

Title of Submission: Cultural Cumulative Impact Assessment in Canada's Far North

In: Proceedings of the 24th Annual Conference, International Association for Impact Assessment; Vancouver, British Columbia

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Abstract

Cumulative Impacts Assessment is now a standard part of many Environmental Impact Assessment (EIA) processes in Canada and elsewhere. Similarly, the definition of the term "environment" in EIA has broadened progressively since the 1970s, to include, in many instances, socio-economic and cultural considerations. This case study examines a unique EIA which dealt with the combination of these: the assessment of cumulative cultural impacts of four proposed projects in combination with other past, present and reasonably foreseeable developments.

This EIA was conducted by the Mackenzie Valley Environmental Impact Review Board (Review Board), an administrative tribunal in Canada's Northwest Territories. In June of 2003, four separate diamond exploration projects were referred to EIA. Although all four developments were relatively small in scale, and used known technologies, the setting for the projects was an unprotected area of great cultural significance to local Aboriginal groups, containing mass graves spiritual sites and teaching areas used for sharing traditional knowledge.

Particularly challenging considerations in this EIA included:

- The identification of reasonably foreseeable future projects in mineral exploration;
- Baseline information issues related to cultural factors in the project area;

- The commissioning of an independent regional study by the MVEIRB, as a resources for both proponents and reviewers;
- The field compilation of Traditional Knowledge by Aboriginal parties to the EIA; and,
- Mitigation techniques for the minimization and avoidance of cumulative impacts to culture and cultural sites where possible.

Approaches to each of these challenges are described, and are likely applicable to other EIAs.

Cumulative Effects Assessment in Canada's Far North

The assessment of cumulative effects (defined as effects of the project under review in combination with the effects of other past, present or future human activities (Ross, 1998)) is a widespread aspect of Environmental Impact Assessment (EIA) in Canada's far north. In EIA in Canada's NWT, Yukon and Nunavut Territories, the types of impacts examined, both in project-specific and cumulative contexts, go beyond the biophysical to include direct and indirect social, cultural, and economic impacts.

This broader scope of EIA is reflected in the related terminology. Where EIAs in the mid-80s focused on impacts to Valued Ecosystem Components, or VECs, (from Beanlands and Dunker, 1983), the EIAs in Canada's north now consider impacts on Valued Ecosystem and Cultural Components, (or VECCs) (Greig et. al, 2002), and Valued Social Components, (or VSCs) (e.g. MVEIRB, 2002). These refer to impacts that go beyond the ecological and physical, to include effects on people, their society, their culture, and their economy. The Mackenzie Valley Environmental Impact Review Board has simplified the terminology, referring simply to Valued Components (or VCs). This terminology has since been adopted more broadly in the NWT (e.g. CEAM, 2002) and will be used through this paper.

EIA in a Co-Management Context

The Mackenzie Valley Environmental Impact Review Board was established through the Mackenzie Valley Resource Management Act in 1998. This administrative tribunal is a court-like body that strives to make consensus-based decisions on environmental and natural resource matters. These relate to development applications referred to it for the purpose of environmental assessment and environmental impact review. Comprised of aboriginal and non-aboriginal members appointed by Aboriginal land claim organizations, and federal and territorial governments, this body draws on multiple, diverse perspectives in order to make balanced decisions.

A Case Study: Diamond Exploration in a Culturally Important Area

Between April and June 2003, the Mackenzie Valley Land and Water Board referred four proposed diamond exploration projects to environmental assessment. The MVLWB conducts preliminary screenings of developments to determine where further examination is required and refers such developments to environmental assessment. These developments were referred due to a "clear indication of public concern about development in the Drybones and Wool Bay [...] given the evidence of the cultural, spiritual and environmental importance of the Drybones and Wool Bay Areas" (MVLWB, 2003). The submissions of Aboriginal parties suggested that the

public concern extended beyond the cultural importance of the Drybones and Wool Bay areas to potential cumulative impacts over the history of mineral exploration in the vicinity of Yellowknife.

Overview of Proposed Developments

The first three developments referred to environmental assessment were considered relatively small compared to most projects referred to environmental assessment. Two of the developments involved three to five exploratory drill holes, mainly on ice over a one-two year period during the winter. The third development consisted of 12 exploratory drill holes, mainly on ice, with potential line cutting to prepare for future work, supported by a person camp over a period of five years.

The last development referred to environmental assessment was larger, involving 98 exploratory drill holes in five claim areas, bulk sampling via trenching or large diameter borehole drilling, road construction, inland access to some site via helicopter or fixed wing, and a semi-permanent camp. The operations were designed to be conducted year round, although mainly in the winter and summer.

The referral of exploration projects to environmental assessment was unprecedented and came as a surprise to the developers given the history of exploration in the area. The importance placed on the location of the developments in Drybones and Wool Bay areas resulted in a level of public concern that initially appeared disproportionate to the size and physical invasiveness of the developments. At present, the area does not contain industrial activity. Land ownership is still under negotiation between the federal government and Aboriginal groups, and there is no land use plan in place.

This paper will now examine some challenging and interesting features of these EIAs.

Environmental Assessment Considerations

Identification of Reasonably Foreseeable Future Developments

The identification of reasonably foreseeable future developments is a standard aspect of the Review Board's cumulative effects assessments, and is a recognized and important part of good cumulative effects assessment practice (Ross, 1998). For the assessment of each proposed exploration project, the other proposed exploration projects were considered as reasonably foreseeable future projects, even though they were not approved or certain. They were considered because a proposed exploration project is likely to become an actual exploration project, and because they all had the potential to affect the same VCs.

Mines are preceded with exploration activities, and future diamond mines would be expected to affect the same VCs as the exploration activities. For this reason, some parties expressed an interest in including possible future diamond mines when scoping the cumulative effects assessment. In this case, the fact that the developments being assessed were all early mineral exploration activities presented an unusual challenge to forecasting other reasonably foreseeable future developments. All four developments that were assessed were diamond exploration projects. The outcome of the exploration activities themselves will influence what future activities will occur (ie, by investigating whether there is a sufficient economic mineral resource

to support a diamond mine). The likelihood of a mineral finding that would lead to a mine is difficult to assess. Although a known and small proportion of exploration projects do lead to mines, the territorial average proportion is not likely to be meaningful or representative of this specific area, which is thought to have unusual mineral potential.

The matter is further complicated in that it is presumably in a company's interest to maximize prospects of a successful finding to potential investors. It is also in a company's interests to minimize likelihood of success when cumulative impacts (in combination with possible impacts of future activities) are being assessed. In Canada, there are also legal limits to a company's ability to publicly speculate on the mineral potential of exploration projects.

There were other reasons for excluding fully developed diamond mines from the scope of reasonably foreseeable future developments. Exploration projects typically involve a high degree of uncertainty. Although all diamond mines in Canada started with exploration activities, most exploration activities do not lead to mines. Any mine that may be proposed in the area would be subject to an EIA. The Review Board decided to exclude possible future mines in Drybones Bay from the cumulative effects assessments.

The Aboriginal groups involved had several years of experience dealing with the environmental issues associated with diamond mines, because they were considered to be potentially affected groups during the assessment of the three diamond mines in the NWT. Based on the EIAs of the previous mines, the kinds of environmental issues one would predict from a diamond mine are different in scale from those that could be expected from exploration activities. However, during the public hearings for these developments, many community members made comments describing concerns about impacts from possible diamond mines in Drybones Bay. This suggested some ongoing differences of opinion whether a possible diamond mine should be considered in the cumulative effects assessment.

Aboriginal groups indicated that developments such as diamond exploration should not be allowed to proceed in an area where people do not wish to have a mine. The Review Board determined that mine development was too speculative to be considered as reasonably foreseeable in the absence of a confirmed economic resource. The decision to exclude mine development as a reasonably foreseeable activity highlighted the limitations of environmental assessment as a tool for dealing with planning issues. Environmental assessment is equipped to deal with how a development should proceed to minimize significant adverse environmental impacts or in rare cases, to reject a project if the adverse environmental impacts are so substantial that the project is not warranted. Environmental assessment is not intended primarily to be a planning tool to prescribe the types of development that are appropriate and compatible with any given area.

Commissioning an Independent Regional Study

All four of the proposed developments were referred to the Review Board for environmental assessment at approximately the same time, for generally similar undertakings, in the same general area. Normally, developers are expected to make their own cumulative effects predictions. In this case, rather than have each developer conduct its own cumulative effects assessment, the Review Board hired an independent third party, Gartner Lee Ltd., to conduct a cumulative effects study for the area. Three of the four proposed developments would not be

asked to prepare their own cumulative effects predications, but could make use of the study instead.

The study would identify existing sensitivities, look at potential impacts of all the proposed developments, and predict combined impacts. The cumulative effects study also looked for opportunities for cooperation between the developers to reduce overall impacts. The draft was circulated to all parties for comment, and developers had the option of adopting it as their own once it was done.

The Review Board considered the conclusions of the study, but made its own decisions with the study serving as a decision making tool. The study was also a resource for developers, reviewers, and other parties to the Environmental Assessment. It was an independent study funded by the Review Board, which had no stake in the outcome of the research or the decisions that resulted. This independence lent the conclusions of the study added credibility.

The commissioning of an independent cumulative effects study of the area benefited the environmental assessments in a variety of ways. All of these developments were small, compared to most of the developments that undergo a similar level of EIA in the Mackenzie Valley. All developments had junior exploration companies as proponents. Based on early discussions with the companies, Review Board staff felt that proponents did not have an understanding of cumulative effects assessment, or the capacity of larger developers to conduct credible cumulative effects assessments on their own. The Review Board felt that the cumulative effects assessment was more likely to be prepared to a higher professional standard if produced by an experienced third party, in this case, a reputable environmental consulting firm.

Industry has often expressed concern over the challenging nature of preparing cumulative effects assessments. Feedback from proponents suggested that the companies in these assessments appreciated having a reduced burden placed on them to predict impacts. The commissioning of the independent study aligns closely with other industry expectations. The Mining Association of Canada has recently suggested, in reference to cumulative effects assessment, that the Review Board and government should “reduce the onus on proponents through regional assessment” (P. Gratton, pers.comm.).

In addition to reducing the burden on proponents, having a single independent study of the area that is spatial and holistic proved valuable for the cumulative effects assessment, because it was able to integrate the consideration of all relevant human impacts in the area. Three separate cumulative effects assessments conducted by the different developers would likely have been harder to integrate into one unified set of predictions. As Ross (1998) stated, it is important that the predictive methodology used in cumulative effects assessment “must be able to incorporate the effects of all relevant human activities that might contribute to the impact being studied”. This constraint was well satisfied by having a single regional study encompassing all four proposed developments.

An unexpected benefit of this approach was that it promoted improved dialogue between parties to the EIA. This proved to be valuable to the ongoing issue scoping throughout the EIA. When the consultant submitted a first draft of the regional cumulative effects study to the Review Board, it was circulated to all parties. Developers and other parties submitted comments on the draft. These comments provided useful suggestions on the impacts to be investigated and the

approach by which to do it. By providing some of the best descriptions of the issues to date, the comments focused and improved the understanding of issues for all parties involved.

For example, before comments were received on the draft regional study, the Review Board was aware of concerns regarding possible disturbances to archaeological and heritage sites, most of which were not mapped before the EIA. The concern at that time appeared to be potential direct accidental disturbance of the sites. Correspondence triggered by the draft regional cumulative effects study indicated that the major cultural concern was not limited to sites, but the connections between the sites as part of a contiguous cultural landscape important to Aboriginal groups. Cultural landscapes are defined as places or series of places linked together by a long history of occupation and traditional use by an Aboriginal group. The landscape embodies the traditional knowledge of ancestors, spiritual and moral teachings, relationships among all living things and the environment, and identity and history of a cultural community. This is a different and broader issue than is concern about impacts to specific sites.

Parallel Environmental Assessments

When the first of the four developments was referred to the Review Board, a workplan and terms of reference were produced. Before these were distributed, two more developments had also been referred for environmental assessments. Even though these were separate referrals for separate developers, the Review Board decided to run three environmental assessment processes in tandem. This decision was reached because of the same vicinity of the proposed developments, the common concerns, and the similar types of activities. By running all of these environmental assessments in tandem, combined hearings would be possible, and parties would have a good opportunity to consider holistically the combined effects of all of these developments. The ability to consider all of these developments together and at the same hearing was valuable in giving each assessment a holistic focus, and it led to better consideration of cumulative effects.

Despite this important benefit, two disadvantages arose from this approach. Although the regional cumulative effects study was not the developer's responsibility, each developer was still responsible for assessing its own project specific impacts. There was a range of quality in the responses, and additional information was required from some. When such uncontrollable external factors like this happened, deadlines for all four projects changed. Developers that provided thorough timely information had to wait for those that did not, to maintain the parallel timing.

Another disadvantage of this approach was the risk of parties losing sight of the distinctions between the developers. One of the developers had a poor relationship with communities and other parties. During the environmental assessment, other developers expressed concern that their companies' earnest efforts to build relationships with communities would be tarnished by confusion with the other developer. Parallel processes increased the risk of this confusion. The important benefit of looking at the developments collectively came with the risk that parties would perceive developers collectively as well. This perception was relevant to developers because the commitments made during an EIA alleviate community concerns when the developer is trusted by the communities.

Baseline Information on Culture

Cultural information about the many Aboriginal groups is retained mainly by oral tradition. Limited cultural information is available in a format that is accessible and easily entered into the public record and considered by the Review Board in an environmental assessment, particularly for Aboriginal groups with unresolved claims. The documentation of traditional knowledge coincides with the land claim negotiation process. The incomplete status of these negotiations with Aboriginal parties that traditionally use the Drybones and Wool Bay areas increased the potential for cultural concerns to be misunderstood.

This posed a challenge for this environmental assessment since there is an onus on the parties to present convincing evidence that the Drybones and Wool Bay areas are of cultural importance and would be adversely affected by the proposed mineral exploration. Not only is there a sensitivity to sharing such personal information but traditional knowledge about culture is not subject to external validation as is scientific knowledge. Cultural information is largely qualitative, consisting of narratives about the historic occupation and use of an area.

A further complicating factor is that culture is not static. In order to assess a cumulative impact to culture, there is a need to determine a normal rate of cultural change to evaluate whether or not the rate of change in culture is accelerated by past, current and reasonably foreseeable development. Cultural change is influenced by variety of confounding factors, including exposure to outside influences and value systems of non-resident cultures through television, radio and other aspects of daily life. Identifying a linkage that can be isolated to proposed development is especially difficult.

Nevertheless, the information in the public record of the EIAs indicated that the culture of Aboriginal groups near Yellowknife was different. Stories from elders and other community members showed rapid culture change coincident with mine development in Yellowknife. New practices emerged that had never before been part of the traditional lifestyle of the Aboriginal parties. Aboriginal communities spoke of displacement of traditional uses, changes from a nomadic hunter and gatherer lifestyle to established settlements, and declining use of traditional areas previously used for passing on traditional practices.

When considered on a project by project basis, the change was incremental. Consideration on a regional scale to examine cumulative effects showed significant, rapid cultural changes over a period of approximately 60 years due to diminished use of traditional territory critical to the preservation of cultural identity.

Compilation of Traditional Knowledge Relevant to EIA

The amount of available scientific information was limited for the area. The importance of the Drybones and Wool Bay area, where the developments were proposed, led to a new initiative to document traditional knowledge. The impetus for this rapid assessment by an Aboriginal group was described in the following statement:

“We're here because our cultures and histories are intertwined with yours and the decisions you make on Drybones Bay and Wool Bay will either diminish us as a people - or else enable us to protect what's basic to our identity and our culture and our values.”

- Chief Darrel Beaulieu, Yellowknives Dene First Nation, November 26, 2003

This contribution of detailed evidence to a proceeding by Aboriginal parties was unprecedented in the experience of the Review Board. Traditional knowledge about the relationship between people and the environment is rarely shared with outsiders or revealed in a written document to be circulated outside the community (Huntington and Fernandez-Gimenez, 1999). Fear that this traditional knowledge information will be taken out of its meaningful context, misunderstood or misused is common among Aboriginal groups. Aboriginal parties to this environmental assessment had similar concerns.

A high quality environmental assessment in this case relied on the disclosure of cultural information, so measures for the confidential handling of cultural submissions were developed. Concerns about the distribution and interpretation of the information were discussed with the Aboriginal party. Conditions for viewing the documents, such as a letter requesting access to the materials and instructions for seeking clarification directly from the Aboriginal party were implemented. Parties wishing to view the material accepted these conditions. This approach to controlled distribution of the archaeological and heritage resource studies provide some measure of protection for Aboriginal parties, and maintained a suitable level of transparency to be fair.

Mitigation of Cultural Cumulative Impacts

Evidence on the public record showed that the cultural and traditional use information available to the developers was incomplete and insufficient to ensure that the mitigation proposed by the developers would be effective. Other policy and procedural challenges further limited the effectiveness of proposed mitigation to address public concern.

Some mitigative measures were proposed by the Review Board to address cultural concerns of the Aboriginal parties. The Review Board has the authority to make recommendations to avoid or prevent a significant adverse impact on the environment. These, if approved by the Minister of Indian Affairs and Northern Development, are binding. The Review Board may also make non-binding suggestions to address policy or procedural challenges.

For this reason, the Review Board recommended and in some cases, suggested additional mitigation to ensure traditional knowledge was used properly to avoid adverse impacts to the environment. A selection of recommendations and suggestions to address cultural impacts is provided below.

Recommendation 1

“The Minister of INAC reject NSV’s (a developer’s) proposed diamond exploration program in Drybones Bay, pursuant to section 128(1)(d), because the proposed development is likely to cause an adverse impact on the environment so significant that it cannot be justified.”

Rationale

Evidence on the public record showed the importance of the Drybones and Wool Bay area. The significance of impacts to the culture required an interpretation of the sensitivity of the areas where the developments were proposed. In the case of one developer, an areas of greater sensitivity demonstrated a greater range of traditional uses integral to cultural identity. In this case, the incompatibility of past, present and reasonably foreseeable development was

determined to be the basis of significant adverse cumulative effects to the cultural landscape of Aboriginal groups, such as the Yellowknives Dene so much so that it was recommended that the development be rejected.

Recommendation 2

The developer “must be accompanied by an Aboriginal elder, a translator, if required, and a qualified archaeologist to scout out archaeological, burial and cultural sites at the proposed access route and drill location before on-land operations for the drill location [...]”

Rationale

Parties claimed that during winter operations the developer could not detect any signs of sensitive archaeological, burial and cultural sites. Only parties familiar with the area and land would be aware of these sensitive areas. For this reason, elders and archaeologists were required to scout out areas where damage to on land sites might occur. By reducing the likelihood of damage to sites, the cumulative impacts to culture would also be diminished.

Recommendation 3

The developer was required “to seek advice and assistance from the YKDFN (Yellowknives Dene First Nations) and the NSMA (North Slave Métis Alliance) in order to undertake the development in a manner that is sensitive to the community and respectful to the families of those buried in the vicinity of the operations.”

Rationale

Aboriginal parties indicated that graves are considered spiritual places. These sites must be honored. The noise impacts of the proposed development were considered invasive and inconsistent with respectful practices expected by Aboriginal people for graves and spiritual sites. By requiring the developer to involve local Aboriginal elders in the operation, an understanding of respectful practices could be achieved.

Recommendation 4

“No part of the proposed development will occur within 100 metres of any known or suspected archaeological, burial or sacred site.”

Rationale

Standard mitigation techniques for suspected and known archaeological and burial sites under the *Mackenzie Valley Land Use Regulations* are the requirement for a 30 metre setback. Field investigations to document known and suspected sites had been undertaken by one Aboriginal party but were considered incomplete therefore the Review Board imposed a measure of added protection to safeguard the sites.

Suggestion 1

“No new land use permits should be issued for new developments within the Shoreline Zone, and within Drybones Bay and Wool Bay proper, until a plan has been developed to identify the vision, objectives, and management goals based on the resource and cultural values for the area. This plan should be drafted and implemented with substantive input from Aboriginal parties. The plan should specifically address future development direction and include provisions for protecting sensitive environmental, cultural, and spiritual sites. This exercise should be completed within 5 years and provide clear management prescriptions for greater certainty of all parties in the future development of this region.”

Rationale

Based on the evidence provided, the shoreline between Wool Bay and Gros Cap was determined to be one contiguous region of occupation and traditional use. Drybones and Wool Bay contained evidence of settlements, such as cabins and tent rings while intervening section included extensive trail networks to support hunting and trapping. The shoreline zone was determined to be so culturally important that a longer term land use planning instrument was needed to better balance traditional and contemporary development values for the area given the increasing pressure for exploration and development around Yellowknife.

Suggestion 2

INAC should consider establishing a prospecting permit approach pursuant to Section 29 of the *Canada Mining Regulations* for this area in order to provide Aboriginal communities concerned about the Wool and Drybones Bay areas the opportunity to provide input into staking areas and to avoid conflict over land use.

Rationale

Evidence from Aboriginal parties to the EIA indicated that the free entry mining system around Yellowknife does not permit the identification of culturally sensitive areas prior to the staking of claims for mineral exploration. Parties further argued that with advanced exploration and development of mineral claims there is an expectation that developers can benefit from their investment in exploration and development that precludes Aboriginal groups from exercising their treaty rights. Without the completion and land claims for the Drybones and Wool Bay area and with the continued access to the area through free entry mining, further conflicts regarding potentially incompatible land uses would be expected to continue to the disbenefit of Aboriginal groups wanting to protect their culture and developers operating in an environment where the public concern was unpredictable that results in increased consultation costs.

Conclusions

The environmental assessments of proposed developments in Drybones and Wool Bay offered an innovative approach for dealing with diverse knowledge systems, beliefs and values of developers, Aboriginal and government parties to assess cumulative impacts to culture. The composition of the Review Board allowed for appropriate consideration of the evidence of the parties reflective of the associated world view. The Review Board took care to ensure that cultural information was interpreted in the context of the party providing the evidence. Aboriginal appointees, including one elder, ensured that cultural information was discussed appropriately and interpreted holistically.

At the onset of these EIAs, the issues were expected to be relatively minor in light of the small scale of the developments and the familiar technology involved. However, location, and not scale, caused these to be complex and challenging EIAs. By the end of the Drybones and Wool Bay assessments, it was clear that it is the scale of the *issues*, and not the scale of the developments, that dictates the size of an EIA.

Many other lessons were learned during this process, including:

- Environmental assessment is not intended primarily to be a substitute for land use planning, as a planning tool to prescribe the types of development that are appropriate and compatible with any given area.
- A single independent study of the area that is spatial and holistic can improve cumulative effects assessment by integrating the consideration of all relevant human impacts in the area.
- Parallel environmental assessments in a region of development can provide a holistic focus, and lead to better consideration of cumulative effects.
- Where scientific knowledge is lacking, traditional knowledge can provide sufficient information to serve as a basis for making determinations of cumulative effects.
- Co-management administrative tribunals can provide an effective means for considering traditional knowledge and scientific information in a useful way to develop mitigations that are effective in dealing with cultural concerns.

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