

**Project Title:** Kivalliq Hydro-Fibre Link Baseline Research

778-558-0377, [dquinn@nukik.ca](mailto:dquinn@nukik.ca)

Robin McKillop, SLR Consulting, 55 University Ave, Suite 501, Toronto, Ontario M5J 2H7  
416-947-0907, [robin.mckillop@slrconsulting.com](mailto:robin.mckillop@slrconsulting.com)

[illegible]

1



Inlet, Rankin Inlet, and Whale Cove) to the Manitoba electricity and fibre-optic grid. The NRI license we held this year supported Inuit Qaujimagatuqangit (IQ), socio-economic, and geotechnical baseline data collection in the Kivalliq communities and region and identify and/or confirm components of the physical, natural, and human environment that should be included in a future impact assessment.

**IQ objectives:**

- To understand land and resource use patterns relative to the Project area.
- To collect IQ to support a future Project proposal to the Nunavut Impact Review Board.

**Geotechnical objectives:**

- Collect preliminary geotechnical data from sites representative of the diverse surface conditions along prioritized sections of the proposed KHFL corridor.
- Installation of thermistors (permafrost monitors) for the collection of ground temperatures along the corridor.
- The resulting data and its analysis are intended to inform the siting, design, and costing of tower foundations and help determine ideal data collection protocols for subsequent geotechnical investigations.

**Annual activities:** A description of activities and methods carried out during the current reporting period. This section should answer the questions: What? Where? When? Who? How? Include dates team members conducted research at remote field sites or collected data (including interviews) in communities; append a map with locations and/or coordinates of remote field sites, if applicable.

**IQ activities and methods:**

Land and Resource Use Workshops were conducted to gather additional information from community members about IQ and their relationships with the land and natural resources. A total of 13 workshops were scheduled as summarized in Table 1.

Table 1 – Land and Resource Use Workshops

Location	Date/Time YYYY-MM-DD/00:00	Team Members Present	# of Participants
Rankin Inlet, Community Hall	2024-04-22/15:00	Jonathan Pameolik – Nukik Corporation  Amy Brown, InterGroup Consultants  Kayleigh Speirs – InterGroup Consultants	7
Rankin Inlet, Community Hall	2024-04-22/18:00	Jonathan Pameolik – Nukik Corporation  Amy Brown, InterGroup Consultants	Cancelled due to unforeseen community circumstances.

Location	Date/Time YYYY-MM-DD/00:00	Team Members Present	# of Participants
		Kayleigh Speirs – InterGroup Consultants	
Rankin Inlet, Community Hall	2024-04-23/09:30	Jonathan Pameolik – Nukik Corporation Amy Brown, InterGroup Consultants Kayleigh Speirs – InterGroup Consultants Bernadette Dean – Interpreter	8
Whale Cove, Community Hall	2024-05-06/13:00	Christina Blouw – Nukik Corporation Mitch Braun – InterGroup Consultants Kurtis Ulrich – InterGroup Consultants Bernadette Dean – Interpreter Donna Adams – Community Researcher	5
Whale Cove, Community Hall	2024-05-06/18:00	Christina Blouw – Nukik Corporation Mitch Braun – InterGroup Consultants Kurtis Ulrich – InterGroup Consultants Bernadette Dean – Interpreter Donna Adams – Community Researcher	Cancelled due to low turnout.
Arviat, Katimavik Suites	2024-05-28/09:30	Jonathan Pameolik – Nukik Corporation	4

Location	Date/Time YYYY-MM-DD/00:00	Team Members Present	# of Participants
Conference Room		<p>Joni Gibbons – Nukik Corporation</p> <p>Amy Brown – InterGroup Consultants</p> <p>Mitch Braun – InterGroup Consultants</p> <p>Bernadette Dean – Interpreter</p> <p>Jimmy Pingushat – Community Researcher</p>	
Arviat, Katimavik Suites Conference Room	2024-05-28/13:30	<p>Jonathan Pameolik – Nukik Corporation</p> <p>Joni Gibbons – Nukik Corporation</p> <p>Amy Brown – InterGroup Consultants</p> <p>Mitch Braun – InterGroup Consultants</p> <p>Bernadette Dean – Interpreter</p> <p>Jimmy Pingushat – Community Researcher</p>	12
Arviat, Katimavik Suites Conference Room	2024-05-28/18:00	<p>Jonathan Pameolik – Nukik Corporation</p> <p>Joni Gibbons – Nukik Corporation</p> <p>Amy Brown – InterGroup Consultants</p> <p>Mitch Braun – InterGroup Consultants</p> <p>Bernadette Dean – Interpreter</p> <p>Jimmy Pingushat – Community Researcher</p>	23

Location	Date/Time YYYY-MM-DD/00:00	Team Members Present	# of Participants
Baker Lake, Nunamiut Lodge Conference Room	2024-05-30/13:30	Christina Blouw – Nukik Corporation Joni Gibbons – Nukik Corporation Kristin Kent – InterGroup Consultants Amy Brown – InterGroup Consultants Bernadette Dean – Interpreter Lisa Attungala – Community Researcher	10
Baker Lake, Nunamiut Lodge Conference Room	2024-05-30/18:00	Christina Blouw – Nukik Corporation Joni Gibbons – Nukik Corporation Kristin Kent – InterGroup Consultants Amy Brown – InterGroup Consultants Bernadette Dean – Interpreter Lisa Attungala – Community Researcher	13
Chesterfield Inlet, Community Hall	2024-11-05/09:30	Christina Blouw – Nukik Corporation Joni Gibbons – Nukik Corporation Kurtis Ulrich – InterGroup Consultants Gerald Beta – InterGroup Consultants Gloria Thompson - Interpreter	Cancelled due to inclement weather.  Tentatively rescheduled for January 2025.

Location	Date/Time YYYY-MM-DD/00:00	Team Members Present	# of Participants
Chesterfield Inlet, Community Hall	2024-11-05/13:30	Christina Blouw – Nukik Corporation Joni Gibbons – Nukik Corporation Kurtis Ulrich – InterGroup Consultants Gerald Beta – InterGroup Consultants Gloria Thompson - Interpreter	Cancelled due to inclement weather.  Tentatively rescheduled for January 2025.
Chesterfield Inlet, Community Hall	2024-11-05/18:30	Christina Blouw – Nukik Corporation Joni Gibbons – Nukik Corporation Kurtis Ulrich – InterGroup Consultants Gerald Beta – InterGroup Consultants Gloria Thompson - Interpreter	Cancelled due to inclement weather.  Tentatively rescheduled for January 2025.

Each workshop began with a presentation that outlined the Project, explained the purpose of the mapping exercise, and reviewed the consent protocol. This introductory session set the stage for participants to feel comfortable and informed about the Project and the mapping process. Following this introduction, large-scale maps were laid out on tables, and the research team invited participants to gather around.

During the mapping exercise, participants identified significant locations by sharing their knowledge of important areas, such as traditional hunting and fishing grounds, gathering sites, cultural landmarks, and travel routes. Researchers marked these locations on the map based on the input provided, ensuring that participants' insights were accurately represented. While researchers posed questions from the questionnaire to guide the discussion, the conversations were primarily led by the participants, allowing them to emphasize topics and locations of particular importance.

## Geotechnical activities and methods:

### Phase 1: Geophysical surveys and site characterization

Phase 1 included a ground geophysical survey using a combination of Electrical Resistivity Tomography (ERT) and Induced Polarization (IP) geophysics. This type of survey enables an interpretation of depth to bedrock and major stratigraphic contacts and helps differentiate ice-rich permafrost and any thawed ground (taliks). Additionally, during Phase 1, surface conditions (e.g., sediment composition, active layer thickness) of each site were documented to help calibrate interpretations of the geophysics and inform subsequent geotechnical studies.

Work was performed by Palmer with support from local community members from Baker Lake and Rankin Inlet, from July 28 to September 7, 2024. The field work extended along the portion of the KHFL corridor, linking Arviat, Rankin Inlet, Whale Cove, and Baker Lake NU.

### Phase 2: Investigative drilling

Phase 2 involved investigative drilling at a specific subset of sites using a lightweight drilling system. Due to the remoteness of the Project area, the use of standard geotechnical drilling equipment is logistically challenging and costly, and the larger equipment results in significant ground disturbance. This pilot program aimed to determine ideal protocols and limitations of a lightweight drilling system to observe subsurface material compositions, depth to bedrock, active layer thickness, and permafrost ice content. In addition, ground temperature sensors (thermistors) were installed at select locations to monitor seasonal and year-over-year changes in ground (permafrost) temperature. Drilling results will also be used to calibrate geophysical data interpretations.

Work was performed with support from local community members from Rankin Inlet, from September 12 to October 4, 2024. The field work was limited to the Rankin Inlet area.

**Results and Achievements:** Findings and results to date of the above activities, highlighting any key research achievements (see guide below for formatting tips regarding tables and figures).

### IQ results:

- Land and resource use is an integral part of people's lives.
- Designing and constructing the Project will need to reflect areas and species of importance.

### Geotechnical results:

A total of 110 sites were proposed for geophysical surveys and site characterization in spring 2024. After a comprehensive, field-based heritage screening in early summer, 107 of the 110 sites were cleared for investigation. By the end of Phase 1, data had been recorded from 107 site characterizations, 107 ERT/IP surveys, 827 frost probe measurements, 146 soil pits, and 42 opportunistic observation points. Preliminary interpretations indicated bedrock as shallow as 2 meters in some areas.

After the Phase 1 field program, 20 sites near Rankin Inlet were selected from the pre-cleared 107 sites for a pilot study using lightweight drilling techniques to investigate subsurface conditions and calibrate the ERT/IP surveys in Phase 2. Using a lightweight Shock-Auger drilling system, the crew drilled at eight sites, retrieving samples for logging and subsurface material analysis, reaching a maximum depth of 5.35 meters. Thermistors were installed at two locations near Rankin Inlet.



Preliminary finding from the geotechnical surveys suggests stable subsurface conditions suitable for infrastructure development in the Rankin Inlet area. Key findings include identifying suitable soil layers for foundation support and manageable groundwater depths. Currently the data collected is being analyzed and a report is expected in February 2025.

**Challenges/Obstacles:** In this section, please comment on any challenges/obstacles (if any) that you experienced during this project year. If there were any actions to mitigate or resolve these challenges, please list them here. Were any concerns raised regarding the conduct of research team members or the impacts of the project?

IQ:

Obstacles/challenges:

Implementation logistics were the greatest challenge in planning and implementing the workshops. Events were rescheduled due to weather conditions, cancellation of flights, and availability of accommodation in the communities. Only one community remains outstanding (Chesterfield Inlet), with plans to conduct workshops in January of 2025. If those events are cancelled, they will be rescheduled until completed.

Project impacts:

Workshops identified concerns about:

- Impacts to wildlife, and in particular potential effects to caribou or important caribou habitat;
- Presence of workers and whether things like hunting or fishing would be permitted;
- Impacts to cultural sites or areas of cultural importance, including heritage rivers;
- Visual and auditory impacts

Geotechnical:

- Challenge: Unseasonable weather conditions in September limited fieldwork days during Phase 2.
- Mitigation: 2024 field work required clearing of sites prior to field work commencing. The 2025 field work will occur earlier in the season to allow for more flexible program now that all sites have been cleared for further investigation.
- Concerns: No significant concerns were raised regarding the conduct of the team.

**Expected Project Completion Date:** Provide month and year of expected completion date of the project.

April 1, 2026

**Project website (if applicable):** If your project has a presence on the internet, including a website and/or social media page, please provide the link and/or account handle.

[www.nukik.ca](http://www.nukik.ca)

**Citations:** Please append a complete reference list if citations are used anywhere in the document.

## **POLICY RELEVANCE**

Does this research support policy development or decision-making in Nunavut? If yes, please describe.

N/A

## **RESEARCH OUTCOMES: BENEFITS**

**Community engagement:** Briefly list and describe any community consultation, engagement, collaboration and outreach activities that you have undertaken for the project; describe the role(s) that community members and/or specific organizations have played in research co-design and activities.

Broadened working relationships beyond leadership and relevant organizations to adopt a community-by-community approach, whereby workshop sessions with the community leadership, relevant community-based organizations, and community members were conducted in a holistic multi stakeholder approach.

Engagement sessions were held in Nunavut with the hamlet councils, Hunter and Trapper Organizations, and community members in Rankin Inlet, Chesterfield Inlet, Whale Cove, Baker Lake and Arviat.

**Youth engagement:** Briefly list and describe any outreach, school or classroom activities that you have undertaken for the project; describe the role(s) that youth have played in your research activities.

N/A

### **Training and Employment:**

How many Nunavummiut received training from team members? Please describe training and/or compensation provided.

IQ: Four community researchers were hired and trained to support the coordination and implementation of workshops. This included three days of training in Winnipeg, remote support over the duration of their contract, and in-community opportunities to participate and support the workshop process (learning by observing and doing).

Geotechnical: At the time of this writing, a training program is being created for thermistor data collection for local community members. This is anticipated to be completed in December 2024 for data collection over the winter months in 2025. The exact number of Kivallirmiut receiving training and/or compensations has not been finalized at this time.

How many team members received training from Nunavummiut? Please describe training received and/or what knowledge sharing and/or skills exchange took place.

The IQ team received informal culture exchange via interactions with community members, and from workshop interpreter.

How many Nunavummiut received employment? Please describe employment type and length, role(s) and responsibilities, and compensation provided.

IQ:

- Four community researchers were hired on a part-time basis to support the coordination and implementation of workshops in communities.
  - One community researcher resigned as workshops could not be implemented in Chesterfield Inlet due to a lack of accommodation.
  - One community researcher was designated to support two communities, but only supported implementation in one due to other commitments.
- Community researchers worked on a part-time basis, with time spent supporting Nukik on engagement activities in communities, identifying potential participants for workshops in the community, and implementing the workshops themselves.
- An interpreter was hired to support the workshop implementation.

- A translator from Rankin Inlet was hired to include translate workshop materials to Inuktitut

Geotechnical:

During the two phases of field work, employment opportunities were as follows:

- Wildlife monitoring was the largest source of employment during the field program. A total of four monitors were hired between July and October 2024. Compensation was \$400/days for every day in the field.
- Logistics support
  - Two individuals were compensated at \$400/day on an as needed basis in August 2024. Support included shipping and receiving of equipment within Rankin Inlet while the crew was conducting field work.

How many Nunavummiut received honoraria as research participants? Please describe method of participation (interview, observation, sample, survey, etc.), including compensation provided.

- Workshops were advertised on local radio, Facebook, and posters throughout the community. Community researchers also used word of mouth to identify and invite people who may have relevant information to share, including outreach to SAOs, the Kivalliq liaison officers, and HTOs.
- Participants were invited to ask questions about the project and share information about the areas important for land and resource use, cultural reasons, or other purposes in areas proximal to their home communities. Large maps were available, and team members documented the information shared in the discussion.
- Workshops were on a come-and-go basis, and people could stay as long as they chose. An informed consent process was followed with everyone in attendance to ensure that they knew how their information was being used. Project representatives were available to answer questions, and Project brochures were available.
- A combination of prize draws and honoraria were offered at each workshop, with the approach to distribution reflective of each community's preference, number of participants, and meaningful participation. For example, at some workshops people heard there were prizes, and the number of participants inflated – though not actively participating in sharing information. When this occurred a prize draw was held and several gift cards awarded. Where people spent time and shared their thoughts and information, honoraria were offered to either Arctic Co-op or the Northern Store depending on the location.

Please explain how the project directly benefited Nunavut organizations and/or businesses (e.g., through contract services, local purchases, equipment donations, etc.)

IQ: Rental fees, catering, and gift cards for prizes/honoraria were all sourced locally.

Geotechnical: Local businesses provided support services, which included, but was not limited to, logistics support, mechanical services and equipment, and storage. Compensation varied and was based on the services provided. These businesses were:

- Sarliaq Holdings, Rankin Inlet
- Sakku Properties, Rankin Inlet
- Peter's Expediting, Baker Lake
- Katimavik Suites, Rankin Inlet
- Nunamiut Lodge, Baker Lake

- Baker Lake Lodge, Baker Lake
- Baker Lake Contracting & Supplies, Baker Lake

**OPTIONAL: Nunavut Team Members, hires, and/or trainees (excluding research participants e.g., interviewees)**

*The NRI is creating an inventory of Nunavummiut who are skilled and/or interested in research. The information provided below will not be shared publicly but will support long-term capacity sharing by connecting local and visiting researchers with research talent in each community.*

N/A

**Academic Mobility**

If you are affiliated with an academic institution, please answer the following question: For which Level of Project(s) will the data be used? (Check all that may apply)

N/A

**BUDGET**

Please complete the table below to detail your projected and actual research expenditures during the reporting period.

Not applicable

Category	Planned/Approved Expenditure	Actual Expenditure
Travel and Accommodation		
Equipment, Materials and Supplies		
Salaries/Wages for Nunavut residents		
Salaries/Wages for non-Nunavut resident researchers		
Professional Fees and services in Nunavut		
Professional Fees and Services outside of Nunavut		
<b>TOTAL EXPENDITURES</b>		

List the total \$ amount of funding from each funding source for your full research program, including in-kind support

N/A

**RESEARCH OUTPUTS / REPORTING TOOLS**

What research outputs were generated? Please list below and append copies of each. Specify which outputs (if any) may be made public on the NRI research licensing database.

Kivalliq Hydro-Fibre Link, Annual Summary Report, June 2024 - Public

Have peer-reviewed manuscripts been published as a result of your project? If Yes, complete the following table:

Full citation	Publicly accessible/ free to access (Y/N)	Link (if available) and DOI (if available)
No		

If No, do you intend to submit a manuscript (or manuscripts) for peer reviewed publication?

No

Were non-peer reviewed materials produced to either communicate or synthesize results to the public? Examples of these materials include (but are not limited to): websites, reports, brochures, podcasts, webinars, presentations, non-peer reviewed publications, etc.

If Yes, complete the following table:

Title	Description of	Link (if available)	DOI (if available)
Materials			
Annual Summary Report, June 2024	Summary of all KHFL activities accomplished in 2024	<a href="https://www.nukik.ca/wp-content/uploads/2024/08/15128-NukikAnnualSummaryReport_2023-24_web-Reduced.pdf">https://www.nukik.ca/wp-content/uploads/2024/08/15128-NukikAnnualSummaryReport_2023-24_web-Reduced.pdf</a>	
Nukik Corporation website, KHFL detail and resources, <a href="http://www.Nukik.ca">www. Nukik.ca</a>			

Did your project develop a communications plan? Please describe communications/reporting tools used, and list the target audience for each and/or who requested which.

N/A

How were Nunavummiut credited and/or acknowledged in all project outputs, such as co-authorship, participant biographies, article acknowledgements, etc.

Yes, section 3 of the Annual Summary Report 2024 describes contributions of all Kivallirmiut that supported project work over the year. A similar report will be produced for 2025 and will similarly acknowledge Kivallirmiut people and businesses that supported project work.

DATA AND INTELLECTUAL PROPERTY

Did you enter into a research agreement, data-sharing agreement and/or intellectual property rights agreement with a community and/or designated Inuit organization (DIO)? If yes, please explain.

Do intellectual property rights apply to your research? If yes, please explain.

Yes

Who owns the data? Has the raw data been shared with the appropriate community and/or DIO? If yes, how? How is data security and storage handled by community-based co-owners?

Nukik Corporation owns all data collected and produced as part of the KHFL baseline investigations. Nukik has data sharing agreements with all hamlets and Hunter and Trapper Organizations. We have not had a request for data from any of our Nunavut based data sharing partners in 2024.

Where is the data stored and will the data be destroyed within a set timeframe?

**IQ Data:**

Data is being managed consistent with the informed consent form provided to all participants. The consent form states the following with regards to confidentiality and storage of the data:

- Confidentiality: The answers you provide will be kept confidential to InterGroup and will only be shared publicly in summary form. A list of people who participated in the studies may be included in public reports.
- Data management: Interview notes, geospatial data, and digital recordings (if applicable) of the interviews will be kept on an encrypted server in the InterGroup offices and transferred to the KIA when the project is done. Information will be shared only among team members. Data sharing agreements have been signed with communities and HTOs in Arviat, Whale Cove, Rankin Inlet, Baker Lake, and Chesterfield Inlet, along with several First Nations in northern Manitoba to support ongoing information sharing related to the Project. Only data that meets the confidentiality requirements of this consent process will be shared through those agreements.

**Geotechnical data:**

The collected data is stored in a secure, cloud-based database while being analyzed. The data will be retained for ten years and then securely destroyed to ensure privacy and compliance with Engineers and Geoscientists of BC (EGBC) requirements.

Is the data trackable and/or available in a public data repository? If yes, please provide the appropriate information and/or link to ensure the findability and accessibility of the data.

N/A

Please append a copy of your data management plan.

**CLIMATE CHANGE**

Is your research about climate change (causes, impacts, mitigation, adaptation, etc.)? If yes, explain.

No

**PHOTOGRAPHS**

If possible, please provide high-resolution photos of licensed research activities that NRI may use in communication materials, organizational reporting, and other promotional purposes. The photographer and all recognizable people in each photo must sign the attached Photo and Video Release form. Please also complete the table below for each photo provided and submit to NRI along with all required NRI photo release forms. The photographer/owner will be credited in all uses of the photograph(s).

File Name	Location	Description	Subjects	Photographer/Owner	Date
-----------	----------	-------------	----------	--------------------	------

N/A

Would you like your project to be considered for a research profile and promotion by the NRI?

Yes

**FORMATTING TIPS**

Main text:

Please supply report in a standard manuscript format (**Microsoft Word format is required**).

**Tables:**

Any number of tables can appear in one file (as long as they are clearly marked). Tables prepared using simple table formats as provided in word processing programs such as WordPerfect are preferred. Each table should be numbered according to its appearance in the text (e.g., Table 1, Table 2) and each should have a brief descriptive heading.

**Figures:**

Each figure or graphic element should be submitted as a separate file. Black & white and colour graphics are both acceptable. We can accommodate most standard graphic file formats, however, please indicate in which format the graphic was prepared.

**References:**

Please use the APA or MLA Citation Style while referencing throughout the report.

**Size:**

The size of the electronic document must not exceed 4MB (if larger than 4MB, please send attachments separately and number the emails).