



Cowal Gold Project – Annexure to the Transport of Hazardous Materials Study

Barrick Gold of Australia (Barrick) submitted a Transport of Hazardous Materials Study (THMS) to the Department of Infrastructure Planning and Natural Resources (DIPNR) (now Department of Planning [DoP]) in January 2006 in accordance with the following Cowal Gold Project Development Consent Condition:

5.4 Fuel, Oil and other Chemical Handling

(b) Pre-commissioning Studies

(i) Transport of Hazardous Materials

The study comprises arrangements covering the transport of hazardous materials including details of routes to be used for the movement of vehicles carrying hazardous materials to or from the proposed development. The study shall be carried out in accordance with the Department of Urban Affairs and Planning's draft "Route Selection" guidelines. Suitable routes identified in the study shall be used except where departures are necessary for local deliveries or emergencies.

The study should also address (1) the issues associated with spills, cleanup procedures, training of clean-up teams, communication, and liaison with organisations such as the fire brigades, District Emergency Management Coordinator (and Committee), Local Emergency Management Committee(s), and state emergency services; (2) inspection and monitoring procedures for chemicals such as explosives, xanthates and cyanides prior to commencement of a trip, to verify the integrity of the packaging; and (3) measures to be taken to ensure that the temperature of the materials does not rise above safe levels.

In accordance with DIPNR correspondence dated 6 June 2005:

- Barrick was granted permission to defer the inclusion of flotation reagents (used in the processing of primary ore [e.g. xanthates]) in the THMS until the sources and suppliers of these goods were known; and
- Barrick committed to submit the amended THMS (to include the assessment of materials required for flotation of primary ore) to the Director-General of Planning for approval at least one month prior to commissioning of the flotation circuit.

The sources and suppliers of these reagents are now known. In accordance with DoP correspondence dated 17 January 2007, Barrick was granted permission to submit the amended THMS to the Director-General of Planning for approval two weeks prior to commissioning of the flotation circuit. Accordingly, an annexure to the THMS has been prepared to include flotation reagents and is attached.

Emergency response procedures, including spill and cleanup procedures, communication and liaison with organisations and state emergency services outside of and within the Cowal Gold Mine mining lease are outlined in Section 7 and Section 8 of the THMS respectively. These sections are relevant to flotation reagents and accordingly no amendment of the THMS is required to satisfy the applicable component of the Development Consent Condition for primary ore processing.

Section 5 of the THMS outlines inspection and monitoring procedures prior to transport of hazardous materials to site. As stated in Section 5, Barrick is not transporting the hazardous materials included in the THMS to the Project, and accordingly do not verify the integrity of the packaging of the materials prior to transport to the Project. Similarly, transport of the flotation reagents will be arranged by the contracted supplier of the materials. Accordingly, Barrick will not be verifying the integrity of the packaging of the flotation reagents prior to transport to the Project. Notwithstanding, the supplier of potassium amyl xanthate would be required to inspect the integrity of the packaging and Barrick would maintain the inspection records.

COWAL GOLD PROJECT
ANNEXURE TO TRANSPORT OF HAZARDOUS MATERIALS STUDY



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ANNEXURE Transport of Hazardous Materials Study

1. Delete paragraphs 1, 2 and 3 on page 4 (Section 1.2).
2. Delete last sentence from paragraph 1 of Section 6 on page 54.
3. Insert as final paragraph in Section 5 on page 54:

Notwithstanding the above, the integrity of the packaging of Potassium Amyl Xanthate (PAX) would be inspected before shipment in China and in Victoria prior to transportation by road to the Cowal Gold Mine (SNF, *pers. comm.* 22 January 2007). It would be the condition of any contract to supply PAX to the Cowal Gold Mine that the integrity of the packaging of PAX would be inspected in Victoria prior to transportation by the supplier of PAX and/or their transport contractors, and records of the inspections would be retained by Barrick for inspection by the Director-General of Planning or his nominee.

4. Insert after paragraph 1 of Section 6 on page 54:

There is a temperature-related hazard applicable to the transportation of PAX. PAX is classified as a Class 4.2 material under the Australian Dangerous Goods (ADG) Code, defined as:

Class 4.2 – substances liable to spontaneous combustion comprises substances that are liable to spontaneous heating under normal conditions encountered in transport; or to heating up in contact with air, and being then liable to catch fire.

For spontaneous combustion to occur oxygen and water must be present. To mitigate the potential for PAX to spontaneously combust or to heat up in contact with air, PAX would be hermetically sealed from dispatchment in China to the Cowal Gold Project, thereby prohibiting moisture and/or oxygen ingress.

PAX decomposes upon ageing, heating or exposure to moisture and releases carbon disulphide (a flammable gas) (SNF, 2007). However PAX is stable if stored and handled under recommended conditions (*ibid.*). The MSDS for PAX (SNF, 2007) recommends containers to be tightly closed in a dry, cool and well-ventilated place, away from heat and sources of ignition, and out of direct sunlight at moderate temperatures.

PAX would be delivered to a port outside of NSW and transported from the port, by road to the Cowal Gold Mine. The supplier of PAX and their transport contractors would be required to transport PAX to the Cowal Gold Mine in accordance with the conditions and recommendations outlined in the MSDS, and would be required to inspect the integrity of the packaging as outlined above. During transportation of PAX to the Cowal Gold Mine the transporter would, as far as practicable, keep the load cool. For example the transporter would maintain satisfactory ventilation during transportation, store hermetically sealed bags in plywood boxes (plywood is a poor conductor of heat) (SNF Australia *pers. comm.* 17 January 2007) and park the vehicle in the shade during stops. The transporter would also be familiar with the PAX MSDS and be aware that the smell of carbon disulphide is a potential indicator of PAX decomposition. Moisture is required for the ageing process of PAX occur (AOTONG Holdings, *pers. comm.* 22 January 2007). The abovementioned hermetically sealed packaging prohibits the ingress of moisture and thereby also prevents this reaction from occurring.

The MSDS for PAX (SNF, 2007) recommends storage of PAX a dry, cool and well-ventilated place. These conditions would be maintained during the road transportation of PAX to the Cowal Gold Mine by the temperature control measures and hermetically sealed packaging outlined above.

No other requirements would be necessary to regulate the temperature of PAX during transportation.

5. Insert after last reference of Section 12 on page 68:

SNF Inc (2007) *Material Safety Data Sheet Flomin C-3505. Georgia.*