

Version 3 Hammond Reef Gold Project EIS/EA – Addendum (Part B)
Responses to Provincial Information Requests

1656263

Identifier	Topic	Reference to EIS/EA Report	Summary of Comment	Proponent's Response	Subsequent Comment
			<i>Date: March 2014</i>	<i>Date: June 2015</i>	
MOE SW-2	Water quality		<p>The impact of cyanide by-products including thiocyanate and their potential to impair water quality within Marmion Lake and Lizard Lake.</p>	<p>Cyanide (CN) is simply a carbon-nitrogen compound and breaks down to carbonate and ammonia in the natural environment. The current process for the Project includes a cyanide destruction circuit which will lower cyanide concentrations as described in the Version 2 Site Water Quality TSD to a degree such that it does not have a significant influence on predicted ammonia and carbonate concentrations downstream.</p> <p>Thiocyanate (SCN) and associated complexes occur during processing where cyanide is used to recover gold. SCN is a sulphur-carbon-nitrogen compound, which can degrade in the environment to sulphate, ammonium ion and carbonate. The rate of thiocyanate production in a given process is dependent on the host rock mineralogy and the process itself. Concentrations of thiocyanate in the process water are generally low for most mining operations, and are expected to be low at the Hammond Reef site given that 1) sulphide concentrations in the ore are low; 2) sulphide when present is generally in the form of pyrite which has a lower affinity for production of thiocyanates relative to other sulphide minerals such as pyrrhotite or chalcopyrite; and, 3) part of the process includes a cyanide destruction circuit.</p> <p>Although not expected, the potential for thiocyanate production is recognized and monitoring for these compounds will be required initially during operations to confirm the concentrations are not influencing overall water quality. Depending on the monitoring results, the process can be controlled, or water can be treated to reduce thiocyanate (e.g., through addition of an ozone oxidation step) however this step is not expected to be required at this site and would only be undertaken if necessary, depending on monitoring results.</p>	<p>MOE SW-2B</p>