
2524 N



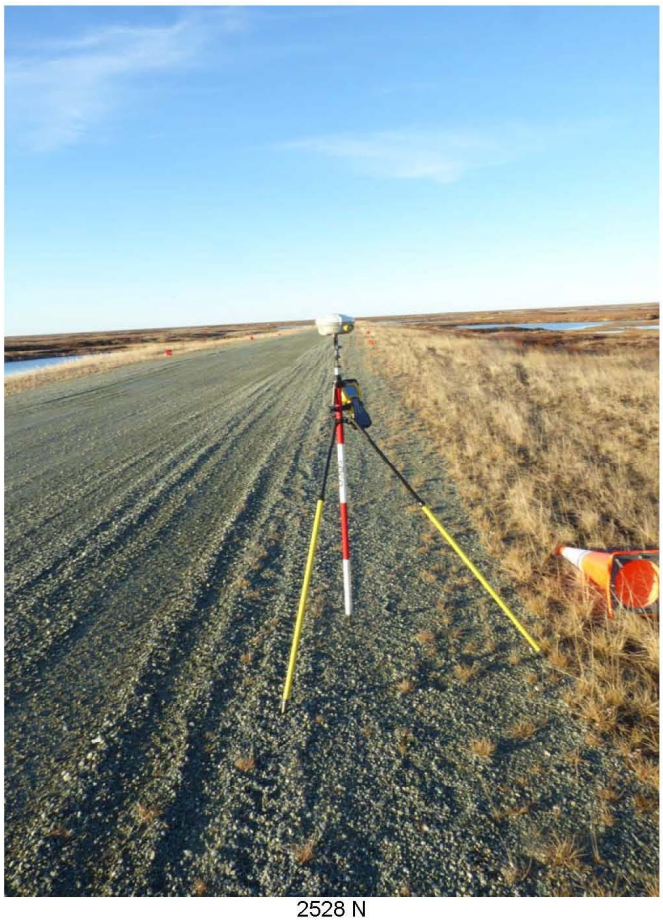
2524 W



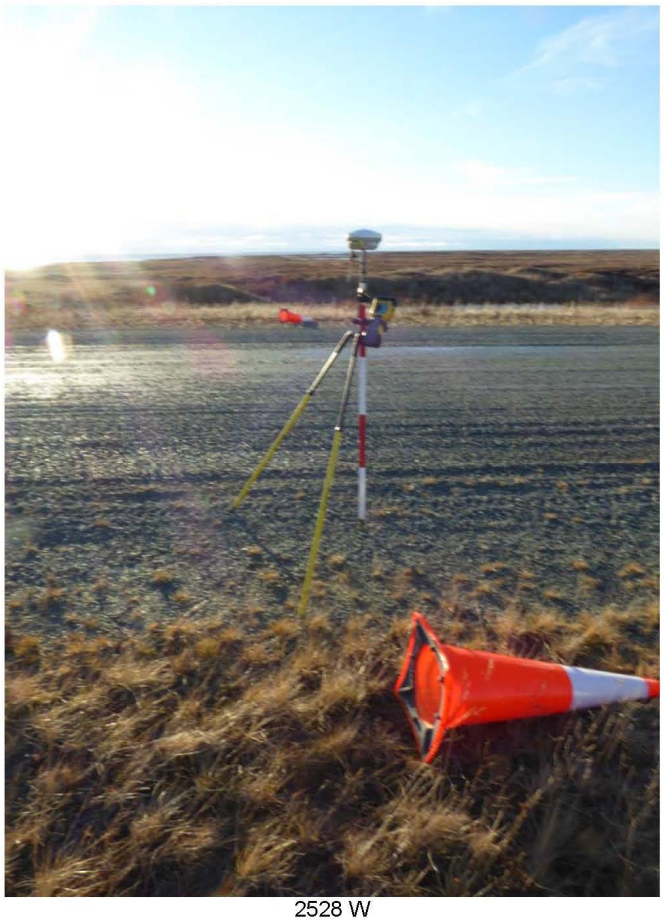
2526 N



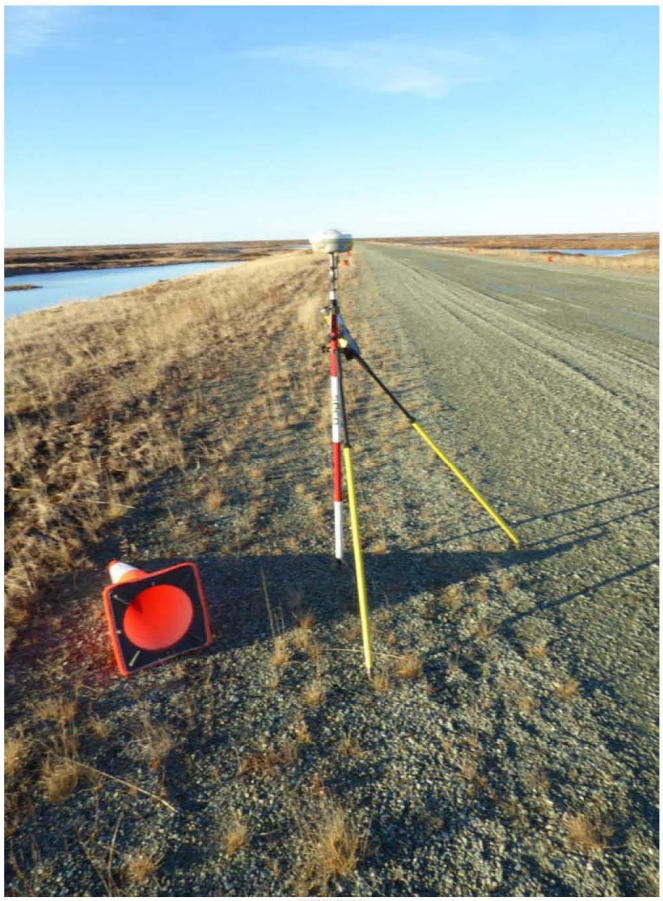
2526 W



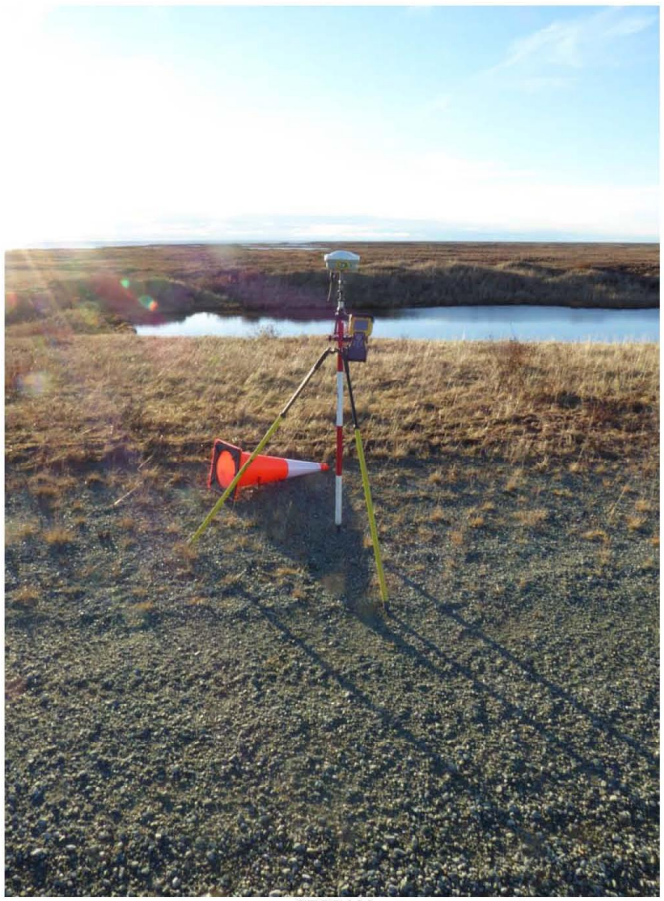
2528 N



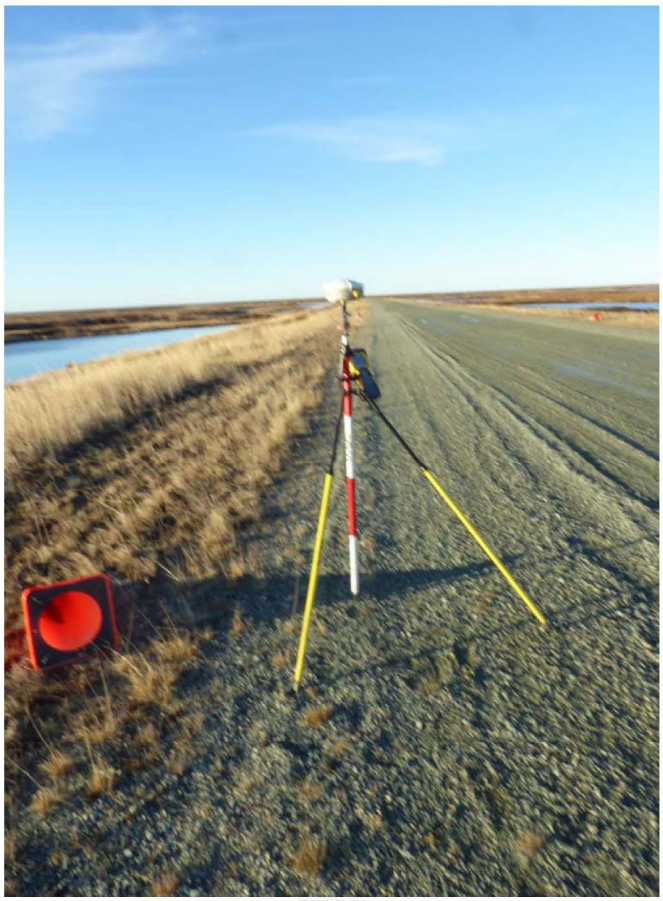
2528 W



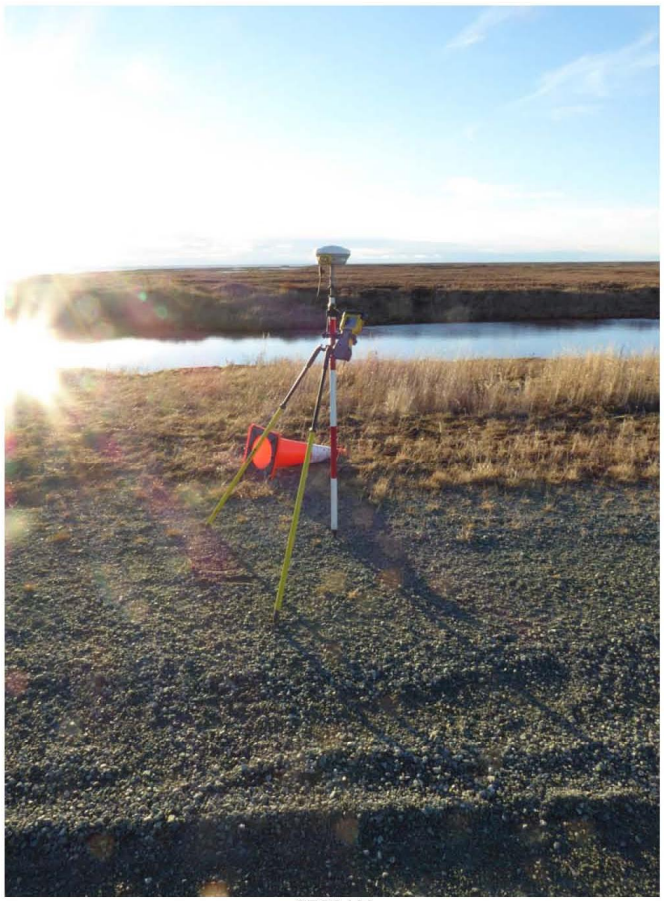
2530 N



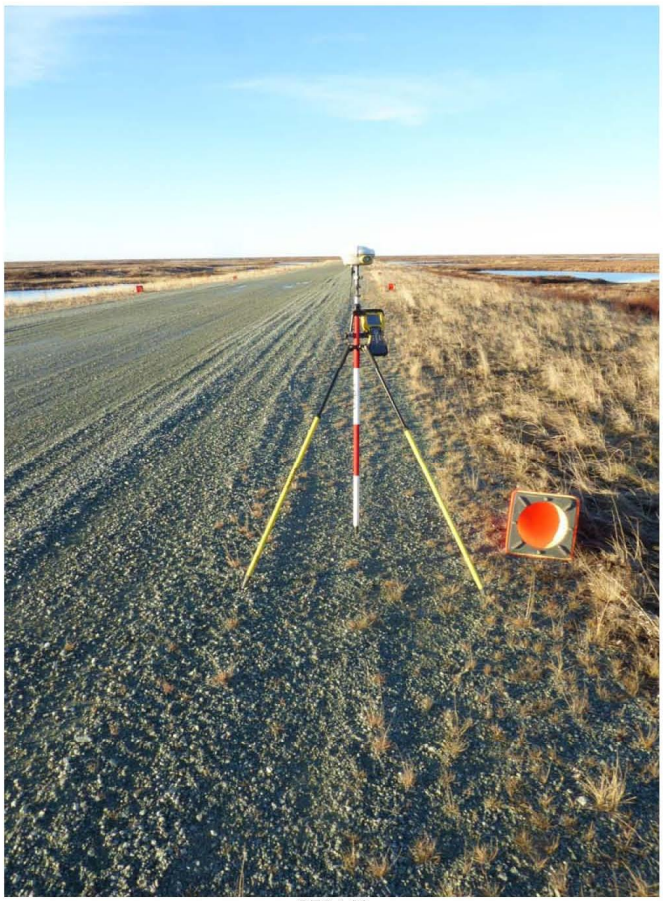
2530 W



2532 N



2532 W



2534 N



2534 W



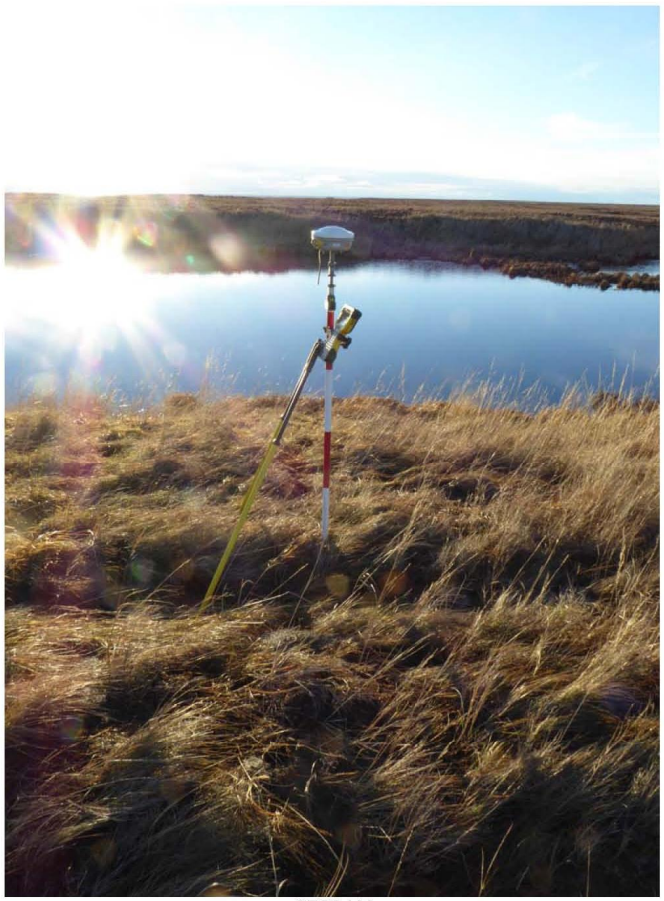
2536 N



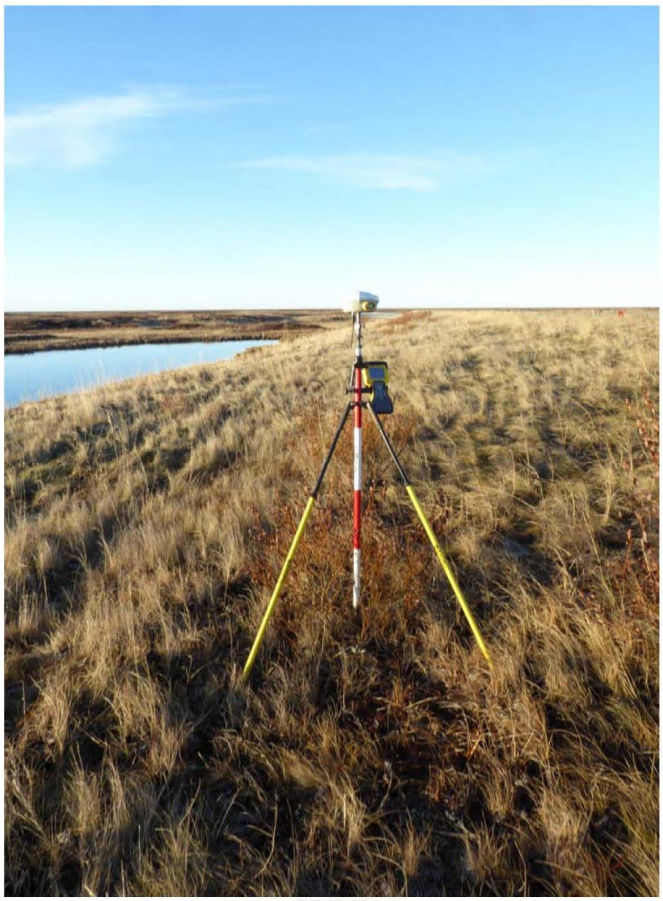
2536 W



2538 N



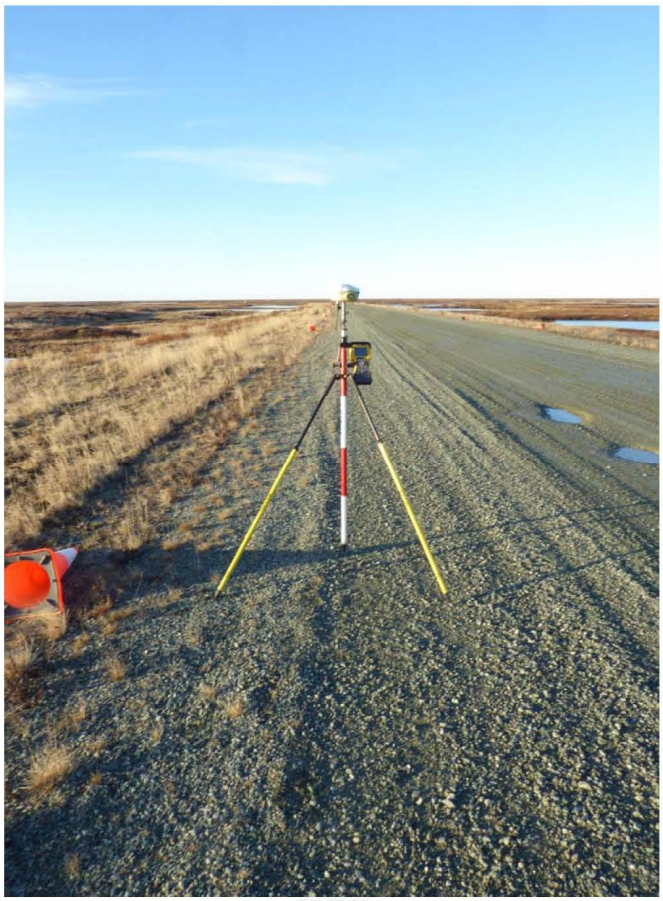
2538 W



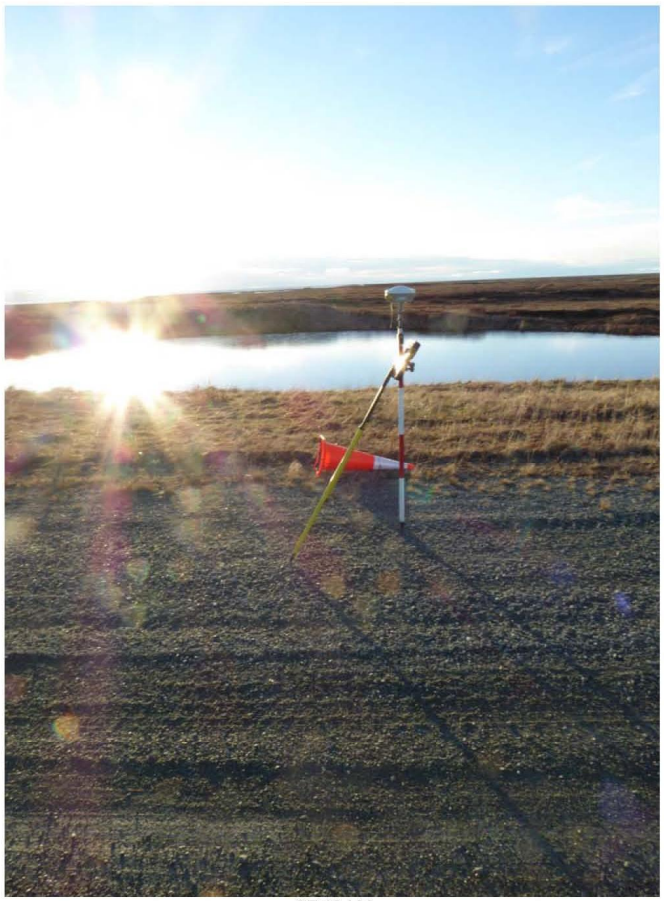
2540 N



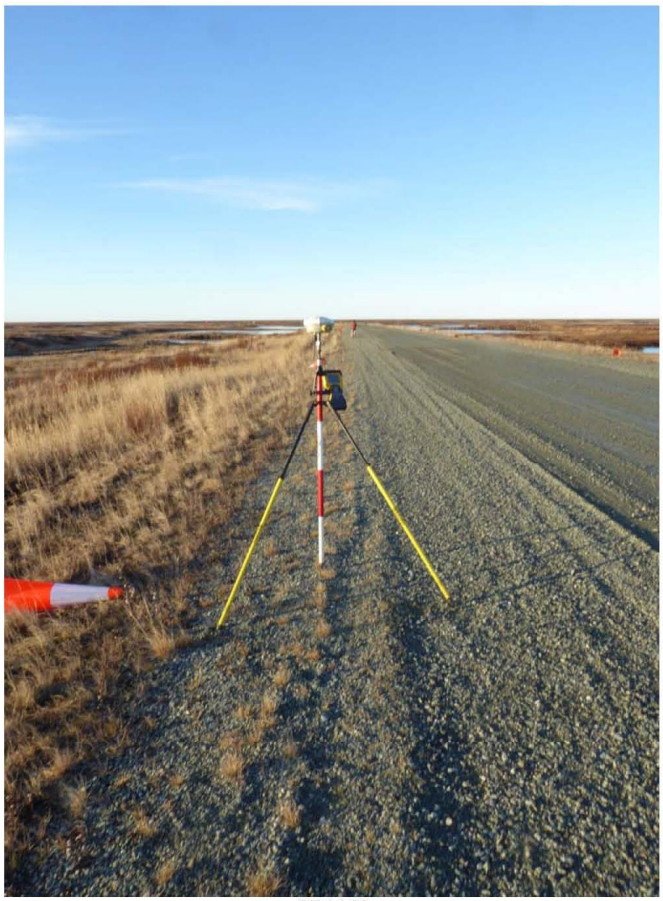
2540 W



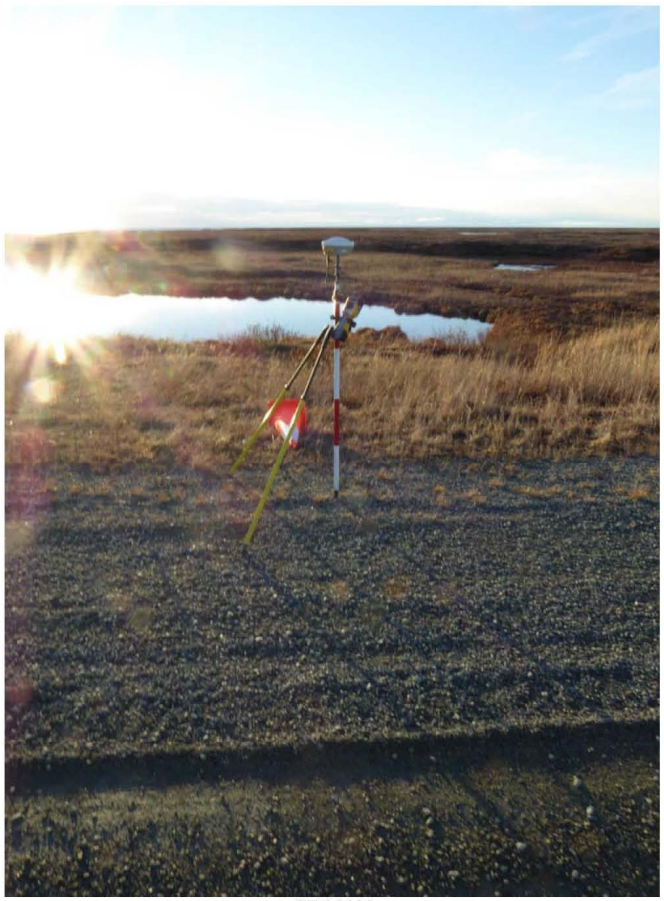
2542 N



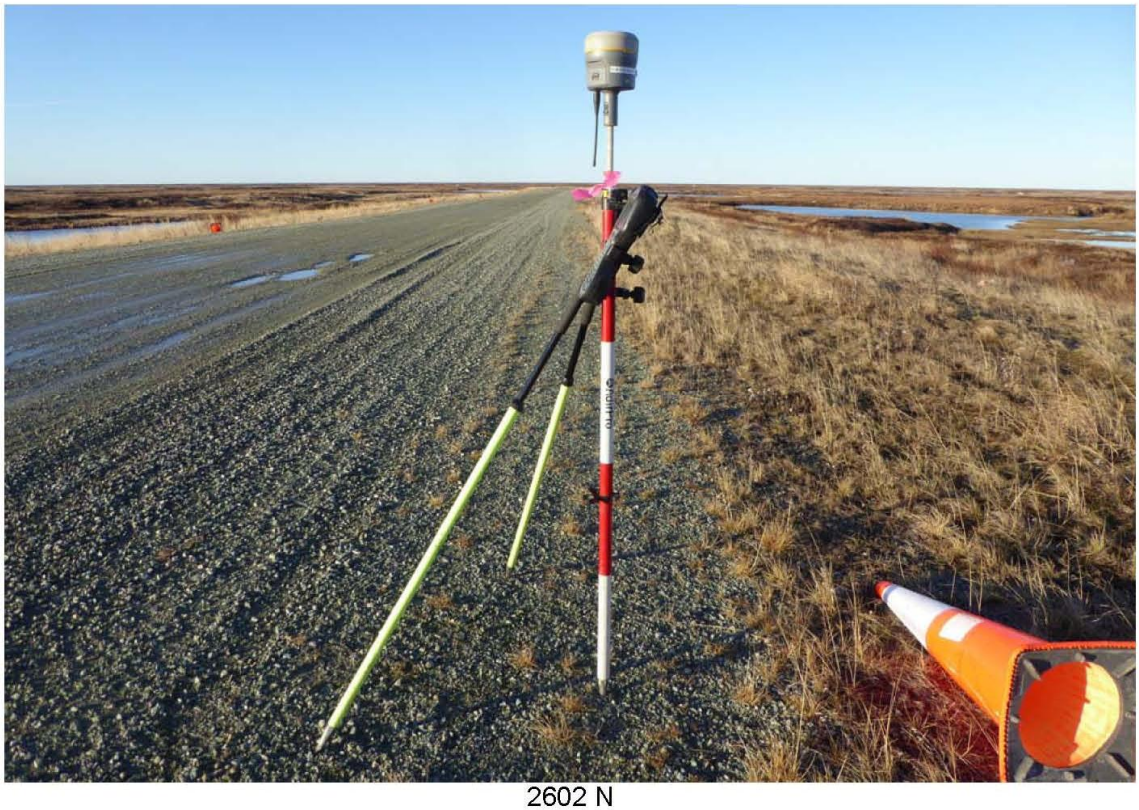
2542 W



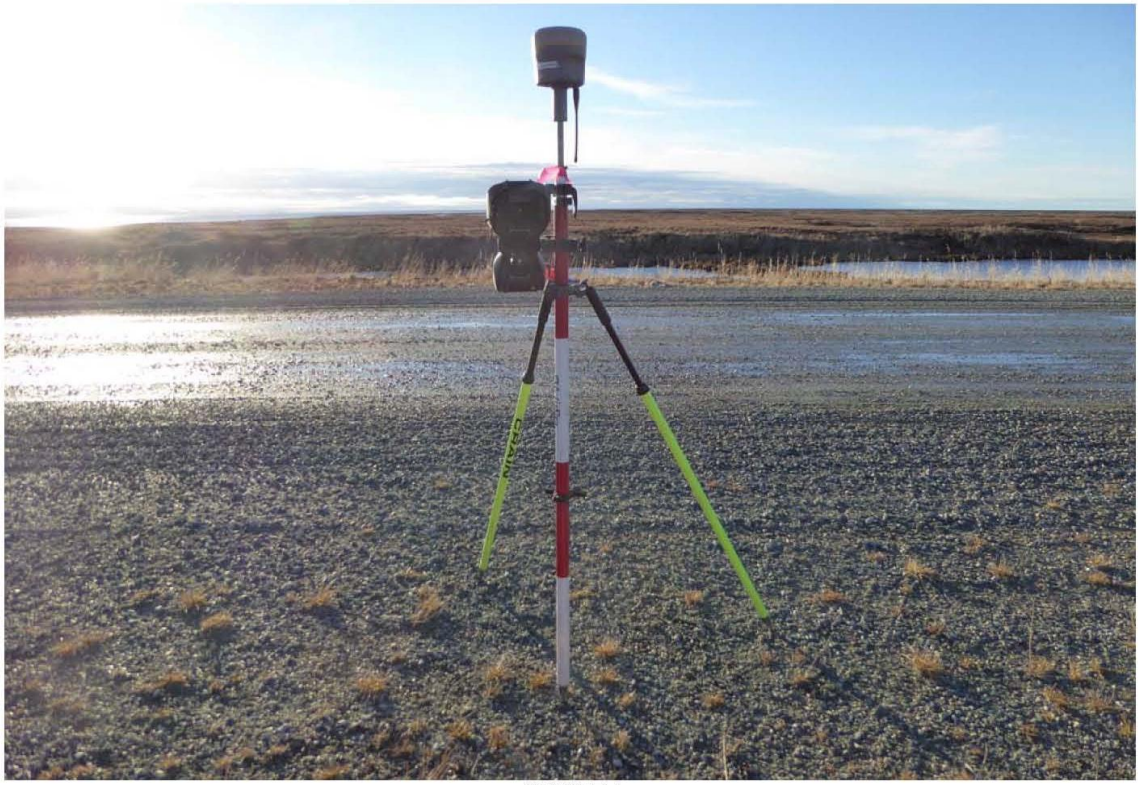
2544 N



2544 W



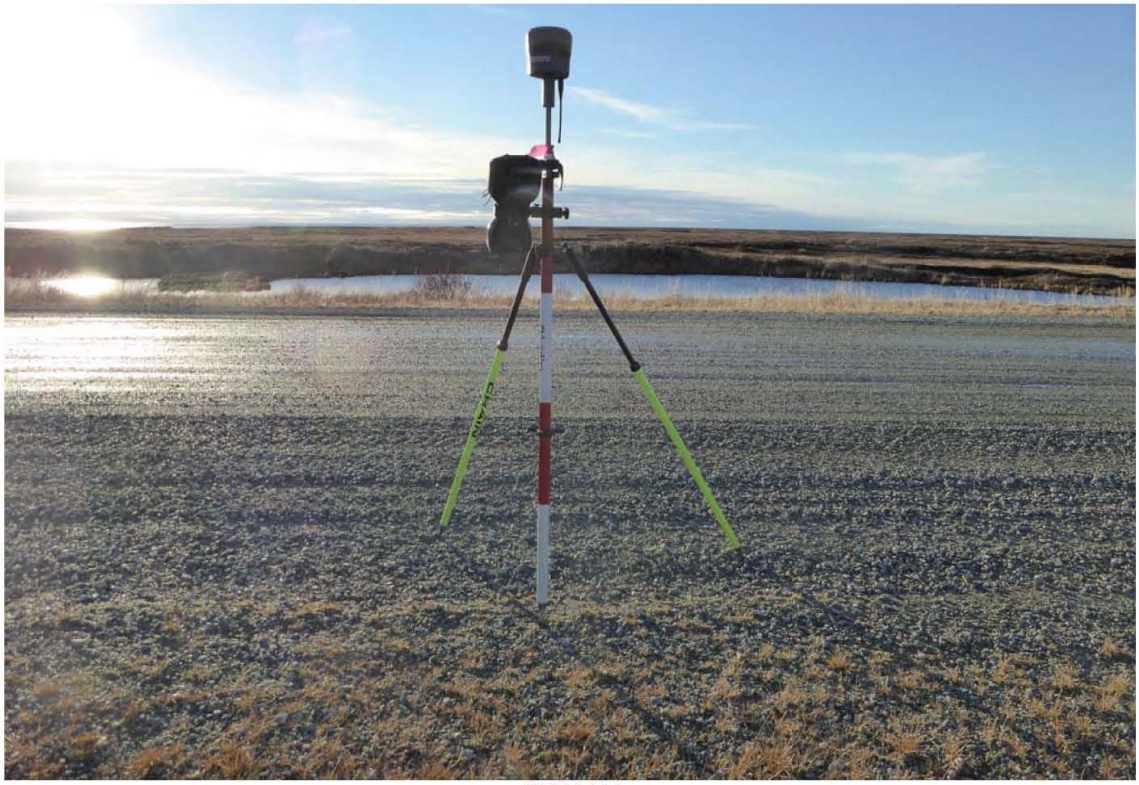
2602 N



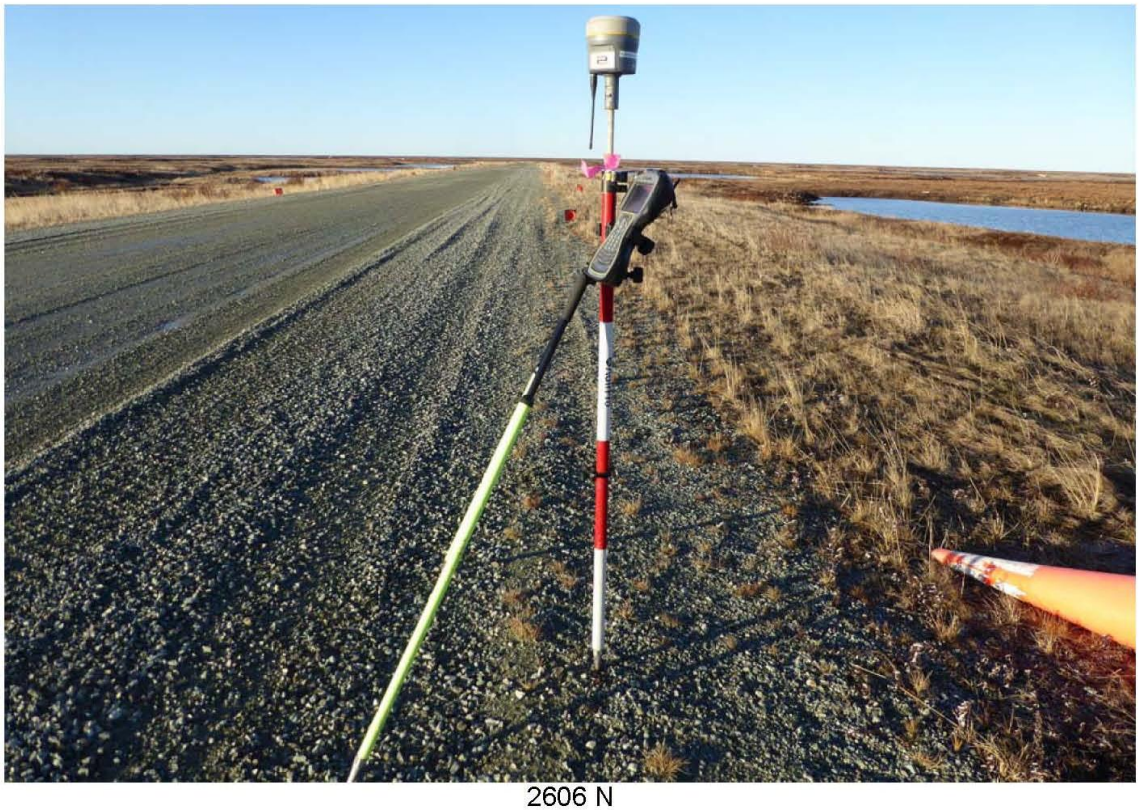
2602 W



2604 N



2604 W



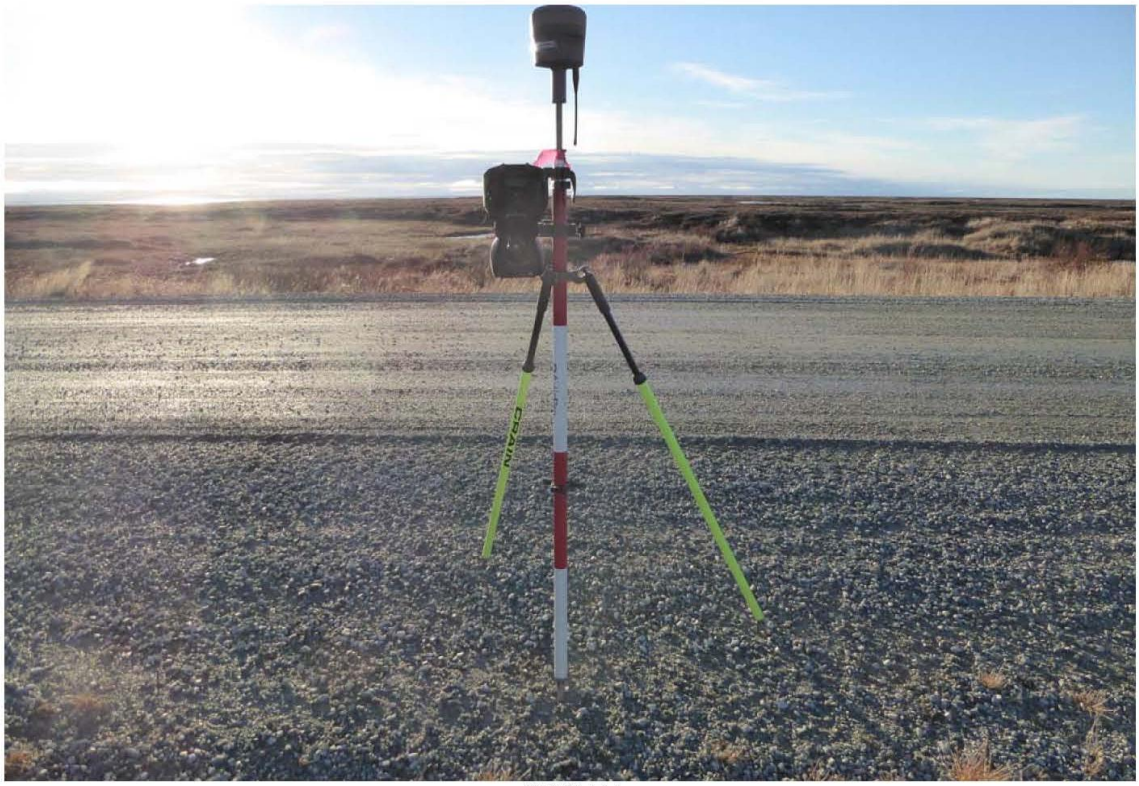
2606 N



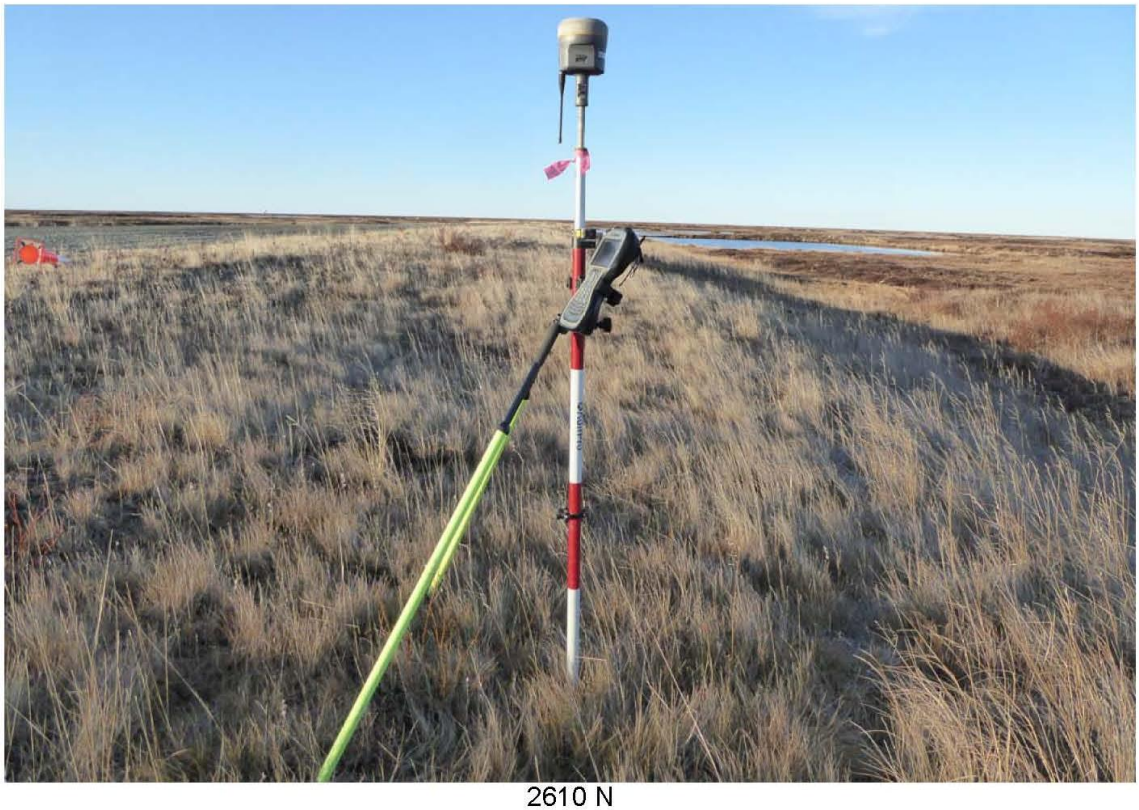
2606 W



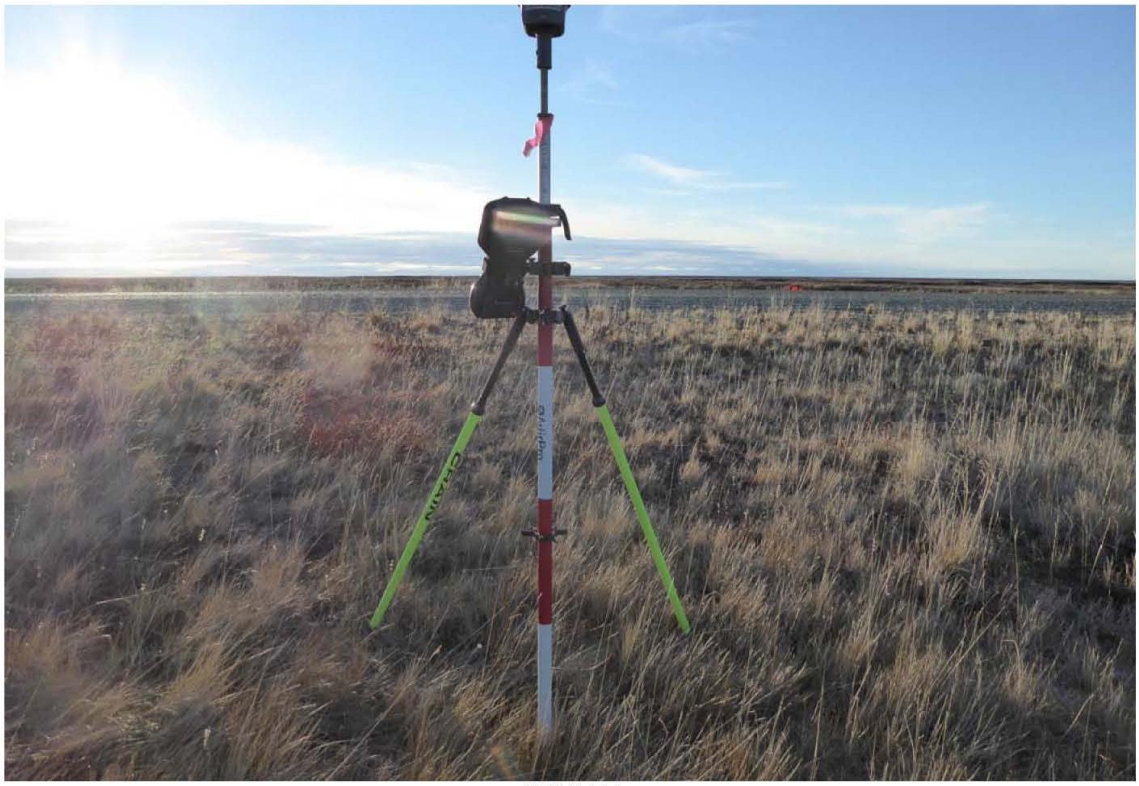
2608 N



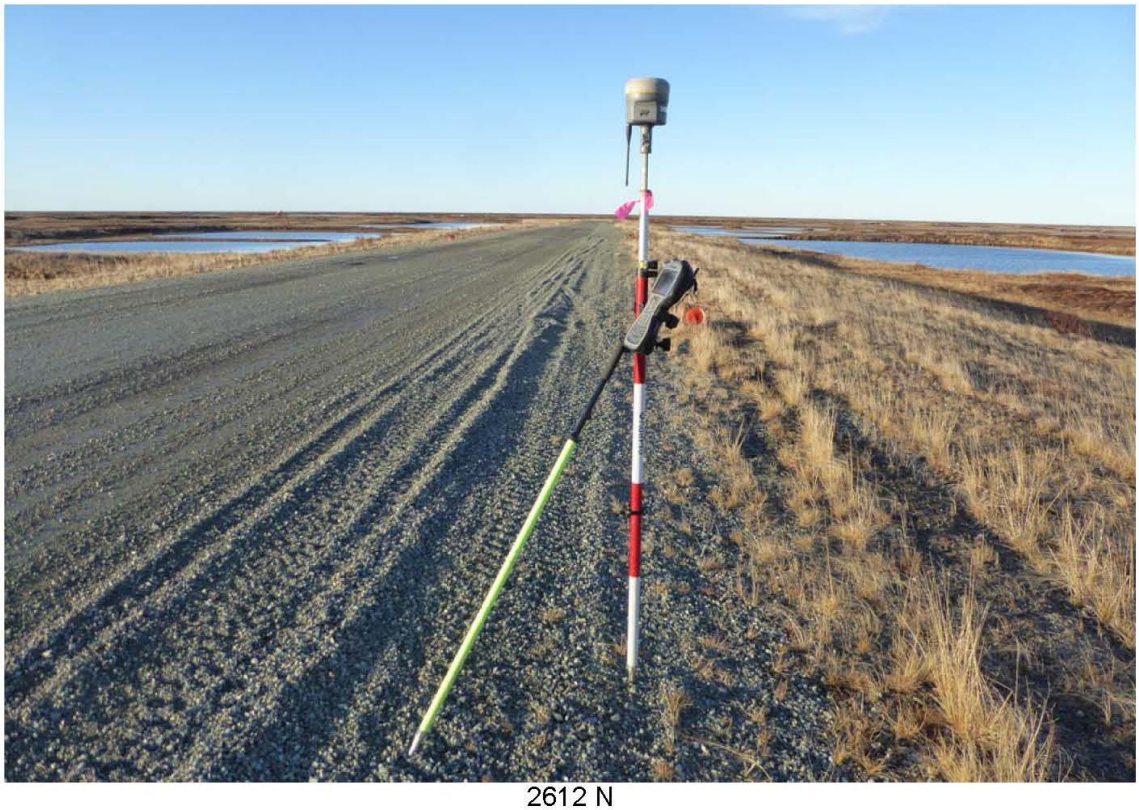
2608 W



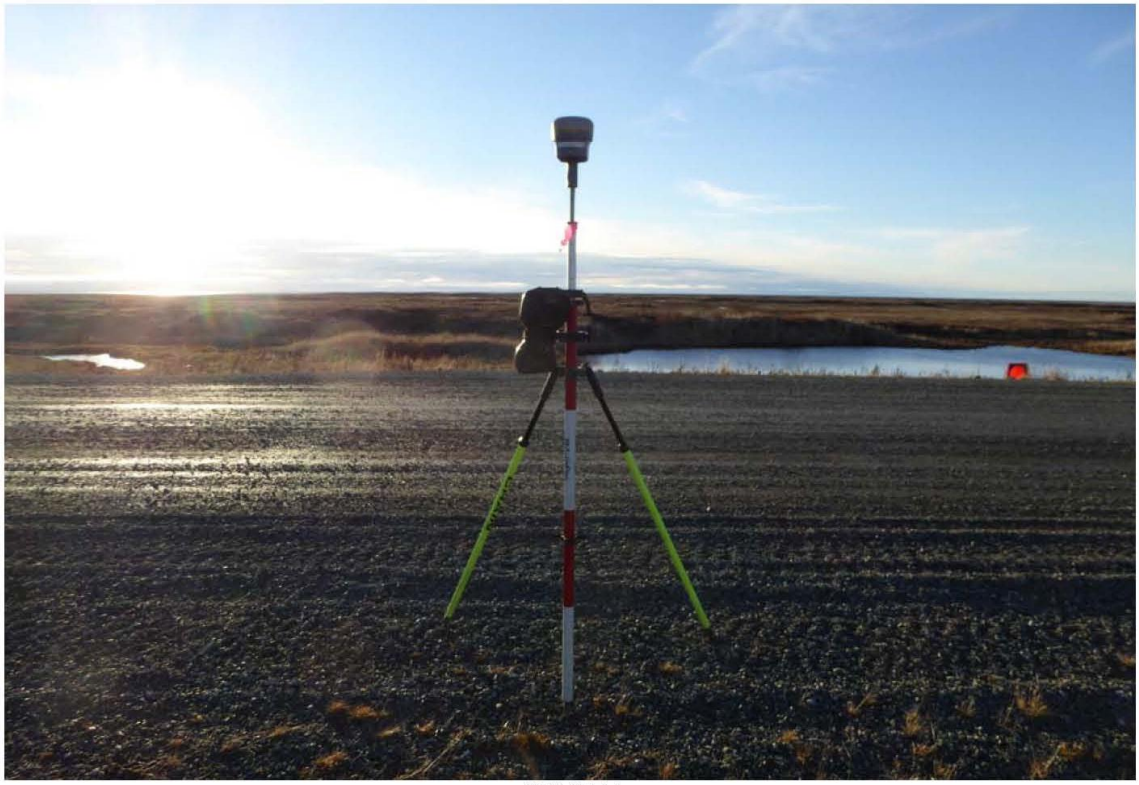
2610 N



2610 W



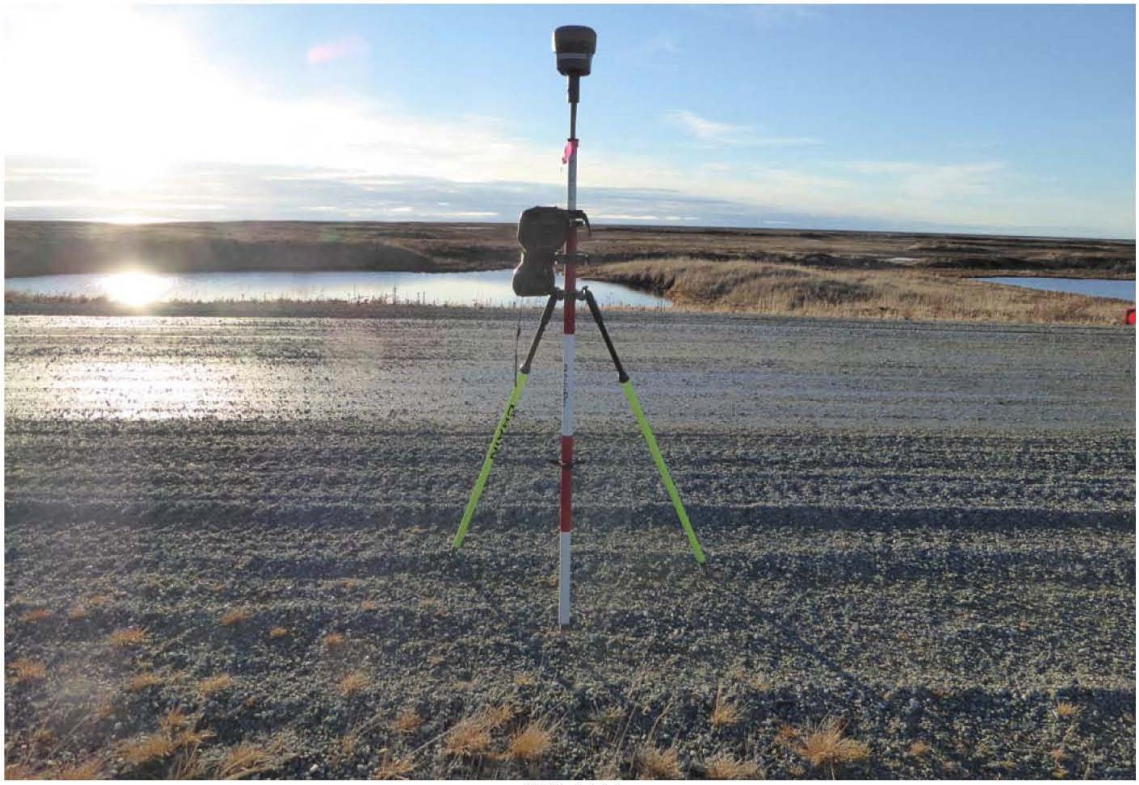
2612 N



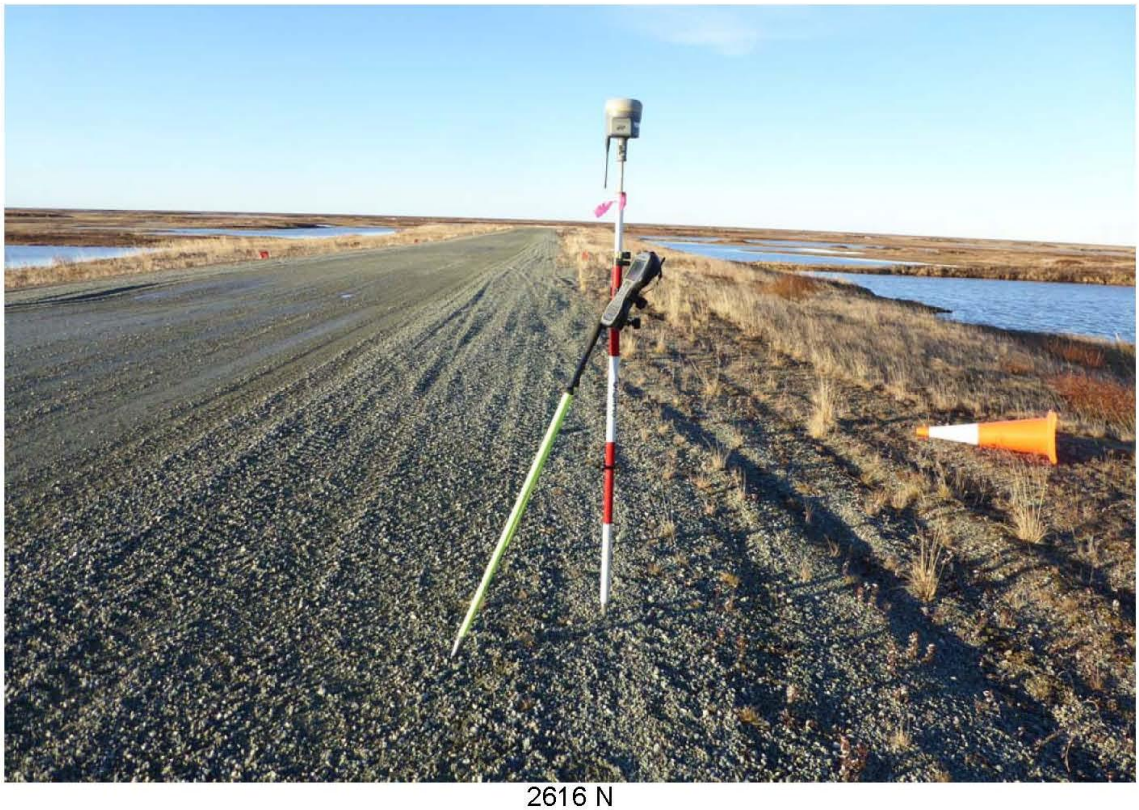
2612 W



2614 N



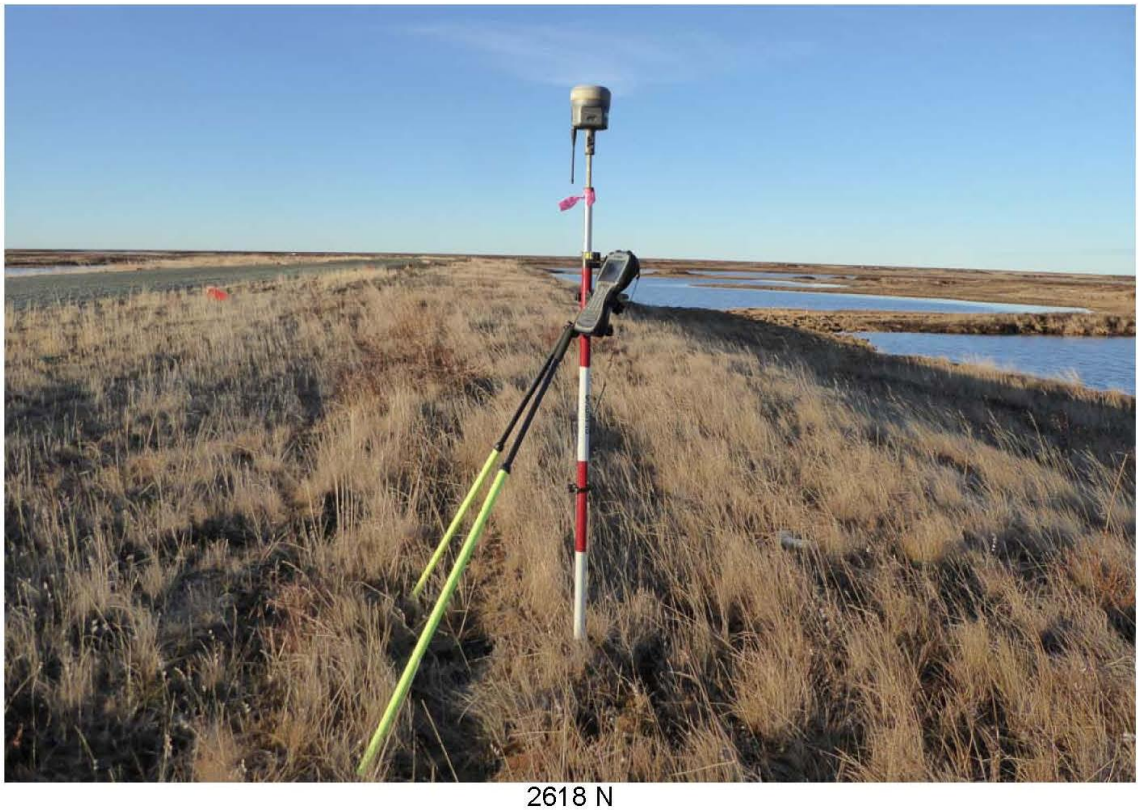
2614 W



2616 N



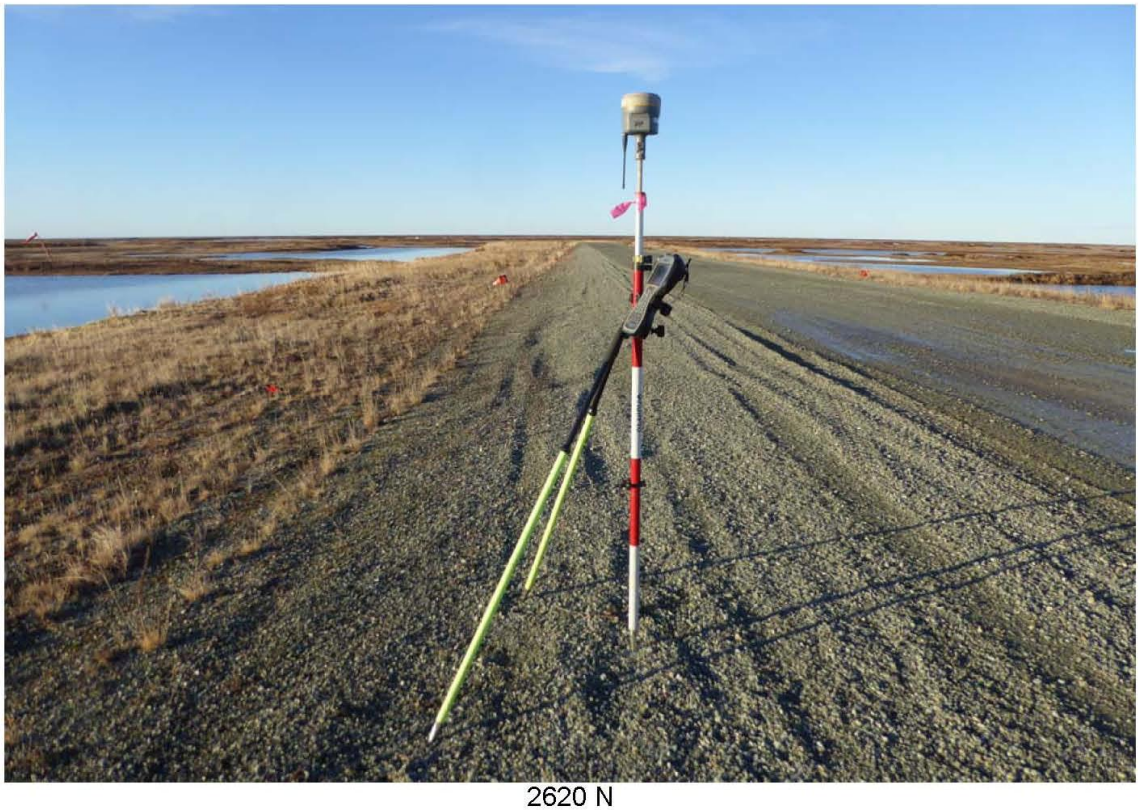
2616 W



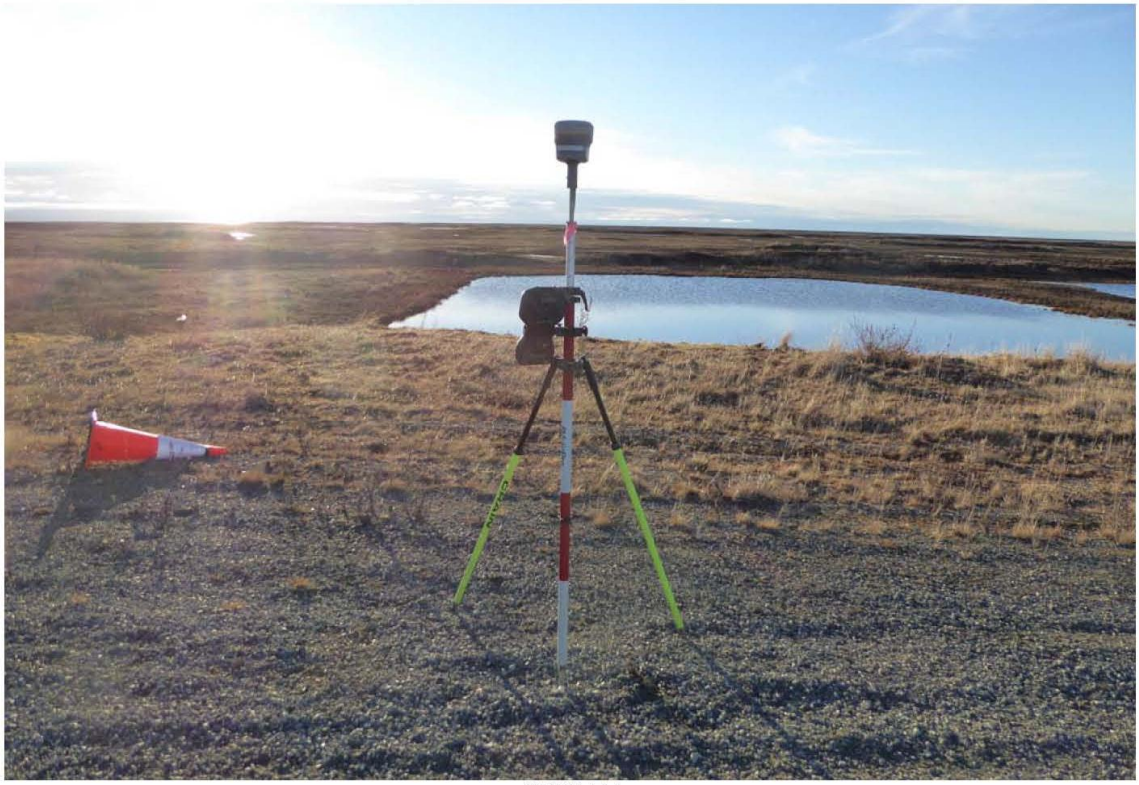
2618 N



2618 W



2620 N



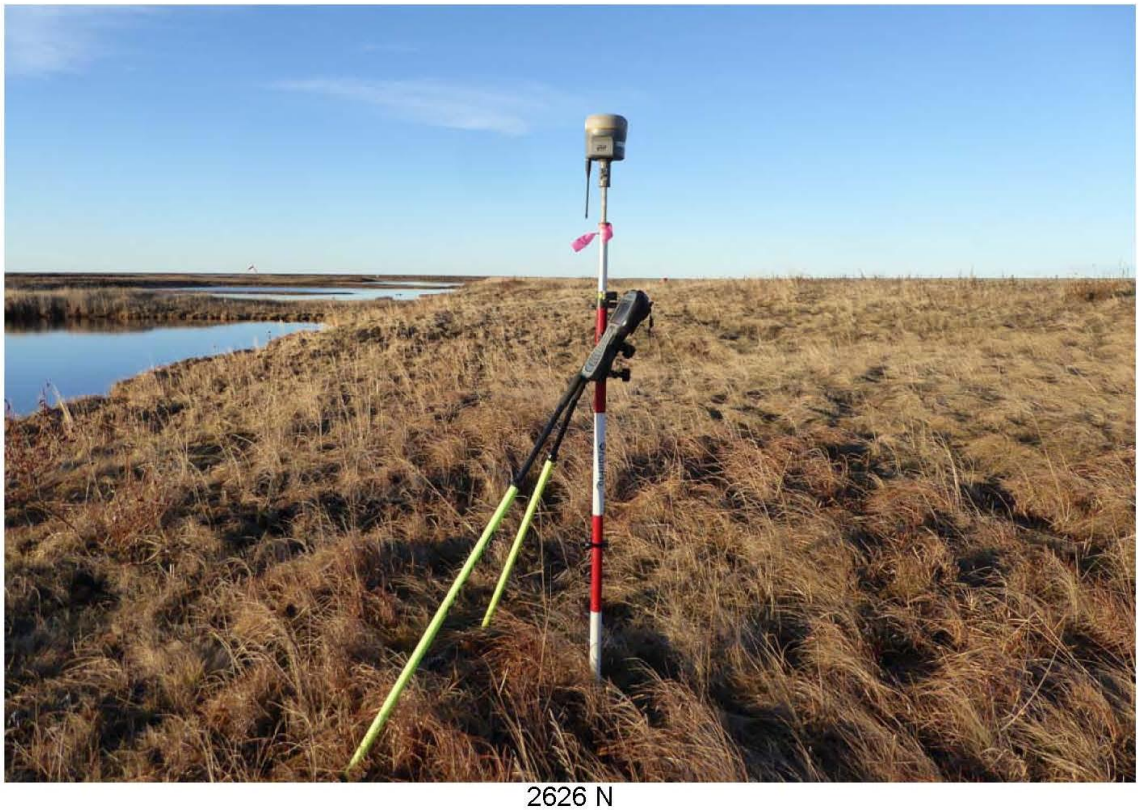
2620 W



2622 N



2622 W



2626 N



2626 W



2628 N



2628 W



2630 N



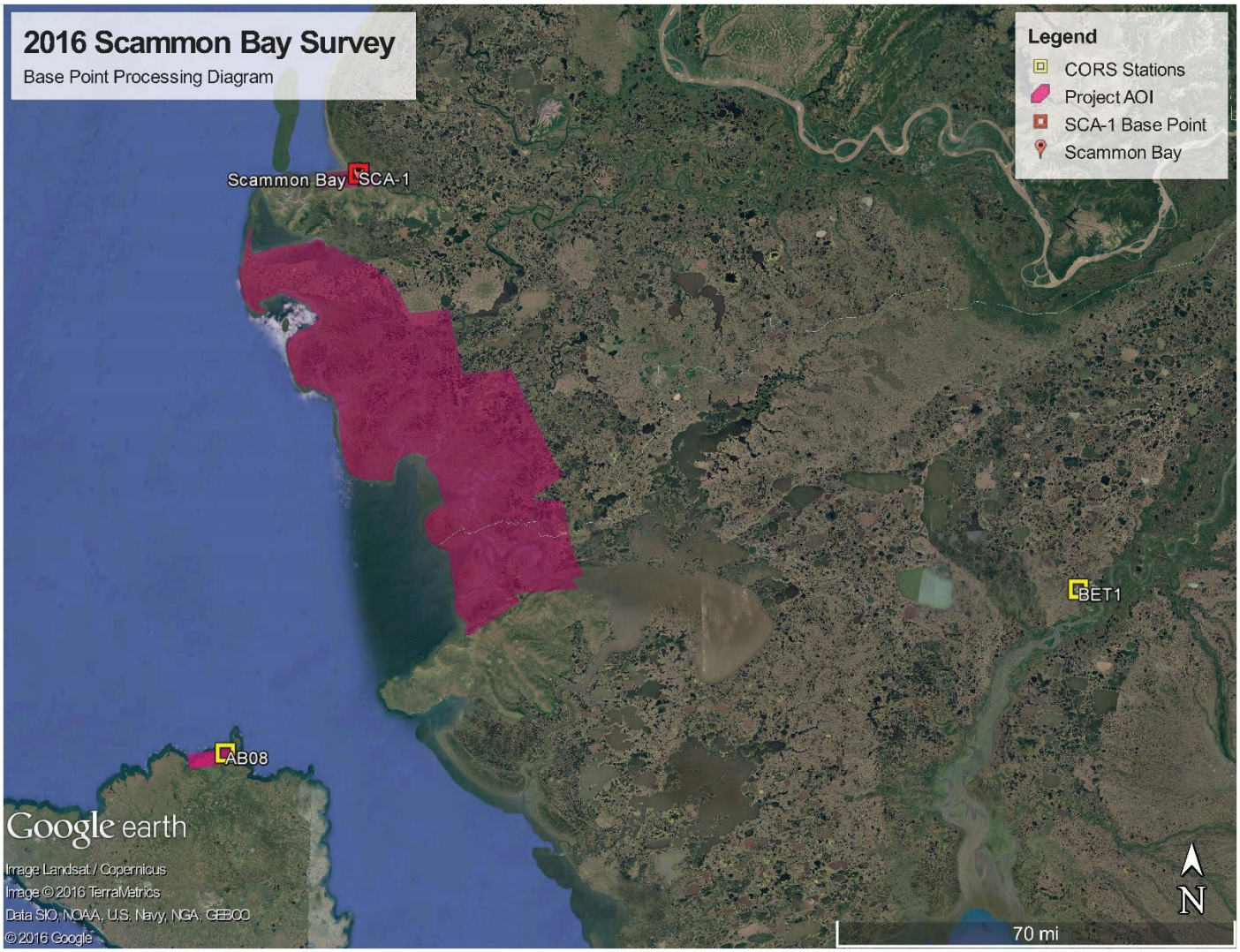
2630 W

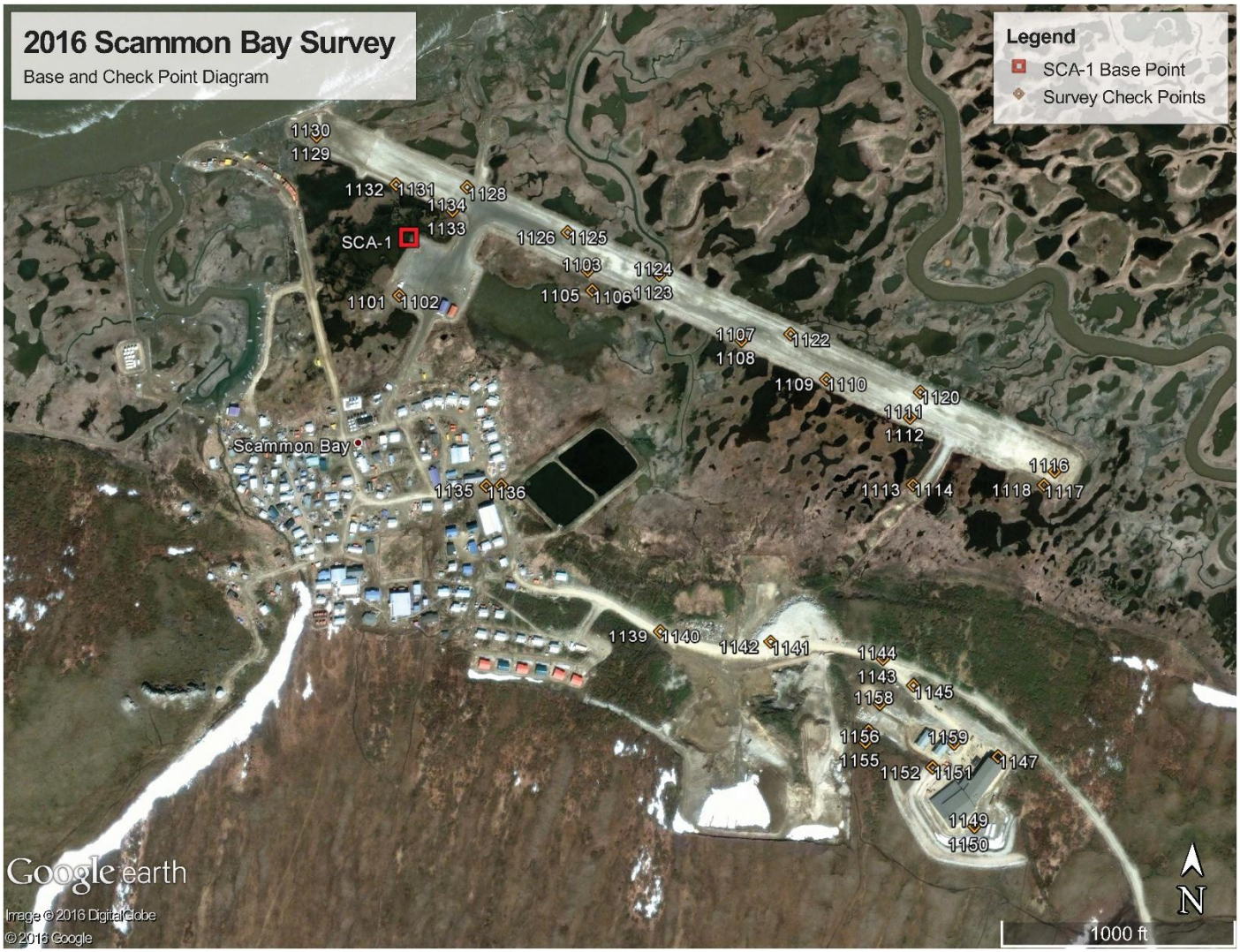


2632 N



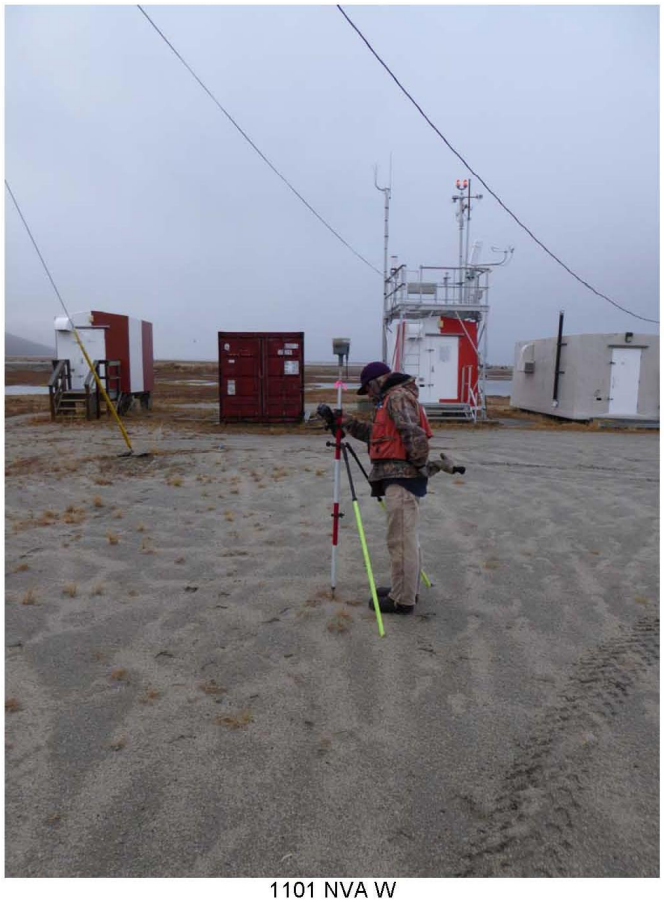
2632 W


2016 Scammon Bay Survey
Base Point Processing Diagram
Legend
CORS Stations
Project AOI
SCA-1 Base Point
Scammon Bay
Scammon Bay
SCA-1
BET1
AB08
Google earth
Image Landsat / Copernicus
Image © 2016 TerraMetrics
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
© 2016 Google
N
70 mi


2016 Scammon Bay Survey
Base and Check Point Diagram
Legend
SCA-1 Base Point
Survey Check Points
SCA-1
Scammon Bay
1101
1102
1103
1105
1106
1107
1108
1109
1110
1111
1112
1113
1114
1116
1117
1118
1120
1122
1123
1124
1125
1126
1128
1129
1130
1131
1132
1133
1134
1135
1136
1139
1140
1141
1142
1143
1144
1145
1147
1149
1150
1151
1152
1155
1156
1158
1159
Google earth
Image © 2016 DigitalGlobe
© 2016 Google
N
1000 ft



1101 NVA N



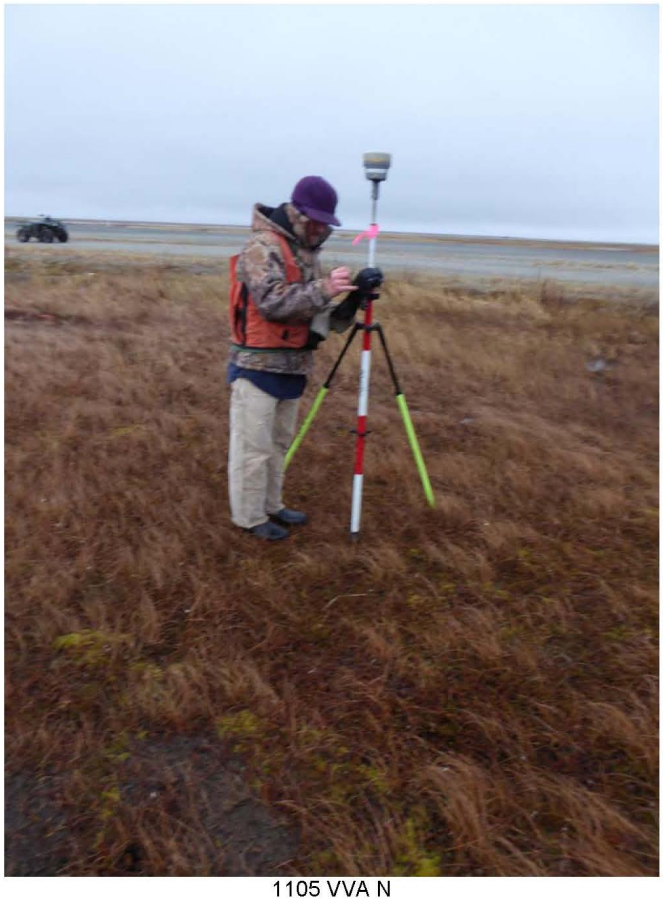
1101 NVA W



1103 NVA W



1103 NVA N



1105 VVA N



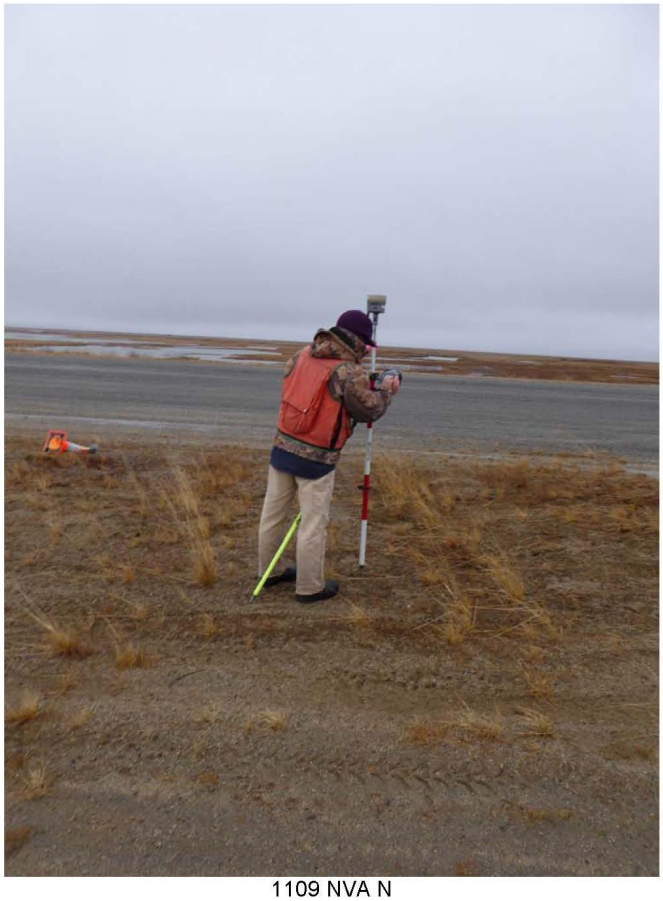
1105 VVA W



1107 NVA N



1107 NVA W



1109 NVA N



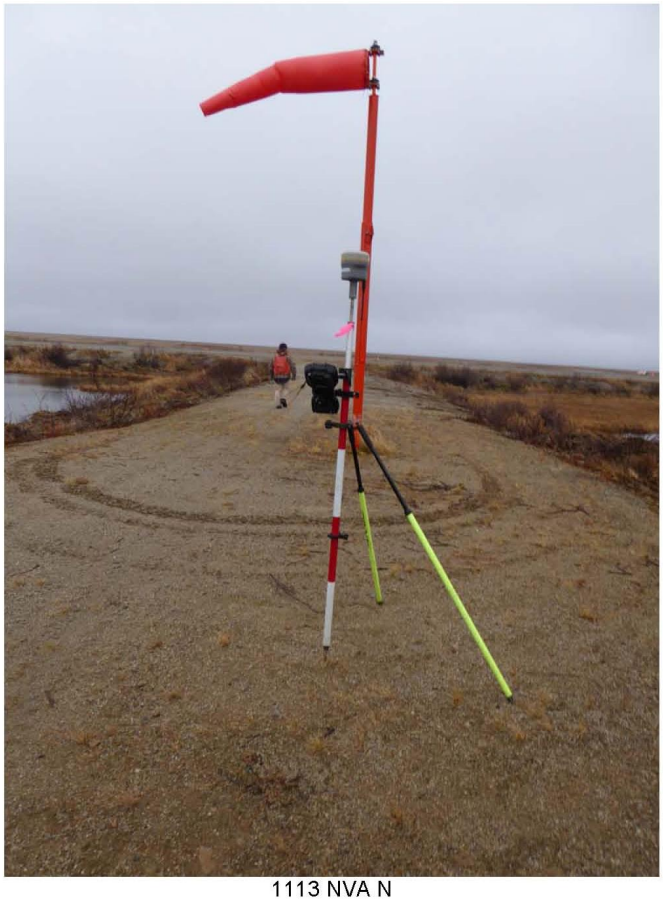
1109 NVA W



1111 NVA N



1111 NVA W



1113 NVA N



1113 NVA W



1115 NVA N



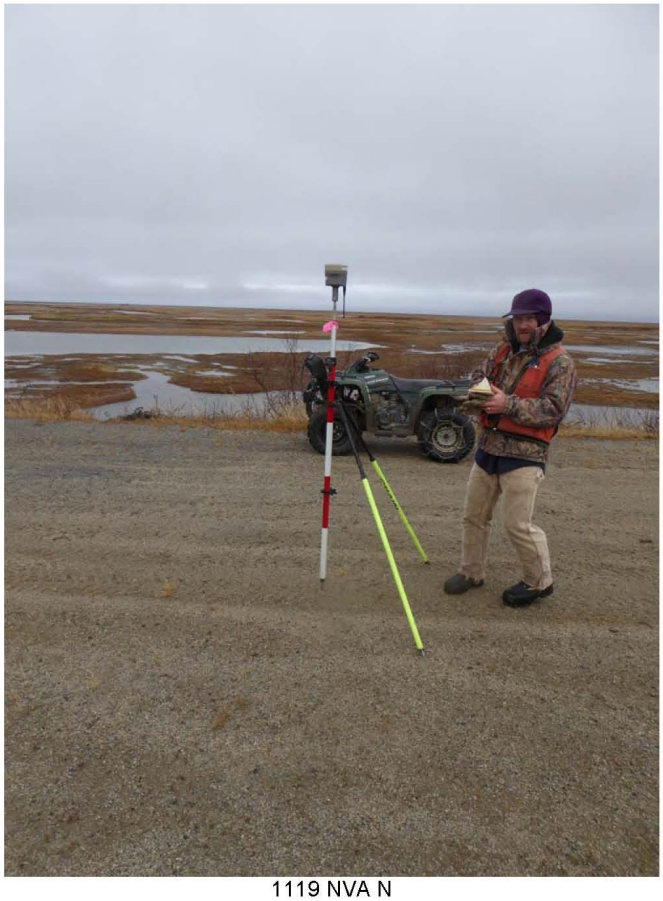
1115 NVA W



1117 VVA S



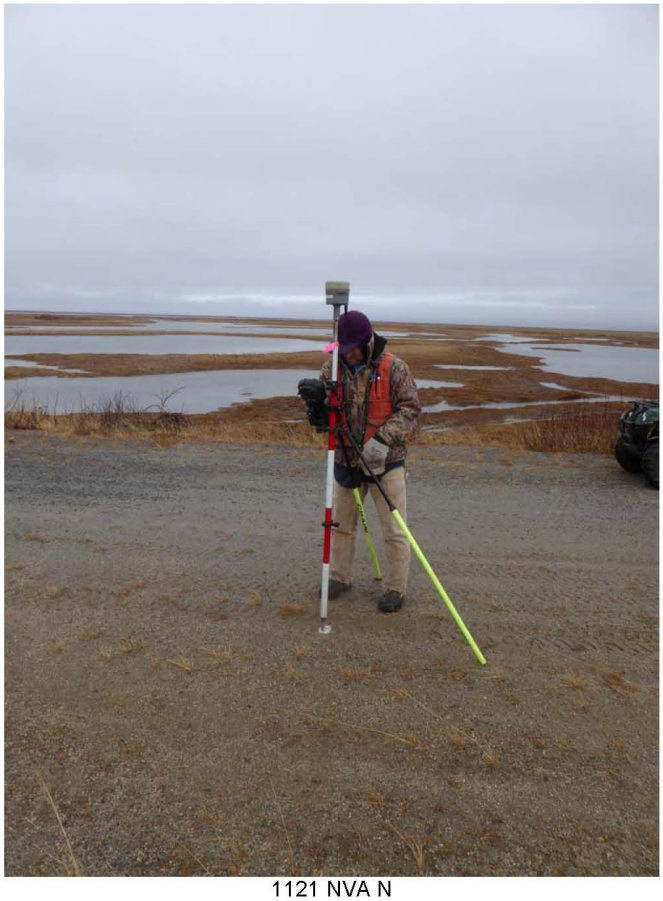
1117 VVA W



1119 NVA N



1119 NVA W



1121 NVA N



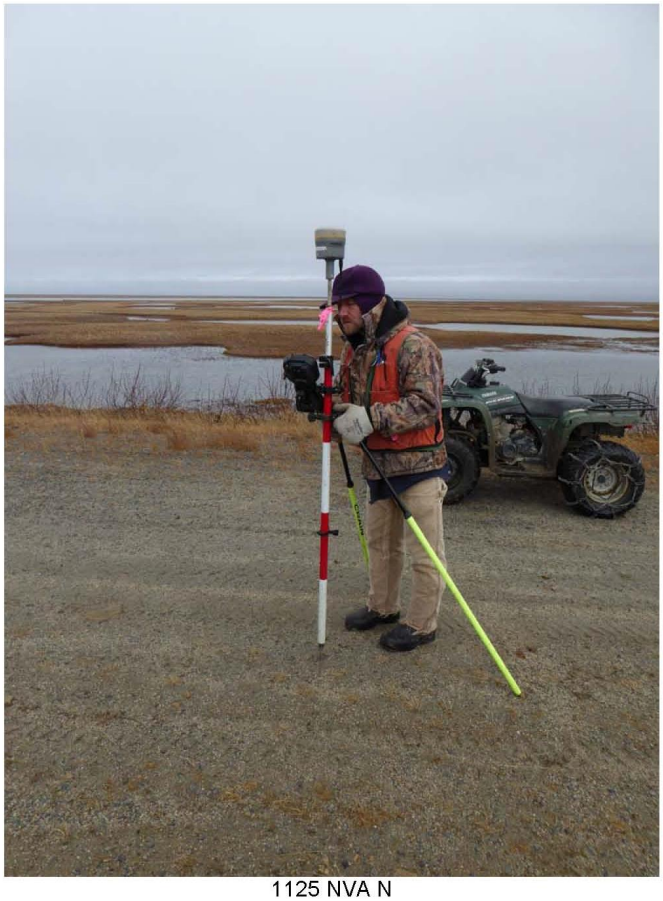
1121 NVA W



1123 NVA N



1123 NVA W



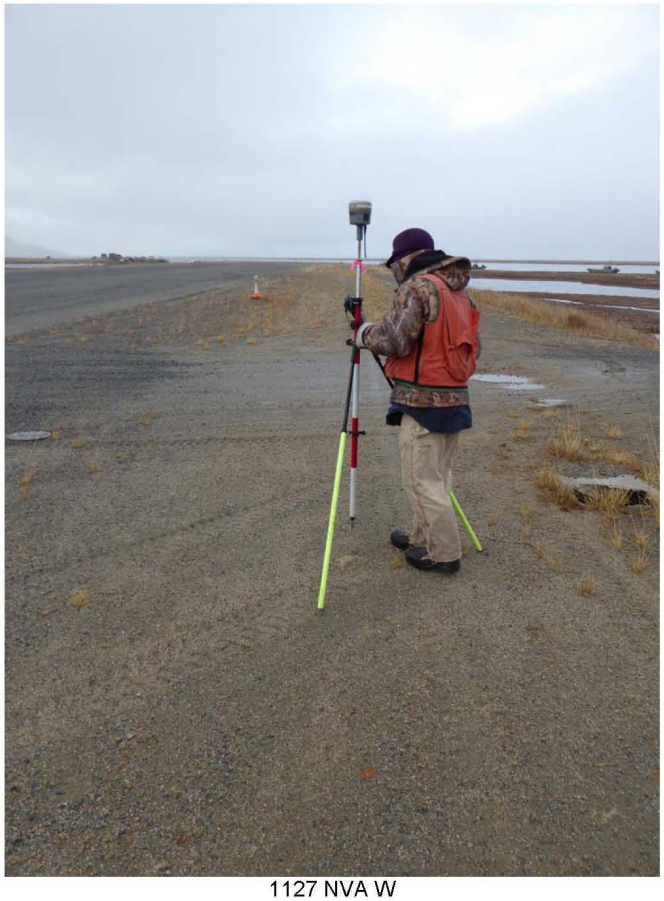
1125 NVA N



1125 NVA W



1127 NVA N



1127 NVA W



1129 NVA N



1129 NVA W



1131 NVA N



1131 NVA W



1133 NVA N



1133 NVA W



1135 NVA N



1135 NVA W



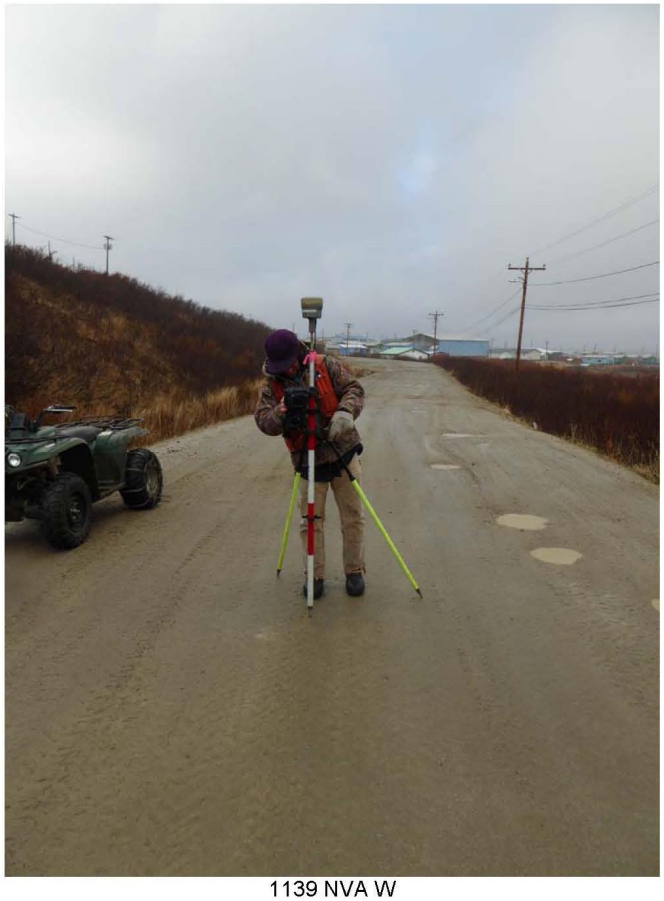
1137 VVA N



1137 VVA W



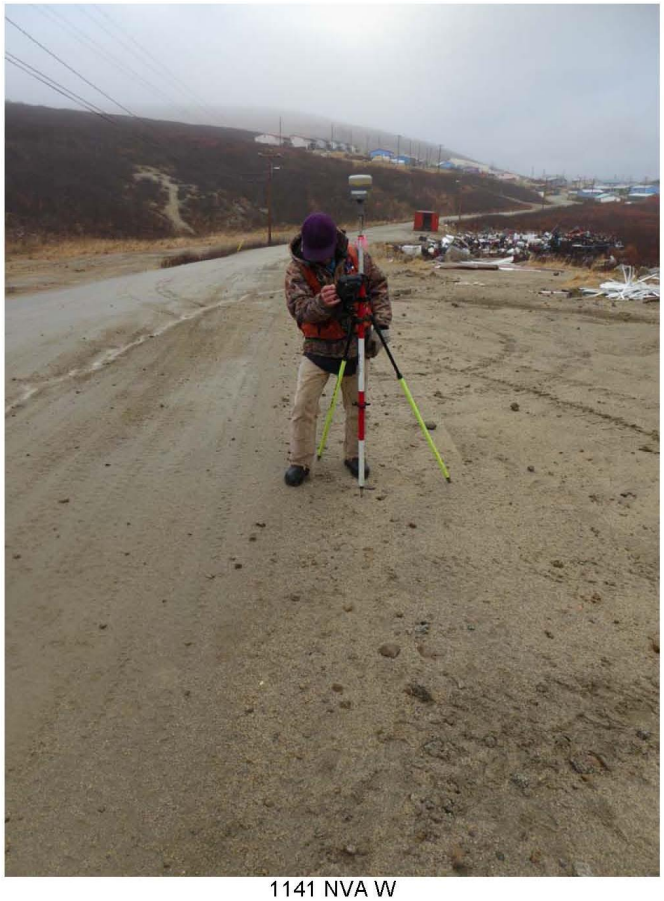
1139 NVA N



1139 NVA W



1141 NVA N



1141 NVA W



1143 NVA N



1143 NVA W



1145 VVA N



1145 VVA W



1147 NVA N



1147 NVA W



1149 NVA N



1149 NVA W



1151 NVA N



1151 NVA W



1153 NVA N



1153 NVA W



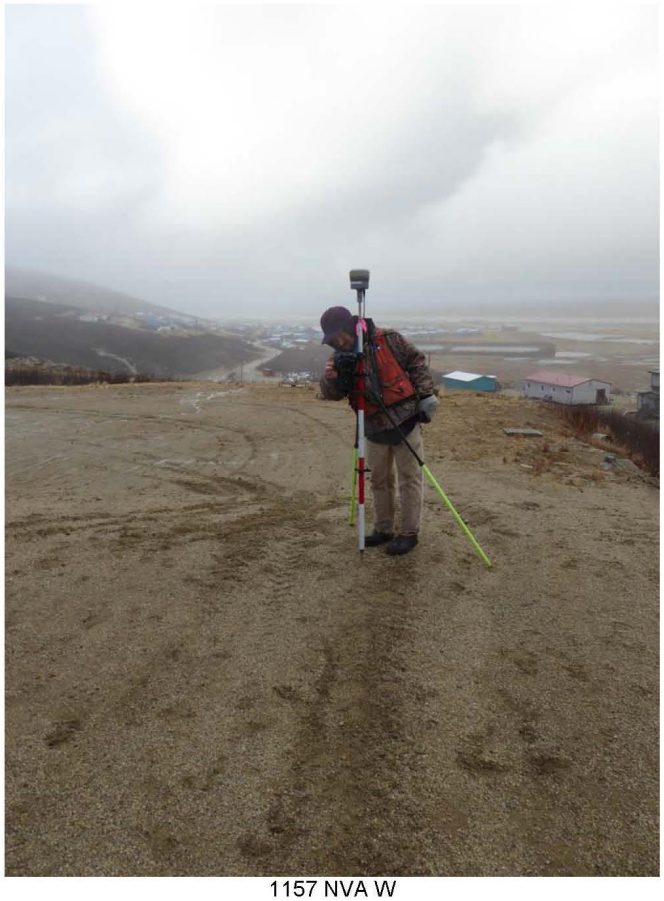
1155 VVA N



1155 VVA W



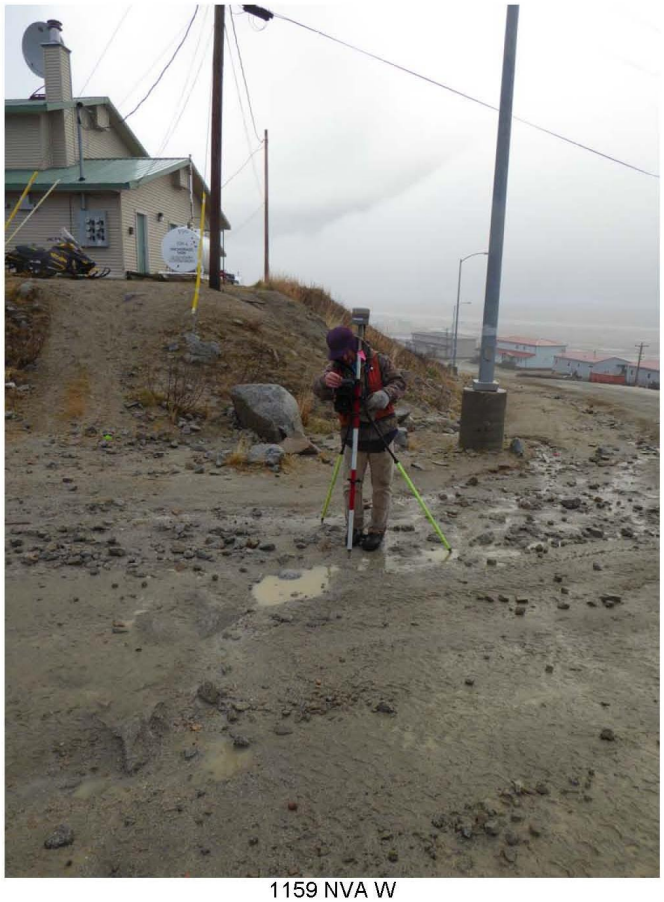
1157 NVA N



1157 NVA W



1159 NVA N



1159 NVA W

Section 4: Existing NGS Datasheets

This section contains the published National Geodetic Survey (NGS) datasheets for those existing monumented control stations that were used to establish 3-dimensional coordinates for each of the newly established ground control survey points for the project.

```
DK4091 ***********************************************************************
 DK4091  CORS         -  This is a GPS Continuously Operating Reference Station.
 DK4091  DESIGNATION -  BETHEL WAAS CORS ARP
 DK4091  CORS_ID     -  BET1
 DK4091  PID          -  DK4091
 DK4091  STATE/COUNTY-  AK/BETHEL CENSUS
 DK4091  COUNTRY      -  US
 DK4091  USGS QUAD    -  BETHEL D-8
 DK4091
 DK4091                        *CURRENT SURVEY CONTROL
 DK4091  ______________________________________________________________________
 DK4091* NAD 83(2011) POSITION- 60 47 16.50874(N) 161 50 30.12380(W)   ADJUSTED
 DK4091* NAD 83(2011) ELLIP HT-    51.096 (meters)        (08/??/11)   ADJUSTED
 DK4091* NAD 83(2011) EPOCH   -  2010.00
 DK4091* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet)
 DK4091  ______________________________________________________________________
 DK4091  GEOID HEIGHT    -         10.609 (meters)                     GEOID12B
 DK4091  NAD 83(2011) X  - -2,965,383.801 (meters)                     COMP
 DK4091  NAD 83(2011) Y  -   -972,577.585 (meters)                     COMP
 DK4091  NAD 83(2011) Z  -  5,543,892.146 (meters)                     COMP
 DK4091
 DK4091  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
 DK4091  Standards:
 DK4091         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
 DK4091            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
 DK4091  ----------------------------------------------------------------------
 DK4091  NETWORK    2.33   7.61           1.09   0.74   3.88      0.06161400
 DK4091  ----------------------------------------------------------------------
 DK4091
 DK4091
 DK4091.The coordinates were established by GPS observations
 DK4091.and adjusted by the National Geodetic Survey in August 2011.
 DK4091
 DK4091.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
 DK4091.been affixed to the stable North American Tectonic Plate.
 DK4091
 DK4091.The coordinates are valid at the epoch date displayed above
 DK4091.which is a decimal equivalence of Year/Month/Day.
 DK4091
 DK4091.Significant digits in the geoid height do not necessarily reflect accuracy.
 DK4091.GEOID12B height accuracy estimate available here.
 DK4091
 DK4091.The PID for the CORS L1 Phase Center is DK4092.
 DK4091
 DK4091.The XYZ, and position/ellipsoidal ht. are equivalent.
 DK4091
 DK4091.The ellipsoidal height was determined by GPS observations
```

```
 DK4091.and is referenced to NAD 83.
 DK4091
 DK4091. The following values were computed from the NAD 83(2011) position.
 DK4091
 DK4091;                     North         East     Units Scale Factor Converg.
 DK4091;SPC AK 7      -   755,880.708   508,621.334   MT  0.99990091   +0 08 17.4
 DK4091;UTM  04       - 6,742,514.331   345,313.793   MT  0.99989319   -2 28 50.8
 DK4091
 DK4091!              -  Elev Factor  x  Scale Factor =   Combined Factor
 DK4091!SPC AK 7      -   0.99999200  x   0.99990091  =   0.99989291
 DK4091!UTM  04       -   0.99999200  x   0.99989319  =   0.99988519
 DK4091
 DK4091_U.S. NATIONAL GRID SPATIAL ADDRESS: 4VCN4531342514(NAD 83)
 DK4091
 DK4091                           SUPERSEDED SURVEY CONTROL
 DK4091
 DK4091  ELLIP H (06/27/12)   51.117  (m)                          GP(2010.00) 0 0
 DK4091  NAD 83(2011)-  60 47 16.50916(N)    161 50 30.12502(W) AD(2010.00) c
 DK4091  NAD 83(CORS)-  60 47 16.50860(N)    161 50 30.12276(W) AD(2003.00) c
 DK4091  ELLIP H (06/??/08)   51.101  (m)                          GP(2003.00) c c
 DK4091
 DK4091.Superseded values are not recommended for survey control.
 DK4091
 DK4091.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
 DK4091.See file dsdata.pdf to determine how the superseded data were derived.
 DK4091
 DK4091_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
 DK4091
 DK4091                           STATION DESCRIPTION
 DK4091
 DK4091'DESCRIBED BY NATIONAL GEODETIC SURVEY 2011
 DK4091'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
 DK4091'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
 DK4091'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
 DK4091'   ftp://cors.ngs.noaa.gov/cors/README.txt
 DK4091'   ftp://cors.ngs.noaa.gov/cors/coord/coord_08
 DK4091'   ftp://cors.ngs.noaa.gov/cors/station_log
 DK4091'   http://geodesy.noaa.gov/CORS
1        National Geodetic Survey,   Retrieval Date = MARCH 24, 2017
 DL6420 ***********************************************************************
 DL6420  CORS         -  This is a GPS Continuously Operating Reference Station.
 DL6420  DESIGNATION -  MEKORYUK__AK2008 CORS ARP
 DL6420  CORS_ID      -  AB08
 DL6420  PID          -  DL6420
 DL6420  STATE/COUNTY-  AK/BETHEL CENSUS
 DL6420  COUNTRY      -  US
 DL6420  USGS QUAD    -  NUNIVAK ISLAND B-4
 DL6420
 DL6420                         *CURRENT SURVEY CONTROL
 DL6420  ______________________________________________________________________
 DL6420* NAD 83(2011) POSITION- 60 23 05.40758(N) 166 12 03.00395(W)   ADJUSTED
 DL6420* NAD 83(2011) ELLIP HT-    25.793 (meters)        (08/??/11)   ADJUSTED
 DL6420* NAD 83(2011) EPOCH   -  2010.00
 DL6420* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet)
```

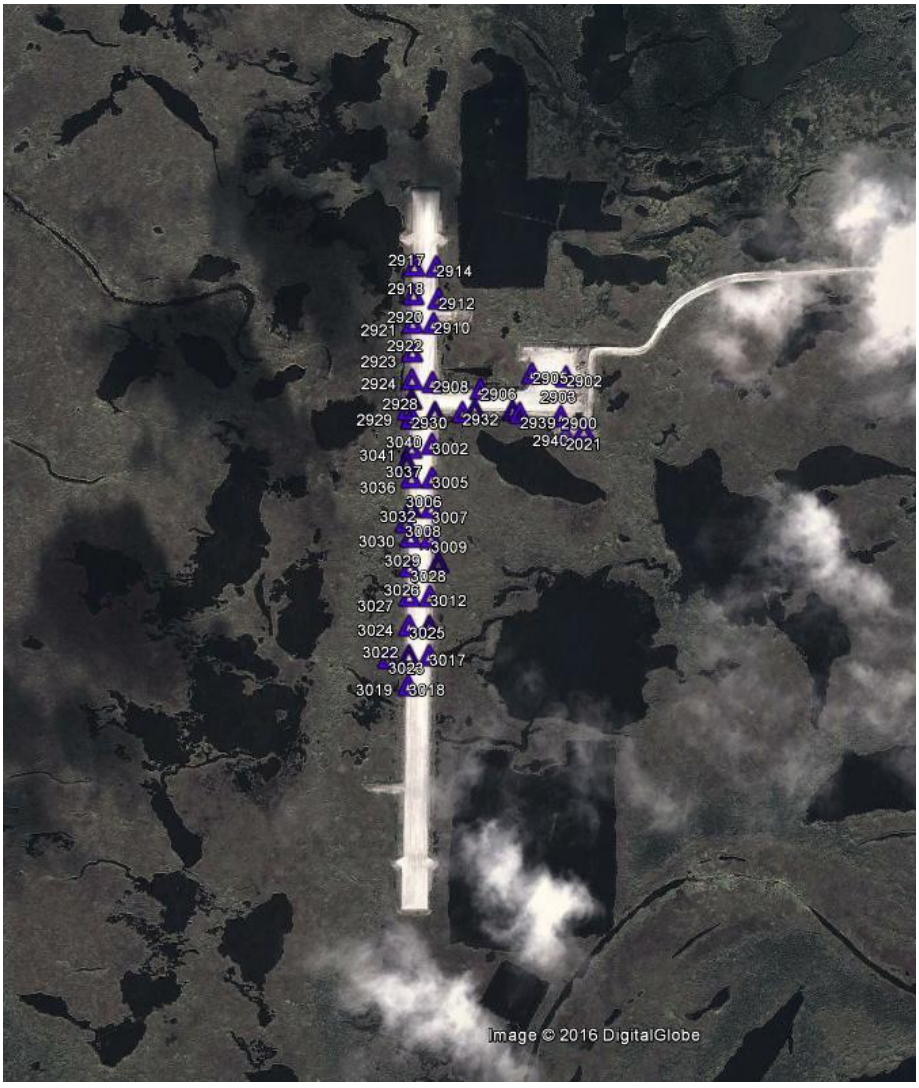
```
DL6420 _____________________________________________________________________
DL6420  GEOID HEIGHT    -          9.780 (meters)                     GEOID12B
DL6420  NAD 83(2011) X  - -3,068,711.148 (meters)                     COMP
DL6420  NAD 83(2011) Y  -   -753,700.365 (meters)                     COMP
DL6420  NAD 83(2011) Z  -  5,521,813.019 (meters)                     COMP
DL6420
DL6420.Formal positional accuracy estimates are not available for this CORS
DL6420.because its coordinates were determined in part using modeled
DL6420.velocities. Approximate one-sigma accuracies for latitude, longitude,
DL6420.and ellipsoid height can be obtained from the short-term time series.
DL6420.Additional information regarding modeled velocities is available on
DL6420.the CORS Coordinates and Multi-Year CORS Solution FAQ web pages.
DL6420
DL6420.The coordinates were established by GPS observations
DL6420.and adjusted by the National Geodetic Survey in August 2011.
DL6420
DL6420.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
DL6420.been affixed to the stable North American Tectonic Plate.
DL6420
DL6420.The coordinates are valid at the epoch date displayed above
DL6420.which is a decimal equivalence of Year/Month/Day.
DL6420
DL6420.Significant digits in the geoid height do not necessarily reflect accuracy.
DL6420.GEOID12B height accuracy estimate available here.
DL6420
DL6420.The PID for the CORS L1 Phase Center is DL6496.
DL6420
DL6420.The XYZ, and position/ellipsoidal ht. are equivalent.
DL6420
DL6420.The ellipsoidal height was determined by GPS observations
DL6420.and is referenced to NAD 83.
DL6420
DL6420. The following values were computed from the NAD 83(2011) position.
DL6420
DL6420;                    North         East     Units Scale Factor Converg.
DL6420;UTM  03      - 6,694,873.806   433,802.146   MT  0.99965370   -1 02 38.4
DL6420
DL6420!             -  Elev Factor  x  Scale Factor =   Combined Factor
DL6420!UTM  03      -   0.99999596  x   0.99965370  =   0.99964966
DL6420
DL6420_U.S. NATIONAL GRID SPATIAL ADDRESS: 3VVG3380294873(NAD 83)
DL6420
DL6420                           SUPERSEDED SURVEY CONTROL
DL6420
DL6420  NAD 83(CORS)-  60 23 05.40719(N)    166 12 03.00295(W) AD(2003.00) c
DL6420  ELLIP H (02/??/10)   25.808  (m)                      GP(2003.00) c c
DL6420
DL6420.Superseded values are not recommended for survey control.
DL6420
DL6420.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
DL6420.See file dsdata.pdf to determine how the superseded data were derived.
DL6420
DL6420_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
```

```
DL6420
DL6420                          STATION DESCRIPTION
DL6420
DL6420'DESCRIBED BY NATIONAL GEODETIC SURVEY 2011
DL6420'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DL6420'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DL6420'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DL6420'   ftp://cors.ngs.noaa.gov/cors/README.txt
DL6420'   ftp://cors.ngs.noaa.gov/cors/coord/coord_08
DL6420'   ftp://cors.ngs.noaa.gov/cors/station_log
DL6420'   http://geodesy.noaa.gov/CORS
```

Section 5: GPS Control Diagram

This section contains a graphical representation of the new and existing control stations used for the project.

Overview of Control Networks



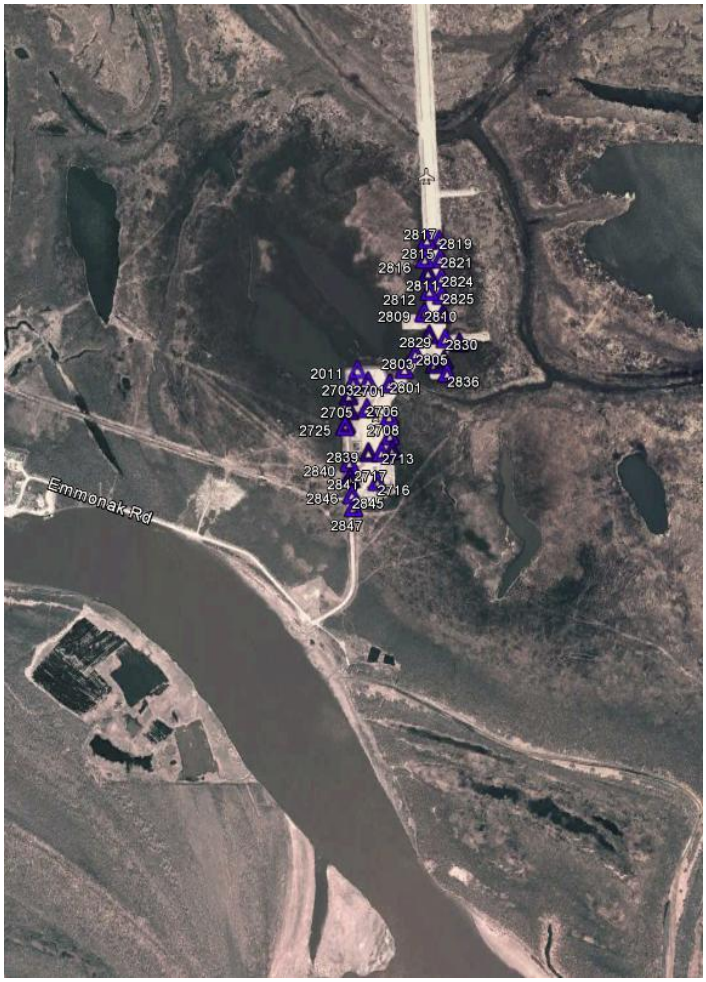
N

Not to Scale



N

Not to Scale



N

Not to Scale



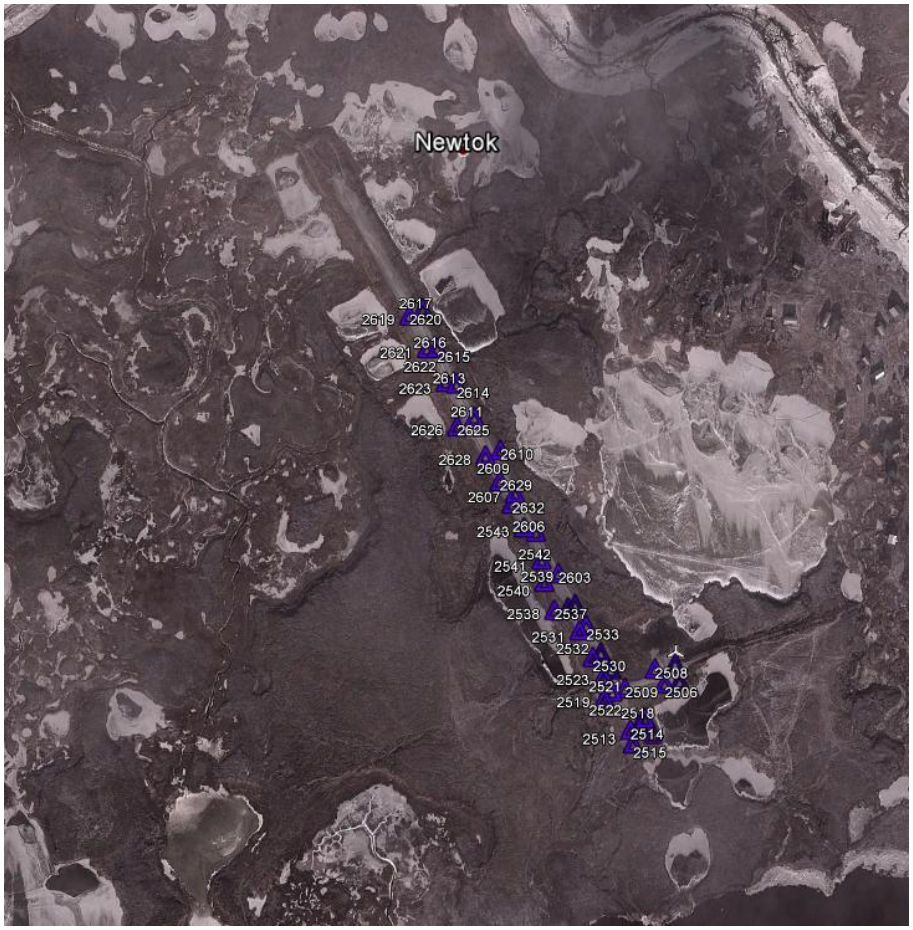
N

Not to Scale



N

Not to Scale



N

Not to Scale



N

Not to Scale