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26 March 2007

Nunavut Research Institute
Box 1720
Iqaluit, NU
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ATTN: Jennifer Cockwell
Manager, Research Liaison

Dear Ms. Cockwell:

Golder Associates Ltd would like to renew our multi-year Scientific Research Licence 0401106R-M for 2007. This licence will be used for continuation of work contracted by Miramar Hope Bay Ltd. in support of their applications for development within the Hope Bay Belt area (68°10'N and 106°35'W) near Umingmaktok.

The program for 2007 is an extension of the aquatic baseline work that has been conducted in the area since 1995. The objectives of the 2007 field program are to address data gaps from the Environmental Impact Statement (EIS) and comments from the Nunavut Impact Review Board hearings. In addition, the proposed field work will expand our current knowledge of baseline conditions and provide data for monitoring programs.

The 2007 field program will include hydrology, water quality, fish population assessments, as well as detailed evaluation of lower trophic levels in selected lakes. Wildlife research components will be conducted under a separate Nunavut Wildlife Act license. Data collection will be conducted within the watersheds of the Hope Bay Belt and will include Roberts, Little Roberts, Pelvic, Ogama, Tail, Doris, Glenn, Patch, Wolverine, Windy, Aimaoktak, Fickle Duck, Reference and Stickleback lakes and their inflow and outflow streams. Sampling will also be conducted in the Koignuk River and the marine environment of Roberts Bay.

The fisheries program for 2007 will include continued investigation of Arctic char use of the Roberts Lake drainage basin for spawning and overwintering. Arctic char research will incorporate spring surveys focusing on smolt migration out of Roberts Lake and fall surveys to provide additional information on spawning use of Roberts Lake by Arctic char. Fisheries work will also be conducted in other lakes identified above to gain additional baseline information on the use of these systems by targeted fish species.

Intensive sampling programs will be conducted on Patch, Pelvic, Aimaoktok, and Reference lakes and will include fish, phytoplankton, zooplankton, and benthic macroinvertebrate sampling, as well as shoreline habitat mapping. In addition, detailed fish population and biomass estimates will be carried out in Patch Lake.

The hydrology program for 2007 will be an extension of the work done in 2006, and will include the installation of hydrometric and climate stations within the Hope Bay Belt watersheds.

The field studies will be conducted between May 1st and October 31st, 2007, using the existing Windy Lake camp a base.

Enclosed is a summary of our 2006 field activities. We will also be submitting a copy of our 2006 Aquatic Studies Report and translations of the executive summary once the report is completed.

If you require additional information for the processing the renewal, please contact me at (780) 483-3499 or email me at gash@golder.com.

Thank you for your assistance regarding this matter.

Sincerely,

GOLDER ASSOCIATES LTD.

Gary R. Ash, M.Sc., P. Biol.
Senior Fisheries Biologist and Principal

MIRAMAR HOPE BAY PROJECT

NRI License # 0401106R-M

Summary of 2006 Aquatic Studies

Prepared by Golder Associates Ltd, March 2007.

Miramar Hope Bay Limited (MHBL) proposes to construct and operate an underground gold mine in the West Kitikmeot Region of Nunavut. The project is located 685 km northeast of Yellowknife and 160 km southwest of Cambridge Bay. The mine is on Inuit owned land, approximately 5 km south of the Arctic Ocean. The nearest communities are Umingmaktok, located 65 km to the west and Bathurst Inlet located 110 km to the southwest.

Additional baseline information collected during the 2006 aquatic studies program included seasonal monitoring of stream discharge; lake level monitoring; tide monitoring at Hope Bay; collecting water quality and limnology data in selected lakes and streams in the study area; determining fish species and relative abundance in potentially affected systems; assessing fish use of near-shore areas in Roberts Bay; conducting habitat assessments in selected lakes; quantifying Arctic char smolt out-migration to Roberts Bay; investigating Arctic char use of tributaries to Roberts Lake and small lakes in the Roberts Bay drainage; and identifying Arctic char spawning sites in Roberts Lake. This information will be used to support the environmental assessment, permitting and monitoring requirements for MHBL.

Hydrology

Lake water level and stream discharge monitoring in 2006 showed that the bulk of runoff was due to snowmelt. Doris, Tail, Roberts, Windy, Glenn, Patch, Ogama, Aimaoktak, Fickle Duck, Stickleback and Wolverine lakes water surface elevations and Doris, Tail, Roberts, Little Roberts, Windy, Glenn, Patch, Ogama, Aimaoktak, Fickle Duck and Stickleback outflows, as well as the Aimaoktak and Koignuk rivers were monitored from the end of June to mid-September. Doris and Tail lakes water surface elevations were also monitored over the winter of 2005-2006. Measured lake levels indicate that spring melt began in the upper watersheds in late May and peak stream discharge occurred approximately 11 June. Water yields were measured at approximately 68 mm for the Little Roberts Lake watershed.

A tide gauge operated at Hope Bay from 3 July to 8 September 2006. Data showed a typical tidal cycle range of approximately 0.4 m.

Snow course surveys were undertaken in the Doris North project area on 30 April 2006 to measure the snowpack available to contribute to spring runoff. Twenty-two survey plots on seven terrain types were measured and the mean snow water equivalent depth was 79 mm. Snow course surveys were undertaken in the Boston area on 1 May 2006 to measure the snowpack available to contribute to spring runoff. Twenty-one survey plots on seven terrain types were measured and the mean snow water equivalent depth was 80 mm.

Rainfall measurements at the Doris North meteorological station indicated that 44.5 mm of rain fell between 1 May and 8 September 2006. A meteorological station installed at Boston recorded 39 mm of rainfall between 2 July and 11 September 2006.

Temperature, relative humidity and solar radiation data recorded at the Doris North meteorological station were used to estimate lake evaporation. The estimated values for 2006 were 286 mm for Doris Lake and 308 mm for Tail Lake. These values are greater than the long-term mean estimates and are consistent with an early spring in 2006.

Rainfall and snowfall in 2006 were both below the long-term average for Doris North and Boston areas.

Physical Limnology and Water Quality

Lakes in the study area were generally isothermic and uniformly mixed during the open-water season; although Roberts Lake exhibited weak thermal stratification during August sampling.

Canadian Council of Ministers of the Environment 2006 (CCME) water quality guidelines for aluminum, selenium, copper, and arsenic were exceeded in one or more water quality sampling events conducted in selected lakes within the study area and the marine environment of Roberts Bay. Roberts Bay was the only site where total mercury concentrations approached guideline levels. Certain lake outflows were also found to exceed the CCME guidelines for aluminum, iron, and selenium at various times during the study period.

Fisheries

In total, 7638 individual fish representing 14 species were captured during fisheries surveys carried out in 2006. Fish sampling was conducted in 31 lakes, 16 streams, and the marine environment of Roberts Bay. Overall the most common fish species captured was least cisco (n = 3895), followed by ninespine stickleback (n = 2141), cisco (n = 661), Arctic char (n = 333), lake trout (n = 244), lake whitefish (n = 144), Arctic grayling (n = 136), Arctic flounder (n = 34), capelin (n = 32), broad whitefish (n = 6), slimy sculpin (n = 4), burbot (n = 3), Greenland cod (n = 3), fourhorn sculpin (n = 2).

Lake Communities

Fish sampling was conducted during the 2006 field program in Roberts, Fickle Duck, Patch, Wolverine, Ogama, Aimaoktak, Reference, and Stickleback lakes as well as a number of small unnamed lakes within the project area. These lakes were sampled to determine fish species composition and relative abundance. Fish sampling in Roberts Lake yielded a total of 402 individual fish representing 6 different fish species. Ninespine stickleback were most abundant (67% of the overall catch), followed by cisco (15%), Arctic char (9%), lake whitefish (6%), lake trout (4%), and least cisco (0.3%). A total of 458 fish were captured in 20 small unnamed lakes surrounding Roberts Lake. Fish catch was dominated by ninespine stickleback (68%), followed by Arctic char (13%), cisco (8%), lake trout (6%), lake whitefish (4%), and broad whitefish (1%). A total of 6104 fish were also captured from lakes in the Boston and Madrid areas, including Patch, Ogama, Fickle Duck, Stickleback, Aimaoktak, Wolverine, Reference lakes, as well as three unnamed lakes between Patch and Ogama lakes. Fish catch consisted of 4 species including

lake trout (2%), lake whitefish (2%), least cisco (64%), cisco (9%), and ninespine stickleback (24%).

Stream Communities

Fish sampling was conducted in Little Roberts, Patch, Fickle Duck, and Stickleback outflows as well as the Koignuk River and 10 streams in the vicinity of Roberts Lake. In total, 260 fish (193 Arctic char, 66 lake trout and one broad whitefish) were captured at the fish fence installed downstream of the outlet at Little Roberts Lake. Fish were captured in six of the tributary streams flowing into Roberts Lake; the total catch included 35 Arctic char, 17 ninespine stickleback, and 12 lake trout. Fish catch in the Koignuk River was comprised of 169 fish and represented six fish species. Arctic grayling were the most commonly captured species (80%), followed by ninespine stickleback (8%), lake trout (5%), lake whitefish (9%), slimy sculpin (2%), and burbot (1%). A total of 64 fish were captured in lake outflows located in the Boston and Madrid project areas. Fish species captured in these outflow streams included lake trout, ninespine stickleback, and slimy sculpin.

Marine Communities

An Arctic fyke net was used to sample fish in the near-shore habitat of Roberts Bay. In total, 106 fish were captured. Arctic flounder was the predominant species in the catch (32%), followed by capelin (30%), lake trout (23%), Arctic char (10%), Greenland cod (3%), and fourhorn sculpin (2%).

Arctic Char in Roberts Lake System

A total of 106 smolts and 71 adults were captured while migrating downstream through a fish fence installed in Little Roberts Outflow during the 2006 season. The size distribution of Arctic char moving downstream varied temporally; larger size-classes (>600 mm in fork length) were observed to move downstream earlier than smolts (200 – 400 mm).

Arctic char were captured in 6 of 20 unnamed lakes and 5 of 10 tributary streams sampled in the vicinity of Roberts Lake. Small lakes and streams with good connection to Roberts Lake appear to provide habitat for anadromous populations of Arctic char migrating from the marine environment of Roberts Bay. Fish sampling of small lakes with poor connection to Roberts Lake yielded small Arctic char with bright spawning coloration. It is likely that these lakes support resident populations of Arctic char.

Approximately 11 km of shoreline was surveyed for Arctic char spawning habitat along the western end of Roberts Lake on 11 and 12 September 2006. Suitable spawning locations (i.e., 3 to 6 m depth with gravel or gravel/cobble substrate) were identified at 54 areas within the surveyed section of the lake. Adult males were noted at four potential spawning sites; however spawning activities were not observed at the time of survey.

MIRAMAR HOPE BAY HAVAUHIIT
NRI Laisini namba #0401106R-M

Naitumik Titikangit ukiumi 2006 Imaknituni Ikaluinik Ihivgiugutainik
Upalungaiyaktan Golder Havakviit, Maasi 2007

Miramar Hope Bay Havavia (MHBL) uktutikaliktut hanavikhainiklu havakvigilugulu atanituhamik nunami gold uyagaghiukvikhainik uvani Waaliani Kitikmeoni Nunavunmi. Havakvikhak nunauyakmi ittuk 685 km northeast Yalonaimilu 160 km southwest Ikaluktutiamin. Uyagaghiukvik Inuinaini nanminikaktuni nunamituk, kanitkiak 5 km hivungani Arctic Tagiumi. Nunaliit kanitkiat Umingmaktok, nunamitut 65 km waaliani hamnatauk Kingaut nunakaktutauk 110 km southwest.

Adlat naunaitkutihat katitigiyauvaktut ukiumi 2006 imaknitunik ihivgiugutainik havakluakhikpaktut kitumi auyamilunin upingahaminaklunin kugluinik kuvivianin; tahiumtauk nalguyutanik ihivgiugutikakhutiklu; tigyagutainiklu ihivgiugutikakpakhutiklu Hope Bay -mi; katitikhugitlu ilitugiyutainik imakmitunik ikalungnik kituni tahiunilu kugluini ihivgiukpaktaini; naunaiyaktait ikaluit tamaita ihivgiukvingni; naunaiyakhugitlu kitut ikaluitlu kanuktutlu amigaitkulangitaitlu humi adlangutihainik kafiuyutainik adlangutikakniaguknahiuni; ihivgiuhugit ikaluit hinani hanianituniklu Roberts Bay; ihivgiuhutigitlu ikalukaktuniklunin huganiklunin kituni naunaiyagikhimayunik ihivgiugutauvaktunik tahiuni; kafiuyutainiklu kauntikpakhugit hivulikpamik audlagutainik nuutigutainik Ikalukpianik Roberts Bay -nun nuulihagutainik; ihivgiukhugit Ikalupialuknik kugluit kugluluaktut angitkiamun tahikmun Roberts Tahianunlu ihivgiuktaitlu mikiunun tahianun Roberts Bay kuglukvianunlu; naunaiyakhugitlu Ikalukpianun spawning sites uvani Roberts Tahiani. Ona nuanaitkutiit atukhikniaktut ikayutihainik hilakyuami ihivgiugutihamingnik laisihainiklu ihivgiugutihanik atugaghainiklu ukuat MHBL.

IMAAKNIKKUT IHIVGIUGUTAIT

Tahiukkut imaaknik nalguyutait nunamun ihivgiukhikpaktut ukiumi 2006 -mi naunaikyakhikpaktut imaat kuvivaktut aputimin mahakami tatatikyumiktait tahiumun. Ukuat Doris, Tail, Roberts, Windy, Glenn, Patch, Ogama, aimaoktak, Fickle Duck, Stickleback and Wolverine tahiut imaniyumiutiyut ukuatauk Doris, Tail, Roberts, Little Roberts, Windy, Glenn, Patch, Ogama, Aimaotak, Fickle Duck and Stickleback outflows, ukuatlu Aimaotaklu Koignuk kugluktut ihivgiukhiktutlu audlaktikpaktait June -min Septaipamun kitkanun. Ukuat Doris and Tail tahiut imangit kulvayutainik kulani ihivgiukhikpaktutlu ukiumi 2005-2006 -mun. Uktutait uktukhikpaktut imangit itiyutainik tahiuni talvani upingahami audlagutikakpaktut kulanituni imakakviini tatkihiunmi nunguligangat May -milu mahakpiakhimayuniktauk ihivgiukhilikpakhutik June 11 -mi. Imakakniit uktuktikakpaktut 68 mm uvani Little Roberts Tahiani imakakviini.

Ulipkakhimayutainik naunaitkutikaktut Hope Bay -mi audlakpaktutauk ihivgiugutihainik Julaimin 3 Septaipamitauk 8 -mi inikvikakhutiktauk ukiumi 2006 -mi. Naunaitkutikakpaktut ulipkakpaktunik kanitkiamun 0.4 m -nik.

Audlagutainik aputikkut ihivgiukhikpaktut Doris North havakviani ubluini April 30 -mi 2006 naunaiyagiamingnik aputiinik ittunik mahakpat naunaiyagumagamiku kanuk angiyutihainik kuvigaktuhamik mahakpat apuuta. 22 -nik naunaiyakviknik nunakakviinik ihivgiuktait savanik kanugitulahanik nunamik imakakviiniklu uktutilangit uktutihainik uktukpaktait ukuatlu ihivgiukpaktaitlu ukiumi tamaini aputainik imangupaktunik mahakviin uktutiikakpaktut 79 mm -nik. Aputait huukugutait ingitgayutait ihivgiuktauvaktutlu nunaini Boston -mi May 1, 2006 -mi uktutihainik apuutihanikviinik apuutinik mahaktuhanik naunaiyagiamingnik mahakuming upingahami. 21 -nik ihivgiukviit naunaiyakhimayunik nunaat savani ittunik uktutilangit naunaiyakhikpaktutlu ukiumi tamainilu apuutiit mahakpaktunik ittijutikakpaktut 80 mm -nik.

Nipaluktauk uktutihakakhutik uktuktaitlu Doris North Hilakkut Havakviinik Iglukpayuani naunaitkutikakpaktut nipaluk uktukhikpaktut kitkani Julai 2 -min Septaipamun 11, 2006.

Unakutaitikkutauk atipkajutaitlu Hikinikmin hikinagutainik naunaitkutainik titigakhikpaktut Doris North Hilakkut Havakviini iglukpakyuanginin uktupaktait ihivgiugutihainik tahium panikpagianginik imaigutigiyutikalikata naunaiyagiamingni. Katitigutingit naunaitkutait ukiumi 2006 uktutilakakpaktut 286 mm - Doris Tahianilu uvanitauk Tail tahiani upingalihami ukiumi 2006 -mi ilitugiyutikakpaktutauk.

Nipalungluanginamilu kaniluanginamilu ihivgiugutait uktutilanga anmunyumikpaktut kangagalungmut atuyutihainik nunaini Doris North uvanilu Boston -milu nunainilu.

Nunakakviitlu Imakaktuniklu Nakuyutainik Ihivgiugutikakpaktut

Nunakakviit havakvingmingnilu ilitugiyutait Tahiit ihivgiuhikviani adjiikikhimakpaktut kihimitauk adlangutikakpaktutik hikuigangatatauk. Ukuatauk Roberts Tahiani naunaitkutikakpaktut takuiluaktunik Unakutinik uktutainik ittijumungakyumigangat unakutimik uktutainik Agasimi ihivgiukhimagutini.

Kanatami Katimayiit Ministangit Hilakyuakmi CCME Havakviani ukiumi 2006 -mi imaakkut nakuyutihainikkut uktutait atugaghainun ukuninga aluminum, selenium, copper, ukuningalu arsenic poisiutiit kunmukpalaktut naunaiyautait ihivgiuktilutik ukuatauk aluminum iron, umingalu selenium kanganguganga pakitpaktainik naunaikpaktut ihivgiukhimaktilutik.

Ikalikinikkut

Katitigutait tamaita ikalikiyutait adlakinik 14 -nik ikalikivaktut. Ikaluknik ihivgiuktilutik, 31 -mi tahiini, 16 -ni kugluinilu humilu imaakaktunilu Roberts Bay -mi hanianilu. Tahama nalvaktait ikalikiyutait least cisco (n = 3895), aipaitauk ikalikiyutait ninespine stickleback (n =2141), cisco (n =6610, Ikalukpiat (n = 333), tahikmitut ihuut (4%), least cisco (0.3%). Katitigutikakpaktut 458 ikalukpaktainik 20 -ni mikiuni atiituni tahiinin hanianitunik Roberts Tahikmi. Ikalikiyutikakpaktut amihuunin ninespine stickleback (68%), aipaitauk Ikalukpiat (13%), cisco (8%), tahiknitunik ihuunik (6%), tahiknitunik kapihiliinik (4%), angitkiatauk kapihiliinik (1%). Katitigutikakpaktut 6104 ikalukpaktainik tahiinin Boston -minlu Madrid - minlu nunainin, hapkunangalu Patch, Ogama, Fickle Duck, Stickleback, aimaoktak, Wolverine, Reference tahiininlu, hapkunangalu atiitunin tahiinin kitkanituni Patch kitkanilu Ogama Tahiininlu. Ikalikivaktut hitamanik adlakinik ikaluknik tapkuningalu tahiknitunik ihuukniniklu (2%), tahiknitunik kapihiliniklu (2%), least cisco (64%) cisco (9%) -niklu ukuningalu ninespine stickleback (24%) -niklu ikalikivaktut.

Tahini Nunaliini

Ikalikiyutait ihivgiukhikpaktut manilaakmi ukiumi 2006 nunaini Little Roberts, Patch, Fickle Duck, uvanilu Stickleback anmuyutainin uvanilu Koignuk Kugluktukmilu kulini kugluinilu hanianitumi Roberts Tahiani. Katitigutikakpaktut, 260 ikaluknik (193 Ikalukpiaknik, 66 tahiknitunik ihuukniklu atauhikmik angitkianik kapihilikmiklu pivaktait ikalikiyutainik avalumi iliugakhimayum anmuviinik ikaluknik anivikhainik tahianungauvikhainik Little Roberts Tahianun audlagutihainik. Ikalukivaktut siksini kugluini anmuyunun Roberts Tahianun; katitigutikakpaktut ikalikiyutainik talva 35 Ikalukpialuknik, 17 ninespine stickleback, uvalu 12 tahiknitunik ihuukniklu. Ikalikiyutait Koignuk Kugluktualukmin katitigutikakpaktut 169 ikaluknik siksinik adlakiinin ikaluknik. Arctic grayling ikalikiluakpaktait katitigutikakhutik (80%) - nik, aipatauk ninespine stickleback (8%), tahiknituni ihuuknik (5%), tahiknitunik kapihilikniklu (9%), kanayuitauk (2%), burbot (1%). Katitigutikakpaktut 64 ikalikiyutainik anmuktunik nunaini Boston -milu Madrid -milu havakviini. Ikalikiyutait anmuvaktutlu adlakiit ikaluit tahiknitunik ihuukniklu, ninespine stickleback, ukuningalu kanayuniklu.

Kugluini Nunainin

Ikalikiyutait ihivgiukhikpaktut hapkunani Kugluini Little Roberts, Patch, Fickle Duck, Stickleback anmuyutait uvanilu ihivgiukhikpaktut ikalikiyutainiklu Koignuk Kugluktukmi hanianilu Roberts Tahianilu. Katitigutikakpaktut, 260 ikaluknik (193 Ikalukpialukniklu, 66 tahiknituni ihuuknilu atauhikmik angitkiamik kapihilikmiklu) ikalikiyauvaktut avalumi anmuyumun Little Roberts Tahianin. Ikaluit pivaktait avalumi iliugakhikpaktut anmulikata tautuknahiyutihainik ikaluknun Little Roberts Tahianulikata. Ikaluit piyauvaktut siksini kugluini anmuyut Roberts Tahianun; katitigutikakpaktut tahamuna 35 ikalukpialuknik, 17 ninespine stickleback, 12 tahiknitunik ihuukniklu. Ikalikiyutait Koignuk Kugluktualukmin pivaktut 169 ikalukniklu siksinin adlakiinin ikaluknin. Arctic grayling amihuutkiat ikalikiyutigivaktait (80%), aipatauk ninespine stickleback (8%), tahiknitunik ihuuknik (5%), tahiknitunik kapihiliknik (9%), kanayunik (2%), uvalu burbot (1%). Katitigutikakpaktut 64 ikaluknik pivaktainin tahiini anmuliktilutik ikaluknik Boston - milu Madrid -milu nunainin. Ikaluit pivaktait anmuliktilutik tahiinituni ihuukninik, ninespine stickleback, ukuningalu kanayuniklu.

Imakni Tamainin Ittunik Nunaliinin

Kuvyanik kalugautinik atukhutik ihivgiukhimakpaktait ikaluknik hanianitunik hinani Roberts Bay -mi. Katitigutikakpaktut ihivgiuktamingnik, 106 ikaluknik ikalikiyutainik. Natangnainiklu ikalikivaktutlu amigaitkiyauvakhutiklu (33%), aipaitauk angmagianik (30%), tahiknitunik ihuuknik (23%), Ikalukpianik (10%) Greenland hiukyuktut (3%), ukuningalu fourhorn kanayunik (2%).

Ikalukpiat Robert Tahianin Atukpaktaini

Katitigutikakpaktut 106 smolts uvalu 71 angayukaluat pivaktait audlaktunin anmutilutik avalukuktunik iliugakhikhimayumik Little Roberts Anmuyutainik kiumi 2006 -mi. Adlakiyutikakpaktut angiyutainik ukumailitainiklu ikaluknik anmuyunik Ikalukpialuknik uva ilangit (ikitkianin 600 mm takitilanginik) ihivgiuktauvaktut anmuyunik ingilgatinatik smolts (200 - 400 mm) -nik takitilakakpaktunin.

Ikalukpialunik pivaktut siksinin 20 -nin atitunin tahiininlu 5 -niktauk kulinin kugluinin ihivgiukhikpaktunin Roberts Tahiininlu kugluininlu audlakhimagutikaktunik nakuyunik Roberts Tahiinun nakuyutut ittut amihutikakhutiklu Ikalukpiinik ingilgahiimakpakviinun audlakhimagutainik nakuyumik audlakhiimaktutut ittut imakakviini Robert Bay -mi. Ikalikiyutait ihivgiukhimagutait mikiunik tahikmitunik audlagutikakpaktunik nakuluangitunik Roberts Tahiinun mikitkiyauvaktut ikalunilikpaktut kaumalikhutiklu uviningitauklu. Ilitugiyutikakpaktut ukuat tahiit Ikalukpialukaktut amihuunik.

Kanitkiamun 11 km hinani ihivgiuktauvaktut Ikalukpialukhanik hinikhitivaktut nunaini wallikluamitut Roberts Tahiani ihivgiukhikpaktut Septaipami 11 -milu 12 -milu ukiumi 2006 -mi. Hinikhitivaktut nunaini (uvatuut pingahuni siksinun hitiliukhutik hiugamilunin uyagaliakniluninlu) ilitugiyutikakpaktut 54 -ni ihivgiukhikviini tahikmituni. Angayutkatkiat anguhaluit ilitugiyauvaktut hitamani hinikhitivakviini; kihimi hinikhitingitpaktut ihivgiuktilutik tahamani ihivgiukhikmaktilutik.

Nunavummi Qaujisaqtulirijikkut / Nunavut Research Institute
Box 1720, Iqaluit, NU X0A 0H0 phone:(867) 979-7277 fax: (867) 979-7109 e-mail: adunford@nac.nu.ca

April 02, 2007

Gary Ash
Golder Associated Ltd.
17312-106 Avenue
Edmonton, AB
T5S 1H9 Canada

RE: 2007 Science Research Licence

Please find enclosed your 2007 Research Licence No. **0400407R-M** which was prepared under the *NUNAVUT SCIENTISTS ACT*. Should you require further support from the NRI Research Centre, please contact the Manager to discuss your research needs.

Please be advised that this multi-year licence is subject to all criteria established in the *Nunavut Land Claim Agreement* and will be subject to any future changes that may occur in the *Nunavut Land Claim Agreement*. A multi-year licence may also be revoked for any of the following:

- the researcher fails to submit an Annual Summary Report
- the researcher breaches any term or condition set out in the licence
- the researcher fails to renew associated licences
- complaints with *just cause* are received concerning the project or any project team member
- the researcher fails to notify the NRI of any changes to the project

Important Renewal Information
Multi-year licences are granted for the duration indicated on your application form. All NRI licences however, expire at the end of each calendar year. To renew your licence each year, according to the *Scientists' Act*, researchers must submit a 500-1000 word non-technical *Annual Summary* of your research activities and findings in English *and* Inuktitut or Inuinaqtun. The translation ensures maximum accessibility of your research results to Nunavut residents. A list of translators is available from the NRI.

Upon completion of your fieldwork in Nunavut, please ensure that you submit a *Final Report* with an English and translated executive summary. Copies of papers that you publish are appreciated. Electronic copies of reports Microsoft Word or Adobe PDF would be most appreciated for posting on the NRI web site (www.nri.nu.ca).

Thank-you in advance for assisting in the promotion and development of a scientific research community and database within Nunavut. The reports and information you provide are utilized to prepare an annual research compendium, which is distributed to communities and organizations in Nunavut as well as to researchers across Canada.

Please accept our best wishes for success in your research project.

Sincerely,

Andrew Dunford

Nunavummi Qaujisaqtulirijikkut / Nunavut Research Institute
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SCIENTIFIC RESEARCH LICENCE

LICENCE # 0400407R-M

ISSUED TO: Gary Ash
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780 484 1574

TEAM MEMBERS: Jim Campbell, Rob Stack, Alison Little, Jacek Patalas, Heidi Swanson

AFFILIATION: Golder Associated Ltd.

TITLE: Doris North Project

OBJECTIVES OF RESEARCH:
Miramar Hope Bay Ltd. Plan to carry out additional baseline aquatic investigations during the 2004 field program. The program for 2004 is considered an extension of the work done in 2003 and the data information collected is required to fill in some information gaps as we continue our advanced exploration activities in the Hope Bay Belt. A considerable amount of aquatic surveys have been completed on the belt since 1992 under a previous owner. The program in 2004 will focus on Roberts bay, Little Roberts Lake and Roberts Lake areas, loacated in the northern portion of the Hope Bay Belt with the closest community being Umingmaktok. Community visits to Bathurst Inlet and Umingmaktok during the summer of 2000 summarized the program anticipated in 2000 and what we might expect to do in 2004. As mentioned, the study program for 2004 is designed to compliment existing information and fill in data gaps on aquatic habitat and fish populations in the study area. The work will include both spring and fall field surveys, focusing on Arctic char spawning locations and migration patterns in and out of Roberts Lake. Tissue samples will be collected from approximately 100 fish (sculpin and stickleback) and analyzed for metal concentrations. Where possible, fish tagging will be undertaken to enable longer term monitoring. In addition, sediment samples will be collected in Roberts Bay and Roberts Lake to determine the present concentrations of metals and organic contaminants.

TERMS & CONDITIONS:
The holder of this licence will be bound by the terms and conditions from the Nunavut Impact Revew Board Screening Decision Report and per the Deaprtment of Culture, language, Elders and Youth Archeological Sites Terms and conditions.

DATA COLLECTION IN NU:
DATES: May 01, 2007-October 31, 2007
LOCATION: Hope Bay Belt, NU

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