teckcominco

Bruce J. Donald
Reclamation Manager

June 12, 2003

Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU
X0E 1J0

Attention: Chief Administrative Officer

To whom it may concern:

Re: Polaris Mine Demolition and Site Reclamation Spill Contingency Manual

Attached please find two paper copies and one electronic copy of the above report, submitted in compliance with Part E of the Polaris Mine Water Licence Number NWB1POL0311. An electronic copy was submitted to the Nunavut Water Board on May 23, 2003.

I have included a cd of the document in one of the report binders that are enclosed with this letter. Please do not hesitate to contact me if you have any questions.

Sincerely,

Bruce Donald
Reclamation Manager

Enclosure

Teck Cominco Ltd. / Environment and Corporate Affairs
Bag 2000 / Kimberley, British Columbia, Canada V1A 3E1 • Tel: 250-427-8405 • Fax: 250-427-8451 • Email: bruce.donald@teckcominco.com

Polaris Mine
Demolition and Site Reclamation

Spill Contingency Plan

May 20, 2003

332500

e-mail version earlier

SNC♦LAVALIN Engineers & Constructors Inc.

SNC·LAVALIN

ᒪᑭᓪᓗᒥ ᐅᓴᖅᓯᐅᑦᕃᓐᓄᑦ
ᐃᔨᑎᑕᐅᓂᖏᓐᓄ ᖃᐃᓇᓀᓂᖏᓐᓄᓗᒃ ᐅᑎᑎᑕᐅᓇᓯᓂᖏᓐᓄ

ᓇᐃᓇᖅᓱᒋᑦ ᑯᐱᐊᖃᓂᒃᑯᑦ ᖃᓄᐃᓕᓪᓚᐅᑲᖃᖅᖁᓪᓗᒍᓐᓇᑦ

Lᐃ 20, 2003

SNC·LAVALIN

ᓴᓇᖃᓪᓚᕆᓯᒪᔪᑦ ᐊᐅᓚᐅᕐᓯᓗᒃᑐᑦ ᓴᓇᕐᔪᒃᓗᒍ

ᓇᐃᓇᕐᓗᒋᑦ ᑯᕕᔪᖅᑲᓂᐸᑦ ᖃᓄᐃᓕᐅᕆᐊᖃᒪᖕᒐᑕ

ᐳᓕᐊᓇᔅ ᐅᔭᕋᓯᐅᕐᕕᒥ ᑕᐃᔭᐅᔪᖅ ᒪᕈᓕᖅᑭᒥᑐᖅ ᓄᓇᕗᑦ ᐃᓗᐊᓂᓗᓂ ᓄᓇᓕᐅᔪᒥ ᐊᒪᓗ ᑕᓇ ᓄᓇᐅᑉ ᐊᑕᓂᑦ ᓴᕕᕋᔭᒃᓴᖅ ᐊᖅᑭᓂᖅᓴ ᐊᒪᓗ ᑎᓯᓂᖅᓴᖅ ᐅᔭᕋᓯᐅᑕᐅᖅᑲᑕᕐᑐᑦ ᓇᒥᓂᖅᑯᑎᒋᔭᐅᓗᓂ ᐊᐅᓚᑕᐅᓗᓂᓗ ᑲᒥᑯᑯᓄᑦ ᑕᐃᒪᖕᒐᓂ 1981ᒥᑦ (ᒪᓇ ᑎᑉ ᑲᒥᑯᑯᓂᕋᑕᐅᔪᑦ). ᐅᔭᕋᒃᓯᐅᓂᖅ ᓴᕕᕋᔭᒃᓴᕐᒥᑉ ᐱᔭᕆᑐᖅ ᐊᒪᓗ ᑎᑉ ᑲᒥᑯᑦ ᒪᑐᓯᕙᓕᐊᓂᖕᒐᓂ ᖃᓄᐃᑐᓂᕕᓂᖕᒐᓄᓗ ᐅᑎᑎᓂᒥ ᐱᓕᕆᔪᑦ ᑕᐃᑲᓂ, ᖃᓄᐃᑐᓂᕕᓂᖕᒐᓄ ᐅᑎᑎᑕᐅᔪᓇᓂᓕᒪᖕᒐᓂ ᐅᑎᑎᑕᐅᓇᓯᒃᑐᖅ. ᓴ.ᓇ.ᑲ. ᓚᕙᓕᑯᑦ ᐊᐅᓚᐅᓯᕆᔨᖕᒋᑦ ᓴᓇᔨᖕᒋᓗ ᒪᓇ ᐊᑭᓕᓯᑕᐅᓗᑎᑉ ᑎᑉ ᑲᒥᑯᑯᓄᑦ ᐱᓇᓯᐊᕐᑎᑕᐅᔪ ᑕᒪᑐᒥᖕᒐ.

ᑲᑐᕋᖕᒐᑕ ᐃᓕᒥᖅᑲᓯᐅᑎᓗᓂᐅᑉ ᓚᕙᓕᑯᑦ ᐊᖅᑭᓱᐃᓯᒪᔪᑦ ᑯᕕᔪᖅᑲᓂᐸᑦ ᖃᓄᐃᓕᐅᕆᐊᖃᒪᖕᒐᑕ ᐊᖅᑭᓯᒪᔭᖕᒐᓂᑉ. ᐊᖅᑭᓯᒪᔭᖕᒐᑦ ᓯᕗᓂᐊᓂ ᐊᖅᑭᑕᐅᓯᒪᓚᐅᓯᒪᔪᑉ ᓄᑕᐅᓕᑕᐅᒥᐊᓯᒪᓕᓗᓂ ᐊᖅᑭᑕᐅᓯᒪᔭᑦ ᑎᑉ ᑲᒥᑯᑯᓄᑦ ᐅᔭᕋᓯᐅᓂᖅ ᑕᐃᓯᒪᓂ ᐊᐅᓚᓂᖅᑲᑎᓗᒍ. ᑯᕕᔪᖅᑲᓂᐸᑦ ᐊᖅᑭᓯᒪᔭᖕᒐᑦ ᑎᑎᕋᑕᐅᓚᐅᓯᒪᔪᖅ ᒪᓕᓗᒋᑦ ᒪᓇᐅᔪᖅ ᐊᖅᑭᑕᐅᓯᒪᔭᑦ ᑯᕕᔪᖅᑲᓂᐸᑦ ᖃᓄᐃᓕᖕᒐᔭᕆᐊᖃᒪᖕᒐᑕ ᓇᓗᓇᐃᑕᐅᓯᒪᔪᑦ ᓄᓇᕗᕐᒥ *ᑯᕕᔪᖅᑲᓂᕐᐸᑦ ᖃᓄᐃᓕᐅᕆᐊᖃᕋᔭᒪᖕᒐᑕ ᐊᒪᓗ ᐅᓂᑲᐅᓯᕆᔭᕆᐊᖃᑕᖕᒋᑕ ᒪᓕᖕᒐᖕᒋᑦ..*

ᑕᒪᓇ ᐊᖅᑭᑕᐅᓯᒪᓕᖅᑭᔪᖅ ᑯᕕᔪᖅᑲᓂᐸᑦ ᖃᓄᐃᓕᐅᕆᐊᖃᓂᖕᒐᑦ ᐱᔪᑎᒋᓗᒍ ᖃᓄᐃᓕᐅᓗᑎᑉ ᑕᒪᓇ ᓯᑯᓇᑐᖅᑲᐸᑦ ᐊᒪᓗ ᐊᓂᕐᓂᒧᑦ ᐃᓗᐊᖕᒋᑐᒧᑦ ᑯᕕᔪᖅᑲᓂᐸᑦ ᖃᓄᐃᓕᐅᕆᐊᖃᒪᖕᒐᑕ ᓄᖅᑲᑎᑐᓇᕐᑯᓗᒍ ᐅᕙᓗᓂ ᐊᕙᑎᕗᑦ ᓯᕋᑕᐅᖕᒋᑐᔭᓇᓂᓕᒪᖕᒐᓂ ᑯᕕᔪᖅ ᑕᒪᓇ ᑲᒪᒋᔭᐅᔭᓇᓂᖕᒐ ᐃᓯᒪᒋᔭᐅᓗᓂ.

ᑕᒪᓇ ᐊᖅᑭᓯᒪᔭᖕᒐᑦ ᐅᓂᑲᕐᓯᒪᔪᖅ ᑯᕕᔪᖅᑲᓂᐸᑦ ᖃᐅᔮᓴᕐᓗᑎᑉ, ᑲᔪᓯᖕᒋᓂᕆᔪᓇᑕᖕᒐᓂ ᐊᒪᓗ ᖃᓄᐃᓕᐅᕆᐊᖃᒪᖕᒐᑕ ᑯᕕᔪᖅᑲᓂᐸᑦ, ᑯᕕᔪᖅᑲᓂᕐᐸᓗ ᒪᓕᑕᐅᔭᕆᐊᓕ ᑭᑯᓄ ᐅᓂᑲᕆᐊᖃᒪᖕᒐᑕ, ᐊᒪᓗ ᓴᓗᒪᖅᓴᑕᐅᓂᖕᒐ ᐊᒪᓗ ᐃᒋᐅᖅᑲᑕᐅᒐᔭᕐᑐᑦ ᑕᒪᑯᐊ ᓯᑯᓇᕐᑐᑦ ᑯᕕᔪᕕᓂᐅᔪᑦ.

ᑯᕕᔪᖅᑲᓂᕐᐸᑦ ᖃᓄᐃᓕᐅᕆᐊᖃᒪᖕᒐᑕ ᐊᖅᑭᓯᒪᔭᖕᒐ ᐊᖅᑭᑕᐅᓯᒪᓕᖅᑭᔪᖅ ᓚᕙᓕᑯᓄᑦ ᑕᐃᑲᓂ ᐱᓇᓱᐊᕐᕕᖕᒐᓂ ᐱᓇᓱᐊᕐᑐᓄᑦ, ᑲᑐᕋᖅᑲᑲᓂᕐᑐᓄᓗ, ᐊᒪᓗ ᓇᓗᓇᐃᓯᓗᑎᑉ ᑭᑯ ᑲᒪᔨᓗᐊᑕᐅᒪᖕᒐᑕ ᑭᓯᒪᖕᒐᑕᓗ ᐱᓕᕆᐊᖕᒋᑦ ᑯᕕᔪᖅᑲᑎᓗᒍ.

ᑯᕕᔪᖅᑲᓂᕐᐸᑦ ᖃᓄᐃᓕᐅᕆᐊᖃᒪᖕᒐᑕ ᒪᕈᓕᖅᑭᒥ ᐊᖅᑭᑕᐅᓯᒪᕗᖅ ᐊᖅᑭᑎᐊᓯᒪᓕᖕᒍᑐᓂ ᓯᐊᒪᖅᑯᓇᒍ ᐅᑯᓂᖕᒐ ᐅᒪ ᐊᑕᓂᑐᓂ ᓴᖅᑭᑎᓯᔪᓇᕐᑯᓗᒋᑦ:

- ᑐᓴᑎᓯᑲᐅᑎᒋᓗᑎᑉ ᑕᕙᓂ ᑲᒻᐸᓂᓂᑐᓂᑉ ᖃᓄᐃᓕᐅᓂᕆᔭᖕᒐ ᖅᑭᓕᒥᐅᓴᓕᔪᖅ ᐊᒪᓗ ᐱᓕᕆᐊᕆᔭᐅᓴᓕᔭᓇᕐᑯᓗᒍ ᑲᒪᒋᔭᐅᓴᐅᑎᒋᔭᓇᕐᑯᓗᒍ;
- ᒪᓕᒥᐊᓕᒥᓂᑉ ᒪᓕᓯᐊᕋᓗᐊᒪᖕᒐᑕ ᑐᓴᖅᑎᓯᓴᓕᓗᑎᑉ ᐊᒪᓗ ᐅᓂᑲᐅᓯᐅᔭᕆᐊᓕ ᑯᕕᓂᖅ ᐱᔪᑎᒋᓗᒍ ᑕᐃᑯᐊ ᐱᔭᕆᐊᓕ ᐅᓂᑲᓂᓗ ᐱᒐᓗᐊᒪᖕᒐᑕ;
- ᖅᑭᓕᒥᐅᓴᓕᔪᖅ ᑯᕕᔪ ᑲᒪᒋᔭᐅᓯᓴᐅᑎᒋᓗᓂ ᑕᐃᑯᐊ ᐊᑐᐃᓇᐅᔭᑦ ᑕᐃᑲᓂᑐᑦ ᐊᒪᓗᑕᐅᖅ ᑕᐃᑲᓂᖕᒋᑐᐃ ᐊᑐᑕᐅᓴᕆᐊᓕᑦ ᐊᑐᐅᓇᕈᑕᐅᓴᓕᕐᑯᓗᒋᑦ;
- ᖃᓄᐃᓕᒋᐊᕐᑐᑦ ᐱᔭᕆᐊᑐᔪᐊᓗᖕᒋᑐᕐᒥ ᐊᖅᑭᒋᐊᕈᑕᐅᔭᓇᕐᑐᕐᒥᑉ ᓴᓗᒪᓴᐃᓂᕐᒧᑦ, ᓯᐊᒪᑎᓯᑕᐃᓕᓗᑎᑉ, ᓴᓗᒪᖅᓴᖅᓗᒍ ᐊᒪᓗ ᒪᓕᓗᒋᑦ ᐃᒋᐅᖅᑲᑕᐅᔭᕆᐊᖃᓂᖕᒋᑦ ᖃᓄᐃᓕᐅᕆᐊᖃᒪᖕᒐᑕ; ᐊᒪᓗ
- ᑎᓕᓯᓗᑎᑉ ᑭᑯ ᖃᓄᐃᓕᐅᕆᐊᖃᒪᖕᒐᑕ ᑭᓯᓕᕆᔭᐅᓂᐊᒪᖕᒐᑕᓗ ᑯᕕᔪᖅᑲᓂᕐᐸᑦ.

ᑯᕕᔪᖅᑲᓂᕐᐸᑦ ᐊᖅᑭᑕᐅᓯᒪᔭᖅ ᐊᖅᑭᓯᑕᐅᓯᒪᕗᖅ ᐅᑯᓄᖕᒐ ᐃᓕᒃᓴᓄᑦ::

- ᐃᓕᓴᓕᒪᑦ ᐊᒪᓗ ᐃᓕᒃᓴᒧ ᖃᓄᐃᓕᒋᐊᕈᑎᑉ ᐅᔭᕋᓯᐅᕐᕕᒥᑦ/ᓴᓗᒪᓴᐃᕕᒥᑦ

- ᐊᒍᓂᐊᒡ ᓇᐃᕈᐃᖅᑎᓗ ᑕᐃᕆᐅᔪᖅ ᖃᔪᖅᓭᐅᓂᒍᖅ ᐊᑐᑕᐅᓯᓂ
- ᑲᓪᐃᑯᓪᓗ ᐅᖅᓴᕆᐅᑎᓇᖅ ᐊᑐᑕᐅᓯᓂ ᐃᓗᓂ ᐅᖅᑐᓯᑐᓂᖅᓪᓚᖅ ᐊᒪᓗ ᐅᖅᓴᐸᑎᓂᖅ ᐃᓗᓇᓯᑕᐅᖅᓴᕐᓂᖅᓴᖅᑐᓂᖅ ᓴᓇᓗᑎᒃᓗᓂᖅ
- ᐳᓪᐃᓗ ᐊᑐᑕᖃᖅᑎᖅ ᐊᓂᐊᓯᐅᑎᕐᓯᓇᖅᑎᖅ, ᓇᑲᑎᓪᓚᑎᖏᓇᖅᑎᖅ, ᐊᒪᓗ ᖅᓴᐊᓴᐃᓇᖅᑎᖅ ᐊᒪᓗ ᐃᓴᐊᓪᑕᐃᓪᓕᓂᖅᓴᒍᖅ
- ᐅᖅᓴᓕᓗᓐᓂᖅᑎᖅ (ᐅᖅᓴᓕᓗᐃᑦ ᐅᐊᕈᑎᓗ)

ᐊᖏᑕᐅᓯᒪᔪᖅ ᐅᓴᓂᓐᓚ ᐃᓪᓕᐅᑎᓯᒋᐅᖅ ᓴᐃᔪᖅᓂᓴᑦ ᖃᓇᐃᓪᓕᐊᕈᑕᐅᔪᑦ ᐊᖏᓯᒪᓴᖏᑦ ᒪᓪᑕᐅᐅᓴᓪᓕᐊᓪᓪᑦ ᐊᒪᓗ ᐅᖃᐅᓯᓴᓪᓕᐊᖅᒪᖏᑕᐅᑎᓂᖅᓴᖅ ᑭᓴᕐᓕᕆᔨᒃᑯᑦ ᐊᑐᑕᐅᓯᒪᔪᖅ ᐃᓕᓴᐅᔪᓂᖅᓴᖅ ᐅᒪ ᐊᑕᓂᒋᑦ:

1. ᑭᓇᐋᐃᓇᖅ ᖃᐅᔨᒍᓂ ᓴᐃᔪᐊᓂᒋᒃ ᐅᖃᓗᐊᓪᓚᖅ ᐅᓴᓂᓐᓚ ᐊᖏᓪᓛᖃᖅᐅᑎᐅᔪᓂᑦ:
   - ᐊᖏᓪᓛᖃᖅᓗᐅᔪᖅ ᐅᔨᕆᓯᐅᖅᓴᓂᒍᑦ ᓄᓇᒋᒃᓗ ᐊᐅᓪᓂᓯᓂᑦ-H..ᐃᓪᓂᐊᕆᑎᑎ ᐃᓇᖖᑎᑎᖓᓗᓂᓪᑦ
   - ᐊᖏᓪᓛᖃᖅᓗᐅᔪᖅ ᓄᓇᐅᐸ ᖃᖖᓗᓂ ᐃᔨᑎᓗᓂᒍᑦ - ᔭ. Hᐊᐅᓪ
   - ᐊᖏᓪᓛᖃᖅᓗᐅᔪᖅ - ᑐᓪᑕᕐᕕᒪ ᐃᔨᑎᓗᓂᒍᑦ -ᔭ. ᓪᐃb
2. ᐊᖏᓪᓛᖃᖅᓗᐅᔪᑦ ᐃᓪᓖᖏ ᐅᒪ ᖅᓯᓪᓂ ᐅᖃᓗᐊᓪᓚᒃ ᑕᐃbᓂ ᒪᔭᓪᖏᒥᑐᒪ ᐊᐅᓪᓚᐸᐅᖖᓗᓂᓪᑦ ᐊᖏᓪᓛᖃᖖᓗᓂᓪᑦ - Hᐃᐅᐳᑦ ᒪbᓪᐃᓵ (ᐃᓇᖏᑎᖖᓗᓂᓄᑦ) ᑕᐃᒪ ᑕᓇ ᐅᓯᓂᖖᓗ ᖃᐅᔨᒍᓂᒪ
   - ᐊᓂᐊᖃᖏᑐᓪᓕᔭᓯᑦ ᐊᒪᓗ ᐊᑕᓇᖏᑐᑐᒥ/ᐱᓇᓯᐊᑎᐅᔪᓄ ᑲᒪᔭᐅᓂᒪ ᐊᐅᓪᓚᓯᔭ -ᐃ. ᐳᐃᑦᕼᐊᐅᒡ
   - ᒪᔪᓪᖏᒥ ᓴᓇᔭᐅᔪᓄᑦ ᐊᒪᓗ ᑲᔪᓯᑎᑕᐅᔪᓄᑦ ᐊᐅᓪᓚᓯᔭ -ᑲ. ᓗᐊᒪᑎᓵ
   - ᑕᐃᓄᐊ ᑕᐃbᓂᓗᑎᒃ ᓄᐃᔪᑎᒥ ᓴᓗᒪᑦᓴᐃᔨᓇᐅᓪᓚᑦ ᐃᓪᓂᓂᐊᑎᑕᐅᓯᒪᓗᓗᑎᒃ ᓄᐃᔪᖅᓂᑦᓴᑦ ᐊᐅᓪᓚᓯᔭᖅᓗᓂᒃ ᑲᔪᓯᑎᑕᐅᓂᒥᒃ
   - ᐃbᖅᓂ 24ᓂᒃ ᓄᐃᔪᖅᓂᔪᑦ ᐅᑦᖃᓪᐃᐅᔨᓇᐅᓪᓚᒃ ᐅᖅᖃᓪᐃᐅᓗᓂ
3. ᑕᐃbᓂᑦ ᓴᓇᔭᐅᔪᑦ ᐊᒪᓗ ᑲᔪᓯᑎᑕᐅᔪᓂ ᐊᐅᓪᓚᓯᔭ (ᑲ. ᒪᒧᑎᖅ) ᐅᓄᓂᖅ ᑐᓴᑎᓯᓂᐊᓗᓂ:
   - ᑎᒃ ᑲᒥᓄᓪᑦ ᒪᔭᖏᓪᒥ ᐱᔭᓯᑦᑐᖅ -ᑲ. ᓇᔪ ᑭᖓᐃᓴᖏᑎᓗᓂᓪᑦ
   - ᓪᕿᓪᓄᑦ ᓯᑐᓴᖏᑎᖏᑕ ᐊᐅᓪᓚᓯᔭᖅᓗ -ᔭ. ᒪᒃᓗ
   - ᑕᒪᖅᒥᒃ ᐅᒪ ᖅᓄᓪᓄᑦ ᑲ. ᓪᓴᒧᑦ ᐅᖃᓪᒪᔨᓇᐅᓪᓚᑦ ᑎᒃ ᑲᒥᓄᑦ ᑲᔪᓯᑎᑕᖏᓄ ᐊᐅᓪᓚᓯᔭᖅᓗᓂᒪ
4. ᑎᒃ ᑲᒥᓄᑦ ᑲᔪᓯᑎᑕᖏᓄᒃ ᐊᐅᓪᓚᓯᔭ (ᑲ. ᓪᓴ) ᐅᖃᓪᓚᑲᖅᓗᓄ ᒪᔭᓪᖏᒥ ᐱᓪᓗᔭᖏᑎᑕ ᓇᒥᓄᖃᖅᓂᓪᓕᓂᒪ -ᑎᒃ ᑲᒥᓄᓄᒃ ᐱᔭᓯᑎᑕᑲᖅᓗᓂᒪ ᕿᑦ ᕼᐊᑦᓯᓗᓴᑦ.

ᖃᓄᐃᓕᓴᐅᔪᖅᓂᖅᓴᖅᑐᓂᖅᓴᖅ ᐅᖃᓗᓕᖅᓴᖅ ᑭᐃ ᖃᓄᐃᓪᓕᐅᑎᐅᔪᖅᓂᖅᓴᖅᑐᓂᖅᓴᖅ ᓄᐃᔪᖅᓂᑦᓴᑦ. ᒪᓪᑕᐅᔨᓗᐊᓪᓚᑦ ᑎᑎᕆᓪᒪᓕᖅᑐᑦ ᓇᓗᓇᐃᓯᓪᒪᓕᖅᑐᑦ ᑭᐃ ᐅᖃᓘᓇᐃᔨᓇᐅᓪᓚᖅᓂᖅᓴᖅᑐᓂᖅᓴᖅ ᐊᒪᓗ ᓇᓪᑕᐊ ᑲᖏᒪᓄᓪᑦ ᐅᖃᓘᓇᐃᔨᓇᐅᓪᓚᖅᓂᖅᓴᖅᑐᓂᖅᓴᖅ.

ᑕᒪᐃᓄᑦ ᐊᐱᕈᕐᑐᑎᓄ ᓄᐃᑐᐃᓇᓗᐊᓪᓕᓄ ᐃᓯᒪᒋᐅᐅᓯᒪᓓᑦ, ᒪᓪᑕᕈᐊᓪᒃ ᑎᑎᕆᓯᒪᓓᖅᖃ ᓇᓗᓇᐃᓯᓯᒪᓓᖅᖃ ᖃᓄᐃᓕᓴᐅᔪᖅᓂᖅᓴᖅᑐᓂᖅᓴᖅ ᑕᐃᓄᐊ ᒪᓪᑕᐅᐅᑎᐊᕆᑦ ᐊᒪᓗ ᖃᓄᐃᓪᓕᐅᑎᐅᔪᖅᓂᖅᓴᖅᑐᓂᖅᓴᖅ ᓄᐃᔪᖅᓂᑦᓴᑦ.

ᑕᓇ ᑎᑎᖃᓯᒪᓓᖅᖃ ᓇᓗᓇᐃᓯᓯᒪᓓᖅᖃ ᓇᓪᑕᐊ ᐊᑐᑕᐅᐅᓪᓚᐊᖅᓴᕐᓗᓂᒪ ᖃᓄᐃᑐᐃᓇᑐᐃᓂᒃ ᑭᓴᐃᑐᐃᓂᒃ ᐊᐅᓪᓚᓯᔭ ᐊᓯᖏᑦ ᑕᓇᓄᐊ ᑕᐃbᓂ ᐊᑐᑕᐅᐃᓇᖅᑎᖅᓴᖅᑐᓂᖅᓴᖅ ᐃᓕᓴᐅᔪᓂᖅᓴᖅ ᐅᓂᒃᓴᓯᒪᓓᑦ. ᑕᓇ ᑎᑎᕆᓯᒪᓓᖅᖃ ᐃᒪᒪᐃᓂᒃ ᑎᑎᕆᓯᒪᓓᕆᓪᓕᒃ:

- ᑭᐃᑦ ᓴᓇᓂᓪᒪᓕᖅᑐᑦ ᑕᒪᐃᓂᖅᓴᖅ ᐊᑐᑕᐅᐅᓪᓚᐊᓪᓚᓂᓂᒃ
- ᐃᑭᓯᓇᓯᑎᓯᓯᒪᓓᖅᖃ ᑭᓯᒪᓕᖅᑐᑦ ᐅᖃᐅᓯᐅᓯᒪᓓᑦ ᐊᒪᓗ ᖃᓄᐃᓕᓴᐅᔪᖅᓂᖅᓴᖅᑐᓂᖅᓴᖅ ᐃᓚᖅᑕᐃᓂᖅ ᐃᓚᖅᑕᐃᓂᖅᓴᖅ ᑕᒥᖃᓂᖅᓴᖅᑐᓂᖅᓴᖅ

- ᐃᑭᓴᑐᑦ ᐊᒪᓗ/ᖃᓴᑐᑦ ᓇᓕᐊᖏᒪᖓᑕ
- ᑕᓇ ᐊᑐᑕᐅᔪᖅ ᐃᓕᓴᓗᓂᑦ ᐃᓕᓴᐅᐅᓴᖅᖏᑦ ᓯᑯᔾᓇᑐᑭᓯᖏᒪᖓᑦ
- ᖃᓄ ᐃᓅᑦ ᐊᓂᐊᖃᕐᓯᑎᕐᓂᕐᔪ ᐊᓵᐃᑦᓴᓴᒪᖓᑦ ᑕᒪᑐᒪᖓ ᐊᓵᑐᑕᐅᓯᒪᔪᓂ
- ᖃᓄᐃᓕᐅᕆᓇᐊᖃᕆᓴᒪᖓᑦ ᐊᓂᑐᖃᑦ ᐊᒪᓗ/ᐅᓐᓗᓂᓂ ᐃᓄᓕᓴᐅᑎᓄᑦ ᐃᑲᔪᑕᐅᔾᓇᐊᖃᒪᖓᑦ ᐊᓵᑐᑕᐅᓯᒪᔪᓂ
- ᑯᐃᔪᖃᑦ ᐃᖏᓐᑐᖃᓕᓂᓂ ᖃᓄᐃᓕᓴᐅᓇᐊᖃᒪᖓᑕ
- ᐱᑐᐃᓇᐅᕐᓂᑐᒥ ᓴᓗᓪᑕᖃᓇᐊᖃᒪᖓᑦ (ᐱᑕᖃᑦ) ᐱᔾᕈᐊᖃᑦ ᐱᓇᓯᐊᖏᓪᓗᔪ ᑕᒪᑐᒥᖓ
- ᖃᓄ ᐅᔨʔᓯᑎᐊᓇᐊᖃᒪᖓᓴᐱᑦ ᐊᐅᓕᓯᓂᐊᕐᓂᑎᑦ ᓯᖏᓪᓗᐊᒥᐅᑕᓇᓂᐊᓪᓗᓂᓂᑦ ᑕᑯᐊ ᖃᒪᑎᔾᑎᑦ

37ᐅᔪᑦ ᐊᔨᑎᖏᑐᑦ ᖃᒪᑎᔾᖏᓂᑦ ᐊᑕᖏᓇᖏᓪᓂᑎᑦ ᒪᓕᑕᐅᔾᓇᐊᓕᑦ ᑎᑎᕐᓯᒪᔪᖏᓂᓂ ᐅᖃᓕᒪᖏᓪᓂ.

ᐅᑯᐊ ᐃᓕᑎᖃᓯᐅᑎᔾᖏᑐᑦ ᑎᑎᕐᓯᒪᔪᑦ ᐅᓂᒃᓯᒪᓕᑎᐊᖏᑐᑦ ᑕᑯᓇᓂ ᐅᖃᓕᒪᖏᓪᓂ ᒪᓕᑕᐅᔾᓇᐊᓕᓂᓂ ᓇᓗᓇᐃᓯᒪᔪᑦ ᑭᓯᓂ ᐅᖃᓕᒪᖏᓪᓂ ᐊᑐᐃᖏᓪᓂ:

ᑎᑎᕋᓯᒪᔪᑦ ᐃᓗᓕᕆᑎᑦ

ᑭᓯᐃᑦ ᓇᓂᒪᖏᑦ

ᐃᓕᑭᐊᕐᑎᕐᑦ ᓇᓂᒪᖏᑦ

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1.0 INTRODUCTION

The Polaris Mine is located on Little Cornwallis Island within the Territory of Nunavut (Figure 1, Appendix 1) and is an underground lead and zinc mine owned and operated by Cominco since 1981 (now Teck Cominco). Mining of the ore body reserve is completed and Teck Cominco now intend to proceed with implementation of decommissioning and site remediation activities to return the site, as close as possible, to natural conditions. SNC- Lavalin Engineers and Constructors Inc. (SLE&C) have been retained by Teck Cominco to undertake the Demolition and Site Reclamation Plan ("Closure Plan") for the Polaris Mine.

SLE&C have prepared a Sill Contingency Plan (SCP) in accordance with the requirements of the Tender Documents (Contract 2071-C.01, Section 3.20.1 - Waste Control and Environmental Protection). The SCP is intended to update the previous spill response plan prepared by Teck Cominco, as filed with the Northwest Territories, for the operations period of the mine. As such, the contents of the SCP also conform to the general requirements for spill response plans, as detailed in the Nunavut *Spill Contingency Planning and Reporting Regulations* (Appendix 3).

1.1 Purpose

The purpose of the Spill Contingency Plan is to provide a course of action to be implemented in the event of an incidental release of hazardous/toxic substances in order to prevent and/or minimize any possible harmful effects to the environment.

The plan describes detail actions for monitoring, prevention and containment of spills, spill response reporting to regulatory agencies, as well as provisions for clean-up and disposal of spilled hazardous materials.

The SCP is designed for SLE&C site staff, including its sub-contractors, and defines responsibilities of key personnel and procedures/protocols to be followed when responding to a spill.

The SCP for the Polaris Mine is intended to allow for the most effective deployment of resources to achieve the following primary objectives:

- immediate notification within the company to assure that an appropriate and timely response is initiated;
- ensure compliance with regulations for notification and reporting of spills to all parties involved;
- provide the earliest possible response to a spill scenario with available on-site and off-site resources;

- a response consistent with remedial action requirements, which include the need for containment, clean-up and disposal phases; and
- to assign roles and responsibilities in the event of a spill.

1.2 Description of Mine Closure Activities

The Polaris Mine closure phase began September 2002 with all decommissioning and site reclamation activities to be completed by October 2004. A site plan showing the layout of key facilities at the Polaris Mine is presented in Figure 2 (Appendix 1).

The primary work activities to be undertaken as part of the Closure Plan for Polaris Mine, as approved by the Nunavut Water Board and Federal Department of Indian Affairs and Northern Development (DIAND), include:

- contaminated soil and waste remediation;
- remediation and reclamation of Garrow Lake tailings pond;
- demolition and disposal of
  - the concentrator and barge
  - concentrate storage facility
  - cemented rock fill plant
  - accommodation complex
  - tailings thickener facility
  - fuel storage tanks, tanks farm and distribution equipment and piping
  - miscellaneous buildings and structures;
- removal and disposal of sheet pile dock structure and shoreline remediation;
- airstrip reclamation and remediation;
- demolition/salvage and disposal of electrical generation, distribution and communications equipment;
- handling and disposal of hazardous and toxic waste;
- construction of cover cap for operations landfill and Little Red Dog quarry; and general grading of mine site.

2.0 HAZARDOUS SUBSTANCES - STORAGE FACILITIES AND DISPOSAL

2.1 Chemicals

Teck Cominco collected, packaged and removed hazardous substances, including chemicals reagents used during operations, as part of its production shut down of the mine. Chemicals and reagents in bulk containers/pallets and drums that were transported off-site by Teck Cominco in August/September of 2002, prior to turnover of the site to SLE&C, included:

- Quicklime;
- MIBC (Methyl Isobutyl Carbinol);
- Percol 351 (flocculant);
- Potassium Amyl Xanthate (flotation reagent);
- Zinc Sulphate;
- Copper Sulphate;
- Sodium Sulphate; and
- Sodium Cyanide.

In spite of Teck Cominco removing the maximum amount of hazardous materials, it is inevitable that limited quantities of materials will be encountered in the course of the demolition and site reclamation works. Remnant chemicals will be collected and stored in containers designated and approved to receive these materials for transportation off-site. In addition, SLE&C will need to store, handle and use chemical materials to complete the scope of work. Hazardous chemical substances to be stored on-site for use and/or disposal include the following:

Chemical and Reagents From Mining/Milling Operations

Residue chemicals arising from the post clean-up of process equipment are anticipated. Following testing of effluent, flushed from the lines, disposal and management options of chemical residuals will be implemented in accordance with the waste management plan. Should it be required, residual chemicals considered to be hazardous will be stored and sealed in 205 L (45 gallon) drums on pallets for off-site disposal or, if suitable, for disposal at the on-site liquid waste incinerator. All hazardous waste materials will be handled, stored and transported in accordance with Federal Transportation of Dangerous Goods Act and Regulations (TDGA). This will include proper manifest documentation and use of licensed waste carriers and receivers.

Ammonium Nitrate

Ammonium Nitrate (NH_4NO_3,) will be used in the preparation of explosive (ANFO) needed for the demolition and reclamation works. Ammonium nitrate is water-soluble and contact with oxidizing materials at high temperatures may cause self-ignition. Ammonium nitrate will be stored on-site in 25-kg plastic bags (46 bags per pallet) underground. All ammonium nitrate is expected to be used prior to the completion of the closure works in 2004. Any uncontaminated ammonium nitrate remaining at the end of closure works in 2004 will be buried in one of the on-site landfills as directed by Teck Cominco.

Glycol

Glycol (Antifreeze) is used throughout the mine in the heat exchange system for diesel generators and in the main heating system in the accommodation complex. As well glycol and extended life coolant will also be used for various equipment and site vehicles. Glycol will be delivered by sealift in 205-L drums and will be stored on pallets in well-marked locations on the pad below the diesel tank farm. Approximately 12 drums will be stored on-site. The remaining glycol, either brought for operations or drained from the existing facilities at the time of reclamation completion, will be disposed of in the dual stage incinerator as per the waste management plan.

Compressed Gases

The following compressed gases will be used and stored on-site during the closure phase:

- Acetylene - stored adjacent to foldaways in designated containers(cutting)
- Nitrogen - stored adjacent to the foldaways in designated containers (welding)
- Medical gases – i.e., oxygen stored in First Aid Stations both underground and above ground;
- Helium - stored inside air strip building/tower for weather balloon; and
- Freon - used in the refrigeration system for the accommodation complex and underground mine. Additional freon is stored in designated containers adjacent to the new warehouse and in a designated container on the oil pad
- Oxygen- Is generated and stored on-site in designated containers adjacent to the foldaways.
- Halon- is used for the fire suppression system for NWTEL systems room and is located on second floor "C" at the north end of the building.
- Propane-is stored on site in designated containers adjacent to the foldaways and is used in the cutting process.

All remaining compressed gases in cylinders at the project end will be removed off-site for re-use or disposal, as part of the site demobilization in 2004.

2.2 Petroleum Products

The following fuel storage tanks are located at the Polaris Mine site.

Tanks (diesel)	Location
Two - 5.5 million L	fuel tank farm
200,000 L	fuel tank farm
22,700 L	barge, vehicle servicing
10.6 million L	barge hull
22,700 L	barge, day tank
8,400 L	accommodation building
2,270 L	thickener generator
34,100 L	CAT generator
8,400 L	fire hall
2,270 L	foldaway building
35,000 L	concrete rock fill plant
15,000 L	underground explosive plant

Diesel will be the main fuel used during the site reclamation works. Two types of diesel will be used, P20 and P50. The P20 will be used for power generation and P50 for mobile equipment on the surface and underground. It is expected that a maximum of approximately 6.5 million L of diesel fuel will be on-site at any given time during the closure works.

Gasoline usage is expected to be minimal, and will be restricted to that used for skidoos, all-terrain vehicles (ATV's). Gasoline will be stored in 205-L gallon drums on the oil pad and will be transported by air from Resolute, as required.

Lubricating hydraulic/transmission oil, grease and engine oil for equipment and generators will be stored in 205-L drums on pallets in well a marked location beside the fuel tank farm. Approximately 156 drums (total of 31,980 L) will be delivered each construction season to supply the needed lubricating oils for equipment and vehicles.

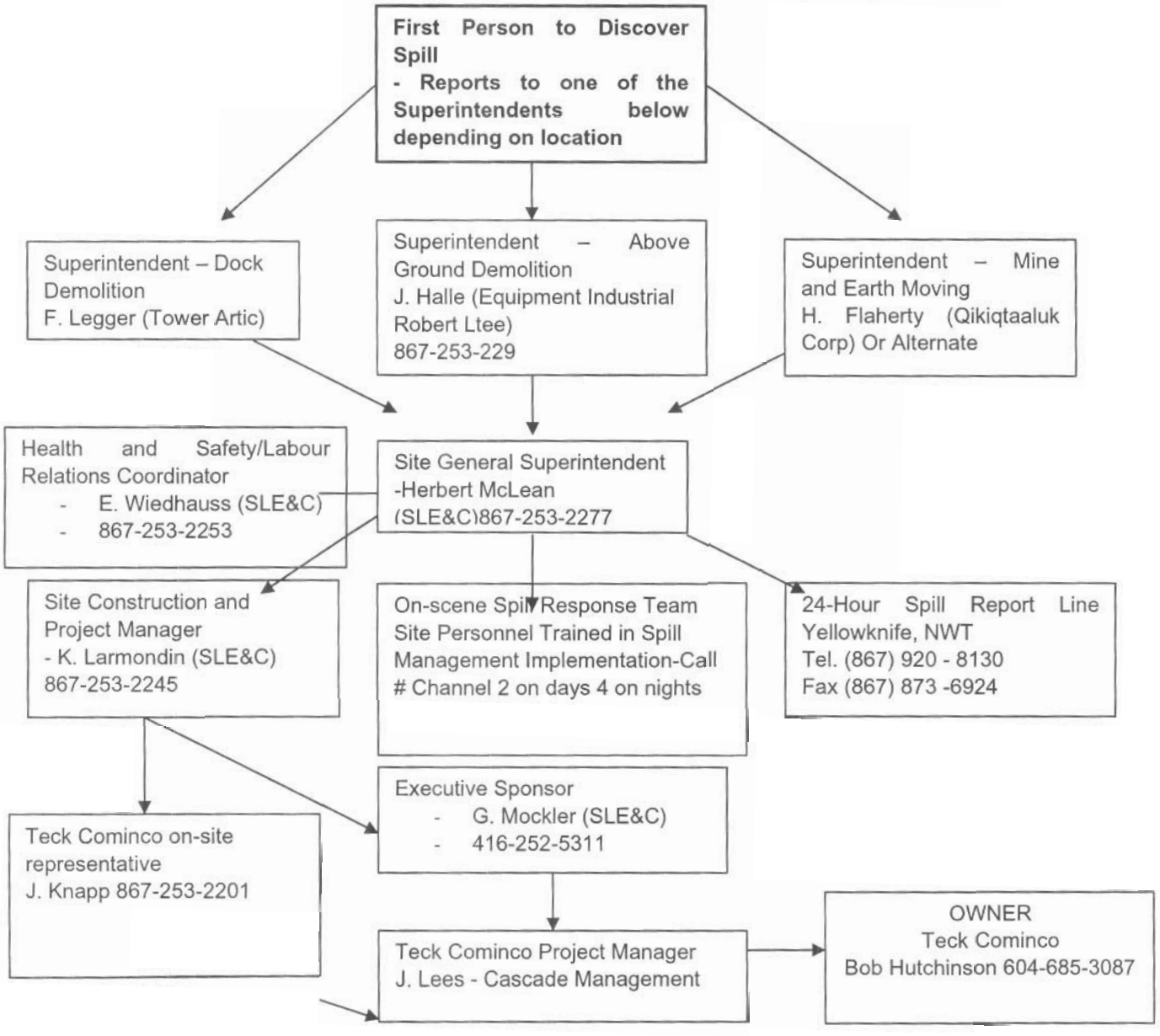
Jet B fuel will be stored in drums on pallets at the airstrip to refuel the Medivac in case of emergency. Approximately 40 drums or 8,200 L will be stored on-site.

Prior to the demolition and disposal of site storage tanks and distribution lines (during 2003 and 2004), residual fuel/sludge, and/or any un-used fuel will be pumped to a holding tank for processing and destruction at the on-site liquid waste incinerator. The liquid waste disposal system (ECO Waste Liquid Waste Oxidizer Model CA 1156PH-01) will also be used for incineration of waste oils and lubricating oils from equipment servicing. The incinerator system is a portable incinerator/evaporator unit that is capable of processing approximately 1,500 L/day (based on 10-hour day) of waste fuel and will be in compliance with prescribed Canadian air emission standards. The liquid waste incinerator will be salvaged for re-sale or re-use elsewhere and is tentatively scheduled for off-site removal at the end of the project in October 2004.

3.0 RESPONSE ORGANIZATION STRUCTURE AND REPORTING SEQUENCE

Figure 3 indicates the response organization structure and their reporting protocol for a spill situation. This organization and reporting structure also includes SLE&C speciality subcontractors, Tower Arctic Ltd., Équipements industriels Robert Itée, and Qikiqtaaluk Corporation.

Figure 3 - Response Organization Structure and Reporting Sequence



4.0 ORGANIZATION ROLES AND RESPONSIBILITIES

The major responsibilities and roles of key employees who will be participating in a spill response situation is presented in Table 1.

Table 1 – Responsibilities of Key Project Personnel for Spill Incident

Title	Responsibility
SLE&C Site Construction/Project Manager - K. Larmondin Tel. 867-253-2245, 867-253-6858(off hours) (24- hour line) *Address:* *LCI Polaris Mine Site* *SNC Lavalin Engineers & Constructors Inc.* *C/O First Air- Resolute Bay NU* *Box 150 Resolute Bay* *X0A 0V0* *Corporate Address:* *SNC-Lavalin Engineers and Constructors Inc.* *2200 Lake Shore Blvd. West* *Toronto, Ontario* *M8V 1A4*	• Activates the Spill Contingency Plan (SCP) based on assessment of spill. • Provide liaison and maintain effective line of communication with SLE&C Executive Sponsor and Teck Cominco Project Manager and on-site representative of spill response, containment and clean up. • Ensure that all phases SCP are appropriately implemented. • Ensure, along with the General Site Superintendent and H&S Coordinator that necessary equipment and training is in place for spill response to meet or exceed legislative requirements. • Report and provide advice/recommendations to all levels of management for the project. • Based on input from the Site General Superintendent and H&S Coordinator, provide Spill Report to SLE&C and Teck Cominco Project Manager and onsite representative and external agencies. • Provide Teck Cominco Project Manager and onsite representative with documentation, follow-up and liaison with government agencies and media. • Review all spill incidents, including any injury and/or property/environmental impact, and ensure that appropriate containment, recovery and cleanup action is initiated.

Table 1 – Responsibilities of Key Project Personnel for Spill Incident

Title	Responsibility
SLE&C Site General Superintendent Herbert McLean	• Support the efforts of the Site Construction and Project Manager. • Evaluate spill situation and assess magnitude of spill. • Provide immediate notification to Site Construction/Project Manager and provide recommendation with respect to activation of spill contingency plan. • Provide notification of spill incident to 24-hour Spill Report Line and other supportive external organizations. • Coordinate and oversee personnel and equipment resources to conduct spill containment, recovery, clean-up and disposal. • Document chronology of spill event and clean-up efforts.
Teck Cominco Project Manager, J. Lees *C/O - Cascade Management, 306-2047200Hanselman Court Saskatoon, Saskatchewan*	• Provide advice to Teck Cominco senior management team for project. • Review Spill Report and actions taken for containment, recovery and clean up and recommend changes if necessary. • Act as company spokesperson with government agencies and media.
SLE&C Health and Safety Coordinator E. Wiedhauss 867-253-2253, 867-253-6600(off hours)	• Inspects the spill area on a continuous basis to assess health and safety hazards and provide appropriate direction. • Coordinate off-site trained medical personnel and resources and secure site, if required. • Implement spill training and simulation exercise for spill response. • Support the efforts of the General Site Superintendent.

Table 1 – Responsibilities of Key Project Personnel for Spill Incident

Title	Responsibility
Subcontractors - Tower Artic - Equipment Industrial Robert Ltee - Qikiqtaaluk Corp)	• Report spill immediately to SLE&C Site General Superintendent. • Initial response and any clean up in the absence of any SLE&C supervisory direction. • Responsible for spill response training of their own personnel. • Advise all their employees of the existence of SCP • Provide manpower and equipment on a priority basis to undertake spill containment, recovery and clean-up.

Activation of Spill Contingency Plan

As specified in the above table, the SLE&C Site Construction/Project Manager is responsible for activation of the Spill Contingency Plan and will be in charge of its overall management and implementation. Spills will be reported in accordance with the amounts set out in Schedule B (i.e., 100 L for diesel) of the Nunavut *Spill Contingency Planning and Reporting Regulations* (Appendix 3) following an assessment of the type and amount of material spilled. All spills will be immediately contained, where safe to do so, and appropriate remedial actions initiated for recovery, clean up and disposal.

4.1 Spill Reporting

During mine closure construction activities, all persons working either below or aboveground will be in a position to detect spills. Notification of any spill will be made immediately to the appropriate Superintendent. The SLE&C General Site Superintendent will notify the Site Construction/Project Manager. Actions to contain and clean up a spill will be initiated immediately.

4.1.1 External

Spills of petroleum products or other hazardous substances will be reported to the Nunavut/Northwest Territories 24 hour Spill Report Line, in accordance the regulations. Upon notification of a spill, the Teck Cominco Project Manager will act as the owner/company spokesperson and under their discretion will report the spill to other regulatory agencies, such as the DIAND and Federal Department of Fisheries and Oceans. All spills must be reported to the regulatory agencies within 24 hours of their occurrence. Telephone number is 867-920-8130. A written report is also required and is to be faxed to 867-873-6924.

The SLE&C Construction/Project Manager will be the primary site contact person between the regulatory agencies and the Polaris Mine in the event of a spill.

In accordance with the regulations, a Spill Report will be prepared and transmitted to the Nunavut/N.W.T. spill centre by the Construction/Project Manager. If the Superintendent is not available, the SLE&C Construction/Project Manager will assign the task of reporting the spill as the situation dictates.

Reporting Instructions:

1. Fill out ***"Spill Report"*** form as completely as possible. This report must be filled out and submitted within 24 hours of the occurrence.

2. Report to the 24-hour Spill Report Line. All spills will be reported by telephone. The Fax number is only to be used to transmit more detailed information and the written Spill Report.

24 Hour Spill Report Line

Telephone Number: (867) 920-8130
Fax Number: (867) 873-6924

Other contacts in Nunavut and N.W.T. are:

Environmental Protection Service Dept. of Sustainable Development Government of Nunavut	Phone: (867) 975-5900 Fax: (867) 975- 5981
Government of the N.W.T. Pollution Control Division Yellowknife, N.W.T	Phone: (867) 873-7654 Fax : (867) 873-0221
Indian and Northern Affairs Canada Environment and Contaminants	Phone:(867)975-4549
Environment Canada Environmental Protection (MMER)	Phone (867)920-8130

5.0 SPILL RESPONSE AND ACTION PLANS

Potential Spills

During the decommissioning and site reclamation works a spill of petroleum products, chemicals or demolished waste material could occur on land, into a water body and/or on ice/snow. Many variables, such as weather and staff preparedness, play an important role in a spill response operation. A spill from an overflowing fuel tank or breaking of a hydraulic hose is likely the most common spill to potentially occur on-site. The worst case spill scenario would involve a rupture of a fuel storage tank or spill during bulk unloading of fuel from the shoreline to the dock area. Spills could be caused by a check valve set in the wrong position, fuel sent to the wrong destination or someone forgetting to shut a valve off after a fuel transfer and overfilling of receiving vessels. However, such situations are expected to be successfully avoided by prevention and mitigated by use of Spill Action Plans (SAP) presented in the following sections.

5.1 Prevention

Prevention is the critical element to avoid a release of hazardous substances. Effective on-site prevention measures can ensure protection of the environment, prevention of injury to personnel and ultimately avoid expensive clean-up costs. Good house keeping measures will entail regular maintenance and routine inspection/monitoring of equipment, storage facilities/tanks and liquid waste incinerator system, as well as record keeping.

Key spill prevention practices will include the following:

- On-site storage facilities for hazardous materials will use existing Teck Cominco secondary containment measures (i.e. berms, liners)
- All storage areas will be provided with well maintained equipment and containers to be handled only by personnel familiar with proper handling;
- Where practical, site transfer and transportation will be performed using secondary containment systems;
- Good house keeping practices in areas like the shoreline during bulk fuel unloading and storage tanks facilities; and
- Accessories such as transfer hoses with camlock mechanisms, drip pans and pumps will be inspected and monitored on a regular basis to ensure they are good working order.
- Supervision and auditing of material transfers.

The SLE&C Health and Safety Coordinator will audit and document the existing

condition of equipment and storage facilities and will make recommendation for repairs should problems be encountered. Designated personnel will inspect storage vessels and transfer piping on a regular basis and record in a log listing items inspected. This task will include recording the amount and compatibility of materials stored, levels of fluids and inventory of personnel protective equipment.

Other preventative measures will include spill response and awareness training for personnel to identify sensitive areas/features, potential spill locations, location of site clean-up kits and proper initial response action. Training of personnel, as well as simulating practice drill exercises, will help ensure a spill response is effective and efficient to minimize potential impacts. Further details on spills training and exercises are contained in Section 6.0.

5.1.1 Petroleum Storage Tanks

In the case of a fuel storage tank rupture the impact would be high. Although fuel tanks will be progressively decommissioned through the closure period, the probability of rupture of active tanks will be reduced by comprehensive training of personnel, regular maintenance, frequent inspections and use of existing impervious geomembrane liners and berming.

Dykes with an impermeable lining are located around the 5.5 million-L storage tank to contain any spill. Dykes have sufficient impoundment volume to retain 110% of the tank volume or 6,300,000 litres. The area within the dyke slopes toward the drainage area to facilitate spill collection.

The vehicle fuel tank, day tank and CAT tank are equipped with an existing protective post barrier to prevent vehicles from hitting the tanks.

The barge hull fuel tank will be used during the 2002/2003 season and then decommissioned in 2004. The barge tank has an existing heavy steel plate completely around the hull to prevent any damage from mobile equipment.

5.1.2 Open Valves or Pipe Failures

Although tanks and distribution pipelines will be progressively decommissioned, spills will be prevented by:

- Locking all valves that are not in use;
- Providing double locking fuel transfer hoses, mark and tag valves or use a lock out system;
- Installing markers to delineate all active distribution lines;

- Training of personnel in regards to requirements of the TDGA; and
- Providing spill kits in vehicles where practical.

5.1.3 Hydraulic Hose Examinations

Preventative measures to be undertaken to avoid an equipment hydraulic hose leak

- Check/Inspect for wear and leaks;
- Rigorous maintenance schedule;
- Training of personnel; and
- Providing spill kits in vehicles where practical.

5.1.4 Fuelling Equipment

Preventative measures to be undertaken to avoid overfilling of equipment tanks and overflows:

- Record all fuel transfers and log.
- Do not leave filling device unattended.
- Measure the content of fuel in tanks to estimate the amount of fuel required to fill.
- Visually check vessel fluid levels while filling.

5.1.4 Spills from Vehicle/Equipment Accidents

The following preventative measure will be exercised to avoid spills from vehicle/equipment accidents:

- Strict enforcement of speed limit;
- Site signage and warning devices for moving equipment;
- Training of personnel (TDGA); and
- Providing spill kits in vehicles where practical.

5.1.5 Chemicals

The probability of a chemical spill is low as the majority of mine chemicals and process reagents were removed prior to the initiation of the decommissioning and reclamation works. The preventative measures to reduce the risk of a chemical spill include:

- Chemicals will be stored in appropriate containers and properly labelled;
- Oxygen, acetylene, propane and nitrogen will be stored in sea containers;
- Storage facilities will be weather and fire protected; and
- Training, inspection and inventory control.
- Empty drums sent to the dump should have hazardous material labels removed.

5.1.6 Fires

Diesel and other hydrocarbon are combustible and therefore no smoking or ignition sources will be allowed within 20 m of fuel storage areas. Signs if not already present will be installed. Ammonium nitrate (solid) can ignite and will be kept away from oxidizers. Compressed gases (oxygen, acetylene) can ignite with explosive power and the cylinders will be stored to minimize such an occurrence in accordance with safe storage regulations.

5.1.7 Material Safety Data Sheets (MSDS)

To provide information with respect to potential contact with hazardous and flammable substances and information on their safe handling, SLE&C will provide MSDS for all materials to be transported, stored and used on site. The MSDS will be made available at the Mine site office and at strategic location on-site and near hazardous substances storage areas. MSDS (Appendix 2) will be in accordance with WHMIS standards.

5.2 Initial Action

This section outlines the initial actions to be taken by the first person(s) discovering a hazardous materials spill. Following the initial action, the appropriate Spill Action Plan will be immediately implemented. Initial actions to be taken by the first person arriving/witnessing a spill include:

⇒ Ensure ones personal safety and anyone else in the area. If possible, identify the product spilled;

⇒ Immediately contact SLE&C Superintendent and report the spill;

⇒ Assess whether the spill can be readily stopped or brought under control. If you are ***sure*** it is safe to do so, try to stop the flow of material;

⇒ If the spill of material cannot be stopped safely, attempt to contain the spill material. The prime objective is to minimize risk to personnel and to prevent any spills from reaching the ocean;

⇒ If unsure whether it is safe to approach the spill, ***remain clear of area***. Report the spill to the SLE&C Site General Superintendent and then ensure that no one else accidentally approaches the spill; and

⇒ Record all relevant information for reporting purposes. i.e. who, what, when, volume weather, where.

5.3 Spill Action Plans

The following sections describe the procedures/protocols for containment, clean-up and disposal to be implemented in the event of a spill.

5.3.1 Spill Off-Shore - Unloading of Bulk Fuel Delivery

Unloading Operations:

Surveillance

- Determine spill limits by visual observations from tanker or boat. Identify containment and limit the drainage.

Range of Spill

- Immediate detection and normal cessation of pumping should limit a spill to no more than 15,000 litres.

Deployment of Equipment

- Set out booms. Located in containers adjacent to the dock. Boat for deployment is also located in container. These containers have signs on them to indicate that they contain spill kits.

- Set skimmer at apex of V formed by the booms. The skimmer is located in heated storage at the warehouse. Teck Cominco's skimmer will also be located here.

Recovery

- Pump recovered oil/water mixture into an empty hold of the tanker.

- If spill exceeds available storage capacity, then line low areas with impermeable plastic sheeting for temporary storage.

Disposal

- Transfer recovered oil that is not contaminated with significant quantities of water and debris to oil storage tanks for future use.

- Pump recovered oil that is contaminated to incinerator system holding tank for controlled burning.

Diesel Line Breakage:

Frequency of Diesel Line Use

- Tank filling will be done once per year.
- Diesel is transferred on a daily basis from the storage tank (fuel tank farm) to the accommodation complex.

Preventive Measures

- Visual inspections of lines will be carried out prior to each transfer. Any line damage will be repaired prior to use of the line. Inspection will note the valve positioning.

Detection

- Pressure can be used to detect major line breakage. This can be accomplished by having gauges on the discharge of fuel transfer pumps. Upon sensing a drop in line pressure, transfer of fuel will be stopped manually by fuel transfer personnel.
- Limits of spill will be visible.

Immediate Action

- Cease pumping immediately.
- Inspection of the broken line will be done immediately to determine the cause and location of breakage, in order to decide upon remedial measures.

Recovery

- Remove pooled fuel with SPATE pumps or manual double-diaphragm pump.
- Complete cleanup by use of absorbent pads. From spill kit containers.

5.3.2 Diesel, Hydraulic/Transmission Fluids and Waste Oil

Spill On Land

- Secure area and restrict access to unnecessary personnel.
- Provide containment by digging cut off trenches and berming.
- Stop or cover entrance of spilled material into watercourse or ditches/drains.
- Stop a tank leak/overflow by the following actions;
  - Cease filling operations
  - Turn off valve(s)
  - Utilize patch kit to seal leak(s) These are located with the H.E Shop for fuel tank repairs.
  - Contain spill
  - Close drains
- Build dikes or berms with earth, sand or other blocking media to contain spill.
- Remove/clean-up small spill by applying absorbents and place contaminated material in marked containers/drums.
- Recover large quantity spill with pump and transfer to drum(s) or storage tank for re-use or disposal at on-site liquid waste incinerator.
- Remove soil material affected by spill using shovels, backhoe or other mechanical method, when safe to do so.
- Contaminated soil material is to be temporarily stockpiled with protective plastic liner placed under and over stockpile.
- Segregate and dispose of contaminated soil material and absorbents to off-site licensed disposal facility or, if approved, to on-site location (underground Mine).

Spill On Snow and Ice

- Stop or cover entry of spill material into watercourse, ocean or ditches/drains.
- Build dykes with snow and water to make impermeable barrier for containment.
- Cut or excavate slots or trenches in ice/permafrost as a secondary containment measure for spill.
- Remove small spills by applying absorbent or snow.
- Remove large spills with pump and transfer to drums or storage tank.
- Burn (in-situ) spill material collected in trench, if safe to do.
- If spill is under ice, drill through ice and pump out spill to storage tank or drums for reuse or disposal at on-site liquid waste incinerator.
- Dispose of contaminated absorbents to off-site licensed disposal facility or, if approved, to on-site location (undergound mine).

Spill On Water

In addition to the specific procedures detailed in Section 5.3.1 for an off-shore spill, the following general procedures will be followed for spills on water.

- Deploy boom to contain the floating product.
- Use skimmer to collect contained product.
- Use absorbent pads to recover small spills on water. For large spill seek assistance from external environmental unit.
- Pump recovered material to tank for storage and disposal.
- Recovered product is to be recycled for use or transferred to liquid waste incinerator for disposal.

5.3.3 Chemicals

Chemicals remaining on site after Teck Cominco demobilizes will be handled in accordance with WHMIS standards. Some of these chemicals are identified in section 2.1 of this document. These will be stored and handled as per the waste management plan.

5.3.3.1 Ammonium Nitrate/Fuel Mixture (ANFO)

Spill on Land

- Fuel may be released from pellets.
- Cover drains and stop spill material from entering ditches or drains.
- Build dykes or berms with earth or sand to contain spill.
- If ammonium nitrate contacts water, try to confine and isolate.
- On dry surface remove with shovel and place in labelled secured plastic 205 L drum(s) for disposal.

Spill On Snow and Ice

- Prevent entry of spill material into water body.
- Cover or cap drains and prevent entry of material to ditch or drain system.
- Remove contaminated snow with plastic shovel and place in plastic secured container for disposal.

Spill On Water

Ammonium nitrate mixes with water (soluble) and is difficult to recover. In water,

the fuel mixture component of ANFO will be released and float to surface. To remove and recover the fuel, use an absorbent pad or skimmer. Spent absorbent pads are to be placed into containers for disposal.

5.3.3.2 Compressed Gases (Oxygen, Nitrogen, Acetylene, Propane)

Actions to be taken in the event of a compressed gas spill include:

- Refer to product properties MSDS, First Aid;
- Eliminate Ignition sources; ie. electrical power, lights, smoking, running vehicles
- Do not try to contain vapours when released;
- Personnel should withdraw immediately from area unless the leak is contained;
- Keep away from ends of tank/cylinder ends;
- If cylinders are damaged, gas should be dispersed and contained; and
- Shut off leak source;
- If small fire, extinguish with dry chemicals or CO_2.; and

USE WATER TO COOL CONTAINERS EXPOSED TO FIRE

6.0 TRAINING

All key SLE&C personnel and its speciality subcontractors, who will be handling, transferring and disposing of hazardous materials, or supervising personnel, will be formally trained. Training will be comprised of all pertinent spill emergency response issues and will include, but not limited to:

- Internal/external communication networks and required spill reporting and notification procedures;
- Response procedures including initial action, clean up procedures and disposal.
- Response organization;
- Individual Spill Action Plans;
- Available internal/external resources (spill clean-up equipment);
- Accessing and deployment of equipment;
- Dealing with seasonal diversities and adverse weather conditions in the context of spill response;
- Personnel protective equipment;
- Properties of hazardous materials handled, stored and used on-site;
- On/off site transportation of dangerous good;
- Environmental legislation; and
- Company Policy.

Training records will be maintained at the Polaris Mine site office by the SLE&C Health and Safety Coordinator.

Exercises

A SIMULATION PROGRAM WILL BE UNDERTAKEN QUARTERLY TO MEASURE THE EFFECTIVENESS OF THE SPILL CONTINGENCY PLAN. THE EXERCISE PROGRAM 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 MANAGEM

7.0 RESOURCE INVENTORY AND LOGISTICS

This section details the resources such as equipment, machinery and tools that will be available to respond to a spill and clean-up situation, as well as general site logistics.

Land

Equipment available for a land spill may include the following this can be supplemented with contractor's equipment. As equipment no longer is functional it will be retired. This is a generalized list of the existing equipment on site

8	-	4x4 Pick-Up Trucks
1	-	Case 1150 Dozer
1	-	Case 350 Dozer
1	-	Case W20 Front-End Loader
2	-	Cat 950 Front-End Loaders
2	-	Cat 980C Front-End Loaders
1	-	Cat 988B Front-End Loader
1	-	Cat 245 Backhoe Excavator
1	-	Cat 140 Grader
1	-	John Deere Grader
2	-	Cat D35C Articulated Dump Trucks
1	-	Cat D8 Dozer c/w Ripper
1	-	Cat D9 Dozer c/w Ripper
1	-	Cat V200 Forklift
1	-	Ford 8000 Dump Truck
1	-	Ford 3 Ton Service Truck
1	-	50 Ton Crane
2	-	20 Ton Cranes
1	-	Chieftain All Terrain/Snow Vehicle
2	-	Skidozer All Terrain/Snow Vehicles

2	-	Ford 9000 - 5th Wheel Diesel Tractors
6	-	Wagner 8-Yard Articulated Scooptrams
4	-	JDT 26 Ton Articulated Dump Trucks
2	-	JDT 13 Ton Articulated Dump Trucks
2	-	Wagner 2-Yard Articulated Scooptrams

Spill Response Kits

During the decommissioning works, spill Response Kits will be strategically located on-site where required. SLE&C will be responsible for providing sufficient spill response kits and speciality spill items in their work areas. These kits will be in marked packages at visible and accessible locations. Kits will be located at fuel storage and transfer areas, the mine portal area, liquid incinerator system, and chemical storage areas. As a minimum requirement, each spill kit will include the following items:

- 1 - 45 gallon (205 L) gauge open top drum with cover, bolt ring and gasket
- 1 - 48" x48" x1/16' neoprene pad (drain stop/plug)
- 2 - Splash protective goggles
- 2 - PVC oil resistant gloves
- 1 - Package polyethylene disposable bags (5 mm) 10 per pack
- 1 - Shovel (spark proof)
- 1 - Case (T-12) 3" x 12' mini booms/case
- 1 - bag (HP – 256) 17" x19"x1/2" pads, 100 pads/bail
- 1 - bag of Sphag Sorp TM

Ocean

Equipment available for an ocean spill will include the following:

Boats

- 1 - 16 ft. Work Boat with Outboard Motor
- 1 - 12 ft. Work Boat with Outboard Motor

Oil Boom/Skimmer

- Oil Boom/Oil Skimmer up to a maximum of 1000 feet

This skimmer is only intended for initial and supplementary recovery of spilled oil. The fuel ships carry spill equipment which would be used as the primary recovery unit should a spill occur.

Safety Equipment/Special Clothing

- 10 - Oil Proof Clothing (Tyvek Suits)
- 2 - D.O.T. Approved Flotation Suits
- 10 - Splash Protective Goggles
- 10 – PVC Oil Resistant Gloves
- These items will be located in the SLEC safety office.

Generators/Lights

- Spot Lights
- Portable Generators of various capacities.
- Diesel Powered Portable Lighting Plant

Other Oil Spill Control Equipment/Materials

- Anchors, Ropes, Absorbents, Miscellaneous Small Items

7.1 Resource Inventory of Fuel Supplier

Oil Tanker

Petrocanada is the prime Teck Cominco supplier of diesel oil to the Polaris Mine closure activities.

FedNav ships are equipped with a "PAGE" (Petroleum Association for the Control of the Environment) package.

Such a package contains:

Boom: Length 750 ft.
Oil Skimmer
Pumps with Floating Suction

7.2 Logistics

Sea Transportation

Shipping Season

- The normal shipping season is between mid-July and mid-October. Exact dates vary due to sea-ice conditions.
- No situation is likely in which ship movements will have to be made at other times of the year. As such, vessels of full ice breaking capacity are not required.

Shipping Route

- Access to the mine-site from the Atlantic Ocean is via Davis Strait, Lancaster Sound, Barrow Strait, south of Resolute and north through Crozier Strait.
- In years when unfavourable ice conditions exist west of Cornwallis Island, an alternate course is available north through Wellington Channel, around Cornwallis Island and south into Crozier Strait.

Vessel Movements

- There will be one supply vessel per year to provide diesel fuel (Teck Cominco to supply using existing subcontractor) and one vessel (SLE&C, Sealift) to provide oil, hydraulic/transmission fluids and other supplies.
- All ships are at least of a Type B Class, that is, having ice strengthened hulls.

Air Transportation

Seasonal Factors

- There is no major deterrent to year-round air access to the mine-site from Resolute or major centres in the south.
- Fog and blowing snow restrict flights on occasion.

Site Facilities

- The landing strip at Polaris is 1,225 metres long as listed with Navigation

Canada. It is capable of handling DC-3, Twin Otter, Dash-7 type aircraft and Hercules aircraft.

- The strip is lighted and equipped with instrument guidance beacon facilities.

- Routine air fights to and from the Polaris Mine site supply fresh food and allow for staff turnaround.

Scheduled Air Access

- Regular air service from Ottawa and Edmonton to Resolute is provided by First Air , Canadian North and Borek Air.

Local Air Service

- Ken Borek Air operates Twin Otter aircraft out of Resolute year-round.

Heavy Cargo Service

- The 737 aircraft operated by First Air are normally configured in a split cargo/passenger configuration.

- The cargo is normally transhipped from Resolute in smaller aircraft, but ice strip landings at the site are possible in the winter months, or the normal airstrip can be used by Hercules aircraft under restricted load conditions.

- The Canadian Armed Services have Hercules aircraft based in Edmonton that can provide emergency service in emergency situations.

Ground Transportation

Seasonal

- Surface transportation between Resolute and the mine-site is possible over the sea ice during the winter. Major shipments of cargo by Cat train and personnel transportation by snowmobile and Bombardier are possible, if required.

Mine-Site

- Roadways have been constructed to all surface facilities and parallel the water and tailings pipeline routes.

Communications

External

- The main communications system to the south is provided by NorthwesTel A satellite telephone has been purchased and is located in the firehall and is tested bi-weekly.

Local

- A complete small airport air traffic control station is available. This includes a multi-channel VHF transceiver for local communications with aircraft.

Marine

- SSB is available for long range communications over 100 km.
- VHF is used for shorter ranges and emergency communications with Resolute Bay in the event of problems with the NorthwesTel system.

Mobile

- Mobile radios are used for all communications around the site.