teckcominco

January 18, 2007

Tom Chapple
Director – Air Quality
Alaska Department of Environmental Conservation
Division of Air and Water Quality
555 Cordova St.
Anchorage Alaska 99501

RE: Red Dog Fugitive Dust Update No. 7 – 4th Quarter 2006

Dear Mr. Chapple:

Please find enclosed Teck Cominco Alaska's (TCAK), Red Dog Mine Fugitive Dust Quarterly Update Report as described in Section 6 of the Memorandum of Understanding (MOU) between the Alaska Department of Environmental Conservation (ADEC) and TCAK. The report covers the period of October through December 2006.

1. Studies

Particle Fate Analysis

A draft final report has been received from Trail Research on the fugitive dust particle fate study.

- Lead and zinc extractability was determined for the Triangle area samples (surface and subsurface) using a diagnostic leach procedure. Preliminary results indicate approximately 3% of the zinc is leached from the surface and subsurface samples. Lead leaching, however, is approximately an order of magnitude below what was observed in the surface sample for zinc.

- Scanning Electron Microscope investigations show some evidence of galena, the mineral form of lead, weathering in the Triangle samples. The weathered or oxidized products were primarily anglesite. In comparison Sphalerite, the predominate zinc mineral, was weathered to a much greater degree.

- Humidity cell tests indicate that the zinc in the fugitive dust readily weathers and oxidizes releasing zinc and sulfate. The release of sulfate lowers the pH.

The final version of the report is expected in January 2007.

2. Ambient and Fugitive Monitoring

Total Suspended Particulate Ambient Air Monitoring

TCAK continues to monitor Total Suspended Particulates (TSP), airborne lead, and airborne zinc using Rupprecht & Patashnick 1400 AB TEOM ambient particulate monitors (TEOM) equipped with TSP Inlets and Automatic Cartridge Collection Units (ACCU). The monitoring results for lead, by quarter, are provided below.

Table-1
Red Dog Mine
Quarterly TSP Lead Concentration*
(R&P 1440AB TEOM Data)

	PAC TEOM Site			Tailings Dam TEOM Site		
	Average ($\mu g/m^3$)	Minimum ($\mu g/m^3$)	Maximum ($\mu g/m^3$)	Average ($\mu g/m^3$)	Minimum ($\mu g/m^3$)	Maximum ($\mu g/m^3$)
1st Quarter 2005	1.7	0.17	5.8	0.7	0.17	1.9
2nd Quarter 2005	1.4	0.05	5.8	0.5	0.05	1.2
3rd Quarter 2005	0.7	0.02	4.8	0.2	0.02	1.4
4th Quarter 2005	1.2	0.22	6.5	1.0	0.02	3.6
1st Quarter 2006	2.2	0.14	14.6	1.0	0.02	3.1
2nd Quarter 2006	1.0	0.12	4.3	0.2	<0.01	2.6
3rd Quarter 2006	0.4	0.07	1.1	0.1	<0.01	0.8

** The table values have been adjusted using the Hi-Vol correlation established in the March 2006 comparison study. (Hi-Vol=TEOM/0.42)*

Vegetation Monitoring

The preliminary report *Vegetation Impact Assessment and Monitoring Studies, Red Dog Mine, Alaska* was received from ABR, Inc. in December. Several observations are made in the summary.

In the three impacted areas selected for study, the Triangle, west tailings, and north bank Red Dog Creek, non-vascular species (mosses, lichens, and liverworts) were either absent or showed mortality >90%. Of the vascular plants, the evergreen shrubs (*Cassiope tetagona, Ledum decumbens, Vaccinium vitis-idaea, Empetrum nigrum* and *Dryas octopetala*) were most heavily impacted.

Impacts to the bryophytes (mosses) were most likely caused by the decomposition products of sulfide dust oxidation which can result in the release of sulfuric acid and iron sulfate both of which are toxic to many moss species.

Evergreen shrubs accumulate dust on leaf surfaces as opposed to deciduous shrubs which loose their leaves before the winter dust accumulation months and start anew with fresh deposition

surfaces each year. The greater year-round accumulation of dust on the evergreen shrubs may be responsible for the greater impacts to these species.

Lowering of the soil pH from the oxidation of the dust appears to have resulted in greater uptake of aluminum, zinc and cadmium into plant tissues in the impacted areas.

Initial baseline observations were made on the ameliorative treatment areas, and the long-term monitoring plots along nine traverses lines radiating from the mine site. These sites will be monitored for two more years as part of this study and some sites may be retained for longer term monitoring through mine closure.

The final report for the 2006 field season is expected in February, 2007.

3. Engineered Controls

Coarse Ore Stockpile Building (COSB) Baghouse

In early 2005, Ridesic Consultants Inc. was retained to evaluate the feasibility of installing a fugitive dust control system in the coarse ore storage building (COSB). Several alternative preliminary designs were developed, and the best option was selected for detailed design of the dust control equipment (baghouse, ducting and fan) which was completed late in 2005.

As the selected concept shared some design similarities with the gyratory and jaw crusher fugitive dust control systems that were being installed in early 2006, it was decided to evaluate operation of those systems before moving forward with the COSB. The crusher dust control systems have operated well to date, so in late 2006 Westmar Consultants were retained to prepare a design of the support and ancillary systems associated the system. Westmar will then prepare a project cost estimate that would be used to support a capital expenditure request that is scheduled for completion in February. If the capital request is approved, then the preliminary construction schedule calls for completion of engineering and procurement of materials in time for the 2007 sealift. This would allow installation of the COSB fugitive dust control system during the second half of 2007.

Mine CSB/Truck Loading Facility Fugitive Dust Reduction Review

Preliminary engineering of the baghouse system continues and the finalization of the design is still expected in the first quarter of 2007.

4. Source Apportionment and Particle Deposition Modeling

Source Contribution and Modeling Report

Over the past several months, SENES and TCAK have worked together to iteratively develop emission rate estimates that reflect site operations as accurately as possible. SENES in now in the process of completing a draft source contribution and emission estimate report for submittal to ADEC. The report will include reference to all assumptions made as well as emission factors and source data used. Additionally, SENES is in the process of setting up a preliminary model and will begin confirmation of input parameters. TCAK intends to submit the draft source

contribution and emission estimate report to ADEC for review and feedback prior to completing the air dispersion modeling exercise.

If you have any questions, concerns, or require any additional information regarding this report, please contact Mr. Jim Kulas at 907-426-9129 / jim.kulas@teckcominco.com or Mr. Wayne Hall at 907-426-9259 / wayne.hall@teckcominco.com.

Sincerely,
Teck Cominco Alaska Incorporated

John B. Knapp
General Manager

cc: R. Barr, NANA/Anchorage
P. Glavinovich, NANA/Anchorage