MINUTES

DFO – AEM Workshop
March 14, 2008 – 8 am to 4:30 pm
Sheraton Gateway Toronto – Boardroom 346
(Toronto International Airport)

Participants: Larry Connell (AEM), Rachel Gould (AEM), Dan Walker (Golder), Gary Mann (Azimuth), Randy Baker (Azimuth), Amy Liu (DFO), Dave Balint (DFO)

Azimuth presented a chronology of NNLP

Habitat Compensation:

- finger dikes to be built off east dike in 2009 at same time as Bay Zone dike construction
- habitat mounts to start being built in 2009/2010; amount of rock dependent on ice load-bearing capacity
- Discussed the feasibility of building the habitat mounts over several years and the difficulty of placing rocks in same location on ice
- The 'criteria and measures for success' for habitat mounts needs to be established
- DFO will determine if report from Jericho project is available to public
- Discussed possibilities of increasing number or size of dike extensions and reducing/eliminating sea mounts? Habitat mounts originally proposed for Meadowbank; they may be more challenging than dike extension method
- The sea mounts would provide diversity since the dike extensions are in close proximity to one another

Number of habitat units proposed for project in Table 5.3 of NNLP and addendum; 2:1 habitat units proposed for tailings impoundment, 1:1 for other habitat destruction. DFO identified a concern with the ratios since 2:1 is usually required for all impacts. It was stated that these ratios had been previously accepted by DFO. AEM will provide DFO the rationale for the habitat compensation ratio of 1:1.

DFO stated that there may be opportunities to develop compensation measures along with contingency measures closer to the community of Baker Lake. These may not necessarily be for Lake Trout but could be developed in consultation with the community.

DFO questioned if habitat compensation is in the best location. The location of habitat compensation works were designed to reduce terrestrial impact, to facilitate low-impact access and to modify low value habitat to high value habitat.

DFO discussed the development of a Contingency plan. Other measures and works will be necessary if habitat compensation from sea mounts or pit breaches are not effective.

DFO will require a contingency plan for an authorization, but this can be developed at a future date, in discussion with DFO.

Detailed design of compensation can be a condition of the authorization. Detailed design should include criteria of design success; i.e. slope design, proximity to drop off, etc. Question to DFO: Is more information required, or does the conceptual design need to be re-packaged, prior to the authorization? DFO responded they have sufficient information to move forward with the authorization, provided that the information requested regarding financial securities, fish–out program, the monitoring plan for the dike slopes and performance effectiveness and any other information that may result from the final hearing are submitted.

Habitat mapping and baseline data:

Habitat mapping for NNLP (2006) done by stereoscopic means and photos; DFO asked how much ground truthing of habitat area completed? Response: In addition to the underwater drop video camera work conducted in support of the original baseline mapping, the 2006 AEMP includes surveys of high-value habitat to link fish use to these features (conducted using short-set gill netting and underwater video transects).

DFO asked whether radio tagging of fish had been used to demonstrate fish habitat use. Fish tagging has been used elsewhere under baseline conditions. Azimuth conducted targeted studies in 2006 AEMP to assess fish usage of high-value habitat (i.e., potential spawning shoals) at the onset of spawning season.

Effectiveness of compensation:

The actual use by fish may be difficult to monitor, therefore, a combination of techniques that also document or establish that compensation works are suitable for the purposes as proposed need to be utilized. For example, Azimuth has already proposed that success of dike faces would be evaluated by monitoring of interstitial water quality, periphyton colonization and/or egg basket studies. As young of the year lake trout are difficult to monitor, adult occurrence at key locations or other surrogates (e.g., caged mussels) could also be considered.

A monitoring plan for dike faces and performance effectiveness (targeted studies) is to be provided to DFO for the authorization process by May 1, 2008. Additional details of the monitoring plan, taking into account success measures, are also to be provided at same time as detailed designs.

DFO stated the need to demonstrate that the potentially acid generating rock and metal leaching into the aqueous environment is not causing a significant impact.

Discussed the timeframe and number of years for effectiveness monitoring which will be required as conditions of an authorization.

DFO will locate an example of previous monitoring plans to aid in preparation and provide to AEM.

Construction in Fisheries Window:

AEM to prepare a letter outlining the schedule of all construction works (i.e. east dike 2008, bay zone 2009, goose island and vault dikes); exact dates of construction activities are needed for potential authorization.

If changes to dike design affect HADD, an amendment is required. DFO will determine the implications of potential changes to MMER and habitat compensation.

Western Channel Crossing:

AEM will finalize the detailed design of the temporary culvert crossing at the Western channel and provide to DFO for authorization as soon as possible; the NNLP addendum will be provided to DFO at the same time. AEM will state clearly in the application that closure and reclamation activities for this channel will be conducted in the event that the Type A NWB water license is not issued.

Fish Out Protocol:

Proposed net sizes for fish out program approved by DFO. AEM will order the nets in preparation for this season's proposed work.

A question was posed regarding the completion of the fish out. It was stated that the CPUE must demonstrate a decline in fish catch, and that the level of effort must have been previously discussed with the community and approved by DFO.

A summary of AEM's fish out protocol, including net sizes and amendments from latest draft DFO protocol, will be provided to DFO as soon as possible; the summary will also be translated into Inuktitut. This summary will be sent to the Nunavut Wildlife Management Board to be vetted at their April meeting if possible.

Questions to be posed to the community regarding the fish out protocol will be provided to DFO for their review.

A full fish out protocol for the East dike will be completed by AEM and provided to DFO by the end of May 2008. A schedule for the Bay Zone, Goose Island and Vault fish outs will be provided in this protocol. The fish out protocol will be specific to the East dike; it will be stated in the protocol that fish outs for other areas will be adapted, pending DFO approval, as required by the specific areas.

Since the Bay Zone and Goose Island fish outs are in smaller basins of a larger lake, the question of whether or not mark and recapture studies are required for these fish outs was posed.

Water Quality Monitoring and Management Plan for Dike Construction and Dewatering:

It was stated that Environment Canada sets water quality limits; DFO and Environment Canada address sediment issues.

AEM stated the monitoring plan includes inspection of the silt curtains and turbidity profiles. The plan was designed to protect high value habitats closest to the dike construction; it was assumed this would protect all high value habitats in the area. The plan does not include monitoring in poor light conditions or during small craft warnings, for health and safety reasons. Discharge during the dewatering process will be monitored at the intake barge.

The frequency of monitoring (spatially and temporally) and methodology was discussed. Remote buoys, a grid spacing of 150 m (4 sampling locations on the inside of the curtain, 6 on the outside), a sampling frequency of 3 times a day, the monthly analysis of metals in water samples, and the measurement of benthos biomass were suggested. AEM will resubmit the monitoring plan at the public hearing with proposed amendments.

Specific details of the 7 day average, monthly mean and 30 day average TSS calculations will be provided to DFO.

Aquatic Environmental Monitoring Plan:

Azimuth presented an overview of the AEMP program.

DFO requested a diagram that presents the location of all sampling points and the media sampled at each.

General information from the previous AEMP sampling events (including locations, media sampled, chemical parameters analyzed) will be provided to DFO within a week.

Tear Drop Lake:

General information from the Tear Drop Lake (NP6) evaluation will be provided to DFO within a week.

R02 Habitat Compensation:

AEM will apply for an amendment to the fisheries authorization (NU-03-0190) for the authorization period to be extended to December 31, 2008. The R02 habitat compensation area has not yet been constructed due to a problem sourcing the appropriate materials. AEM will purchase gravel in Quebec and barge it to the site this summer; the habitat compensation area will be constructed in October/November 2008.

Vault Road (Turn Lake Road) Crossing:

The fish habitat value at this crossing was discussed. The NWB Type A water license application includes a culverted crossing for this area. Azimuth stated that fish passage is unlikely in this area due to shallow water and boulder/cobble substrate; however, fish passage cannot be positively ruled out. Minor modifications (e.g., embedded culverts and passage enhancement) to the crossing would improve fish passage, and consequently, could be considered as habitat compensation for other areas of the project. Designs for crossing modifications (including mitigation measures for sedimentation control) will be submitted to DFO in the future.

Eastern Channel Assessment:

Golder presented a summary of their assessment. No modifications of the channel are necessary.

Pit Re-flooding:

Golder presented a summary of the supplemental information provided to the NWB in Appendix D of the technical meetings response. DFO had no comments, but indicated they may ask questions at a later date.

Explosives Plant:

A maximum drawdown of 200 m^3 per month is estimated. AEM will truck water to the explosives plant if this presents an issue. AEM will assume this lake is a fish-bearing lake; information on the maximum depth and discharge will be collected this summer and provided to DFO.

DFO Security:

AEM will propose a bond dollar amount, including inflation, for the construction of the TIA and HADD compensation areas. DFO will determine if the interest on the bond goes to the government or the company.

Other Agenda Items: Barge Landing Facility:

The hamlet of Baker Lake has informed AEM that they would prefer a new barge landing facility be built outside of the city center. AEM will proceed with the regulatory approvals necessary for a new barge landing facility; it is not expected to be built in 2008.

Deliverables:

- Baseline data: 2006 & 2007 AEMP – March 31, 2008
- AWPAR 2006 – March 31, 2008
- Annual Report AWPAR 2007 – March 31, 2008
- Fish-Out Protocol (with Inuktitut translation)
    - Summary – ASAP
    - Full protocol, including schedule of construction for all habitat compensation structures – end of May 2008
- Detailed design of temporary crossing at Western channel - ASAP
- Western Channel NNLP addendum - ASAP
- Detailed habitat compensation designs, and detailed monitoring plans taking into account success measures – to be completed as a condition of the authorization
- Rationale for 1:1 habitat compensation ratio – end of May 2008
- Questions from fish out program to be posed to community - ASAP
- AEM to propose financial security for habitat compensation measures – end of May 2008
- Contingency plan for habitat compensation structures – to be completed as a condition of the authorization
- Monitoring plan for dike faces and performance effectiveness – May 1, 2008
- Details of TSS calculations in water quality monitoring plan – ASAP
- AEMP overview, including maps of sampling locations - ASAP
- Baseline information for Tear Drop Lake – ASAP
- Application for amendment to fisheries authorization for construction of R02 habitat compensation area - ASAP
- Designs for Vault Road crossing modifications – in future
- Baseline information on lake adjacent to the explosives plant - collected in summer of 2008 and provided to DFO
- Dike monitoring plan with proposed amendments – Public hearing

Permits and Authorizations Required in 2008:

- TIA Approval
- *Fisheries Act* subsection 35(2) Authorization – mine
- *Fisheries Act* section 30 Permit for Freshwater Intake
- License to Fish for Scientific Purposes - Permit for Fish Removal – Fish-Out, AWPAR, AEMP
- Renewal of *Fisheries Act* subsection 35(2) Authorization NU-03-0190 – R02 Habitat Compensation
- Nunavut Research Institute license renewal