

Non-Technical Description of the Project Proposal Environmental Studies for the Iqaluit Hydroelectric Project

Qulliq Energy Corporation (QEC) is currently evaluating the potential to provide hydroelectric power to the City of Iqaluit. A study carried out by Knight Piésold Ltd. in late 2005 identified 5 watercourses within 50-100 km of Iqaluit where the development of hydroelectric power may be feasible. Additional environmental information is required at the four locations before decisions can be made with respect to advancing any of the projects to a detailed feasibility study. Research activities include stream flow measurements, fisheries and aquatic surveys, and raptor surveys. Five candidate watercourses will be studied:

- Armshow River
- Jaynes Inlet
- Cantley Bay
- Anna Maria Port
- McKeand River

Stream flow will be measured on the five candidate watercourses, plus the Sylvia Grinnell River, by installing flow gauges consisting of a pressure transducer placed at the bottom of the watercourse connected to a datalogger at the shoreline. The Sylvia Grinnell River is not being considered for hydroelectric power, however, stream flow measurements were collected on this river up until 1999 and it is the only watercourse in the region where historic flow data has been collected. Flow data on this river will be important for comparison to the water systems under study. Physical stream flow measurements (the Swoffer Method), as well as possibly the salt dilution method, will be used to calibrate the flow gauges. The salt dilution method involves depositing a known amount of salt into the watercourse upstream of the measurement point the conductivity of the water over time is measured until all the salt has passed the measurement point. This method is approved by both Water Survey of Canada (WSC) and Fisheries and Oceans Canada (i.e. not harmful to fish as salt concentration is so low, and would qualify for drinking water standards). This method can be used at all flow rates, and is generally relied on at higher flow rates when the creek cannot be waded for Swoffer measurements.

Fish and fish habitat studies will also be carried out on the five candidate water systems. The fisheries studies will be important to establish the presence of fish at various reaches within each watercourse, and whether or not the watercourse is used by migratory (sea-run) arctic char. This will include angling, netting, electrofishing and minnow trapping.

Cursory raptor surveys will also be carried out within the areas expected to be flooded by a storage reservoir if a hydro project was developed. A number of the sites are comprised of deeply incised valleys with steep walls that are potentially suitable nesting habitat for raptors.

Land Use and Inuit Qaujimajatuqangit (IQ) studies will also be carried out, to determine the relative importance and use of the candidate hydroelectric sites and to collect IQ information on fish and wildlife ecology and movements. A separate research application will be submitted for this component of the work.

All field staff will be accommodated in Iqaluit and will access the field sites by helicopter each day. No camps will be established during the study. The 2006 field program will be carried out starting in June 2006 and will be completed by October 15, 2006. More detailed studies will be carried out in 2007 on any projects that are advanced, and thus an application is being submitted for a multi-year research permit.

Based on the findings of these environmental studies, QEC may conduct detailed feasibility studies on one or two of the most promising projects. The feasibility studies could start as early as October 2006 and be completed by the spring of 2007. If favourable results are obtained

during the feasibility study and QEC decides to develop the projects, it is expected that an environmental assessment would be carried out over the 2007-2008 period.