10 January 2012 Project No. 09-1373-1004.9500

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RESPONSE TO ADDITIONAL INFORMATION REQUESTS
NICO DEVELOPER'S ASSESSMENT REPORT

Dear Sir,

As per an email dated 19 December 2011 to Dr. Rick Schryer of Fortune Minerals Limited (Fortune), Fisheries and Oceans Canada (DFO) requested clarification on the below 4 points following review of Responses to Information Requests submitted to the Mackenzie Valley Review Board on 13 December 2011. Based on a conference call on 4 January 2012, between DFO (Rick Walbourne and Pete Cott), Fortune (Rick Schryer), and Golder Associates Ltd. (Gary Ash, Cameron Stevens, and Jennifer Gibson), the responses below summarize the conference call and provides further clarification to the 4 requests.

Point 1

Please provide additional information for contingencies (e.g., rational and supporting information) regarding the Contingency Pond. During our conference call meeting on the morning of 4 January 2012, DFO also indicated they would like more information on the likelihood of the pond complex in questions (pond 3, 4, and 5) being connected to downstream waterbodies and supporting fish.

Response

In its Developer's Assessment Report (DAR) update letter dated 30 September, 2011, Fortune announced it would be moving to a reverse osmosis/chemical treatment/biological treatment system combined with chemical treatment and biological treatment for effluent water treatment at the NICO Project. This system provides the best available technology for removing contaminants from water. Therefore, the likelihood of the Contingency Pond being required for additional water treatment is very low.

As noted in "Information Request – DFO_2", Ponds 3, 4, and 5 are headwater wetlands (or ponds) draining into Peanut Lake. Ponds 3, 4, and 5 are essentially one pond interspersed by muskeg. The pond complex is shallow (20 to 30 centimetres in depth so freezing to the bottom in most winters), and characterized by an ephemeral outlet stream where there is beaver activity, such as dams, blocking fish passage from downstream locations. The likelihood of the pond complex to support fish is very low.

Point 2

Please provide additional information on stream crossings (e.g., proposed methods for stream crossing construction that will ensure fish passage).

Response

With the exception of the Marian River crossing, all other crossings along the 27 kilometre (km) NICO Project Access Road (NPAR) are over ephemeral streams not considered to support fish habitat. Supporting information and photographs of these crossing were provided in Annex C of the DAR, specifically the report "Fish and Fish Habitat Assessment of Watercourses Along the Proposed Nico All-Weather Road" (Golder 2007). As per Annex C, the only flowing stream found with a discernible channel along the proposed road corridor was the Marian River. For the Marian River, a single clear-span bridge will be installed in accordance with DFO's Operational Statement for such structures.

Note that the baseline assessment was originally completed on a 51 km road prior to the NPAR being reduced to 27 km. Therefore, the stream crossings (C1 to C5) that were identified in Golder (2007) are no longer relevant to the assessment as they are located along the Whatì to Gamètì portion of the road (not part of the current NICO Project) and not part of the Fortune proposed NPAR road for the NICO Project.

Point 3

Please provide additional information on anticipated changes in hydrological conditions and water levels (for Peanut and Burke creeks).

Response

Tables 1 and 2 present stream flow (cubic metres per second [m^3/s]) for Peanut Creek and Burke Creek, respectively, and represent data described in Appendix 11.III of the DAR.

It is anticipated that changes in streams flows will generally be positive in magnitude and similar in magnitude for both Peanut and Burke creeks. The largest relative change in flows is expected during the low flow period (in September) and post-closure after pit overflow (see Appendix 11.III in the DAR). However, use of relative change in the assessment can exaggerate impacts when small values are in the denominator of the calculation. In other words, baseline daily flows are very low in September, and so even subtle changes in flows may result in large relative changes. The point is that for both creeks, flows will remain very low in September and well within the seasonal variation that characterizes the creeks (Table 1 and 2). For example, for Peanut Creek, historical mean daily flows vary from 0.078 m^3/s (in September) to 0.418 m^3/s (in June). Post-closure and after pit overflow, mean daily flows will vary from 0.098 m^3/s (in September) to 0.441 m^3/s (in June). Across all 12 months of the year for Peanut Creek, the monthly average relative change in daily flows will be about 2.5% for Operation Start-Up, 6.7% for Operation End Year, -0.2% for Post-Closure Before Pit Overflow, and 7.5% for Post-Closure After Pit Overflow. Finally, it is important to clarify that for both creeks absolute changes are actually highest in May and June. For example, for Peanut Creek, daily flows increase by 0.023 m^3/s upon pit overflow (versus historic baseline) during May and June, versus an increase of 0.02 m^3/s in September.

Table 1: Predicted Absolute Values in Daily Stream Flows for Peanut Creek Per Month

	Peanut Creek (Q_{BL4}), m^3/s				
Month	**Baseline Historic Mean**	**Operation Start Up Year**	**Operation End Year**	**Post-closure - Prior to Pit Overflow**	**Post-closure - After Pit Overflow**
January	0.102	0.104	0.109	0.101	0.101
February	0.094	0.096	0.101	0.093	0.093
March	0.091	0.094	0.099	0.091	0.091
April	0.083	0.086	0.091	0.083	0.083
May	0.301	0.303	0.308	0.301	0.324
June	0.418	0.421	0.425	0.419	0.441
July	0.131	0.134	0.139	0.131	0.150
August	0.101	0.104	0.109	0.101	0.121
September	0.078	0.081	0.085	0.078	0.098
October	0.105	0.108	0.112	0.105	0.125
November	0.113	0.116	0.121	0.113	0.113
December	0.109	0.112	0.116	0.109	0.109

Table 2: Predicted Absolute Values in Daily Streamflows for Burke Creek Per Month

	Burke Creek (Q_{BL8}), m^3/s				
Month	**Baseline Historic Mean**	**Operation Start Up Year**	**Operation End Year**	**Post-closure - Prior to Pit Overflow**	**Post-closure - After Pit Overflow**
January	0.105	0.108	0.113	0.105	0.105
February	0.090	0.092	0.097	0.089	0.089
March	0.085	0.088	0.093	0.085	0.085
April	0.070	0.073	0.077	0.070	0.070
May	0.493	0.495	0.500	0.493	0.516
June	0.722	0.724	0.728	0.722	0.744
July	0.163	0.165	0.170	0.162	0.181
August	0.105	0.108	0.112	0.105	0.124
September	0.059	0.062	0.067	0.059	0.079
October	0.111	0.114	0.119	0.111	0.132
November	0.128	0.130	0.135	0.127	0.127
December	0.119	0.122	0.127	0.119	0.119

Although it is predicted that stream flows will increase during operation and post-closure phases of the NICO Project, it is difficult to anticipate actual changes in water levels for Burke and Peanut creeks because most of their streams sections are typically impounded by beaver (see Baseline Annex C). Field surveys have documented high levels of beaver activity in the region, and it is well known that beaver can have overwhelming influences on water levels, as well as the general structure and function of aquatic ecosystems. The effect of increases in stream flows could unfold 2 ways. An increase in flows may lead to higher and/or wider dams in Peanut and Burke creeks, which could increase the availability of overwintering habitat for local species of fish. Alternatively, an increase in stream flows may lead to dam blow-outs and the displacement of local beaver, which could improve fish passage between Peanut and Burke creeks. But the anticipated changes in stream flows are minor in magnitude, and thus, levels of beaver activity should remain unchanged.

Using the stage-discharge relationship of $S = 0.3115 \cdot Q + 99.005$ (see Annex G of the DAR), and the assumption of no beaver dams and related influences on Peanut Creek, the largest change in water levels will be following the overflow of the pit (post-closure), and will be an increase of 7 millimetres (mm) during May and June and 6 mm between July and October. However, water levels for Peanut Creek are expected to be unchanged between November and April during post-closure. Similar trends are expected for Burke Creek if assuming no beaver dams and their influences. For example, the stage-discharge relationship for Burke Creek ($S = 98.7461 + 0.5064 \cdot Q^{0.2528}$) predicts that the largest change in water levels will be an increase of 19 mm in September following the overflow of the pit (post-closure), and will be unchanged during winter months. Overall, Project-related changes in stream flows and water levels will be minor in magnitude and will not affect the persistence of local populations of fish.

Point 4

Please provide additional information, observations and/or notes regarding the lack of connectivity between Little Grid Pond and Nico Lake.

Response

The flow path of water exiting Little Grid Pond to Nico Lake was surveyed on 25 August 2011 by Dr. Rick Schryer of Fortune, with the assistance of Mike De Carlo (Fortune NICO Project Manager) and Edward Williah of Gamètì. The purpose of the survey was to examine the potential connectivity for fish between the 2 waterbodies and to collect water quality samples along the length of the watercourse.

Over most of its length, the watercourse from Little Grid Pond to Nico Lake meanders through sedge meadows and complexes of willows as shown in Photo 1. This photo was taken approximately half way between Little Grid Pond and Nico Lake and shows the lack of a distinct channel that would allow for fish passage. A wetland exists approximately 200 metres downstream of Little Grid Pond, which has a large beaver dam on its downstream side (Photo 2). The location of the wetland in relation to Little Grid Pond and the lack of a distinct channel between this pond and the wetland is shown in Photo 3. The overall conclusion from the survey was that there is no connection for fish passage between Little Grid Pond and Nico Lake due to the lack of a distinct channel in most locations and the presence of a large beaver dam on the downstream side of the wetland.

Even if fish passage was physically possible (i.e., no physical barrier for fish), the water quality in the outlet of Little Grid Pond may pose a natural physiological barrier for upstream movements. Water quality results for total arsenic showed a decreasing trend from Little Grid Pond to Nico Lake. Total arsenic levels at the outlet of Little Grid Pond were high (163 µg/L) and at the upstream end of the wetland below Little Grid Pond were slightly lower, but still high at 129 µg/L. At the outlet of the wetland, total arsenic levels were 93 µg/L and ranged from 75 to 100 µg/L in the lower portions of the watercourse. Water entering Nico Lake had a total arsenic concentration of 87 µg/L.

Photo 1: Upstream View of Little Grid Pond Outlet Flow, 25 August 2011

Photo 2: Upstream View of Wetland from the Base of the Beaver Dam, 25 August 2011.

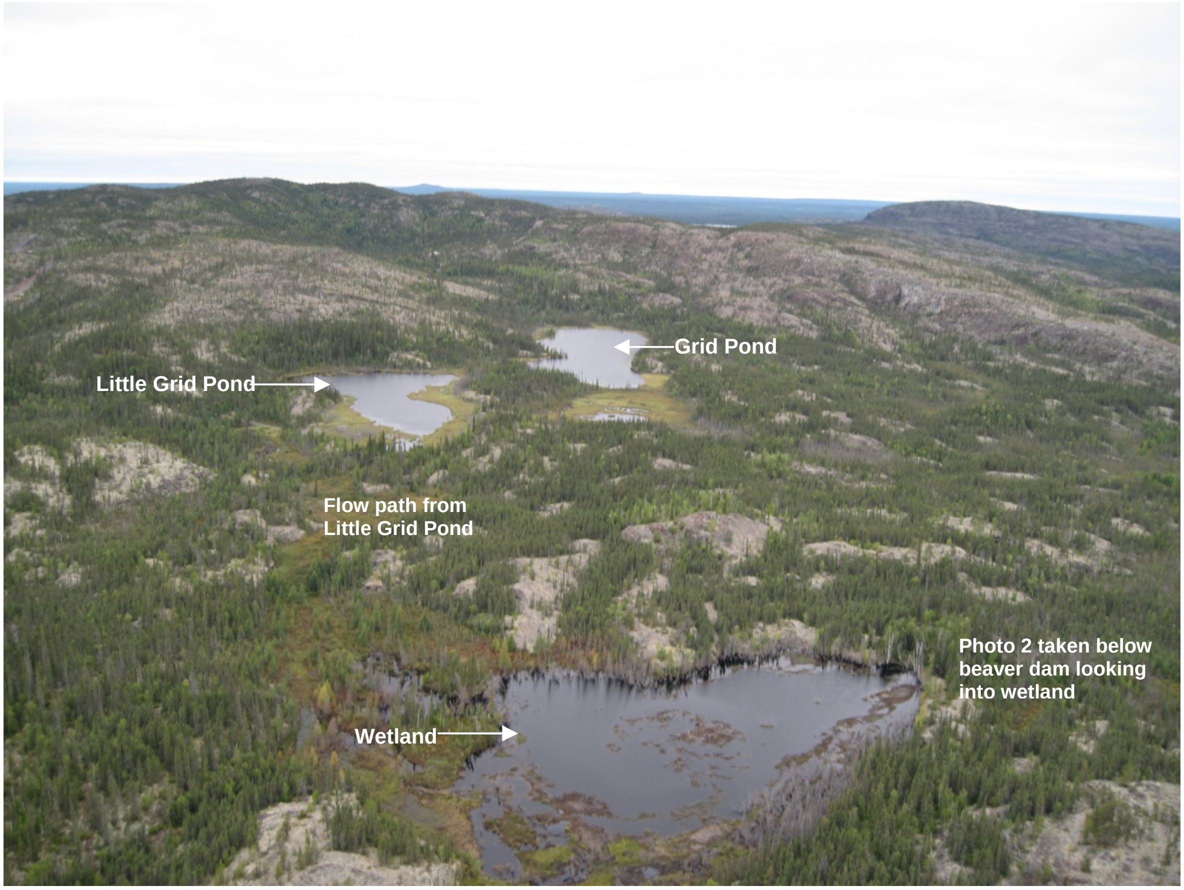

Photo 3: Aerial View of Wetland (foreground) Downstream of Little Grid Pond

References

Golder (Golder Associates Ltd.). 2007. Fish and fish habitat assessment of watercourses along the proposed NICO all-weather road. December 2007.

Closure

We trust that the information contained in this memo meets the requirements of DFO. If any additional information is required, please contact Dr. Rick Schryer of Fortune or one of the undersigned.

GOLDER ASSOCIATES LTD.

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