

MINE CLOSURE OBJECTIVES

FIRST NATIONS & INUIT PERSPECTIVE

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MINE CLOSURE OBJECTIVES

FIRST NATIONS & INUIT PERSPECTIVE

1. INTRODUCTION

1.1. OBJECTIVES

The primary objective of this report is to evaluate the perspectives and participation of First Nations and Inuit with respect to mine closure in northern Canada, especially in relation to closure objectives used in mine closure planning. It is anticipated that the product of this project will form the basis of a program to aid in the education of First Nations people in mine reclamation issues and objectives, and to better incorporate their concerns in mine reclamation planning.

The project involves a number of sub-objectives, namely:

1. To identify general purposes for closure objectives and closure criteria.
2. To identify typical closure objectives as have been approved or preferably implemented at northern Canadian mine sites
3. To identify methods used at various northern and Canadian mine sites for establishing closure objectives and criteria, with focus on methods for gathering and incorporating First Nations' concerns in the establishment of closure objectives.
4. To identify merits/problems with: (i) methods for establishing closure objectives, and (ii) implementation of established closure objectives.

Objective 1, dealing with closure objectives and criteria has been submitted under separate cover. That document provides a simplified and non-technical discussion of mine closure criteria.

Once the project was underway, it was recognized that sub-objective 2 was really a different exercise that did not fit well with the general project. Consequently, upon discussion with the Departmental Representative, it was decided to reduce the project emphasis on this and put more effort into addressing sub-objectives 3 and 4.

This report deals with the sub-objectives number 3 and 4.

1.2. BACKGROUND

A number of factors have led to the need for examination of mine closure objectives in the context of the First Nations perspective. Most importantly, in recent years the federal government has accepted responsibility for several mine sites in the north and has generally taken site-specific approaches to managing each site. For each of these federally managed sites, First Nations have expressed strong interests in closure activities. Specifically, government wants to evaluate First Nations' perspectives about mine closure objectives for the following reasons:

- Government wants to incorporate the issues and concerns of First Nations into the planning process for mine closure at Federally managed sites.
- First Nations' issues and concerns should be addressed by ensuring that they are taken into consideration early in the process and that they influence the closure objectives used in closure planning. A formal role for First Nations in Yukon is provided for in the 2003 Devolution Transfer Agreement.
- There have been weaknesses in the historical approach to closure planning, including:
 - First Nations' issues and concerns have not always been effectively considered in establishing closure objectives,
 - some objectives established after considering broad input have been impractical,
 - implementation of broader closure objectives has sometimes been problematic, and,
 - some reclamation measures requested (and implemented) were inappropriate or unnecessary.
- To minimize the potential for impractical and problematic closure objectives, the Government wants to ensure that all parties have a common understanding of the purpose and implementation practicalities of closure objectives prior to finalizing the objectives.

Generally, mine closure objectives fall into 3 general categories:

- The standards for physical and chemical stability to which the work is aimed,
- The extent of post-closure or ongoing site activity, and,

- The degree to which the land can be productive after reclamation is complete.

Historically, mine closures have been undertaken on the assumption that these types of objectives would be sufficient to address the concerns and issues of First Nations. The extent to which First Nations consider this approach to have been successful needs to be evaluated. If this approach can be applied successfully, the conditions that lead to effective application need to be identified.

1.3. METHODOLOGY

The methodology which was used focused on a case study approach. This allowed interviewees to identify merits and problems with determination of reclamation objectives. It included input from proponents, regulators, and First Nations or Inuit Organizations, as appropriate.

The following table presents a summary of the mines which were the focus of the case study review.

Mine	Type of Mine	Operational Period	Status of Mine Closure	Affected First Nation/Inuit
Brewery Creek, Yukon	Open pit, gold	1996 to 2002	Partially complete	Tr'ondek Hwech'in
Giant Mine, NWT	Underground, gold	1947 to 2004	Studies & planning in progress	Dog Rib, Dene
Colomac Mine, NWT	Open pit, gold	1993 and 1996 to 2001	Studies & planning in progress	Dog Rib
Ekati Mine, NWT	Open pit, diamonds	1997 to ongoing	Operations expected for > 10 years	Dog Rib, Dene
Nanisivik Mine, Nunavut	Underground, lead/zinc	~1987 to 2003	Studies & planning in progress	Community of Arctic Bay
Polaris Mine, Nunavut	Underground, lead/zinc	~1980 to 2002	Nearly complete	Community of Resolute

The sites were selected because they represent a range of:

- geographic distribution across northern Canada,
- sites which are being managed by the government and the private sector, and,
- new and old mines.

A standard list of questions was developed to ask mine operators, regulators and First Nations or Inuit representatives, as appropriate. This list of questions is included in Appendix A, while the results of interviews from each of the six sites presented in Appendix B, under separate cover.

Note that where the term “First Nations” is used it should refer to either First Nations or Inuit Organizations, as appropriate. It is used to simplify the text and should not be read so as to specifically name or specifically exclude either group.

2. RECLAMATION QUESTIONNAIRE

2.1. GENERAL

Persons with knowledge of, or prior involvement, in the six selected mines were approached in order to develop an understanding of how the concerns of First Nations and Inuit Organizations were being considered in the development and implementation of mine closure plans.

The general approach involved contacting the regulator first. This allowed the interviewer the opportunity to identify specifics of the project which may need to be examined further in questioning the other parties. It was also expected the regulators would help to identify the most appropriate First Nation or Inuit organization(s) to contact for each site.

Generally, the First Nations or Inuit Organizations were interviewed second. Ideally, at least two such individuals were contacted. The final contact was usually with a

representative from the mining company or government representative of the agency with responsibility for a site if it was under government management.

All three interviewers experienced difficulty in contacting the appropriate individuals and arranging a time to conduct the interviews. All interviews involved documenting a verbal question and answer format. However, interviewees were sent the list of questions before the interview was conducted so that they could consider their responses. Only oral responses were obtained because this was deemed to be the most effective way of obtaining responses from the necessary representatives as many responders would not have the time to prepare a written response. This approach also allowed the interviewers the ability to ensure an equivalent level of response from each responder.

There is no best way to conduct interviews such as these. Each of the interviewers took a slightly different approach to recording the responses. One interviewer simply recorded in great detail all that was provided by the responder. A second interviewer, recorded relatively brief responses by listening to the response and then providing a brief summary statement back to the responder for confirmation. A third interviewer recorded a level of detail in between the first two.

2.2. SUMMARY OF MINE RECLAMATION QUESTIONNAIRE

A summary of the responses to each of questions is presented as follows.

QUESTION 1

Did First Nations have an opportunity to participate in the development of mine closure objectives for the _____ mine?

Regulators generally felt that First Nations had an opportunity to participate in the development of mine closure objectives. For the most part, the regulators believed that the permitting and environmental assessment processes were sufficient to allow the participation of First Nations. In some cases, the regulators stated that the processes dictated that First Nations be engaged. Most of the regulators referenced processes whereby First Nations could review draft and final plans and provide comments or participate in hearings.

First Nations generally advised that, while they had an opportunity to participate in permitting and environmental assessment processes, these did not provide adequate

opportunity for participation in establishing mine closure objectives. First Nations felt that these processes were mostly consultation or intervener processes which sought input but not participation. Colomac was the only exception, where the Dogrib feel that they have a partnership with DIAND (the project proponent) whereby they participate in all stages of closure planning.

The proponents generally advised that First Nations had adequate opportunity to participate in establishing mine closure objectives. This opportunity was provided through permitting and environmental assessment processes, whereby First Nations could review and comment on plans. In most cases, these opportunities were afforded once the plans had been submitted to regulatory agencies. In the case of Polaris, a draft plan was submitted to communities. In the case of Colomac, the Dogrib participated in the development of the plan, including the evaluation criteria (i.e. measures of meeting the objectives) used for selecting alternatives. For Giant, DIAND advised that the objectives have not yet been established but they will be as part of developing a project description for the selected alternative.

QUESTION 2

Did First Nations have the capacity to participate?

- a) *Financial*
- b) *Technical*
- c) *Timing*

Overall, the responses to these questions are linked. Where financial resources were in place (either internally or through government contributions), the First Nations and Inuit have adequate technical capacity and can meet the timing limitations. Where there was inadequate financial capacity, the technical capacity was also inadequate and the First Nations had difficulty meeting the time constraints.

Question 2(a) Financial Capacity

Generally, regulators either didn't know about the financial capacity of First Nations or expressed the opinion that First Nations had adequate financial capacity to participate. For Ekati and Brewery Creek, the regulatory agencies provide some funding for the participation of First Nations: at Ekati through the Independent Resource Management Agency, and at Brewery Creek through various programs for intervener and environmental assessment funding.

First Nations at Ekati, Giant and Nanisivik did not have adequate financial resources to participate at the level they would have liked. The Inuit did not express any concern about financial capacity at Polaris, but noted that their participation was funded internally. The Dogrib stated that they had adequate financial capacity at Colomac, provided by a contribution agreement with DIAND. The Tr'ondek Hwech'in felt they had adequate financial capacity at Brewery Creek, but this relied on contributions of time from their consultant.

With the exceptions of Brewery Creek, and Giant, the companies were of the opinion that First Nations had adequate financial capacity. Some were of the opinion that government agencies (especially DIAND) provided some assistance. At Giant where there are two proponents, DIAND felt that financial capacity was lacking but has not addressed this need, while Miramar assumed that DIAND was likely providing support.

Question 2(b) Technical Capacity

At three sites (Polaris, Colomac and Brewery Creek), the opinions of the regulators, First Nations and companies were relatively consistent that First Nations and Inuit had adequate technical capacity. At both Colomac and Brewery Creek, the technical capacity appears to have resulted, to some extent, from government providing financial assistance.

For the other three mines, the First Nations generally felt that they did not have adequate technical capacity. Regulators felt that there was technical capacity but it was limited and probably not adequate. Companies generally felt that there was adequate technical capacity, but in the case of Giant, the proponents both noted that there was only one person trying to fulfill the technical role and that she was overwhelmed.

Question 2(c) Timing

In all cases, the question of timing seems to be linked to whether there is adequate financial and technical capacity. If the capacity exists, the First Nations and Inuit were able to work within the time frames of the government processes. If there was not capacity, then these groups could not meet the deadlines.

QUESTION 3

What was done financially to ensure that First Nations had the capacity to participate?

The six sites have a broad range in the scale of financial assistance provided for ensuring the capacity to participate in closure planning. At the upper end, DIAND (as a proponent) has provided substantial financial assistance to the Dogrib for their participation in closure planning and implementation at Colomac. At the lower end, at Giant and Polaris there appears to have been no financial assistance provided by either government or companies specifically for closure planning. Although, in the case of Polaris, the company did cover the cost of site access for inspections. At the other three mines, government has provided varying levels of assistance, generally in the form of funding for participation in regulatory processes.

With the exception of Brewery Creek, the existence of impact/benefit agreements between First Nations and mining companies was not discussed. As a result, it is assumed that these agreements did not focus on providing assistance for closure planning.

QUESTION 4

Who is responsible for assisting First Nations in closure planning:

- a) *Government*
- b) *Mining company*
- c) *First Nations*

With a few exceptions, the following general pattern emerged from responses about who is responsible for assisting First Nations in closure planning:

- Regulators generally believed that the greatest responsibility rested with the mining company and the First Nation, with some references to impact/benefit agreements.
- First Nations believed that the responsibility should be shared among all three groups; government, First Nations and companies.
- Companies believed that the greatest responsibility rested with government and the First Nation.

Regulators who did not consider themselves part of an agency that might be responsible for providing government funding tended to identify a greater responsibility for government.

At Ekati, all parties agreed that the responsibility was shared among all groups.

At Colomac, where DIAND is the proponent, they identified themselves as having a big role in assisting First Nations, but stressed that this was part of their responsibility as a proponent. For Giant, where DIAND is also the proponent, they stressed that government had a role to provide assistance, but that the role was not part of being the proponent.

QUESTION 5

At what stages and to what extent in the process were the First Nations invited to participate?

- a) *Pre-mine development (mine planning and permitting)*
- b) *Operations*
- c) *Detailed closure plan*
- d) *Closure implementation*
- e) *Post-closure monitoring*

General responses for each question are outlined below, but it should be noted that without exception, companies believed that they had provided opportunities for participation at any phase that they were involved with.

Question 5(a) Pre-mine Development

The level of participation of First Nations during pre-mine development appears to be linked to the time at which the mine was developed. Brewery Creek and Ekati were developed most recently (1990s) and First Nations participated in regulatory and

environmental assessment processes for these developments. There was little if any participation for the earlier developments.

Question 5(b) Operations

Similar to the pre-mine development phase, the level of participation of First Nations during operations appears to be generally linked to the age of the mine. In several cases, the level of effort by companies to seek participation diminished once the permits were in place and the mining began. For many of the projects, 'participation' through employment was identified for the operations phase. This employment was sometimes linked to requirements of impact/benefit agreements.

Question 5(c) Detailed Closure Plan

Where closure planning is underway, participation of First Nations seems to be standard. Generally, this has occurred through the government regulatory and environmental assessment processes, with First Nations being invited to review and comment on draft plans and final plans. For most projects, the reviews have included site tours. Colomac has involved First Nations in a more participatory role, where they appear to be part of the decision making process for closure planning.

Question 5(d) Closure Implementation

Half of the projects have not reached the stage of closure implementation. For those that have reached this stage, participation at Polaris and Brewery Creek has mostly relied on government regulatory and environmental assessment processes. At Colomac, the Dogrib have been directly involved in closure implementation, as a contractor at the site, and in a planning role.

Question 5(e) Post-Closure Monitoring

None of the facilities have reached the stage of post-closure monitoring.

QUESTION 6

What was done in the area of education during community consultations to help First Nations to better understand the issues and possible solutions to the problems at the site? Who initiated these sessions? Were translators used and/or written translations prepared? What formats were most successful for education programs?

Government

a) What was done in the area of education during community consultations to help First Nations/Inuit to better understand the issues and possible solutions to the problems at the site?

At each of the six mines, regulators indicated that they have been part of many community consultations. These have occurred primarily in local villages adjacent to or nearby the mine, as well as consultations and public meetings in the larger cities of Whitehorse, Yellowknife and Iqaluit. Most of them have been structured as informative sessions where the proponent describes some facet of mining phase, including mine closure. For the Giant Mine, some education has occurred through community meetings and open houses, but these have not been as interactive as they could be. In only one case, Brewery Creek, did the regulators participate in a community session solely for the purpose of answering questions posed by Tr'ondek Hwech'in community members concerned about closure issues. Regulators believe that in some cases (e.g., Ekati) the consultation process is improving.

b) Who initiated these sessions?

Generally, regulators believed that the consultations were company sponsored but initiated because of the regulatory process. Some were initiated by the government both as a regulator (Nunavut Water Board for Nanisivik) and as the proponent (e.g., DIAND for Colomac).

c and d) Were translators used and/or written translations prepared?

Regulators recognized that there was a wide range in use of translators during public meetings, and written translations for technical or informative documents. This was generally a function of the remoteness of the mine and whether there was a significant number of non-English speaking First Nations/Inuit at the meetings. In most cases some form of translation was used during public meetings, although it was recognized that the technical language of mine closure was not easily translated orally. In one case (Nanisivik), it was noted that having an Inuk speak Inuktitut about reclamation issues was very helpful. Except for executive summaries, technical documents were generally not translated. In one case (e.g., Brewery Creek) they were not used or needed because only a handful of elders still spoke the native language.

e) What formats were most successful for education programs?

In general, regulators believe that informal open-forum meetings are the most successful and beneficial to First Nations/Inuit. In these conditions community members are given "straight forward answers. Government also recognized that there is more participation by FN/Inuit governments in the public hearing process because they are to some degree less technical than the detailed technical sessions or workshops. Important mine-closure decisions have been made, however, without participation and, as a result, some people do not understand the decisions. For example, the option of in-situ freezing of arsenic

trioxide has been recently announced as a selected option for the Giant Mine. Many parties have expressed concern about this option. If this is the best option, and First Nations/Inuit were involved in the development and evaluation of options, they would likely have had a better understanding of issues and solutions. This may have led to more widespread support for the option.

First Nations/Inuit

a) What was done in the area of education during community consultations to help First Nations/Inuit to better understand the issues and possible solutions to the problems at the site?

All responded that they were aware of some level of community consultations, but were generally not in agreement as the level of education or the consistency of these consultations. For example, at Nanisivik, Ekati, and Polaris the general feeling was that the community meetings were limited in frequency, occurred only during parts of the process, were limited by location, and that interaction with the company was limited.

In contrast, at Colomac First Nations have recognized that participation of community members, especially elders, from the very beginning of closure planning has allowed them to get a good understanding of issues and solutions. Because the elders play such an important role in the community, this education was key, because the elders took the information back to the community. Further during regular meetings, people have been given the opportunity to ask questions and provide opinions.

At Brewery Creek, the Tr'ondek Hwech'in indicated that DIAND at first provided an outside "expert" who presented community workshops about heap-leach mining. Further, more in depth education was offered to the FN's representative, who traveled to Nevada at DIAND's expense and participated in a tour of four heap-leach mines.

b) Who initiated these sessions?

There was a general consensus by the First Nations/Inuit that the proponent initiated the sessions, but that many of the meetings conducted by the mine companies were also requested by the communities.

c and d) Were translators used and/or written translations prepared?

Aside from Brewery Creek, First Nations/Inuit indicated that there were translators for most public meetings during most of the stages, but written translations were less available or used. For Colomac some information was provided through local CBC radio which carries a First Nation program from 1:00 to 2:00 each day, with some programming in Dogrib language. Local (Arctic Bay) radio broadcasts were also used for Nanisivik. These were supplemented by newsletters, meeting minutes and a Labor Market Survey in both languages.

e) What formats were most successful for education programs?

First Nations/Inuit believed that visual and oral information (Visual presentations using lots of pictures and diagrams) were the most effective and that they (especially elders) benefited most from the workshops and mine tours, and informal meetings with technical representatives. Also considered helpful was a good open door policy established by the proponent, the use of pamphlets and slide shows, local radio broadcasts and the use of interpreters.

Negative responses were also provided. Powerpoint presentations, which are sometimes overly confusing with technical information were not as helpful and did not seem to be appropriate for the range of knowledge in the audience. FN/Inuit suggested refraining from relying on text to supply information (i.e., use more pictures than words).

There was some cynicism reflected in that the importance of education may be undermined by the apparent unwillingness to consider the comments of First Nations/Inuit (or even to explain why the comments can't or shouldn't be addressed). Most FN/Inuit do not understand the technical issues, but might if more time was spent to explain them. "They're doing what they want anyway," is a concern.

Mine Company

a) What was done in the area of education during community consultations to help First Nations/Inuit to better understand the issues and possible solutions to the problems at the site?

According to all the proponents interviewed, community consultations for First Nations/Inuit were part of the process at all of the mines, some more regular than others, much of which was beyond the mandate of the regulatory process. Additionally, the proponents were aware that First Nations/Inuit utilized various additional educational resources at the six mines that included mine tours, technical/scientific advisors, community liaison persons,

At Colomac, the Tłı̨ch have been part of a detailed and lengthy options selection process, through which they developed an understanding of the issues and the options for solutions. Two parallel options selection processes were used: one quantitative by technical people and the second holistic, by Tłı̨ch representatives. There was very good convergence of outcomes.

At Giant, various formats have been used for meetings to try to appeal to broader audiences. In one case, the meeting was held with a supper. Further, for the arsenic trioxide management plan, there was extensive community consultation with sessions in Yellowknife Ndilo and Dettah. There were three major public information sessions and three workshops. Approximately 50% of the people at these events were aboriginal.

b) Who initiated these sessions?

The proponents (including DIAND for Colomac and Giant) saw that they were usually the primary initiators, but generally at the request of First Nations/Inuit groups or as a function of the regulatory process. Proponents also recognized that in one case (Nanisivik) government (Nunavut Water Board) initiated meetings.

c and d) Were translators used and/or written translations prepared?

For five out of six of the mines (not Brewery Creek), proponents have been aware of the use of translators at public meetings and technical sessions (less so), however, translation of written material has been either not done or limited to summary documents.

e) What formats were most successful for education programs?

No single format was favoured by proponents, but a number of successful formats were recognized that included: some form of oral or public presentation and illustrations (especially for elders), informal question and answer periods (workshop formats), site visits, transparency (i.e., no formal hurdles or informal obstacles), and the inclusion of FN/Inuit as part of the process.

A few proponents mentioned that written materials appear to be less effective due to the predominant oral culture of FN/Inuit.

QUESTION 7

Do you think that the First Nations/Inuit understood the common breakdown of mine closure issues into physical stability, chemical stability and land use? Do you think that the First Nations/Inuit understood how their broad objectives fit into, or are linked to, or were addressed by these categories? Do you think that the First Nations/Inuit were provided or were they asked to provide their definition of "closure"?

Government

a) Do you think that the First Nations/Inuit understood the common breakdown of mine closure issues into physical stability, chemical stability and land use?

Regulators are aware that, in general, good understanding is limited to a few individuals within each FN/Inuit organization (although regulators believed that the people who needed to understand the breakdown of closure issues generally did) and that, in general, regulators sense that most First Nations/Inuit people (including elders, council members) do not understand many of the issues. Government recognizes that this is a common problem with lots of mine closures, within the general public. In general, there is not much depth of technical knowledge within many of the communities so it is difficult for them to understand mine closure objectives. In particular when issues become technically complex, conveying all the options and describing processes is problematic.

Understanding is better with some mines than others. At Colomac, DIAND has done a good job and has developed a partnership with the Dogrib.

b) Do you think that the First Nations/Inuit understood how their broad objectives fit into, or are linked to, or were addressed by these categories?

Although, regulators believe that First Nations/Inuit understand the categories in a general way, they are not aware of the implications on their own overall objectives. Although the technical solutions are sometimes adequate, there is a sense that there is not a strong connection between First Nation/Inuit's objectives and the common breakdown of chemical stability, physical stability and land use.

c) Do you think that the First Nations/Inuit were provided or were they asked to provide their definition of "closure"?

Regulators indicated that First Nations/Inuit did provide input regarding closure objectives through the regulatory process (e.g., environmental assessment, water licence hearings) as comments, but only with comments, and there was no interaction with the company outside this forum. Regulators generally believe that FN/Inuit have been clear (qualitatively) of what they hope that closure will achieve. In some cases, however regulators perceive that the First Nation's definition of closure could be very different than both government and a proponent. For example, an individual may think that rehabilitation means that the forests are replaced and every mine pit filled in.

First Nations/Inuit

a) Do you think that the First Nations/Inuit understood the common breakdown of mine closure issues into physical stability, chemical stability and land use?

FN/Inuit were generally aware of the breakdown, but in most cases in only a very general sense. In some cases, only a few from the FN/Inuit organization (including their technical representatives) had a comparable understanding of the issues. It was also noted that much of their knowledge however, has come as a result of lessons learned from previous bad experiences (i.e., Rankin Inlet, Rae Rock, Giant and Colomac).

The common breakdown does not fit well with the FN/Inuit more holistic views, in which they do not necessarily agree with the compartmentalization. For them, it all relates back to land use: "will we be able to hunt, will the animals be safe, do the animals have contaminants in them, and why can't the pits be filled in to return the land to similar productivity?" In general, many technical concepts are too complex to translate, especially for the elders. The Dogrib language, for example, is not effective in explaining chemistry issues. Oral explanations have helped to some extent.

b) Do you think that the First Nations/Inuit understood how their broad objectives fit into, or are linked to, or were addressed by these categories?

There was a general sense that all three parties had similar concepts regarding closure and reclamation, but that the FN/Inuit believed that they had a much more comprehensive and holistic view. There was a common belief that land and resources should be given greater value and that specific criteria should be added to the closure objectives that reflected this value. FN/Inuit were concerned about the segregation of closure concepts into smaller issues, and that as a result, the process would miss the “forest through the trees.”

Although in some cases there was some recognition that efforts have been made to integrate the two types of objectives, there is still only a poor to fair understanding of how to fit FN/Inuit objectives into the process. At Giant, there was a concern that there has not been any educational programs provided to assist First Nations in understanding these closure aspects.

c) Do you think that the First Nations/Inuit were provided or were they asked to provide their definition of “closure”?

FN/Inuit believed that because closure is defined from a western-science point of view there are built-in obstacles that prevent their concurrence with mine closure plans. For the most part, FN/Inuit were not asked for their definition of closure, although they did provide their concepts of closure at workshops and public hearings. FN/Inuit’s definition of closure is different focusing more on a more holistic and ecological view in which the animals/plants and natural productivity are returned to resemble the pre-mining state. For example, they believe that closure should have “productive capacity” as an objective, but it is currently not one of the established criteria. In some cases it appeared that government and mine companies were more concerned about the spending of money rather than making sure everything was considered and taken care of. They also emphasized that they were the ones left behind to deal with the closed mine, and that there was a general belief that the mine companies are not really consulting them but doing essentially what they wanted.

At Colomac, the combined efforts of the proponent (DIAND) and the Tłı̨ch have improved the closure planning process. Although the Tłı̨ch haven’t been asked directly about their definition of closure, they understand what it means to them – a walk away scenario without fear of contamination.

Mine Company

- a) *Do you think that the First Nations/Inuit understood the common breakdown of mine closure issues into physical stability, chemical stability and land use?*

In most cases the proponent indicated that they believed that the First Nations/Inuit understand the overall mine closure objectives and the general concepts of remediation, though they recognized that technical details were less understood. In the cases, when the FN/Inuit group had consultants acting on their behalf, there was a better understanding, although at times when issues were complex it became more difficult educate the First Nations/Inuit people on the scope of the problem and potential solutions. This becomes even more difficult due to the language differences and having to translate. For example, in general, people may not be able to understand the differences between contamination with uranium and that with cyanide/ammonia. Proponents indicated that because the FN/Inuit focus is on land and water use, they are not necessarily concerned with details of how physical/chemical stability is achieved.

- b) *Do you think that the First Nations/Inuit understood how their broad objectives fit into, or are linked to, or were addressed by these categories?*

Proponents do not have a consensus opinion. In some cases (Colomac, Brewery Creek and Nanisivik), the proponent thought that the First Nation/Inuit's objectives were linked well with the common breakdown of chemical stability, physical stability and land use. At Colomac, even though the Tłı̨ch̨ elders did not want to use a standard engineering scoring system to evaluate options, at the end of the day the selection approach appeared to work well. With other mines (Polaris, Ekati and Giant) the sense was that FN/Inuit do not really have a good understanding of how their broad objectives are addressed by the three technical categories. At Giant, the First Nation wanted the land returned to its original state. At Polaris and Ekati, proponents sensed a need to improve communication, especially for the elders.

- c) *Do you think that the First Nations/Inuit were provided or were they asked to provide their definition of "closure"?*

With the exception of Colomac, the Proponents indicated that First Nations/Inuit have not been asked to provide their definition of closure. In most cases, the proponent is aware that "closure" is defined in statutes and regulations, with the regulatory intent on retaining the highest and best uses of the lands. Definitions for closure are generally provided to the FN/Inuit at meetings, site visits and public hearings with little opportunity for an exchange of ideas. In Giant's case, there is a recognition of issues that are much broader than just environmental issues (i.e. community socio-economic issues) but not necessarily an understanding of how these may relate to some of the technical issues, responses and solutions.

At Colomac, DIAND (as the proponent) indicated that the Tłı̨ch had a very good idea of what they wanted for closure. Initially there was an interest in pre-disturbance conditions, but there has been subsequent recognition that this may not be practical. The role has changed to an interactive role, where the Tłı̨ch provides recommendations about when conditions are “good enough.”

QUESTION 8

Was economic opportunity seen as an objective for closure planning, and if so, by whom?

Government

Although not explicitly addressed in the water licensing and assessment processes, regulators are aware that economic provisions are part of socio-economic agreements, but these have only lately come into the picture. Regulators generally believe that economic objectives have been part of the concepts of closure planning by First Nations/Inuit (although not universally by all groups), but do not think that mining companies have that perspective. Regulators indicated that the proponent typically wants to limit their financial liability (i.e., clean up fast, spend money up front and leave town), while some First Nations/Inuit see the advantages of spreading out the clean-up and closure implementation over a number of years to ensure economic stability. In all cases, regulators indicated that if economics were an objective, the First Nations/Inuit groups did not consider them to be a substantial component.

First Nations/Inuit

There was no general consensus regarding economic objectives associated with closure. From the onset at Nanisivik, there was the general awareness that there would be some economic opportunity (i.e., agreement stipulated 60% Inuit employment – including apprenticeship trades programs, but met only 40%), especially for the local community at Arctic Bay. However, there was also a sense that the mine was looking to get it done as soon as possible and did not want to extend the duration of closure activities.

At Brewery Creek, Giant, Colomac and to some extent Ekati, economic opportunity (in the form of a limited number of jobs) was (is) seen as a secondary or limited objective, as the primary goals were (are) defining closure objectives and achieving acceptable cleanup standards and closure conditions. For Polaris economic opportunity was not really considered as an objective.

Mine Company

With the exception of Ekati where the main objectives have focused on habitat, all the proponents see economic considerations for First Nations/Inuit associated with the mine-closure process. The proponents have described economic opportunities in terms of target levels of employment (including training and education) during reclamation, and offering facilities to FN/Inuit for their benefit (i.e., the transfer of infrastructure to and development of alternative uses). For DIAND as the proponent at Colomac and Giant,

the economic opportunities for First Nations is important policy at senior levels of the Department.

QUESTION 9

Do you feel that the mine operator, regulator and other stakeholders understood and addressed:

- a) the concerns of First Nations/Inuit?*
- b) What “traditional knowledge” means to First Nations/Inuit?*
- c) What “closure” means to First Nations/Inuit?*

Government

a) Do you feel that the mine operator, regulator and other stakeholders understood and addressed the concerns of First Nations/Inuit?

At Polaris, Colomac and Giant, regulators believed that First Nations/Inuit concerns were understood. At Brewery Creek and Nanisivik, regulators thought that concerns were addressed but expressed less confidence in this opinion because it was likely that not all concerns were understood and maybe not to a satisfactory level for all concerned. At Ekati regulators did not believe that First Nations/Inuit concerns were understood.

b) Do you feel that the mine operator, regulator and other stakeholders understood and addressed what “traditional knowledge” means to First Nations/Inuit?

Except for Polaris, regulators generally agreed that the concept of traditional knowledge has been and is a big source of misunderstanding, and as a result it has been poorly utilized. In broad terms, regulators agreed that few have a good understanding of the meaning of traditional knowledge, partly because the meaning is still evolving, even for First Nations/Inuit. For Brewery Creek, DIAND addressed traditional knowledge from a technical nature in terms of “Valued Ecosystem and Cultural Components” (VECCs). DIAND approached closure issues by asking: “What effect would the decommissioning have on VECCs?” In this way, they believed they were working within the spirit of the settlement agreement, and DIAND believed that they took these components seriously.

c) Do you feel that the mine operator, regulator and other stakeholders understood and addressed what “closure” means to First Nations/Inuit?

There was either a sense that the meaning of closure to First Nations/Inuit was generally understood or that the regulators did not know how FN/Inuit felt. Although meetings and workshops appeared to be productive, there was a belief that not everyone understood some of the complexities. For example, a typical comment would be: “Why can’t you just take the bad stuff away?” Further, regulators expressed that meeting performance criteria and closure objectives to the proponent do not necessarily mean the same thing to First Nations/Inuit.

First Nations/Inuit

a) Do you feel that the mine operator, regulator and other stakeholders understood and addressed the concerns of First Nations/Inuit?

According to First Nations/Inuit, their concerns are consistently met conditionally or not met at all, even though they felt that the operator had a pretty good understanding of their concerns. They attributed this disparity to different objectives or the lack of effort to include FN/Inuit.

b) Do you feel that the mine operator, regulator and other stakeholders understood and addressed what “traditional knowledge” means to First Nations/Inuit?

There was a general feeling that traditional knowledge is not well understood by industry or government. Also, FN/Inuit recognized that because of the difficulty in incorporating TK into the closure process, there has been limited use of T.K. in the closure plan. A common sentiment is that mine companies and regulators just check the TK box to satisfy assessment or licence criteria, and the attempts at integrating TK with western science have not been successful. In general, FN/Inuit appeared to be very open to sharing TK. It was also recognized that the views of TK are very different all across North America. At Colomac, the Tłı̨ch have had very good involvement and the traditional knowledge of elders has played a significant role – especially information about land use and cultural use.

c) Do you feel that the mine operator, regulator and other stakeholders understood and addressed what “closure” means to First Nations/Inuit?

There was a broad range of answers and no consensus opinion. At Brewery Creek it was thought that the Tr’ondek Hwech’in desire to return the land to the natural productive capacity was not meaningfully addressed. At Polaris and Nanisivik, Inuit closure conditions were only partially understood. At Ekati, it was felt that FN/Inuit closure concepts were not really addressed. At Colomac, the Tłı̨ch definition of closure has been discussed in meetings – everybody knows that the Tłı̨ch want a walk away closure scenario. At Giant, it was expressed that there has been no real opportunity to address what closure means to First Nations.

Mine Company

a) Do you feel that the mine operator, regulator and other stakeholders understood and addressed the concerns of First Nations/Inuit?

There was a general consensus among the proponents that they believed that they understood, at least partially, the First Nations/Inuit concerns, but that one could not look at the question in isolation of licences and the regulatory process. At Colomac, addressing the concerns of the Tłı̨ch has evolved reflecting the cooperative approach

being taken. Even if the concerns were understood, however, not all have been addressed.

b) Do you feel that the mine operator, regulator and other stakeholders understood and addressed what “traditional knowledge” means to First Nations/Inuit?

There was no consensus opinion. At Polaris and Ekati it was felt that TK was not well understood and not really addressed. At Brewery Creek, Nanisivik and Giant there were lukewarm responses (i.e., qualified yes), and the notion that there was some reluctance on the regulators part to deal fully with First Nation’s concerns regarding traditional knowledge. At Colomac, the proponent believed that they understand what making use of traditional knowledge meant. In this case they took an atypical approach of involving the holders of traditional knowledge in the decision-making processes. As a result, the traditional knowledge holders brought two key traditional knowledge components to the decision making process: the traditional knowledge itself, and the integrally related values associated with the land. In a more typical traditional knowledge approach, regulators suggested that the values aspect would be more difficult to recognize and utilize.

c) Do you feel that the mine operator, regulator and other stakeholders understood and addressed what “closure” means to First Nations/Inuit?

In all cases but one, the proponents believed that the proponent, regulators and stakeholders understood the concept of closure to First Nations/Inuit. At Giant, one proponent thought that because of the of variation in age and type of education within First Nations/Inuit (just like any other group of people), it is not possible to have a single understanding about the meaning. For example, elders may have a substantially different understanding than younger people.

QUESTION 10

a) Do First Nations/Inuit feel that the mining company and regulators understand how they feel about closure issues?

Government

In general, regulators believed that First Nations/Inuit understood what the regulators were doing, but there was not necessarily agreement as to what closure meant, or who was doing what. There was a sense among some regulators that they were aware of some confusion among First Nations/Inuit in their attempt to understand the many divided regulatory mandates and roles of various government organizations. For example, it may be confusing to an Inuit which organization (e.g., DFO, EC, NTI, DIAND, GN, NWB, etc.) was doing what and that some things may be slipping through the gaps.

First Nations/Inuit

With the exception of Giant, First Nations/Inuit replied that they have a reasonable but sometimes not complete idea of what the mine companies and regulators were doing, and they recognized the evolving nature of the closure planning process. Also, the First Nations/Inuit representatives indicated that the level of understanding was not as keen amongst the people in general. A degree of skepticism is evident amongst First Nations/Inuit. This was primarily attributed to a difference in closure objectives. For example, First Nations/Inuit usually reference a much a broader view – “this place has to be safe” so the land can be useable again in contrast to the apparent mine companies’ primary desire to get ‘sign off’ from regulators.

In some cases the role or position of regulators was questioned as it did not seem as if they were always in charge of the mechanics, or were not holding the proponents to follow approved plans during operations. In one case (Brewery Creek) the opinion was expressed that regulators did not arbitrate (or consider it a priority to arbitrate) between First Nations and the proponent when differences regarding closure issues were expressed.

b) Do the mining company and regulators feel that First Nations/Inuit understand what they are doing about the closure issues?

Mine Company

In general, proponents thought that First Nations/Inuit understood what the mine company was doing, and that this understanding was facilitated through the public consultation and meeting process.

QUESTION 11

Do you think that the First Nations’ representatives (band resource officer, chief, elders and members) had an opportunity to;

- a) express their concerns with the closure plan?*
- b) Make recommendations on the closure plan?*
- c) Participate in the preparation of the plan ?*

All of the regulators believe that First Nations had an opportunity to express their concerns and make recommendations through the regulatory process. The regulators generally saw that there was little or no opportunity to participate in the preparation of the plan. The two exceptions being Polaris, where local employment is high and Nanisivik, where the community of Arctic Bay is quite active.

The First Nations response on opportunity to express concerns, make recommendations and participate included: no opportunity due to lack of understanding of the issues, occasional or infrequent opportunity, to active participation. In the case of active participation, the Colomac example, which includes a number of elements as described in

the Colomac questionnaire, appears to be a good format for encouraging effective participation of First Nations.

All mining company representatives believed that the First Nations had sufficient opportunity through the regulatory process to express concerns and make recommendations. Generally, the First Nations were not able to participate in the preparation of the plan.

QUESTION 12

Did the First Nations have internal resources (land manager) or external resources (technical experts) acting on their behalf? Were these people effectively addressing their concerns, and did these people, where necessary, educate First Nations about the subject, process, issues, options and solutions?

The regulators believe that the First Nations have internal and/or external resources to aid them in understanding the issues. In general, these were seen as being very effective.

First Nations reported that they did not have all the resources (internal or external) needed to fully understand the issues and express their concerns. The only exception here was Polaris, where the Inuit had been involved in the site operations, understood the issues and had a lesser concern for the site as it was not prime hunting habitat.

The companies perceived that the First Nations had at least internal or external resources acting on their behalf, except in the Polaris case for the reasons cited above. In the cases where the First Nations had active representatives acting their behalf the companies generally saw these people as being effective to very effective.

QUESTION 13

Do you feel that the First Nations feel they:

- a) can, or*
- b) should*

rely on the federal and/or territorial government agencies (DIAND, EC, DFO, RWED, etc) and their experts to address the issues at the site to a satisfactory level?

All of the regulators believe that First Nations can rely upon government agencies, but that they should not do so exclusively. Polaris was an exception to this because the Inuit are not the land owners and they have limited interest in the area around the mine for traditional activities. The regulators believe that the First Nations should conduct their own independent review to ensure that their concerns are addressed. The rationale for this can be found in the responses to Question 9.

In some cases, Polaris and Colomac, the First Nations do rely upon the government agencies. In the others, First Nations believe that they cannot rely upon the government agencies. This concern is what led to the formation of the Independent Monitoring Agency (IMA) in NWT for the diamond mines. Some First Nations see the government efforts as inadequately addressing the concerns of First Nations and that this probably

stems from the fact that the government experts do not contact the First Nations to find out what their concerns are.

In the case of Colomac and Giant, where the government is the party responsible for the site, the First Nations reported that they could not rely upon the government and that lack of trust was the main reason here (probably stemming from the perception that the government had allowed the situation to develop in the first place).

The company representatives for the other sites believed that the First Nations can and should rely upon the government (if it includes the IMA in the case of Ekati), but not fully.

QUESTION 14

During the closure planning and implementation stages, were First Nations effectively advised about how the closure plan addressed the issues and objectives identified by First Nations during the planning process? Was there sufficient feedback to First Nations on issues and resolution during the stages of the process including:

- a) Pre-mine development (mine planning and permitting)*
- b) Operations*
- c) Detailed closure plan*
- d) Closure implementation*
- e) Post-closure monitoring*

This question was not well answered in most cases. In general, the regulators reported that the First Nations were not, or at best minimally, advised about how the closure plan addressed their concerns during the permitting and operations phases, particularly for the older mines. There has been a greater involvement in the detailed closure plan.

The First Nations reported that they had not been very involved in the early stages. They were more so during the detailed closure planning but not as much as they would have wanted. In the case of Colomac, because they are actively involved, they have been effectively advised.

Representatives of the mining companies reported that there had been regular feedback and believed that this was adequate for the First Nations. They believe that the situation has improved beyond what they would have provided in the cases of Giant and Colomac since the government took over.

QUESTION 15

Do First Nations understand

- a) the purpose for reclamation security (as opposed to funds held in an environmental agreement),*
- b) how it is determined,*
- c) who decides if it is released,*
- d) when it may be released?*

Note that the responses to this question were not applicable to Giant and Colomac, as they are already under government management.

The regulators believed that the First Nations had a general idea about these questions, but noted that the details are legally constrained by the applicable laws. These details lead to confusion and mis-understanding.

First Nations reported that they had a general concept about these questions, and a better understanding when their experts (consultants) were involved in security matters. They did not understand how the amounts were determined or how the respective Water Boards reached their conclusion, other than recognizing that the Water Boards had considered the recommendations of experts.

Company representatives reported that they believe that First Nations have a general concept only of the security issues.

QUESTION 16

Do First Nations understand how reclamation security would be used?

All individuals (government, First Nations and mine representatives) responding to this question reported that there was not much more than a general understanding that security money would be used for reclamation work. The level of understanding was highest on Ekati (which was probably the first mine to have security tied to actual liability and where First Nations have been relatively involved since early days in the mine life).

3. DISCUSSION OF RESULTS

The discussions with First Nation and Inuit representatives during the interviews identified a fairly consistent desire for a holistic and long-term approach to mine closure. While First Nations are concerned about specific chemical and physical stability issues at mines, they are primarily concerned about the potential for combined impacts on culturally important ecological components. One respondent used the phrase “Is it safe?” to summarize the approach of First Nations. This sentiment was common among the First Nations and Inuit representatives.

Wilderness ecosystems and resources continue to support First Nations' subsistence activities, traditional economies and cultures. Many First Nation people remain deeply connected to the lands and resources within their traditional territories and this relationship is important to cultural well-being. Many First Nation people still obtain a substantial portion of their daily nutrition from traditional food sources. As a result, they are very concerned about any anthropogenic impacts on the ecological systems that provide these sources of nutrition. Because of their reliance on local resources for traditional activities, both real and perceived changes in the environment can cause real impacts on First Nations people. For example, the First Nation people may avoid hunting or fishing in an area if they believe that the food is unsafe.

These impacts need to be addressed in effective closure planning, whether by education or by action. First Nation people often see themselves as the primary recipients of adverse impacts of mining projects because they were there before the projects and they expect to be there in the long-term. First Nation concerns result in an overarching desire for closure planning that will ensure protection of culturally important ecological components and recognize that First Nations people need to continue using local resources for the long-term.

For the most part, the holistic and long-term objectives of First Nations can likely be addressed through effective implementation of the more common objectives related to physical stability, chemical stability and land-use. This approach appears to have been effective in addressing First Nations' concerns at sites where First Nations have been involved in closure planning. Obviously the interaction between each of these categories of objectives is important for addressing the holistic values and the application of these narrower objectives would have to be adjusted to consider their relationship with First Nations' broader objectives.

In a general sense, First Nations are unlikely to support the closure planning process unless it is undertaken as part of a program where First Nations understand the purpose of the objectives, how they will be applied in making closure planning decisions, and how they relate to the overall desire for long-term protection of ecological integrity.

Achieving this likely requires the direct engagement of First Nations at all phases of closure, but especially during the initial phases during the identification, evaluation and selection of alternatives. First Nations that had not been engaged in the process of closure planning until after alternatives were selected on the basis of somebody else's objectives were quite unhappy with their level of participation in closure planning. These groups tend to be distrustful of government, especially if government is the proponent for the closure project. Engaging First Nations in defining the measuring sticks that will be used to evaluate alternatives, and in the actual evaluation of alternatives, helps to provide these groups with an understanding of the reasons for decisions that are made.

The importance of education for First Nations cannot be overstated. Education about real vs. perceived impacts and what can be achieved by mine closure is extremely important in building First Nation support for mine closure plans. The education has to be undertaken in an honest and unbiased manner, and should not be used as a tool to promote certain activities, or consult on already completed plans. Education programs can likely be an effective part of closure planning as long as the efforts to provide a more level knowledge playing field are done prior to, or as part of, making major closure decisions, rather than as part of defending an already chosen option.

Education is not really occurring at public hearings. Education occurs before this through sessions at the communities and through site visits. It should be recognized that, in order to be effective, education is not a "one off" activity, but rather an ongoing process. This is particularly important for the elders.

The effectiveness of education programs relies on an atmosphere of trust with the agencies providing information. In order to gain this trust, governments and/or proponents must convince First Nations that they have genuine interest in hearing about their concerns (whether perceived or real), and effectively addressing them, whether by action or education. A side benefit of this trust is that First Nations will likely begin to rely more on government expertise in making decisions about closure planning.

Generally, First Nations want to be involved in closure planning. They do not believe that their participation in government regulatory and environmental assessment processes is adequate. They are seeking participation, not consultation, in the closure planning process. For the most part, closure planning to-date has involved consultation, usually through existing government processes. In a general sense, First Nations who have not been involved in closure planning prior to submission of plans for regulatory approval have been unhappy with the plans and implementation. With increasing levels of involvement, the level of dissatisfaction with the plans seems to diminish. This greater acceptance probably results both from the direct involvement and the better level of understanding of real impacts and balancing of complex issues.

First Nations want to be involved in implementation of closure plans, and they generally recognize mine closure as an economic opportunity. For them, this opportunity usually takes a second priority to protection of land and resources. As a result, First Nations' willingness to play a big role in implementing closure activities is often contingent on their understanding and supporting the closure plan that is proposed, and agreeing that it will achieve their objectives. If the First Nation is closely involved in implementing a closure plan that it believes in, there is a much better likelihood of broad community support.

In general, greater levels of participation by First Nations have been apparent at sites where government provided financial assistance that was focused on closure planning. This assistance has provided First Nations with an opportunity to seek outside expertise as necessary and to dedicate staff and resources to the specific projects. As a result, the First Nations' understanding of the closure issues has been much better. The interview results indicate that government and proponents often appear to "pass the buck" with respect to responsibility for providing financial assistance. While private sector proponents may provide some assistance through impact/benefit agreements, these are less likely for closure planning because the companies have lost much of their incentive to seek the buy-in of First Nations for their projects. As a result, these private sector proponents are likely to expend fewer resources on gaining the input of First Nations during closure phases. Governments on the other hand, have a greater potential to benefit

from the participation of First Nations, because the participation will likely lead to less opposition to, and greater satisfaction with, closure activities. This could often lead to decreases in long-term government costs.

CONCLUSIONS

Based on the information reviewed and the above assessment, the following conclusions have been reached.

1. It would be beneficial to First Nations and governments if First Nations were more involved, and at an earlier stage in mine development, in the determination of mine closure objectives. In most cases, they believe that their ability to participate is limited due to technical and financial capacity. This view is shared in part by regulators and mine company representatives. The adequacy of technical capacity seems to be linked the availability of financial resources. First Nations generally seem unable or unwilling to place high priorities on participation in developing closure plans unless they have financial resources that are dedicated to the specific projects.
2. First Nations do not believe regulators or mining companies understand what they expect in mine closure. They rarely feel consulted on their expectations. This view is shared in part by regulators and mine company representatives.
3. First Nations do not understand, or necessarily care about, the western science approach to mine reclamation. They are more concerned with knowing that the land and water will be safe, and that the habitat will be suitable for wildlife. This view is shared in part by regulators and mine company representatives.
4. Greater participation of First Nations at all phases of closure appears to improve their acceptance and support of closure activities. The provision of financial support dedicated to closure planning is likely the most effective way of improving the participation of First Nations. Companies, First Nations and some government agencies see this as a government responsibility.
5. The participation of First Nations during closure planning needs to include education both for and by First Nations. First Nation representatives and participants need to have the tools and knowledge necessary to participate fully in providing advice for decision making, including in the establishment of closure objectives. Also, mine closure proponents and decision makers will need to become more knowledgeable about the values, aspirations and objectives of First Nations for the mine closure projects. Working closely with First Nations

throughout the closure planning process will help to ensure that both types of education and knowledge transfer occur on an ongoing basis.

6. At the initial stages of closure planning, the usual process of presenting draft or final plans for review by First Nations should be avoided. Instead, major decisions about closure alternatives, and how they will be evaluated (closure objectives) should be developed with the participation of First Nations.
7. The views of the Inuit with respect to Polaris are somewhat dissimilar to First Nation opinions other sites. At Polaris, the Inuit have generally participated through government regulatory and environmental assessment processes and have relied on internal resources for this participation. The Inuit have been relatively satisfied with this level of participation and support in closure planning, whereas First Nation groups at other sites have been less satisfied with similar levels of participation and support.
8. Future phases of this project might be better conducted through face to face interviews in the communities.

Should there be any questions regarding the approach or conclusion of the report, please contact the undersigned.

Yours truly,

Brodie Consulting Ltd.

A handwritten signature in dark ink, appearing to read 'M. J. Brodie', is written over a light grey circular stamp.

M. J. Brodie, P. Eng.

APPENDIX A
QUESTIONNAIRE

QUESTIONNAIRE

FIRST NATIONS INVOLVEMENT IN MINE CLOSURE OBJECTIVES

Ekati Mine

- 1) Did First Nations have an opportunity to participate in the development of mine closure objectives for the _____ mine?
- 2) Did First Nations have the capacity to participate?
 - a) Financial
 - b) Technical
 - c) Timing
- 3) What was done financially to ensure that First Nations had the capacity to participate?
- 4) Who is responsible for assisting First Nations in closure planning:
 - a) Government
 - b) Mining company
 - c) First Nations
- 5) At what stages and to what extent in the process were the First Nations invited to participate?
 - a) Pre-mine development (mine planning and permitting)
 - b) Operations
 - c) Detailed closure plan
 - d) Closure implementation
 - e) Post-closure monitoring
- 6) What was done in the area of education to help First Nations to better understand the issues and possible solutions to the problems at the site?
 - a) Community consultations, (where)
 - b) Who initiated these sessions?
 - c) Were translators used?
 - d) Were written translations prepared?

What formats were most successful for education programs?

- 7) Do you think that the First Nations understood:
 - a) the common breakdown of mine closure issues into physical stability, chemical stability and land use?
 - b) how their broad objectives fit into, or are linked to, or were addressed by these categories?
 - c) Did First Nations provide or were they asked to provide their definition of "closure"?

- 8) Was economic opportunity seen as an objective for closure planning, and if so, by whom?
- 9) Do you feel that the mine operator, regulator and other stakeholders understood and addressed:
 - a) the concerns of First Nations?
 - b) What “traditional knowledge” means to First Nations?
 - c) What “closure” means to First Nations?
- 10) Do First Nations feel that the mining company and regulators understand how they feel about the closure issues?
- 11) Do the mining company and regulators feel that First Nations understand what they are doing about the closure issues?
- 12) Do you think that the First Nations representatives (band resource officer, chief, elders and members) had an opportunity to;
 - a) express their concerns with the closure plan?
 - b) Make recommendations on the closure plan?
 - c) Participate in the preparation of the plan ?
- 13) Did the First Nations have internal resources (land manager) or external resources (technical experts) acting on their behalf? Were these people effectively addressing their concerns, and did these people, where necessary, educate First Nations about the subject, process, issues, options and solutions?
- 14) Do you feel that the First Nations feel they:
 - a) can, or
 - b) should relyon the federal and/or territorial government agencies (DIAND, EC, DFO, RWED, etc) and their experts to address the issues at the site to a satisfactory level?
- 15) Were First Nations effectively advised about how the closure plan addressed the issues and objectives identified by First Nations during the planning process? Was there sufficient feedback to First Nations on issues and resolution during the stages of the process including:
 - a) Pre-mine development (mine planning and permitting)
 - b) Operations
 - c) Detailed closure plan
 - d) Closure implementation
 - e) Post-closure monitoring
- 16) Do First Nations understand
 - a) the purpose for reclamation security (as opposed to funds held in an environmental agreement),
 - b) how it is determined,
 - c) who decides if it is released,

d) when it may be released?

17) Do First Nations understand how reclamation security would be used?

MINE CLOSURE OBJECTIVES

FIRST NATIONS & INUIT PERSPECTIVE

APPENDIX B – DETAILED INTERVIEW NOTES

Prepared for:

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Water Resources Division
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QUESTIONNAIRE
FIRST NATIONS INVOLVEMENT IN MINE CLOSURE OBJECTIVES
BREWERY CREEK MINE, YUKON

The following table is a summary of contacts and interviews.

Person Interviewed	Affiliation	Contact Information	Interview Date/Time
Derek Fraser	Formerly with DIAND, now YTG	1-867-456-3763	9-Mar 2004, 14:00-14:30
David Sherstone	DIAND – Type II Mines Office	1-867-667-3360	Thursday, February 12, 2004
Dave Chambers	Tr'ondek Hwech'in technical representative	1-406-585-9854	16 Feb 09:30-10:15
Clynton Nauman	Viceroy	1-360-371-0176 (home in Blaine, WA)	16 February 2004, 13:00-13:45
Tim Gerberding,	Tr'ondek Hwech'in,	1-867-993-5385	Friday, February 20, 2004, 13:15-14:25
Richard Nagano	Tr'ondek Hwech'in	1-867-993-5385	Friday, February 13, 2004
Leslie Gomm	DIAND	1-867-456-3865	Monday, 23-Feb 2004 11:45-12:00

Qualifiers:

Dave Sherstone was manager of DIAND office prior to devolution and is now on special assignment with DIAND related to Type II mines in the Yukon. Dave was involved as a supervisor but not involved in much of the Brewery Creek Mine project details.

Derek Fraser qualified his responses – he was involved in the environmental assessment related to the decommissioning plan – but was not around at the beginning of the project – he was first involved around September 2002. He referred me to Marg Crombie as one who worked for DIAND when Brewery Creek first started; also the role under DIAND has changed as devolution in Yukon has evolved (i.e., March 2003 devolved to YTG, July 2003 they finished the EA). Derek is still involved peripherally with Brewery Creek.

Clynton Nauman – the former Vice President for Viceroy, now on Board for Spectrum Gold; was spokesperson for mine at water board hearings and was principal involved with negotiating socio-economic agreement

Dave Chambers has worked with the Tr'ondek Hwech'in as their technical representative since the exploration phases began in the early 1990's. He is currently geophysicist and executive director of the Bozeman, Montana based Center for Science in Public Participation.

By design Leslie Gomm answered only some of the questions (i.e., the ones that Dave Sherstone did not feel he could answer). Leslie was first involved in process beginning in fall 2001.

Richard Nagano is Tr'ondek Hwech'in and works in their Dawson City, Yukon office. He was happy to participate but reiterated that he was not involved with the Brewery Creek issues at the same level that Steve Caram (former lands officer) and Tim Gerberding (current lands officer) were.

1) Did First Nations have an opportunity to participate in the development of mine closure objectives for the Brewery Creek Mine?

Government

Both Mr. Sherstone and Mr. Fraser indicated that the Tr'ondek Hwech'in were fully involved in the Environmental Assessment and Water Licensing processes. According to Mr. Sherstone, there has always been an obligation by DIAND to engage First Nations, and the Tr'ondek Hwech'in would be involved in the public hearing processes as intervenors, and also establishing the final claims agreement under Chap 14 (The Tr'ondek Hwech'in agreement was concluded in 1998).

Mine Company

Mr. Nauman believed that the Tr'ondek Hwech'in had significant input during the water licensing process. The mine closure objectives were set during the Type A water license process, which had attached reclamation and closure objectives that were bonded.

First Nations

Mr. Gerberding indicated the the Tr'ondek Hwech'in had an opportunity to an extent. As part of one big picture, they certainly have participated in the processes, submitted comments, and intervened on the amendment to the license (i.e., quartz license). However, he was not particularly happy as to how their recommendations have been incorporated into the plan and is not entirely persuaded that "regulators" take their recommendations seriously enough. He indicated that very few of their recommendations made their way into the final report. It was obvious to him that regulators were making an effort to include First Nations, but Mr. Gerberding felt that sometimes it's just a token effort rather than a genuine effort. He sees that part of the difficulty has arisen since devolution (April 1 2003), when DIAND functions were taken over by the YTG. In some sense even if DIAND changes their practices, it will not change what YTG is doing.

Mr. Nagano believed that the Tr'ondek Hwech'in has been involved from the beginning to where they are today, but he did not know to what extent.

Dr. Chambers did not believe that the Tr'ondek Hwech'in were involved in the scoping of mine closure objectives, but was aware that they have been involved in communicating on amendments to the plan and license (i.e., quartz and water licenses). Other than formal stages of licensing and environmental review, he indicated that the Tr'ondek Hwech'in were not involved in the "mechanics" of developing objectives, but were involved only at the comment level.

2) a) Did First Nations have the financial capacity to participate?

Government

Mr. Sherstone did not know and deferred to Ms. Gomm. She indicated that the Tr'ondek Hwech'in did get funding to participate in mine closure issues but not with development. There was some funding available through a DIAND grant (\$15,000 in 2003) and plus their own resources.

Mine Company

Mr. Nauman did not know anything about the financial capacity of the Tr'ondek Hwech'in.

First Nations

Mr. Gerberding indicated that when the Brewery Creek Mine was first proposed and during the initial Environmental Assessment, the Tr'ondek Hwech'in received a modest assistance from the Regional Environmental Review Committee (RERC). At first they received \$5,000 then \$7,500 per year. Also, as a representative of the Tr'ondek Hwech'in and sponsored by DIAND, he toured four heap leach mines in Nevada. The field leader was Dr. Omar Mutady who was an expert from the States. Omar came up to Dawson City at DIAND's expense and gave a detailed description of heap leach mines to the community.

Later on the Tr'ondek Hwech'in was able to get technical assistance from the Sierra Legal Defense Fund (SLDF) and persuaded Dr. Chambers (then working for the SLDF in Juneau, Alaska) to assist the Tr'ondek Hwech'in. They still had to pay Dr. Chamber's travel expenses, but they were never charged a fee for his time (which was paid by the SLDF). Now they have the same arrangement with his new affiliation, the Center for Science in Public Participation in Bozeman, Montana. He indicated that if the Tr'ondek Hwech'in had to pay for his consultant fees, they might not have been able to get adequate technical support. Essentially they had to use their own resources and Dr. Chambers 'free' assistance to get the job done. Some of their costs in the last two years were offset by a DIAND program called the Indian Environmental Assistance Fund. In 2002-2003 they received \$15,000, and in 2003-2004 received \$10,000 from this fund. However, these funds did not cover all their expenses. He thought they wound up spending something like \$20,000 on expenses (primarily travel related for Chambers). The fund did not cover the regular wages for Steve Caram, Mr. Gerberding and other staff who were working on mine issues.

2) b) Did First Nations have the technical capacity to participate?

Government

Mr. Sherstone was not sure and thought that the Tr'ondek Hwech'in could have hired technical experts who could have been paid under a claim agreement. Ms. Gomm was aware that the Tr'ondek Hwech'in had a consultant who gave them technical support. She also thought that the Tr'ondek Hwech'in would not have been able to participate to the technical extent they did without the consultant. She indicated that the Tr'ondek Hwech'in would have been able to participate in general and in global terms regarding basic concepts of revegetation and reclamation, etc. She referred to Clynton Nauman of Viceroy and Derek Fraser (now YTG – formerly of DIAND) who might know more.

Mine Company

Mr. Nauman did not know the extent of the First Nation's technical capacity but was aware that they participated at a very significant technical level. He believed their participation was due primarily to Steve Caram (the Tr'ondek Hwech'in lands officer) and Dr. David Chambers (technical consultant).

First Nations

Mr. Gerberding and Mr. Nagano both referenced the critical technical assistance provided to them by Dr. Chambers.

2) c) Did the timing of the process affect the capacity for First Nations to participate?

Government

Mr. Sherstone indicated that the Tr'ondek Hwech'in were notified and copied on all correspondence from the beginning (when the mine was first proposed). From Mr. Fraser's perspective (which did not begin until September 2002), the Tr'ondek Hwech'in did have the financial and technical capacity and so were not affected by the timing.

Mine Company

Mr. Nauman believes that the Tr'ondek Hwech'in had ample time to participate;

First Nations

Mr. Nagano indicated that the Tr'ondek Hwech'in felt rushed on some issues, and could not meet all of the demands. From Dr. Chamber's perspective, he thought that he had enough time to participate. Mr. Gerberding was okay with the timing with one exception, which had to do with a security bond release. Evidently, YTG had released part (around \$3 million) of the \$8 million reclamation security bond contributed by Viceroy. The Tr'ondek Hwech'in wanted to retain the money longer to cover unanticipated closure costs. They made strong recommendations to DIAND and then YTG to take the precautionary approach. The timing of when the security bond is released is a big deal with the Tr'ondek Hwech'in. They are very concerned about the long-term effects of mining. The Brewery Creek mine sits next to three large settlement blocks of the Tr'ondek Hwech'in (these blocks account for one-third of the entire settlement land adjacent to the Klondike River (Tr'ondek Hwech'in means the people of the Klondike)).

3) What was done financially to ensure that First Nations had the capacity to participate?

Government

According to Mr. Fraser, DIAND had some national funding programs, and he encouraged the Tr'ondek Hwech'in to apply for them. The Tr'ondek Hwech'in obtained \$10,000 the first year and \$15,000 the second year (this are the same monies described by Mr. Gerberding). Most recently, the Yukon Environmental and Socio-Economic Assessment Act (YESAA) makes funding available on an annual basis. He did not know the amount. Mr. Sherstone was not sure

as he was not involved at that level. Ms. Gomm was aware that money was available through government grants but knew that the grants were not a huge amount.

Mine Company

Mr. Nauman indicated that the Tr'ondek Hwech'in and Viceroy had a Socio-Economic Agreement which was substantial. The Tr'ondek Hwech'in initially received \$1 million plus \$100,000 per year plus one liaison on-site; they had ample resources and did participate

First Nations

See Mr. Gerberding's response to 2a) above. He also indicated that Mr. Fraser (DIAND) talked to citizens during community consultations at DIAND's expense. Dr. Chambers was not aware of any financial support, but that he might not know, because it was not his role. He served only as a technical representative. Mr. Nagano indicated that when the mine first opened, they had a Socio-Economic Agreement, which made provisions that Viceroy (formerly Loki Gold) would hire locally from First Nations, and he was aware that Tr'ondek Hwech'in people were employed by Viceroy.

Mr. Gerberding indicated that beginning in May 2003 as a result of YESAA, First Nations are receiving core funding in areas of environmental assessment. The Tr'ondek Hwech'in will receive \$110,000/year, which first began in May 2003 on a prorated basis. They will get their full allotment beginning in 2004, etc. The funds are intended to help in broad terms; the act stipulates how it's supposed to be used. It is not intended, however, for participation in major projects, which should have additional financial support (i.e., it is not supposed to cover the costs of "Brewery Creek-like" issues).

4) Who is responsible for assisting First Nations in closure planning: Government, Mining Company or First Nations?

Government

Mr. Sherstone believes that all three groups are responsible at some level; however, it was DIAND's position that the mining company should take the lead role. He also indicated that the agreements between First Nations and proponents are confidential (i.e., Socio-Economic Agreement) so he is not sure what provisions or stipulations any of the agreements may have had. Mr. Fraser could not answer.

Mine Company

Mr. Nauman believed that the mining company should take the primary role, and that government should definitely not be responsible for assisting First Nations in closure planning.

First Nations

Mr. Gerberding indicated that the government of Canada has a fiduciary responsibility to ensure that First Nations have meaningful input in the process, and in this case, whoever has jurisdiction – initially it was DIAND, and now it is the YTG.

Dr. Chamber's indicated that the government agencies probably think they should take an active role, but he would like to think it was mining company's primary role. In reality, though, he believed that the responsibility falls on First Nations. He recalled that during the permitting stage, the Tr'ondek Hwech'in were actively involved, but once the permit was issued most of the dialogue came to an end.

Mr. Nagano indicated that the Tr'ondek Hwech'in did not rely on the government or the mining company, and felt that had to do it own their own, which is one of the reasons why they consulted Dr. Chambers.

5) *At what stages and to what extent in the process were the First Nations invited to participate?*

Government

Mr. Fraser was not sure as his involvement did not begin until late (September 2002). He deferred to Marg Crombie, his predecessor at DIAND, who was involved early in the process. Ms. Gomm questioned whether First Nations were involved at any level of detail except through the environmental assessment process.

Mine Company

Mr. Nauman indicated that the Tr'ondek Hwech'in have participated all they way through, from pre-mine planning and permitting to the detailed closure planning.

First Nations

Mr. Gerberding and Mr. Nagano indicated that the Tr'ondek Hwech'in had been invited to participate from the beginning, but all at their own expense. Mr. Nagano also added that they had to be invited by law.

- a) Pre-mine development (mine planning and permitting) – Mr. Sherstone indicated that First Nations certainly would have been invited in 1995, but he does not remember whether they were involved at this stage. Dr. Chambers and Mr. Gerberding indicated that, yes, they had been involved through the initial environmental assessment and licensing process. Mr. Gerberding indicated that a Ms. Rosanna White (DIAND), did everything in her power to help the Tr'ondek Hwech'in. He also referred to RAN (Resource Access Negotiations – a federal assistance program), which helped pay for time to help negotiate the Socio-Economic Agreement (SEA).
- b) Operations – Mr. Sherstone again was not sure, but he thought that the SEA would have some provisions for some FN involvement during operations – although he did not know what the agreement entailed. Dr. Chambers was not involved at this level and so did not know. Mr. Gerberding indicated that they had a Socio-Economic agreement with Loki Gold, and then Viceroy, which dictated the level of First Nations participation. He was the Tr'ondek Hwech'in's representative. He mentioned that Viceroy was very accommodating, and that he reported his observations to his council.

- c) Detailed closure plan – Mr. Sherstone indicated that during the environmental assessment and licensing process, First Nations were actively participating. Dr. Chambers thought that the Tr'ondek Hwech'in were not really involved, as the company submitted their plan and only then asked for comment. Mr. Gerberding replied that they were still working on it. Dr. Chambers said that YTG/DIAND were not very proactive in responding to proposed changes, and that there was no formal scoping for plans. The company was not asked, but insisted on having the decommissioning plan (and any plan revisions) not finalized. He thought the company wanted to keep the reclamation issues not modeled or discussed but all reactive. He did not believe they wanted to do work according to what was in print. He thought closure work should be done in accordance with specific provisions stipulated before hand. Dr. Chambers thought that the objectives were not clearly stated, and then the process spelled out and accomplished. It was more like, "this is what we did, is this OK?"
- d) Closure implementation – Mr. Sherstone said there was not much involvement to this point, but that it was be too early to say as mine has not been closed for that long of a time. Dr. Chambers replied that the Tr'ondek Hwech'in were formally involved (i.e., commenting on regulatory changes), but that should not be the limit of involvement. Mr. Gerberding said that they were just beginning this phase.
- e) Post-closure monitoring – Mr. Sherstone, Mr. Gerberding and Dr. Chambers both said it was too early to tell. Mr. Nauman referred to hearings that week (February 16-20) in Dawson City. They needed amendments to production license; intro – covers all issues not water related; discriminate – caps from heaps; YESAA dictates how to deal with it – an intricate part of the EA statutes; devolution – cannot sign off until all mitigation completed.

6) a) What was done in the area of education during community consultations to help First Nations to better understand the issues and possible solutions to the problems at the site?

Government

According to Mr. Sherstone, consultations were company sponsored and developed in Dawson City at Viceroy's project office on Front Street. He was not sure about the level of involvement or degree of consultation, and so he deferred to Ms. Gomm or Mr. Slater who were more directly involved. Ms. Gomm indicated that representatives of DIAND went to the Tr'ondek Hwech'in community (i.e., in Dawson City) as part of the Environmental Assessment process. Mr. Fraser indicated that he was invited to one of these community consultations (in 2002) to answer questions and inform the community members of the process. Both Ms. Gomm and Mr. Fraser came into the process during the assessment stage of closure, so they did not know much about the early stages.

Mine Company

Mr. Nauman referred to a component of the Socio-Economic Agreement which mandated that the mine must get together with the Tr'ondek Hwech'in at regular intervals (i.e., he recalled already a couple this year), in addition to the interactions during the permitting process.

First Nations

Dr. Chambers remembered that there were a number of attempts, including community consultations, by the mine company and government during the pre-mining permitting stages. Since then, however, he did not remember any attempts at education from the mine company or government. Mr. Nagano also remembered a number of community consultations at the community hall in Dawson City in the beginning when the initial permitting stages were occurring.

Mr. Gerberding indicated that DIAND at first provided an "expert" (i.e., Omar Mutady), who presented community workshops about mining and heap-leach mining in particular. More in depth education was offered to Mr. Gerberding as the Tr'ondek Hwech'in representative. He traveled to Nevada (at DIAND's expense) to participate on a tour of four heap-leach mines. He wrote a report to the Tr'ondek Hwech'in that summarized his observations. He believed the workshops were successful for him, although they did not really serve to educate the Tr'ondek Hwech'in people in general. There were still a whole lot of unanswered questions.

6) b) Who initiated these sessions?

Government

Mr. Fraser believed that the Tr'ondek Hwech'in requested the sessions in late 2002 and asked him to participate.

Mine Company

Mr. Nauman believed that both the mine company and the Tr'ondek Hwech'in initiated the sessions.

First Nations

Dr. Chambers thought that the mine company initiated the sessions, while Mr. Gerberding said he thought DIAND initiated the sessions. Mr. Nagano indicated he thought that both the Tr'ondek Hwech'in and Viceroy initiated the sessions.

6) c and d) Were translators used and/or written translations prepared?

According to all that responded translators and/or written translations were not used or needed. According to Mr. Gerberding only a handful of elders still speak the Han language.

6) e) What formats were most successful for education programs?

Government

It seemed to Mr. Fraser that the open forum workshop that he attended was successful, and the community members were given "straight forward answers."

Mine Company

Mr. Nauman believed that the most successful format occurred when they were sitting across the same table with Tr'ondek Hwech'in staff, and other community members and representatives. He believed that transparency (i.e., no formal hurdles or informal obstacles) was the most effective format.

First Nations

Mr. Gerberding said he benefited most from the workshops and mine tours, and he indicated that the touring of the Brewery Creek Mine by the chief, council, and elders was also valuable. He mentioned that it was very beneficial when Dr. Chambers met with the community three or four times and explained issues. He indicated that Viceroy had a very good open door policy, which was very accommodating, and that he has a lot of respect for this effort. Mr. Nagano said he did not have a particular preference but thought that the use of pamphlets, slide shows and mine tours was useful.

Dr. Chambers has met with the Tr'ondek Hwech'in staff a number of times of the years, and these meetings were all initiated by them, and so thought that indicated he was successful in communicating to them. He has had experience with only one community meeting/counsel meeting open to public, so did not have an opinion on the broader question.

7) a) Do you think that the First Nations understood the common breakdown of mine closure issues into physical stability, chemical stability and land use?

Government

Mr. Fraser thought that certainly the people who needed to understand the breakdown of closure issues did. He mentioned those as being Dr. Chambers, Mr. Caram, and Mr. Gerberding). Mr. Sherstone indicated, however, that in general he did not think most First Nations people did not, and that this is a common problem with lots of Type II mines. In general, he indicated that within many of the communities there is not much depth of technical knowledge so it is difficult for people to understand mine closure objectives.

Mine Company

Mr. Nauman said it was not a question that the Tr'ondek Hwech'in staff and Dr. Chambers understood the issues, who he believed absolutely had the capacity, but that sometimes there are other individuals, groups or First Nations that might not have the capacity, and so the problem would be to try and ensure that an attempt was made to have all people understand.

First Nations

Dr. Chambers was aware that the Tr'ondek Hwech'in staff understood, but that the community as a whole did not really understand the issues. He mentioned that he was still grappling with chemical and physical stability issues that have been unresolved. Mr. Gerberding concurred with Dr. Chambers in knowing that only the few staff (3 or 4 total) members understood the issues and that the community did not. He thought, however, that this level of understanding within a community was likely the same as anywhere else. In general, he felt that the people who needed to know, did know. Mr. Nagano did not fully understand the issues, and indicated that that was

why they hired Dr. Chmabers, who was able to translate the technical information into terms they could understand.

7) b) Do you think that the First Nations understood how their broad objectives fit into, or are linked to, or were addressed by these categories?

Government

Mr. Sherstone did not think the linkages between First Nation's objectives were strongly connected to the common breakdown of chemical stability, physical stability and land use. Mr. Fraser did not know and deferred to the Tr'ondek Hwech'in.

Mine Company

Mr. Nauman thought that the First Nation's objectives were linked well with the common breakdown of chemical stability, physical stability and land use. He said that they would have benefited from the training and employment during production and closure process.

First Nations

Mr. Gerberding said that the Tr'ondek Hwech'in had made detailed comments on the comprehensive study on reclamation, but that they were not happy on how Tr'ondek Hwech'in concerns were incorporated (or not incorporated). He believed that the mine and Tr'ondek Hwech'in had similar concepts regarding closure and reclamation, but he thought that the Tr'ondek Hwech'in had a much more comprehensive and holistic view. Land and resources should be given greater value; he wanted specific criteria added to the closure objectives that reflected this value. He also indicated that there was an issue regarding the acceptable concentration of selenium in the mine discharge. Viceroy wanted to modify the criteria but they did not concur with the proposal.

Dr. Chambers indicated that he thought there was a fair amount of concern as to whether reclamation would result in impacts to water quality.

Mr. Nagano said that the objectives were similar to some extent, but that the Tr'ondek Hwech'in prefer to deal with all the current and future issues more holistically or at the same time, and not segregated into smaller issues.

7) c) Do you think that the First Nations were provided or were they asked to provide their definition of "closure"?

Government

Mr. Fraser did not think so, not that he remembered, and Mr. Sherstone did not know, but he thought that the First Nation's definition could be very different than both government and a proponent. For example, an individual may think that rehabilitation means that every tree is replaced and every rock put back in place. He indicated that workshops have been conducted for FARO to address this disparity of understanding.

Ms. Gomm indicated that the Tr'ondek Hwech'in did provide input regarding closure objectives through the Environmental Assessment process as comments, but only with comments, and there was no interaction with the company.

Mine Company

Mr. Nauman indicated that "closure" was defined in statutes and regulations, with the intent on retaining the highest and best uses of the lands. He did not directly answer the question.

First Nations

Mr. Nagano responded negatively, that he did not think they were asked to define closure. Dr. Chamber's response was no, but he indicated that is was a complicated question. For example, the company asked to increase the discharge of Selenium without treatment, even though they apparently have treatment capacity. He indicated that one of the closure objectives was to ensure that there was no impact on the South Klondike River. But this did not go far enough, because mine effluent would still have a significant impact on a small tributary (e.g., Laura Creek, and others). Although Laura Creek is not a big tributary and does not have a lot of aquatic value he does not think that we should use the philosophy of raising limits to meet criteria, but rather treat to meet criteria. He said that the physical reclamation is, all in all, going pretty well, but the company is doing essentially what they want. He indicated that there was a fair amount of topsoil not being used, and that Viceroy was resisting using all the topsoil – there was also a difference of opinion on the volume of topsoil available.

Dr. Chambers indicated that the Tr'ondek Hwech'in want to be satisfied with the visual restoration, but they have not been consulted on meeting these objectives. He believes more work is needed by the mine company but so far they have not responded favorably;

Mr. Gerberding wanted the restoration of land to something approximating the natural productive capacity. In more of an ecological view the Tr'ondek Hwech'in want the animals/plants and natural productivity to resemble the pre-mining state. He said that right now pits are left stable (no sloughing), but the rocky area will never be vegetated or productive because the walls are too steep. Closure should have "productive capacity" as an objective, but it is currently not one of the established criteria (i.e., currently with closure criteria met, the area will have sheer walls, which are not as productive. Although they are relatively small pits, the issue regarding determining closure is still different. He was also not aware of any criteria for revegetation; however, he believes this issue has not yet been fully dealt with.

8) Was economic opportunity seen as an objective for closure planning, and if so, by whom?

Government

Mr. Fraser was aware of a Socio-Economic Agreement (SEA), but that DIAND was not involved, and so he did not know if the SEA stipulated any economic opportunities for closure.

Mr. Sherstone thought that it is definitely seen that way by First Nations and DIAND, but mining companies do not necessarily have that perspective. The proponent typically wants to limit their financial liability (i.e., clean up fast, spend money up front and leave town). He indicated that

DIAND and First Nations see the advantages of spreading out the clean-up and closure implementation over a number of years to ensure economic stability. He mentioned that Viceroy's Brewery Creek mine may be unique in that the mine feels that they are getting hit twice by having to provide security (\$8 million), and then pay for the decommissioning too, before the security is refunded. Also, he knows that they will not be able to find \$300 million to clean-up FARO, but that over long-term these monies may be more available.

Mine Company

Mr. Nauman thought that both sides saw that there were economic opportunities, and recognized certain jobs for First Nations. He indicated that there were still First Nations individuals working at the Brewery Creek Mine. The mine has also offered facilities to the Tr'ondek Hwech'in for their benefit.

First Nations

Dr. Chambers was aware that there were some limited jobs available, but that these opportunities were not considered to be a significant amount of money by anybody, and there were not that many jobs.

Mr. Gerberding's response was, not really. The Tr'ondek Hwech'in's primary concern was whether the reclamation would work. He remembers though at one point economic opportunity was considered and there were some general and broad discussions about the issue. Tr'ondek Hwech'in was considering taking over the reclamation (but this was not seen as a primary objective). Viceroy has chosen to do all the work, and they want all their money back, and he believes may be doing things as "cheaply" as possible. They are still having a debate on revegetation, and on the thickness of the soil cap on the heap. He indicated that Viceroy was initially planning to build a 1.0 metre thick cap, as a way to inhibit direct infiltration and ensure water quality. Now, he said, Viceroy argues that only a 0.25 metre cap is necessary to ensure water quality. In this way they might be meeting water quality objectives, but are not necessarily meeting criteria to ensure other issues such as full productivity of the land (i.e., a thinner cap cannot sustain full re-vegetation).

Mr. Nagano indicated that work is being done a little at a time now, but it is apparently not viewed as an economic opportunity. He noted a recent CBC newscast that indicated that Spectrum Gold was interested in pursuing further mining at Brewery Creek. Mr. Nagano thought that once Viceroy shut down the Brewery Creek Mine, it wouldn't be available to anyone anymore. As part of the Land Claims Agreement, once the mining is finished, it can no longer be staked, except for a grandfathered clause from a previous claim. He thought Spectrum might be trying to circumvent this by operating under an old Viceroy permit and then leasing it from them. He wasn't sure whether the mine was on Category A land (surface and subsurface rights) or Category B land (surface rights only).

9) a) Do you feel that the mine operator, regulator and other stakeholders understood and addressed the concerns of First Nations?

Government

Mr. Fraser did not know about mine operators, but felt that the government gave full credence to First Nation's concerns. Mr. Sherstone thought that they were addressed but maybe not to a satisfactory level for all.

Mine Company

Mr. Nauman responded with a qualified yes, and indicated that one could not look at the question in isolation of licenses (i.e., for water and production).

First Nations

Mr. Gerberding felt that the operator had a pretty good understanding and recognized their concerns, but that they had different objectives. He thought that the mine company understood their needs for economics and training, but it has yet to be seen what the outcome will be. He was not happy with regulators to date.

Dr. Chambers doesn't think the First Nation's concerns were always understood or addressed satisfactorily. He also wasn't sure that he had always expressed the concerns to all participants as well as he would have liked.

Mr. Nagano indicated that some issues were addressed, but not all, and they are still having battles over certain issues.

9) b) Do you feel that the mine operator, regulator and other stakeholders understood and addressed what "traditional knowledge" means to First Nations?

Government

Mr. Fraser thought he addressed it from a technical nature only and in this case in terms of "Valued Ecosystem and Cultural Components" (VECCs). DIAND approached this issue by asking: "what effect the decommissioning would have on VEECs?" In this way, they were working within the spirit of the settlement agreement (as DIAND was legally obligated to do); he believes that DIAND took these components seriously;

Mr. Sherstone thought that concept of traditional knowledge is a big source of misunderstanding. According to Mr. Sherstone, traditional knowledge is not mythology, nor is it the exclusive domain of aboriginals (i.e., an individual {of any race} or family with generations of knowledge about lands, waters and wildlife also have traditional knowledge). He gave the example of the Mayo mayor who is from a family with over three generations in the Mayo area and Steve Taylor who has lived in area over 30 years and participated at water board hearings. Traditional knowledge may mean just simply local knowledge, and is not cultural but factual. Mr. Sherstone quoted, Peter Usher, who insisted that the information has to be testable so it can feed into science-based rationale; he recognized that this viewpoint was probably not held by First Nations who might consider more longer term oral history being passed down over many generations within the First Nation's group (i.e., and exclusive of non-aboriginals).

Mine Company

Mr. Nauman responded with a qualified yes. He thought that the mine operators knew better than the regulators, and he saw reluctance on the regulators part to deal with First Nation's concerns regarding traditional knowledge. He thought that the government adjusted protocols for each First Nation, and that they have a framework but also a marked reluctance to deal with First Nations and traditional knowledge. He mentioned that it is mandated to have adequate time and money to have consultation with First Nations.

First Nations

Dr. Chambers believes that traditional knowledge is not well understood by industry or government, while Mr. Gerberding thinks that the mine operator, regulator and other stakeholders probably understand the issue.

The question was difficult to answer for Mr. Nagano. He replied that what he may say might also be different from Mr. Gerberding's concept. To him, how one is brought up has a lot to do with perspectives on traditional knowledge. For example, if one was raised by elders, he would have a different perspective than one raised by parents without elder influence. In his case, he was partly raised (weekends) by his grandparents who used to speak the native language, and he learned traditional hunting methods and rights for hunting. Even so, he thought he still missed out some traditional knowledge. Apparently, very few people still use the Han language and only about 5 or 6 elders speak only the Tr'ondek Hwech'in language. Richard did not have a clear definition of traditional knowledge.

9) c) Do you feel that the mine operator, regulator and other stakeholders understood and addressed what "closure" means to First Nations?

Government

Mr. Fraser indicated that the traditional ecological condition is ground zero. Mr. Sherstone thought that to the mining company it meant meeting performance criteria and closure objectives but he does not think most First Nations have this understanding; he doesn't think they are at that stage yet.

Mine Company

Mr. Nauman felt that he has answered this earlier, but he added that when they calculate the amount of land disturbed, and then determine the amount of land reclaimed. In this case, reclamation will mean there are hard rock exposures and they will reclaim without moving 10,000 tonnes of rock without changing landscape. He indicated there would be high walls, pit lakes and they do not intend to reclaim these types of conditions. He thought the general feedback was pretty positive regarding these conditions.

First Nations

Dr. Chambers felt that there should be objectives that can be measured. For example, when revegetation is done according to criteria, and when water quality conditions meet specific criteria and it can be demonstrated that the water quality will always meet the criteria. But he also indicated that there were qualitative and quantitative measures.

Mr. Gerberding thought that there was perhaps not a clear understanding. The Tr'ondek Hwech'in want to return the land to the natural productive capacity. Mr. Nagano considered closure to mean that the mine would be shut down permanently, and that they would try to restore to original lands as much as possible. He compared the current work to Clinton Creek, where much was left without stabilization, and now the federal government has to do all the work after mine company left. In Brewery Creek's case, Viceroy has rounded off the land, stabilized piles and slopes, but he would like to see the muck (soil?) pushed back on top to help re-establish growth. Closure to him meant re-contouring, stabilization and sustained new growth.

10) Do the mining company and regulators (First Nations) feel that First Nations (the mining company and regulators) understand what they are doing about the closure issues?

Government

Mr. Fraser replied affirmatively, and thought that the Tr'ondek Hwech'in knew what DIAND was doing with respect to the environmental assessment process. But Mr. Sherstone replied negatively, saying there is not agreement as to what closure means.

Mine Company

Mr. Nauman thought the Tr'ondek Hwech'in understood what they were doing.

First Nations

Dr. Chambers gave a qualified yes, saying that the staff did understand what the mine company and regulators were doing, but that the Tr'ondek Hwech'in people in general did not. He did question what role the regulators were playing as it did not seem as if they were in charge of the mechanics, and were not holding the mine company to follow specific plans. So he questions the regulatory involvement. He also felt that the mine company is doing things differently than what the Tr'ondek Hwech'in recommended, and the government is not arbitrating (it did not seem like a big priority to government). If it's seen as no big problem, then they (DIAND) don't have to get involved - he also suggested that he thought the regulators were overworked and over committed.

Mr. Gerberding replied: "Yes, I think they do." The problem, he thought, was not understanding but whether they (government and mine company) had the will to address the concerns given various financial and political considerations. He recognized that the Yukon has suffered a drought in positive mining activity over the last 10 years, and he thought that the YTG wanted to send a message to the mining industry that the Yukon is a "friendly environment" to mining ("the pendulum swings back and forth").

11) a) Do you think that the First Nations' representatives (band resource officer, chief, elders and members) had an opportunity to express their concerns with the closure plan?

Government

Mr. Fraser did not know, as the company submitted the closure plan. Mr. Sherstone said that First Nations had a formalized role during devolution transfers, environmental assessment process and during water license hearings.

Mine Company

Mr. Nauman thought that the Tr'ondek Hwech'in had considerable opportunity to express their concerns in the form of written interventions, of which he remembered over 2500 pages (not sure if I quoted him accurately here).

First Nations

Dr. Chambers said that they did normally in public hearings and written comments. Mr. Gerberding added that he thought they made it happen and Mr. Nagano indicated that they expressed their concerns with the closure plan primarily through Dr. Chambers.

11) b) Do you think that the First Nations' representatives (band resource officer, chief, elders and members) had an opportunity to make recommendations on the closure plan?

Government

Mr. Sherstone indicated that they did formally in writing and that they have for the last two hearings (i.e., during a license amendment and for closure).

Mine Company

Mr. Nauman said they did.

First Nations

All responded affirmatively.

11) c) Do you think that the First Nations' representatives (band resource officer, chief, elders and members) had an opportunity to participate in the preparation of the closure plan?

Government

Mr. Sherstone, to his knowledge did not think they did as the company prepared and submitted the plans in isolation of First Nations. He thought that First Nations may have had the opportunity to review it after the plan went to the Board, but he was not sure.

Mine Company

Mr. Nauman said that the Tr'ondek Hwech'in did not participate in the plan preparation, but did participate later by their comments and recommendations made during screening. He indicated that DIAND and the Tr'ondek Hwech'in had one year with the draft plan.

First Nations

Dr. Chambers said that the Tr'ondek Hwech'in did not participate at all with the draft preparation, and they were no different than "John Q Public."

Mr. Gerberding indicated that the plan has not yet been approved. He mentioned a Comprehensive Study Report that described the opportunity that could have enhanced conditions. The actual reclamation plan has not been approved nor has the final water license or quartz mining license been finalized, so he won't know how successful the Tr'ondek Hwech'in were in getting their concerns addressed until all the plans are completed and licenses approved.

12) a) Did the First Nations have internal resources acting on their behalf?

They were all aware of the internal resources provided by Mr. Gerberding and Steve Caram (former land manager) who evidently did a good job with the support of his superiors. Steve could not be reached and is now apparently on extended leave until September in New Zealand and Australia.

12) b) Did the First Nations have external resources (technical experts) acting on their behalf?

Similarly, all (government and mine company) were aware of the role that Dr. Chambers had played, and that he was in general the only outside technical resource used by the Tr'ondek Hwech'in.

12) c) Were these people effectively addressing their concerns and did these people, where necessary, educate First Nations about the subject, process, issues, options and solutions?

Government

Mr. Sherstone did not know and Mr. Fraser deferred to those with the Tr'ondek Hwech'in. Ms. Gomm was aware of the technical role and thought he seemed to provide valuable input during water board hearings.

Mine Company

Mr. Nauman thought that Dr. Chambers involvement was very effective.

First Nations

Mr. Nagano and Mr. Gerberding thought Dr. Chambers was very effective, and that they were fortunate to be able to tap into his organization for support. He thought the DIAND – now YTG could have been more supportive.

13) Do you feel that the First Nations feel they can or should rely on the federal and/or territorial government agencies (DIAND, EC, DFO, YTG, etc) and their experts to address the issues at the site to a satisfactory level?

Government

Mr. Sherstone believes they can and they should depend on government, but not exclusively. Mr. Fraser thought they should to some extent, but that they absolutely need to develop their own independent view. Mr. Sherstone thought that First Nations need to address technical issues independently, that they should receive advice from an independent evaluation or they might not believe or trust what is provided. Dave mentioned that a mine at Dublin Gulch did not follow this pattern.

Mine Company

Mr. Nauman did not feel it was his place to answer.

First Nations

Mr. Nagano felt that First Nations can and should rely on government for expert information and analysis. However, Dr. Chambers thought otherwise, that the Tr'ondek Hwech'in should not rely on government to represent them. He thought First Nations should rely on their own experts, but that he expects that government agencies believe they should or could be relied on.

Mr. Gerberding indicated that the YTG has a regulatory responsibility to all, and ultimately signs off and enforces conditions. Even though the Tr'ondek Hwech'in does not have jurisdiction, they still need independent expert advice to help get it right.

Mr. Nagano indicated that since everything is funneled down through the YTG, the Tr'ondek Hwech'in as an affected party must depend on YTG for the dissemination of information.

14) a) During the closure planning and implementation stages, were First Nations effectively advised about how the closure plan addressed the issues and objectives identified by First Nations during the planning process?

Government

Mr. Sherstone did not know, as he was not involved at that level.

Mine Company

Mr. Nauman indicated that the regulatory process provides a mandate for that to happen.

First Nations

Dr. Chambers thought that the Tr'ondek Hwech'in concerns were not adequately addressed. There has been no arbitration. Ideally he would like to sit down with the company to resolve the outstanding issues, but now their only place is in hearing in an adversarial role. Mr. Gerberding indicated that the Tr'ondek Hwech'in were advised to an extent as they had the opportunity to attend meetings in the community and to be kept in the loop of activities.

14) b) Was there sufficient feedback to First Nations on issues and resolution during the stages of the process including:

Government

Mr. Fraser thought that much of the early phases were outside of the realm of the environmental assessment when he was involved, but that the questions were best directed to company. He said that the detailed closure plan was prepared by Viceroy for the Government as part of the environmental assessment process and subsequent regulatory approval.

Mr. Sherstone did not think there was much feedback during pre-mine development (mine planning and permitting). He did not know about the operations and closure planning stages, and deferred to Ms. Gomm or Mr. Slater. He thought it was too early to tell about closure implementation and post-closure monitoring.

Ms. Gomm indicated that the Tr'ondek Hwech'in were advised through a consultant, as well as the government. She said that in some places a little feedback on security issue was incorporated but in general there was minimal feedback.

Mine Company

Mr. Nauman indicated that there was feedback throughout but that it was too early to tell about post-closure monitoring, although he expected no changes.

First Nations

Mr. Gerberding did not think there was sufficient feedback, even though there was a dialogue. He remembered that when the final comprehensive study came out, Tr'ondek Hwech'in comments were not really addressed. Mr. Nagano deferred to Mr. Gerberding.

Dr. Chambers indicated that during pre-mine development (mine planning and permitting) the interaction was pretty good. He did not know much about the operations phase. He thought that during the detailed closure plan and closure implementation there was not sufficient feedback. Mr. Gerberding mentioned that he thought decisions were politically motivated. Dr. Chambers indicated that it was too early to tell about closure implementation and monitoring. He said to ask him in five years whether the long term objectives, and socio-economic and environmental impacts have been mitigated or addressed. Mr. Gerberding indicated that because the process is not finished, opinions are perhaps a little premature. He said he has been advised on the proponent's plans and that there were some issues between government, but there has been a dialogue.

15) a) Do First Nations understand the purpose for reclamation security (as opposed to funds held in an environmental agreement)?

Government

Mr. Fraser thought that they absolutely did, but whether the Tr'ondek Hwech'in supported the current concepts was a different matter. Mr. Sherstone did not believe that First Nations fully understood the purpose. He cited First Nation demands, for example, to start clean-up right

away, but the government is not legally able to use all or some of the money, as it may be set aside for care and maintenance.

Mine Company

Mr. Nauman thought that First Nations very clearly understood the purpose and referred to the statutes.

First Nations

Dr. Chambers felt that the Tr'ondek Hwech'in probably understood about the purpose, but had some issue over the release of funds. Mr. Gerberding replied that he thought they did. However, on a theoretical basis, he believes that reclamation security should have a broader purpose and be more utilized. Government and regulators should take a more long-term view. He cited issues now apparent at FARO and Clinton Creek (which was shut down in 1978) but only in last the five to six years has the danger of sloughing of tailings pile become evident. This has taken place slowly over a number of years. He said that DIAND and the mine company think that looking ten years ahead is enough, but First Nations believe that a much longer time should be evoked (i.e., with Clinton Creek sloughing issue demonstrates it has to be a minimum of 25 years, but he would like a much more conservative view of perhaps 50 years). "We have to get better faster than we are" (when contemplating our understanding of closure issues and objectives).

Mr. Nagano thought they did understand the purpose, but referred to a little struggle with YTG regarding their recent release of \$3.5 million of the security fund to Viceroy. He was concerned that the money might not be available at a later date to fix issues. If money was left, government could hire someone else to do the reclamation work. Currently Viceroy still has a small presence at the mine; two guys check conditions and conduct monitoring.

15) b) Do First Nations understand how reclamation security is determined?

Government

According to Mr. Sherstone, the determination is a long convoluted process, and he doesn't know to what extent that First Nations understood the process. He thought that certainly it was difficult to grasp all of it. The money is set aside by the Board, but then determined by the Minister to release certain amounts, for what purpose and at what time. Sometimes how it is to be done is left hanging for the Minister to decide. In YTG, for example, the recent controversy stemmed from when the YTG minister of Energy, Mines and Resources gave back \$3.5 million out of the \$8.0 million security, even though not all the work/objectives was/were accomplished – i.e., when there was no evidence that the liabilities had been reduced; so now if there are problems they may not be adequately secured.

Mine Company

Mr. Nauman indicated that in Yukon and Northwest Territories there were wide differences in what he called "dualing engineers." He cited experts working for DIAND (i.e., Brodie and others – usually the highest estimates needed for the bond) to a consultant (i.e., SRK) to the mining company (usually the lowest estimates need for the bond);

First Nations

Dr. Chambers believes that the Tr'ondek Hwech'in staff know, but that the others maybe don't how the reclamation security is determined. Mr. Gerberding thought that the government ultimately decided, while Mr. Nagano did not know.

15) c) Do First Nations understand who decides if and when to release all or part of the reclamation security?

All indicated that they knew that the YTG government decided. Only Mr. Sherstone referred to the YTG minister of Environment as the actual person, while Mr. Nagano simply said that politicians decide, and he was not sure on what premise.

16) Do First Nations understand how reclamation security would be used?

Government

Mr. Fraser thought they did. Mr. Sherstone said the question relates to 15a, but thought that First Nations did not fully understand how the security would be used. He believed it stemmed from a poor understanding of how and when the security could be distributed (i.e., not all the money can be used when under receivership – FARO can't touch the \$14M except for final abandonment).

Mine Company

Mr. Nauman thought that it was a stupid question, because one can't use it or get access to it until after spending or completing work. At that time, then the minister releases some or all of the money after the work is done. He said that in reality the total used is twice as much ("double-dipping"). They originally gave \$8 million for security and then had to spend more to do reclamation work before they got any money back – and then only at the discretion of the minister.

Mr. Nauman thought that the recent controversial issue was not due to the return of security, but the fact that the YTG has not bothered to consult with the First Nations. He said they independently negotiated a release agreement, and the Tr'ondek Hwech'in were an integral part, to achieve a stable site. He said they greed on certain mitigation measures.

First Nations

Mr. Gerberding thought they did, while Mr. Nagano said that they try to but, for example, were not sure why the YTG released the \$3.5 million. When asked about how reclamation security would be used, Dr. Chambers mentioned the possibility of a new mine on the horizon at Brewery Creek, and how that might confuse things. He thought the new mine was probably a long shot because the ore was into sulphides. He would need to look at geologic report prepared to attract investors to see what the potential is, but that it would probably have to go underground and need higher grade.

Other Issues Brought Up

Mine Company

Mr. Nauman was concerned what this study would be used for and referred to the following three different groups “swirling” around the issues:

- 1) extreme left - those who don't want to see any new mines – see all the bad things to use as examples to prevent any future mining
- 2) an opinion typified in DIAND (it was hard to gage how large this group is), where people are typified by those who think the government should be the only ones or primary ones involved in establishing reclamation and closure at Type II mine sites
- 3) private corporations (mining companies) have the resolution and capability to complete closure work

First Nations

Mr. Gerberding referred to the chemistry of the heap as not fully understood at this time. He would expect to do some drilling still, so he thought that the decisions about closure are premature until the heap has been drilled and characterized.

Other Contacts Attempted

Contact	Affiliation	Contact Information	Comment
Jessie Duke	YTG – Minerals Development Group – Energy Resources, Whitehorse	1-867-667-3422	
Karyne Besso	YTG - Minerals Development Group – Energy, Mines and Resources, Whitehorse		Works on closure planning
Steve Caram	Tr'ondek Hwech'in – former lands officer		On temporary leave to New Zealand
Pete Johnson	Viceroy -		Works at mine – oversees reclamation monitoring
Brad Thrall	Viceroy		
Chris Cuddy	DIAND – Ottawa (Hull)		
Rosanna White	DIAND - formerly		
Bill Slater	formerly DIAND, now YTG		
Marg Crombie	DIAND - formerly		Preceded Derek Fraser

QUESTIONNAIRE

FIRST NATIONS INVOLVEMENT IN MINE CLOSURE OBJECTIVES

Colomac Mine

	QUESTION	REGULATOR RESPONSE	FIRST NATIONS RESPONSE	COMPANY RESPONSE
		Bob Woolie, Executive Director, Mackenzie Valley Land and Water Board February 27, 2004, 10:15 See note 1.	George Lafferty, Community Liaison, Tłı̨ch Logistics February 11, 2004, 8:00	David Livingstone, Director Renewable Resources and Environment, DIAND, Yellowknife, NT February 10, 2004, 8:00
				Octavio Melo, Senior Environment Scientist, DIAND Contaminated Sites Office February 12, 2004, 11:30
1	Did First Nations have an opportunity to participate in the development of mine closure objectives for the mine?	<ul style="list-style-type: none"> The Mackenzie Valley Land and Water Board (MVLWB) utilizes distribution lists for all applications and these lists always include First Nations. 	<ul style="list-style-type: none"> There is a partnership between Treaty 11 and DIAND to develop a closure plan. DIAND has hired Tłı̨ch Logistics to manage the site. DIAND has worked with four Tłı̨ch Chiefs in four communities right from the start of closure planning. The Chiefs are part of the management committee. Mr. Lafferty is also part of the committee and one of his roles is to deal directly with elders. The elders have visited the site to discuss options for remediation – the process with the elders began with a discussion of what they want to do and how will they evaluate the process as they go along? The elders' priority is traditional knowledge especially related to economic and cultural use of the area. They want to ensure protection of wildlife and wildlife movements. When it came to finalizing plans, the chiefs, elders and resource people were all working together. 	<ul style="list-style-type: none"> Yes Tłı̨ch were involved in closure planning from the time that DIAND took over responsibility for the site. DIAND sought the participation of the Tłı̨ch and wish to have them involved through all phases of the closure planning and implementation. The Management structure for closure planning and implementation includes the Tłı̨ch : the Chiefs and David Livingstone comprise a strategic level planning committee, while a working group is comprised of representatives of DIAND, the Tłı̨ch and the Department of Public Works. Tłı̨ch Logistics, a Tłı̨ch company, is involved directly in site management activities. The focus is on participation as opposed to consultation. Yes there was opportunity for the Tłı̨ch to participate once DIAND took over – DIAND took over in

				1999, but the strong interaction with the Tłı̨ch did not really begin until 2001.
2	<p>Did First Nations have the capacity to participate?</p> <p>a) Financial</p> <p>b) Technical</p> <p>c) Timing</p>	<ul style="list-style-type: none"> First Nations generally need financial contributions to be able to retain technical advisors. Dogrib probably have better capacity for Colomac than the Yellowknives Dene have for Giant. At MVLWB proceedings, the Dogrib always have very capable legal representation and they use technical advisors. 	<ul style="list-style-type: none"> Yes, the Tłı̨ch have the necessary resources. Also, Tłı̨ch Logistics has the resources and capability to manage the site. The company also does logistics (i.e. airport and road maintenance, fuel supply) for other sites, including the Diavik Diamond Mine. Tłı̨ch also have a technical advisor who works with the Chiefs and executive. Both the technical advisor and the community liaison are on the management committee. 	<ul style="list-style-type: none"> Yes, the Tłı̨ch have the financial and technical capacity to participate. Timing has generally not been a problem. There is a Tłı̨ch community liaison person (George Lafferty) who's work is dedicated to the closure program at the Colomac Mine. In addition, the Tłı̨ch have a technical and scientific advisor (Tony Pierce). Tłı̨ch Logistics manages the site under a contribution agreement with DIAND. Yes, the Tłı̨ch were provided with resources so that they would have the capacity to participate effectively – though this was not in place at the start.
3	<p>What was done financially to ensure that First Nations had the capacity to participate?</p>	<ul style="list-style-type: none"> Don't know, but the MVLWB does not provide any financial assistance. 	<ul style="list-style-type: none"> DIAND has provided the remediation funding, which has included money for Tłı̨ch Logistics to do work at the site. 	<ul style="list-style-type: none"> DIAND, as the project proponent, has helped to provide the Tłı̨ch with capacity. DIAND maintains a Contribution Agreement with the Tłı̨ch which includes financial allocations for the community liaison person and the technical/scientific advisor. The total value of the Contribution Agreement is approximately \$300,000 per year. Since 2001, DIAND has provided funding for a technical advisor and a part-time community liaison. DIAND involved the Tłı̨ch leadership in the Project Management Team.

4	<p>Who is responsible for assisting First Nations in closure planning:</p> <ul style="list-style-type: none"> a) Government b) Mining company c) First Nations 	<ul style="list-style-type: none"> • Government has a big responsibility – this responsibility comes about as a result of fiduciary responsibilities to First Nations. • The responsibility is in the role as government, not as “proponent.” 	<ul style="list-style-type: none"> • Both Government and First Nations are involved. • The First Nation feels that the government has some responsibility for this • DIAND is providing some direct assistance technically. 	<ul style="list-style-type: none"> • Generally, the company is responsible, and DIAND would not be providing funding to the extent that it is if there were a company taking responsibility for closure. In that case, more typical government funding programs would still apply: i.e. the Independent Resource Management Agency. • There is also an expectation that First Nations play a leadership role in their own participation, and provide resources for that participation.
5	<p>At what stages and to what extent in the process were the First Nations invited to participate?</p> <ul style="list-style-type: none"> a) Pre-mine development (mine planning and permitting) b) Operations c) Detailed closure plan d) Closure implementation e) Post-closure 	<ul style="list-style-type: none"> • First Nations are involved in the MVLWB process every time that a proponent makes an application. All of the stages listed require permitting, so the MVLWB seeks the input of First Nations at each of these stages. For Colomac, the MVLWB was not involved in pre-mine development and operations. 	<ul style="list-style-type: none"> • There was no first hand involvement during the pre-mine development and operations phases – but there was some minor employment benefit. • There has been extensive involvement and participation throughout closure planning. • In selecting options for each mine component, elders played a significant role. Site visits were followed by meetings to evaluate various options for each component. Typical engineering rating system was not effective for elders. As a result, the Tłı̨ch and 	<ul style="list-style-type: none"> • Very minimal involvement at the pre-mine development and operations phases – limited to consultation that was required by regulatory processes. • DIAND sought participation of the Tłı̨ch during detailed closure planning. Tłı̨ch are directly involved at all levels of closure planning. • Tłı̨ch logistics is currently the site operators as part of the closure implementation phase and the intention is to continue having the

	monitoring		<p>technical groups completed independent evaluations of the options with the Tłı̨ch using a qualitative evaluation and the technical group using a quantitative evaluation. Once the two processes were complete, the entire group reconvened to finalize options selection. In 15 out of 18 instances, both groups had selected the same option. Three areas required additional fine tuning. The evaluation process was a very good learning experience.</p>	<p>Tłı̨ch play an active role throughout the closure and post-closure phases.</p> <ul style="list-style-type: none"> • Mr. Melo's understanding is that opportunities for Tłı̨ch participation were minimal when the site was controlled by private sector companies. • During the first couple of years after DIAND assumed responsibility, DIAND was trying to mend the relationship with the Tłı̨ch and gain their trust. Some factors that were key in accomplishing this were: <ul style="list-style-type: none"> ○ Strong leadership at a senior level on both sides: from David Livingstone and Carol Mills on the DIAND side and from the Chiefs on the Tłı̨ch side. ○ A commitment by both parties to work together. ○ The work carried out by the Tłı̨ch . ○ DIAND's provision of funding for community liaison and technical advisor. • The Tłı̨ch are heavily involved in closure planning, and in ongoing remediation work.
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6	<p>What was done in the area of education to help First Nations to better understand the issues and possible solutions to the problems at the site?</p> <ul style="list-style-type: none"> a) Community consultations, (where) b) Who initiated these sessions? c) Were translators used? d) Were written translations prepared? e) What formats were most successful for education programs? 	<ul style="list-style-type: none"> • Consultations have taken place and these were initiated by the proponent. • Translators were not necessarily used. • Unable to comment on the formats that were most successful. 	<ul style="list-style-type: none"> • The Tlįch executive has ongoing access to the DIAND office, and there is ongoing communication with the Chiefs. This allows for effective flow of information. • Participation of community members, especially elders, from the very beginning of closure planning has allowed them to get a good understanding of issues and solutions. Because the elders play such an important role in the community, this education was key, because the elders took the information back to the community. • Twice per year community meetings to provide a Colomac Mine reclamation update – generally these meetings included providing meals, and doing a visual presentation. People were given an opportunity to ask questions and provide opinions. • Consultations/meetings were initiated by both DIAND and the Tlįch . • Interpreters were used at all stages, but written materials were generally in English only. • Some information was provided through local CBC radio which carries a First Nation program from 1:00 to 2:00 each day, with some programming in Dogrib language. • Visual presentations using lots of pictures and diagrams were effective and the use of interpreters was key. 	<ul style="list-style-type: none"> • There have been plenty of site visits by chiefs, council and elders. These are continuing. • Community meetings. • Regulatory hearings have been held in the community of Rae. • There is a Tlįch community liaison person. • The Tlįch have a technical/scientific advisor. • Throughout the closure planning process, there have been regular community sessions and updates. • Most of the on-site staff are Tlįch . • Tlįch have been part of a detailed and lengthy options selection process, through which they developed an understanding of the issues and the options for solutions. Two parallel options selection processes were used: one quantitative by technical people and the second holistic, by Tlįch representatives. There was very good convergence of outcomes. • Interpreters were always available at meetings and there was some translation of materials (limited). • Most successful mechanisms for education has been to have Tlįch as part of the process. This resulted in education on both directions whereby all parties have a better understanding of each others' perspectives. If people understand what is being done and why, they are more likely to be supportive. • Public meetings and site visits are
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				<p>relatively effective, while written materials are not because this is an oral culture.</p>
				<ul style="list-style-type: none"> • There was ongoing and direct involvement of the Tłı̨ch during detailed closure planning, including a 1-year long process of evaluating options – this was lengthy but served to educate people (education occurred in both directions). This process, along with the work of the technical advisor was key in developing capacity in the community. • The technical advisor was key to bridging between the technical and non-technical people. • Once the capacity was in place, there was a much higher level of trust – whereby both groups could recognize the expertise of the other groups in certain areas – i.e. the Chiefs essentially deferred to technical experts in areas of water treatment, but played a very significant role with respect to wildlife. • The site operator is a Tłı̨ch company that hires local people – this helps to educate and build capacity in the community. • Tłı̨ch have learned from this process and are now using their knowledge with respect to other mining projects. • Community consultations were done – in late 2001, and another round of consultations is planned.

				<p>These will be done jointly with the Tłı̨ch .</p> <ul style="list-style-type: none"> • They usually use interpreters. • They keep records of comments.
7	<p>Do you think that the First Nations understood:</p> <p>a) the common breakdown of mine closure issues into physical stability, chemical stability and land use?</p> <p>b) how their broad objectives fit into, or are linked to, or were addressed by these categories?</p> <p>c) Did First Nations provide or were they asked to provide their definition of “closure”?</p>	<ul style="list-style-type: none"> • a) Yes. At Colomac, DIAND has done a good job and has developed a partnership with the Dogrib. • b) Yes, people are aware of the implications on their overall objectives, and that technical solutions are adequate to resolve these. (i.e. water treatment to resolve issues related to fish, and installation of fence to address concerns related to metals in caribou). • c) No Comment. 	<ul style="list-style-type: none"> • a) Generally the concepts presented in the technical breakdown are too complex to translate, especially for the elders. The Dogrib language, for example, is not effective in explaining chemistry issues. Oral explanations have helped to some extent. • b) Efforts have been made to integrate the two types of objectives. For example, elders are aware in general of what contamination means, and the impacts associated. • c) Tłı̨ch haven’t been asked directly, but they understand what it means to them – a walk away scenario without fear of contamination. 	<ul style="list-style-type: none"> • a) On this project, Tłı̨ch understand the important elements of remediation, and the overall objectives very well, though perhaps not the technical details. • b) There seems to be a good understanding of how holistic objectives fit into the important elements of remediation. • c) Tłı̨ch had a very good idea of what they wanted for closure. Initially there was an interest in pre-disturbance conditions, but there has been subsequent recognition that this may not be practical. The role has changed to an interactive role, where the Tłı̨ch provide recommendations about when conditions are “good enough.” • Significant concern about contaminant effects on wildlife led to a reluctance by the Tłı̨ch to agree to re-establishment of wildlife habitat on the site, and to the wish to install a fence around the tailings area. While there was not necessarily agreement about the technical need for the fence, it was extremely important to meeting the objectives of the Tłı̨ch . As a result, the decision to proceed with the fence played a significant role in securing a good faith partnership with the Tłı̨ch .

				<ul style="list-style-type: none"> a) There is not a good understanding in the stated terms – but when you sit down with people to discuss it, they have a general understanding – but they tend to look at the big picture. The technical advisor understands the breakdown very well, but struggles to communicate it. For example Rae Rock has been problematic because people do not understand the differences between contamination with uranium and that with cyanide/ammonia. This is difficult to explain. First Nations people tend to be very strong on the land use side. b) Yes, people understand that the science based approaches may work to address their concerns and issues. The Tłı̨ch elders did not want to use a standard engineering scoring system to evaluate options, but at the end of the day, the two approaches to selection worked well together. c) Tłı̨ch did not provide it specifically, but it was discussed with respect to what the Tłı̨ch saw as a vision for the Colomac site in the post-closure period – they recognized that it could never be pristine. They recognized the need to establish priorities.
8	Was economic opportunity seen as an objective for closure planning, and if so, by whom?	<ul style="list-style-type: none"> No comment. 	<ul style="list-style-type: none"> Not specifically seen as an objective. The main objectives relate to the definition of closure. Tłı̨ch Logistics sees this as an economic opportunity for employment and training. DIAND is creating a trust relationship 	<ul style="list-style-type: none"> Yes, by all parties. While abandoned mines have left a legacy in the north, the remediation projects offer opportunities for training, education and economic development. They should be

			<ul style="list-style-type: none"> with the Tłı̨ch by developing the partnership in mine closure at Colomac. Tłı̨ch Logistics offers economic benefits to the community at large – 40% of employees are non-aboriginal. 	<ul style="list-style-type: none"> viewed in this way. These remediation projects should provide the greatest economic opportunity to the aboriginal people in who's backyard the projects occurred. Yes, by both DIAND and the Tłı̨ch . It was always recognized as a secondary objective to doing the job right and ensuring the safety of the environment for the Tłı̨ch . Seen as an opportunity for capacity building and employment. At DIAND, the economic opportunities for First Nations is important policy at senior levels of the Department.
9	<p>Do you feel that the mine operator, regulator and other stakeholders understood and addressed:</p> <ul style="list-style-type: none"> a) the concerns of First Nations? b) What "traditional knowledge" means to First Nations? c) What "closure" means to First Nations? 	<ul style="list-style-type: none"> a) Yes they understood the concerns. b) Probably not. Nobody has a good understanding of the meaning of traditional knowledge, partly because the meaning is still evolving, even for First Nations. It changes depending on who you talk to. c) Don't know. 	<ul style="list-style-type: none"> Pre-mining and operations, there was minimal to no involvement of First Nations. a) DIAND has understood the concerns of First Nations and worked to address them. The fence is an example of this understanding and willingness to recognize the issues. Also, elders recognize some of the technical issues with the fence and the need for daily monitoring to ensure that animals are not trapped. Elders will be visiting the site in February to evaluate and discuss issues related to the fence. b) Tłı̨ch have had very good involvement and the traditional knowledge of elders has played a significant role – especially information about land use and cultural use. Input from elders with respect to wildlife use played a role in the decision to construct the fence. c) What closure means to the Tłı̨ch has 	<ul style="list-style-type: none"> a) Addressing the concerns of the Tłı̨ch is a work in progress, but it is the purpose of the cooperative approach being taken with the Tłı̨ch . b) Mr. Livingstone believes that they understand what is meant by making use of traditional knowledge. The project has not taken the typical approach of trying to compile traditional knowledge in a report. Rather, the approach has been to involve the holders of traditional knowledge in the decision making processes. As a result, the traditional knowledge holders bring two key traditional knowledge components to the decision making process: the traditional knowledge itself, and the integrally related values associated with the land. In a more typical traditional knowledge

			<p>been discussed – everybody knows that the Tłı̨ch want a walk away closure scenario. The issue of the longevity of the fence remains unresolved because DIAND sees it as a temporary measure. The elders don't necessarily disagree, but want to be able to evaluate the effectiveness of future closure measures for the tailings before any decisions are made.</p>	<p>approach, the values aspect is difficult to recognize and utilize.</p> <ul style="list-style-type: none"> c) He believes that they have a good handle on what closure means to the Tłı̨ch, but it is still evolving.
				<ul style="list-style-type: none"> a) Feels that DIAND did understand and address the concerns of the Tłı̨ch. b) Yes, DIAND had a strong understanding – Carol Mills, the Manager of DIAND's Contaminated Sites Office had written papers on traditional knowledge and had a very strong understanding. c) Yes, DIAND understands what the Tłı̨ch want – remediation followed by a walk away scenario.
10	Do First Nations feel that the mining company and regulators understand how they feel about the closure issues?	n/a	<ul style="list-style-type: none"> Yes, DIAND has a good understanding. Tłı̨ch experience with this project has given them more confidence in closure discussions related to other projects (i.e. Ekati). 	<p>n/a</p> <p>n/a</p>
11	Do the mining company and regulators feel that First Nations understand what they are doing about the closure issues?	<ul style="list-style-type: none"> Feels that some members of the First Nations have an understanding of what is being done about closure – the more technical people understand it, but for the most part, people do not understand. 	n/a	<ul style="list-style-type: none"> Mr. Livingstone believes that the Tłı̨ch do understand what government (as the proponent) is doing about closure issues – certainly at the levels of the leadership and people involved in decision making processes. There is a recognition that communication is always a challenge within a community, and there is no certainty about how far the “ripples have spread.” Yes, the Tłı̨ch have a good understanding. As for the regulators, the Board

				has a technical committee that includes various representatives of various government technical agencies – the committee also has a representative from the Tłı̨ch . When DIAND approaches the regulators, it is usually with a letter of support from the Tłı̨ch .
12	<p>Do you think that the First Nations representatives (band resource officer, chief, elders and members) had an opportunity to;</p> <ul style="list-style-type: none"> a) express their concerns with the closure plan? b) Make recommendations on the closure plan? c) Participate in the preparation of the plan ? 	<ul style="list-style-type: none"> • The MVLWB provides First Nations with an opportunity to express concerns and make recommendations. • For Colomac, he's not sure whether First Nations have been able to participate in preparation of the plan. 	<ul style="list-style-type: none"> • Four mechanisms have been important and effective for the Tłı̨ch to express their concerns: <ul style="list-style-type: none"> ○ Band resource people have been involved in closure planning from the start. ○ The Chiefs are involved in a senior management level committee with senior DIAND staff. ○ The elders have had ongoing involvement in identifying and evaluating closure options – they have taken information about the project and their experience back to the community. ○ There have been twice yearly community meetings in Tłı̨ch communities to solicit input. • Tłı̨ch have made recommendations throughout the closure planning process. • Tłı̨ch have participated in the preparation of the plan. 	<ul style="list-style-type: none"> • Yes in all cases – people could express concerns, make recommendations and participate in preparation of the plan. • Yes on all points. The Tłı̨ch were a party to the development of the closure plan. The plan is currently out in draft form and DIAND is consulting with the Tłı̨ch , including an offer to meet with the Tłı̨ch executive.
13	<p>Did the First Nations have internal resources (land manager) or external resources (technical experts) acting on their behalf? Were these people effectively addressing their concerns, and did these people, where</p>	<ul style="list-style-type: none"> • There are definitely internal resources through people in the office of the Dogrib/Treaty 11. • There is a Dogrib member on the MVLWB. This likely leads to some informal education about the process. • Dogrib have technical advisors 	<ul style="list-style-type: none"> • People are being educated as much as possible with ongoing updates about site activities and issues. • To some extent they rely on the technical team that is doing much of the project design – headed by SRK. • There is also some reliance on GNWT resources – i.e. biologists 	<ul style="list-style-type: none"> • Yes, the Tłı̨ch had both internal (community liaison) and external (scientific/technical advisor) resources acting on their behalf. • Both seemed to be effective in compiling concerns and bringing them forward, and in educating the Tłı̨ch people about the closure

	necessary, educate First Nations about the subject, process, issues, options and solutions?	<p>(Tony Pierce, Steve Wilbur), both of whom are effective in addressing concerns and educating people.</p> <ul style="list-style-type: none"> In general, the First Nations are much more sophisticated than a few years ago. 		<p>planning.</p> <ul style="list-style-type: none"> Yes there were internal and external resources – initially in the form of the technical advisor and community liaison. The Tlįch now have a land and resources group within their own government structure. Both the community liaison and the technical advisor have been quite effective in communicating with the Tlįch .
14	Do you feel that the First Nations feel they: <ul style="list-style-type: none"> a) can, or b) should rely on the federal and/or territorial government agencies (DIAND, EC, DFO, RWED, etc) and their experts to address the issues at the site to a satisfactory level 	<ul style="list-style-type: none"> No, in general First Nations can't rely on government for this role, but they should be able to. For Colomac there appears to be a different relationship between the Dogrib and the DIAND Contaminated Sites Office, so there may be more reliance in this case. 	<ul style="list-style-type: none"> Tlįch do rely on government resources and use them to get the best information possible for decision making. The participation of government experts has been a learning experience for the Tlįch . 	<ul style="list-style-type: none"> Tlįch should not rely on government to address issues on their behalf; not without an audit function in the form of their own independent technical advice. With adequate internal audit, they can put some reliance on government experts. With this project, DIAND is trying to use independent peer review to assist in providing an overall evaluation that can be used by all parties. Yes, they do rely on government agencies in some areas – but this is based on trust. Initially there was a lot of blame for DIAND – but with the Colomac project, there has been a lot of progress, and the Chiefs now recognize areas of expertise within government (i.e. water treatment) and rely on this expertise to make good decisions. In a general sense, First Nations

				would like to be able to trust government to address their issues, but in many cases they do not feel that they can.
15	<p>Were First Nations effectively advised about how the closure plan addressed the issues and objectives identified by First Nations during the planning process? Was there sufficient feedback to First Nations on issues and resolution during the stages of the process including:</p> <ul style="list-style-type: none"> a) Pre-mine development (mine planning and permitting) b) Operations c) Detailed closure plan d) Closure implementation e) Post-closure monitoring 	<ul style="list-style-type: none"> • No comment. 	<ul style="list-style-type: none"> • There was no involvement during pre-mine development and operations. • There is a good feed back mechanism. Elders are kept up-to-date with on-site activities and monitoring programs. There are weekly meetings of the Project Management Team comprised of DIAND, the technical advisor and the community liaison. 	<ul style="list-style-type: none"> • The feedback process is currently working well. It has only been in place since DIAND took over responsibility. • There has not been a lot of opportunity to test this, but it is being tested by fence issue. The Tłı̨ch pushed very hard for the fence and were part of the design and construction. A caribou was recently killed by a wolf in an area adjacent to the fence, and may have become trapped by the fence routing. The elders will be visiting the site soon to evaluate this problem and to discuss possible solutions. • The degree of feed back depends on the issue – for example, with diversion ditch placement and design, the Tłı̨ch are relatively unconcerned – as long as water quality remains acceptable. • Feed back will continue to be used – i.e the need for the fence to remain will be evaluated by all parties after the cover is placed on the tailings.
16	<p>Do First Nations understand</p> <ul style="list-style-type: none"> a) the purpose for reclamation security 	n/a	n/a	<ul style="list-style-type: none"> • Tłı̨ch have a good understanding of the security issue, though it is not relevant at this site.

	(as opposed to funds held in an environmental agreement), b) how it is determined, c) who decides if it is released, d) when it may be released?			n/a
17	Do First Nations understand how reclamation security would be used?	n/a	n/a	n/a
				n/a

Note 1: Mr. Woolie stated that he is not necessarily in a good position to answer all of the questions because he is only aware of specific aspects of the Colomac project; the ones that have been subject to licencing requirements and that have required review by the MVLWB. As a result, Mr. Woolie felt that his responses were not based on a general understanding of how First Nations were involved in planning for the Colomac project, but only on his experience with specific project aspects. Also, he is not necessarily aware of the participation of First Nations directly through the project proponents (DIAND in this case), but is aware of the participation of First Nations in the MVLWB processes.

QUESTIONNAIRE

FIRST NATIONS INVOLVEMENT IN MINE CLOSURE OBJECTIVES

Giant Mine

	QUESTION	REGULATOR RESPONSE	FIRST NATIONS RESPONSE	COMPANY RESPONSE
		David Livingstone, Director Renewable Resources and Environment, DIAND, Yellowknife, NT February 10, 2004, 8:00	Rachel Crapeau, Land and Environment Office, Yellowknives Dene First Nation, Dettah, NT March 16, 2004, 10:55	Bill Mitchell,, Manager Giant Mine Remediation Team, DIAND, Yellowknife, NT, February 11, 2004, 6:30
		Bob Woolie, Executive Director, Mackenzie Valley Land and Water Board February 27, 2004, 10:15 See Note 1.		Ron Connell, Manager, Environment, Giant Mine, Miramar Giant Mine Ltd. Yellowknife, NT March 5, 2004, 13:00
1	Did First Nations have an opportunity to participate in the development of mine closure objectives for the mine?	<ul style="list-style-type: none"> The Giant Mine Project Team followed a consultation approach rather than a participation approach. In general, the Team developed plans and then took the plans to First Nation groups to solicit their opinions of the plans. 	<ul style="list-style-type: none"> No real opportunity. 	<ul style="list-style-type: none"> The Giant Mine Remediation Team (the Team) is now developing the objectives, along with the project description for the selected alternative for addressing the arsenic trioxide. The intent is to complete the project description for submission to regulators in the fall of 2004. The Abandonment and Reclamation Plan should be completed about the same time – objectives will be part of that plan. It is still early in the development of closure objectives and the Yellowknives Dene (YD) are not yet aware of the process for establishing objectives. Alternatives for arsenic trioxide issue have been discussed with YD. The Team plans to make continual efforts to bring the YD up to speed on issues and solutions. At this stage, the YD are very

		<ul style="list-style-type: none"> The MVLWB utilizes distribution lists for all applications and these lists always include First Nations. 		<p>suspicious of the Team and are confused about the arsenic issues. The current wish of the YD is to have the arsenic shipped off site.</p> <ul style="list-style-type: none"> Yes, there was definitely an opportunity – but stress on the word opportunity – for First Nations to review Miramar’s draft Abandonment and Remediation Plan. There was not a lot of response as yet. The draft plan has been sent to the YD, Dogrib Treaty 11, Dogrib Rae Band, North Slave Metis Alliance, Dene Nation and Akaitcho Territory Government. The plan was sent 18 months ago, as directed by the Mackenzie Valley Land and Water Board (MVLWB). YD are the largest player for Giant Mine.
2	<p>Did First Nations have the capacity to participate?</p> <p>d) Financial</p> <p>e) Technical</p> <p>f) Timing</p>	<ul style="list-style-type: none"> The YD seem to be lacking in capacity to participate, and the Project Team has not shown any intention to provide assistance in building capacity. 	<ul style="list-style-type: none"> No on all counts. Also, the proponents didn’t make it easy to participate. Meetings were generally held in Yellowknife and there usually were not specific meetings with First Nations. 	<ul style="list-style-type: none"> a) Financial capacity – the YD don’t seem to have financial resources available to be able to hire technical consultants to review material. The YD did hire at least one consultant to look at impacts of arsenic on traditional foods. That consultant is now part of DIAND’s independent peer review panel. b) The YD have limited technical capacity because they rely very heavily on a single environmental coordinator who is busy with several major projects. c) Because of the limited technical capacity, timing is always an issue for review of materials and identification/resolution of

		<ul style="list-style-type: none"> a) Don't know. b) Rachel Crapeau is very capable and does a very good job, but she is inundated with paper so that she cannot work effectively. The YD also use a technical advisor – Tim Byers. He hasn't been as effective as technical advisors working for the Dogrib. c) Timing is problematic because Rachel is overwhelmed. 		<p>outstanding concerns.</p> <ul style="list-style-type: none"> (a) Yes, they have the financial resources. He assumes that somebody is providing resources, likely DIAND or MVLWB, but does not know for sure. (b) Some have adequate technical resources, generally through consultants, but 1 or 2 groups have adequately trained aboriginal people working for them. (c) Depends on which group – the draft plan has been out for review for 18 months and 2 of the above six groups (see response to Question 1) have come for a site tour, 2 have contacted Miramar, and there has been no response from the remainder.
3	What was done financially to ensure that First Nations had the capacity to participate?	<ul style="list-style-type: none"> As far as Mr. Livingstone is aware, no assistance has been provided by the Project Team. The plan is to involve the YD through the regulatory processes, with reliance on assistance programs that are part of those processes. Don't know, but the MVLWB does not provide any financial assistance. 	<ul style="list-style-type: none"> Nothing. 	<ul style="list-style-type: none"> DIAND has not provided assistance to the YD through the Giant Mine Team. As closure planning proceeds, the Team hopes to hire some YD for studies, especially those related to traditional knowledge and fish. Not qualified to respond.
4	Who is responsible for assisting First Nations in closure planning: d) Government e) Mining company f) First Nations	<ul style="list-style-type: none"> Generally, the company is responsible, but with recognition that there is no private sector company responsible for closure in this case, government may have a larger role than usual. There is also an expectation that First Nations play a leadership role in their 	<ul style="list-style-type: none"> All three are responsible – it is a question of how do we do it together. 	<ul style="list-style-type: none"> Government and the First Nation themselves should be responsible for ensuring involvement of the First Nation in closure planning.

		own participation, and provide resources for that participation.		
		<ul style="list-style-type: none"> Government has a big responsibility – this responsibility comes about as a result of fiduciary responsibilities to First Nations. The responsibility is in the role as government, not as “proponent.” 		<ul style="list-style-type: none"> Government has overall responsibility – but this is sometimes transferred to companies by regulatory requirements – i.e. the MVLWB requires that Miramar contact a list of groups to advise them about closure planning. They must provide proof that information about the project has been provided to First Nation groups. Regardless the ultimate responsibility rests with government. There should be a recognition that First Nations can always opt out of being a part of the planning.
5	<p>At what stages and to what extent in the process were the First Nations invited to participate?</p> <p>f) Pre-mine development (mine planning and permitting)</p> <p>g) Operations</p> <p>h) Detailed closure plan</p> <p>i) Closure implementation</p> <p>j) Post-closure monitoring</p>	<ul style="list-style-type: none"> During pre-mine development and operations, the opportunities for participation of First Nations were less at the Giant Mine than at the Colomac Mine – primarily related to the long history of Giant Mine in the area. After DIAND assumed responsibility for closure activities, there was a tendency to operate the project like a mine. This resulted in a DIAND operated remediation program rather than a partnership between DIAND and the YD. A community advisory committee was created relatively recently, though DIAND has been responsible for the site since 1999. Participation is limited to invitees. Site operations activities are carried 	<ul style="list-style-type: none"> No involvement during pre-mining and operations. At early stages, mine staff were apparently discouraged from interactions with First Nations people. For closure planning, both Miramar and DIAND sent information out to the office, but it was not supported with any education about the issues and proposed solutions. As a result, participation wasn’t really possible on a basis where people understood what was happening. Closure implementation and post-closure monitoring haven’t happened yet. 	<ul style="list-style-type: none"> No comments on pre-mine development and operations. The Team is in the beginning phases of detailed closure planning, and is trying to seek participation of the YD – they are making a concentrated effort to talk with them about closure planning. The environmental coordinator for the YD sits as an observer on the Community Alliance Group. This Group is comprised of local community stakeholders and acts as a bridge between DIAND and the local community. Its main purpose is to ensure effective communication. Full participants are required to sign a “Terms of Reference” for the Group, and the

		<p>out under a contract rather than a contribution agreement, thus leaving less opportunity for direct YD participation in decision making.</p>		<p>YD have not agreed to sign this: therefore, they remain as observers.</p>
		<ul style="list-style-type: none"> • No comments on pre-mine development and operations. • The MVLWB is involved at the closure planning, closure implementation, and post-closure monitoring stages, so they will involve First Nations through their process. • Applications to the MVLWB must include evidence of the proponent talking with the community, including First Nations. The application must demonstrate that the community is aware of the project (i.e. what, where, when) or the application will be not be declared adequate. This requirement is reviewed at two stages – first by the staff and second by the Board itself. 		<ul style="list-style-type: none"> • (a) and (b) not applicable for Giant because it has such a long history. Also, since Miramar only began operating in 2000, he is not in a position to comment. • (c) There has been 18 months of opportunity to review the draft abandonment and remediation plan. • (d) and (e) not applicable because these stages have not been reached yet.
6	<p>What was done in the area of education to help First Nations to better understand the issues and possible solutions to the problems at the site?</p> <p>f) Community consultations, (where)</p> <p>g) Who initiated these sessions?</p> <p>h) Were translators used?</p> <p>i) Were written translations prepared?</p> <p>j) What formats were</p>	<ul style="list-style-type: none"> • Some community meetings and open houses have been held. Primarily these have been information sessions and did not seek involvement. • Some education has occurred through community meetings and open houses, but these were not interactive. • Decisions have been made without participation and, as a result, people don't understand the choices. For example, the option of in-situ freezing of arsenic trioxide has recently been announced as a selected option. Many parties have expressed concern about this option. 	<ul style="list-style-type: none"> • Nothing in the way of education. There were meetings in Yellowknife, but nothing done specifically for First Nations in communities. • The Giant Mine Project Office did meet with the First Nation community – a combined meeting of leadership and community. The participants wanted the Project Office to return to spend more time on explanations about issues and solutions etc, but this never happened. Ms. Crapeau was not particularly happy about this meeting – she agreed to assist in 	<ul style="list-style-type: none"> • The Community Alliance Group, on which the YD are an observer, is intended to foster effective communication and serves as a tool for education. • A series of public meetings have been held, including in two First Nation communities. Some of these were held as follow-up to a technical workshop in which options for addressing the arsenic issue were discussed. The purpose of this series of meetings was to help people understand the issue and potential solutions. They also served as a forum for

	most successful for education programs?	<p>If this is the best option, and First Nations were involved in the development and evaluation of options, they would likely have a better understanding of issues and solutions. This may have led to more widespread support for the option.</p>	<p>arranging the meeting, but at the last minute she was apparently asked to chair the meeting even though she had stated that she was only an observer on the community liaison committee. She felt uncomfortable about this because it gave the appearance to the First Nation members that she was part of the project planning, which she was not. As a result, she has been very reluctant to help in organizing any further meetings.</p> <ul style="list-style-type: none"> • The Land and Environment Office currently has two CDs for review – the A&R Plan from Miramar, and the Arsenic Trioxide Management Alternatives from the Giant Mine Project Office. • Ms. Crapeau is not aware of any translations of materials being provided. • In general, Ms. Crapeau is not sure that education is all that important because there doesn't seem to be a willingness to consider the comments of First Nations anyway – or even to explain why the comments can't or shouldn't be addressed (i.e. YD desire to ship arsenic somewhere else vs. Project Office concerns about impacts at other locations, or impacts from transport – Most YD don't understand these issues, but might if more time was spent to explain 	<p>seeking input.</p> <ul style="list-style-type: none"> • Various formats have been used for meetings to try to appeal to broader audiences. In one case, the meeting was held with a supper. • Public meetings are currently being planned for May 2004, with a proposal for the participation of the independent review panel members at the meetings. • Members of the planning team have met individually with one YD Chief. • One meeting involved the participation of DIAND's Regional Director General during the early part of the meeting. This was effective because the political issues (i.e. compensation, historical issues) were addressed to the RDG, leaving the latter part of the meeting for technical discussion. • Consultation meetings were initiated by the Giant Mine Team, with the assistance of the YD's environmental coordinator. • The Team has used interpreters, and translation of the summary reports prepared by the consulting team (SRK, Senes, HGE, Lakefield). • Presentations with lots of graphics are most effective.
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			<ul style="list-style-type: none"> them). “They’re doing what they want anyway.” YD need more explanation of problems and all possible solutions so that they can be part of the decisions about how to proceed. 	
7	<p>Do you think that the First Nations understood:</p> <p>d) the common breakdown of mine closure issues into physical stability, chemical stability and land use?</p> <p>e) how their broad objectives fit into, or are linked to, or were addressed by these categories?</p> <p>f) Did First Nations provide or were they asked to provide their definition of “closure”?</p>	<ul style="list-style-type: none"> a) YD do understand this breakdown and recognize that the principle issue on this site is arsenic, and the question of whether it should remain on site. b) In general, the YD don’t appear to believe that their broad objectives have been addressed by the options selected. c) YD have been clear of what they hope that closure will achieve. 	<ul style="list-style-type: none"> No on all counts, because there has been no education program to assist First Nations in understanding these closure aspects. 	<ul style="list-style-type: none"> a) Generally, there is not an understanding of this technical breakdown of mine closure objectives. b) There is not a good understanding of how broad objectives are addressed by technical objectives. Generally, the First Nation wants the land returned to its original state. c) YD have not really provided their definition of closure. Many people are still concerned about harvest issues. The planning has not really addressed surface issues as yet. Once the GNWT and DIAND have developed a surface plan, they can take it to the YD and present it.
		<ul style="list-style-type: none"> a) Mr. Woolie is not comfortable in saying that there would be an understanding. The arsenic trioxide issue is complicated and First Nations do not understand the issue. b) No. c) No comments. 		<ul style="list-style-type: none"> a) Generally no, there wasn’t a good understanding of this breakdown. If the group had consultants acting on their behalf, there was a better understanding. b) Somewhat – There is a recognition of issues that are much broader than just environmental issues (i.e. community socio-economic issues) but not necessarily an understanding of how these may relate to some of the technical issues, responses and solutions.

				<ul style="list-style-type: none"> c) Not that Mr. Connell is aware of.
8	Was economic opportunity seen as an objective for closure planning, and if so, by whom?	<ul style="list-style-type: none"> Doesn't know whether economic opportunity was seen as an objective. The project is seen as an in-house operation by DIAND. YD likely recognize that they don't have the capability to gain much economic opportunity from the management of arsenic trioxide, but are likely interested in surface reclamation works. 	<ul style="list-style-type: none"> YD would be interested in economic opportunities – i.e. through Deton Cho Corp.. But, the work needs to be done to acceptable standards. 	<ul style="list-style-type: none"> The YD are interested in economic benefits, but are not really interested in the arsenic issue from an economic perspective. The Team has tried to provide opportunities for the YD to participate in small jobs on site – but there is not much surface activity as yet, because the mine is still operating.
		<ul style="list-style-type: none"> Don't know, it's not addressed in the MVLWB process. 		<ul style="list-style-type: none"> First Nations definitely saw economic opportunity as an objective for closure. Some groups have created their own engineering and contracting companies to seek work on these projects. Other outside engineering firms have also seen this as an opportunity through forming joint ventures with First Nations.
9	Do you feel that the mine operator, regulator and other stakeholders understood and addressed: <ul style="list-style-type: none"> d) the concerns of First Nations? e) What "traditional knowledge" means to First Nations? f) What "closure" means to First 	<ul style="list-style-type: none"> a) People understand the concerns. b) Traditional knowledge not as well understood and utilized as at Colomac. c) Yes, they understand what closure means to the YD. 	<ul style="list-style-type: none"> a) Operators and other stakeholders don't understand or address concerns, and they're not willing to listen. Some proposals will go to the MVLWB in the fall, so the Board will have an opportunity at that time to understand and address concerns. Compensation is a huge issue that has been largely pushed to the side. The issue of compensation dates back to initial mine 	<ul style="list-style-type: none"> a) Yes, the Team understands the concerns of the YD. Much of the concern is rooted in historical events at the mine (i.e. stories of children dying from arsenic contamination). b) The Team wants to include traditional knowledge in the closure plan, but the environmental coordinator has expressed concern that it may not

	Nations?		<p>development and needs to be resolved before other issues will be addressed. The various project groups say this is not their responsibility, but do not provide information about who's responsibility it is. This is a treaty issue (YD treaty dates to 1899).</p> <ul style="list-style-type: none"> • b) No. • c) No. There has been no opportunity to explain it in the context of Giant – the difficulty is exacerbated by the lack of education and information about the project itself. If operators and regulators want to find out what the YD really want, they'll have to meet with them directly, and there may be costs associated with this type of consultation. 	<p>add much to the planning. Mr. Mitchell expressed interest in using traditional knowledge to get an understanding of land use prior to mine operations. Discussions with chiefs are underway to evaluate the need to incorporate traditional knowledge.</p> <ul style="list-style-type: none"> • c) Yes, the Team understands what closure means to the YD.
		<ul style="list-style-type: none"> • a) Yes they understood the concerns. • b) Probably not. Nobody has a good understanding of the meaning of traditional knowledge, partly because the meaning is still evolving, even for First Nations. It changes depending on who you talk to. • c) Don't know. 		<ul style="list-style-type: none"> • a) In general the concerns were understood, but not all were addressed, especially those that are related to compensation for impacts that have occurred since the 1950s. • b) Yes, Miramar has a very good understanding of traditional knowledge. Mr. Connell worked with Placer Dome when it was developing one of the first impact/benefit agreements between a First Nation and a mining company. In order to help this process, the staff, including Mr. Connell did extensive training related to understanding traditional knowledge inputs, and First Nations' culture. • c) No, because there is lots of variation within a First Nation, just like any other group of people, so it is not possible to have a single understanding about the meaning. For example, elders may have a substantially different understanding than younger people.
10	Do First Nations feel that the	n/a	<ul style="list-style-type: none"> • No. 	n/a

	mining company and regulators understand how they feel about the closure issues?			
11	Do the mining company and regulators feel that First Nations understand what they are doing about the closure issues?	<ul style="list-style-type: none"> No, YD don't have as good of an understanding of what is being done at the site as the Tłı̨ch do at Colomac, because the YD have not been closely involved in decision making. 	n/a	<ul style="list-style-type: none"> Some people understand quite well, especially younger people (i.e. environmental coordinator, Chiefs). Many of the elders do not understand what is being done and why (i.e. many elders believe that the arsenic was brought in from off-site and therefore it should be removed). This demonstrates an issue with respect to disseminating the necessary information, especially since the elders have a lot of sway within the community. At a General Assembly, the Dene Nation passed a motion supporting the removal of the arsenic from the site.
		<ul style="list-style-type: none"> Feels that some members of the First Nations have an understanding of what is being done about closure – the more technical people understand it, but for the most part, people do not understand. 		<ul style="list-style-type: none"> In most cases, it is questionable whether they understand, but in some cases there is good understanding (i.e. Rachel Crapeau at YD).
12	Do you think that the First Nations representatives (band resource officer, chief, elders and members) had an opportunity to; <ul style="list-style-type: none"> d) express their concerns with the closure plan? e) Make 	<ul style="list-style-type: none"> Yellowkinves Dene had an opportunity to express concerns and make recommendations, but little opportunity to participate in preparation of the plan. 	<ul style="list-style-type: none"> No. There has been no education process so that people can understand issues and be in a position to be able to comment. Meetings have not been designed to explain issues, but to advise about the decisions that have been made (i.e. presentation about seven options for arsenic trioxide, but 	<ul style="list-style-type: none"> Yellowkinves Dene had ample opportunity to express concerns and in some cases, have made demands on the closure plan. In some cases, meetings have been cancelled because the First Nation did not follow through with the necessary participants.

	<p>recommendations on the closure plan?</p> <p>f) Participate in the preparation of the plan ?</p>	<ul style="list-style-type: none"> The MVLWB provides First Nations with an opportunity to express concerns and make recommendations. For Colomac, Mr. Woolie is not sure whether First Nations have been able to participate in preparation of the plan. 	<p>there had already been many options eliminated – what were they and who decided to eliminate them and why?).</p> <ul style="list-style-type: none"> YD don't want people making their decisions for them, they want to be part of the decision making team. 	<ul style="list-style-type: none"> The opportunity is there for expressing concerns and making recommendations. The opportunity to participate in preparation of the plan is there – but only after the draft plan has been prepared.
13	<p>Did the First Nations have internal resources (land manager) or external resources (technical experts) acting on their behalf? Were these people effectively addressing their concerns, and did these people, where necessary, educate First Nations about the subject, process, issues, options and solutions?</p>	<ul style="list-style-type: none"> Did not finish questionnaire. 	<ul style="list-style-type: none"> YD have internal resources (Rachel) but she is not dedicated to Giant – she is working on at least eight other major projects – so there are not adequate internal resources to deal with the project load. Generally there are not external resources available because there is no money available, but YD do bring in technical people on an as needed basis if there are projects/events that they know will be controversial. Because there are not adequate resources, they are not adequately addressing concerns. 	<ul style="list-style-type: none"> Internal resources are stretched very thin. The environmental coordinator is working on many large projects including Giant, Ekati, Snap Lake and Drybones. YD have made only limited use of external resources (i.e. Laurie Chan, Centre for Indigenous Peoples' Nutrition and Environment, McGill University). Both internal and external people have brought forward issues, but have had a difficult time in going back and educating people. There has been difficulty dealing directly with councils because there are elders on the councils. The Team has tried to go back out to the communities, but meetings have been difficult to arrange.
		<ul style="list-style-type: none"> Internal resources have been effective – Rachel Crapeau is a very competent person who understands the issues. YD have used some external resources but Mr. Woolie could not comment on their effectiveness. 		<ul style="list-style-type: none"> Yes, in most cases the groups have either a consultant or a trained aboriginal person – in some cases both. The effectiveness of these people varies between First Nation groups. Within the communities, the consultants and staff are relatively effective in educating First Nation

				members, but they are not very effective for people who live outside of communities.
14	Do you feel that the First Nations feel they: c) can, or d) should rely on the federal and/or territorial government agencies (DIAND, EC, DFO, RWED, etc) and their experts to address the issues at the site to a satisfactory level	<ul style="list-style-type: none"> Did not finish questionnaire. 	<ul style="list-style-type: none"> They should be able to rely on this government expertise, but generally they cannot. For the most part, government experts don't contact them to find out what their concerns are. Sometimes at public hearings, government experts are not effectively dealing with the issues that are important for First Nations. 	<ul style="list-style-type: none"> YD feel that they should be able to rely on government agencies to clean up the site to a satisfactory level – but they feel that they cannot do so, because there is a lot of mistrust. There is some reliance on the expertise within government agencies, but it is not universal.
		<ul style="list-style-type: none"> YD do not feel that they can rely on Government to fulfil this role. They should be able to rely on government, but in the case of Giant, there does not appear to be any trust that government will act effectively on the First Nation's behalf. 		<ul style="list-style-type: none"> No, the First Nations don't feel that they can or should rely on government agencies to assist them – they don't trust the government agencies.
15	Were First Nations effectively advised about how the closure plan addressed the issues and objectives identified by First Nations during the planning process? Was there sufficient feedback to First Nations on issues and resolution during the stages of the process including: f) Pre-mine development (mine planning and permitting) g) Operations h) Detailed closure plan i) Closure implementation j) Post-closure monitoring	<ul style="list-style-type: none"> Did not finish questionnaire. 	<ul style="list-style-type: none"> No at all stages. 	<ul style="list-style-type: none"> The need for feedback has arisen with respect to some decisions on the site – mostly in relation to the arsenic trioxide management approach. Through ongoing presentation of information, the Team has gained some ground on the YD's desire to remove the arsenic from the site. Discussions about the dangers of moving arsenic have been useful. In some circumstances the YD have realized that their original proposals were not necessarily the best option. The independent review panel members will be participating in upcoming meetings which will hopefully help to secure better

				<ul style="list-style-type: none"> understanding of selected options. A feedback process will have to continue at a high level.
		<ul style="list-style-type: none"> No comment. 		<ul style="list-style-type: none"> (a) and (b) – not applicable for Giant, especially for Miramar which took over in 2000. (c) For the closure plan, the draft has been available for 18 months to allow people to gain an understanding of how their issues were addressed. (d) and (e) – these phases have not been reached yet at Giant.
16	Do First Nations understand <ul style="list-style-type: none"> e) the purpose for reclamation security (as opposed to funds held in an environmental agreement), f) how it is determined, g) who decides if it is released, h) when it may be released? 	<ul style="list-style-type: none"> Did not finish questionnaire. Not relevant for this project. 	<ul style="list-style-type: none"> Some people understand the purpose of the security, but generally no understanding of how it is determined or conditions for release. Security arrangements should include an agreement with the YD. 	<ul style="list-style-type: none"> Not relevant for this project. Generally there is not a good understanding of the purpose of reclamation security or how it is determined, released etc. For the most part, First Nations probably don't know that Miramar is contributing to a security bond. Current security is approximately \$7 million for incremental environmental liabilities accumulated by Miramar since 2000. Generally there is some difficulty in conveying an understanding of the difference between reclamation security and compensation.
17	Do First Nations understand how reclamation security would be used?	<ul style="list-style-type: none"> Did not finish questionnaire. Not relevant for this project. 	<ul style="list-style-type: none"> No comment. 	<ul style="list-style-type: none"> Not relevant for this project. Unlikely.

Note 1: Mr. Woolie stated that he is not necessarily in a good position to answer all of the questions because he is only aware of specific aspects of the Giant project; the ones that have been subject to licencing requirements and that have required review by the MVLWB. As a result, Mr. Woolie felt that his responses were not based on a general understanding of how First Nations were involved in planning for the Giant project, but only on his experience with specific project aspects. Also, he is not necessarily aware of the participation of First Nations directly through the project proponents, but is aware of the participation of First Nations in the MVLWB processes.

QUESTIONNAIRE

FIRST NATIONS INVOLVEMENT IN MINE CLOSURE OBJECTIVES

EKATI MINE

	QUESTION	REGULATOR RESPONSE	FIRST NATIONS RESPONSE	COMPANY RESPONSE
1	Did First Nations have an opportunity to participate in the development of mine closure objectives for the mine?	Limited at time of permitting, more now through ongoing water licence and Independent Monitoring Agency (IMA)	Some participation No, North Slave Metis Alliance (NSMA) was not incorporated in 1996, attempted to participate through hunter/trapper association	Yes, reviewed A&R plan as final before EIS hearings, FN did not see drafts of the plan
2	Did First Nations have the capacity to participate? g) Financial h) Technical i) Timing	Limited to a, b and c. Independent Resource Management Agency (IRMA) provides some core funding, some top up of funding requirements is possible, typically core funding is used up on base issues, major project review requires additional funds	Took a lot of effort and pressure to get necessary resources, this was achieved just in time to provide input a & b, no inadequate funding c) N/A	Yes, company understands that capacity assistance is available from DIAND Yes Believe yes, adequate timing should be available based on BHPB's distribution policy
3	What was done financially to ensure that First Nations had the capacity to participate?	First Nations are aware of, and have access to, IRMA funds now and had some access to intervenor funding from DIAND in 1996	Intervener funding only Applications for funding submitted to DIAND but declined	Don't know
4	Who is responsible for assisting First Nations in closure planning: a) Government b) Mining company c) First Nations	All three are responsible. Gov't via the IRMA, the mining company should provide some resources and FN have access to other resources which could be applied to major projects which are of concern to them. If all three sources contribute, then FN should have sufficient funds to participate in closure planning.	All three parties are responsible Government is primary, company is secondary and F.N. have minor responsibility	All three are responsible
5	At what stages and to what extent in the process were the First Nations invited to participate? a) Pre-mine development (mine planning and permitting) b) Operations c) Detailed closure plan d) Closure implementation	a) FN participated in panel hearings (technical sessions), scoping sessions in communities, WL hearings and EA negotiations b) Reduced opportunity now compared to permitting stage of project, participation through IMA and IRMA, (note that the IMA is not communicating the current issues to the communities very well) c) Limited involvement d) N/A e) N/A	a) company appears to be most diligent at this stage b) less participation, company is backing off in effort c/d/e N/A a) limited b) more active now c/d/e N/A	a) Yes, b) Yes, currently funded for traditional knowledge studies c) N/A d) N/A e) N/A

	e) Post-closure monitoring			
6	<p>What was done in the area of education to help First Nations to better understand the issues and possible solutions to the problems at the site?</p> <p>a) Community consultations, (where)</p> <p>b) Who initiated these sessions?</p> <p>c) Were translators used?</p> <p>d) Were written translations prepared?</p> <p>e) What formats were most successful for education programs?</p>	<p>a) community information sessions conducted by BHP, it is understood that there are ongoing but infrequent updates, generally few sessions were structured as educational although many of the meetings (panel hearing, WL hearing) would have some educational value, there was limited education in 1996, more is occurring now</p> <p>b) mostly the company or the regulatory process.</p> <p>c) Yes</p> <p>d) Probably not, limited at best</p> <p>e) Oral</p>	<p>a) Numerous meetings</p> <p>b) BHP & as requested by the communities</p> <p>c) Yes</p> <p>d) Minor</p> <p>e) Visual and oral, (non-written)</p> <p>a) no meetings held; plans were supplied by company but no interaction from company or DIAND</p> <p>b/c/d N/A</p>	<p>A/B/C,D Don't know</p> <p>Site visits are very good for elders, oral format is best for elders, written format is acceptable for younger FN people, generally lots of pictures are needed at community sessions</p>
7	<p>Do you think that the First Nations understood:</p> <p>a) the common breakdown of mine closure issues into physical stability, chemical stability and land use?</p> <p>b) how their broad objectives fit into, or are linked to, or were addressed by these categories?</p> <p>c) Did First Nations provide or were they asked to provide their definition of "closure"?</p>	<p>a) community spokesperson – yes elders – limited band council – limited community at large – very limited</p> <p>b) only in a general way</p> <p>c) the FN have been clear about what they expect in terms of residual negative effects, in qualitative terms only, not quantitative,</p>	<p>a) basic understanding, some people believe that pits should be filled and don't understand why this can't happen</p> <p>b) sometimes</p> <p>c) unknown</p> <p>a) generally not, particularly with respect to habitat loss</p> <p>b) generally not, if they do then not clear how they meet those objectives</p> <p>c) yes, in workshops on regional monitoring & public hearings – focus on lost habitat</p>	<p>a) No, translators are required</p> <p>b) No, especially for the elders</p> <p>c) None written, verbal definitions were provided at meetings, site visits and public hearings</p>

8	Was economic opportunity seen as an objective for closure planning, and if so, by whom?	No	Not for Ekati Yes, employment is a secondary objectives for NSMA after environment	No, primary objective is habitat
9	Do you feel that the mine operator, regulator and other stakeholders understood and addressed: a) the concerns of First Nations? b) What "traditional knowledge" means to First Nations? c) What "closure" means to First Nations?	a) no b) no, mis-understanding of what TK means and its use, FN want those people with TK involved in planning, use of TK was poor originally and is better now through the IMA c) yes, qualitative	a) Sometimes b) Occasionally c) Not really a) Concerns are understood but not fully addressed b) No, difficulty in incorporating into closure planning c) Possibly, but reflected in the closure plan	a) Yes b) Not full understanding c) Yes, (removal of disturbance to wildlife)
10a	Do First Nations feel that the mining company and regulators understand how they feel about the closure issues?		Sometimes Yes, NSMA thinks that the company believes it has successfully presented it's plans	
10b	Do the mining company and regulators feel that First Nations understand what they are doing about the closure issues?	No		Yes
11	Do you think that the First Nations representatives (band resource officer, chief, elders and members) had an opportunity to; a) express their concerns with the closure plan? b) Make recommendations on the closure plan? c) Participate in the preparation of the	a) yes b) yes, (very limited capacity to respond) c) no, not directly, limited to communication via IMA	a) at times, decreasing frequency b) at times, decreasing frequency c) very limited a) No in 1996, and also with current plan due to limited capacity b) No c) No	a) Yes, plans were sent out for review b) Yes, but no recommendations were submitted (in writing) c) Yes

	plan ?			
12	Did the First Nations have internal resources (land manager) or external resources (technical experts) acting on their behalf? Were these people effectively addressing their concerns, and did these people, where necessary, educate First Nations about the subject, process, issues, options and solutions?	Yes both internal and external resources Yes concerns were addressed via external resources	Yes, more would be better, funding is limited to periods of permit/process activity, not enough for ongoing participation. The people were effective. No, limited capacity No, limited capacity	Don't know Don't know
13	Do you feel that the First Nations feel they: a) can, or b) should rely on the federal and/or territorial government agencies (DIAND, EC, DFO, RWED, etc) and their experts to address the issues at the site to a satisfactory level	a) yes to a limited extent but they should have their own experts	No to both a, and b, this is what led to the Independent Monitoring Agency Yes, in theory, in practice government efforts are seen as inadequate No	Yes, (if IMA is included in the government group) Yes, but not 100%
14	Were First Nations effectively advised about how the closure plan addressed the issues and objectives identified by First Nations during the planning process? Was there sufficient feedback to First Nations on issues and resolution during the stages of the process including: a) Pre-mine development (mine planning and permitting) b) Operations c) Detailed closure plan d) Closure	N/A, detailed closure planning in the future	N/A a) No b) No c) N/A d) N/A e) N/A	a) Yes b) Yes, via community and site visits c) N/A d) N/A e) N/A

	implementation e) Post-closure monitoring			
15	Do First Nations understand a) the purpose for reclamation security (as opposed to funds held in an environmental agreement), b) how it is determined, c) who decides if it is released, d) when it may be released?	a) yes b) limited c) DIAND d) No	a) Yes b) Yes, by technical experts c/d Yes, education is responsibility of FN technical representatives a) Yes b) No c) Yes d) Yes	a) Some do, some don't, yes to general concept b) No c) Not really, expect that they understand it is up to the government d) Not really, expect that they understand it is up to the government
16	Do First Nations understand how reclamation security would be used?	Yes, in principal	Yes Yes	Yes

FN 1st row – Z. Nevitt, Dog Rib Treaty 11

FN 2nd row – B. Turner, North Slave Metis Alliance

**QUESTIONNAIRE
INUIT INVOLVEMENT IN MINE CLOSURE OBJECTIVES
NANISIVIK MINE, NUNAVUT**

The following table is a summary of contacts and interviews.

Person Interviewed	Affiliation	Contact Information	Interview Date/Time
Levi Barnabas	Arctic Bay Community Liaison Coordinator	1-867-439-8152	19-March 2004,
Stephan Lopatka	NTI Environmental Manager? in Cambridge Bay	1-867 983-5616 (direct); other 1- 867-983-2517	22-Mar 04, Monday 09:00-10:05
Susan Hardy,	Government of Nunavut legal counsel,	1-867-975-6319	22-Mar 2004, 13:00-14:00
Phillipe di Pizo	Executive Director, Nunavut Water Board	867-669-1238	13:30-13:40, 9-Mar 2004
Bob Carrera	Corporate Manager, Environmental Affairs, Breakwater- Nanisivik		Faxed responses on March 26, 14:05

Qualifiers:

Phillipe responded to a few questions, but wished – as the director of an impartial organization – to remain impartial. Eight out nine of the NWB are Inuit – but these members do not have western science degrees.

4) Did the Inuit have an opportunity to participate in the development of mine closure objectives for the Nanisivik Mine?

Inuit

LB: Yes, but in 1972 when agreement was first signed, it was never translated into native tongue and people weren't quite sure how to approach the closure process; has a demo radio tape of process (from National Film Board of Canada); by 2002 had created Hamlet Working Group; still had to meet with various organizations/agencies to learn what would happen; conducted a Labour Market Survey and Socio-Economic Survey; quite a few public meetings beginning after September 17, 2001

SL: In some way as much as we (NTI) are intervenors; had a chance to review, but not in the development process; made recommendations – final reclamation plan issued Feb 2004 – now in series of technical meetings, pre-hearing conference and then hearings in June; other times limited Inuit involvement (i.e., from Arctic Bay) – they were aware that they had to simplify

Government

SH: There have been major public hearings in Arctic Bay in 2002 prior to issuing a license; Inuit had opportunity to attend. Community members expressed their concerns; NTI representative sent Stephan Lopatka who understood technical issues, but not necessarily legal issues; community members did not necessarily pick up on legal aspects...sounded disconnected in some way – only could comment on from their own capabilities.

PdP: He was aware that the NTI had done some technical reviews of some aspects of mine closure – and they typically speak for or represent the Inuit

Mine Company

BC: Through the public meeting/Public hearing process, local Inuit of Arctic Bay were given the opportunity to provide guidance and input.

- 5) Did Inuit organizations have the capacity to participate?
 - a) Financial

Inuit

- LB: not sufficient, hired Levi funded by GN
- SL: NTI took it upon themselves, but funding was limited to a certain extent; federal and territorial governments have experts on retainer, and mining companies hire numerous experts; we hired outside consultants but haven't had them come to meetings (too expensive) – looking for funding sources but not aware of any funding vehicles (i.e., Inuit do not have the tax havens that other First Nations groups have);

Mine Company

- BC no financial assistance provided

b) Technical

Inuit

- LB: NWB hired technical coordinator (Patrick Duxbury); Levi needed a technical translator to answer some of the material. – SL: hired human health and ecological risk assessment expert, and a Phase II ESA expert;

Mine Company

- BC - yes

c) Timing

Inuit

- SL: process of looking for consultant took time, but we did not ask for extension; recognize that the regulatory system has established guidelines for timeliness and wanted to adhere to these
- LB: Has to deal with closure process for two years because Inuit not happy with lack of jobs; tailings pond left (Inuit not happy with way it was left); had to come up with a partnership program so people could work

Mine Company

- BC we attempted to be sensitive to timing issues raised by the local community

Government, Questions 2(a), (b) and (c)

- SH: NTI does have the capacity – but they elected not to have legal counsel; Artic Bay community – does not have financial or technical capacity. Timing OK.
- Arctic Bay did not have a lawyer, ability to be effective compromised; heard that they needed a lawyer but could not afford it.
- PdP: Phillipe indicated that there was a lack of funding for intervenors – and so also a lack of public participation in the process (i.e., with no access to the process participation was not as good as it could be)
- PdP: He also recognized that it was harder in Nunavut – as there is no public funding for the environmental review phases – and so very little chance to look at specific files
- PdP: In view of these shortcomings, the NWB hired an Inuit Coordinator (Patrick Duxbury) to go to the communities and present information to the people so they had a better idea of what was occurring; there was no special funding for this particular activity or level of involvement
- PdP: He mentioned that the NTI had a representative, Stephen Lopatka, who was involved in the Polaris and Nanisivik Mine issues – but in a large sense the communities were left to tackle problems on their own, as there was little support available from government. He believed DIAND was trying to do the best job – but still missing on some of the issues.
- PdP: Phillipe expressed a concern regarding other projects (i.e., Jericho and Hope Bay) that were marginal projects that might not receive the scrutiny by the Inuit (compared to other proposals) because they were marginal and financial resources to assist in the review process would not be available.

6) What was done financially to ensure that Inuit had the capacity to participate?

Inuit

LB: After Labour Market Survey – NTI contributed to academic programs (trades) with partnership of GN/DIAND; no other programs – some issues “won’t happen over night” – needed to hire lawyer/consultant – Qikiqtani Inuit Association (QIA) formerly Baffin Regional Association came up with security for Reclamation plan back in 1981 - \$1 million towards security
SL: NTI took it on themselves; nothing they knew of was available

Government

SH: Generally speaking – she has no idea; GN’s specific response was to help fund (with NWB) a liaison coordinator (i.e., Levi Barnabas) – someone who could speak Inuktitut and speak to the people. When Levi left to go to assembly (run for MLA) position closed. Levi was able to communicate effectively in Arctic Bay but could not translate the technical issues very well. NWB responded by expanding Patrick Duxbury’s role – who is now a case manager.;

Mining Company

BC - Provided transportation for smaller groups to attend at the Nanisivik site for tours and inspections. All other meetings convened at Arctic Bay? Company covered all costs.

- 7) Who is responsible for assisting the Inuit in closure planning?
- a) Government – SL: primarily responsible
 - b) Mining company – SL: will have some level of responsibility
 - c) Inuit

Inuit

- SL: government has primary responsibility, mining company will have some level of responsibility and Inuit participation is important; NTI took on financial responsibility because they knew Inuit communities did not have ability
- SL: Issues are different for those mines opened before the land claim agreement; now new mines coming in will have to develop and Impact and Benefit Agreement (IBA) prior to mining.
- LB: Should all be responsible equally – all supposed to contribute

Government

SH: All have some level of responsibility. DIAND conceded to work with the Socio-Economic study (DIAND contributed funding). GN feels that they have a responsibility when they have a statutory mandate (i.e., economic planning) – that’s why they were in favour of hiring Levi; also sent public nurse into Arctic Bay to alleviate fears associated with lead contamination, and communicate to community (i.e., don’t chew on the dirt; different experts were needed at different times for specific needs);

Mining Company

BC - Shared responsibility with all parties having incurred an important role to play.

- 8) At what stages and to what extent in the process were the Inuit invited to participate?
- a) Pre-mine development (mine planning and permitting)

Inuit

- SL: Back in 1970’s - no participation, some invitation to participate non-existent; some opportunity for employment.

Government

- SH: what Susan has learned is that initially (early 1970’s) mine conducted a very perfunctory visit to community at the time (just asked to come to a “party” to witness and sign off on proposal;

Mine Company

- BC - local Inuit party to an agreement that gave birth to Nanisivik Mining Agreement
-
- b) Operations –

Inuit

- SL: The QIA, in development no. Yes NTI did participate – community did try to take active role – not at beginning but after a while; NTI now has a greater involvement; closure implementation – suggestions that Inuit will be involved in closure – in reality do not know, not sure yet – will have to see; some jobs available – hoping for closure monitoring.;

Government

SH: Susan came to Nunavut in 1998;

Mine Company

BC - yes

c) Detailed closure plan

Inuit

Govnerment

- SSH: and was with GN when Nanisivik announced in 2000 their intent to close mine; at that time Inuit were invited to participate directly with process – which led to public hearing in 2002; invitation by coordinators and communicators (i.e., Levi) – worked through communicators to develop submission – it all happened at the hearing;

Mine Company

BC - yes

c) Closure implementation –

Government

– SH: “we hope that there will be Inuit involved”;

Mine Company

– BC –yes

d) Post-closure monitoring

Inuit

LB: Series of public hearings, mine, NWB, GN or DIAND in Arctic Bay

After closure; he knew there were meetings during public hearings and after closure – but doesn't know details (i.e., 1978 – federal government proposed to Arctic Bay -?tailings were overflowing? – people not happy – exposed to airborne pathways; either close mine or cap tails, prevent windblown issues; flooded tailings – yielded winter ice cover; long term plan is to cap tailings about one metre in thickness

SL: Early days – representatives of community invited to a party – and asked to sign as witnesses but not as participants; different in July 2002;

Government

– SH: too early, hasn't happened yet.

Other areas, GN does not carry main role – so no involvement;

Mining Company

BC – yes

9) What was done in the area of education to help the Inuit to better understand the issues and possible solutions to the problems at the site?

a) Community consultations, (where?)

Inuit

LB: P. Duxbury (NWB) gave presentations; – SL: NTI is aware that the company did some; were they effective – he does not know. Occurred at Nanisivik and Arctic Bay – seem to be at hearing stage – Inuit of Arctic Bay had some understanding;

Government

- SH: there were numerous, and issue specific in Arctic Bay – as well as what Levi conducted;

Mining Company

- BC - yes, both at Nanisivik and Arctic Bay

b) Who initiated these sessions?

Inuit

LB: Joint from many; – SL: attended by people of Arctic Bay (MLA – Rebecca Williams); company had relationship with Arctic Bay for a long time – not sure who initiated meetings – there were efforts on both sides to ensure that sessions took place.;

Government

- SH: Susan referring to only those that the GN initiated;

Mining Company

- BC - the company and/or Nunavut Water Board and GN

c) Were translators used?

Inuit

- LB: Yes beginning in 9/17/01 when first learned of mine closing; meetings began between hamlet and mine managers, the hamlet organized a working group; SL: Assume yes;

Government

– SH: most of the time, but occasionally they just “hobbled” along in English.

Mining Company

– BC – yes

d) Were written translations prepared?

Inuit

LB: Translated documents at public hearings; SL: Yes at water licence hearings – but not sure about company;

Government

SH: Yes, for most of the major technical documents; 2002 hearing translations for everything

Mining Company

BC – executive summary document

e) What formats were most successful for education programs?

Inuit

LB: Labor Market Survey – format used a questionnaire which was answered; public meetings; minutes and surveys; newsletters in both languages made every month and there was also local radio broadcasts of issues

SL: a lot of companies will do powerpoint presentations – which are sometimes overly confusing with technical information; need to use more pictures than words; effort has to be made to be aware of whole audience;

LB: Hamlet Working Group consisted of a coordinator (Levi), mayor, elders community, hamlet rep, youth rep, women's rep, housing, education and the HTO; Hamlet consisted of just the hamlet boundary, whereas the HTO has jurisdiction of whole environment; Nanisivik Mine is 30 km up inlet from Arctic Bay

Government

SH: a lot of technical info before public- with difficulty in getting info communicated; on example she remembered was a Philippine scientist with a heavy accent – and it was very difficult for translators to get info translated accurately. GN chose to keep the technical responses in writing and keep the hearing at the plain language - level; when discussing security an agent of GN spoke directly in Inuktitut (i.e. Florene Lumbers – worked with Levi and elder in advance of the 2002 hearing and was very effective {instead of relying on local translations}– but in most cases cannot work out translations in advance). Translators used “things that make you die” for “contaminant” and had hard time in effectively getting accurate message across. Having an Inuk speak Inuktitut about reclamation issues was very helpful.

SH: Inuktitut language is a North Baffin dialect spoken in the Arctic Bay area

Mining Company

BC: 1) public presentation and illustrations, 2) question and answer periods

10) Do you think that the Inuit understood:

- a) the common breakdown of mine closure issues into physical stability, chemical stability and land use?

Inuit

LB: Yes, always concerned about the tailings pond and which areas need to be cleaned up. Elders know about mine closure in Rankin Inlet around 1967 – that's why this one was different – in Rankin Inlet, the company just closed the mine without

reclamation – they know the consequences of mine closure – left tailings, old buildings, mine waste and facilities; Now Nunavut Land claims agreement stipulates reclamation must occur; mine is very close to community – people know the Act and actions taken reflect the lessons learned;

SL: Inuit tend to look at mine closure more holistically – difficult to compartmentalize – it all relates back to land use “will we be able to hunt, will animals be safe, do animals have contaminants in them?” etc.

Government

SH: She has no idea;

Mining Company

BC – General comprehension

b) how their broad objectives fit into, or are linked to, or were addressed by these categories?

Inuit

SL: Concerned about missing the “forest through the trees” – Inuit may not understand exact significance- the hearing process is for the benefit of all intervenors (technical and non-technical – two audiences must be appeased).

Mining Company

BC - yes

c) Did Inuit provide or were they asked to provide their definition of “closure”?

Inuit

LB: Still occurring – DIAND is more concerned about the spending of money; Inuit’s definition is different – but Inuit are the ones left behind to deal with the closed mine – if anything that DIAND misses – it will affect wildlife (small game, i.e. fox, rabbits); river flowing to ocean – small pods, cod, whale – food chain and ultimately effect human beings

LB: Feasibility study – identified hot spots that need to be cleaned out; when tailings capped all wind issues would be settled

SL: No, he very much doubts it. It's done from a western science point of view – that is process that is developing within NTI – bring together Inuit views of closure – together with what is being done with reclamation policies worldwide.

SL: NTI went in with concept that Nanisivik is one mine, but there were three landowners that added to confusion: DIAND, GN (owns some of the land) and DFO (owns Coast Guard dock)

Government

SH: When switched to “our pre-arranged delivery” was an improvement;

Mining Company

BC - In the consultation process, ???, working definitions were adopted, including a universal definition of mine closure

11) Was economic opportunity seen as an objective (consideration (SL)) for closure planning, and if so, by whom?

Inuit

LB: Yes, people have understood even when agreement supposed to be 60% Inuit employment, but met only 40%; Nanisivik should be trade centre –going to long ways for an apprenticeship trades programs – to work at reclamation

LB: Opportunity was seen by community members of Arctic Bay predominantly, less so by Baffin Region, and to even lessor extent all of Nunavut

SL: From onset, there was awareness that there would be some, whatever jobs they had – were looking at loss of jobs from mine closure – what can we do to make sure they got employment; mine looking to get it done as soon as possible and not want to extend duration of closure;

Government

SH: Community very focused on this since day one. GN trying to move forward, DIAND not always seen as a concern, but recently DIAND joined by GN (and mine, NTI) in Strathcona Sound Monitoring Committee (DIAND proposed to close committee but left

open after others expressed usefulness and validity). GN sees it as an objective (Socio-Economic Study – GN idea, Nunavut Impact Review Board (NIRB) saw report and included recommendations for parties to include it as an objective (but not a mandate- did not have that authority – NIRB can order the mine but not DIAND or GN) and has role with cumulative effects

Mining Company

BC:

- 1) emphasis was placed on transfer of infrastructure and alternative uses
- 2) emphasis placed on training and employment opportunities for northerners

- 12) Do you feel that the mine operator, regulator and other stakeholders understood and addressed
 - a) the concerns of the Inuit?

Inuit

LB: Yes, “we always said that if we were not happy we’d go to court – so I guess they understand” – no court – not yet – always keep in mind; : SL: the first reclamation plan – no significant effort was made to include Inuit – SL: probably not initially, mine operation was aware of some discussions; regulators walked in with their concerns, not Inuit; most recently through Nunavut Water Board (NWB) hearing process – NTI participated; yes now because of process;

Government

SH: Not all, some at some times, weren’t always articulated in a manner that was effectively dealt with; were members of community – raised compensation as something they wanted; GN however, knowing the poor financial strength of the mine – knew that compensation might compromise some of the clean-up (so GN did not support compensation issues);

Mining Company

BC – we made our best effort

- b) what “traditional knowledge” means to Inuit people?

Inuit

- LB: not sure how to answer, have some problems – how to integrate TK into process; SL: The term has been batted around – Inuit term “Q...” the Inuit way of doing things use terms....new mines gather TK – whether it impacts on final plan – probably limited; mine companies and regulators just check the TK box but there are problems with integrating TK with western science; Inuit are very open to sharing TK – adaptable and understanding; some views of TK are very different all across North America.

Government

- SH: Not really – people with first hand knowledge, this was considered, but was not considered equally with what the “experts” who showed up in the last two years had to say; although this isn’t really TK; in listening to other concerns – sounded as if their attempts to have TK integrated have never been heard; i.e.. Elder asked to have seals tested as they did not act normal and were dying. Fisheries had a report on seals, but nobody had any evidence of the elders request – builds lack of confidence with regulators;

Mining Company

- BC – to the best of our abilities
- c) what “closure” means to Inuit people?

Inuit

SL: Discussed above;

Government

SH: Discussed pretty thoroughly; “why can’t you just take the bad stuff away” – there were in-depth discussions about what closure means; whether everyone understood is another matter, but there were productive discussions

PdP: TK – Phillipe was aware that ‘they’ tried to use traditional knowledge (Muktar?) – an elder who worked on mine – used him to get feedback regarding past use – and remediation objectives.

Mining Company

BC – yes

13) Do the mining company and regulators (Inuit) feel that Inuit organizations (the mining company and regulators) understand what they are doing about the closure issues?

Inuit

LB: Fesibility Study – Arctic Bay wants own facilities – mine used them for 26 years – cost too much to bring them down to Artic Bay; use mine as a trades school; 5-year opportunity – longest airport, deep sea port, facilities that can be used - pool, recreation, kitchen dining room, 20 apartment buildings only 2 years old, 40 units cleaned up

SL: Objective of closure to Inuit – make land useable again; to mine company – to get sign off from regulators – Inuit have reasonable idea of what mine company is doing; Inuit have a broader view – “this place has to be safe”

Government

SH: To some extent yes; so many different areas – divided mandates in DFO, EC, NTI, DIAND, GN, etc) – confusing to Inuit who is doing what – and whether anything was slipping through the gaps:

Mining Company

BC - Through the public consultation and meeting process

14) Do you think that the Inuit representatives (SH: mayors, chief, elders and members) had an opportunity to:
a) express their concerns with the closure plan?

Inuit

LB: In public meetings yes, elders not used to having written documents – Levi would have to write for them in order to address their concerns; in some ways, he thinks so, but really can't answer; some ways people not happy, not all concerns addressed, all sorts of concerns over last 2 years; SL: Regional gov'ts and HTO's (Hunter and Trapper Organizations) should have participated but did not; had opportunity through NWB process – but did not go through NIRB – perhaps too old?; NIRB was at hearings but only as observers – did not get involved;

Mining Company

BC – yes ample opportunity

b) make recommendations on the closure plan?

Inuit

– LB: still open to their recommendations, not over yet, probably see how first phase of reclamation is doing then have a better ideas; SL: NWB process allows for various groups to get involved;

Mining Company

– BC – yes, ample opportunity

c) participate in the preparation of the plan ?

Inuit

LB: no primarily just the mine company; SL: not directly, Arctic Bay had no technical experts – and they were not provided; Inuit TK concepts – “take all that tailings and ship it out”;

Government

SH: NO, to the extent they did not have legal representation; she couldn't comment on the other.

Mining Company

BC - To the extent that their recommendations and suggestions were incorporated into the plan

15) Did the Inuit organizations have internal resources (land manager) or external resources (technical experts) Were these people effectively addressing their concerns, and did these people, where necessary, educate Inuit about the subject, process, issues, options and solutions?

Inuit

- LB: yes from NTI – had some experts in some areas) SL: NTI hired some consultants to do work (i.e., human health and ecological risk assessment) acting on their behalf?
- LB: In some ways , Levi has no problem – lacking resources to get to all the people – why so many public meetings over one issue – every issue appears to be the same issue with no action being done.
- SL: NTI – got involved – not on behalf of Arctic Bay but represented Inuit as a whole; Arctic Bay community did get some help but not from consultants – NTI provided some documents for community, would have been nice to have more information from the government; try not to represent groups, want each group there individually; they do cooperate and collaborate, but will not do just one submission on behalf of all the groups;

Government

- SH: NTI had tech person present – but very closely linked to community; appeared that during hearing Mayor (Joanasie) had never talked with NTI; Mayor gave a great speech at first hearing – but mayor was not able to tap into NTI as a resource – instead NTI was there representing their own interests;

Mining Company

- BC - The NWB and NTI made their resource people available to the community of Arctic Bay for independent consultation

16) Do you feel that the Inuit feel they:

- a) can, or
- b) should

rely on the federal and/or territorial government agencies (DIAND, EC, DFO, RWED, etc) and their experts to address the issues at the site to a satisfactory level?

Inuit

LB: Only experts we can rely on are Inuit organizations (ie., ones for NTI)

SL: they don't. SL: Rely now on NTI; less confidence in Territorial government, no confidence in federal government – who appear to be looking after their own liabilities; DIAND had fiduciary responsibility but were also landowners so there was conflict (were not unbiased);

Government

SH: don't know; would hope GN could be depended on (where they have a statutory mandate); public health – could trust that we are actually doing that; They've had enough negative experiences to develop distrust. SH: GN hopes that the communication {affects?} give security;

Mining Company

BC - We feel that the Inuit feel that the federal and territorial governments have been of little assistance to this process

17) During the closure planning and implementation stages, were the Inuit effectively advised (just recently) about how the closure plan addressed the issues and objectives identified by the Inuit during the planning process? Was there sufficient feedback to the Inuit on issues and resolution during the stages of the process including:

- a) Pre-mine development (mine planning and permitting)

Inuit – LB: Nanaisivik Mine just proposed and addressed closure plan – Levie hasn't seen it, would like to see if Inuit concerns are being addressed.

Government - SH: not there

b) Operations

Government - SH: not there

c) Detailed closure plan

Inuit

- SL: initially very little feedback to Inuit, since then more on final; dialogues going back and forth – mostly between company and regulators; unless Inuit get to sign off they (proponents and regulators) will not take them seriously – not as aggressive with aboriginal organizations – would be different if on Inuit owned land (18% of Nunavut is Inuit owned) – who would then be regulator of surface rights (including water); –

Government

- SH: too soon to say at interim hearing – did get report that “ you raised questions/concerns “a,b,c and d”) and here's what it says; but we did not pick up every item – If not in GN's mandate – do not tend to see or have authority to say things.

d) Closure implementation

Inuit – SL: not there yet, too early

e) Post-closure monitoring

Inuit – SL: not there yet

Company – Question 14 - BC – see response to question 5

18) Do Inuit organizations understand

a) the purpose for reclamation security (as opposed to funds held in an environmental agreement)

Inuit

LB: yes to reclaim whatever is in the agreement, I think so, QIA on behalf of environment area in Arctic Bay – took mine to court because Nanisivik was not providing enough security (court determined that it should be \$17 million – or \$1 million per year;),
SL: he thinks that in general now they do, may have been some misconceptions (i.e, monies available like an insurance policy – but there is still tendency to think of it as a cash pie;

Government

SH: I think they do; GN submissions included a lot about the security; NTI surely doesn't, not so sure about Arctic Bay.

b) how it is determined,

Inuit - LB: not really

c) who decides if it is released, and when it may be released?

Inuit

LB: Pressures federal government; SL: Not clear, confusing for a lot of people – concepts of progressive reclamation come into play; worldwide – recognized as not double-dipping; not clear – have been significant discussion as to who should hold security – Inuit Regional Organizations believe they should hold security; living through the process, “Reclaim Model” of John Brodie – the way it was calculated as \$17.6 million compared to the \$9 million developed by the company; had to assume third-party costs and would have to assume large “flying in lime by plane rather than shipping it in”. Currently, Nanisivik is only holding \$4-5 million – process done backwards;

SL: New mines – there is a better process

SL: Tailings pile failure (in mine to west – he thought somewhere in Yukon – the security was misappropriately used to clean up tailings mess and now there is no security left,

Government

SH: They don't understand - active GN and DIAND – Inuit organizations wanted to be granted status as a security holder along with DIAND; GN agreed with Inuit in that both GN and Inuit should hold status (they have impacted land)-there was enough English to confuse many of the community members – GN developed “blurbs” which summarized that essentially they (Inuit) asked for x, y and z and the Board gave them this. Board confirmed that DIAND would hold all security – decision was clear, but not necessarily communicated at community level (there was precedent – mine on both KIA and DIAND land – joint security holders – GN tried to use this example to promote their case)

19) Do the Inuit understand how reclamation security would be used?

Inuit

- LB: Yes pretty well

SL: Probably not in detail; even the feds don't fully understand; in Nanisivik – better ...CanZinco was possibly going bankrupt – did not see bright prospects; they were paying \$1 million per year, but since mine closed early, they only made 4 to 5 payments – now in court case, Breakwater is suing DIAND (perhaps as a way of not paying remainder of reclamation costs)

Government

SH: Yes, but not in detail – there is some confusion, however, where the mine would pay security, and others understand it to deal with abandonment – monies for reclamation were understood.

Other Issues Brought Up

LB: Levi wants copy of report, he is no longer community liaison coordinator; last month Feb 16 elected to legislative assembly, now must fly to Iqaluit; saw CBC interview – not only ones that see “poor” closures – the Europeans visiting

LB: De Beers currently exploring Nanisivik area – twin mine and Kennecott – evidently found kimberlite pipes

Phillipe mentioned that intervenors had until March 12 to review closure issues/documents, and was hoping to have hearings in mid-May – mid-June – and then clear the way for Wolfden to bring in work crews and dismantle the facilities that they had acquired. He was not sure who was or will be in charge of the clean-up.

Other Contacts

Contact	Affiliation	Contact Information	Comment
Elizabeth Sherlock	DIAND - relatively new to Nanisivik		
Stephanie Hopkins	DIAND water resources		
Carl McLean –	DIAND land		
Steve Traynor	DIAND		
Patrick Duxbury	Inuit Coordinator for NWB	867-983-3039	I originally called Patrick Duxbury (Inuit Coordinator for NWB re: Nanisivik Mine) – but he deferred to Phillipe di Pizo and also gave a number of potential interviewees (see list at end of this document)
Niori Iqaluuak	Mayor, works for Arctic Bay Housing	867-439-8833	

Mishak Allurut	works for Hamlet of Arctic Bay	867-439-9917	
Joanasie Akumalik	former Mayor, now works for NTI (Nunavut Tunga... Inc.) in Iqaluit	867-975-4900	
Doug Paget	works in Hull for DIAND he was or is lead for Strathcona Sound Monitoring Committee worked with Inuit and original developers at Nanisivik – socioeconomic issues		
Nadia Gonzalez	works for NTI lots of day to day work on mine issues		

From Phillipe:

Levi Barnabas – elected NLA territory, legislative assembly in Iqaluit – Arctic Bay Community Liaison Coordinator: home 867-439-8152

NTI – negotiated land claims, lobby group, umbrella group for Inuit villages/communities

Stephen Lopatka – lives in Cambridge Bay, works for NTI handling environmental issues (including issues associated with Nanisivik Mine); 867-983-2517 (NTI office)

Susan Hardy – Government of Nunavut lawyer

QUESTIONNAIRE

INUIT INVOLVEMENT IN MINE CLOSURE OBJECTIVES

POLARIS MINE

Note: No

Inuit Owned Lands at Polaris

	QUESTION	REGULATOR RESPONSE	INUIT RESPONSE	COMPANY RESPONSE
1	Did First Nations have an opportunity to participate in the development of mine closure objectives for the mine?	Inuit organizations are on the Water Board distribution list and participated on the review of the A&R plan	Limited, did a review of the initial draft of A&R plan Had opportunity as intervener at Water Licence hearing	Yes, a draft plan was presented to the communities
2	Did First Nations have the capacity to participate? a) Financial b) Technical c) Timing	a) No funding provided by INAC b) Inuit organization local staff attended meetings, no consultants used c) Same timing opportunities as other interveners	a) Yes, via Land dept and environment dept. of the Nunavut Tunngavik Association (NTI) lands office b) Yes, via Land dept and environment dept. of NTI lands office c) Yes A/B yes, but not assistance proved by government or proponent, internally financed, limited by budgets Generally work within timing as set out by the Water Board	a) believe yes, unaware of requests for support b) believe yes, unaware of requests for support c) yes
3	What was done financially to ensure that First Nations had the capacity to participate?	No requests for funds or assistance were submitted	Nothing was required Nothing, no attempt to obtain funding was made	No, for consultants, company covered cost of site tours
4	Who is responsible for assisting First Nations in closure planning: d) Government e) Mining company f) First Nations	a) Minor b) Primary c) Primary	All three have a responsibility here Government has primary responsibility, company has tertiary responsibility and Inuit organization has secondary responsibility	Primary responsibility is with government and Inuit organization, company has lesser responsibility
5	At what stages and to what extent in the process were the First Nations invited to participate? f) Pre-mine development (mine planning and permitting) g) Operations h) Detailed closure plan	a) Unknown b) Unknown c) Yes, company organized meetings and mine tours d) Yes, Inuit organizations allowed to comment on changes to A&R plan e) Not yet	a) None b) Limited, surface rights was the focus c) Only one draft, NTI looked at it but not the final plan d) Not directly e) N/A f) no g) no h) through Water Board process	a) some involvement, (a lot for the day – approx. 1980) b) limited c) yes d) yes, through water board approval process (changes were very minor), company hired local people to provide “informal” feedback e) only informally

	i) Closure implementation j) Post-closure monitoring		i) through Water Board process & reporting j) N/A	
6	What was done in the area of education to help First Nations to better understand the issues and possible solutions to the problems at the site? f) Community consultations, (where) g) Who initiated these sessions? h) Were translators used? i) Were written translations prepared? j) What formats were most successful for education programs?	a) Two meetings in Resolute, 1 or 2 in Gris Fjord, 2 mine site visits, public meetings in Iqaluit b) The company c) Yes at public meetings, not at technical sessions (they weren't required) d) No e) More Inuit organization participation in public hearing because these are less technical	a) Limited community consultation, more focus in Iqaluit b) Company c) No translation in Iqaluit, translation was conducted in Resolute d) None e) visual/oral, written with translations a) yes, Resolute and Cambridge Bay b) Teck-Cominco c) Yes d) partial e) visual and oral are best, text is poor, radio broadcasts are good	a) Yes, at communities and at site visits, Water Board reclamation coordinator helped convey information b) company c) usually yes d) no e) oral is best
7	Do you think that the First Nations understood: d) the common breakdown of mine closure issues into physical stability, chemical stability and land use? e) how their broad objectives fit into, or are linked to, or were addressed by these categories? f) Did First Nations provide or were they asked to provide their definition of "closure"?	a) Somewhat b) Yes c) Yes	a) Very general only b) In a general sense only c) Probably not a) general, concern for holistic solution, i.e. Integration into whole site solution b) poor to fair, often fails to answer the question "Is it safe (after mining)?" c) no	a) Inuit focus is on land and water use, they are not concerned with details of how physical/chemical stability is achieved b) not really, generally, company doesn't do a good enough job communicating c) no

8	Was economic opportunity seen as an objective for closure planning, and if so, by whom?	Somewhat, were interested in closure work	No limited	Yes, company had target levels of Inuit employment during reclamation and is trying to “give away” some site assets to the communities
9	Do you feel that the mine operator, regulator and other stakeholders understood and addressed: d) the concerns of First Nations? e) What “traditional knowledge” means to First Nations? f) What “closure” means to First Nations?	a) Yes b) Yes c) Yes	a) Understood yes, addressed – mostly b) Mostly c) Somewhat, but not completely	a) partially, not 100% (either didn’t understand or weren’t satisfied with response) b) no, no concerns raised by Inuit organizations with respect to traditional knowledge c) no
10a	Do First Nations feel that the mining company and regulators understand how they feel about the closure issues?	Yes, on a broad knowledge basis	Somewhat, they are making some effort Yes but not completely, this is an evolving situation	
10b	Do the mining company and regulators feel that First Nations understand what they are doing about the closure issues?			Yes
11	Do you think that the First Nations representatives (band resource officers, chief, elders and members) had an opportunity to: a) express their concerns with the closure plan? b) Make recommendations on the closure plan? c) Participate in the preparation of the plan?	a) Yes b) Yes c) Yes	a) Yes b) Yes c) Yes d) Yes e) Yes f) Yes	a) Yes b) Yes, primarily socio-economic c) Yes, more involvement may have been better especially earlier.

12	<p>a) Did the First Nations have internal resources (land manager) or external resources (technical experts) acting on their behalf?</p> <p>b) were these people effectively addressing their concerns, and did these people, where necessary, educate First Nations about the subject, process, issues, options and solutions?</p>	<p>a) Yes, internal resources were there, no external resources</p> <p>b) Internal resources were effective</p>	<p>a) Yes</p> <p>b) Yes</p>	<p>a) No consultants or land managers were involved.</p> <p>b) Generally only superficial reviews, low level of concern for the closure plan by the Inuit organizations (mine is remote and not prime hunting territory).</p>
			<p>a) Yes</p> <p>b) Yes</p>	
13	<p>Do you feel that the First Nations feel they:</p> <p>c) can, or</p> <p>d) should rely on the federal and/or territorial government agencies (DIAND, EC, DFO, RWED (Resources, Wildlife and Economic Development), etc) and their experts to address the issues at the site to a satisfactory level</p>	<p>a) Yes</p> <p>b) Yes, because they are not the land owners</p>	<p>a) No</p> <p>b) No</p>	<p>a) yes</p> <p>b) maybe</p>
			<p>a) no</p> <p>b) no</p>	
14	<p>Were First Nations effectively advised about how the closure plan addressed the issues and objectives identified by First Nations during the planning process? Was there sufficient feedback to First Nations on issues and resolution during the stages of the process including:</p> <p>f) Pre-mine development (mine planning and permitting)</p> <p>g) Operations</p> <p>h) Detailed closure plan</p> <p>i) Closure implementation</p> <p>j) Post-closure</p>	<p>a) Unknown</p> <p>b) Unknown</p> <p>c) Yes</p> <p>d) Yes</p> <p>e) N/A</p>	<p>a) No</p> <p>b) Yes</p> <p>c) Yes</p> <p>d) Yes</p> <p>e) N/A</p>	<p>a) limited</p> <p>b) limited</p> <p>c) yes</p> <p>d) yes</p> <p>e) expected</p>
			<p>a) no</p> <p>b) limited</p> <p>c) yes</p> <p>d) limited</p> <p>e) feedback is expected once monitoring starts</p>	

	monitoring			
15	Do First Nations understand e) the purpose for reclamation security (as opposed to funds held in an environmental agreement), f) how it is determined, g) who decides if it is released, h) when it may be released?	a) Unknown, probably but not much discussion except by listening at public hearings b) Based on company's tendered costs, very little security before reclamation started c) Unknown d) Unknown	a) Generally b) Generally c) Generally d) Generally e) yes f) yes g) uncertain h) uncertain	a) Yes, but they are not very concerned about it in the Polaris case b) No c) Yes, but not an issue d) Yes, but not an issue
16	Do First Nations understand how reclamation security would be used?	probably	General idea only Not a clear understanding	No, not really

Inuit, 1st row – S. Shoo, Qikiqtani Inuit Association

Inuit, 2nd row – S. Lopatka, Nunavut Tunngavik Association

MINE CLOSURE OBJECTIVES

FIRST NATIONS & INUIT PERSPECTIVE

APPENDIX C

MINE CLOSURE OBJECTIVES – DISCUSSION PAPER

Prepared for:

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July, 2004

MINE RECLAMATION OBJECTIVES SUMMARY

Mine closure objectives must address a number of issues for any given site. These are summarized in the following table. The main purpose of closure objectives is to provide a rational criteria for designing and assessing alternative reclamation strategies.

CLOSURE CRITERIA	DETAILS	PURPOSE
Physical stability	Performance during earthquakes or floods, and resistance to erosion	To ensure that mine components which remain after closure do not degrade in time
Chemical stability	Water quality criteria such as M.M.E.R. and CCME, and any site specific criteria which may be developed	To ensure that water released to the environment does not cause adverse impacts
Land use	Typically this is habitat productivity of the land after reclamation but could also include other uses	To ensure that the opportunities for future use of the land is not lost
Post-closure activity level	Criteria for target level of site presence after closure; walk-away, maintenance required or active care	Avoids unnecessary burden on future generations
Risk of failure	Potential consequences arising from failure of a part of the closure plan	Risk and consequence must be understood to aid in selection of the other criteria
Duration of mine closure work	Period of time for studies, implementation and initial monitoring	Avoids delay of reclamation work
Leadership/perception	Parties responsible for mine closure may/should elect to apply Best Available Technology (BAT)	Ensures highest quality closure effort and reduces risk of failure
Socio-economic	Incorporation of non-technical factors such as Traditional Knowledge or local values, and balances factors such as economic versus technical uncertainty	Ensures that the closure plan considers non-technical interests of all stakeholders
Cost	Cost affects selection of technically equivalent options	The closure plan which satisfies the other criteria at the lowest cost should be selected

1 INTRODUCTION

1.1 GENERAL – What Are Reclamation Objectives

Mine reclamation objectives could range from generic ideals describing a site condition after closure to specific engineering criteria such concrete strength for the cover on a shaft. The purpose of this document is to provide a definition of reclamation objectives and an understanding of the common terms.

Reclamation objectives are more specific than say a “mine site reclamation policy” which typically provides only written (non-numeric) goals to be achieved.

Another way of looking at this might be that in the Environmental Assessment phase a project would be expected to show at a conceptual level only that the mine could be reclaimed to meet or satisfy the reclamation policy. As the project moves into Water Licencing and then operations, it would be expected to show that it will provide an acceptable reclamation condition through more detailed evaluation and assessment relative to reclamation objectives. In the final stages of a project, the reclamation objectives might become site specific.

Mine reclamation objectives serve several purposes. These include:

- assisting proponents of mining operations in understanding the expectations of land owners, stakeholders and regulators,
- providing a rational criteria for designing and assessing alternative reclamation approaches,
- setting numerical criteria to:
 - determine which approaches will be appropriately protective of the environment, and,
 - against which monitoring results can be evaluated.

Reclamation objectives are to provide a general approach to address the minimum specific standards to be achieved when reclamation is complete. There may be aspects of a site which require the reclamation objectives to exceed the generally accepted standards. These could be: sensitive fish or wildlife habitat, proximity to communities, or site factors such as permafrost stability.

Reclamation objectives must address all components of a mining project, including; open pits and underground workings, tailings containment areas, mill and effluent treatment facilities, ore and waste rock storage areas, associated water and waster disposal uses, and all site infrastructure.

1.2 APPROACH and GENERAL OBJECTIVES

1.2.1 Background

Mining is considered to be a temporary use of the land. After mining is finished, then future uses of the land should be provided for, if possible. At a minimum, the land should not be hazardous to people who go into the area. The land and the area downstream of the site should not be negatively affected by any contaminants associated with the mine development. Furthermore, the land should be productive in a way that is compatible with the land use of the surrounding area.

Engineers and scientists who develop mine closure plans with these thoughts in mind typically break down the reclamation objectives into three primary objectives. These are, in order of priority:

1. protect public health and safety;
2. prevent, reduce, or mitigate environmental degradation; and
3. allow the return to productive land use of the mine site that reflects its original use or an acceptable alternative.

The above general reclamation objectives should be addressed for each component of the mine site, such as an open pit or a tailings containment system.

It is important to recognize that there may be several options for achieving the above objectives. In order to determine which option is best, it is necessary to evaluate the alternatives. For example, control of ARD from a waste rock pile could be achieved by i) collection and treatment of the drainage, ii) placement of a low permeability cover to prevent flushing of contaminants, or iii) relocation to a submerged disposal site to prevent ongoing ARD.

The three primary objectives described above set out what the reclamation plan is to achieve. However, they do not describe how the reclamation plan is to achieve the objectives. This is done by considering the reclamation objectives in the three broad categories:

- physical stability,
- chemical stability and,
- land use.

Each of these categories is described in the following sections.

A key concept must be introduced at this stage.

Mine site reclamation cannot be successful unless all components of the site are stable in the long term.

This means that measures to protect water resources from the negative effects of sediment or chemical contaminants or measures to restore land productivity for wildlife will not be successful unless the site is physically stable. For this reason, physical stability must be

addressed before chemical stability or land use concerns are addressed.

1.2.2 Physical Stability

A mine component that remains after mine closure should be physically stable such that it does not pose a hazard to public health and safety in the event of a failure or physical deterioration; and that the facility continues to perform the function for which it was designed. It should not erode, slump, or move from its intended location under extreme events or perpetual disruptive forces to which it will be subjected to after closure.

1.2.3 Chemical Stability

A mine component, including any waste, which remains after mine closure, should be chemically stable without release of chemicals into the environment. A less preferable case occurs where there is some chemical instability which results in the release of chemicals into the environment after closure. If a release is unavoidable, the resulting water quality should not endanger public health or safety, or result in the exceeding of water quality objectives in the receiving environment.

1.2.4 Land Use and Aesthetics

Reclamation requirements at a project site should consider:

- the naturally occurring bio-physical conditions, including any physical hazards of the area;
- the characteristics of the surrounding landscape;
- the level and scale of environmental impact; and,
- the expected post-operational land use activity.

It should be recognized that the land-use objectives may change over time and vary at different sites (i.e.; near communities or remote locations). In addition, there are significant differences in the socio-cultural values associated with land and water in northern Canada compared to southern Canada. Once reclamation has been completed, an abandoned mine component should be compatible with the surrounding lands.

2 DESIGN OBJECTIVES

The design criteria for mine components which remain after closure such as waste rock dumps or tailings impoundments will depend upon the risk associated with those structures. Consideration of risk or potential impact provides a rationale for requiring a higher level of protection where there could be greater impacts arising from failure of the reclamation plan.

Criteria for physical and chemical stability and the water quality need to be considered, as described further in the following sections.

2.1 Design Criteria for Physical & Chemical Stability

Physical stability is most commonly thought of in the context of critical structures such as tailings dams and spillways. However, it must also be applied to rock and overburden piles, pit slopes and crown pillars over underground workings. Physical stability objectives are commonly factor of safety against failure and capacity to perform (or remain stable) under extreme events such as floods or earthquakes.

In situations where physical measures are used to mitigate potential chemical impacts, such as an engineered cover over waste rock for the control of ARD, then the design criteria for the physical aspects of the cover should be considered in the potential chemical impacts.

Guidance on the selection of reclamation design criteria based upon potential impact categories is presented in Table 1. Once the designer has selected the appropriate potential impact category, then design event criteria can be obtained from Table 2.

TABLE 1

Selection of Reclamation Design Criteria Based on Potential Environmental Impact

<p>Low Impact</p> <p>To be classified as "low impact", the mine component must meet all the following criteria:</p> <ul style="list-style-type: none"> Low levels of contaminants, (levels in source materials are less than shown in Table 3.3) No potential for acid generation, (NP:MPA > 3:1) No potential for the leaching of contaminants, Surface area of 50 hectares or less, Concentrations of all the parameters in the liquid discharge are lower than appropriate water quality objectives, and, No human use of the impacted downstream area.
<p>Medium Impact</p> <p>The mine component will be classified as "medium impact" if it meets any one of the following criteria:</p> <ul style="list-style-type: none"> Moderate levels of contaminants, Moderate potential for acid generation, (1:1 < NP:MPA < 3:1) Moderate potential for the leaching of contaminants, Surface area greater than 50 hectares but less than 100 hectares, Concentrations of any one of the parameters in the liquid discharge are higher than appropriate water quality objectives, but lower than the concentrations in Table 3.3, Seasonal human use of the impacted downstream area.
<p>HIGH IMPACT</p> <p>The mine component will be classified as "high impact" if it meets any one of the following criteria:</p> <ul style="list-style-type: none"> High levels of contaminants, (levels in source materials are >10 times those in Table 3.3) High potential for acid generation, (NP:MPA < 1) High potential for the leaching of contaminants, Surface area of 100 hectares or greater, Concentrations of any one of the parameters in the liquid discharge are higher than the concentrations in Table 3.3, Year-round human use of the impacted downstream area.

Table 2

Design Criteria for Dams, Spillways, Slopes and Covers

POTENTIAL IMPACT CATEGORY	SLOPE STABILITY MINIMUM FACTORY OF SAFETY		STORM & RUNOFF EVENTS
	STATIC	SEISMIC	FLOOD EVENT
LOW	1.5	1.05 BASED UPON 1:475 YEAR RETURN PERIOD EVENT	MAXIMUM RUNOFF OF THE 1 IN 500 YEAR RETURN PERIOD EVENT
MEDIUM	1.75	1.10 BASED UPON 1:1000 YEAR RETURN PERIOD EVENT	MAXIMUM RUNOFF OF THE 1 IN 1000 YEAR RETURN PERIOD EVENT
HIGH	2.0	1.15 BASED UPON MAXIMUM CREDIBLE EARTHQUAKE	MAXIMUM RUNOFF OF THE PROBABLE MAXIMUM FLOOD EVENT

In addition to the design criteria shown in Table 2, engineers and scientists apply a number of qualifying criteria to provide further assurance that the closure plan will be effective.

2.2 WATER QUALITY CRITERIA

The effluent discharged from licenced or permitted mines must allow for the protection of aquatic life at the permitted points of compliance, such as the Surveillance Network Program stations as set out in the Water Licence.

Chemical stability objectives are the water quality values which are used to show that water resources can be protected. These values may be defined in several ways for a site.

- Water quality criteria may be defined in the receiving environment, which is the final proof that the reclamation plan is effective. These are presented in the Water Quality Objectives as set out by the Canadian Council of Ministers of Environment (CCME).
- Water quality criteria may be further defined at the point of release of water, which is the last point of control. These are defined through the federally mandated Metal Mine Effluent Regulations (MMER).
- Water quality criteria may also be set at points within the mine site, where monitoring of the effectiveness of specific reclamation measures may be conducted.

In addition to water quality monitoring, some reclamation plans may require a period of aquatic effects monitoring to further demonstrate that protection of water resources is being achieved.

2.3 Land Use

Reclamation requirements at a project site should consider:

- the naturally occurring bio-physical conditions, including any physical hazards of the area;
- the characteristics of the surrounding landscape;
- the level and scale of environmental impact; and,
- the expected post-operational land use activity.

Post-closure land use in northern Canada is generally wildlife habitat. Ideally, the productivity of the land after mining should be equivalent to the pre-mining condition. This may not be practical every where on a site, but it should be the target on an “average property basis”.

Once reclamation has been completed, the site should be compatible with the surrounding lands.

2.4 POST CLOSURE ACTIVITIES

The post-closure activities at a mine site should be reduced to the minimum practical level. Initially, there may be considerable construction activity as the primary reclamation is carried out. This post-mining phase should be of limited duration, typically not more than several years. In some cases this could be extended, depending on the size and complexities of the mine site. Once reclamation has been completed, on-site activity should be reduced to geotechnical and water quality monitoring, with limited maintenance or repair activities.

There are three general design categories for mine site reclamation, namely; walk-away, passive care, and active care. The categories are described in the following sections.

2.4.1 Walk-Away

A walk-away reclamation plan requires no on-site monitoring or maintenance, once the reclamation activities have concluded. This is an ideal objective and may be achieved for some portions of a mine site, such as some waste rock piles or the mine shaft caps. This design category is difficult to achieve for an entire mine site. A walk-away plan will also include select short-term monitoring, to ensure that the reclamation objectives have been met.

2.4.2 Passive Care

A passive care reclamation plan consists of only occasional monitoring and coupled with infrequent maintenance, at the end of the primary reclamation activities. This plan may include spillway maintenance or repairs to the waste rock or tailings covers. It is unlikely that a walk-away reclamation plan can be achieved for critical mine components, such as tailings embankments and spillways. The majority of mine sites usually require ongoing passive care, which is generally considered to be an acceptable practice.

2.4.3 Active Care

An active care reclamation plan occurs when continual or regular operation of facilities is required following the conclusion of primary reclamation activities. These may include:

operation of an effluent treatment plant or annual maintenance of water management facilities. An active care situation most commonly results from improper reclamation planning. An active care reclamation plan is not acceptable for a new modern mine development. This situation should be avoided wherever possible, although it may be the most practical option for some abandoned or operating mines, due to former mine practices and waste handling.

2.5 Risk of Failure

Risk is generally defined as:

$$\text{Risk} = \text{probability of failure} \times \text{consequences of failure}$$

Probability of failure is the likelihood of an event occurring. Consequence is the resulting impacts to people or the environment.

Incorporation of the risk concept into mine closure planning is addressed in the determination of physical stability criteria, as described in Tables 1 and 2. It may also be considered in factors such as institutional failure, such as where a water treatment plant fails to operate or where failure to conduct routine maintenance leads to a major failure.

2.6 Duration of Mine Closure Work

Mine closure work, and particularly at many northern sites, has been extended for periods of years to decades. This has arisen due to legal, financial or other factors associated with the party responsible for the site. Once it is clear that a mine will not re-open, and then closure activities should commence. It is preferable that this work be initiated with out excessive delay. The sooner the work is completed, the sooner the post-closure land use objectives will be achieved.

It should be recognized that mine closure involves a number of steps, which can be simplified into: planning, implementation and monitoring. Target objectives for each phase can be established to ensure that the project is completed in a reasonable period of time.

2.7 Leadership/Perception

Parties responsible for mine closure may/should elect to apply Best Available Technology (BAT). This approach ensures that the closure effort is of the highest quality. Most importantly, it reduces the risk of failure and ensures that post-closure impacts are at the lowest practically achievable level.

2.8 Socio-Economic

Socio-economic criteria provide for incorporation of non-technical factors such as Traditional Knowledge or local values into the mine closure process. When considered in conjunction with risk of failure, socio-economic considerations may help to weigh factors such as economic versus technical uncertainty. For example, a lower risk closure plan may be selected where there is a strong local interest, especially if the lower risk plan can be implemented at only a minor increase in cost.

Socio-economic parameters may not be readily presented as specific criteria in the way that other criteria may be set out. However, evaluation of socio-economic factors ensures that the closure

plan considers non-technical interests of all stakeholders.

2.9 Cost

Cost is generally only considered after technically viable closure alternatives have been developed. Cost may aid in the selection of technically equivalent options (i.e. options which meet the same closure objectives)

In general, the closure plan which satisfies the other closure criteria at the lowest cost is the one which should be selected.

3 DESIGN FOR CLOSURE

Reclamation planning is a valuable part of the regulatory and decision making process for a mine development. Preparing an acceptable closure plan prior to the development of a mine is referred as "designing for closure." This concept requires that proponents forecast, assess and analyse their proposed mine operation for final closure. The mine and reclamation plan design may change the mine operation and design parameters, which will save time and financial resources and reduce liabilities, over the mine life.

The concept of designing for closure merges into three separate objectives:

- the requirement that the mine component meets the reclamation objectives;
- that reclamation activities are incorporated into the design; and,
- that reclamation activities are incorporated into the operation of the mine.

Design for closure requires that the mine operator to look well into the future, at least in the order of several centuries, and identify those natural processes and forces which may act upon the mine components after mine closure. The operator must design, operate and reclaim the mine, so that the risk of failure of those components is minimised or eliminated. Where deterioration is inevitable, then the operator should identify and plan for the required maintenance. Wherever practicable, there should be no ongoing intervention or operating activities other than periodic inspections and minimal maintenance after closure. Mine component closure starts when all affected operations and reclamation activities have ceased.

3.1 DEVELOPING the CLOSURE PLAN

The closure plan is an evolving document through the life of a mine. When submitted at the time of the permit application, it is an initial or conceptual reclamation plan. The plan is based upon projected conditions, such as the expected life of the mine and assumed geologic/geochemical conditions. The life or operation of a mine may change or geochemical monitoring may indicate a need for modifications. Reclamation research may suggest modifications to the plan are required. The closure plan should be re-evaluated and submitted to regulatory agencies other stakeholders for approval on a regular basis as the mine progresses.

The closure plan only becomes final when mining is complete and a plan based on the details of the mine development has been approved.

Development of the closure plan is usually an iterative process. The ultimate closure scenario will depend upon many factors that include: the mine plan, a reclamation plan and finance assurance, environmental factors, stakeholder concerns, reclamation methodologies and challenges, technology improvements, and economics. A method for developing the closure plan for a new mine is illustrated on Figure 1. Existing mines may need to consider additional steps, such as consideration for reducing existing liability by the modification of the mine operation plan.

Key parts of the process, as illustrated in Figure 1 are:

- | | |
|--------|--|
| Step 1 | a description of the pre-development environment, |
| Step 2 | a description of the facilities and components that will be developed and operated, |
| Step 3 | a description of the proposed progressive and final reclamation measures that will be implemented, |
| Step 4 | an impact assessment based upon the proposed development and reclamation measures. If the predicted long-term physical and chemical effects and anticipated land uses do not meet the objectives for the site, then alternative reclamation measures will have to be considered (Loop A). If the mine operator evaluates a number of alternative reclamation measures and finds that they all result in unacceptable impacts, then it may be necessary to consider an alternative form of mine development (Loop B), |
| Step 5 | a description of the monitoring and maintenance requirements, |
| Step 6 | a construction schedule and project costs, including estimated closure costs, if too costly then it may be necessary to consider an alternative approach to reclamation (Loop C), |
| Step 7 | a description of the financial assurance to ensure that the closure plan will be implemented, |
| Step 8 | a projection of the post closure environment. |

FIGURE 1
STEPS IN CLOSURE PLAN DEVELOPMENT

