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PROJECT MEMORANDUM

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| To: | Nunavut Water Board | Fax No.: | (867) 360-6369 |
| Attention: | Mr. Philippe di Pizzo, Executive Director | CC: | Patrick Duxbury |
| From: | Holger Hartmaier (Ext. 113) | Date: | June 26, 2003 |
| Subject: | Polaris Mine- Review of Spill Contingency Plan | | |
| No. of Pages (including this page): | 5 | Project No: | 0308-001-05 |

This memorandum summarizes comments on the Polaris Mine Demolition and Site Reclamation- Spill Contingency Plan ("Plan") as drafted by SNC Lavalin Engineers and Constructors Inc. (SLEC), the lead contractor for the decommissioning and closure of Polaris Mine. The Plan was required as part of Licence NWB1POL0311, Item 1 of Part E: Conditions Applying to Emergency Response.

BGC reviewed the copies posted on the Nunavut Water Board (NWB) FTP site, which consisted of fifteen (15) parts, comprising the Plan, Site Maps and appendices containing MSDS sheets for all of the potential contaminants stored or used at the Polaris mine site.

The spill contingency plan must meet the requirements of the Environmental Protection Act. A copy of the Consolidation of Spill Contingency Planning and Reporting Regulations ("Regulations") was provided in Appendix 3 of the Plan. Section 4 (2) of the Regulations lists the information that must be provided in a spill contingency plan. Our comments are organized with respect to these requirements.

4.(2) A spill contingency plan for a facility must contain the following information:

- (a.) The name, address and job title of the owner or person in charge, management or control:*

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This information is contained in Section 3, Figure 3 of the Plan. The Owner is Teck Cominco (Bob Hutchinson, (604) 685-3087). The Teck Cominco on-site representative is John Knapp (867) 253-2201 and the Teck Cominco Project Manager is J. Lees, of Cascade Management. The SLEC Site Construction and Project Manager is K. Lamondin (867) 253- 2245. The addresses for SLEC and Cascade Management are given in Section 4, Table 1 of the Plan, however Teck Cominco is not included in this list. The address for SLEC is the LCI Polaris Mine Site, however no address for Teck Cominco is given. It is recommended that a table be added ahead of Figure 3 in Section 3 to provide a more convenient listing of the above information.

- (b.) *The name, job title and 24-hour telephone number for the persons responsible for activating the spill contingency plan.*

This information is adequately presented in Section 3, Figure 3 of the Plan.

- (c.) *A description of the facility including the location, size and storage capacity.*

The description of the facility, which includes the Polaris mine site is described in Sections 1.0 and 1.2 of the Plan. Appendix 1 of the Plan contains plans of the site location and Polaris mine site. Section 2 of the Plan summarizes the hazardous substances storage facilities and disposal procedures. The hazardous substances on site include chemicals and reagents from mining/mill operations, ammonium nitrate, glycol, compressed gases and various petroleum products. Section 2 of the Plan includes information about the volumes of each on-site and related storage capacities (e.g. diesel tanks). As clean-up and decommissioning work continues, it should be recognized that the number and quantities of hazardous materials on-site may change, however the requirements of the Plan will remain in effect.

- (d.) *A description of the type and amount of contaminants normally stored at the location described in paragraph (c).*

Details are provided in Section 2 of the Plan.

- (e.) *A site map of the location described in paragraph (c).*

The general locations are described in Section 2 of the Plan. Many of the chemicals have already been removed by Teck Cominco. Residual chemicals will be collected and stored in sealed 205 L (45 gallon) drums on pallets for off-site disposal or if suitable for on-site incineration. The ammonium nitrate is stored underground (unspecified). Glycol used during the reclamation period will be stored on pads below the diesel tank farm. Specified locations are given in Section 2 for the compressed gases and petroleum products that are on-site. Since most of these substances are stored in the vicinity of the mine site buildings complex area, it is recommended that SLEC include a third figure in Appendix 1 to show the locations of those areas referred to in Section 2 of the Plan.

- (f.) *The steps to be taken to report, contain, clean up and dispose of contaminants in the case of a spill.*

The response organization structure and reporting sequence is given in Section 3 of the Plan, which includes Figure 3, a flow chart illustrating the reporting sequence. Spill response action plans are described in Section 5 of the Plan. This includes a reference (Section 5.1.7) to the MSDS sheets contained in Appendix 2 of the Plan. In Section 5.3.2 of the Plan, it should be noted that on-site (underground) disposal of contaminated soils and absorbent materials containing free-phase liquids is not permitted. In this case, off-site disposal or further treatment would be required.

- (g.) *The means by which the spill contingency plan is activated.*

Section 4 of the Plan describes the activation of the spill contingency plan. The SLEC Site Construction/Project Manager is responsible for activation of the Plan once a spill is reported. Spills will be reported in accordance with Schedule B of the Regulations, which defines the amounts of a substance deemed to be of a reportable amount.

- (h.) *A description of the training provided to employees to respond to a spill.*

Section 6 of the Plan describes the training for spill response. All key SLEC personnel and its speciality subcontractors who will be handling, transferring and disposing of hazardous materials or supervising personnel will be formally trained. An outline of the training program is provided. Training records will be maintained at the Polaris Mine site office by the SLEC Health and Safety Coordinator. A simulation exercise will be undertaken quarterly to measure the effectiveness of the spill contingency plan. The exercise will include classroom and field simulations and will describe a range of spill scenarios from minor easy spill situations to larger complex spill response and management.

- (i.) *An inventory of and the location of response and clean-up equipment available to implement the spill contingency plan.*

Section 7 provides a summary of the resource inventory of equipment, machinery and tools available for spill response on land and on water. The equipment listed under "Land" in Section 7 appears to be a list of mine equipment owned by Teck Cominco. It is not clear how much of this equipment is actually functional. The equipment may be supplemented by the contractor's equipment, but it is not clear what additional equipment is currently on-site. As a result it is not possible to determine the level of resources available to respond to a given spill on land. It is recommended that SLEC provide the NWB with at least quarterly updates on the remaining

functional equipment on-site and capability to deal with the range of spill response scenarios described in Section 5 of the Plan.

(j.) *The date the contingency plan was prepared.*

The Plan is dated May 20, 2003. Under the terms of the Regulations, (Section 7(1.)), the person responsible for preparing the Plan, shall review the Plan on an annual basis. The person responsible for preparing the spill contingency plan shall in writing, notify the Chief Environmental Protection Officer when a review has been completed and shall immediately file with the Chief Environmental Protection Officer any changes made to the Plan. Once the Plan has been filed, the person responsible for preparing the plan shall implement the plan.

MSDS SHEETS

The Plan includes Material Safety Data Sheets (MSDS) for a total of thirty-seven (37) substances in Appendix 2. Each MSDS sheet includes details of the product name(s), product identification, manufacturer, emergency telephone number, physical data, component information, fire and explosion hazard data, special hazard designations, reactivity data, health data, spill or leak procedures, special protection information, special precautions and WHMIS (Workplace Hazardous Materials Information System) classification.

Some of the substances require special precautions with regard to fire fighting and to prevent fire and explosion hazards. The spill contingency plan does not specifically address these issues, so it is not clear what fire fighting capability and protection measures are in place at the mine site.

It is not within BGC's scope to review the contents of the MSDS sheets in detail, however it appears that each sheet was prepared by the Canadian Centre for Occupational Health and Safety. We would recommend however that the SLEC Health and Safety Coordinator undertake a review to be satisfied that there are sufficient first aid resources and emergency measures in place to deal with any potential emergencies associated with these substances. Also, we recommend that the sheets be reviewed to check for any inconsistencies that may require checking at the source. For example, on page 7 of 7 for ACETYLENE, first aid measures refer to aspirated ACETONE under the section "Note to Physician".

BGC Project Memorandum

To: Philippe di Pizzo

From: Holger Hartmaier

Date: July 16, 2003

Subject: Polaris Mine- Review of Spill Contingency Plan

Proj. No: 0308-001-05

CLOSURE

In general the Spill Contingency Plan covers the essential elements to fully address regulatory and environmental protection concerns. It is recommended that Teck Cominco review the comments provided above with SLEC and submit a revised plan for approval by the NWB.

We trust that the above information will satisfy your requirements at this time. If you have any questions or require additional information, please do not hesitate to contact me.

Yours truly,

Per

BGC Engineering Inc.

Holger Hartmaier, M.Eng., P.Eng.
Senior Geotechnical Engineer

HHH/sf

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