Sierra Club of/du Canada

April 16, 2004

Todd Burlingame
Executive Director
Mackenzie Valley Environmental Impact Review Board
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Re: Mid-Level Environmental Assessment – Mackenzie Gas Project

Dear Mr. Burlingame:

I am pleased to enclose the joint submission of Sierra Club of Canada (SCC) and Canadian Nature Federation (CNF) to the Mackenzie Valley Environmental Impact Review Board with respect to the mid-level environmental assessment of the Mackenzie Gas Project (MGP).

Both of our organizations regret that we were unable to participate in the MVEIRB's hearings in the Mackenzie Valley. We take the view that your work in determining the level of public concern about the MGP and scoping the project and the assessment is very important.

Sincerely,

Elizabeth May
Executive Director

Encl.

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MID-LEVEL ENVIRONMENTAL ASSESSMENT OF THE MACKENZIE GAS PROJECT

SUBMISSION TO THE MACKENZIE VALLEY ENVIRONMENTAL IMPACT REVIEW BOARD

Sierra Club of Canada
Canadian Nature Federation

April 16, 2004

Introduction

This joint submission on behalf of Sierra Club of Canada and Canadian Nature Federation addresses three issues relevant to Mackenzie Valley Environmental Impact Review Board's hearings on the mid-level environmental assessment of the Mackenzie Gas Project (MGP):

- The level of public concern about the MGP and whether the project should be referred to a joint panel review as envisaged under the Cooperation Plan signed by environmental assessment boards and other agencies;
- The scope of the project to be assessed by the joint panel review; and
- The scope of the assessment by the joint panel review.

Short descriptions of Sierra Club of Canada (SCC) and Canadian Nature Federation (CNF) follow first.

The Sierra Club has been active in Canada since 1969. Its mission is to develop a diverse, well-trained grassroots network working to protect the integrity of global ecosystems. The national office of the Sierra Club of Canada in Ottawa works closely with its chapters in British Columbia, the Prairies, Eastern Canada, and Atlantic Canada. The Sierra Club of Canada also has a national youth arm, the Sierra Youth Coalition. The organization is non-profit and membership based. Financial support comes primarily from members and supporters. The Sierra Club of Canada is proud to be democratically governed, with national elections for the board of directors.

The Sierra Club of Canada is a leading voice on climate change and energy issues in Canada, working on a wide array of energy and atmosphere issues, from nuclear power to offshore drilling and pipeline issues. SCC is also respected for our work on biodiversity issues, concerned particularly with protection of old growth forests and wetlands. The Sierra Club of Canada is engaged in work to protect the boreal region and has undertaken cutting edge research on the role of forests and the carbon cycle. (See: *Forests, Climate Change and Carbon Reservoirs: Opportunities for Forest Conservation*, September 2003, www.sierraclub.ca)

Since 1992, SCC has maintained a priority campaign to raise awareness of the imperative to deliver reductions to greenhouse gas emissions. SCC intervened in the environmental assessment hearings in the early 1990s on the proposed Great Whale Hydroelectric project in Quebec. SCC's British Columbia chapter has been active in opposing the proposed GSX pipeline to Vancouver Island, while the Atlantic Chapter has been very engaged in issues of off-shore and near-shore oil and gas development. SCC intervened in the proposed Alberta tar sands mining and de-watering projects, such as the Horizon Project proposed by Canadian Natural Resources Ltd and the Jackpine mine proposed by Shell Canada.

In the wake of the ratification of the Kyoto Protocol, it is critical that projects with significant implications for GHG emissions be subject to a thorough analysis of environmental, economic, and community sustainability. Sierra Club of Canada is intervening in the environmental review of Hydro Quebec's proposed Rupert River

diversion. SCC is a founding member of the Canadian branch of the international Climate Action Network.

The Canadian Nature Federation is the national voice of naturalists in Canada. We represent more than forty thousand individual members and supporters in every province and territory, together with over one hundred affiliated organizations, including local and provincial naturalist groups (our "Nature Network"). Ecology North is CNF's affiliate in the Northwest Territories

CNF's mission is to protect nature, its diversity and the processes that sustain it. The Canadian Nature Federation's conservation programs focus on four key areas:

- Preserve Canada's natural heritage. The CNF's wildlands campaign works to establish new national parks and marine conservation areas, and to protect existing parks from inappropriate development.
- Conserve the natural diversity of Canada's birds by working with others at home and abroad to identify and protect sites that are critically important to native Canadian bird species.
- Protect species at risk and their habitats through public education and the promotion of effective endangered species legislation.
- Foster a better understanding of nature — and the role Canadians can play in protecting it — through our publications, educational materials and volunteer monitoring projects.

The Canadian Nature Federation participated as an active intervenor in the initial Berger Hearings on the Mackenzie Valley Pipeline. We have also been active throughout are history in a variety of northern conservation and land use initiatives. We have in particular helped in the establishment of a number of northern national parks, including Tuktut Nogait National Park in the Northwest Territories, Vuntut National Park in the Yukon, as well as two World Heritage Sites - the Kluane and Nahanni National Park Reserves - in the Yukon and the Northwest Territories. As well, CNF has partnered in the identification of 17 Important Bird Areas in the Northwest Territories, including a number of that occur in the Mackenzie River Valley.

Public Concern about the MGP

At a cost of $CDN 5 billion, the Mackenzie Gas Project is a giant among megaprojects--perhaps the largest ever in Canada's North. The MGP consists of three natural gas production fields in the Mackenzie Delta, two pipelines, and related infrastructure. The ecology and communities of the Mackenzie Valley and Delta will be transformed for good or for ill, with significant negative impacts on migratory birds, fish and wildlife and their habitat, biodiversity, permafrost regimes, and air and water quality. The wilderness character of the Mackenzie Valley will likely be lost.

As huge as it is, the Mackenzie Gas Project is just phase one in the large-scale industrialization of the Northwest Territories and northern Alberta. In 1998 the National

Energy Board identified 80 significant discoveries of gas and oil in the region and there have no doubt been additional discoveries since then. Additional production facilities, roads, linking pipelines and other infrastructure will be needed to carry the natural gas from these fields to feed the big pipes heading south. The transportation and communications networks developed by MGP will no doubt trigger new mining, hydro-electric and forestry development in the Mackenzie Valley.

Further the Dene Tha' First Nation revealed in early April 2004 that a protocol has been signed with TransCanada Pipelines relating to construction of another 230 km.natural gas pipeline (the so-called Northcentral Crossing) across northern Alberta from the southern terminus of the MGP to Fort McMurray. Mackenzie natural gas will be shipped via the MGP and Northcentral Crossing pipelines directly to the Athabasca tar sands solely to heat up tar sands for the purposes of separating oil from the matrix of tar, sand, clay and water.

This means that the Mackenzie Gas Project is just phase one of a bigger megaproject to extract more oil from the Athabasca tar sands for export to the United States.

Note that the Athabasca tar sands could hold more than 300 billion recoverable barrels of oil. The tar sands currently account for 26 per cent of Canada's oil production, but by 2025 that figure could grow to 70 per cent. Because of the massive amounts of energy needed to extract and refine the bitumen, oil from the tar sands end up producing two-and-a-half time the greenhouse gases of conventional oil production, making it the world's most harmful type of oil for the atmosphere.

Tar sands projects are projected to be the largest single addition to Canada's greenhouse gas emissions, even without accounting for the carbon emissions that result from burning the end product. Tar sands production of greenhouse gas emissions was 17 megatonnes in 1990, and is projected to increase to 70 megatonnes by 2010. Tar sands projects would then represent the largest total single addition to Canada's greenhouse gas emissions representing 9 per cent of Canada's total in 2010 (or 12 per cent of Canada's Kyoto target for that year). The implication of this dramatic increase in emissions is that Canada could well blow any chance of meeting its commitment under the Kyoto Protocol.

Northern communities are already experiencing rapid climate change, with intrusion of invasive species and alteration of the habitat of animals such as muskoxen and caribou on which they traditionally depend. Ice travel, once critical for hunting, is now precarious in many places and unpredictable at most times of year. Concern runs high in the North about climate change and the ability of northern ecosystems and communities to adapt. Current global climate change modelling suggests that the Arctic will continue to experience the most dramatic effects of climate change anywhere on the globe, with the polar ice cap all but disappearing by 2055.

It is no exaggeration to state that decisions governing the Mackenzie Gas Project are globally significant. They will likely trigger massive expansion of tar sands developments and the industrialization of northern Alberta and the Mackenzie Valley.

As well, decisions relating to the MGP could well drive Canada's energy policies and investments of capital and innovation on to unsustainable paths that emphasize development of fossil fuels (and specifically the world's dirtiest form of oil) rather than sustainable paths focusing on renewable energy sources and energy efficiency.

The Mackenzie Gas Project is of growing concern to the members and supporters of Sierra Club of Canada and Canadian Nature Federation and to Canadians and Americans knowledgeable about the threats to the biodiversity and climate of North America. The recent revelations that the MGP is part of a much larger plan by the oil and gas industry for massive expansion of development of the Athabasca tar sands means that all residents of this planet should be concerned. The SCC and CNF urge the Mackenzie Valley Environmental Impact Review Board to refer the Mackenzie Gas Project with recommendations for modifications to project scope and terms of reference to a joint panel review.

Scope of the Project

The scope of the Mackenzie Gas Project for the purposes of the joint panel review is too narrow. Sierra Club of Canada and Canadian Nature Federation take the position that the proposed 230km Northcentral Crossing Pipeline that will connect the MGP to Fort Murray should be included as part of the project scoped for the environmental assessment by the joint panel review. TransCanada Pipelines is one of the proponents of the MGP as well as a primary proponent of the Northcentral Crossing Project.

Without inclusion of the Northcentral Crossing Project as part of the scoped project, the true environmental effects of the MGP cannot be fully understood. The GSX panel review determined that "downstream" environmental effects of the GSX pipeline should be examined in the environmental assessment. In the case of GSX, these downstream effects included greenhouse gas emissions associated with burning of natural gas at the Duke electricity generating facility on Vancouver Island (which was the destination for GSX gas). In the case of MGP, the greenhouse gas emissios associated with extraction of oil from the Athbasca tar sands resulting from burning of Mackenzie gas must be assessed, as well as environmental effects relating to construction and operation of the Northcentral Crossing Project.

Anything less than inclusion of the Northcentral Crossing Project in the scoped project is project-splitting in our view.

Scope of the Assessment

Sierra Club of Canada and Canadian Nature Federation take the view that the October 23, 2003 draft of *Environmental Impact Statement Terms of Reference for the Mackenzie Gas Project* (draft TORs) for the joint panel review are gravely deficient for a project of the enormous ($5 billion) scale envisaged by the Mackenzie Gas Producers for the Mackenzie Gas Project. Generally speaking, the draft TORS do not reflect or reflect inadequately the many changes in environmental assessment policy and practice in the

past 20 years. Sierra Club of Canada and Canadian Nature Federation believe that the people of the Mackenzie Valley and Delta as well as other Canadians deserve a state of the art environmental assessment that meets the spirit and letter of guidelines prepared by environmental assessment agencies as well as legal requirements.

Valued Environmental Components (VECs) - The draft Terms of Reference for the Environmental Impact Statement (EIS) indicate that VECs will be used as a foundation for predicting project-related impacts. SCC's view is that the EIS TORs must specify which VECs are to be used and not leave these decisions entirely up to the proponent. VECS must include: carbon releases and changes to carbon sinks; permafrost, wilderness and its fragmentation by the MGP and related development, grizzly bears, wolves, migratory birds including geese, ducks tundra swans and songbirds, caribou, water quality, air quality. Social and cultural VECs also would need to be specified.

Biodiversity - The draft TORS barely mentions biodiversity as an issue distinct from the much more limited issues of wildlife management and wildlife habitat. The EIS must conform closely to guidance provided by the Canadian Environmental Assessment Agency: *A Guide on Biodiversity and Environmental Assessment April 1996.* The *Canadian Biodiversity Strategy* needs to be referenced and project activities and mitigation measures focused on achieving the objectives of the Strategy. The Guide notes that biodiversity needs to be examined at the ecosystem, species and genetic levels. For example, at the *ecosystem* level, areas of high biological diversity, critical habitat areas, relic ecosystems and fragile ecosystems needs to be identified and assessed for impacts. At the *species* level, COSEWIC/IUCN species at risk, populations at low levels in cycle, populations at outer limits of their range, species with low reproductive capacity, and species highly sensitive to disturbance need to be identified and assessed for impacts. At the *genetic* level, genomes and genes of social, scientific and economic importance must be identified.

Climate Change Effects of Project - The environmental assessment of the Mackenzie Valley Pipeline and the EIS in particular represents a tremendous opportunity to better understand the changes to greenhouse gas emissions and changes in carbon sequestration capacity in boreal and arctic regions that projects such as the MGP are likely to cause. The forests and wetlands of the boreal region are the largest storehouse of carbon on the planet. The Mackenzie Gas Project will certainly result in releases of methane and carbon dioxide as a result of forest cutting, draining of wetlands, and construction activities. The EIS must include baseline measurement of total carbon currently stored and current fluxes of greenhouse gas emissions relating to the MGP study area. The EIS must also measure the amounts of greenhouse gases expected to be released by construction and operation activities of the MGP over the life of the project and changes in the capacity of the natural ecosystems in the study area to store carbon over the life of the project. In addition to the direct impacts on climate change there should be an examination of the indirect impacts. This should include consideration both of the emissions from the gas itself as well as the subsidiary emissions (such as the use of gas from the project to develop the Athabasca Tar Sands).

The EIS must conform closely to guidance provided by Canadian Environmental Assessment Agency: *Incorporating Climate Considerations in Environmental Assessment: General Guidance for Practitioners, November 2003.* Greenhouse gas management plans will need to be developed as suggested by the Agency. Design of followup programs for the MGP EA must include monitoring and reporting of MGP's GHG emissions to ensure they are consistent with Canada's *Climate Change Action Plan.*

Impacts of Climate Change on Project - Since the current and projected future impacts of climate change are particularly severe in Canada's northern regions, the Mackenzie Valley can be expected to be subjected to rapid and unprecedented climatic change. The EIS needs to examine how projected future climatic changes (affecting wildlife habitat, permafrost, ecoregion boundaries, socioeconomic conditions, etc.) will influence the design and routing of the pipeline and how it may exacerbate impacts of the project.

Landscape-scale Approach - The draft TORs are deficient in not providing for a landscape-scale approach to the EIS. A landscape-scale approach is essential in the EIS of the Mackenzie Gas Project, given the 1350–km length of the pipeline and that it would certainly be only the first in a series of major phases of oil and gas development in the Mackenzie Valley. Once the pipelines are built, oil and gas exploration and other industrial activity would likely accelerate in adjacent regions. Thus, the EIS and the environmental assessment generally must examine effects at a landscape scale; mitigation measures and regulatory approaches must also be addressed at a landscape scale.

A related point is that the EIS must examine all environmental effects of the project as required by the *Canadian Environmental Assessment* Act and not be limited to examining effects in the proposed one-kilometre wide pipeline corridor study area. The approach taken to the study of biophysical effects should be similar to that proposed in the Preliminary Information Package (PIP) for study of socio-economic effects (i.e., a 200 km corridor).

Impacts on Protected Areas and Biodiversity Hot Spots - The EIS must examine the impacts of the MGP on the ecological integrity of existing protected areas in the Mackenzie Valley. For example, the Mackenzie Valley and Delta include five globally significant Important Bird Areas (IBAs) and one continentally important IBA. These IBAs attract hundreds of thousands of migratory birds including snow, Canada, and white-fronted geese, tundra swans and canvasback ducks. The Mackenzie Delta IBA includes the Kendall Island Migratory Bird Sanctuary within which the Niglintgak and Taglu natural gas production pads are to be situated. The last confirmed sighting of the highly endangered Eskimo curlew was in the Kendall Island MBS.

Protected Area Networks Establishment - Prior to construction of the MGP, a network of protected areas must be established to adequately represent the ecoregions affected by such development and safeguard wildlife habitats and culturally significant areas. The TORS must clearly detail how the EIS will address the impact the MGP and other likely projects related to the MGP will have on the ability to complete a representative network of protected areas recognizing that cumulative effects will occur at a landscape scale even

beyond the lifespan of the MGP. To achieve this goal, current protected areas as well as protected areas proposed under the NWT Protected Areas Strategy or under comprehensive claims agreements must be identified and conflicts and gaps addressed.

Construction Impacts on Fish Habitat – The draft TORS includes a section dealing with Fish and Aquatic Resources. Sierra Club of Canada's understanding is that the proposed pipeline will cross some 580 rivers and streams along the route, and construction of these crossings will be conducted in winter. The EIS must include winter field data on fish and fish habitat in order to make accurate predictions of environmental effects of construction activities.

Permafrost-related Effects - To ensure the integrity of the pipeline over its anticipated 25-year lifespan, it is essential that permafrost conditions are well-understood in detail over the length of the pipeline. Permafrost conditions associated with river crossings are particularly important to understand in advance, given that permafrost does not occur directly under the larger rivers and streams to be crossed. The TORS must specify that the EIS will identify the most problematic river crossings (such as those having channels that fluctuate from year to year), and demand that strategies be developed for dealing with them. The TORS should require detailed maps showing ice content of soils (not just ice-rich areas), surficial geology, vegetation types, forest fire incidence and risk, and ground temperatures (not just thaw-sensitive areas) in the EIS.

Worst-case Scenario - The TORs should require that the EIS examine the environmental and other effects of a worst-case scenario. Such a worst-case scenario could be associated with a break in the pipeline. The EIS should assess the risks of such a scenario and how the proponent proposes to address and mitigate them.

Cumulative Effects Assessment - The tremendous scale of the MGP demands a state of the art approach to assess: "any cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out." (s.16.(1)(a) CEAA) Note that Mr. Justice Campbell in the Cheviot case (the leading case on the subject of federal cumulative effects assessment requirements) held that "Projects or activities that will be carried out" means those that are "likely".

The terms of reference for the EIS must specify these other projects and activities that are to be considered in the cumulative effects assessment. Examples of other projects that are likely to be carried out (and thus should be specified in the cumulative effects assessment) include: existing natural gas exploration projects and activities in the Mackenzie Delta and Beaufort Sea; the Norman Wells development and oil pipeline; likely Northern Alberta tar sands developments; other likely natural gas fields that are currently subject to leasing or regulatory processes intended to provide gas for the MGP pipeline; and existing and likely diamond, gold and other mines, forestry developments, and infrastructure developments in the Mackenzie Valley and Delta.

The EIS must conform to the guidance provided by Mr. Justice Campbell in the Cheviot case as well as that provided by the Canadian Environmental Assessment Agency in the

Cumulative Effects Assessment Practitioners Guide. For example, it is fundamental to the cumulative effects assessment that the cumulative effects likely to result from the MGP and other concurrent projects and activities be assessed at different stages of development over the expected lifespan of the MGP. The Guide advises that temporal boundaries for the CEA reflect the operational life of the project (e.g., exploration, construction, operations and abandonment). The Guide further advises that the analysis organize time-dependent changes in discrete units of time. As a practical matter, this means that the scenario analysis of cumulative environmental effects would be undertaken for the year that construction on the MGP commences (Year 0), with further scenario analyses undertake at five-year intervals during the stages of the expected 25 year lifespan of the MGP (Year 5, Year 10, Year 15 etc.) with a final scenario analysis for the year representing post-abandonment and reclamation (Year 25). As additional projects other than the MGP come on stream in the Mackenzie Valley and Delta, the cumulative effects of the MGP in combination with these projects would be brought into the analysis of overall significance.

Conclusion

The Mackenzie Gas Project and the other megaprojects that it would induce or trigger, such as the expansion of Athabasca tar sands development and the Northcentral Crossing Project, would have tremendous implications for the ecosystems and communities of northern Alberta and the Mackenzie Valley, for Canada's ability to meet its international commitments under the Kyoto Protocol and the Biodiversity Convention, and for Canada's energy policy generally.

SCC and CNF are convinced that the Mackenzie Gas Project is of significant concern to publics in the North, and other parts of Canada. Indeed, we believe that MGP is of growing concern to international publics as well.

SCC and CNF urge the Mackenzie Valley Environmental Impact Review Board to refer the Mackenzie Gas Project to a joint panel review as envisaged by Cooperation Plan.

SCC and CNF further urge the Board recommend that the scope of the project to be referred to the joint panel review be revised to include the Northcentral Crossing Pipeline Project, and Athabasca Tar Sands development projects that have been proposed to Alberta or federal regulatory authorities.

SCC and CNF further urge the Board to recommend changes to the terms of reference for the environmental impact statement to be prepared by MGP proponents, discussed above, as follows:

- Identify Valued Environmental Components to be used by the proponent as a foundation for predicting project-related effects, including cumulative environmental effects;
- Assess biodiversity effects in accordance with the published guidelines of the Canadian Environmental Assessment Agency;

- Assess climate change effects in accordance with the published guidelines of the Canadian Environmental Assessment Agency
- Ensure that models are prepared and calculations made to enable predictions of:
  - changes in greenhouse gas emissions (e.g., releases of methane from bogs) associated with destruction or degradation of wetlands and forest cutting
  - changes in carbon sequestration capacity
  - downstream greenhouse gas emissions associated with the Northcentral Crossing Pipeline Project and Athabasca Tar Sands development projects
- Ensure that models are prepared and calculations made to enable predictions of the impacts of global climate change on the operations of the MGP over at least the new 25 years;
- Assess environmental effects at a landscape scale
- Assess impacts on existing protected areas and biological hotspots
- Identify and map a network of protected areas to adequately represent the ecoregions to be affected by the MGP;
- Specify the most problematic river crossings in terms of permafrost-related effects, require strategies to deal with them, and prepare detailed permafrost-related maps for the length of the pipelines;
- Assess environmental effects associated with a worst-case scenario; and
- Assess cumulative environmental effects in accordance with the published guidelines of the Canadian Environmental Assessment Agency, the requirements of the several applicable federal laws, and the Cheviot Mine decision of Mr. Justice Campbell of the Federal Court of Canada.

SCC and CNF further urge the MVEIRB to recommend changes to the Cooperation Plan to reflect the concerns of the Deh Cho First Nations and the need to ensure that the Deh Cho First Nations are appropriately represented on the joint review panel.