2005 MT. NANSEN SUMMARY/KEY POINTS:

May 11, 2006

Introduction:

Environmental Dynamics with assistance of the Little Salmon Carmacks First Nation has been conducting a Terrestrial and Aquatic Effects study for the Mt. Nansen mine site since 2005. This study is designed to test plants, soils, animals, water, sediment and fish to determine if the minesite is impacting these components of the ecosystem. Metals were selected for analysis as they can accumulate in ecosystems. Community members were surveyed to determine what types of plants and animals are harvested in the vicinity of the minesite so that these could be collected and tested.

Terrestrial Effects:

1) Lichens (good indicator of aerial contamination): some localized windblown metal contamination (for arsenic, antimony, silver, lead and copper) found in lichens within the immediate vicinity of the mill site, open pit, and tailings. To put the results into perspective, the highest lead levels found in lichens at Mt. Nansen was 39.4 ppm compared to maximum levels around 700 ppm at Faro. Additional study components will be completed this year to determine if that is historic or recent ongoing contamination (via moss bag technique).

2) Most plant parts tested did not appear to have elevated metal levels in locations around the minesite. Labrador tea appeared to have slightly higher lead and arsenic concentrations in the immediate vicinity of the mill site (compared to other areas). Willow samples showed some elevated levels near the pit, tailings pond and riparian areas (Dome and Pony Creeks).

3) A narrow band of dead vegetation beside Dome Ck below tailings dam possibly due to the release of contaminated water during mine operations. Metal levels in this blackened vegetation were extremely high; however, it appears that metal levels in soils are only somewhat elevated and occur only in the upper horizons. It appears that vegetation can grow in the area given the right conditions (i.e. seed can establish through the blackened vegetation).

4) Indication of some metal (As, Pb, Cu) uptake into plants growing on tailings and near ore stockpiles and waste rock.

5) Metal levels in berries are generally low are not of concern.

6) Wildlife: -small animals and gray jays showed slightly elevated metals compared to control data; however, not enough samples were obtained to confirm this. Levels not near toxic levels but more sampling will be done this year to confirm the patterns found in 2005. Plans in 2006 include sampling higher up in the food chain (ie marten, weasels etc) to see if metals are bioaccumlating.

7) Ungulates: Generally speaking the results from ungulates in the area were not of a concern in terms of human or ungulate health. Additional sampling in 2006 will help confirm these

patterns. (*Hugh's comment: Lyn we need to bring home the point in the newsletter any chance we get, that without submission of tissue samples from locals hunting in the area we can't arrive at any conclusions as to the bio-accumulation of metals as consumption moves up the food chain*) *Pat's comment: also would like submissions of small game birds such as grouse.*

Aquatic:

1) Water -effects of the minesite on Upper Dome Creek are evident, these effects are generally down to background levels in lower Dome and Victoria Creek - water sampling continues on a regular basis

2) Stream sediments. –the results indicate above normal levels of metals in sediments in parts of Dome Ck; however, levels in Victoria Creek appeared to be normal both upstream and downstream of Dome Creek. Additional sampling will be completed in 2006 to understand variations in sample results over the years.

3) Fish - No fish were captured in Dome Ck. There are small falls at the mouth of Dome Creek which appear to limit fish from entering this creek. Slimy sculpin and burbot in Victoria Ck show slightly elevated levels of metals (Ag, As); however, additional sampling in 2006 is required to confirm these patterns. Metal levels in grayling from Victoria Ck appeared normal and not a concern in terms of toxicity to fish or human consumption.

In summary, preliminary results indicate some evidence of impacts resulting from the minesite and associated activities. Compared to other sites (i.e. Faro), the impacts appear limited in magnitude and area. However, given the preliminary results, perhaps some caution and some moderation should be used when consuming plants and animals at the site. Collection of plants/small animals should be limited at or immediately around the three sources of contamination (the mill site/pit/pond). In addition, rinsing plant parts prior to consumption or preparation is recommended. Avoiding collection of plants/small animals in the immediate vicinity of the mine site would likely eliminate any concern regarding the consumption of contaminants. For ungulate,s the limits of consumption outlined by Yukon Heath appear to be adequate.

The completion of this study in 2006 will provide additional insight into the impacts of the minesite. A clear understanding of the impacts and issues at the site is required to guide restoration/rehabilitation works at the site in the future.

Tailings Pond

Photo 2.1. Northwest view of main tailings pond during low to moderate water levels (late Aug 2005). Waste dumps around the Brown-McDade Pit in background.

Brown-McDade Pit

Photo 2.2. Southeast view of the Brown-McDade Pit and the surrounding area.

Mill site

Photo 2.3. West view of mill site from tailings pond.

Waste Rock Pile

Photo 2.4. Low-grade ore stockpile adjacent to mill site (west view; tailings pond in background).