Montreal, May 30 2017

Joseph Vidger
Canadian Environmental Assessment Agency
1801 Hollis Street, Suite 200
Halifax (NS), B3J 3N4

Subject: Memo on Howse Air Monitoring

Dear Mister Vidger,

On behalf of HML, please find attached the proponent's answers to NRCan's questions related to the groundwater component at the Howse Property.

The answer is composed of seven documents:

- Background information and monitoring plan (present document);
- Proponent responses to CEAA IRs 16-20;
- SNC December 2016 modelling report;
- GEOFOR December 2016 memo;
- GEOFOR July 4 2016 memo;
- SNC report 636766 (surface water); and
- SNC May 2017 modelling report.

As you know, there has been considerable communication between the proponent and NRCan and CEAA on this matter. Should you require any additional information, or documents, on this this matter, please do note hesitate to contact me.

<Original signed by>

Prepared by: Mariana Trindade, PhD
Groupe Hémisphères, Project manager for the Howse Property EIS

Background

In June 2016, NRCan (via an IRs: CEAA 16-20, Round 1, Part 1) expressed concerns over groundwater issues due the Howse Project activities. CEAA's IRs related to the possible environmental effects of the Howse Project on groundwater and associated components was posed by NRCan. Following this, the proponent initiated a process to respond to these concerns, which included numerous groundwater modelling scenarios. From then, and in between numerous clarifications meetings, the proponent presented NRCan groundwater modelling reports on October 2016, December 2016 and May 2017. Each iteration of these reports represents a modelling scenario that is based on NRCan comments and concerns.

The numerous groundwater modeling scenarios presented by the proponent indicated that the drawdown of the water table due to the pit dewatering activities would affect Triangle Lake. Although the proponent's experience at the site indicates that there is an underlaying layer of clay material that prevents the connectivity between surface and ground water, the proponent conceded that the evidence is insufficient relative the possible magnitude of the adverse environmental effects should this connectivity exist.

As such, HML is proposing a monitoring program to ensure that in the unlikely event of an effect at Triangle Lake, it will be able to respond rapidly and efficiently.

Groundwater follow up measures

In order to respond to the Canadian Environmental Assessment Agency's Information Request from June 2016, the proponent suggests the following strategy:

Mitigation measure	Measurable	Relevant	Time bound	Effects analysis update
The installation of an automated gauge at Triangle Lake (level logger).	Monitoring surface water levels at Triangle Lake.	This measure will ensure that any changes to the level of the Lake will be detected rapidly by TSMC.	The lake levels will be monitored before (2017), during and after the operations phase. An automatic gauge will allow for hourly readings of water levels to be taken during the operations phase, and four times per year during the construction and decommissioning phases.	No
The installation of an automated	Monitoring surface water	This measure will ensure that any	The lake levels will be monitored before (2017), during and after	No

Mitigation measure	Measurable	Relevant	Time bound	Effects analysis update
gauge at Morley Lake (level logger).	levels at Morley Lake.	changes to the level of the Lake will be detected rapidly by TSMC.	the operations phase. An automatic gauge will allow for hourly readings of water levels to be taken during the operations phase, and four times per year during the construction and decommissioning phases.	
The installation of a new well in proximity to Triangle Lake.	Monitor groundwater levels and quality.	During dewatering activities, any changes to the levels of the groundwater in the vicinity of Triangle lake will be detected.	Water level and quality will be recorded four times annually for the duration of the construction, operations, and decommissioning phases.	No
Close management and monitoring of the effluent from the sedimentation pond at Goodream Creek.	Discharge values from Sedimentation pond.	If there are any changes to the water levels at Triangle Lake (e.g. lowering of the level due to dewatering activities), the amount of effluent discharged towards triangle lake could be adjusted to restore the lake levels to natural values. Water quality will be assessed weekly/monthly, as per detail provided in Table 9-1 of the Howse EIS.	Duration of Project activities.	No