Contributions to the Review of the "Beaufort Sea - Mackenzie Delta Region Environmental Impact Statement"

Office of the Northern
Research & Science Advisor.

January 1983.

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Contributors

Beaufort Sea - Environmental Impact Statement - 1982
Volume 5 - Socio-Economic Effects
Review of Greenland Section - Chapter 13

Reference Statement: (Terms of Reference, June 1981, p. 4).

"International Implications"

> "The Panel should be aware of possible international implications of this proposal (e.g. Greenland, Alaska), but should not explore and evaluate - potential impacts outside of Canada. (My emphasis). The Panel is to work directly with the Federal Environmental Assessment Review Office (FEARO) and the Department of External Affairs when making any arrangements for contacts and communications with other countries in matters dealing with information exchange."

As a consequence of the above statement, my comment shall be confined to the three main considerations of the Beaufort Sea EIS Review Format.

1. Deficiency Identification:

   (a) The Marine Environmental Co-operation Agreement (MECA) between Denmark and Canada is not mentioned in the Section on Greenland. The Agreement is important to the "awareness of the international implications" as it sets out the content, division of jurisdiction; and measures to be taken for pollution prevention, vessel traffic, exchanges of scientific and information/scientific exchanges and much more regarding the implications of tanker traffic in the international waters between Canada and Greenland.

   (b) As a result of this omission the section on Greenland is, (i) incomplete.

   (c) This deficiency can be overcome by (i) referring to the MECA Agreement which can be obtained from External Affairs.

2. Report Quality

   The Section on Greenland is of a good quality.

3. Conclusions

   The conclusion of the section on Greenland, p. 13.10, is in keeping with the context of the data which cannot be subjected to the guidelines of the EIS as they contain clauses already covered by the jurisdiction of a foreign country, as in the case of Greenland, and, or, are covered by the Marine Environment Cooperation Agreement (MECA).

J. Ashlee, Senior Analyst,
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THE BEAUFORT COMMUNITIES - E.I.S. Volume 5, Chapter 4

- DRAFT COMPONENT REVIEW -

MONA EVANS

EARP:

1.3 GENERAL

- The E.I.S. is quite comprehensive and covers a full range of subjects. It incorporates general concerns and presents data on the region and communities that are quite general in nature.

1.3.1 Report quality

- The E.I.S. was easy to read and contained well presented charts, maps and photographs.

1.3.2 ... scientific and technical material referenced (incomplete)

- The majority of statements, assumptions and conclusions regarding native people* were not documented and the sources, the basis for viewpoints expressed or rationale were not explained. (*This refers to guideline requirements (2.3.3 and Appendix C.2) for descriptions of community social patterns, attitudes, lifestyles, to residents' perceptions of and aspirations for each community's development, community reactions to local issues and projects occurring in the community).

Valid, representative viewpoints and concerns could be obtained and referenced through community consultation, invited "position" statements and recommendations from concerned community groups

and institutions, from research findings, from published information, and from public statements.

1.3.6 ... Issues and their implications should be discussed thoroughly

1.3.6.3. Adequate protection for social values and significant natural and cultural resources

(incomplete).

With regard to social values, it does not appear that the E.I.S. makes an adequate effort to identify what these social values <u>are</u> as a first step toward protecting them. Attempts toward identification of social values appear to be based on conjecture and projections without a systematic attempt to obtain representative input from northerners on the subject. (See Chapter 6 and Chapter 4 of Volume 5).

The industry approach is well summed up in the statement on page 1.3 of Volume 5: "It is up to the Industry to state its position, but up to the people that development will affect to state theirs".

(See comments above on 1.3.2 regarding community consultation etc.).

1.3.6.4. Cumulative Effects of Impacts

(incomplete)

Cumulative or individual effects of impacts are too general and solutions to the identified problems are not proposed.

The scope of the Environmental Review Process includes the period up to the year 2000. At that time most of the development will be nearing completion. A forecast of only eighteen years is inadequate, and serious thought must be given to the longer range future, especially that of native people, and to provision for community input in future decision-making.

Again, community consultation could contribute toward identifying, planning, and developing programs to mitigate long range and cumulative, negative effects.

1.3.8 Specify knowledge deficiencies and indicate remedial steps

(incomplete)

Generally, industry demonstrated its knowledge of the deficiencies, but remedial actions are not provided.

1.4 ORGANIZATION

The socio-economic overview generally and specifically in each chapter is adequately described.

1.4.3 Baseline descriptions

(incomplete)

The baseline description of the existing socio-economic environment is grossly understated and their effects due to developments are not clearly stated.

1.4.4 Impact Analysis

(incomplete)

Socio-economic issues are defined; however, it appears that the impact analysis was purposely minimized and hence the problems that may result from development are superficially addressed. Possible adverse effects appear to be minimized, giving sections dealing with the impact of a pipeline a pro-development bias, limiting the description of possible negative effects, and thus not presenting a balanced and realistic analysis.

Analysis appears to be based on assumptions that industry is much needed and sought after by northern people as a means toward satisfying rising material expectations, that

it is possible to develop the Beaufort Sea without affecting the lifestyle of the people, and that the government and northern people will be responsible for dealing with the rapid influx of large numbers of transients from the South and any attendant training for employment, health and social requirements resulting from development. It appears to be also assumed that the traditional lifestyle and culture is no longer viable or valued and no plan is required to reinforce, enhance or protect its integrity.

With these underlying assumptions, analysis of issues appear based on a few individual opinions and no systematic approach to obtain and document positions and recommendations of representative groups on various subject areas in planning and developing programs for mitigating impact (i.e. identifying knowledge deficiencies, research needs (e.g. baseline information), training needs, health and social program needs, enhancement measures, monitoring, etc.).

2.2 BACKGROUND

(incomplete)

The background data presented in Chapters 2 to 5 inclusive does not adequately describe requirements which could result with development. There are many instances that conclusions are made without adequate indications as to its source

or the basis for them.

2.3 Description of the existing environment

(incomplete)

"The socio-economic effects of exploration to date is the only area that is adequately described. However, many of the sources of information used are not reliable or come from one part of the industry. For example:

1) the use of TERIS as the source of available skills in any given community is totally misleading since this system double or triple counts;

2) most of the data is derived from DOME Operation and hence it is not a reflection of the industry's real effect which occurred to date". (Moll).

2.3.3 A) Demographics (Appendix "C", page 40, C.1)

(incomplete)

Inuvik and Tuk were handled well by bar graphs for age and sex distribution (Table 4.1-1, 4.2-1, page 4.1 and 4.19 respectively) and pie diagrams for ethnic distribution (Figure 4.1-3 page 4.4 and Figure 4.2-3 on page 4.20.

All other communities were handled by written descriptions that were either incomplete, inaccurate or superficial. It failed to convey the information required, making only

general statements like "The population is youthful...".

The birth rate, death rate and migration pattern information is consolidated into table form for most of the Delta region communities. This information is lacking for Tuk and Old Crow. (Hawn).

2.3.3. B) - community social patterns, attitudes, and lifestyles Appendix "C" - C.2, page 40).

(incomplete)

C) - services and facilities.

(incomplete)

Although some issues, concerns, attitudes and perceptions are presented, there is no reference to methodology or sources of information, and it is not clear how information was gathered (i.e. how feelings of committment and categories of shared identities were determined). On page 4.3 there is a discussion on "double socialization" and value conflicts related to education without any substantiation. Although there is the odd expression of individual opinions included (e.g. Tuk page 4.22), this chapter consists largely of general statements made on behalf of residents or feelings attributed to them, without a clear indication of where or from whom these ideas came (i.e. a representative statement from a identifiable source) or how the information was obtained.

There are no issues or concerns outlined from specific groups, especially on the their role in development (e.g. Political Organizations are listed but their identified issues and viewpoints are not outlined).

There is a good description of physical facilities for education, health and social services. However, a description of the activities, functions, programs, policies (and effectiveness) of various social and cultural organizations, agencies and institutions is lacking (e.g. There is a reference to an Education Action Plan but no terms of reference, group representation or specific plan described). There are no comprehensive statistical data that would objectively describe health, social and cultural conditions (e.g. incidence of morbidity by cultural groups, description of school population by cultural groups and levels of achievement). There is no no quantifiable information that would describe various social groups (e.g. social services clientele by age group and category of need) and provide baseline data for measurement and monitoring of social impact (e.g. mortality by causes and migration by ethnic group, etc.).

Some descriptions of accommodation are provided (e.g. Inuvik) and Tuk has a written description but no breakdown (e.g. Table) of housing types and

availability data. Paulatuk, Sacks Harbour and Old Crow lack any description of housing facilities. It would be helpful to have specifics of the various programs, eligibility criteria for access to various types of housing, and relative types and levels of subsidies available to occupants.

Obtaining information on quality of life (perceived or quantifiable) at the individual, family, cultural group, and community level that would describe social and cultural patterns, attitudes or lifestyle would require a systematic method and community participation. (Some methods are outlined in A Guide To Social Impact Assessment by Cathy M. Waiten, Research Branch, Corporate Policy, DIAND, 1981). One method might be to involve community members in identifying indicators for community lifestyle, attitude and need surveys. At the individual level (by cultural and age groups), indicators could include: cultural identity; language use; family composition, socialization, cohesion, interaction; living conditions (and access); diet (e.g. extent of access and percentage use of indigenous foods); sense of well-being (e.g. self-esteem, safety, deprivation); status (in reference group, in community); roles (in family, reference groups, community); participation (family, cultural, social, political);

interactions with other cultural groups; education level; types of skills and extent of use (e.g. traditional, trades); type of employment; income level (fixed?); recreation (types of activities and pastimes); use of time (e.g. hunting, visiting relatives); interdependence (e.g. helping elderly); spending patterns (e.g. percentage on utilities), assets (e.g. tent, truck); individual concerns (e.g. problems, conflicts); perceived needs (social, cultural, physical); and expectations re development. This information would establish baseline information required for social impact monitoring.

This information could be supplemented with statistical information (also by cultural and age group) on: occupational skills; level of employment; social service profiles (e.g. types of caseloads); health status (morbidity, stress-related incidents such as mortality (causes), heart attacks, crimes of violence, divorce rate, child abuse/neglect, runaways).

Another survey could be undertaken on identifiable social and cultural groups, agencies and institutions. Content in the survey would outline the following: identity (e.g. political, voluntary), organization (if any), regulatory function (if any), services or functions and type (if any), facilities and capacity (if any), staff/membership/clientele (if any) and ratio

and qualifications, etc.), perception of community development, aspirations for community development, reactions to issues occurring in the community and occurring in the region in total, reactions to projects occurring in the community, and in the region in total, relationship to industry (if any), interaction with industry (if any - e.g. communication), anticipated types and degree of impact (direct and indirect), participation in planning for impact (cost-sharing?), preparation for impact (staff training, new programs, expansion).

In describing the Beaufort communities, the most outstanding deficiency is the apparent lack of northern input in a systematic, documented, manner, outlining their social and cultural lifestyles, conditions, and the concerns and issues deemed important by them. Participation of the affected groups in identifying indicators for baseline data on the existing conditions is an important first step toward protecting social values while preparing for the impact of development. Findings from this process would describe the conditions that would provide necessary existing baseline data required for planning and future monitoring of social impact.

08.12.82

Mona R. Evans,
Northern Social Research Division.

SOCIO-LEGAL IMPACT OF HYDROCARBON DEVELOPMENT IN THE BEAUFORT SEA-MACKENZIE DELTA REGION

November 30, 1982

by

Harold W. Finkler
Northern Social Research Division
Indian and Northern Affairs

INTRODUCTION

The following analysis of the socio-legal impact resulting from the envisaged increase in the growth in population, the work force and economic activity generated by hydrocarbon development in the Beaufort Sea-Mackenzie Delta Region is based on a review of the proponents' Beaufort Sea Environmental Impact Statement. This review, undertaken within the terms of reference enunciated in the EARP Environment Impact Statement Guidelines, begins with an assessment of the proponents' description of current socio-legal issues; to be followed by an analysis of their identification of the potential socio-legal effects related to the envisaged development as well as their consideration of proposed measures toward avoiding, mitigating or compensating for adverse effects; and concludes with some comments on their plans for further research and monitoring. It should be noted that this analysis is general in nature, highlighting some basic concerns, with a more specific impact assessment to be contained in submissions by both territorial governments who have the direct responsibility for formulating socio-legal policy and service delivery. Finally, for the purposes of this paper, socio-legal impact entails the following issues addressed by the proponents in their submission: alcohol and drug abuse, crime and violence, and criminal justice services.

I. DESCRIPTION OF CURRENT SOCIO-LEGAL ISSUES

The following assessment pertains to the adequacy of the proponents' description of the current situation vis-a-vis alcohol and drug abuse; crime and violence; and criminal justice services.

1. Alcohol and Drug Abuse

With particular reference to Volume 5, p. 3.3 and 4.4, i.e. the proponents' description of the socio-economic effects of hydrocarbon development, they have identified the relationship of increased income to a corresponding increase in alcohol abuse, a situation particularly acute in those native communities experiencing industrial development. From their review of the literature, they have also established the significant relationship of alcohol consumption to deaths from accidents, injuries and violence, as well as a factor in precipitating/facilitating crime. Furthermore, they have raised the problem related to Inuvik as the regional outlet for the supply of alcohol to other communities.

... 2

Notwithstanding the above and the proponents' appreciation of the disruption of alcohol abuse to the quality of northern life, the description omits any reference to recent research or baseline information in this area. It also reflects an inadequate description of existing diagnostic/treatment/prevention strategies and services, including community based interventions; and fails to provide a more comprehensive account of the effectiveness in the increasing use of legal restraints provided in the Liquor Ordinance enabling communities to determine their own desired level of restrictions on the purchase, sale, or consumption of alcohol. Finally, it has neglected to address the issue related to the rising incidence of the non-medical use of drugs and solvent abuse.

2. Crime and Violence

Apart from a passing reference to the literature debate on the relative effects of industrial development on crime and violence (Volume 5, p. 3.4), the description of this issue is wholly inadequate. This is particularly crucial given that the introduction and comprehensive review of existing baseline information vis-a-vis current regional patterns of criminality and offender profile constitutes the requisite framework for determining socio-legal impact assessment, its management and monitoring.

3. Criminal Justice Services

Other than a superficial description of the socio-legal infrastructure (Volume 5, p. 4.15), the proponents have omitted to provide a satisfactory overview of current policies/programs for socio-legal control within the specific context of existing northern realities. Specifically, as a consequence of its massive geographic area yet small population scattered throughout the North, there has not been the expansion in the full range of socio-legal services. Furthermore, within the context of northern justice planning, this scarcity of resources dictates a focus on the optimal utilization of existing socio-legal resources; and, given the majority native population of the NWT, e.g. 61.7% in 1979, necessitates that these interventions are culturally relevant for their effective delivery in an indigenous and northern milieu. These are important considerations in the assessment of existing socio-legal services as well as a prerequisite to the formulation of any impact policy and programming in this area.

... 3

II. IMPACT ANALYSIS AND MANAGEMENT

This section on impact analysis and management centres on the proponents' discussion of potentially significant socio-legal effects related to alcohol and drug abuse, crime and violence, and criminal justice services; and their identification of appropriate measures considered essential to avoiding, mitigating or compensating for adverse effects.

1. Alcohol and Drug Abuse

In regards to alcohol abuse, the proponents have recognized the potential adverse effects of increased economic activity in the further aggravation of an already acute problem in northern communities, especially the vulnerability of native people in a time of accelerated change (Volume 5, p. 8.14). With respect to the management of this negative impact, while the proponents are of the opinion that the intensity of the disruption relates to care exercised in planning population and economic growth (Volume 5, p. 8.17), ultimately, they believe, it is up to the communities to resolve this problem. Management of this problem, they feel (Volume 5, p. 11.25), necessitates a reduction in stressful situations that induce excessive drinking; and they recommend encouragement and financial support in dealing with this problem. For their part (Volume 5, p. 9.3), they are prepared to advise employees against the possession of illegal drugs and co-operate with the authorities in the enforcement of these laws.

However, other than their statement of adhering to a 'dry camp' policy, the proponents do not sufficiently address northern concerns about the effective containment of alcohol abuse among their own employees and its possible impact on northern communities. For example, there is no reference as to how it will effectively enforce a 'dry camp' policy, or prevent 'bootlegging', or any discussion as to its role in providing alcohol/drug counselling or other similarly required services for its employees. Furthermore, there is no mention of instituting any screening mechanism into hiring policies to avoid potential problems, or the matter of discipline and termination procedures for unacceptable behaviour. Finally, in regards to the necessary community based, native oriented and delivered alcohol programs, the proponents make no offer for cost sharing despite the fact that the rising magnitude of this problem may be traceable to project activity.

... 4

2. Crime and Violence

As in the previous section, the proponents do not expand to any great depth on this topic beyond their acknowledgement that antisocial behaviour may emerge as a result of the increase in economic activity (Volume 5, p. 8.14), and suggest that the minimization of this negative effect rests in careful planning in population and economic growth. However, this superficial treatment of this relevant issue fails to underline the reality of the disproportionate involvement of native people in criminality, a situation that will no doubt be compounded by massive economic activity and the migration of transient workers, predominantly within the high risk age group for potential anti-social behaviour. Possible measures for the effective control of workers and transients may include government action to discourage transients coming north in search of project employment; the return of workers on rotation, vacation, or dismissal, to point of hire; and some community control over who enters as well as in hiring and termination of personnel.

3. Criminal Justice Services

The proponents' discussion on the effects of development on criminal justice services is primarily limited to the recognition that project activity will result in increased demands on existing services, thereby necessitating the expansion in services/manpower to accommodate boom induced criminal activity (Volume 5, p. 8.4, 11.25). Suggested measures for impact management call for the absorption of some of this increased volume by community volunteer groups (Volume 5, p. 8.6); the establishment of information/referral and crisis intervention centres (Volume 5, p. 9.6); and the utilization of community work orders in sentencing (Volume 5, p. 11.25).

Regarding the effects of the proposed project activity on criminal justice services, the proponents have generally restricted their discussion to policing, excluding any substantive review of the envisaged impact on the other vital components of the justice system i.e. legal aid, native courtworkers, judiciary, corrections, parole, aftercare, division, and community based measures. They have omitted the formulation of any crime prevention strategies or the utilization of company police or security to minimize the negative impact of the migration of transient workers. With respect to law enforcement in Tuktoyaktuk, I believe it is unrealistic to assume or expect that community voluntary

groups will be able or interested to undertake any additional responsibility for socio-legal control likely to be generated by population growth from resource development in a boom/bust context.

In view of the aforementioned limited development of socio-legal resources, and the current delivery of culturally relevant policy/programs, the proponents have failed to address the issue as to how these services will be able to cope, as well as maintain their northern orientation in the face of project related demands by non residents and transients. It is apparent that the proponents have not fully assessed the additional demands that development would place on these limited services, or their negative impact in undermining the ability of northern justice policies and programming in continuing to respond to the needs of the northern indigenous offender. Furthermore, it is evident that proceeding with the proposed schedule for project activities will not provide sufficient lead time for policy/program planning or securing the financial resources to institute the appropriate socio-legal infrastructure. The present situation necessitates the collaboration between all components of the justice system with the accent on prevention/diversion, and a strategy for the co-ordination of socio-legal services toward the optimal use of existing resources and development of others as required.

The limited range in the proponents presentation of concrete measures to minimize, or mitigate adverse socio-legal effects may rest in their adherence to the principle that the provision of any required programs is the general responsibility of the government and community. Thus while it advocates a liaison/consultation process between northerners, government and industry in impact planning, it feels that government funds should underwrite the additional costs for required programs or the expansion of services/manpower related to project activity. However, while the proponents remain generally hesitant to participate in any cost-sharing scheme, they are examining appropriate methods of compensation to individuals and groups for damages or losses traceable to project activity (Volume 5, p. 9.2). In this regard, perhaps compensation for victims of crimes and alcohol programs constitute possibilities for industry funding.

III. RESEARCH AND MONITORING

The proponents' discussion regarding its research and monitoring program, contained in Volume 7, does not include any reference to undertaking socio-legal studies relevant to development

needs or to the assessment of development effects. However, in reference to my working paper for the Alaska Highway Pipeline Inquiry (1977), entitled, Alcohol, Crime, and Socio-Legal Services, the following areas remain relevant and should be considered in any research/monitoring program endeavouring to adequately measure socio-legal impact generated by hydrocarbon development:

> "-gather baseline information through an evaluation of past, current, and projected natural growth, program and manpower efficiency of the administration of justice as a frame of reference for monitoring impact; included would be a quantitative and qualitative assessment of the past, current and projected incidence of alcohol problems and criminality including a detailed profile of caseloads carried by the various agencies;
>
> - aside from a review of comparative research or documentation on problems or impact that have occurred in areas experienceing similar types of change, further impact research is required; but research that will go beyond a general statistical evaluation of trends and address itself to the issue of the impact or change in the quality of life on communities generated by pipeline construction; perhaps a more rigourous methodological design is in order; beginning with gathering political, social, economic, cultural (etc.) profiles of affected communities, a required basis for more careful and scientific selection of indicators more accurately measuring the social impact of pipeline activity on communities;
>
> - any social impact or monitoring study must be careful to distinguish between the effects arising during the construction phase as opposed to those on-going during the operation and maintenance period.
>
> The above could be undertaken through the establishment of an information or impact centre, (providing for community, government, as well as input by industry) coordinating the gathering of baseline information as well as impact on alcohol, crime and socio-legal services." (p. 41-42).

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October 28, 1982

ACL File: 1282C

M. Donat Savoie
Chef
Division de la recherche sociale dans le Nord
Affaires indiennes et du Nord Canada
Les Terrasses de la Chaudiere
Hull Quebec

Dear Donat,

Please find enclosed a draft copy of the review of the Beaufort Sea Environmental Impact Statement dealing with native resource harvesting in the areas of Barrow Strait and West Greenland.

Should you wish to discuss any of the points raised in the review, I could meet with you in Ottawa November 16th or 17th.

Sincerely yours,

ARCTEC CANADA LIMITED

Dr. Albert A. Haller
Senior Principal Scientist

AAH/vs

Enclosure

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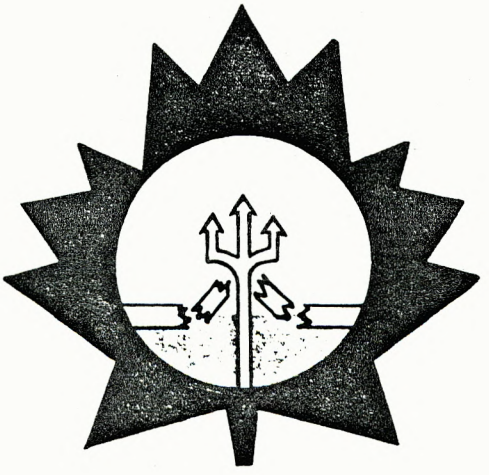
BEAUFORT SEA
ENVIRONMENTAL IMPACT STATEMENT

A Review of the Socio Economic Effects and Northwest Passage Setting Pertaining to Native Resource Harvest



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DRAFT REPORT 22

BEAUFORT SEA
ENVIRONMENTAL IMPACT STATEMENT

A Review of the Socio Economic Effects and Northwest Passage Setting Pertaining to Native Resource Harvest

INTRODUCTION

Although the terms of reference for the review specifies the areas to be examined are Barrow Strait (Resolute Bay) and West Greenland, I have included some discussion on the communities interacting with Lancaster Sound. This is done where it was deemed necessary as some of the possible impacts of the Beaufort Sea development on the two specified areas could not be considered in isolation.

DEFICIENCY IDENTIFICATION

VOLUME 5: SOCIO - ECONOMIC EFFECTS
CHAPTER 12: PARRY CHANNEL COMMUNITIES

Shorebased Facilities (incomplete)

On page 12.1 it is stated that "although it is unlikely that there would be any major shorebased facilities along the route, year-round shipping through Parry Channel could nevertheless have some impact on the residents". There is no indication of what is meant by major (or minor) facilities. Additional information should be required describing under what conditions there would be a liklihood of creating shorebased facilities. Will there be minor facilities? Where and what would these facilities be?

Employment Statistics (incomplete)

On page 12.1 it is stated that "the area's residents are still strongly dependent on hunting, fishing and trapping" yet the information presented in support of this statement is incomplete. Information is needed with respect to individual settlement breakdowns on the number of hunters and their income from these sources. Data presented on page 12.5 (Table 12.1-1) are insufficient and are 6 years out of date. Table 12.1-1 shows that only 15 out of 257 (less than 6%) are listed as hunters and trappers. This does not support the phrase "strongly dependent". Therefore further explanation of this statement is needed.

Routing (improper methodology)

A major deficiency is that there appears to be no standard definition for the tanker routing. In figure 12.1-1, page 12.1, Vol. 5 the wording "possible tanker route" is used without defining the meaning of "possible". This

routing is different from the routes depicted on page 1.7, Vol. 3B where the terms "north", "central", "direct", and "south" are used. From information presented in Vol. 3B, page 1.7 the north route would be chosen 58% of the time yet this route is not included in the shaded area in figure 12.1-1, page 12.1, Vol. 5.

A further descrepancy is found on page 1.50, Vol. 3B. The "primary route" is depicted in the northern region of Viscount Melville Sound and includes the area between Griffith Island and Resolute Bay (Resolute Passage) yet on page 12.1, Vol. 5 the route does not go through Resolute Passage. Clarification of the routing in this area is needed as it is a major hunting area, (See discussion under Resolute).

12.1 HUMAN AND ECONOMIC GEOGRAPHY

Demography (incomplete)

On page 12.3, paragraph 3, it is staed that there was a major movement of people toward a more urbanized life style. Information in support of this statement is lacking. The location of seasonal camps as stated on page 12.3 should be shown as their locations may be important when assessing possible impact of the ships passage through the area.

Subsidization (incomplete)

On page 12.3, paragraph 3, it is stated tha Inuit live in a highly subsidized social environment and that total subsidization of the Northwest Territories resident averages to be $7,000 and it is LIKELY to be higher in the Eastern Arctic. This section should be more specific. If it is higher, by how much?

Employment (incomplete)

On page 12.3, paragraph 5, it is stated that development of new sources of income should be a priority for the Eastern Arctic. These are identified as seamanship, communication, meteorology, ice reconnaisance and environmental monitoring. The report does not state if these activities have been discussed with the Eastern Arctic peoples or say how many jobs would be available to these people. If relocation is required what is the rotatinal scheme? What studies have been done concerning patterns of resource harvest to show what will be the impact of rotation. Data are needed on estimates of how many hunters would be required and when.

12.1.3 CURRENT NATIVE HARESTING

(incomplete)

It is stated on page 12.6, paragraph 1, that "nevertheless subsistence hunting remain important as a source of protein, cash and cultural indentity". Yet information in this section does not provide data from which to evaluate this statement. Tables indicating food value and cash value per settlement and a basis to examine the meaning of cultural indentity, should be presented.

On page 12.6, paragraph 1, it is stated that some Inuit have returned to permanent outpost camps. These settlements are not named and there is no indication of where they are. A map showing these settlements should be included as hunting activities and mobility between the outposts and major settlements may be affected by ship movement. For example, there is no mention of the new Resolute Bay outpost which has been established on the south side of Barrow Strait on Prince of Wales Island.

Harvest Levels (incomplete)

The section on harvest levels on page 12.7 is accurate concerning the presentation of data for 1975-78. It does not, however, refer to data that has been collected by the Baffin Region Inuit Association (B.R.I.A.) or a current Resolute Bay study started by the APP in January 1981. Numbers of annual harvests alone are not sufficient. Data on where and when animals were taken are needed to assess the impact of ship traffic.

Pond Inlet (incomplete)

On page 12.8 it states that "virtually all marine hunting activities by the Inuit of Pond Inlet occur in the Pond Inlet - Eclipse Sound and Navy Board Inlet area". However, in Fig. 2.5-2, pae 2.88, Vol. 3B and Fig. 2.5-4, page 2.89, Vol. 3B, the full extent of hunting areas includes Lancaster Sound. The difference between "core areas" indicated in Figs. 2.5-1 and 2.5-3, pages 2.88-89, Vol. 3B and "full extent hunting areas", should be explained.

The statement page (12.8) that there "seems to be no recent use of pack ice in Lancaster Sound" should be expanded. How recently and what areas beyond the core were used most frequently? In order to asess the impact of shipping or hunting activities it is important that more specific data be collected on numbers of hunters using the area and time of year of utilization. this informatin will be needed when attempting to work out a compensation policy for hunters.

Arctic Bay (imcomplete)

The same comments re: differences in "core areas" and "full extent of huntng areas" mentioned in the section on Pond Inlet, apply here as well. Information on the extent and timing of hunting activities is needed in order to assess impact. An indication of the number of animals killed near Lancaster Sound is also needed.

RESOLUTE

Routing (incomplete)

As stated correctly on page 12.9, hunting during the dark period is primarily carried out for ringed seals in the area bounded by Resolute Bay, Allen Bay and Griffith Bay. For this reason it is important to establish what will be the ship's route. If figure 12.1-1 on page 12.1, Vol. 5 portrays the actual routing, then the ringed seal hunting should not be affected during the dark season. However, if the primary route shown in Fig. 1.4-1, page 1.50, Vol. 3B is to be used then the impact of the passage of tankers upon the harvesting activities could be very high. A map showing the tanker route in the vicinity of Rsolute along with harvesting activity data should be included in order to help evaluate possible impact.

Musk-Oxen and Caribou Hunting (inaccurate)

The section on Resolute (page 12.10) suggests that most of the hunting out of Resolute is for seals and polar bears. What is not made explicit is that hunting trips are made to Somerset and Prince of Wales Islands for caribou and musk oxen. This is contrary to what is said in the first paragraph, page 12.10.

In order to assess the impact of the passage of tankers in Barrow Strait, information on number and routes of hunter crossings should be included. This information was collected by the APP for 1981 and is presented in at in a report entitled SHIP TRACK CROSSING submitted to the NEB.

Recurring Ice Cracks (incomplete)

PAGE 12.9. As much of the hunting takes place along the recurring cracks, a map showing the location of these cracks in the Barrow Strait vicinity should be presented. The effect upon the cracks was a subject of main concern expressed by the Inuit during the EARP hearings in Resolute 1980 and a map of these cracks is found in the Integrated Route Analysis APP.

Polar Bears (incomplete)

The information presented on page 12.9 implies that polar bears are taken mainly when ecountered en route to hunting areas on Somerset and Prince of Wales Islands. What is not mentioned is that Polar bears are hunted throughout Barrow Strait. More information should be included with respect to locations or polar bear kills and this information can be obtained from the G.N.W.T. and the Canadian Wildlife Service. The plotting of kills and location of hunting routes is essential for an impact assessment.

12.2 SCENARIO FOR FUTURE DEVELOPMENT

Ship Tracks (incomplete)

On page 12.10, it states that by the year 2000 there could be an average of one ship per day passing any point in the northwest passage. However, no further information is given regarding the number of ship tracks to be used (although it states on page 12.12 that special attention will be paid to this subject). Information is needed on how many times a ship would use the same track. This is important for several reasons:

1) A large number of ship tracks in the vicintiy of Barrow Strait could produce a high percentage of seal pup mortality during

the denning season. A decrease in seal pup production could have an effect on both seal hunting and polar bear hunting activities. This issue was brought up at the EARP hearing in Resolute in 1980.

2) The creation of a ship track, while not resulting in an impassable barrier, is nevertheless an inconvenience and requires extra time and effort on the part of the hunter during the crossings of the track. Numberous ship tracks in the immediate vicinity of Resolute during the late spring could be a problem and it is therefore necessary to know how many individual ship tracks are envisaged and where they might be located. The boundaries of the shipping corridor should be defined and descrepancies between Figure 12.1-1 and Figure 13.1-1 should be cleared up.

3) Another reason for knowing the number and distribution of ship tracks, is that this information will be needed when analysing how ship tracks may influence the spring break-up pattern in Barrow Strait. Different swaths cut through the ice in late spring and could accelerate break-up. Any change in break-up patterns woud have an important effect on resource harvesting.

Other Developments (incomplete)

On page 12.11, it states that "the Parry Channel region's economic future is not limited to non-renewable resource development" and that a viable small-scale fishing industry could provide employment. It also states that fishing lodges could add to the local economy. It does not state what work has been done to this end or on what basis such statements were made. Before persuing this idea, a feasibility study should be carried out identifying possible lakes and a study on carrying capacities should be done. Sport fishing does occur at Koluktoo Bay near Pnd Inlet but information for Resolute is lacking.

12.3 INTERACTION

hip Track (incomplete)

On page 12.12, it states that ship track studies have shown that the roken ice left behind ships tend to fill in the track under most conditions and reeze very quickly. It does not state under what conditions the ship track oes not fill in. When would this happen? How would this affect the crossings n Barrow Strait. What studies have been done during conditions where the ship rack did not fill in?

nderwater Noice (incomplete)

The question of underwater sound is only briefly mentioned on pages 2.12 - 12.13. This section should be expanded as the effect of underwater ound on harvesting activities has been voiced as a major concern by the Inuit. he noise levels produced from cavitating propellors at different power levels hould be specified. This is important in assessing the impact upon the various arine mammals. One important specie that should be identified here is the owhead whale as it is on the endangered species list. There is some fear that he sound signal produced by the cavitation will mask the communication signals etween the animals. A model which looks at the propogation of sound in Baffin ay is being developed for the APP. The model was explained at the NEB hearings n Ottawa.

hales in Ship Tracks (inaccurate)

The reference on page 12.13, to seals and whales following artificial eads, was discussed during the EARP hearings at Resolute and there is now eneral agreement that this would not take place as whales would be able to

ifferentiate between ice filled ship tracks and natural leads.

CHAPTER 13

BAFFIN BAY - DAVIS STRAIT COMMUNITIES

REENLAND

ackground (incomplete)

PAGE 13.3. In discussing the communities along the southwestern reenland coastline, the text states that most of the communities lie within the erritory's open water region and the reader is referred to Fig. 13.1.1, page 3.1. No information, however, is given concerning water and ice concentration n this map. In order to evaluate the impact of shipping or hunting activities, n ice map should be included. This is important especially for the communities n North West and North Greenland as hunting activities extend to the edge of he landfast ice.

Furthermore, neither map (Fig. 13.1-1 & Fig. 13.2-1) accurately portrays settlements along the coast. Only the capital of the administrative istrict are located and the smaller, more important hunting communities are not ncluded.

eneral Greenland Harvesting Activities (inaccurate)

On page 13.4, paragraph 2 (section 13.2.2), the last sentence should ead "fishing" instead of "hunting".

arine Mammals (incomplete)

PAGE 13.6. This section on hunting is incomplete. A more accurate

description of the hunt for the northern districts of Greenland should state that during the winter season, hunting is generally limited by the expanse of shore fast ice and the bay fast ice in Melville Bay. This ice is variable from year to year and during some years the hunting for polar bear is extended far out into Melville Bay. For this reason detailed ice information of Melville Bay should be included. To say that APP ships will not approach within 200 km of the polar bear hunting areas may not be true under certain circumstances. Information on ice conditions in Baffin and Melville Bays can be found in a study that was carried out by Arctic Sciences that was funded by the APP.

A description of the seasonal variation in hunting activities should also be included in this section.

A concern not mentioned in this section on marine mammals is that the ship's passage through northern Baffin Bay may have an important impact on the ringed seal population of the Greenland coast. As is mentioned in Vol. 3B, page 2.16, an estimated 150,000 to 200,000 ringed seals occupy the pack ice in Baffin Bay. Population studies on ringed seals done by L.G.L. for APP show that the population of seals being born along the Greenland coast may not be sufficient to sustain the present rate of coastal resource utilization and therefore the influx of seals from the pack ice is necessary to augment the coastal population of seals.

The Greenlanders have said that the seals migrate to the pack ice in spring and return to the coastal waters in the fall. The Greenlanders, fear, that the presence of ships in the pack ice will scare away the seals. As Greenlanders in the northern districts rely mainly on marine mammal hunting for their livlihood, they are afraid that their only source of income will be removed.

Studies carried out by the Danish consulting firm, Marin I.D., also suggests that the seals leave the coastal area of Greenland in the spring and return to the coast in the fall.

The concern that the Greenlanders have for the passage of ships near the Greenland coast has therefore not been sufficiently underscored. The Greenlanders are united against the APP and the Beaufort Sea Development and the Greenland parliament has passed legislation saying that they will always be against such projects as long as they threaten their livlihood.

The main objection is that the Greenlanders are not willing to take the risk of having their main way of making a living (marine renewable resource utilization) destroyed without a substitute to replace it. The threat of pollution through an oil spill is very real to them and the recent oil spill in the Melville Bay area by an American ship has been used by them as an example. The general feeling in Greenland is that a project such as the Beaufort Sea Development has nothing in it for them.

Not Mentioned (incomplete)

Another deficiency of the section of Greenland is that there is no mention of the Marine Environmental Co-operation Agreement that is being negotiated between Canada and Denmark. As the terms of reference include an avenue for international cooperation in environmental protection, it is essential that its terms and conditions be examined to ensure that Canadian committments are upheld.

Greenland Home Rule (incomplete)

Reference to the attainment of Home Rule is mentioned only in passing (page 13.4). This section should be expanded to include what are the jurisdictions of the Greenland Home Rule and what is the timing of the plan for Greenland sovereignty over resource development for the next 5 years. The information can be obtained in the DIAND document which examines Greenland Home Rule.

VOLUME 3B

ROUTING AND MARINE MAMMALS

WHALES 2.1.1

2.1.1.1 White Whales (improper methodology)

The last paragraph on page 2.3, Vol. 3B states that the migratin through Lancaster Sound occurs primarily along the south coast of Devon Island rather than in the middle of the Sound. Yet on page 1.14, Vol. 3B, page 1.50 Vol. 3B and page 13.1, Vol. 5, the ship routes are found along the south coast of Devon Island. This means that the ships would be sailing right through the major white whale migration routes. This route is also different from the latest route proposed in the APP Integrated Route Analysis (I.R.A.) document which shows the route located in the middle of the sound in order to avoid the whales.

2.1.1.3 Bowhead Whales (improper methodology)

The major inward migration of bowhead whales is along the north side of Lancaster Sound and the outward migration route is along both coastal areas. Therefore a coastal routing of the ship, as illustated on page 1.50, would have an impact on the bowhead migration.

The proposed routing for the APP L.N.G. ships is different in that the I.R.A. shipping corridor is presented as a narrow strip down the middle of Lancaster Sound. This is done to minimize the impact of shipping on the whales.

Walrus 2.1.2.1 and harp Seals 2.1.2.3 (improper methodology)

The same argument against the proposed routing for the Beaufort Sea Development ships can be put forward for walrus which migrate along the south coast of Devon and Cornwallis Islands (page 2.10) and for harp seals, most of which leave Lancaster Sound along the north side (page 2.13).

Narwhal 2.5.1.4 (inaccurate)

Muktuk is not whale fat but whaleskin.

Ringed Seals (incomplete)

The map in Fig. 2.1-7 page 2.17 should be extended to show the distribution of the estimated 200,000 seals found in Baffin Bay (KOSKI: 1980).

Also aerial surveys done for the APP by L.G.L. give information on the distribution of marine mammals in Davis Strait - Hudson Bay. This report has been submitted to the NEB and would be useful in determining optimal ship routing in this area.

REPORT QUALITY

Although it is stated that "A major component of the Beaufort Sea development scenario is the transportation of oil and gas by tanker to markets on the east coast of North America." (p.12.1, Vol. 5), the amount of material devoted to the Eastern Arctic region is extremely sparse. Detailed examination of the local economy, projected population growth, manpower demands and services, which appear to be well covered for the Beaufort Region, are barely discussed for the Parry Channel and the Baffin Bay - Davis Strait communities.

Accuracy in the cartographic presentations is also lacking as is seen in the different versions of the shipping corridor locaions and this has to be considered as a major deficiency in the report.

From the meagre information presented on the Parry Channel communities it is difficut to assess what would be the social and economic dislocations and what other problems or benefits might result from development in the Beaufort Sea.

There is also little clarification of how Industry is and will ensure that the Parry Channel communities are being informed or consulted regarding the Beaufort Sea development.

The information that is presented, however, is generally well written and is properly documented informing the reader very clearly as to what supporting material was used to write the sections.

The cartographic information for the number of hours travelled in Davis Strait is well presented but it should be noted that the map only represents Danish/Greenlandic travelling activities as travelling information on other nationals is difficult to obtain.

CONCLUSIONS

Parry Channel communities. To state that only the harvest activities of the Inuit of Resolute could be influenced by the frequent passage of tankers (page 12.9) would not be intirely correct. The extent to which noise would affect harvesting activities of Actic Bay is still unknown. Underwater sound studies sponsored by DIAND at the floe edge in Admiralty Inlet (1982) will be useful in evaluating the problem.

As also stated earlier, contrary to what is stated in the conclusions (and based upon studies carried out by the APP) the passage of ships does have a direct bearing on the harvesting of terrestrial animals as most of these animals are harvested on the islands to the south of Barrow Strait.

Given the wording for the conclusions stated in the Greenland section (pages 13.9-10) and the present available information, I agree that the offshore shhip routes willnot DIRECTLY interfere with the harvesting of marine mammals by Greenlanders. The same opinion is valid for the harvesting of coastal birds and the inshore fishery.

POLICY

As is stated on page 12.14, Vol. 5, DIAND should assume leadership in the long range planning for future development along the northwest passage.

DIAND should take the lead by establishing policy for remedial action and in particular should establish a compensation policy. In order to draw up the guide lines for such a policy an assessment of the pre-impact state is required.

With respect to resource harvesting, the information that is presently being obtained by B.R.I.A. is insufficient and additional data are required to assess the possible future impact on native resource harvesting. An administrative body should be set up to establish how and what data should be collected all along the northwest passage. The reviewer suggests that the required informatin should include location of animal captive, losses, timing and frequency of hunts and additional information on animal population dynamics.

The training program should be 'fleshed out' and the number of man hours for the Eastern Arctic should be estimated. Job identification and training should procede well before the project is in place. Training facilities for industrial employment and environmental monitoring should be established in the Eastern Arctic. The jobs that are selected for the training program should be those that are transferable trades in the event that the existing development scenario is not carried out.

The Canadian government should take note that although the Greenland government is opposed to Canadian mega projects such as the APP and the Beaufort Sea Development, Greenland is nevertheless looking at developing its own oil and gas industry.

While Industry has no specific measures to propose, with regard to Greenland (page 13.10, Vol. 5), at present the Canadian Government should take the lead in offering assistance to Greenland with respect to Canadian technical-logical know-how in arctic marine design and logistics and environmental impact assessment.

The prospects of the Greenland areas of Jameson Land and Peary Land becoming hydrocarbon producers are high and Premier Motzfeldt of Greenland has stated that his party (Siumut) would welcome the participation of Canadian oil firms with Arctic exploration and development experience. He has also stated that Greenland, for the next period, will become a normal industrial society.

It would be advisable for DIAND and External Affairs to arrange for visits to Greenland by Canadian businesses in order to discuss existing problems and pave ways for possible cooperation of technology exchange.

Such an exchange program could be funded by the Canadian International Development Agency if Greenland was added to the list of eligible regions (countries).

Technological exchange programs would be useful not only for establishing good relations with Greenland for security reasons, but also may serve to remove opposition against the Beaufort Sea Development.

G. Parsons

Deficiency Identification: Chapter 14, Vol. V of Beaufort Sea Environmental Impact Statement (Subject: Alaska)

1. Inadequate identification of sources: some implications

One of the outstanding deficiencies is in the citing of references. There are at least 50 citations in the text of Chapter 14 which do not appear in the following list of references. Since in accordance with common practice the textual citations are themselves incomplete, it is impossible to identify sources of information or to make adequate judgements about their reliability or accuracy.

At least 18 of the sources mentioned in the text are attributed to personal communications rather than to published materials. No less than eleven of these personal communications are attributed to a J. Burns, whose name does not appear either in the list of references or in a separate list of personal communicants on page 15.11. Yet it is largely on the strength of these personal communications with J. Burns and a few others, likewise unidentified, that we are informed of the numbers of white whales, walruses, seals, polar bears, and other animals taken annually by residents of the Alaskan communities of Wainwright, Point Lay, Barrow, and Kaktovik. By searching in a reference list in the middle of Volume 3A, one can find J. Burns identified as an official of the Alaska Department of Fish and Game, but this is not much help to the reader of Volume V.

In summary, reference lists are scattered throughout each of several volumes, and references which appear in one volume are not repeated in others where they are again used. A more scholarly approach would have been to include a single complete list at the end of each volume, supplemented as necessary by footnotes or, better still, by end-notes to individual chapters. The inadequate identification of sources seriously affects readability, constitutes a failure to conform with generally accepted research practice, and tends to call into question the reliability of the data presented.

2. Some Questions of Fact

(a) The North Slope Borough is said to have a population of 9,000 (p.14.2). However, figures published by the Borough administration in 1979 show that there were 4,305 permanent residents in 1978. It cannot be that the authors of Volume V had more recent information, otherwise they would not have used 1977 population figures for individual communities within the Borough. Inclusion of the highly transient population at Prudhoe Bay could not account for the discrepancy, and in any case, would be misleading.

(b) It is stated that "communities on the Chukchi Sea, such as Point Hope and Kotzebue, are not part of the North Slope Borough" (14.3). Point Hope is in fact within the Borough, while Kotzebue is not. Since Point Lay and Wainwright also are on the Chukchi Sea, the suggestion is that they are not part of the Borough, whereas in fact they are.

...3

(c) Speaking in the context of marine resource harvesting activity, Chapter 14 states that because they would operate "well offshore",* "it is, on the whole, unlikely that the tankers would have any effect on coastal activities close to shore"(14.2). However, Figure 14.1-1 shows a possible tanker route within about 30 miles of Point Barrow, and figure 14.1-2 shows that the Barrow people normally hunt whales as much as 50 miles offshore. The text further states that "once through the Bering Strait, (tankers) would steer a course due southward"(14.2), the implication being that from Bering Strait south there would be no impact on "activities occurring close to shore". This ignores the fact that such a route cuts right through the Aleutian Islands, where there is substantial commercial and subsistence hunting and fishing activity.

(d) Pages 14.6 through 14.9 discuss Bering Sea offshore and inshore commercial fisheries, but fail to provide quantitative data either in terms of monetary value or magnitude of catch. This oversight seems particularly serious in view of the contribution of commercial fishing to the economy of the State of Alaska, and its significance for the livelihoods of many hundreds of rural Alaskans, Native and non-Native,

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* This may be more difficult than it is made to sound. By contrast, Volume 3A (p.1.19) points to the extremely difficult ice conditions on Alaska's north coast and states that "year round navigation... largely depends on the degree to which the dominant, recurring east-west lead systems near the 30 m isobath can be safely used".

...4

living on the Bering Coast. Statistics are available from Alaska government and other sources that would serve to describe the fisheries in quantitative terms and on a regional basis, and a few such figures should have been included.

3. Social and Political Implications of an Alaskan Coastal Tanker Route

Chapter 14 acknowledges that there has been "some controversy" in Alaska over petroleum exploration and development activity, present and proposed, on the Outer Continental Shelf (OCS), and adds that "the direction that the OCS program takes could have a bearing on the view taken toward the possible movement of Canadian icebreaking tankers in Alaskan waters"(14.1). The discussion then sets "such political issues aside"(14.2), as if they were of rather minor importance. On the contrary, it could be argued that these "political issues" are among the most important that would have to be addressed if a decision were made to move oil by tanker around the Alaskan coast. It is not a question whether the State's OCS program could have a bearing on local perceptions of such a proposal: the possibility of a Canadian tanker route is already in the public consciousness on the Alaska North Slope and is closely tied to the perceived threat to subsistence hunting and fishing posed by the State's own OCS development.

The political and litigational responses of the North Slope Borough Government to perceived threats to subsistence hunting and fishing as these relate to offshore petroleum development have for years

been strong, determined, and sophisticated. Borough officials have used every means to mobilize public opinion against OCS development and to influence the policies and actions of the federal and state governments to their own advantage. The Borough has already directed its attentions to activity in the Canadian Beaufort, and in fact it was offshore drilling by Dome that helped to motivate the former Borough Mayor to initiate the first Inuit Circumpolar Conference in 1977. The proponents of an Alaskan tanker route out of the Canadian Beaufort will have a selling job to do on the North Slope, and probably in Juneau and Washington as well.

George F. Parsons,
Senior Analyst,
Circumpolar Affairs,
Northern Research Division.

November 3, 1982.

UNIVERSITÉ DE MONTRÉAL
Département de démographie

Le 30 novembre 1982

Monsieur Donat Savoie, Chef
Division de la recherche
sociale nordique
Ministère des Affaires indiennes
et du Nord canadien
Ottawa (Ontario)
K1A 0H4

Cher Monsieur,

Conformément à ce qui était convenu, voici l'"Evaluation des aspects démographiques du Beaufort Sea - Mackenzie Delta Region Environmental Impact Statement".

Espérant le tout à votre entière satisfaction, je vous prie d'agréer, cher Monsieur, l'expression de mes sentiments les meilleurs.

Norbert Robitaille

Norbert Robitaille
Professeur agrégé

Pièce jointe

NR/dh

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Evaluation des aspects démographiques du
Beaufort Sea - Mackenzie Delta Region
Environmental Impact Statement

Le but du présent travail est d'évaluer les aspects démographiques du Beaufort Sea - Mackenzie Delta Region Environmental Impact Statement (1982) (BMEIS). Pour ce faire nous comparerons ce qui était requis dans The Beaufort Sea Hydrocarbon Production Proposal (février 1982) (BSHPP), à ce qui a été produit dans le premier document mentionné en respectant autant que possible les directives du Beaufort Sea EIS Review Format. Nous ne nous enfermerons cependant pas dans l'évaluation du BMEIS et suggérerons parfois certaines analyses non requises par le BSHPP qui à notre avis amélioreraient le BMEIS.

C'est le volume 5, Socio-Economic Effets qui traite entre autres choses des aspects démographiques et c'est principalement à lui que nous référerons dans les pages qui suivent. Nous traiterons également, en terminant, du volume 7 Research and Monitoring. Il s'agira pour ce volume d'une démarche un peu différente puisqu'il s'agit dans ce volume de suggérer des recherches pour suivre et évaluer les conséquences des développements envisagés.

Volume 5 Socio-Economic Effects

1. Identification des insuffisances

Le Beaufort Sea Hydrocarbon Production Proposal (BSHPP) demandait essentiellement dans un premier temps que soit décrite la situation démographique des régions impliquées. Cette description devait se faire au niveau des communautés (BSHPP No. 2.3.3). Il était même mentionné dans l'annexe C.1 que l'on devait trouver dans cette analyse des taux de natalité et de mortalité. Dans un second temps, le BSHPP demandait une description de l'avenir de ces mêmes populations advenant le développement de l'exploitation des hydrocarbures (no. 2.4.4.1).

1.1 Description de la population

Dans le chapitre 4 du BMEIS qui traite des communautés de la région de la mer de Beaufort, si on donne les effectifs de naissances et de décès par

communauté, on ne parle cependant jamais des taux de natalité ou de mortalité. Dans les chapitres 10, 11, 12, 13 et 14 traitant des autres régions impliquées, il n'est même plus question de naissances et de décès. De façon analogue, on demandait dans l'annexe C.1 du BSHPP (p. 40), la distribution selon l'âge, le sexe et l'origine ethnique de ces mêmes populations. On répond à cette exigence de façon adéquate pour Inuvik (p.4.3) et Tuktoyaktuk (p.4.20) en fournissant une pyramide des âges de la population. Dans le cas des communautés de la vallée du Mackenzie on y répond de façon différente en donnant la population pour 4 grands groupes d'âges. Pour les autres populations, on ne trouve que des indices de la structure par âge insatisfaisants.

Le problème de l'absence d'informations adéquates concernant l'accroissement naturel et la structure par âges est la conséquence du fait que les informations démographiques sont fournies au niveau des communautés. Il s'ensuit que l'on présente des données aussi détaillées et non significatives que le nombre de décès à Sachs Harbour en 1978 (0), en 1979 (1) et en 1980 (0). Cette option de présenter les données au niveau des communautés étant prise, il était logique que l'on n'aille pas jusqu'à calculer des taux de natalité et de mortalité avec d'aussi petits nombres. Cependant, en négligeant ces informations on ne donnait aucune information sur les facteurs qui font évoluer la population. Le même type de raisonnement pourrait tenir en ce qui concerne l'évolution de la structure par âge.

Notre suggestion, pour pallier cette difficulté consisterait à présenter l'analyse de la population dans une section distincte. Il serait ainsi possible de procéder à une analyse minimale de l'évolution de la population en travaillant sur des effectifs plus importants. Il serait ainsi très intéressant de disposer des taux de mortalité, de natalité et d'accroissement naturel pour l'ensemble des populations des régions affectées par les différents projets. On pourrait éventuellement estimer ces mêmes variables pour les populations autochtones, ou pour les agglomérations les plus importantes en regroupant par ailleurs les unités plus petites. De la même façon on pourrait présenter la structure par âge de façon détaillée pour l'ensemble de la popu-

lation et pour les grandes agglomérations (par groupe quinquennal d'âge par exemple) tandis que pour les plus petites unités, un indice plus sommaire pourrait être présenté (% des moins de 20 ans par exemple).

Cette façon de procéder requerrait une meilleure coordination entre les différentes personnes qui ont exécuté ce rapport. Le manque de coordination entre les différentes parties de ce rapport est un autre reproche que l'on peut faire à celui-ci. Ainsi, aux pages 8.1 et 8.2, dans la section traitant de la mer de Beaufort, on prévoit pour Inuvik en 1990 une population de l'ordre de 10 000 personnes. Par ailleurs, pour cette même ville, on prévoit à la page 11.16 pour une date équivalente environ 900 personnes de plus que la population actuelle, ce qui fait une population totale de l'ordre de 4 000 personnes. Ces différences sont sans doute dues au fait que les prévisions de population pour la région de la mer de Beaufort et celles concernant la vallée du Mackenzie ont été faites par des équipes différentes qui n'ont pas tenté d'expliquer les différences d'effectifs auxquels ils arrivent.

1.2 Prévision de la population en l'absence d'exploitation des hydrocarbures

Sans que soient explicitement demandées des prévisions de la population on demandait néanmoins à la page 14 du BSHPP "une prédiction des conditions socio-économiques pour l'an 2000 en l'absence du développement proposé". Cette projection esquissée au chapitre 6 page 6.1 me semble faible et sans imagination, si on la compare aux autres parties faisant état de la situation advenant le développement de l'exploitation des hydrocarbures. La faiblesse de ces projections est en partie due au manque d'analyse démographique (calcul des taux de natalité, de mortalité, d'accroissement naturel). Une telle analyse aurait, à notre avis, mis en lumière l'important potentiel de croissance démographique de la population autochtone qui est vraisemblablement très jeune.

1.3 L'avenir des populations advenant le développement de l'exploitation des hydrocarbures

Ce genre de projections est toujours très imprécis. Les résultats dépendent habituellement beaucoup plus des hypothèses que du modèle employé pour faire les projections. Comme ces hypothèses sont soumises à bien des aléas, ces prévisions sont rarement bonnes. Il aurait été intéressant que l'on tente de donner une idée de la précision que l'on peut attendre de prévisions que l'on a faites. Une façon de faire ce travail aurait été de critiquer davantage les indices inclus dans le modèle. Par exemple, le multiplicateur de 2.071 (Employment Multiplier) page A2 n'est que très peu critiqué. On n'a pas d'information sur la manière dont il a été calculé et sa source est imprécise. Pourtant son importance est capitale. Il en va de même du 3,74 personnes par familles de la page suivante qui à première vue nous semble fort.

2. Qualité du rapport

Ce rapport contient une bonne quantité d'informations démographiques. Son principal défaut est à notre avis son hétérogénéité qui rend difficiles les comparaisons. Nous avons déjà parlé de la difficulté d'avoir une idée globale de la structure par âge de l'ensemble de la population. Comment alors savoir si une région est plus jeune ou âgée que l'ensemble? Il en va de même de la natalité ou de la mortalité que l'on connaît mieux par ce rapport pour Sachs Harbour que pour Yellowknife pour laquelle aucune information n'est donnée pour les naissances ou décès.

Il existe également un autre type d'hétérogénéité. Alors que la situation actuelle de la population est présentée par communauté, la population future est présentée pour des unités différentes. Il est alors difficile de voir l'impact du développement des hydrocarbures sur la population dans son ensemble.

Dans l'ensemble le rapport présente d'une façon simple et claire les données démographiques. Tableaux et graphiques se lisent aisément. Chaque partie semble en général bien faite mais c'est lorsque l'on tente de faire des synthèses que les problèmes se posent.

3. Les conclusions

Les aspects démographiques de cet ouvrage sont de trois ordres.

Tout d'abord la partie descriptive n'a pas donné lieu à une analyse de telle sorte qu'il est difficile d'être en accord ou en désaccord avec elle.

Pour ce qui est des prévisions en l'absence de développement, elles sont très peu articulées et fondées sur la faible capacité de support du milieu. Cependant, alors que pour l'éventualité d'une exploitation extensive des hydrocarbures on prévoit jusqu'au type d'habitations (maisons mobiles, semi-détachées (p. 8.2)), dans le cas de l'absence d'un tel projet, on ne prévoit même pas d'effectifs. Quant aux perspectives qui sont faites en tenant compte des divers projets de développements, il y a dans ce rapport des résultats intéressants qui gagneraient cependant à être discutés davantage afin d'avoir une idée de la précision que l'on peut attendre d'eux. Une façon de procéder pourrait être d'appliquer la méthode utilisée de même que les multiplicateurs sélectionnés à un autre chantier pour lequel on connaîtrait les effectifs globaux induit par un apport important de main-d'oeuvre. On pourrait ainsi, en comparant la population "prévue" à la population observée, avoir une idée de l'importance de l'erreur que l'on peut commettre en procédant comme on l'a fait.

Enfin un dernier point, plus général, nous a frappé. Ce rapport tente de faire la preuve qu'étant donné le niveau actuel d'exploitation des ressources renouvelables, et leurs limites, le développement de l'industrie de l'extraction des hydrocarbures est une bonne chose. A notre avis, il ne fait pas de doute qu'une certaine extraction des hydrocarbures est souhaitable. Le problème est selon nous de savoir à quel rythme doit se faire cette exploi-

tation. Ce problème du rythme de l'exploitation n'est qu'effleuré dans ce rapport. Il serait intéressant de poser différemment la question de l'opportunité du développement des hydrocarbures en la formulant de la façon suivante par exemple: Pour les populations autochtones (ou du Nord) est-il plus souhaitable de construire un pipeline maintenant ou dans dix ans? Ceci soulèverait la question du rythme de l'exploitation qui, à notre avis, est primordiale.

Volume 7

Les auteurs du rapport sont très prudents quant au contenu et au calendrier d'éventuelles recherches pour évaluer les conséquences du développement d'une extraction intensive des hydrocarbures. Je suis d'accord avec eux pour dire que les communautés doivent être étroitement associées à ces recherches. Cependant nous croyons qu'il faudrait faire quelques suggestions.

Tout d'abord, pour pouvoir élaborer un système qui puisse suivre les conséquences des développements envisagés, il faut imaginer quelles pourront être ces conséquences.

La principale conséquence d'un apport important de nouveaux venus dans le Nord risque d'être une minorisation des autochtones et éventuellement leur assimilation. Ce risque est d'autant plus important que les effectifs impliqués sont petits. Il nous semble donc extrêmement important de suivre l'évolution des effectifs des groupes autochtones et de l'ensemble de la population du Nord. Deux types de solutions sont envisageables pour suivre l'évolution de ces communautés.

La plus classique consiste à effectuer des recensements périodiquement. C'est ce qui se fait actuellement dans le Nord comme d'ailleurs dans le reste du pays. Il s'agit là d'un moyen qui a l'avantage d'être déjà établi. Cependant, la périodicité de ces recensements est assez faible (5 ou 10 ans suivant les variables) de telle sorte que le suivi est parfois assez lent. Par exemple, la

dernière information disponible actuellement en ce qui concerne l'origine ethnique date de 1971. Je pense que si on s'en tient à cette méthode classique pour suivre les conséquences du développement de l'extraction des hydrocarbures, il faudrait envisager de poser dans le Nord les questions concernant l'origine ethnique de même que la langue usuelle à tous les cinq ans et non à tous les dix ans comme c'est le cas actuellement. De plus, il serait important de mettre des fonds à la disposition des chercheurs pour que les données recueillies soient analysées. Il serait également envisageable, pour suivre plus précisément l'évolution des différents groupes d'effectuer des enquêtes intercensitaires. Cette façon de procéder pourrait permettre de suivre assez bien l'évolution des effectifs. Cependant elle n'éclairerait pas parfaitement les composantes des variations de ces effectifs.

Une approche plus audacieuse mais combien plus efficace consisterait à élaborer un registre de la population de toute la région touchée par les projets et éventuellement de tout le Nord du pays. Les populations impliquées n'étant pour le moment pas très nombreuses, la constitution d'un tel registre serait possible. Ce registre qui ne peut être implanté qu'avec la collaboration des habitants du Nord pourrait comprendre des informations sur la date de naissance, le sexe, l'origine ethnique, la langue parlée habituellement à la maison, la langue maternelle, les langues comprises, le lieu de résidence, le nom des parents, enfants, conjoints etc. A l'aide de ce registre les communautés pourraient suivre au fur et à mesure l'évolution de leurs effectifs. De plus, le grand avantage de cette seconde approche est de permettre de bien isoler les composantes de l'accroissement ou de la décroissance des communautés ou groupes ethniques. Les solutions que l'on peut apporter à différents problèmes que peuvent rencontrer les groupes peuvent ainsi être beaucoup plus adaptées, plus spécifiques, donc plus efficaces. De plus, un registre de population, s'il est conçu de façon adéquate, peut s'avérer un excellent moyen de planification.

Cette dernière solution quoique des plus intéressantes à notre avis n'en demeure pas moins pleine d'embuches et elle ne doit être envisagée qu'avec le support des communautés impliquées. On devrait de plus être des plus prudents

dans le choix des variables à inclure dans cet éventuel registre, pour éviter qu'il ne serve à des fins autres que celles pour lesquelles il aurait été créé et pour qu'il puisse être convenablement tenu à jour.

Evaluation of the demographic aspects of the Beaufort Sea-Mackenzie Delta Region Environmental Impact Statement

The purpose of this paper is to evaluate the demographic aspects of the Beaufort Sea-Mackenzie Delta Region Environmental Impact Statement (1982) (BMEIS). To do so, we shall compare what was asked in the Beaufort Sea Hydrocarbon Production Proposal (February 1982) (BSHPP) with what was produced in the first-mentioned document, following as closely as possible the directives of the Beaufort Sea EIS Review Format. We shall not, however, confine ourselves to an evaluation of the BMEIS. At times, we shall suggest certain analyses not required by the BSHPP which, in our opinion, would improve the BMEIS.

It is Volume 5, Socio-Economic Effects, that deals with the demographic aspects, among others, and it is mainly the one to which we shall refer in the following pages. We shall also deal, in conclusion, with Volume 7, Research and Monioring. A slightly different approach will be taken to this volume since it contains suggestions as to research on following and evaluating the effects of the planned developments.

Volume 5 - Socio-Economic Effects

1. Identification of the shortcomings

The Beaufort Sea Hydrocarbon Production Proposal (BSHPP) essentially asked first of all for a description of the demographic situation in the regions involved, which was to be made at the community level (BSHPP No 2.3.3). It was even mentioned in Appendix C.1 that birth and death rates were to be dealt with in the analysis. Secondly, the BSHPP asked for a description of the future of the said populations, should

hydrocarbon production be developed (NO 2.4.4.1).

1.1 Description of the population

In Chapter 4 of the BMEIS which deals with the communities in the Beaufort Sea region, although birth and death data are given by community, no mention is ever made of death and birth rates. In Chapters 10, 11, 12, 13 and 14 dealing with the regions involved, births and deaths are no longer even mentioned. Similarly, Appendix C.1 of the BSHPP (p 40) asked for a breakdown by age, sex and ethnic origin of this population. This requirement was adequately answered for Inuvik (p 4.3) and Tuktoyaktuk (p 4.20) by providing an age pyramid of the population. In the case of the Mackenzie Valley communities, a different reply was provided by giving the population for four major age groups. For the other populations, only unsatisfactory indices of the age stucture were given.

The lack of adequate data on natural increase and age structure is due to the fact that the population statistics are provided at the community level. It therefore follows that such detailed and insignificant information as the number of deaths in Sachs Harbour in 1978 (0), in 1979 (1) and 1980 (0) is given. Since it was decided to give data at the community level, it was logical that the birth and death rates were not calculated for such small numbers. However, since those statistics were overlooked, no information was given on the factors that influence population growth. The same type of reasoning might hold true for changes in age structure.

To overcome this difficulty, we suggest that the population analysis be presented in a separate section. A minimal analysis of population changes could be made by working with larger numbers. It would thus be very interesting to have death, birth and natural increase rates available for the population of all the regions affected by the various projects. These same variables could possibly be estimated for the native

population or for the largest communities by grouping together small units. Similarly, the age structure could be presented in detail for the population as a whole and for large communities (by five-year age group for example) while, for the smaller units, a more succinct index might be given (percentage of under twenty-year-olds for example).

This procedure would require better co-ordination among the various persons who prepared the report. Another criticism that might be directed at the report is that very lack of co-ordination. For example, on pages 8.1 and 8.2 in the section dealing with the Beaufort Sea, it is estimated that in 1990, Inuvik will have a population of roughly 10,000. Yet, for this same community, it is estimated on page 11.16 that by 1990, the population would increase by 900 over the current figure, which would give a total of roughly 4,000. These differences are undoubtedly due to the fact that population forecasts for the Beaufort Sea region and for the Mackenzie Valley were made by different teams who made no attempt to explain the differences in their figures.

1.2 Population forecast if there is no hydrocarbon production

Without population forecasts being explicitly asked for, a request was nonetheless made on page 14 of the BSHPP for a prediction on socio-economic conditions for the year 2000 in the absence of the proposed development. The projection outlined in Chapter 6, page 6.1, seems to me poor and unimaginative when compared with the other sections describing the situation in the event hydrocarbon production is developed. These projections owe their weakness partly to the lack of population analysis (calculation of birth, death, natural increase rates). In our opinion, such an analysis would have highlighted the large population growth potential of the native population which is very likely very young.

1.3 The future of the population in the event hydrocarbon production is developed

This type of projection is always very imprecise. The results usually depend much more on hypotheses than on the model used for making the projections. Since such hypotheses are subject to many uncertainties, such forecasts are rarely good. It would have been interesting had an attempt been made to give an idea of the degree of accuracy that might be expected. One way to do that would have been to find greater fault with the indices included in the model. For example, there is only slight criticism of the employment multiplier of 2.071, page A2. There is no information on how it was calculated and its source is unclear. Yet it is of capital importance. Such is the case for 3.74 persons per family on the following page, which at first glance seems high to us.

2. Quality of the report

The report contains a good amount of population data. Its main shortcoming, in our opinion, is its heterogeneity which makes comparisons difficult. We have already spoken about the difficulty in getting an overall idea of the age structure of the population as a whole. Therefore, how can we find out whether one region is younger or older than the regions as a whole? Such is the case as well for births and deaths which are better reported for Sachs Harbour than for Yellowknife for which no data on births and deaths are presented.

There is another type of heterogeneity as well. While the current population situation is given by community, the future population is given for different units. It is therefore difficult to see the impact of hydrocarbon development on the population as a whole.

Generally speaking, the report presents population data simply and clearly. Tables and graphs are easy to read. Each

part generally seems well prepared but it is when attempts to synthesize are made that problems arise.

3. Conclusions

The demographic aspects of this work fall into three categories.

First of all, no analysis issued from the descriptive part, with the result that it is difficult to either agree or disagree with it.

The forecasts, if there is no development, are expressed very poorly and based on the environment's poor supportive capacity. However, on the one hand, should extensive hydrocarbon production occur, forecasts are given even for the type of housing (mobile and semi-detached homes (p 8.2)); on the other hand, failing such projects, not even population forecasts are given. As for the outlook, in the event of development projects, the report contains interesting results which could be greatly improved, however, through further discussion so as to get an idea of what to expect with regard to their accuracy. One method might be to apply the same method and multipliers to another worksite for which overall figures are known owing to a major influx of manpower. Thus, by comparing the population "forecasted" with the population observed, it would be possible to get an idea of the size of error that may be made by using such a procedure.

Lastly, we were struck by a final, more general point. The report attempts to prove that, given the present level of development of renewable resources, and their limits, the development of the hydrocarbon extraction industry is a good thing. In our opinion, some hydrocarbon extraction is undoubtedly desirable. We feel that the problem is to determine at what pace such development should take place. This problem is only lightly touched upon in the report. As to the advisability of

hydrocarbon development, it would be interesting to ask the question differently by wording it as follows: Where the native (or northern) peoples are concerned, would it be better to construct a pipeline now or in ten years? This would raise the question of the pace of development which, in our opinion, is of prime importance.

Volume 7

The authors of the report are very cautious when it comes to the content and schedule of possible research to evaluate the effects of the development of intensive hydrocarbon extraction. I agree with them in that the communities must be closely involved in that research. However, we feel a few suggestions are in order.

First of all, in order to be able to develop a system that can follow the impact of the planned developments, it is necessary to draw a mental picture of what that impact may be.

The main effect of a large influx of newcomers to the North is that the natives may become the minority and possibly even be assimilated. This risk is all the greater when the people involved are few in number. It therefore seems to us extremely important to follow changes in the native population and the northern population as a whole. Two types of solutions are possible for following changes in those communities.

The more traditional is to conduct a census periodically. This is what is done now in the North as elsewhere in the country. An added advantage is that the method is already established. However, such a census is held rather infrequently (five or ten years depending on the variables) so that the follow-up is sometimes rather slow. For example, the latest information available now on ethnic origin dates back to 1971.

I think that if this traditional method continues to be used to follow the effects of the development of hydrocarbon extraction, plans should be made to ask, in the North, questions on ethnic origin and usual language every five rather than ten years as is the case now. In addition, funds should be made available to researchers so that the data gathered will be analysed. In order to follow more accurately changes in the various groups, intercensal surveys should also be considered. Under this procedure, population changes could be followed fairly closely. However, it would not clearly define the components of the variations in that population.

A bolder but how much more effective approach would be to establish a population registry for the entire region affected by the projects and eventually for the entire northern part of the country. Since the populations involved are not large in number at the present time, the establishment of such a registry would be possible. This registry, which could be set up only with the co-operation of northern residents, might include information on the date of birth, sex, ethnic origin, language usually spoken at home, mother tongue, languages understood, place of residence, name of parents, children, spouse and so on. With the help of this registry, the communities could follow population changes as they took place. In addition, the major advantage of this second approach is that the components of the growth or diminution of ethnic communities or groups can be isolated. Much better adapted, more specific and therefore more effective possible solutions to the various problems encountered by the groups could thus be offered. Furthermore, a population registry, if it is properly designed, may turn out to be an excellent planning tool.

This latter solution, although the most interesting in our opinion, nonetheless is full of pitfalls and should be envisaged

only if the communities involved give their support. The greatest caution should, furthermore, be exercised in choosing the variables to be included in the registry so that it will not serve purposes other than those for which it was presumably created and so that it can be properly updated.

November 30, 1982

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Government of Canada / Gouvernement du Canada

MEMORANDUM / NOTE DE SERVICE

Mona Evans: Research Officer
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Nov 9

FROM / DE

Dave Sherstone
Inuvik Scientific Resource Centre

SECURITY - CLASSIFICATION - DE SÉCURITÉ

OUR FILE/NOTRE RÉFÉRENCE

YOUR FILE/VOTRE RÉFÉRENCE

DATE
November 3, 1982

SUBJECT / OBJET SOCIO-ECONOMIC EFFECTS - BEAUFORT SEA E.I.S.

Basically I agree with the thrust of the proponents proposal, particularly on the subjects of education vs. job opportunities for northerners and the present cultural and economic structure of society within Beaufort Sea Communities. Once one discards the myth of "... living in harmony with nature ...," and "... living off the land ..." (arguments which were fallacious even prior to the Berger Inquiry) then it becomes a matter of controlling development rather than discussions of whether development will proceed.

Since my background is predominantly confined to the Western Arctic I have examined only those portions of the Environmental Impact Statement (E.I.S.) which fall within this region.

I think the proponents have done an adequate job in identifying impacts within the Inuvik and Tuktoyaktuk areas. What does concern me is that the predictions are based on fairly large numbers of persons (approximately 22,000 at peak). I wonder how valid these numbers are? They appear extremely high, but indicate that Inuvik will face significant pressures as population expands. These impacts must be addressed by the Town of Inuvik and the Government of the Northwest Territories, and not by the proponents.

In the time available for review my concerns centred around two areas; the road network required over the life of the project, and the proposed developments along the Yukon Coast at Stokes Point and King Point.

ROAD NETWORK

Little detailed examination of road transportation appears in the E.I.S. Discussion of the role of the Dempster Highway suggests that it is of peripheral interest to the oil and gas industry (Vol. 5, p. 10.9). The E.I.S. suggests demands from residents will force upgrading of the roads, yet the report also indicates that during 1981 Dome contracted trucks were one of the major users of the Dempster Highway.

There are also suggestions that demands for completion of the Mackenzie Highway and construction of the Inuvik - Tuktoyaktuk roads will result from regional development (Vol. 5, p. 8.14). If these roads are not critical to Beaufort Sea oil and gas development then why would they be completed and/or upgraded? It seems unlikely that an Inuvik - Tuktoyaktuk road would not prove valuable to resource developers in the Tuktoyaktuk - McKinley Bay area.

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Development at King Point and/or Stokes Point requires a road network. The proponents require an all weather road from King Point to connect to a gravel source 53 km south, at Mount Sedgewick (Vol. 2, p. 5.28). They further suggest a road linking Stokes Point, King Point and the Dempster Highway at Fort McPherson (Vol. 2, pp. 5.28 and 5.39). If such a road is desirable then the existing and currently proposed road network must play a critical role in oil and gas development within the region.

My suggestion to your review group would be that the proponents should identify their projected demand for the Dempster Highway. They should further identify what demand (if any) exists within their operations for completion of the Mackenzie Highway and should be prepared to estimate their utilization of any Inuvik - Tuktoyaktuk connector road.

In the case of a Stokes Point - Kay Point to Fort McPherson road the question would be, who is expected to build and maintain the road? Is it to be a private road (as in the Alyeska Pipeline Haul Road) or is it expected that the Government of the Northwest Territories and the Yukon Territorial Government will be responsible? An immediate corollary to this is the question of a road to Aklavik thus bringing this settlement into the northern roads network. Such a possibility has been ignored by the E.I.S.

YUKON COAST DEVELOPMENT

Discussed briefly in Chapter 5 of Volume 2 (p. 5.37 to p. 5.31) the socio-economic impacts of development at King Point and Stokes Point are ignored in Volume 5. These would not be severe but would be predominantly related to natural resource harvesting.

The impacts of road construction along the west side of the Delta have been ignored as they relate to wildlife resources, wildlife harvesting and the impact of road access close to Aklavik. As an example, a public road which connected Fort McPherson to the Yukon coast would provide easy access to the Canoe Lakes area for hunters and trappers from McPherson. If a road link is not also made to Aklavik, local residents might find themselves effectively cut-off from traditional hunting and trapping areas.

If Aklavik is connected to this new road then an additional ferry will be required on Peel Channel to link the present townsite to the road network.

Additionally the proponents indicate that the gravel source at Mount Sedgewick will be used as a regional source, with material being removed by ship to other Beaufort Sea project sites. This would mean significant road traffic along the haul road. Is this area a major Caribou migration or grazing area? The gravel pit and haul road may have a greater environmental impact than developments concentrated at King and Stokes Points.

SUMMARY

Briefly my points are;

1. The proponents appear to be committed to moving significant quantities of material by road,

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2. Demands on present roads are greater than the proponents admit,
3. No priority for proposed road extension has been established,
4. No socio-economic impact has been done on the proposed road down the western side of the Delta,
5. No clear development proposal has been stated for Yukon coast sites.

* * * *

I trust the above information is useful to your group in preparation of its brief. If you require further clarification of any of the above data please contact me.

Dave Sherstone

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