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BGC Project Memorandum

To:	**Copper Fox Metals Inc.**	**Date:**	**February 5, 2008**
Attention:	**Shane Uren, M.A.Sc., R.P.Bio**	**CC:**	**Matthias Jakob**
From:	**Kris Holm, M.Sc., P.Geo.**	**Project No:**	**0530-001**
Subject:	**Schaft Creek Tailings Options study, Geohazards**		
No. of Pages (including this page): 13			

1.0 INTRODUCTION

1.1 Area Overview

The Schaft Creek copper-gold-molybdenum deposit is located in the British Columbia Coast Mountains about 120 km northeast of Wrangell, Alaska, 60 km south of Telegraph Creek, BC, and about 160 km northwest of Stewart, BC (Figure 1.1). The access route and minesite areas are located within the Mess Creek Watershed, which drains an area of 2,306 km^2 and is a major tributary of the Stikine River. The proposed minesite and tailings areas are located in upper Schaft and Hickman Creeks, tributaries to Mess Creek.

1.2 Terms of Reference and Scope of Work

Copper Fox has identified three tailings site options in the vicinity of Schaft Creek (Drawing 1) and would like to identify the most favourable option based on a variety of factors. This memorandum summarizes overview assessment of landslide and snow avalanche geohazards at each option, including identification of the most favourable option with respect to these geohazards. BGC understands that the following work is required, based on a work plan documented in an email dated January 16, 2008:

- Terrain analysis and identification of landslide and snow avalanche geohazards at an overview level of detail;
- comparison of relative geohazard levels for each tailings option; and
- identification of the most favourable tailings site with respect to geohazards.

1.3 Terrain Analysis Methods

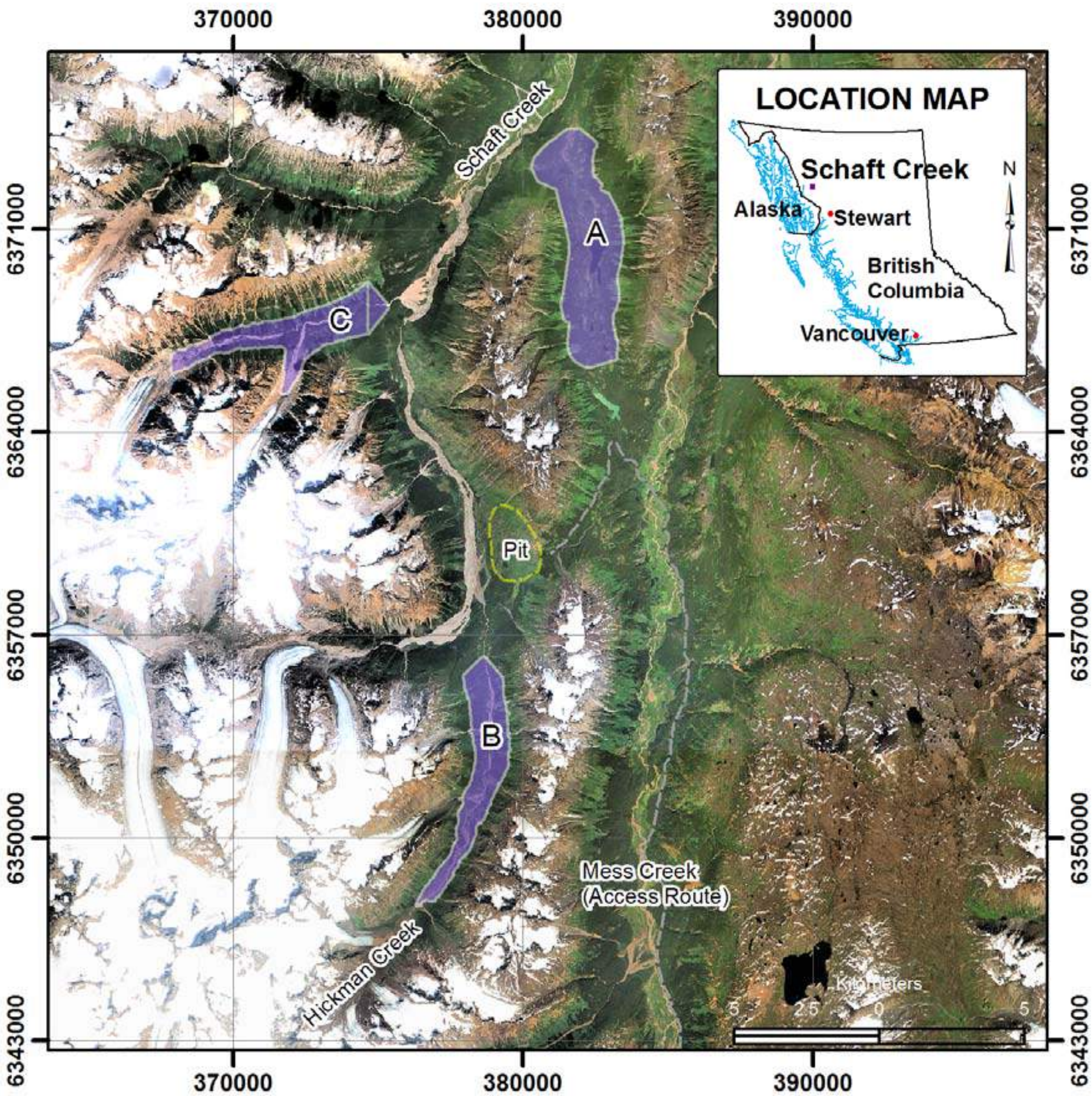
Terrain analysis was done by Kris Holm, M.Sc., P.Geo. (KH) and reviewed by Matthias Jakob, Ph.D., P.Geo. (MJ), on approximately 1:10,000 and 1:20,000 scale aerial photographs (Table 1.1). Airphoto interpretations were digitized onscreen in ArcGIS.

Maps and terrain descriptions included in this memorandum provide a general overview of the distribution of geohazards. The scale of analysis completed in this work is intended for preliminary development planning and early identification of any major geohazards issues. In the case of snow avalanches and rockfall, the arrows on figures show general areas of hazard potential but do not indicate individual paths. This level of detail is not appropriate for detailed site selection or design, and does not replace more detailed terrain analysis and field investigation at a later project phase.

Table 1.1 List of Air photographs used

Tailings Option	Line	Date	Photograph Number
A	6	15-Sep-06	Eagle Mapping EML06 Nos. 44-51
	7	15-Sep-06	Eagle Mapping EML06 Nos. 52-58
B	7	15-Aug-07	McElhanney Nos. 181-190
	8	15-Aug-07	McElhanney Nos. 191-204
	5	15-Sep-06	Eagle Mapping EML06 Nos. 1-5
	6	15-Sep-06	Eagle Mapping EML06 Nos. 30-34
C	3	15-Aug-07	McElhanney Nos. 124-138
	4	15-Aug-07	McElhanney Nos. 144-160
	5	15-Aug-07	McElhanney Nos. 161-173

Figure 1.1 Tailings Options A, B and C (Shaded Purple).



2.0 TAILINGS OPTIONS

2.1 Option A

2.1.1 Terrain

Tailings Option A is located in a valley trough extending north from the northeast side of Mt. La Casse, and encompasses a 15 km^2 area surrounding Skeeter Lake (Figure 1.1). The valley head is at approximately 900 m elevation and has not been glaciated in Holocene time (past 10,000 years); existing glaciers are limited to three cirque glaciers on the upper northeast slopes of Mt. La Cass.

Upper slopes contain gullied bedrock partially overlain by colluvial veneers that increase in thickness towards the valley bottom and within colluvial fans at the outlet of debris flow channels. Holocene glacial till exists in upper cirques on the west side of the valley, north of Mt. La Casse. The valley bottom contains hummocky bedrock partially overlain by till and organic veneers in depressions.

The valley follows an extensional fault zone and fault contact between Stuhini Group volcanic rock on the west valley side, and Stikine Assemblage dolomitic limestones and volcanic rock in the valley bottom and east valley side (Logan et al. 1997).

2.1.2 Geohazards

Geohazards with the potential to impact the tailings footprint are shown in Figure 2.1 and primarily include runout zones of snow avalanches and debris flows around the footprint perimeter. Gentle terrain in the middle of the tailings footprint is considered to have very low levels of geohazards.

A ~2000 m wide linear bedrock feature exists on the east side of the valley (orange line in Figure 2.1). Based on the position of the feature with respect to adjacent slopes, it is interpreted to have sagged several tens of metres relative to slopes above. No signs of recent movement are visible on the photos, and it is possible that the feature is very old (on the order of thousands of years and possibly associated with glacial debuttressing). Implications of rapid failure would likely include wave triggering and could be factored into tailings dam design. However, rapid failure of the block is considered very unlikely (less than 1/1,000). Further more detailed geological mapping and monitoring of slope movements (e.g. Interferometric Synthetic Aperture Radar (INSAR) and/or Differential GPS) would be required to test this hypothesis.

Hummocks and numerous disconnected depressions exist in the valley bottom throughout the footprint of the tailings area. Some depressions may be kettles formed from melting of stagnant glacial ice. However, discontinuous bedrock outcrops imply thin till cover and suggest the presence of sinkholes and karst terrain in underlying carboniferous bedrock. These landforms were also noted by Spooner (2007b). Combined with the presence of extensional faults, this could represent a very significant hydro-geotechnical challenge for tailings design related to groundwater flow.

Figure 2.1 Terrain Hazards, Tailings Option "A".

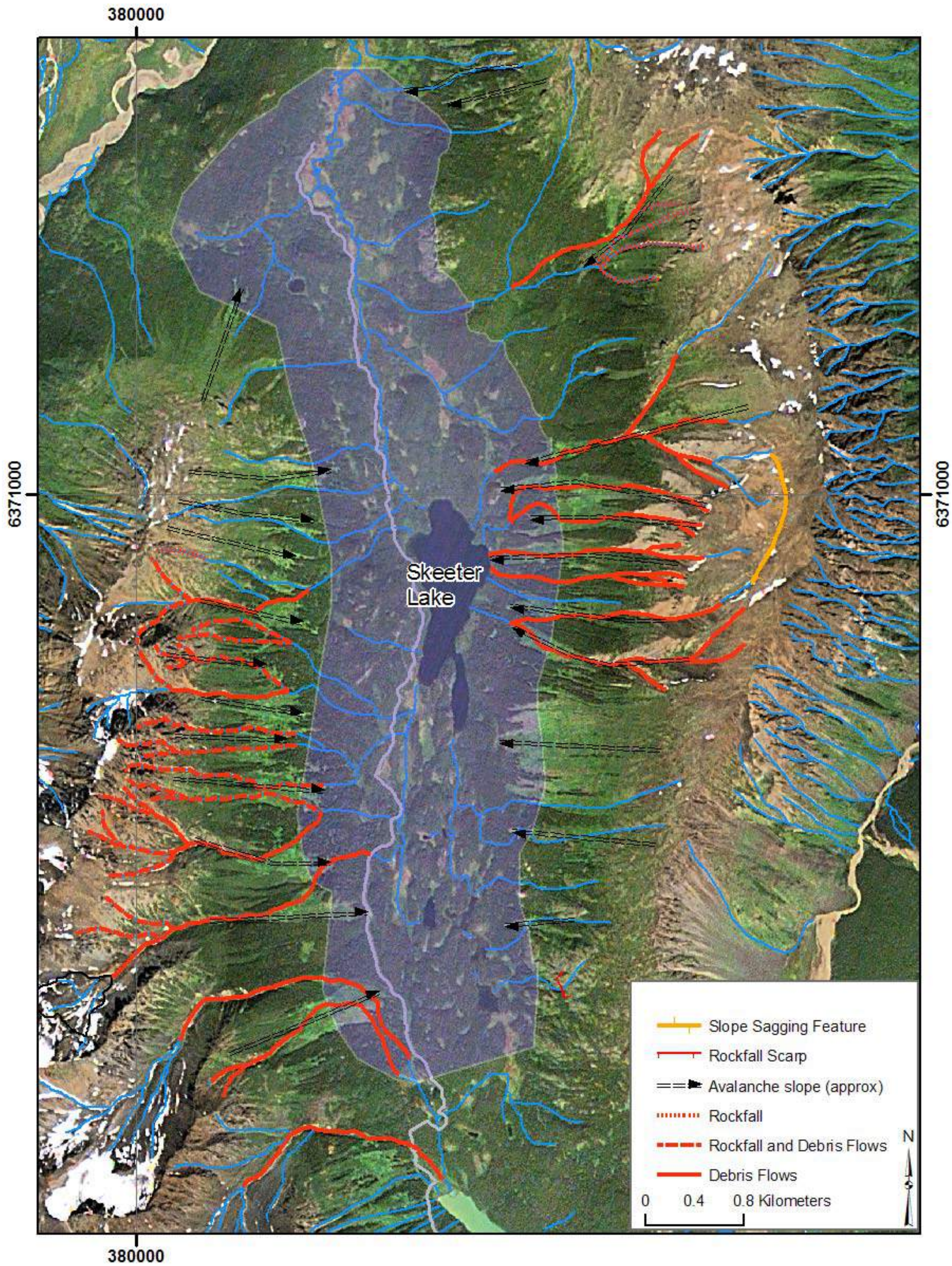


Figure 2.2 Sagged Slope Feature, East Side of Tailings Option A.

2.2 Tailings Option B

2.2.1 Terrain

Tailings Option B is located in upper Hickman Creek, about 4 km east of Mt. Hickman. This valley is extensively glaciated in its upper headwaters and in cirques above the west side of the valley. Upper slopes contain steep, gullied bedrock, with colluvium concentrated on lower angled steps and gully bottoms. Lower slopes are overlain by colluvium, including debris flow fans at the outlet of most channels and talus at the bottom of steep rockslopes. The valley bottom contains till overlain by fluvial and colluvial gravels. Based on the position of moraine deposits and comparison between TRIM and satellite imagery, Hickman glacier has retreated approximately 2 km since the Little Ice Age maximum[1] and about 400 m since the early 1980's.

[1] Period of Holocene glacial advance with maximum extents approximately 150 years before present.

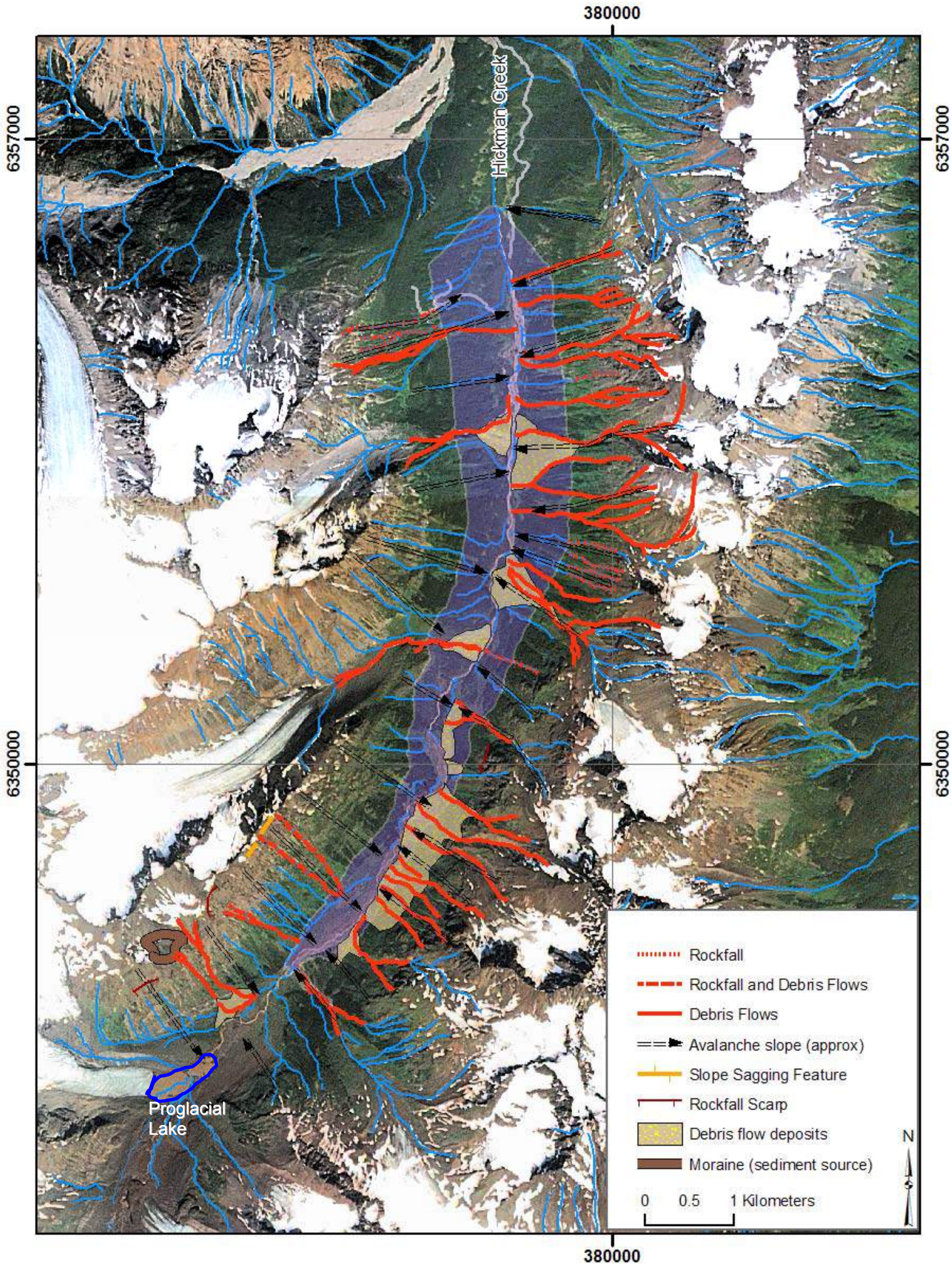
2.2.2 Geohazards

Geohazards with the potential to impact the tailings footprint are shown in Figure 2.3. Hazards include debris flows, rockfall, and snow avalanches.

Snow avalanches are the most frequent geohazard and occur on all slopes above the tailings footprint. Maximum avalanche runout zones extend to the middle of the valley and frequent (>>1/year) avalanches have the potential to reach the tailings footprint. Fragmental rockfall occurs on most steep rockslopes on both valley sides. Debris flow channels exist on both valley sides and have formed fan deposits at outlets of tributary channels, as shown in Figure 2.1. Based on the freshness of deposits, debris flow frequency is estimated as approximately 1:10 years. Linear features interpreted as slope sagging (sackung) were also identified on the uppermost west slope (orange lines on). These features are common in many glacially scoured valleys and do not show signs of active movement.

A small (~0.2 km^2) proglacial pond exists below the glacier toe in upper Hickman Creek. This lake has approximately doubled in size since the early 1980's, based on comparison of TRIM and satellite data, and is dammed by a recessional moraine. Spooner (2007) observed that the moraine dam has previously been breached, and that accumulation of subglacial meltwater beneath Hickman glacier is unlikely due to its steep gradient. These factors limit the potential for future moraine dam outbreak floods at this site, and BGC's preliminary estimate is that outbreak flood hazard at this site is very low (<1/500 annual probability). However, this location should be further assessed during summer fieldwork, including investigation of moraine dam stability and potential flood peak discharges, if this location is selected as the preferred tailings option.

Figure 2.3 Terrain Hazards, Tailings Option B.



2.3 Tailings Option C

2.3.1 Terrain

Tailings Option C is located in a tributary of upper Schaft creek, about 8 km northwest of the proposed minesite. Similarly to Hickman Creek, this valley is extensively glaciated in its upper headwaters and at the head of tributaries on the south side of the valley. The tailings footprint extends into two valleys, the main tributary valley extending west, and a second main sub-tributary extending south. Based on the position of moraine deposits and comparison between TRIM and satellite imagery, both main valley glaciers have retreated approximately 2.5 km since the Little Ice Age and about 500 m since the early 1980's.

Upper slopes contain steep, gullied bedrock, and as well as end moraines perched in hanging valleys that provide sediment supply to channels (outlined in brown on Figure 2.4). Lower slopes are primarily overlain by a colluvial blanket composed of debris flow and rockfall deposits, and the valley bottom contains till overlain by fluvial and colluvial gravels. The valley bottom at the east side of the tailings dam footprint appears to contain gentle, thick deposits incised by the main channel. Based on the proximity of these deposits to a main valley stem, and the potential for Hickman Glacier to have dammed this tributary during the Pleistocene glaciation, the deposits may contain glaciolacustrine silts. Field mapping and drilling would be required to test this hypothesis.

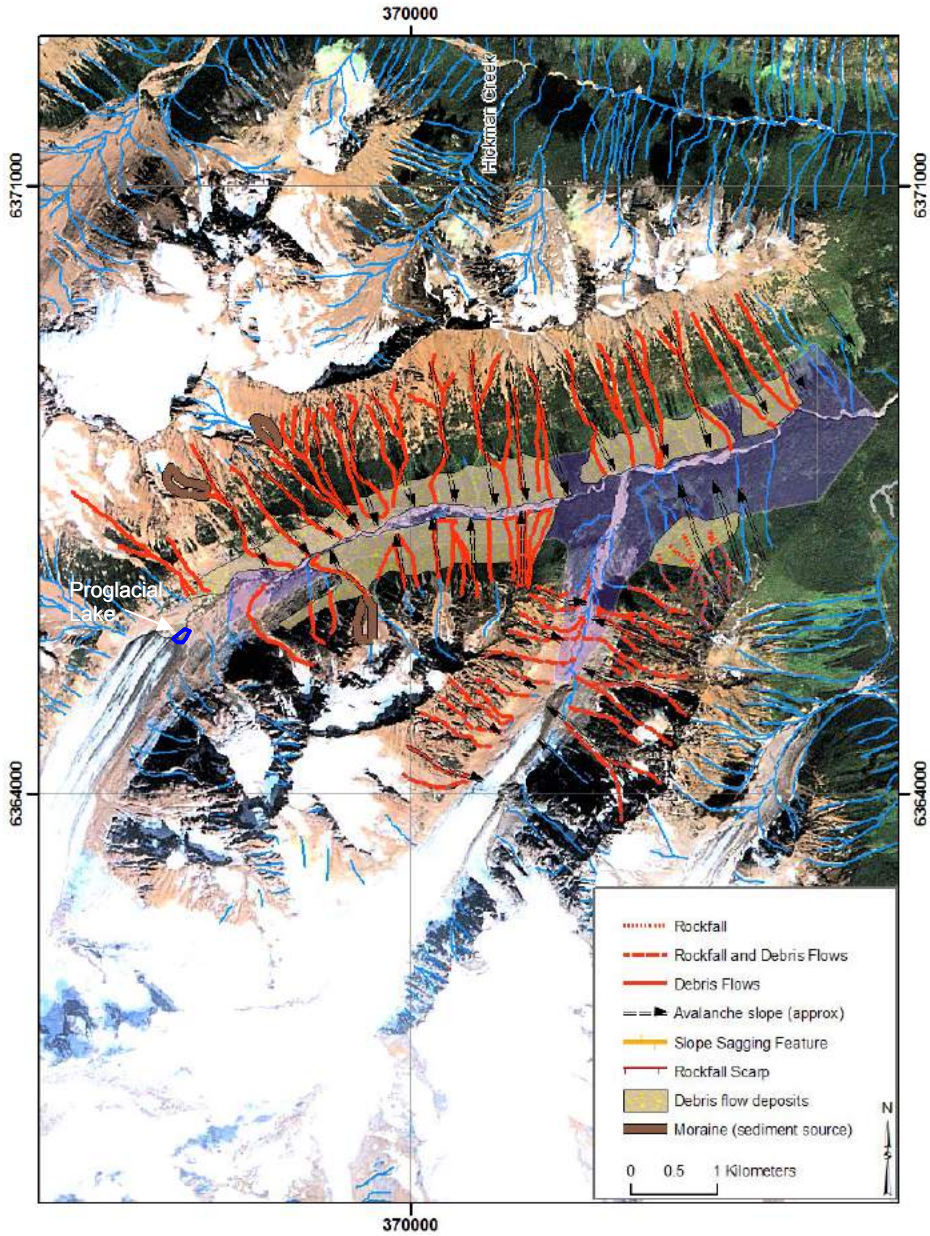
2.3.2 Geohazards

Geohazards with the potential to impact the tailings footprint are shown in Figure 2.4. Hazards include debris flows, rockfall, and snow avalanches.

Similarly to Tailings Option B, snow avalanches are the most frequent geohazard and occur on all slopes above the tailings footprint. Maximum avalanche runout zones extend to the middle of the valley and frequent (>>1/year) avalanches have the potential to reach the tailings footprint. Fragmental rockfall exists on most steep rockslopes. Debris flow channels exist on north and south sides of the main valley, and have formed fan deposits that coalesce as a blanket along lower valley slopes. Based on the freshness of vegetation scars and deposits, frequency of debris flows intersecting the tailings footprint is estimated as approximately 1:10 years.

Glacial outburst flood hazard appears to be very low in the main sub-tributary. A very small (0.1 km^2) pro-glacial lake exists at the toe of the main tributary glacier. No evidence was identified on the airphotos to suggest previous moraine dam outburst floods at this site. However, the lake itself lies west of the available stereo airphoto coverage and would need to be visited in the field for further assessment of this potential hazard.

Figure 2.4. Terrain Hazards, Tailings Option C.



3.0 RELATIVE GEOHAZARD LEVELS, TAILINGS OPTIONS A, B, C.

Table 3.1 lists geohazard types and relative hazard rankings (lower number = more favourable) for each tailings option. Hazard levels are based on judgement and correspond to relative levels of geohazard activity, defined as a combined measure of hazard frequency and magnitude. Options are assigned the same relative ranking if they are considered to have negligible relative difference in hazard level. Based on ranking totals in Table 3.1, Tailings Option A is considered the most favourable with respect to geohazards.

Table 3.1 Relative Tailings Options Geohazard Rankings

Geohazard	Tailings Options Relative Geohazard Ranking			Discussion
	A	B	C	
Avalanches	1	2	2	Vegetation evidence shows significantly smaller areas subject to avalanche hazard in Option A
Rockfall	1	2	3	High frequency rockfall hazard exists in the south sub-tributary of Option C
Debris Flows	1	2	2	Both Options B and C contain a relatively larger number of higher frequency and magnitude debris flow channels that run into the tailings footprint.
Deep-seated slumping	2	1	1	A 2 km wide zone interpreted as a sagged slope exists on the east side of Tailings Option A.
Outbreak Floods	1	2	1	Further field assessment of moraine dam outbreak flood hazard potential for both Options B and C is recommended.
Ranking Total	6	8	8	

At Options B and C, no landslide or snow avalanche geohazards were identified during this overview assessment that would preclude tailings construction or operation. However, snow avalanche and debris flow hazard could represent significant challenge to the design of drainage capture and diversion structures, if constructed around the tailings pond perimeter. In addition, more detailed assessment of the potential for moraine dam outburst floods is recommended at both sites.

At Option A, implications of slope failure at the site interpreted as a sagged slope include damage to infrastructure, safety considerations, and the potential for wave generation in the tailings. However, the likelihood of rapid failure is considered very low. More detailed assessment and possibly slope monitoring is recommended at this site. BGC also recommends further investigation of karst landforms noted across the lower valley area of Option A, as their existence could present significant hydro-geotechnical challenge to tailings pond construction.

4.0 CLOSURE

We trust the information provided in this memorandum meets your requirements. If you have any questions or comments, or if we can be of further assistance, please do not hesitate to contact the undersigned.

Yours sincerely,
BGC ENGINEERING INC.
per:

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Project Geoscientist/Project Manager

Reviewed by:

Matthias Jakob, Ph.D., P.Geo.
Senior Geoscientist

5.0 REFERENCES

Giroux, G., 2004. Summary Report, Status and Resource Estimate, Schaft Creek Property, Northwestern British Columbia. 96 pp.

Logan, J., Drobe., J., Koyanagi, V., and Elsby, D., 1997. Geology of the Forest Kerr – Mess Creek Area, Northwestern British Columbia (104B/10, 15, & 104G/2 & 7W). Ministry of Employment and Investmeent, Geoscience Map 1997-3, 1:100,000 scale.

Spooner, I., 2007. A preliminary assessment of Mass Wasting and Glacial Outburst Flood Risk. Report prepared July 2007 for Copper Fox Metals Inc. 27 pp.

Spooner, I., 2007b. Airphoto Interpretation of the Schaft Creek – Mt. LaCasse Region. Report and map prepared August 2007 for Copper Fox Metals Inc. 9 pp.