INFORMATION REQUEST RESPONSE

EA No: 0809-001 **Information Request No: YKDFN #06**

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Linkage to Other IRs

Alternatives North #05

Date of this Draft:

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Request

Preamble:
It is stated in the DAR that 60,000 m³ of contaminated soil can be safely frozen in B1 pit, and that 58,000 m³ of contaminated soil will be placed in B1 pit. The locations and associated volumes of contaminated soil, as well as the contaminant types, were not detailed. There remains uncertainty in the prediction of the volume of contaminated soil estimated.

Since the estimated contaminated soil volume and available disposal volume in the B1 pit are similar, it is possible that the available storage volume could be exceeded if predictions are underestimated. There is uncertainty in the contingency in place should the actual volume of contaminated soil exceed the available storage volume in the B1 pit.

Question:
a. It is requested that the contaminant types that are typical of that which is proposed to be deposited in the B1 pit be provided.
b. It is requested that the acceptable contaminated soil types that are permissible for disposal in the B1 pit be defined. If there are restrictions on the contaminated soil types for deposit in the B1 pit, it is requested that the QA/QC measures to control entrance of contaminated soil in the B1 pit be defined.
c. It is requested that a contingency plan is detailed to account for the possibility of actual contaminated soil to exceed the allowable storage volume in the B1 pit.

Reference to DAR (relevant DAR Sections):

DAR s. 5.10 Contaminated Surface Materials
DAR s. 5.12.4 Area 4: B1 Open Pit
DAR s. 6.4.3 Specific Pit Remedial Works

DAR s. 6.10 Contaminated Surficial Materials
DAR s. 6.12.2 Hazardous Waste

Reference to the EA Terms of Reference

ToR s. 3.2.4 Development Description, Point 6
ToR s. 3.2.4 Development Description, Point 7

Summary

Discussion of the volumes and plans for various types of contaminated soils appears in several places in the Developer's Assesment Report (DAR). Any excess arsenic contaminated soil will be placed in tailings ponds prior to cover being applied.

Response a

Soil and waste rock fill containing total arsenic above the industrial land use criterion (GNWT 2003) would be disposed in B1 Pit that.

Process residues from the Roaster and Mill complexes, as well as any other materials or machinery contaminated with soluble arsenic, will be disposed within one of the planned freeze zones.

Hazardous materials other than arsenic trioxide contaminated waste will be handled and disposed in an approved facility in accordance with applicable regulations and guidelines (DAR s. 6.12.2)

Response b

The acceptable soil types for disposal in the B1 Pit include contaminated surficial soil and waste rock containing total arsenic above the industrial land use criterion (GNWT 2003) (DAR s. 6.4.3). Hydrocarbon contaminated surficial materials co-contaminated with arsenic may also be deposited within the B1 Pit (DAR s. 6.10). The only soil-like material that will be excluded from the B1 Pit is spilled tailings, which will be placed into one of the tailings impoundments.

In general soil with higher levels of arsenic contamination will be placed within the zone of the B1 Pit that will be frozen. Surficial waste rock that contains total arsenic above the industrial land use criterion will be backfilled into the unfrozen section of the B1 Pit, and the remainder of the pit filled with quarry rock, stable non-hazardous demolition waste and other clean fill. Any other high arsenic material that is encountered will be excavated and deposited within one of the planned freeze zones, possibly including the frozen section of the B1 Pit (DAR s. 6.10).

Other hazardous wastes will be excavated, handled and disposed of in an approved facility in accordance with the *Guideline for the General Management of Hazardous Waste in the NWT* (GNWT 1998) (DAR s. 6.10).

A protocol for site wide sampling will be developed to manage the movement of the various types of contaminated soil and to confirm remediation. Procedures comparable to those outlined in the British Columbia Ministry of Environment (BC MoE) contaminated sites technical guidance documents on Site Characterization and Confirmation and Composite Samples (BC MoE 2009, 2001) will be followed.

Response c.

The volumes of arsenic contaminated soil and surface waste rock are estimated to be 177,000 m^3 and 38,100 m^3, respectively. These estimates are presented in Table 5.10.1 of Section 5.10.1 of the DAR.

The volume of the B1 Pit that will be frozen is estimated to be 60,000 m^3. More highly contaminated soil material will be placed there, where scheduling and other practicalities permit. The plan as stated in Section 6.10 of the DAR is for the remaining volume of arsenic contaminated soil to be disposed of in the tailings and/or sludge ponds prior to the construction of the cover.

References:

BC MoE, 2009. Technical Guidance Document 1 on Contaminated Sites, Site Characterization and Confirmation Testing, January 2009.
BC MoE, 2001. Technical Guidance Document 12-10 on Contaminated Sites, Composite Samples, April 2001.
GNWT, 1998. Guideline for the General Management of Hazardous Waste in the NWT, February 1998.
GNWT, 2003. Environmental Guideline for Contaminated Site Remediation, November 2003.