ᑲᓐᑲᒪᑦᑎᓕᕆᔨᒃᑯᑦ
KAVAMATKOT APIKHOIYIT
DEPARTMENT OF JUSTICE
MINISTÈRE DE LA JUSTICE

May 24, 2003

Mr. Philippe Di Pizzo
Executive Director
P.O. Box 119
Gjoa Haven, NU
X0B 1J0

BY FAX 1 867 360 6369

Dear Mr. Di Pizzo:

Re: Licence NWB1NAN0208 – HHERA, Phase 2 ESA, and Emergency Response Reports - GN Comments

This is the Government of Nunavut's second letter responding, to the HHERA, Phase 2 ESA, and Emergency Response Reports submitted by Canzinco/ Breakwater Resources Ltd. pursuant to License NWB1NAN0208.

Procedural Concerns

GN Regulators have noticed the absence of two items of dialogue that were anticipated by this time, based on the Board's correspondence of April 11th, 2003:

- First, we have neither received directly, nor found at the Board's FTP site, any response from CanZinco/Breakwater Resources Ltd., to the questions raised by peer experts and stakeholders at the Iqaluit technical meeting of March 31st and in written submissions circulated by the Board in April. This CanZinco response was due for submission on May 19th, 2003.

- Second, the Board has not acknowledged the scheduling concerns raised by the GN (April 24th, 2003) and by DIAND (May 12th, 2003). Friday May 23rd, 2003 is the latest date mentioned by the Board, in any correspondence, for the receipt input from Regulators.

GN submits that a further opportunity for written submission is needed. It is objectionable for Regulators to attempt any kind of "final" written input to the Board without a comprehensive response from CanZinco Ltd. to the concerns already articulated, and not knowing whether or not the Board intends to treat this round as final.

The GN supports DIAND's scheduling proposal for reasons elaborated in this letter, and we request the Board's earliest response on the following schedule proposal:

P.O. Box 1000 Station 540, Iqaluit, NU X0A 0H0
(867) 975-6319 (867) 975-6349 shardy@gov.nu.ca

- **Thursday, June 5, 2003** - Board/Regulator Technical Teleconference;
- **Mid-June** - CanZinco final response; and
- **Last Full Week of June** – GN's Human Health oriented report will be available, and we agree there should be a meeting or teleconference of regulators.

GN input to the Technical Review – Experts Providing Support

As indicated in our previous letter, the Government of Nunavut fully endorses the reports prepared and submitted to date with our participation, by EBA Engineering.

From a public health perspective, GN Regulators encountered an unfortunate obstacle. Dr. Tenenbein who was introduced in our submission dated April 25th, 2003, unfortunately withdrew his services and had to be replaced on very short notice.

This was accomplished, and the individuals now providing review from a human health perspective are: Robert E. Rogers, Ph.D, DABT, P.Biol., President, Toxcon Health Sciences Research Centre Inc., and Dr. Brian Zelt

GN input to the Technical Review – Position Unchanged

None of the concerns raised to date by GN regulators have been addressed to our satisfaction. At this point, we can only confirm that every issue raised in our written submission of April 25th, 2003 and most of those raised at the Technical Meeting in March, remain outstanding.

Based on the expert support obtained by our Regulators to date, the GN believes that the HHERA in particular, is not a sound basis for decision-making as it currently stands.

The usefulness and impact of the HHERA depends on the quality and proper use of data and assumptions in drawing conclusions about risk. In addition to concerns raised by GN and other regulators regarding the use of a 1985 Soil Geochemistry study to establish background contamination levels at the site, the experts retained by the GN to assess public health are indicating that the Report does not describe in an appropriate manner:

- the data available for review,
- its derivation and quality, or
- how, why, and with what level of reliability the data actually used in the HHERA was selected and used.

We have also asked these experts whether there is a need for an HHERA approach more specifically tailored to an Arctic environment and lifestyle. There are assumptions in the HHERA addressing water quality, dust quality ingestion rates etc… which are drawn from highly urbanized southern places, for example, Ontario and Atlanta Georgia. It seems to us that it should be explained whether, and how accurately, these can be assumed to predict what a typical person living in the environment at Nanisivik may safely be exposed to. Further, the HHERA currently gives no weight to the differences

of Inuit lifestyle and a diet that includes potentially contaminated fish and marine mammals in large quantities, as well as game.

Of course, the fundamental concern to be addressed in this public health element of the review is: what health risks does this site indicate for people, especially if they will live at Nanisivik? We believe that the Board should not finalize reclamation standards for any mine-impacted land without a reliable answer to this question. As indicated, our earliest ability to provide a report that provides those answers is the last week of June 2003.

Next Steps

Based on the HHERA, Phase 2 ESA, and various reviews and concerns canvassed to date, GN maintains that wider soil sampling to establish reliable background data is a crucial requirement that should be performed by the Mine as soon as feasible.

Once the Board has fixed the schedule for our next month or two of dialogue, we suggest that upcoming Technical meetings or teleconferences should include the discussion in advance, of the sampling program that the Mine proposes to use to obtain this needed background data.

GN Regulators have no further comments to add regarding the Emergency Response Plan.

Thank you for the opportunity to provide these comments.

Sincerely,

Susan Hardy,
Legal Counsel

6.0 ENVIRONMENTAL

On October 25th and 26th, FSC Architects and Engineers, conducted an environmental sampling process on a selected group of houses identified by the environmental soils report. Based on this report, four (4) houses(approximately 10% of the total number of units) were used for the environmental sampling process. The previous report indicated high concentrations of zinc, lead and cadmium throughout the Nanisivik town site.

Using sampling procedures determined by the FSC Environmental Department, eleven (11) samples were obtained from each of the four houses, each consisting of a sample size of approx 10cm x 10cm and are as follows

- 6 dust samples taken from various parts of the house (return and supply duct work, window sills in the living room and a bedroom, closet located next to the bathroom and a sample obtained from the kitchen – either on top of the refrigerator or upper millwork). These samples were taken to determine the levels of zinc, lead and cadmium
- 2 paint chip samples taken from the front vestibule of each of the houses and from the lower millwork of the kitchen or wall of one of the bedrooms. These samples were taken to determine the levels for lead and PCB's in the paint.
- A ceiling tile sample was taken from one of the bedrooms to be analyzed for asbestos.
- A floor tile sample was taken from the mechanical room to be analyzed for asbestos.
- A piece of insulation from the hot water tank was taken as a sample to be tested for asbestos.
- Mercury tipping switches (as found in a thermostat) were noted as being present in each of the homes. This information was passed onto the FSC Environmental Dept.
- A search in each of the homes was conducted for fluorescent lighting, which may or may not contain PCB's in the transformers for each of the lights. None were found. This information was passed onto the FSC Environmental Dept.

6.1 Results

Three possible sources of contamination from 4 different houses were sampled for the Nanisivik Feasibility Study. Once the materials were sampled they were sent to Enviro-Test Laboratories in Edmonton for analyses. Enviro-Test Laboratories are accredited by the Standard Council of Canada / Canadian Association for Environmental Analytical Laboratories (SCC/CAEAL), American Industrial Hygiene Association (AIHA), and SCC/Health Canada, and certified by the National Environmental Laboratory Accreditation Program (NELAP).

The sources of contamination under consideration were:

- Asbestos
- Lead/PCB Paint
- Cadmium/Lead/Zinc Dust

Asbestos

In Canada, regulations state that the maximum acceptable concentration of asbestos is 1%. As shown in Table 1, none of the samples that had been taken contained detectable levels of asbestos and thus there is no asbestos contamination.

Table 1 Asbestos Results

Sample ID	Sample Date	Location	Asbestos Type	% Asbestos
H604-7.	26-Oct-02	Hot water tank insulation - Mechanical room	N.D	<1
H604-7	26-Oct-02	Hot water tank insulation - Mechanical room	N.D.	<1
H604-8	26-Oct-02	Ceiling Tile - Bedroom #2	N.D.	<1
H604-9	26-Oct-02	Floor tile - Mechanical room	N.D.	<1
H700-7	26-Oct-02	Floor tile - Mechanical room	N.D.	<1
H700-8	26-Oct-02	Ceiling Tile - Bedroom #1	N.D.	<1
H700-11	26-Oct-02	Hot water tank insulation - Mechanical room	N.D.	<1
H801-7	25-Oct-02	Ceiling Tile - Bedroom #1	N.D.	<1
H801-8	25-Oct-02	Floor tile - Mechanical room	N.D.	<1
H801-11	25-Oct-02	Hot water tank insulation - Mechanical room	N.D.	<1
H905-7	25-Oct-02	Ceiling Tile - Bedroom #1	N.D.	<1
H905-8	25-Oct-02	Floor tile - Mechanical room	N.D.	<1
H905-11	25-Oct-02	Hot water tank insulation - Mechanical room	N.D.	<1

N.D. None detected, Detection Limit: 1%

Paint

The next set of analyses performed was for lead and/or PCBs in paint. PCBs were undetectable in the paint, but there was some lead. Canadian Guidelines consider lead paint to be a toxin, but do not have a concentration values on the amount of lead that may be considered a hazard. We have used the U.S. Poison Protection Act (42 U.S.C. 4822 (c)) as our guidelines when dealing with lead concentrations. The following table shows the results.

Table 2 Paint Results

				Lead Poison Prevention Act (42 U.S.C. 4822(C))
				50,000 mg/kg
Sample ID	**Sample Date**	**Location**	**PCBs**	**Lead (mg/kg)**
			All Aroclors (mg/kg)	
H604-10	26-Oct-02	Vestibule #2	<0.3	190
H604-11	26-Oct-02	Bedroom #1	<0.3	10
H700-9	26-Oct-02	Bedroom #3	<0.3	520
H700-10	26-Oct-02	Vestibule #2	<0.3	30
H801-9	25-Oct-02	Vestibule #2	<0.6	30
H801-10	25-Oct-02	Lower Millwork - Kitchen	<0.3	40
H905-9	25-Oct-02	Vestibule #2	<0.3	210
H905-10	25-Oct-02	Bedroom #3	<0.3	<10

As shown in the above table the concentration of lead did not surpass the guideline limit, neither does the paint contain PCB's.

Dust

The dust in the house was tested for cadmium, lead and zinc. Table 3 shows the laboratory results of the samples. A control sample of the cloth used to collect the samples was analysed for background levels of the above noted parameters. The results listed as "actual" on this table are the result of subtracting the control values from the laboratory results.

There are no Canadian Guideline concentrations for any of these parameters. In the U.S., there are only concentration guidelines for lead dust. These have been used and are displayed in the following table.

Table 4 Lead Dust Contaminants

U.S. Protection Agency Lead Standards (40 CFR Part 745) January 5, 2001			**Floors - 40ug/ft2 Window Sills - 250ug/ft2**
Sample ID	**Location**	**Lead (ug/100cm2)**	**Conversion - ug/ft2**
H604-1	Window sill - Living room	76.8	713.5
H604-2	Window sill - Bedroom #4	20.1	186.7
H604-3	Supply Duct - Bedroom #3	34.6	321.4
H604-4	Closet next to bathroom	14.3	132.9
H604-5	Top of fridge - Kitchen	9.4	87.3
H604-6	Return air duct - Dining room	24.5	227.6
H700-1	Window sill - Living room	2.2	20.4
H700-2	Window sill - Bedroom #3	1443.7	13412.4
H700-3	Return air duct - Dining room	42.6	395.8
H700-4	Supply Air Duct - Bedroom #1	10.2	94.8
H700-5	Closet next to bathroom	<0.2	N/A
H700-6	Upper Millwork - Kitchen	<0.2	N/A
H801-1	Window sill - Living room	349.7	3248.8
H801-2	Window sill - Bedroom #4	819.7	7615.3
H801-3	Return air duct - Dining room	138.7	1288.6
H801-4	Supply Duct - Bedroom #3	33.5	311.2
H801-5	Upper Millwork - Kitchen	2.6	24.2
H801-6	Closet next to bathroom	<0.2	N/A
H905-1	Window sill - Living room	618.7	5747.9
H905-2	Window sill - Bedroom #3	22.1	205.3
H905-3	Supply Air Duct - Bedroom #1	5.1	47.4
H905-4	Closet next to bathroom	<0.2	N/A
H905-5	Top of fridge - Kitchen	<0.2	N/A
H905-6	Return air duct - Dining room	37.6	349.3

We have considered every item that is not a floor to fall under the windowsill parameter. As seen in this table, there is extensive lead dust contamination in these houses. Because we do not have results for flooring, and because of these elevated levels, we must assume that there has been dust ground into the floors that would most likely be well above the guideline limits.

6.2 Recommendations

In order to deal with the problem of dust contamination, the houses must be thoroughly cleaned.

1. All items in the house must be washed down from floor to ceiling, into all crevices.

2. Ductwork should be vacuumed using HEPA-filter type equipment.

3. If there are wood floors in the house, they should be sanded down in high traffic areas to remove the top layer of ground-in dust, then resealed.

4. During the cleaning of the houses, personal protective equipment (PPE) should be worn. PPE required would be a dust mask, gloves, and coveralls. Ensure that proper personal washing takes place after PPE is removed.

5. All surfaces in houses should be re-sampled following cleaning. We believe that to wash an entire house down to these specifications would take a four-person crew a full day to complete.

Phyllis Beaulieu

From: Hardy, Susan [SHardy@GOV.NU.CA]
Sent: Wednesday, May 21, 2003 9:21 AM
To: 'Nunavut Water Board'; 'nwbexec'
Cc: 'Thomas Kudloo'; 'Stephen Traynor'; 'Stephanie Briscoe'; 'Stefan Lopatka'; 'Senior Technical Advisor'; 'Robert Carreau'; 'Phyllis Beaulieu'; 'Philippe di Pizzo'; 'Paul Smith'; 'Michael Roy'; 'Lee Webber'; 'Laurie Pelly'; 'Jordan DeGroot'; Baddaloo, Earle; 'David Searle'; 'Carson Gillis'; 'Carl Mclean'; Trotter, Bruce; Curley, Billy; 'Bill Tillman'; 'Bill Heath'; Moquin, Robert; 'Brent Murphy'
Subject: Nanisivik Technical Reports - April 25th Input from the Government of Nunavut


2003 05 21 - GN Response to HH...


FSC Report - Environmental Sec...

Hello,

Please find enclosed a letter from the GN regarding the Technical Review of the Nanisivik HHERA and Phase 2 ESA. This document will also be forwarded to the Board by fax.

<<2003 05 21 - GN Response to HHERA Phase 2 ESA and ER Reports.doc>>

Best Regards,

Susan L. Hardy, Legal Counsel
Nunavut Department of Justice
Legal and Constitutional Law Division
First Floor, #1107 GN Building
Box 1000, Station 540
Iqaluit, Nunavut
X0A 0H0

Tel 867 975 6319
Fax 867 975 6349
E-mail SHardy@gov.nu.ca

> -----Original Message-----
> From: Thompson, Joy
> To: Hardy, Susan; MacIsaac, Bernie; Baddaloo, Earle; Trotter, Bruce; Moquin, Robert
> Cc: D'Arcy, Chris
> Subject: RE: Nanisivik Technical Meeting - Follow Up
>
> Here's the environmental section of the FSC study, as requested by Susan.
>
> <<FSC Report - Environmental Section.doc>>
>
>