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ᐊᐳᕐᑎᓈᕐᒥ ᐱᒋᔭᐅᔪᖅ ᑕᒪᓅᑖᖓ ᐱᒋᔭᐅᔪᖅ ᑲᔫᓯᓚᐅ ᐅᔭᕋᒃᑕᓕᐊᓂᑦ ᐃᓄᐃᑦ ᓄᓇᖁᑎᖓᓂ 70ᓂᒃ ᐅᖓᓯᒍᓂᖅᑲᓄᓂ ᖃᒪᓂ'ᑐᐊᑉ Hᐋᓚᑦ ᑲᓇᖕᓇᖓᓂ. ᓯᑕᒪᑦ ᑰᑎᑦᑲᖅᑎᐊᕙᕐᒧᑦ (ᑕᑦᕝᓂ ᑲᓇᖕᓇᖓᓂ ᐊᐳᕐᑎᓈᑐᐊᑉ ᑕᓯᐊᓂ, ᕿᑭᖅᑕᒥ, ᑲᓇᖕᓇᕐᓚᐋᒥᒃ ᖃᐅᔨᓴᑦᑕᐅᓚᐅᕐᒥ) ᓇᒧᓇᐃᕐᑕᐅᓚᐅᕐᒧᑦ ᐊᐳᕐᑎᓈᑐᒥ ᐱᒋᖓᓂ ᕿᓂᓕᕆᑕ ᑕᐃᒪᖓᑦ 1995ᒥᑦ. ᔭᓄᐊᕆ 2002ᒥᑦ ᓯᑕᒪᑦ ᓇᓂᔭᐅᓯᒪᓕᕐᒧᑦ 3ᒥᓕᐊᓐ ᐅᑦᑯᒪᐃᓐᓂᖅᑲᕐᒧᓂᒃ ᐋᕐᒧᑎᑦ ᑯᑦᑎᑦ, 2.2ᒥᓕᐊᓐ ᐅᑯᒪᐃᓐᓂᐊᓖᑦ ᐅᔭᕋᒃᑕᕐᓗᐅᓇᔭᕐᒧᑦ. ᑕᓐᓇ ᕿᓂᕐᓂᖅ ᐃᓕᑰᖅ 2003ᒥ ᐃᑰᑦᑕᕐᓂᑯᑦ 2002ᒥᑦ ᐃᓚᓕᐅᑎᓂᐊᕐᒪᑕ. ᐅᔭᕋᒃᑕᕙᕐᒧᑦ ᐅᑭᐅᓂᒃ ᑯᓕᓂᒃ ᐃᓱᖃ ᐃᓪᓚᓐᓇᕐᑑᖓᓗᐊᖅ ᐅᑭᐅᑦ ᑯᓕᑦ ᐅᖓᑖᓄᑦ ᐅᔭᕋᒃᑕᕐᓂᖅ ᑲᔪᓯᓂᐊᕐᓂᖓ ᐃᓕᓪᓚᕐᑐᓗᓗᐊᖅ ᕿᓂᕐᕕᐅᓂᐊᕐᒧᑦ ᖃᐅᔨᓴᕐᒪᐅᕙᓂᒃᐸᑕ.

ᐅᔭᕋᒃᑕᓂᖅ ᐱᕙᓪᓕᐊᕆᐊᕙᕐᒧᖅ ᒪᔨ 2005ᒥ ᑕᒪᑯᐊᓗ ᐱᓕᕆᕖᖓᑦ ᐅᔭᖃᓄᑦ ᐱᒋᐊᕙᕐᒧᑎᒃ ᑎᓯᐱᕆ 2005ᒥ. ᓄᓇᐅᑉ ᖃᖓᓂ ᐅᔭᕋᒃᑕᕐᓂᖅ 87ᐳᓴᓐ ᐊᖏᓂᖃᕙᕐᒧᓂ, ᓄᓇᐅᑉ ᐋᑕᓂ ᐅᔭᕋᒃᑕᕐᓂᖅ (ᒥᑭᓂᕐᓴᐅᓗᓂ 13ᐳᓴᖕᒥᒃ) ᐅᔭᕋᒃᑕᕐᕕᐅᔪᑦ ᐋᑕᓂ ᕿᑭᖅᑕᒥ ᐊᒻᒪᓗ ᑲᓈᓕᕐᐋᒥ ᐅᔭᕋᒃᑖᓗᓴᑦ. ᐃᒪᑲᕐᑕᐃᑦᓕᑎᒃᓴᑦ ᓴᓇᔭᐅᔫᒪᕐᒧᑦ ᑕᓯᐅᑉ ᓇᑎᐊᓂ ᐅᔭᕋᒃᑕᕐᕕᖕᓴᓂᒃ ᐃᓱᒃᑕᐃᑦᓕᑎᒃᓴᖅ ᓴᓇᔭᐅᓂᐊᕐᒧᖅ ᐅᔭᕋᒃᑖᓗᐅᓐᓂᑯᑦ ᐊᑐᖏᓐᓂᑯᖏᓐᓂᑦ. ᐃᒪᖅ ᐃᒪᐃᔭᕐᓂᑯ ᐅᔭᕋᒃᑕᕐᕕᐅᑉ ᐃᓗᐊᓂᑦ ᐃᒪᑦᑐᑦ ᓴᓗᒪᖕᓴᐃᕕᑰᓗᓂ ᐊᒻᒪᓗ ᓴᓗᖃᕐᓴᕐᓯᒪᔪᖅ ᐃᒪᖅ ᐅᑎᕐᑎᑕᐅᔫᖅ. ᐅᔭᕋᖕᓂᒃ ᓯᑯᐊᑎᕈᑎᖃᑦᑐᓂ, ᐳᒃᑕᓪᓚᑦᑯᑕᐅᓯᕕᖃᑦᑐᓂ, ᐃᖁᒨᒧᑦ ᐊᑦᑎᕈᑦ, ᐃᖕᒥᒎᒥᒃ ᓴᓗᖃᕐᓴᐅᑦ ᐊᒻᒪᓗ ᑯᑦᑎᒧᑦ ᓴᓗᒪᕐᓴᐅᑦ. ᐅᑦᑯᒪᐃᓐᓂᖅᑲᕐᒥᒃ 1,715,500 ᐅᑭᐅᓄᑦᑕᖅ ᐅᔭᕋᒃᑕᕙᕐᒧᑦ 246,000 ᐅᑦᑯᒪᐃᓐᓂᐊᓖᑯᑦ ᑯᑦᑎᒥᒃ ᐱᓂᓱᖕᓂᐊᓗᑎᒃ. ᐱᓕᕆᕕᒃ ᐊᐅᓪᓚᖏᓐᓇᕐᓂᐊᕐᒧᖅ ᓯᑯᒥᑐᑲᖏᓐᖓᓂ ᐋᕿᒃᓱᖕᖓᓴᑲᓕᖅᑲᕐᑎᓐᓇᒍ. ᐃᓱᖃ 142 ᐱᓕᕆᐊᓴᑦ ᓄᐃᓂᐊᕐᒧᑦ, 60ᓂᒃ ᓄᓇᓕᖕᒥᑦ ᐱᓕᕆᔫᓴᕐᑕᖃᕙᕐᒧᓂ.

ᐊᖏᓕᓗᐊᑦᑯᓇᒍ ᐅᓗᕆᐊᓇᕐᓂᖓ ᐅᔭᖃᓄᑦ ᐃᑦᑐᑎᕕᓂᐅᑉ ᐸᓇᐅᓖᕐᓂᖓ ᐊᑐᖏᓐᓂᑯᑦ ᐅᔭᖃᑦ ᓯᑯᐊᑎᕐᑕᐅᓂᑯᑦ ᑲᑎᕐᓯᕐᑕᐅᓇᔭᕐᒧᑦ ᑕᓯᐅᑉ ᓇᑎᐊᓄᑦ ᐅᕝᕙᓗᓂᑦ ᓄᓇᒥ ᖃᐃᕐᒥ ᐃᓗᒃᑐᕐᑎᓯᒪᔫᒥ ᐅᓕᒃᑐᕐᑕᐅᓗᑎᒃ. ᐊᓯᖏ ᐊᑐᓇᐊᖃᕙᕐᒧᑦ ᓯᖃᐅᒥᑦ ᐅᓯᖏᔭᐃᕖᒃ ᖃᒪᓂ'ᑐᐊᕐᒥ, ᐅᑭᐅᑯᓗ ᐊᑦᑯᑕᐅᓇᔭᕐᒧᖅ ᖃᒪᓂ'ᑐᐊᕐᒥᑦ ᐅᔭᕋᒃᑕᓕᐊᑦ ᓄᓇᓕᖏᔫᓄᑦ, ᐊᒻᒪᓗ ᒥᑦᕕᖃᑦᑐᓂ ᐊᒻᒪᓗ ᐊᑦᑯᑎᖃᑦᑐᓂ ᐅᔭᕋᒃᑕᓕᐊᑦ ᓄᓇᖏᔭᖓᓂ.

ᐸᕐᓇᖕᓂᕐᒧᑦ ᐊᕙᑎᓕᕆᓂᕐᒥᒃ ᐃᓯᒪᓕᐅᕐᑕᐅᓯᒪᓗᐊᕐᒧᑦ, ᑲᔫᓯᓚᐅ ᐅᔭᕋᒃᑕᓕᐊᑦ ᖃᐅᔨᓴᕐᓗᐊᕐᓯᒪᓕᕆᓪᓗᑕ ᐊᕙᑎᓕᕆᓂᕐᒥᒃ ᓄᓇᖑᐊᓕᐅᕐᓂᒃᑯᑦ, ᓄᓇᒥᒃ ᖃᐅᔨᓴᕐᓂᖅ, ᓯᓚᐅᑉ ᖃᓄᐃᖕᓂᖓᓂᒃ, ᓄᓇᐅᑉ ᖃᓄᐃᖕᓂᖓᓂᒃ, ᓄᓇᒥ ᐱᕈᕐᑐᓂᒃ, ᐊᒻᒪᓗ ᓂᕐᔪᑎᓂᒃ. ᐊᕙᑎᓕᕆᓂᕐᒥᒃ ᑐᓴᖓᕕᖅᑲᕐᑐᑎᒃ ᖃᐅᔨᓴᕐᓂᖅ, ᓄᓇᓕᖕᓂ ᑐᓴᐅᒪᑎᑦᑎᐅᑉᑐᑎᒃ (ᐅᑯᐃᑎᒥᒎᓗ ᐃᓄᐃᑦ ᐱᑦᑯᓯᖏᑎᒎᑦ ᖃᐅᔨᒪᔭᐅᔪᓂᒃ) ᐊᒻᒪᓗ ᓯᕗᓂᖓᓂ ᐱᓕᕆᐊᖑᓕᐅᕐᒧᑦ ᑲᑎᑦᑐᑎᑦ ᐱᓕᕆᐊᖑᓂᐊᕐᒧᑦᑐ ᒪᓕᒃᓴᖓᓂᒃ. ᐊᕙᑎᓕᕆᓂᕐᒥᒃ ᖃᐅᔨᓴᕐᓂᖅ ᐊᒻᒪᓗ ᓄᓇᓕᖕᓂ ᑲᑎᒪᑦᑕᕐᓂᖅ ᐱᓕᕆᐊᖑᐃᓐᓇᕐᒧᖅ.

ᑲᔫᓯᓚᐅ ᐅᔭᕋᒃᑕᓕᐊᖏ ᒪᓕᒃᓴᖅᑲᕐᓂᐊᕐᒧᑦ ᐊᕙᑎᓕᕆᓂᐅᑉ ᒪᓕᒐᖅᑲᕐᓂᐊᕆᐅᑦᑐᑎᒃ ᒪᑯᓂᖓ, ᑐᑦᑯᓇᕐᑐᓂᒃ ᐱᓕᕆᐊᖅᑲᕐᓂᖅ, ᐳᕝᕙᑦᑐᖕᓂᒃ ᖃᐅᔨᓴᕐᓂᖅ, ᐊᓂᐊᕐᑕᐃᓕᓂᕐᒥᒃ, ᐊᕙᑎᓕᕆᓂᕐᒥᒃ ᒪᓕᒐᓴᑦ, ᐊᒻᒪᓗ ᑯᕕᔪᖅᑲᕐᑦ ᒪᓕᒐᓂᒃ, ᐊᒻᒪᓗ ᑐᐊᕕᖅᓇᕐᑐᓕᕆᓂᕐᒥᒃ. ᐅᔭᕋᒃᑕᓕᐊᖅᓂᖅ ᐱᐊᓂᓕᕐᑉᐸᑦ ᐅᔭᕋᒃᑕᓕᐊᑦ ᐊᐅᓚᖏ ᐱᑕᖃᕐᑎᐃᕐᑕᐅᓂᐊᕐᒧᑦ, ᓄᓇᐅᑉ ᐋᑕᓂᑐᑦ ᐅᑎᕐᑎᑕᐅᓗᑎᒃ, ᐊᓯᕙᕐᑕᐅᓗᑎᒃ ᐱᓕᕆᕕᐅᓚᐅᕐᒧᑦ ᐊᒻᒪᓗ ᓯᓂᒃᑕᕐᕕᐅᕙᓚᐅᕐᒧᑦ ᐃᓗᐊᖏ, ᐱᑦᑯᓯᖏᓐᓄᑦ ᐅᑎᕐᑎᑦᑐᑎᑦ ᓄᓇᑦ, ᐊᒻᒪᓗ ᐱᔪᑦᑎᐊᕐᒨᑦᑐᐊᕐᓂᖓ ᓄᓇᐅᑉ ᐱᓕᕆᐊᖑᓗᓂ.

POPULAR SUMMARY

Cumberland Resources Ltd. is proposing the development of the Meadowbank Gold project, located approximately 70 km north of the Hamlet of Baker Lake on Inuit-owned surface lands.

This Project Description Report (PDR) is submitted in accordance with the Nunavut Impact Review Board's (NIRB) requirements for proposed mine developments, as stipulated in Appendix B of NIRB's "Operational Procedures" manual. The objective of this report is to introduce the Meadowbank Gold project to the public and regulatory agencies and initiate the review process. The lead authorizing agency is the Nunavut Impact Review Board (NIRB), whose primary functions are to screen the project proposal to determine whether a review is required, to set the terms and conditions for the project to proceed, and to provide a Screening Decision Report to the Minister.

Cumberland Resources Ltd. has been actively exploring the Meadowbank project since 1995. Engineering, environmental baseline studies and community consultations have paralleled these exploration programs and have been integrated to form the basis of current project designs.

Five significant gold deposits—North Portage, Third Portage, Bay Zone, Goose Island, and the Vault—have been identified on the property. These deposits are defined by 570 diamond drill holes in 84,560 m of drilling. As of January 2002, the project hosted a combined measured and indicated resource of 7.77 million metric tonnes grading 5.79 grams gold per tonne and additional inferred resources of 10.93 million metric tonnes grading 4.44 g/t. Resource estimates will be updated in April 2003 to include the results of a large definition drilling program completed in 2002.

Prefeasibility level engineering and economic studies have established the project as technically and financially sound. Further improvements in the return on investment may be realized by an extended operational life or with improved gold prices. The economic strength of the project increases directly with gold prices above US$300/oz. The economics of the project are sensitive to fuel prices and capital costs, common factors of northern mine operation, and development.

Economic studies, completed in January 2002, produced mining plans incorporating 14.05 million tonnes grading 4.91 g/t in a combination of open pit and underground mine designs. The operational life of the project will be approximately 9 to 10 years, although it is reasonable to expect this will be extended as a result of continued exploration.

A bankable feasibility study on the Meadowbank gold project is underway with expected completion in late 2003. Approximately 250 jobs will be created through mine development.

Regional & Local Geology

The Meadowbank project is located within rocks of the Archean-aged Woodburn Lake Group of the western Churchill Province. The Woodburn Lake Group comprises a deformed sequence of Archean supracrustal rocks unconformably overlain by rocks of the Paleoproterozoic Baker Lake Basin.

The project area is underlain by a sequence of Archean metavolcanic (ultramafic, mafic and intermediate volcanic flows) and metasedimentary rocks. Geological units include volcaniclastic sediments, felsic to intermediate

flows and tuffs, sediments (greywackes) and oxide facies iron formations. The North Portage, Third Portage, the Bay zone, and Goose Island gold deposits are hosted within iron formation rocks. The Vault deposit is hosted within variably altered intermediate volcanic rock.

Project Description

Prefeasibility studies, completed in 2000, emphasized both the remote location and northern climate as the principal engineering considerations for the successful design, construction, and operation of the project.

The project area is typified by long, cold winters lasting from October through May with average temperatures of 5°C to -40°C. Summers are short and cool, with temperatures ranging from -5°C to 25°C.

Similar to the gold and diamond mines currently operating in the NWT, Meadowbank is designed as a "fly-in/fly-out" operation with an airstrip providing the only year-round access to the site. All construction and operating supplies for the project will be transported on ocean freight systems to marshalling and storage facilities constructed at the Hamlet of Baker Lake. A 92 km long winter haulage route will provide seasonal access and re-supply to the project from Baker Lake. Mine facilities will include accommodations for approximately 250 mine personnel, a process plant, power plant, fuel storage, and maintenance facilities. The mine will produce gold in doré bar form, which will be flown to southern sales destinations on a regular basis

It should be noted that although this project description represents the current mine model, the detailed feasibility study could result in changes. In particular, detailed studies could impact the following areas:

- sequencing (scheduling) of the various open pits and underground mining
- water retention dyke alignments
- process options including whole ore leach vs. a flotation concentrate
- mine rock placement options including submerged vs. land-based storage
- blasting with 100% emulsion (with a manufacturing plant) or a split of dry ANFO and some packaged emulsion.

Mine

Commencement of mine construction is planned for March 2005. Production will be split between surface or open pit mining (approximately 87%) and underground mining (approximately 13%).

Surface or open pit mining will occur in three separate areas. The Portage open pit is expected to be the largest, measuring 1,600 m in length, 500 m in width, and 175 m deep. The Goose Island open pit is less than 500 m in diameter and 120 m deep. The Vault open pit, located 5 km north of Portage and Goose Island, is designed to be approximately 500 m long, 300 m wide, and 85 m deep.

Water retention dykes will be constructed at the Portage and Goose Island areas to allow mining of the ore where it occurs beneath shallow lakes. The dykes will be constructed in water, approximately 2 to 6 m in depth, using appropriate rock selected from surface mining activities. A low permeability vertical slurry wall will be constructed in the center of the dykes to minimize seepage from the surrounding lakes into the work area. Residual seepage through the dykes will be collected in a series of collection ditches and sumps and treated if necessary. Construction of the dykes will utilize floating sediment curtains to minimize the release of suspended solids into surrounding lake waters. During mining, water collected from

the base of open pits will be treated as required prior to discharge

Mine rock may be placed in land-based or submerged storage areas. Comprehensive studies to assess mine rock for potential acid rock generation are currently in progress. These studies will determine placement guidelines for mine rock. As mine scheduling permits, some mine rock may be stored in mined-out pit areas or used as cover for the tailings area. Overburden material that is geotechnically and environmentally suitable for use in constructing the airstrip and site facilities will be stockpiled separately until required. Some overburden material may also be used as a low-permeability central core material in constructing the dewatering dykes.

Project milestones are listed below.

Feasibility study	01/2003 to 12/2003
Permitting	01/2003 to 05/2004
Procurement	06/2004 to 06/2006
Pre-stripping	03/2005 to 12/2006
Mining/processing begins	12/2006 to 12/2016
Decommissioning & closure	2017 to 2018

Ore Processing

Exhaustive metallurgical studies are underway to develop the process flowsheet for the Meadowbank project. Two process options are in the final stages of evaluation for feasibility. Both options include standard crushing and grinding, gravity concentration and carbon in pulp (CIP) technology. One process option leaches total mill tonnage, while a second, currently preferred, option considers the leaching of a flotation concentrate only. Both process options include cyanide leaching, cyanide destruction, and refining to doré bars.

Under the currently preferred process option, run-of-mine (ROM) ore will be jaw-crushed and conveyed to ore storage. The ore will be ground in two stages incorporating semi-autogenous grinding (SAG) and ball mill grinding. The SAG and ball mills will discharge the ground product to cyclones for size classification. The ore will be ground to 80% passing 45 µm. Gravity separation of liberated gold particles will be applied within the grinding circuit. A high-grade gravity concentrate suitable for direct smelting on site will be produced.

The milled ore will be treated in a flotation circuit to produce a bulk sulphide concentrate. The concentrate will be reground to 80% passing 25 µm in a vertical grinding tower mill. The reground concentrate will be pre-aerated prior to treatment in a carbon-in-pulp (CIP) cyanidation circuit. The CIP circuit will concurrently dissolve the gold and adsorb it onto activated granular carbon.

The residue from the concentrate CIP circuit will be combined with the flotation tailings and treated in a separate "combined" CIP circuit to ensure maximum gold recovery and provide further retention time for the sulphide concentrate. The combined leach residue slurry will be treated with an air/SO_2 process to detoxify the free cyanide in the tailings stream. The treated tailings will either be disposed of under a minimum cover of water in the Second Portage Lake impoundment area or be used for underground hydraulic backfill.

The loaded carbon from the concentrate CIP circuit will be stripped in a pressure Zadra-type elution circuit. The stripped carbon will be returned to the combined leach CIP circuit where it will be advanced countercurrent to the slurry flow. The loaded carbon from the combined CIP circuit will be transferred to the concentrate CIP circuit for final loading prior to stripping. The gold will be recovered from the strip solution by electrowinning. The gold laden cathodes and the gravity concentrate will be

treated in an on site refinery to produce gold doré bars.

To minimize the potential for acid rock drainage, tailings from the milling process will be stored in a submerged environment within Second Portage Lake.

Site Facilities & Services

The implications of the cold climate will be taken into account in the construction of the buildings, which will be supported on concrete foundations extending to bedrock. The foundations will be built at a suitable elevation to prevent frost damage and will be insulated to maintain the underlying permafrost. Waste heat captured with heat exchangers will be used to heat the entire plant and camp building complex.

On-site infrastructure will include a process plant, power plant, maintenance facilities, tank farm, accommodations facility, water treatment plant, sewage treatment plant, and airstrip. Barge unloading facilities, a laydown area, and tank farm will also be required in Baker Lake for storing and staging materials to be transported on the winter haulage route.

The mine and camp fresh water supply will be pumped from Third Portage Lake. Mine process water will be primarily reclaimed from the tailings pond. Sewage will be collected and pumped to a sewage treatment plant and will meet Nunavut guidelines for wastewater discharge. The sewage effluent will be discharged to the tailings pond.

Site security will be provided by appropriate lighting and fencing, uniformed personnel, closed-circuit television, card access control, and an alarm system.

Closure & Decommissioning

The Meadowbank operation is designed to minimize the area of surface disturbance, stabilize disturbed land surfaces against erosion, and return the land to a post-mining use for traditional pursuits and wildlife habitat. Cumberland's objective is to ensure the environment is not unduly influenced after mining operations cease, and that any materials that could potentially cause degradation to the land and/or waters of the project area are stabilized, removed, and/or mitigated.

A mine decommissioning plan will be developed and outlined in the EIS. This plan will guide all aspects of operation and ensure compliance with all regulations concerning the environment.

Environmental Baseline Studies

In preparation for the environmental assessment (EA) process, Cumberland has conducted extensive studies in the project area on traditional knowledge, geology, climate, terrain and soils, fisheries, hydrology, vegetation, ARD, and wildlife, all of which have been integrated into current project design.

Each valued ecosystem component (VEC) listed below is of ecological importance, and is intimately connected with one or more of the other components. VECs were primarily identified in consultation with regulatory and governmental authorities, as well as discussions with members of the local community.

- caribou & muskoxen
- fish habitat
- fish populations
- air quality
- water quality
- surface water quantity & distribution
- small mammals
- marine mammals
- permafrost
- raptors
- waterfowl
- other birds
- wolf, wolverine, fox & grizzly bear
- vegetation cover

Valued socioeconomic components (VSECs) in the project area, as identified by the scientific and traditional knowledge gathered to date, consist of archaeological sites, traditional use areas, employment/training opportunities, traditional/current lifestyle.

Environmental Description

Laterally extensive deposits of glacial till, a product of the Laurentide ice sheet, cover the central project area. Trenching, diamond drilling, and overburden drill data suggest an average thickness of 2.75 m with local deposits in excess of 10 m.

Locally the land surface is underlain by continuous permafrost, except under large bodies of water that are too deep to freeze entirely. Thermal studies indicate the depth of permafrost to be on the order of 400 to 500 m, based on data collected from thermistors. The depth of the active zone is estimated to be generally between 2 and 4 m, although this will vary based on proximity to lakes, overburden thickness, vegetation, snow cover, climate conditions, and slope direction.

Taliks occur beneath lakes in the region at an estimated depth equal to one-quarter to one-half the width of the lake. Because of low ambient air and ground temperatures, this ratio may be closer to one-quarter.

Information from ongoing soil and terrain characterization will assist in mine planning and design, and provide a base for developing the Ecological Land Classification (ELC) for the study area. Results will be provided in the EIS.

Air Quality

Studies to monitor air quality and noise conditions at the Meadowbank project are scheduled as part of the 2004 air and noise monitoring program for mine construction and operation. Baseline data will be collected from the existing database on air and noise quality in the arctic.

Water Quality

Hydrometric data have been recorded from the on-site meteorological weather station (operational since 1997) as well as through monitoring of lake levels and lake outlet discharges. All of the conventional water quality parameters, metals concentrations, and limnological data indicate that water quality of the study and reference lakes is high, as would be expected given the remote location and absence of anthropogenic activities. In addition, because the study lakes are situated in the uppermost reaches of the Quioch River system, they do not receive input from upstream lakes or streams that might carry suspended and dissolved solids and/or nutrients. Therefore, all inputs are restricted to the immediate vicinity of the lakes within very small watersheds. This helps to explain why the lakes are so oligotrophic, nutrient-poor, and relatively unproductive.

Acid Rock Drainage

A comprehensive program to assess acid rock drainage (ARD) geochemistry is ongoing. To date, static testing has been completed and kinetic tests are underway. A full discussion of the results will be included in the EIS.

Aquatic Resources

Baseline work on the study lakes and regional environment has been carried out for more than six years.

Traditionally, fish has been the secondary food source for Baker Lake residents after caribou meat. Key fish species in the Meadowbank region include lake trout, Arctic char, lake whitefish, and lake cisco. Fishing or "jigging" is a year-round activity that is pursued more

vigorously in spring and early winter. A study for DIAND completed in 1978 found that lake trout accounted for approximately half of the domestic harvest, totalling 65,000 kg from the lakes around and north of Baker Lake. According to the Elders of Baker Lake, the area around the mine was not used for fishing although some fishing did take place several kilometres to the south.

Second and Third Portage lakes, Tehek Lake, and Tern Lake have been the subject of limnological, biophysical, and fisheries studies since 1996. Studies have been conducted in each of these lakes to assess seasonal and inter-annual trends in water and sediment quality, lower trophic level (i.e., phytoplankton, zooplankton, benthos), community structure and abundance, and fisheries.

In addition, regional studies were conducted to examine the physical, chemical, and biological features of several lakes on a broader geographic scale. Proposed field studies for 2003 will address the remaining data gaps; the results will be included in the EIS.

Vegetation

The Meadowbank study area lies at the lower end of the Northern Arctic Ecozone and is characterized by a continuous vegetation cover interspersed with bedrock outcroppings and continuously aggrading surfaces. Vegetative cover is composed of lichens, various moss species, ericaceous shrub and heath species, and a variety of herbs, grasses, and sedges.

In the summers of 1999 and 2002, baseline vegetation studies, which included conducting two aerial surveys and approximately 175 vegetation plots, were carried out to inventory the flora and plant communities in the project area. The aerial survey found few anomalous sites, one riparian area, and several small sandy deposits bearing plant communities typical of esker crest communities. Vegetation plots showed the vegetation at the mine site is typical of upland tundra. No obvious sensitive or endangered plant species or communities at risk were identified.

Wildlife

The caribou are one of the community's primary concerns. The Meadowbank site is considered to be in a low usage area for caribou hunting due to low abundance and distance from Baker Lake. Foxes, wolves, bears, and wolverines are sometimes hunted, as is ptarmigan. No other bird species is hunted with any regularity.

Aerial and ground surveys for wildlife were conducted in the spring of 1999 and summer and fall of 2002 to establish baseline conditions, diversity, relative abundance, and distribution of wildlife species within the local study area and regional study area. Additional information was obtained from on-site wildlife logs and from the Baker Lake Hunters' and Trappers' Organization (HTO) and various Elders.

Wildlife monitoring and habitat mapping programs will continue in 2003. The study area will be visited on several occasions to collect information on wildlife occurrence and habitat, caribou abundance and movement, migratory birds, nesting landbirds and waterbirds, and resident small mammals.

Community Contact

Cumberland has made it a priority to keep the community informed of project advancements or setbacks and to create constructive dialogue between all parties. Consequently, numerous mine elements have been planned based on community input. This practice of information sharing will continue and will provide a framework for addressing future opportunities and concerns.

IIBA Agreement

Negotiations for the Inuit Impact and Benefit Agreement (IIBA) are proposed for 2003 and will address some of the following opportunities:

- job opportunities
- training
- preferential hiring programs
- project financing
- new business & contract arrangements
- participation in monitoring activities & dispute resolution.

Environmental Impacts, Mitigation & Monitoring

Overall, the development is projected to have a minor impact on the existing environment in a regional context, and a low to moderate impact in a site-specific context. This will be confirmed in the EIS.

A project EMS (environmental management system) will be implemented to provide a systematic method for managing the expected and potential interactions of the project with the biophysical environment. It will consist of three key elements: an integrated environmental management plan, a formal environmental awareness program, and an ongoing environmental monitoring program.

Upon conclusion of activities, the mine will be fully decommissioned. This will include sealing the underground mine facilities, removing the mill and ancillary buildings, recontouring disturbed areas, and reclaiming the vegetation.

***Notes**: 1. Unless otherwise specified, all costs in this report are in Canadian dollars and all units of measurement are metric. 2. A glossary of units of measurement, abbreviations, and definitions is provided in Appendix A.*