APPENDIX F

Summer 2022 Work completed and results obtained by Ausenco

2022 Field Program Summary Report – Angilak Environmental Baseline Monitoring Program

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Executive Summary

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1.0 Introduction

ValOre (formerly Kivalliq Energy Corp.) executed a drill program at the Angilak Uranium Project (the Project) from April to June and July to September 2022. As part of the drill program, ValOre retained Ausenco (formerly Hemmera Envirochem Inc.) to re-initiate environmental baseline data collection activities. Ausenco completed previous baseline environmental data collection programs on this project from 2010 to 2014. The scope of the 2022 program closely followed previous programs, focusing on five aspects:

- Climate
- Atmospheric contaminants
- Surface water characterization
- Water quality and water level
- Incidental wildlife observations
- Caribou (*Rangifer tarandus*) Monitoring Plan (**Appendix H**) development.

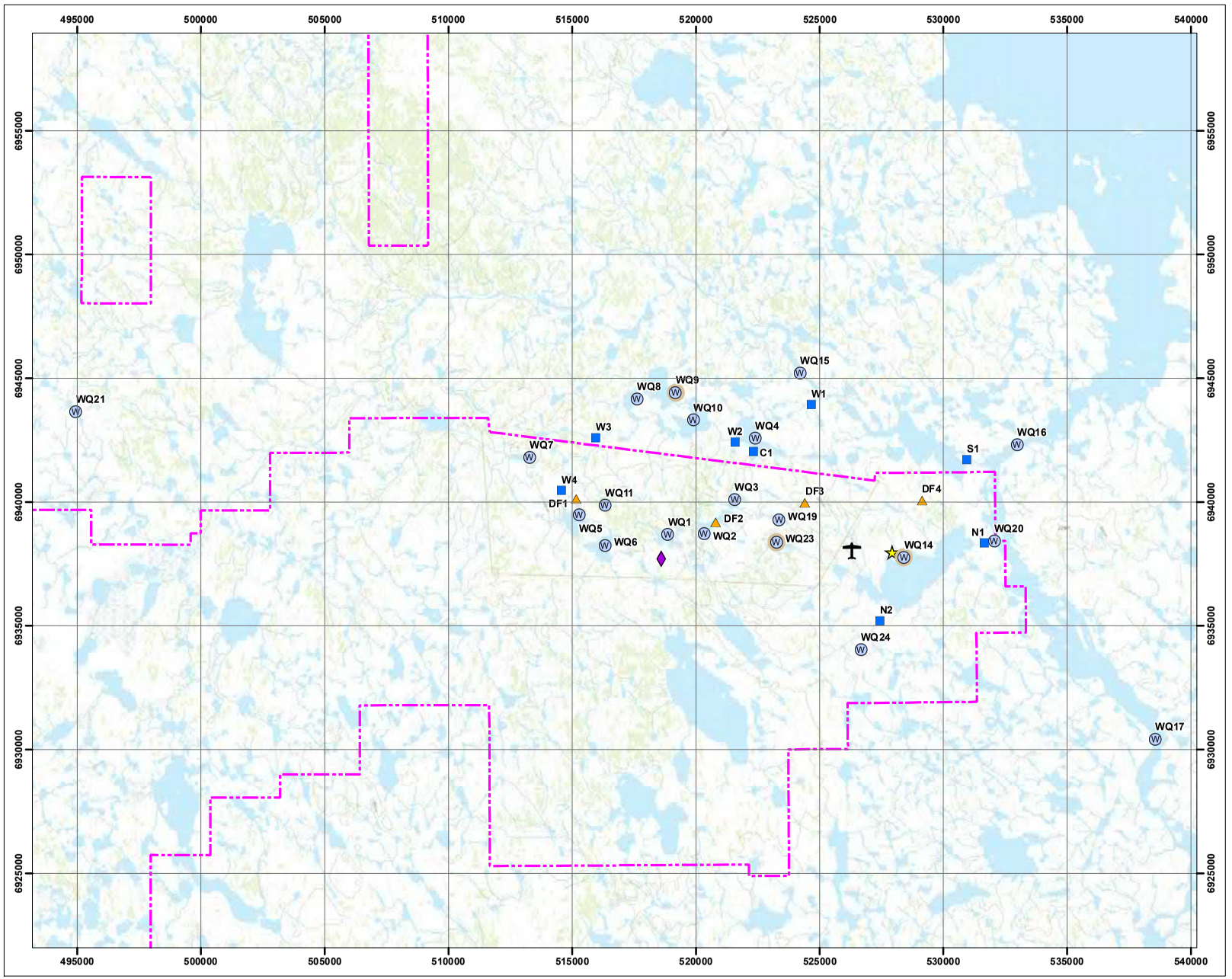
The Project is authorized under Crown Indigenous Relations and Northern Affairs Canada (CIRNAC) Land Use Permit (LUP) N2019C0013, Kivalliq Inuit Association (KIA) Land Use Licence KVL308C09, Nunavut Water Board (NWB) Water Licence 2BE-ANG2227and Nunavut Impact Review Board (NIRB) File 08EN052.

Activities authorized at the Project include: the use of water and disposal of waste associated with camp operations, exploration drilling, geological mapping, rock, soil and till geochemical sampling, airborne and ground geophysical surveys, trenching and the establishment of fuel caches.

The goal of the environmental baseline data collection program was consistent with the initial work and follows Ausenco's Environmental Monitoring Toolkit for Exploration Projects approach. Mining is subject to considerable scrutiny by government regulators, Indigenous Groups, and the public, and uranium mining is of particular focus to regulators. To produce a robust and scientifically defensible Environmental Assessment (EA), a comprehensive and long-term data set is necessary. The purpose of the studies in this program are to capture data in a standardized manner relevant to potential future environmental baseline study requirements while remaining within a scale and scope consistent with ValOre's exploration program. While undertaking the baseline data collection, there was also an opportunity for ValOre to train local Inuit Environmental Monitors and build capacity within the local community to support the Project.

1.1 ValOre Site Description

The Angilak Uranium Project location (herein referred to as the "Site") is located approximately 230 km south-west of Baker Lake or approximately 325 km west of Rankin Inlet, within the Kivalliq Region of Nunavut. The Kivalliq Region is situated within Inuit traditional territory. In summer, the Site is only accessible by air (both helicopter and fixed wing aircraft). In winter the Site can be accessed by snowmachine. The Site is located at and around UTM coordinates (Zone 14) 528227 Easting and 6937523 Northing.



Angilak Environmental Baseline Monitoring Program
Nunvaut

Site Location

Legend

- Nutaaq Camp
- Airstrip
- Climate Station
- Dustfall Station
- Hydrometric Station
- Water Quality Station
- Sediment Sample Location
- Site Boundary

Notes

1. All mapped features are approximate and should be used for discussion purposes only.
2. This map is not intended to be a "stand-alone" document, but a visual aid of the information contained within the referenced Report. It is intended to be used in conjunction with the scope of services and limitations described therein.

Sources

- Main Frame and Inset Basemap: ESRI World Topographic Map

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Kilometres

NAD 1983 UTM Zone 14N

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2.0 Climate Station Refurbishment Assessment

Climate monitoring of the proposed mine study area and the establishment of a baseline data set can help support streamflow monitoring, mine reclamation and engineering design, water balance modelling, water quality modelling, and water management planning during mine exploration, construction, and operation. As part of the baseline assessment, Ausenco found and evaluated the utility of a previously installed climate station.

The historical climate station is positioned at UTM coordinates (Zone 14) 518588 North and 6937702 East.and consists of the Onset Hobo Weather Station with an OTT Pluvio Rain Gauge and Alter Shield add-on. The system is powered by a 63 AHR AGM Solar Battery, which is charged using a 20-Watt Solar Panel. The station had been sitting idle in the tundra with no maintenance completed since 2016 when the last field program was concluded.

Ausenco personnel held a pre-field meeting with the original provider of the climate station, Hoskins Scientific. The intent of that meeting was to gain insights from an expert with respect to potential condition of the climate station. Doug Calvert (Hoskin Integrated System Manager), the individual who built the original station, was consulted.. Doug Calvert theorized that the entire station would likely need to be replaced as it had been sitting for nearly a decade in harsh winter conditions without maintenance and all the sensors could be degraded. On July 13th,2022, Ausenco's environmental technician conducted a visual inspection of the climate station to determine if it would be possible to salvage any components to save on the cost of replacement.

2.1 Results

The climate station is in degraded condition. The HOBO logger external box was found detached from the climate station stand. The box door was partially ajar, exposing all electrical components within the protective box to weathering. Water has penetrated the logger box, impacting the logger, the satellite communication chip, and all connecting wiring leaving visible corrosion on all electronic components. The rain gauge is in good visual condition, but external wires linking the rain gauge to the weather station are severed. The solar panel is detached from the station and connecting wires are severed beyond repair. The solar radiation sensor cable is frayed and beyond repair. Battery cables are severed beyond repair and the battery is not in working condition. The temperature sensor cables are severed and beyond repair. The humidity or the barometric pressure sensor is destroyed; identification of which is difficult based on the remaining pieces. The climate station tripod guy wiring is no longer attached to surrounding anchor points and the station is standing askew. A set of representative climate station photos can be found in **Appendix A**.

2.2 Discussion and Recommendations

Based on the visual inspection of the climate station, the station will require new parts including cables to each sensor, relative humidity and barometric pressure sensors, logger, sat-com link chip, battery, solar panel, guy wires and anchors, and a logger external box. The rain gauge appears to be in good physical condition, as does the tripod climate station stand. Ausenco proposes two options going forward with respect to getting the station operational:

Option 1: Purchase and replace only the sensors and cables that were visually noted as degraded. Option 1 would include replacing components in **Table 2-1** which is an estimated total of $7,400.

Table 2-1 Estimated Repair Costs for Visually Degraded Climate Station Components

Item	Unit Price
Hobo Energy Logger Pro Data Logger	$519.00
Solar Stream Iridium Telemetry Kit	$1795.00
Hoffman NEMA 4 enclosure 1	$1395.00
Guy Wire Kit	$100.00
Solar Panel Kit, 30 Watt	$350.00
Battery Enclosure System and Battery	$775.00
Wind Monitor and Conduit Sensor Cable Protection	$1892.00
Temp/RH Sensor and Conduit Sensor Cable Protection	$351.00
Barometric Pressure Sensor	$222.00
Estimated Total	$7400.00

Option 2: Replace all electronic components (sensor and wiring components) of weather station during next field visit. Power up station and begin collecting data.

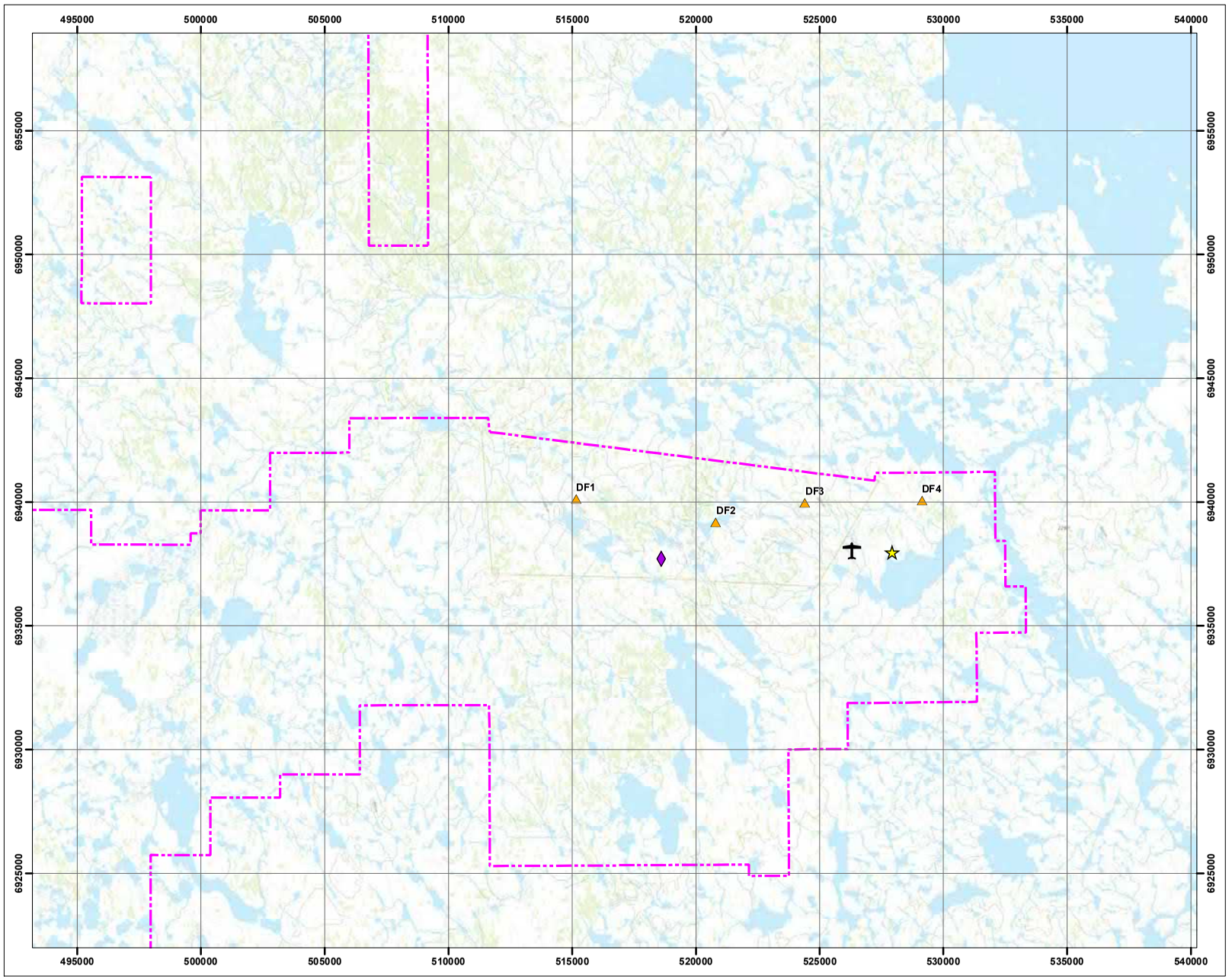
Given the remote location of the Site, difficulty gaining access and short field season, Option 2 would be the most practical as it would be more likely for the climate station to be operational during the next field visit. See **Appendix B** for a quote from Hoskins Scientific to build a new weather station totalling **$17,518.00**.

3.0 Atmospheric Contaminants Monitoring

The focus of the air quality monitoring program in 2022 was to continue the dustfall collection program initiated in 2010 through (seasonally) to 2012. Dustfall is a method used to describe air particles that settle under the influence of gravity and atmospheric conditions. Chemical analysis of dustfall particulates can help to identify atmospheric contaminants and their ecological impact within a described area.

3.1 Methods

During the 2022 program, the four previously installed dustfall stations were re-established. Dustfall canisters were installed within the erected dustfall stations and replaced every 30 days, sealed, and sent to ALS Environmental (ALS) for laboratory analyses. One sample per station was collected during the 2022 program. However, station DF1 was knocked over during the sampling period thus impacting results. The sampling coordinates are provided in **Table 3-1** and the locations shown on **Figure 3-1**.



Angilak Environmental Baseline Monitoring Program
Nunvaut

Dust Fall Stations

Legend

- Nutaaq Camp
- Airstrip
- Climate Station
- Dustfall Station
- Site Boundary

Notes

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Kilometres

NAD 1983 UTM Zone 14N

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Table 3-1 Atmospheric Contaminants Monitoring Stations at the Angilak Uranium Project

Monitoring Component	Station ID	UTM Coordinates (NAD 1983 Zone 14N)	
		Easting	Northing
Dustfall Station	DF1	515159	6940119
	DF2	520809	6939187
	DF3	524411	6939969
	DF4	529124	6940061

3.2 Results

In total, a single set of samples were deployed, retrieved, and sent for total particulates and metals analysis during the 2022 program. **Appendix F** contains the ALS report, which includes details of the standards and procedures used for analyses and laboratory results. **Appendix F** also displays results from previous sampling years (2010 to 2012) summarized in one table.

Air quality samples were analysed for the following parameters:

- **Particulates:** Total dustfall particulates (**Table 3-2**).
- **Total Metals:** Aluminum, antimony, arsenic, barium, beryllium, bismuth, boron, cadmium, calcium, chromium, cobalt, copper, lead, lithium, magnesium, manganese, molybdenum, nickel, potassium, selenium, silver, sodium, strontium, thallium, tin, uranium, vanadium, zinc.

There are currently no dustfall criteria for Nunavut. As such, dustfall samples were compared to total particulate criteria from BC, Ontario, Alberta, and Quebec (**Table 3-3**). It was found that there were no exceedances over a 30-day period for total particulates.

Table 3-2 2022 Results for Total Particulates

Station ID	Total Dustfall Particulates (mg/dm^2/day)
DF1	<0.11*
DF2	0.30
DF3	0.32
DF4	0.31

Notes: The lowest dustfall detection limit ALS can analyse is 0.11 mg/dm2/day. Low concentrations of total particulates at DF1 are likely attributed to the station being knocked over during the sampling period.

Table 3-3 Atmospheric Contaminants Provincial Criteria

Jurisdiction	Receptor Type	Dustfall Criteria
British Columbia	Residential / Parkland	1.75 mg/dm^2/30 day
	Industrial / Other	2.90 mg/dm^2/30 day
Ontario	Any	70 mg/dm^2/30 day
Quebec	Any	50 mg/dm^2/30 day
Alberta	Residential / Recreation	53 mg/dm^2/30 day
	Commercial / Industrial	158 mg/dm^2/30 day

3.3 Discussion and Recommendations

The dustfall samples collected during the 2022 field season yield similar results to that of the previous programs. There are no notable exceedances or differentiations between the monitoring programs. The total particulates found at DF1 (<0.11 mg/dm^2/day) are significantly lower than that of the other stations. The lower concentrations of total particulates are likely due to the station being knocked over during the sampling period.

Site ground conditions consisting of bedrock and permafrost make it difficult to establish permanent dustfall collection stations. The 2022 program followed the method to erect the stations used in monitoring programs before it: Dig down to permafrost and use rocks and overburden to keep the dustfall stations erect. However, during the 2022 program, a dustfall station was found to be knocked over. The cause is undetermined. To overcome this problem Ausenco suggests that the stations be cemented into five-gallon pails with quick setting concrete and placed into the overburden as deep as permafrost would allow. This would add stability to each station and decrease the risk of sample disruption from weather events.

4.0 Surface Water Quality and Hydrology

Instantaneous flow measurements collected monthly (during open-water conditions) combined with regional streamflow and climate data will support mine reclamation engineering design, water balance modelling, water quality modelling, and water management planning during mine construction and operation.

The objective of the surface water quality monitoring program is to add to the existing baseline water quality data set collected in previous programs in areas of active exploration within the vicinity of the Angilak Project. The 2022 program focused on surface water flows in both the projected mine affected areas and upstream areas (hydrology), as well as surface water quality around Site (i.e., background surface water quality and mine-impacted surface water). The established surface water quality stations and hydrology stations are provided in **Table 4-1** and **Table 4-2**, respectively. The locations of all sampling stations are shown in **Table 4-1**.

Table 4-1 Surface Water Quality Monitoring Stations at the Angilak Uranium Project

Monitoring Component	Station ID	UTM Coordinates (NAD 1983 Zone 14N)	
		Easting	Northing
Water Quality Station	WQ1	518875	6938682
	WQ2	520323	6938718
	WQ3	521577	6940092
	WQ4	522399	6942567
	WQ5	515280	6939478
	WQ6	516328	6938229
	WQ7	513281	6941798
	WQ8	517630	6944156
	WQ9	519177	6944419
	WQ10	519896	6943305
	WQ11	516327	6939863
	WQ14	528403	6937762
	WQ15	524222	6945204
	WQ16	532976	6942307
	WQ17	538569	6930410
	WQ19	523358	6939271
	WQ20	532046	6938424
	WQ21	494953	6943644
	WQ23	523250	6938369
	WQ24	526672	6934031

Table 4-2 Flow Monitoring Stations at the Angilak Uranium Project

Monitoring Component	Station ID	UTM Coordinates (NAD 1983 Zone 14N)	
		Easting	Northing
Hydrometric Station	C1	522306	6942036
	N1	531664	6938345
	N2	527433	6935201
	S1	530948	6941716
	W1	524666	6943935
	W2	521589	6942415
	W3	515964	6942589
	W4	514572	6940459

4.1 Methods

The 2022 monitoring program consisted of one water grab sample at each water quality station. Water grab samples were collected from the middle of the stream, when possible, perpendicular to the flow and while facing upstream. Lake and stream samples were collected 0.1 m below surface. Sample bottles arrived clean to analytical standards, negating the need for rinsing. Sample containers and preservatives were obtained from ALS Winnipeg and brought to Baker Lake with Ausenco personnel in July. It is standard practice for dissolved metals and dissolved organic carbon samples to be field filtered with a 0.45 μm filter to remove any particles and to be preserved with nitric acid and hydrochloric acid, respectively while taking the sample in the field. However, ALS did not provide syringes and filters for the sampling program. Upon consultation with ALS, samples were not field filtered, and the preservatives were rinsed out of the dissolved sample containers. Ausenco was assured that this would not impact sample integrity. ALS filtered and preserved samples upon receipt. Water samples were packed with ice, placed in coolers, travelled with field staff to Winnipeg and were delivered to ALS Winnipeg for chemical analyses.

During the July 2022 monitoring event, sampling was completed at all 20 surface water quality stations. Eight staff gauges were installed at each of the hydrometric locations. However, biweekly flows were only conducted at seven of the eight stations as S1 was considered too deep and wide to conduct accurate flow readings. Using the hydrometeric data, stream discharge was calculated for seven of the eight stations. Stream discharge is the amount of water flowing through the stream at a given date and time. This was measured using the velocity-area method. Stream gauging was used to measure each of the hydrology location discharge or the volume of water moving through each channel per unit of time. The height of water in the stream channel, known as a stage or gauge height, was used to determine the discharge in each stream. The flow measurements were used to develop a best-fit rating curve for each station's discharge and stage height relationship. A rating curve was constructed by graphing manually derived discharge measurements (e.g., measured using the method described above) with a corresponding stage height. A best-fit curve was fit to these data points, and the equation of the line corresponds to the relationship between stage and discharge.

On each scheduled hydrology monitoring date, multiple measurements of water depth and velocity were collected across each hydrometric station stream channel, and the channel width was measured to calculate the area of the flow at the station. A flow meter and wading rod were used to collect water velocity

at 60% of the depth when depths were below 0.75 m and at 20% and 80% if stream depth is greater than 0.75 m. Each flow was conducted twice per location, per event. A staff gauge was installed at each station prior to conducting flow measurements to compare stream discharge with level of water. With sufficient discharge measurements, stream gauging via a staff gauge could negate the need for manual flow measurements.

Ausenco was present during the initial set of flow monitoring, after which trained ValOre staff continued to conduct stream monitoring through the season.

4.2 Results

Field in-situ water quality data was collected at each of the stations visited. A summary of field measurements including temperature, pH, specific conductivity, dissolved oxygen, oxidation-reduction potential (ORP), and turbidity readings are presented in **Table 4-3**. Field forms for each station are provided in **Appendix C**.

Table 4-3 Observed In-Situ Parameter Measurements from July 15 to July 16, 2022

Station	Date (dd/mm/yy)	Parameter					
		Temp. (°C)	pH (unitless)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)
WQ1	16/07/22	14.7	7.97	50.0	9.86	77.7	0.76
WQ2	16/07/22	15.5	7.84	54.4	9.75	77.3	0.37
WQ3	16/07/22	16.8	7.72	44.0	9.26	74.7	0.51
WQ4	15/07/22	18.9	6.87	41.4	8.84	151.7	1.38
WQ5	16/07/22	16.0	7.92	65.9	9.44	82.3	0
WQ6	16/07/22	15.5	7.87	48.9	9.48	80.1	0
WQ7	15/07/22	17.0	7.80	63.1	9.56	129.9	0
WQ8	15/07/22	20.0	8.25	70.0	9.62	125.9	0
WQ9	15/07/22	19.8	7.69	52.0	8.77	135.7	0.17
WQ10	15/07/22	19.4	7.72	45.0	9.01	142.5	0
WQ11	16/07/22	16.0	8.03	48.1	9.44	79.0	1.31
WQ14	16/07/22	13.9	7.25	38.9	9.88	59.2	0
WQ15	15/07/22	20.4	7.58	35.7	9.02	144.7	1.21
WQ16	16/07/22	15.8	7.70	26.1	9.72	89.2	0.07
WQ17	16/07/22	15.3	7.56	26.0	9.61	95.5	0
WQ19	16/07/22	16.3	7.70	42.2	9.46	72.0	0.04
WQ20	16/07/22	17.3	7.41	32.3	9.95	60.0	0
WQ21	16/07/22	14.3	7.83	57.0	9.93	79.1	2.87
WQ23	16/07/22	12.3	7.73	69.0	9.79	77.3	1.00
WQ24	16/07/22	12.1	7.63	79.8	10.14	77.4	1.32

Laboratory analytical results for surface water samples are summarized in **Appendix G**. Results were compared to Canadian Council of Ministers of the Environment Water Quality Guidelines for the Protection of Freshwater Aquatic Life (CCME). Analytical laboratory reports are provided in **Appendix F**.

A summary of all stations with concentrations exceeding CCME guidelines during the July 2022 sampling event is presented in **Table 4-4**.

Table 4-4 Summary of CCME Guideline Exceedances by Surface Water Monitoring Stations, July 2022

Sample Location	Parameters exceeding CCME-FAL guidelines	CCME-FAL Guidelines
WQ15	Iron (0.638mg/L)	Iron: 0.3 mg/l Aluminum: 100 µg/l Copper: 2 µg/l
WQ21	Iron (0.311mg/L)	
WQ23	Aluminum (107µg/L), Iron (0.614mg/L)	
WQ24	Copper (5.12 µg/L), Iron (0.683mg/L)	

A summary of surface water quantity and hydrometric monitoring tasks, as well as raw data for each station visited in July 2022 is provided in **Table 4-5**. Field forms for each station are provided in **Appendix C**. Raw and refined flow measurements are provided in **Appendix D**. Flow measurements were recorded biweekly at 7 stations during the 2022 field year (**Table 4-5**).

Table 4-5 Flow Measurements Completed from July to September 2022

Hydrology Event	Site ID	Date (dd/mm/yy)	Discharge (m^3/s)	SG Reading (m)	Comments
First Event	C1	14/07/2022	0.0884	0.631	
	N1	14/07/2022	4.8175	0.550	
	N2	15/07/2022	2.2061	0.472	
	W1	14/07/2022	2.8686	0.250	
	W2	15/07/2022	2.5525	0.600	
	W3	15/07/2022	0.7518	0.682	
	W4	15/07/2022	0.2014	0.660	
Second Event	C1	28/07/2022	No Flow	0.532	No flow readings conducted.
	N1	28/07/2022	2.3858	0.430	
	N2	28/07/2022	1.1901	0.400	
	W1	28/07/2022	1.5333	0.178	
	W2	28/07/2022	0.5597	Roughly 0.480	SG not legible from photo and is erroneous on field sheet.
	W3	28/07/2022	0.3441	0.622	
	W4	28/07/2022	0.0610	0.602	
Third Event	C1	11/08/2022	0.0801	0.481	
	N1	11/08/2022	2.5210	0.374	SG not legible from photo and is erroneous on field sheet. Approximate reading is from photo.
	N2	11/08/2022	0.8599	0.358	
	W1	11/08/2022	0.9511	0.144	
	W2	11/08/2022	0.3875	0.464	
	W3	11/08/2022	0.0662	0.595	
	W4	11/08/2022	0.4052	0.560	SG not legible from photo and is erroneous on field sheet. Approximate reading is from photo. 10/20 flow measurements were recorded as 0 where spots before and after displaying high velocities; this suggests an inadequate flow spot was chosen, little to no flow, or an instrument/user error.

Hydrology Event	Site ID	Date (dd/mm/yy)	Discharge (m^3/s)	SG Reading (m)	Comments
Fourth Event	C1	25/08/2022	*(0.78 to 1.1)	0.450	Flow is erroneous. Total of 6/20 readings between two traverses with no distances recorded.
	N1	25/08/2022	*(0.49 to 2.63)	0.284	Flow is erroneous. No distances recorded.
	N2	25/08/2022	*(0.53 to 0.91)	0.306	Flow is erroneous. No distances recorded.
	W1	25/08/2022	*(0.77 to 1.87)	0.112	Flow is erroneous. No distances recorded.
	W2	25/08/2022	*(0.37 to 1.01)	0.401	Flow is erroneous. No distances recorded.
	W3	25/08/2022	*(0.19 to 1.18)	0.544	Flow is erroneous. No distances recorded.
	W4	25/08/2022	n/a	0.495	No flow conducted.
Fifth Event	C1	08/09/2022	n/a	0.448	No flow conducted.
	N1	08/09/2022	0.5075	0.306	
	N2	08/09/2022	1.2687	0.352	
	W1	08/09/2022	n/a	0.128	No flow conducted. SG not legible from photo and is erroneous on field sheet. Approximate reading is from photo.
	W2	08/09/2022	n/a	0.448	No flow conducted.
	W3	08/09/2022	0.1580	0.612	13/21 flow measurements were recorded as 0; this suggests an inadequate flow spot was chosen, little to no flow, or an instrument/user error.
	W4	08/09/2022	n/a	n/a	SG not legible from photo. No flow conducted.

***Note:** Data was corrupted by human error and missing observation. Therefore, a range of possible flows is estimated with significant uncertainty.

4.2.1 Quality Assurance/Quality Control

The ALS laboratory QA/QC measures were reviewed in detail. Per **Appendix E** this included analytical data for two field duplicates. Due to logistical challenges a trip blank and field blank were not collected as per standard practice. As discussed below, there were only minor relative percent difference (RPD) exceedances during the July 2022 program. The sample blank and spike analyses were within the acceptable limits.

Sample hold times (three days) were exceeded for nitrate (as N), nitrate + nitrite (as N), and pH due to logistical challenges with conveyance of the samples to the analytical laboratory given the Site location. The field measurements of pH and laboratory measurements were generally comparable (**Appendix G**), suggesting that the laboratory pH results were not unduly influenced by exceeding the prescribed holding time. However, field measurements of pH are considered more accurate measurements of in-situ conditions as they are collected concurrently with the grab sample.

Samples and duplicates were generally comparable, sample integrity has been maintained, and the data are considered reliable. Full analytical laboratory reports are provided in **Appendix E**.

4.3 Discussion and Recommendations

There were four minor exceedances found within the surface water grab samples (**Table 4-5**). All exceedances are minor and are likely due to naturally occurring metals/metalloids within the area.

The hydrology data displays a general trend of declining flow throughout the open-water season. This seasonal variation of flow is expected; spring thaw and melt results in a temporary greater amount of regional water. As the summer continues, water is expected to exfiltrate into ground aquifers or move down gradient into connecting waterbodies. As winter freezing occurs, water levels and water movement are expected to decrease.

During the fourth hydrology field program (August 25, 2022), distances were not recorded. Distances are needed to determine flow accurately and to understand stream structure. Ausenco hydrologists have used the given discharge measurements along with the known stream width to determine a range of possible flows. However, the extrapolated data collected from the fourth event holds a degree of uncertainty.

Upon Ausenco's departure ValOre staff conducted hydrology flow measurements. It is recommended that future environmental monitoring and data collection programs follow similar structure to that of the July 2022 program. A training manual and training program once per-year will assist in keeping methods consistent between events.

Given the irregular and rocky nature of tundra waterways, some waterways may not be ideal for velocity by area discharge measurements. The irregular, boulder cross sections of smaller waterways can impede metered flow thus skewing results. It is recommended that smaller streams with boulder cross section be surveyed using salt dilution gauging potential. Dilution gauging methods use the addition of a tracer to the stream and discharge is measured by determining the dilution of the tracer. Dilution methods require complete mixing of the tracer and are best suited to steep streams where turbulence aids lateral and vertical mixing. There are several variations on dilution gauging methods (e.g., slug injection or constant rate injection, Rhodamine WT or salt tracers).

A salt slug of known mass is input at the injection location and the electrical conductivity (temperature compensated), ECT, response is measured at a downstream measurement site. A fundamental assumption of the method is that the tracer is fully mixed with the streamflow at the ECT measurement site. Consequently, determining an appropriate mixing reach is key to accurate measurements. A good mixing reach has minimal pools or backwater areas; no braiding; little to no in-stream vegetation and no significant losses or gains of water such as tributaries or groundwater fluxes. A constriction (e.g., boulder cascade, culvert) can aid mixing and provide a suitable mixing reach. Moore (2005) suggests that as a rough guide, the mixing length should be at least 25 stream widths. However, this is highly dependent on the stream characteristics. Validation of mixing should be undertaken by measuring ECT at a minimum of two locations, ideally on opposite sides of the stream. A specific conductivity meter (YSI ProPlus multi-meter) is used to measure ECT at 0.1 µs/cm resolution and a site-specific calibration is conducted before each measurement to determine the calibration factor, CFT. Background ECT is logged for several minutes before the salt is injected to measure the variability of the background conditions and a salt-slug is added to achieve a peak concentration of approximately 25 to 40 µs/cm above background. Experience is required to determine the amount of salt required to achieve the target response, but no more than 1 g of salt per L/s of streamflow should be used.

The salt (dry table salt only) is measured accurately with a scale and dissolved into a graduated bucket of stream water at the injection site. Once fully dissolved, the salt solution is injected at the upstream site and the ECT response is measured at the downstream location at two second intervals. A minimum of two trials, moving the location of the conductivity meter between trials, are conducted at each station.

The formula used to calculate discharge for the salt slug injections is:

$$Q = M / (CFT \times ABC)$$

Where Q is discharge (m^3/s), M is the mass of salt slug injection and ABC is the area under the ECT curve above background.

Ausenco recommends that each waterway should be further assessed throughout the project operating season to determine the flow method that would produce the highest accuracy. A tracer method such as salt dilution gauging can be used in response to seasonal water fluctuations (low water late in season). Each hydrology station can be assessed prior to conducting a flow measurement; should water levels not allow for an accurate velocity by area measurement, a salt flow may be feasible.

5.0 Wildlife and Wildlife Habitat

Wildlife incidental observations were collected through submission of wildlife sightings provided by onsite staff. These observations were compiled to produce a species list for the study area. The following information was logged with each observation:

- Species
- Age/sex
- Number
- Location
- Human activity at time of observation
- Wildlife behaviour at time of observation
- Changes in wildlife behaviour associated with human activities
- Weather
- Comments.

Between March 24, 2022 and September 13, 2022, ValOre staff and contractors made 170 incidental wildlife sightings of 20 different species on and around site, as summarized in **Table 5-1**.

Table 5-1 Incidental Wildlife Sightings from 2022

Species	Number of Reported Sightings (March 24, 2022 to September 13, 2022)
Arctic Hare (*Lepus arcticus*)	18
Ptarmigan (*Lagopu spp.*)	9
Arctic Fox (*Vulpes lagopus*)	22
Muskox (*Ovibos moschatus*)	8
Wolf (*Canis lupis*)	2
Sandhill Crane (*Grus canadensis*)	2
Red Fox (*Vulpes vulpes*)	2
Snowy Owl (*Nyctea scandiaca*)	3
Falcon (*Falco spp.*)	2
Snow Goose (*Anser caerulescens*)	3
Canadian Goose (*Branta canadensis*)	10
Loon (*Mergus spp.*)	1
Swan (*Cygnus*)	2
Wolverine (*Gulo gulo*)	3
Hawk (*Accipiter spp.*)	1
Moose (*Alces alces*)	3
Caribou (*Rangifer tarandus*)	64
Grizzly Bear (*Ursus arctos horribilis*)	7
Bald Eagle (*Haliaeetun leucocephalus*)	5
Golden Eagle (*Aquila chrysaetos*)	3

In addition to wildlife observation recording, Ausenco has developed a caribou monitoring plan (CMP) **(Appendix H**). A CMP was initially developed for the project in 2012 by Ausenco, however, an updated monitoring plan was needed to meet current permit requirements and expand the monitoring area to account for new drilling locations. The purpose of the CMP remains the same as it previously was; to capture data in a standardized manner relevant to potential future environmental baseline study requirements while remaining within a scale and scope consistent with ValOre's proposed exploration program. The CMP can be found in **Appendix H**.

6.0 Closure

During the 2022 Northern Canada field season, ValOre commissioned Ausenco to restart baseline monitoring and assessment, to provide data to support future permitting, assessment, and design for proposed uranium mining at the Angilak site in Nunavut.

This work consisted of a climate station evaluation, surface water flow and quality assessment, and dustfall measurement and assessment. This work was completed while training ValOre and local Indigenous staff, and detailed analysis and future recommendations are included within this report. Ausenco anticipates this information will form the basis of the comprehensive baseline and assessment program required to support the permitting and approval of larger exploration and mining programs in Nunavut and is proud to be able to assist ValOre with this effort.

We sincerely appreciate the opportunity to have assisted you with this project and if there are any questions, please do not hesitate to contact the undersigned by phone at 250.949.0678

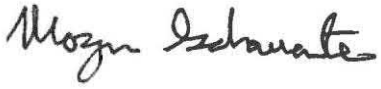
Report prepared by:
Ausenco Sustainability Inc.

Alex Therriault, B.Sc., BIT
Environmental Scientist

Report reviewed by:
Ausenco Sustainability Inc.

Laura Pacholski, M.Sc., P.Chem.
Mining Permitting Lead

Report reviewed by:
Ausenco Sustainability Inc.



Morgan Schauerte, B.Sc.
National Director Mining Sector Lead

Appendix A

Photo Log

Photo 1 Nutaaq Camp overview.

Photo 2 Nutaaq Camp overview.

Photo 3 Rain gauge (left) alongside the climate station (right).

Photo 4 Rain gauge close up.

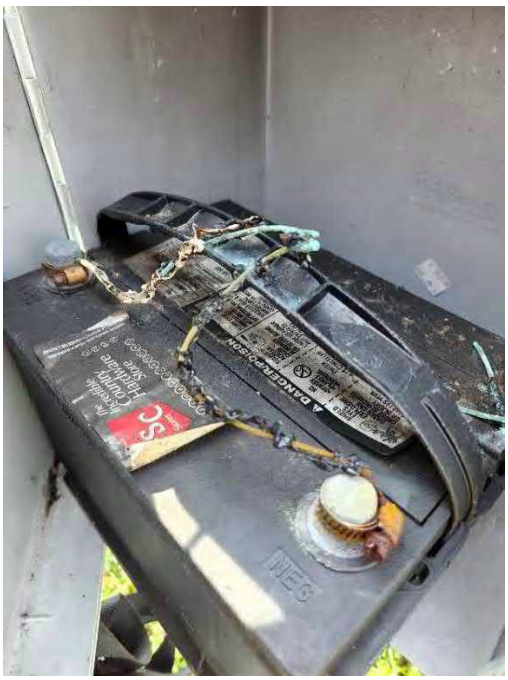


Photo 5 Climate station battery.

Photo 6 Climate station solar panel – wiring has been severed from station. Upon inspection the panel was not cracked but has been weathered and exposed to harsh climate for a prolonged period of time.

Photo 7 Inside logger box. HOBO ONSET logger (black) shows significant corrosion damage as does the satellite communication chip (green).

Photo 8 HOBO logger corrosion from being exposed to elements over prolonged period of time.

Photo 9 All logger sensor cables have been severed and destroyed over time.

Photo 10 Dustfall installation process. Dug down to permafrost and laid a rock foundation. Station was then erected and as dirt / rock mound was laid for support.

Photo 11 Erected dustfall station. Should the monitoring program continue, it is recommended that the stations be cemented in a 5-gallon pail and the pail be buried to permafrost.

Photo 12 Dustfall station 4.

Photo 13 Dustfall station 3.

Photo 14 Dustfall station 2.

Photo 15 Dustfall station 1.

Photo 16 Established hydrology station N1.

Photo 17 Established hydrology station S1.

Photo 18 Established hydrology station W1.

Photo 19 Established hydrology station N2.

Photo 20 Established hydrology station W2.

Photo 21 Established hydrology station W3.

Photo 22 Established hydrology station W4.

Photo 23 No flow collected at proposed hydrology station S1 due to wide waterway and deep water. This station will not be re-visited unless water levels drop significantly.

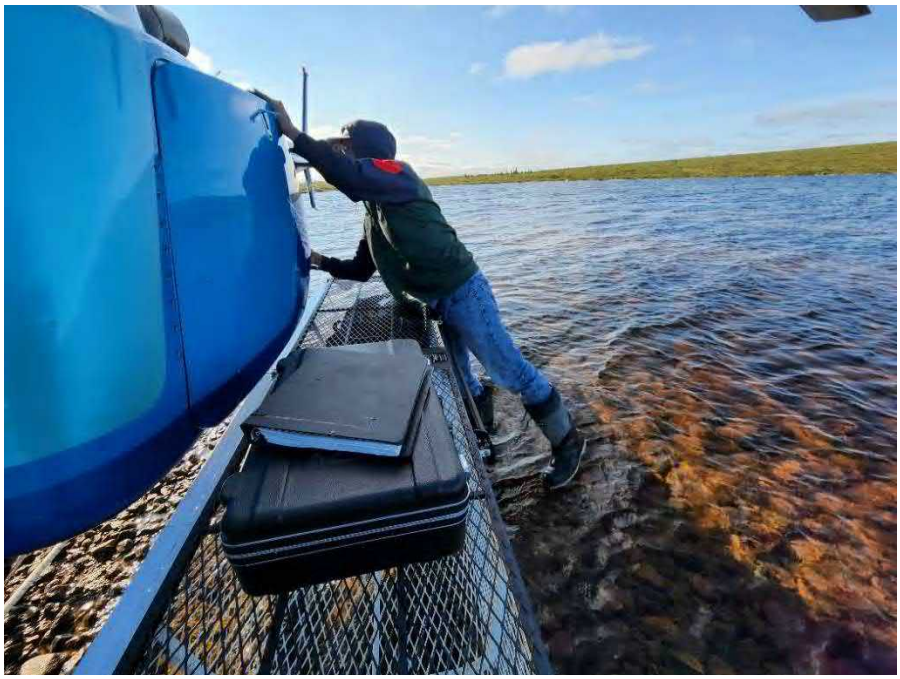


Photo 24 Water sampling training.

Photo 25 Angilak camp drone photo.

Photo 26 Angilak camp drone photo.

Photo 27 Angilak camp drone photo.

Appendix B

Climate Station Quote

HOSKIN SCIENTIFIC LIMITED


ENVIRONMENTAL Monitoring


SYSTEMS Integration


TELEMETRY Solutions

Quote : 261881

Contact : Alex Therriault

Date : 4/6/2022

Bill to : Hemmera Envirochem Inc.
Gahcho Kué Project
2237 2nd Ave
Ste 230
Gahcho Kué Project
Whitehorse, YT Y1A 0K7
Attn: Alex Therriault

Ship to : Hemmera Envirochem Inc.
Gahcho Kué Project
2237 2nd Ave
Ste 230
Gahcho Kué Project
Whitehorse, YT Y1A 0K7
Attn: Alex Therriault

Here is the quote you requested.

#	Item	Description	Qty	Unit Price	Extended
		Iridium Satellite Weather Station			
	SP10088 EE99-SS-IRD	SolarStream Iridium Telemetry Kit	1	$1,795.00	$1,795.00
	SP10018 EE99-H22-E14	Hoffman NEMA 4 enclosure 1 >High Arctic Solar Regulator >Wedimuller Terminals for Power and I/O >Cable glands for Sensors >High Capacity Desiccant Pack and Corrosion Inhibitors	1	$1,395.00	$1,395.00
	SP10137 EE99-EF-MM	Fiberglass Enclosure Mast Mounting Kit	1	$89.00	$89.00
	100353 E348-H22-001	HOBO Energy Logger Pro Data Logger. Indoor logger rated from -20° to 50°C with alkaline batteries & -40° to 70°C with lithium batteries.512Kb memory. 1 second to 18hr logging interval, user-specified. Logger comes with with 6 smart sensor inputs and up to 6 analogue inputs (analogue inputs require Analogue Input Modules). Can record 15 channels. Uses 8 AA batteries. (8 AA alkaline batteries included) Requires case for outdoor applications	1	$519.00	$519.00
	100316 E348-A-H22-MOUNT-1	H22 Mounting Feet Kit	1	$21.00	$21.00
	100359 E348-HWSB-LI	AA Lithium Battery 4 Pack	2	$37.00	$74.00
	SP10115 EE99-Solar-30	SOLAR PANEL KIT 30 WATT	1	$350.00	$350.00

continued on next page ...

Unless otherwise stated :

1. All items quoted in Canadian dollars.
2. Quote valid for 30 days.
3. Taxes extra if applicable.
4. F.O.B. Burnaby, British Columbia.
5. Terms net 30 days O.A.C.

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#	Item	Description	Qty	Unit Price	Extended
	SP10037 EE99-EP-12V-63	Battery Enclosure System for 63 Ahr battery including battery · 12VDC 63 Ahr. AGM Solar Battery · Hoffman Nema 4 Enclosure 14"x12"x8" · Mounting Kit for Up to 2" Diameter Mast · Gortex Enclosure Vent · 3 Meter 14 Gauge Wiring Harness (battery to RTU Enclosure) · 3/8" Liquid Tight Conduit 3 Meters with Liquid Light Conduit Connector	1	$775.00	$775.00
	100373 E348-M-TPA-KIT	Complete 3m Tripod kit (includes 3m tripod, grounding kit, guy wire kit, 1/2" stake kit & mast level)	1	$491.00	$491.00
	100364 E348-M-GWA	Guy Wire Kit (recommended for windy locations or when mounting rain gauge on tripod; requires 1/2" stake kit for use with the 2m tripod or 3m mast)	1	$100.00	$100.00
	100314 E348-ADAPT-SER-USB	CABLE-USB232 with CABLE-PC-3.5	1	$91.00	$91.00
		SubTotal			**$5,700.00**
		Weather Station Sensors			
	108380 E444-200-05103	Wind Monitor	1	$1,784.00	$1,784.00
	SP10045 EE99-RMY-MAST-2"	Young wind monitor 05103 mast mounting kit for 1.5"-2" masts	1	$140.00	$140.00
	100451 E348-S-WCE-M003	Adapter for interfacing RM Young 05103 Wind Monitor (up to 100m/s) & 05103-45 Alpine Wind Monitor (for extreme cold environments up to 100m/s) with H21, H22, and U30 products	1	$229.00	$229.00
	SP10109 EE99-LTC-3M	3M Liquid tight Conduit Sensor Cable Protection	1	$108.00	$108.00
		SubTotal			**$2,261.00**
	100441 E348-S-THB-M002	Temp/RH Sensor (12-bit) w/ 2m Cable	1	$262.00	$262.00
	101675 ED62-RAD 06	6 Plate Solar Radiation Shield - Double Louvre	1	$265.00	$265.00
	SP10207 EE99-LTC-2M	2M Liquid tight Conduit Sensor Cable Protection	1	$89.00	$89.00
		SubTotal			**$616.00**
	100412 E348-S-BPA-CM10	Barometric Pressure Sensor, rate for -40 C to +70 C, must be used inside logger case, w/10cm Cable	1	$222.00	$222.00
		SubTotal			**$222.00**
	101218 E653-7004000090	Pluvio² L without heating device Collection area 200 cm²/1500 mm	1	$7,524.00	$7,524.00
	SP10005 EE99-PLU-MOUNT	10 m liquid tight conduit kit for Pluvio without heater Protects cable between datalogger enclosure and Pluvio	1	$200.00	$200.00
		SubTotal			**$7,724.00**

continued on next page ...

Unless otherwise stated :

1. All items quoted in Canadian dollars.
2. Quote valid for 30 days.
3. Taxes extra if applicable.
4. F.O.B. Burnaby, British Columbia.
5. Terms net 30 days O.A.C.

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#	Item	Description	Qty	Unit Price	Extended
		System Integration			
	INTEGRATION INTEGRATION	System Integration Charge >System Design >Datalogger and Iridium Telemetry and Programming >Documentation Package >Field Assembly and Commissioning Guide >Packing and Handlling Fee	1	$995.00	$995.00
	FREIGHT FREIGHT	FREIGHT FOB Edmonton PrePaid and Charge	1	$0.00	$0.00
		SubTotal			**$995.00**
		Running SubTotal			**$17,518.00**

Please contact me if I can be of further assistance.

Douglas Calvert, Systems Integration Manager
dcalvert@hoskin.ca

Unless otherwise stated :

1. All items quoted in Canadian dollars.
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5. Terms net 30 days O.A.C.

www.hoskin.ca | Unit #100 18138-105 Ave. | Edmonton, AB | T5S 2T4 | t. 800.663.3023 | f. 604.872.0281

STANDARD TERMS AND CONDITIONS OF SALE

1. By issuing a purchase order based on an Hoskin quote, the buyer agrees to the terms and conditions herein. Prices provided by Hoskin for a quote are applicable for 30 days from the date of the quote. Hoskin may modify the price of any quote if actual or expected delivery of an order is more than 6 months from the date of the quote.

2. Shipment terms are FOB Hoskin unless otherwise specified in the quote.

3. Order acceptance is subject to credit status.

4. Payment terms are Net 30 days from the date of invoicing. A monthly service charge of one and a half percent (1.5%) will be applied against any unpaid balance after the applicable 30 days.

5. Changes to an order already accepted by Hoskin may result in additional fees. In the event of a request for change to a pending order, sufficient details will have to be provided in a timely fashion. Hoskin will then advise the client of the costs arising of such changes as soon as possible. The client will then have 30 days to accept such additional costs failing which the request for change will be non-applicable.

6. Cancellation of an order will be subject to charges by Hoskin and/or its suppliers.

7. All goods received from Hoskin must be examined immediately upon arrival and any claims arising from damage in transport or to the non-conformity of the goods delivered in relation to the order must be communicated to Hoskin within 5 days of the date of delivery.

8. Warranties and Returns

   a. Warranties vary with each manufacturer represented by Hoskin. Standard manufacturers' warranties apply unless otherwise specified in the quote provided by Hoskin.

   b. Hoskin will be responsible for returning defective goods to the manufacturer or having such goods repaired within the warranty period. If there is a claim for defective goods within 30 days of delivery, all transportation cost will be incurred by Hoskin. In the event that a claim for defective goods is made more than 30 days after delivery, Hoskin shall incur only the transportation cost for the return to the client of the repaired or replaced good.

   c. A Return Authorization issued by Hoskin's customer service must accompany all goods returned, including those returned under warranty. Hoskin is under no obligations to accept goods returned without prior return authorization.

   d. Return/restocking approval will only be considered for current standard products and within 30 days of delivery.

   e. Returns will be subject to a minimum 20% restocking fee on the sale price of the returned goods. All transportation costs incurred by Hoskin and associated with a return will be charged to the buyer.

   f. The buyer is responsible to ensure that the returned goods are adequately packaged and insured against damage and loss arising from transportation.

   g. Hoskin is under no obligation to honor the warranty on an item that has been damaged, altered, or tampered without the permission of Hoskin. Hoskin is under no obligation to replace or restock an item that has been damaged, altered, or tampered with.

   h. Hoskin accepts no liability for consequential or indirect loss or damage arising from the use of the goods sold.

9. Conditions set forth in a Purchaser's order are binding only insofar as they do not conflict with the above Hoskin' conditions of sales. In the event of a conflict, the Hoskin' conditions of sale shall prevail.

10. Estimated delivery dates are on a best effort basis only on the part of Hoskin.

MODALITÉS ET CONDITIONS DE VENTE

1. Par la production d'un bon de commande selon un devis soumis par Hoskin, l'acheteur accepte les présentes modalités et conditions. Les prix établis par Hoskin dans un devis sont valides pendant les trente (30) jours suivant la date du devis. Hoskin se réserve le droit de modifier les prix indiqués au devis si la date du devis est à plus de six (6) mois de la date réelle ou prévue de livraison.

2. Hoskin assure la livraison franco bord sauf indication contraire dans le devis.

3. L'acceptation des commandes est conditionnelle à l'approbation du crédit.

4. Les modalités de paiement sont de trente (30) jours nets à partir de la date de facturation. Des frais administratifs équivalant à un et demi pour cent (1,5 %) du solde en souffrance seront ajoutés après cette période.

5. Des frais additionnels peuvent s'appliquer en cas de modification d'une commande déjà acceptée par Hoskin. En cas de modification d'une commande en attente, les informations requises doivent être fournies dans les plus brefs délais, après quoi Hoskin informera rapidement l'acheteur des nouveaux coûts. Celui-ci dispose ensuite de trente (30) jours pour accepter ces coûts, faute de quoi la modification sera annulée.

6. Des frais peuvent être facturés par Hoskin ou par ses fournisseurs en cas d'annulation d'une commande.

7. Les biens envoyés par Hoskin doivent être inspectés dès la réception, et toute réclamation liée aux dommages subis pendant le transport ou à la non-conformité des biens par rapport à la commande doit être soumise à Hoskin dans les cinq (5) jours suivant la livraison.

8. Garanties et retours

   a. Les garanties varient selon chaque fabricant représenté par Hoskin. Les garanties standards s'appliquent, sauf indication contraire dans le devis soumis par Hoskin.

   b. Hoskin s'occupe du retour des biens défectueux au fabricant ou de la réparation de ces biens pour la durée de la garantie. Hoskin couvre également les frais de transport pour toute réclamation liée à des biens défectueux soumise dans les trente (30) jours suivant la livraison. Si une telle réclamation est soumise au-delà de cette période, Hoskin couvre seulement la partie des frais de transport qui sont liés au retour à l'acheteur des biens réparés ou de remplacement.

   c. Tous les biens retournés, qu'ils soient couverts par une garantie ou non, doivent être accompagnés de l'autorisation de retour délivrée par le service à la clientèle de Hoskin, sans quoi Hoskin peut refuser les biens retournés.

   d. Hoskin peut accepter de reprendre ou de restocker des biens seulement si ceux-ci sont des produits standards actuels et s'ils sont retournés dans les trente (30) jours suivant la livraison.

   e. Les retours font l'objet de frais de restockage équivalant à au moins 20 % du prix de vente des biens retournés. Les frais de transport engagés par Hoskin pour un retour sont facturés à l'acheteur.

   f. L'acheteur doit veiller à ce que les biens retournés soient emballés adéquatement et couverts par une assurance contre les dommages ou la perte liés au transport.

   g. Si un article a subi des dommages, a été modifié ou a été altéré sans la permission d'Hoskin, Hoskin n'est aucunement tenu d'en honorer la garantie ni de remplacer ou restocker l'article en question.

   h. Hoskin refuse toute responsabilité concernant les pertes directes ou indirectes ou les dommages résultant de l'utilisation des biens vendus.

9. Les conditions énoncées par l'acheteur dans sa commande n'ont force exécutoire que si elles ne sont pas en conflit avec les présentes modalités et conditions de vente de Hoskin. En cas de conflit, ces dernières ont préséance.

10. Les dates de livraison estimées sont fondées seulement sur le meilleur effort possible de la part de Hoskin.